

Fiscal Year 1998

**Annual Performance Evaluation
and Appraisal**

Lawrence Berkeley National Laboratory



Prepared by:

**U.S. Department of Energy
Oakland Operations Office
December 1998**

CONTRACTING OFFICER'S EVALUATION

The DOE Oakland Operations Office, Performance Review Board reviewed and discussed the recommendations of functional managers and staff concerning the appropriate adjectival and numeric ratings with which to rate the University of California's performance in the management and operation of the Lawrence Berkeley National Laboratory. Based upon this process and a unanimous vote of the members of this board, an adjectival rating of "**excellent**" is granted, based on a numeric rating of 887 points. The Board further determined and recommended that, in accordance with Appendix F of the contract the Senior Management Salary Increase Authorization Multiplier shall be 1.25. This report, the "Lawrence Berkeley National Laboratory Fiscal Year 1998 Annual Performance Evaluation and Appraisal" provides the basis for my determination, and is hereby endorsed and approved.

Recommendation:

Martin J. Domagala
Deputy Manager
Chairperson, Performance Review Board

Date: _____

Approval:

James M. Turner, P.h.D.
Manager
Oakland Operations Office

Date: _____

FY 1998 Annual Performance Evaluation and Appraisal
for Lawrence Berkeley National Laboratory

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Executive Summary

Executive Summary

Introduction

This report, produced by the U. S. Department of Energy (DOE) Oakland Operations Office (DOE OAK), provides the Contracting Officer's written assessment of the Contractor's performance at the Lawrence Berkeley National Laboratory (LBNL) under contract DE-AC03-76SF00098/M272. Appendix F defines the Objective Standards of Performance agreed to by DOE and the University of California (Contractor or UC) to annually measure the Contractor's overall performance of operations and administration, and science and technology/programmatic performance under the contract.

There may be programs, systems, compliance requirements or observations not covered by Appendix F presented in this report. By management agreement, these additional "observations" will be limited to items of performance not effectively covered by Appendix F performance measures, but still requiring the attention of the Laboratory Director. These "observations" will not be factored into an overall rating of Laboratory performance under Appendix F.

Performance Period

This appraisal and evaluation is for the period from October 1, 1997 through September 30, 1998 (Fiscal Year 1998). Certain performance measures are on a calendar year basis and they are identified in the "Detailed Appraisal Results" section of the report.

Appendix F - Objective Standards Of Performance And Contract Requirements

This report provides the Contracting Officer's Fiscal Year 1998 evaluation and validation of the Contractor's self assessment of performance in its management and operation of LBNL for the U.S. Department of Energy under the contract. In this contract, UC and DOE have agreed to use a performance-based management system for Laboratory oversight. The parties agreed to use clear and reasonable, objective performance measures as standards against which the Contractor's overall performance of Operations and Administration and Science and Technology under the contract will be assessed and evaluated. DOE and UC also agreed that the Contractor would conduct an ongoing self assessment process, including self assessments done by the Laboratory, as the principal means by which the Contractor would evaluate compliance with the performance objectives contained in Appendix F.

DOE OAK conducts validations against the Contractor's self assessment and evaluates the Contractor's performance. The validation effort is conducted by teams responsible for the various

functional areas represented in Appendix F. These teams, with guidance from DOE OAK management, are responsible for developing an adequate, independent basis for assessing the quality, credibility, and accuracy of the contractor's self assessment; and to establish a basis for DOE OAK's evaluation of the Contractor's performance.

This report fulfills the requirements of the contract (Appendix F), and specifically supports and meets the following contract requirements by providing:

- A summary of the results from the conduct of the DOE OAK validation program and evaluation of performance of work under this contract, as required by Article VI, Clause 6.
- A written assessment of the Contractor's performance under the contract based upon the DOE OAK appraisal program and the Contracting Officer's evaluation of the Contractor's self assessment, as required by Article VI, Clause 2.6.(e)
- The basis for determination of the Senior Management Salary Increase Authorization (SIA) Multiplier, as required by section III, (compensation) paragraphs (f), (6) and (8) of Appendix A and Section C, Part III of Appendix F.
- The basis for determination of the Contractor's Program Performance Fee, as required by Clause 5.3.

Observations Not Covered by Appendix F

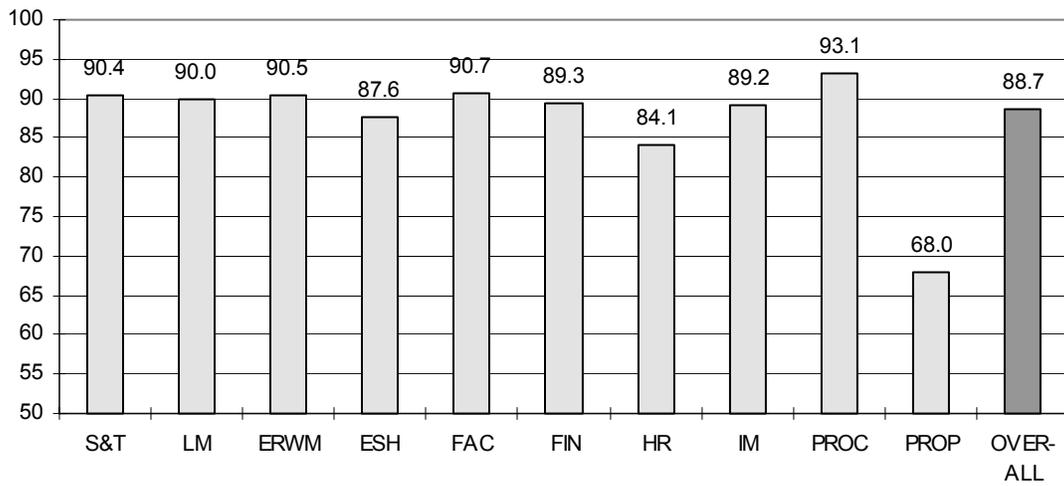
No additional observations this report period.

FY 1998 Appraisal Results in Brief

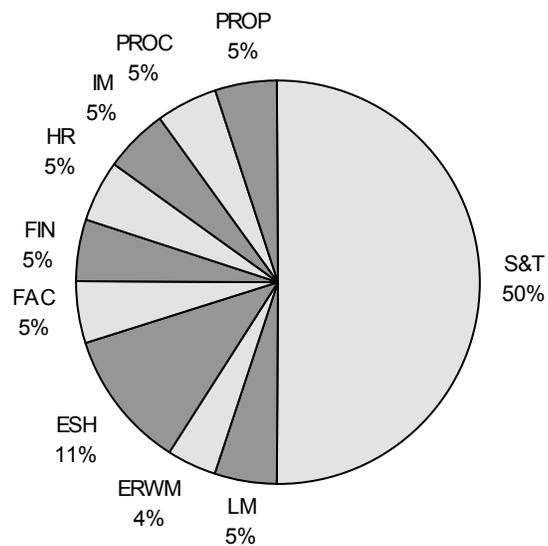
A. Overall Results FY 1998

DOE rates the overall performance of LBNL as **Excellent** for FY 1998.

A.1 RATING SUMMARY

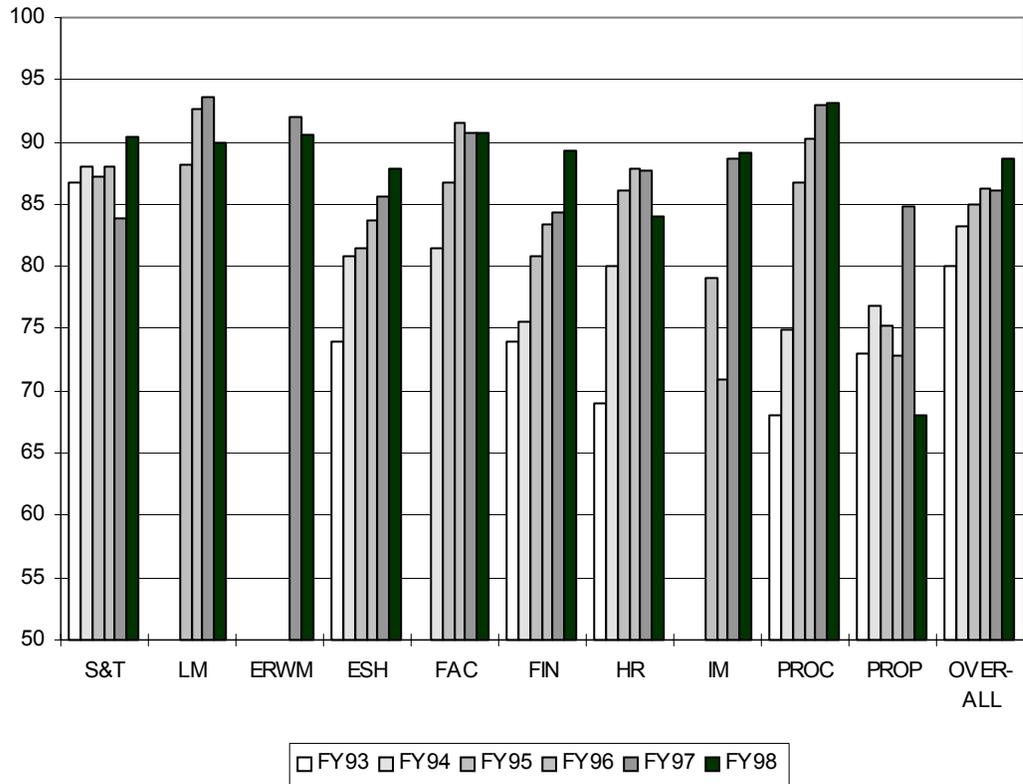


A.2 WEIGHTING SUMMARY



FY 1993-1998 Appraisal Results in Brief

B. Overall Trend Results FY 1993 - 1998



C. Operations and Administration

Laboratory Management

Lawrence Berkeley National Laboratory's (LBNL) overall Laboratory Management rating is **outstanding** at 90.0 percent.

LBNL continued to conduct planning activities that are recognized across the Office of Science Laboratory complex as best-in-class. As a result of these efforts, notable improvements were realized in scientific performance for areas such as the Advanced Light Source and the Joint Genome Institute.

LBNL continued to utilize several forums to effectively establish and communicate performance expectations. This led to accomplishments in science, ES&H performance and advancing credibility with the public and stakeholders. However, Laboratory Management has not been as successful in implementing a philosophy of individual accountability for personal property.

The leadership of the Laboratory continues to pursue an effective strategy of investing significant amounts of indirect funding to the infrastructure while continuing to reduce operations and administration costs in support of science. The average operating cost per research full time equivalent has trended downward over the past couple of years. Further, LBNL percentage of Functional Support Cost to Total Site Cost has continued a downward trend.

LBNL has successfully faced many challenges in its relationship with the community in FY 1998. This includes interacting with community stakeholders regarding the Tritium issue, hazardous waste concerns and the Dual Axial Radiographic Hydro Testing (DARHT) project. DOE OAK encourages LBNL to be even more proactive in its community interaction, and the Laboratory may wish to consider establishment of a visitor center and more frequent tours.

LBNL continued to operate very effective systems for tracking commitments and assuring accountability/follow-up. Both the Laboratory Corrective Action Tracking System and the Internal Audit Services Department delivered 100 percent of corrective actions on schedule.

LBNL continued its outstanding effort to assure the institutional viability of this critically important national asset. The leadership of the Laboratory provided the vision and direction necessary to plan and manage its limited assets/resources, address community issues, enforce accountability and maintain commitments. This materially contributed to the successful execution of the Laboratory's mission.

Environment Restoration and Waste Management

The Lawrence Berkeley National Laboratory (LBNL) achieved an overall performance rating of **outstanding** at 90.5 percent.

Waste Management: LBNL Waste Management continued their streamlining of the program to maximize the use of Environmental Management (EM) funds for the safe and proper disposal of waste. LBNL successfully reduced a backlog of inventoried waste and is moving towards a throughput process for radioactive waste at the Hazardous Waste Handling Facility. LBNL Waste Management has met and exceeded the treatment and disposal commitments identified in the Accelerated Cleanup Path to Closure document.

Technology Innovation: LBNL's score represents a varied use of innovative technologies that have improved LBNL's overall performance as well as successful use of LBNL's technologies at other sites. LBNL has also provided resources in support of the research for the vadose zone issue at Hanford to identify the problems and the science that will be needed to solve the problems.

Environmental Restoration: In FY 1998 the LBNL Environmental Restoration (ER) Program continued to demonstrate a high level of commitment to cost savings and project/program performance. The Laboratory measures its performance of projects/programs against schedule and cost baselines. The ER Program had a positive Cost Variance of 8 percent and essentially no Schedule Variance, which indicates the project remained on schedule and below the baseline cost.

The ER Program continued to develop innovative solutions to advance the EM Program. The use of innovative technology's and the ground water collection trench in the old town area resulted in significant cost savings for the ER program.

LBNL maintained an aggressive approach toward completing release sites. Twenty release sites or Area of Concerns/Solid Waste Management Units were approved for "no further action" or "no further investigation" (NFA/NFI) status in FY 1998. It was significant to note that 9 of the 20 sites were approved for no further action. An NFA is considered closed by the regulatory agencies.

Cost and Schedule Variances: LBNL Waste Management (WM) performed well in executing the approved technical scope of their FY 1998 Baseline in accordance with the approved budget. In addition, WM worked within the EM-30 Baseline Change Proposal process to secure additional funds for agreed upon scope.

Environment, Safety & Health

The Overall 1998 ES&H Performance Rating for the Lawrence Berkeley National Laboratory (LBNL) is **excellent** with a score of 87.6 percent. It must be recognized that this year LBNL was rated against the exacting criteria developed by the Berkeley Site Office (BSO), and the Laboratory, to assess the effectiveness of the Laboratory's newly implemented Integrated Safety Management System (ISMS). Via the DOE/BSO Operational Awareness Program, DOE personnel assessed the Laboratory to critical requirements, and elements that make up an effective integrated system. Overall, under this newly developed assessment criteria, the Laboratory showed significant improvement over last year.

In general, the Laboratory's performance indicates that the work is performed safely, and that management has been effective in identifying and controlling hazards. However, the Laboratory was found to be deficient in the area of personnel training. These deficiencies included a lack of line management commitment to ensure that their workers have been trained to the appropriate level to discharge their responsibilities, and the lack of evidence in the documentation of worker training records. Additionally, concern was raised as to the lack of criteria for the qualification of the

Laboratory instructors, and the course content. These weaknesses have been identified in prior assessments. With the implementation of an effective integrated safety management system, and the successful implementation and maturing of the divisional safety plans, it is expected, that performance in the training of workers will improve significantly during FY 1999.

The successes and recommendations for continued improvement are noted as follows:

Successes:

The Laboratory continues an upward trend in ES&H Performance.

Laboratory Management demonstrated a strong commitment to the DOE's ISMS requirements.

The Laboratory has formalized documents in place for all processes along the lines of the core functions of ISMS and developed a plan for their implementation.

Recommendations for Continued Improvement:

It is recommended that Laboratory management continue the implementation of its Integrated Safety Management System (ISMS) program. The program indicates a strong Laboratory commitment towards safety. As this program matures at LBNL, the Laboratory will benefit from an even more effective ES&H program.

It is also recommended that the Laboratory management ensure that line management fully understand and execute their responsibilities under the new Laboratory ISMS. It is particularly important for line management to fully engage workers in applying the principles of ISMS and its core work functions. Validation of divisional training records by Laboratory and DOE personnel show significant variations in the percentages of workers that have attended the required training. Additionally, some divisions have no documented training records for their workers. These conclusions were noted in previous years' assessments.

It is recommended that the Laboratory develop criteria for instructor selection/qualification, and course content. Laboratory courses attended by DOE personnel showed a wide disparity in the information presented by the instructor, and the intended course outline. In one instance, a course element was not even mentioned by the instructor.

It is recommended that Laboratory management review their criteria for the scheduling and performance of Management Environment, Safety & Health (MESH) appraisal. For the last two years, scheduled MESH appraisals have not been completed. DOE OAK views these appraisals as indicators of management involvement in LBNL's work safe philosophy. These appraisals are an important indicator, in that they review the effective implementation of institutional, as well as divisional requirements.

Facilities Management

Lawrence Berkeley National Laboratory's (LBNL) overall Facilities Management rating is **outstanding** at 90.7 percent. Four out of five objectives (Real Property Management, Physical Asset

Planning, Maintenance Management and Utilities/Energy Conservation) received a rating of Outstanding, which is an improvement over FY 1997. The fifth functional area (Project Management) received a rating of excellent and improved its rating each of the last four years.

The Maintenance Management program improved its performance rating from excellent in FY 1997 to outstanding in FY 1998. This performance, evaluated against two new measures this year, is attributed to meeting all of their established goals and receiving a rating of “Best-in-Class” among the Energy Facility Contractors Group (EFCOG).

The Real Property Management, Physical Asset Planning, and Utilities/Energy Conservation programs continue to perform at the outstanding level. The Real Property Management program is commended for meeting all of their established goals and successfully administering the Facility Information Management System (FIMS) through the exceptional efforts of the newly appointed FIMS administrator. The Physical Asset Planning program has met 27 of their 28 established goals and has significant accomplishments in the areas of, environmental planning, space planning, meeting National Environmental Policy Act/California Environmental Quality Act timelines, and establishment of planning procedures. The Utilities/Energy Conservation program has consistently provided reliable electrical power to the site and has met the President’s initiative to reduce energy consumption by 30 percent well ahead of the FY 2005 goal.

The Project Management program has met all of its 15 established goals and completed one of three line item projects under budget.

LBNL’s Facilities Management program is noted for its highly effective management team, highly skilled, and dedicated staff throughout the Facilities Management organization. LBNL performance demonstrates that facilities management functions can be effectively accomplished in support of the Life Cycle Asset Management program using performance-based contracting. Goals and gradients for each of the five objectives were mutually agreed upon at the beginning of the performance year and successfully accomplished during the performance year. An effective partnership has been built between LBNL and DOE OAK, consisting of trust, improved communication, and a better understanding of the parties operations and requirements.

Financial Management

LBNL’s overall Financial Management rating is **excellent**. The point score of 89.3 percent is higher this year than last year. The Laboratory earned higher points in all measures and made significant improvement in some measures. A summary by performance objective is as follows.

Customer Focus and Satisfaction.

LBNL’s performance for this measure is excellent. They successfully identified their customer groups and developed a systematic approach for understanding customer needs and requirements. A strategy was developed that segmented customers and identified specific needs and expectations which allowed the flexibility to adjust to customer requests. The financial system conversion and update, which was a joint effort between CFO and internal customers, provided an additional tool to satisfy customer requirements. The Laboratory’s Finance Division conducted a study to determine what the customers thought of the new Financial Management System (FMS). The feedback was positive.

Operational Effectiveness.

LBNL performance is outstanding for this measure. LBNL submitted both the FY 2000 Budget Submission and Financial Information System (FIS) transmissions early. The Laboratory continues to reduce the cost of printing the budget and is making better use of automation in budget preparation. They respond to DOE OAK's periodic and ad hoc requests in a timely manner. The new FMS system implemented by LBNL has resulted in more consistent and accurate information for both internal customers and DOE OAK transmissions. The update to the FMS plan is forward-looking, logic-based, and will help the Laboratory and the CFO achieve improved business and financial capabilities. The continued system improvement and increased training programs reflects LBNL's desire to be proactive in addressing the labs financial concerns and overall knowledge. All cost targets, benchmarking trends and cost/cycle time areas were achieved.

LBNL implemented new processes and initiatives during FY 1998 for workforce management as well as continued those determined to be effective last year. The new areas addressed this year included: span of control ratios, number and effectiveness of self-directed work teams, merging of related functions, training and development activities, and alignment of individual performance objectives/appraisals with Financial Management objectives.

Financial Stewardship and Integrity.

LBNL's performance for this measure is excellent. The Laboratory maintained costs and commitments and no reportable violations occurred. LBNL engaged in numerous proactive activities to improve the effectiveness of funds control. This included training on the annual budget workshop, development of more meaningful reports, formal meetings, and more interface with programmatic divisions.

Previous audit findings concerning the close of construction projects to completed plant were addressed during FY 1998. The Laboratory revised its project closing procedures and provided training to laboratory staff to ensure projects are closed in a timely manner. There were improvements and continuing emphasis in monitoring high risk areas in accounts payable payments, account reconciliation, and bank account monitoring. The Laboratory proactively supported DOE initiatives in many financial areas including Management Analysis and Reporting System (MARS), managerial cost reporting, and financial statement analysis. However, it is recommended that more emphasis be placed on reconciling DOE MARS accounts.

The Cost Accounting Standards disclosure statement was revised to reflect all accounting practice changes approved by DOE OAK. However, we suggest LBNL and DOE OAK work together to identify cost accounting practice changes requiring disclosure and approval. In addition, the allocation of space costs needs to be validated for appropriateness.

Internal controls were reviewed in five specific areas. Of the five areas, two were satisfactory and we recommend further evaluation and additional documentation on the remaining three.

Human Resources

The Lawrence Berkeley National Laboratory (LBNL) received an overall rating of **excellent** for performance in Human Resources (HR) Management for FY 1998. Although the FY 1998 rating of 84.1 percent is below the FY 1997 rating of 87.7 percent, DOE OAK considers the

Laboratory's FY 1998 performance in the HR functional area as significant and commendable, given tremendous staffing obstacles endured by the Laboratory's Human Resources Department (LBNL-HR). The LBNL-HR Department was under the leadership of three different managers (one an Acting) during the fiscal year. Changes at the LBNL-HR Manager level occurred in mid-February and again in mid-July. Additionally, other key leadership positions in Compensation and Labor and Employee Relations are filled with recent additions to the LBNL-HR staff. Although these key management changes in the LBNL-HR Department adversely impacted commitments with regard to consistency of implementation and timeliness, the staff's focus on deliverables was apparent, in that emphasis was restored immediately after each staffing change.

Important challenges for LBNL-HR during FY 1997 were to determine how to improve upon value added support to the Laboratory's research missions and responsiveness to customer needs. LBNL expanded its focus in these areas and succeeded in establishing a number of more efficient and cost effective changes in systems and processes. DOE OAK's FY 1997 Human Resources summary cited LBNL-HR for "its focus and commitment with regard to system and process improvements in the HR area." This commitment continued through FY 1998 and was a factor in the Laboratory maintaining a performance rating of excellent, while facing significant staffing challenges.

A summary of significant accomplishments in the Human Resources Management performance area during FY 1998 follows:

- **HR systems and Processes:** A critical examination of the Laboratory's system for identifying supervisors, managers and confidential employees as defined under the Higher Education and Employee Relations Act was completed. This examination resulted in new guidance and a more cost-effective approach to collecting timely and accurate information on these employees.
- **Work Force Planning:** LBNL-HR continued to emphasize the need to improve upon value added support to the Laboratory's research missions. Thus, initiation of a process for partnering with the Directorate and major programmatic division customers during FY 1998 is noteworthy. Quarterly meetings of these major customers resulted in significant steps taken by LBNL-HR to support work force planning at the Joint Genome Institute facility in Walnut Creek.
- **Recruiting and Supplemental Work Force:** Subsequent to review of its recruitment strategies, LBNL-HR concluded that cost data was not readily available to determine the most cost-effective recruitment strategies. A plan to upgrade data collection capability to include a system to collect cost data on recruitment strategies has been initiated.

A thorough review of supplemental labor force population resulted in a 33.7 percent decrease in usage during FY 1998, and will result in significant changes in policy and implementing guidelines.

- **Baseline and Benchmark Evaluation of Research and Support full time equivalent Costs:** With regard to baseline evaluation efforts, LBNL-HR is currently making refinements to data collected which ultimately will enable management to make informed decisions regarding FTE costs in exempt and non-exempt research support areas. A plan is in place to

conduct benchmark evaluation of research and support FTE costs in similar R&D facilities. Eight Comparator facilities have been identified subsequent to consultation with OAK-HRMD.

- Effectiveness of Employee/Labor Relations: LBNL-HR collected data on formal employee complaints to identify problem areas. Corrective actions were implemented or are in the planning process to address employee concerns.

The Laboratory successfully gained authority from the Regents of the University of California to negotiate local terms and conditions with several collective bargaining units at the Laboratory. This authority permitted LBNL the flexibility to bargain successfully the terms and conditions on local wages and work shifts for the Laboratory's Research Associates at the Joint Genome Institute facility, Walnut Creek.

- Customer Needs Input: LBNL-HR's commitment and effort to build upon and maintain positive productive relationships with internal and external customers continued during FY 1998. Key changes in leadership positions did not reduce this commitment. An excellent relationship between OAK-HRMD and the current HR Manager exists. Both staffs continue to work as partners on transactions and issues. LBNL-HR is working to build customer feedback loops into its customer input mechanisms in order to accurately measure effectiveness.
- Alignment of HR Programs with Laboratory Business Strategies: LBNL-HR continues to look for ways to build upon providing cost-effective programs and services in support of the Laboratory's mission/research efforts. For example, the staffing function was relocated with the Administrative Services unit and efforts are underway to locate LBNL-HR staff in closer proximity to division customers to streamline and improve HR processes. Additionally, the co-location of the Work Force Diversity Office and LBNL-HR is expected to result in more efficient, cost support of institutional efforts and commitments within the equal opportunity area.

Information Management

Lawrence Berkeley National Laboratory (LBNL) earned an **excellent** rating for FY 1998 with a score of 89.2 percent. It provided sufficient evidence to show that Information Management is managed as a corporate asset. The organizations that perform Information Management activities have done an excellent job in planning and implementing new systems that have resulted in substantial cost savings and increased customer capabilities.

The Laboratory has done an excellent job in its planning efforts. The Information Management (IM) planning process is integrated with the Laboratory's mission. Planning is extensive and includes a variety of methodologies to identify and address customer requirements. There is evidence of heavy customer involvement and top management involvement with the planning process. IM organizations identified the "critical few" objectives and were successful in achieving these objectives.

The Laboratory has an excellent program of self assessment. The robust self assessment program includes scheduled self assessment activities and a tracking system to monitor corrective action plans.

Customer involvement is an integral part of the process and customers sit on many committees. The Laboratory has been successful in identifying improvement opportunities, has responded to findings from past efforts, and has been successful in implementing recommended improvements.

In the area of customer satisfaction, the Laboratory has done an excellent job in identifying customer requirements and providing the products and services they require. Information Management activities have resulted in a high level of customer satisfaction and an increase in satisfaction from last years survey. Service levels have been met, and several indicators show a high level of acceptance of new IM products.

Finally, the IM organizations have done an outstanding job in improving their operational effectiveness. The Laboratory reported nearly three million dollars in cost avoidance this year, mostly from the Information Systems and Services (ISS). The elimination of legacy systems reduced the number of full time equivalent's needed and also provided better capability to its users. The Technical and Electronic Information Department's (TEID) web site has earned national recognition, the ISS Laboratory Electronic Time Reporting System (LETS) system has been implemented by Kaiser-Hill, and ISS has consulted other facilities on its experiences with PeopleSoft systems.

Procurement

Lawrence Berkeley National Laboratory (LBNL) achieved an overall performance rating of **outstanding** for the third consecutive year at 93.1 percent. The Procurement operation received outstanding in two performance measures and excellent in three performance measures. Procurement's continued success at this level is demonstrated by the excellent partnership, communication, and working relationship with DOE OAK and UC representatives.

The Procurement Manager is a recognized leader in the Energy Research Laboratory procurement community. Procurement has a credible, self-critical, and well documented system evaluation program. The Procurement Manager's involvement is evident ensuring policies and procedures are adhered to and managed. Benchmarking with other DOE Laboratories in cycle time, purchasing card usage, and cost of operations has resulted in cost and time savings for the Laboratory and DOE. Procurement made excellent progress to improve customer satisfaction with procurement employees and requesters while vendor satisfaction remained unchanged. Supplier management for goods and services continues to increase substantially allowing the Laboratory to close the gap with its objective of 90 percent or better for on-time deliveries. Socioeconomic contributions slipped slightly from previous years achievements as a result of internal business decision changes, changes in the funding profile for larger projects, and the alignment with the new contract reform provisions in the first year of a new contract. The annual self assessment is well written and presents all the necessary details for an evaluation. As usage of the Value-Based Self Assessment Model concludes with this year's performance, Procurement has embraced the Balance Scorecard Model for FY 1999 and is poised to continue at their outstanding performance level.

Property Management

The Lawrence Berkeley National Laboratory (LBNL) earned a rating of **marginal** at 68 percent in the functional area of Property Management. The rating represents a two level drop from the FY 1997 rating of excellent and a one level drop from the rating of good received in FY 1996 and FY 1995.

The Laboratory experienced notable success in the precious metals inventory, where they recorded a 100 percent find rate. In the area of fleet management, high utilization rates earned the Laboratory a rating of outstanding. In addition, mid year corrections to the utilization criteria were recognized as needed and, in fact, implemented. These changes by management are viewed as positive actions.

Deficiencies were identified in the critical areas of accountability and stewardship, where accuracy and timeliness issues severely diminished the Laboratory's opportunity to conduct the inventory of sensitive items and equipment in the most cost effective manner. Poor performance in the cost versus performance area contributed to the Laboratory's marginal rating.

While the Laboratory recorded a find rate of 99 percent, data base accuracy and timeliness question the level of confidence in that find rate. For example, a sample size of 45 items drawn to validate the inventory contained barcode numbers of seven items that should not have been in the property data base. An 11th hour deployment of the core property management staff to other directorates was necessary to achieve the 99 percent. The temporary reallocation of resources to help locate property is not a cost effective use of resources, and brings into question the effectiveness and degree to which the Laboratory's property program is decentralized.

As noted above, the current assessment of Laboratory performance at the marginal level represents a significant reduction in the overall rating from FY 1997. Beginning with the FY 1995 assessment report, subtle deficiencies were identified in the performance assessment that were leading indicators of a downward trend in performance. Deficiencies identified by specific measures, such as the inability to make timely initial assignment of property was identified this year for the fourth consecutive year. In addition, in each of the last four years the inventory has been completed at the last minute and required a significant management push.

The executive summary for the FY 1995 annual assessment of performance stated in part, "Fundamental weaknesses exist such as the lack of a Laboratory-wide culture of strict accountability for personal property actively supported by upper management..." This statement is still valid in FY 1998.

D. Science and Technology

Institutional/Programmatic Level Assessment

Lawrence Berkeley National Laboratory's (LBNL) Institutional Level Assessment addresses the challenges and issues faced by the Laboratory and perspectives on plans for the future. The Laboratory Director's perspective, as contained in the Science and Technology self assessment, provides insight into where LBNL's leadership has been directed the past year. LBNL continues to excel in their ability to develop and execute scientific programs.

LBL's management of the Laboratory Directed Research and Development (LDRD) program continues to direct the Laboratory's resources toward exciting scientific challenges and in keeping the Laboratory on the cutting edge of science and technology. The Laboratory has been funding the LDRD program at about 3 percent to 3.5 percent of the total LBNL funding. Major strategic thrusts supported with LDRD funds have included computational projects in all of LBNL's scientific divisions and projects that apply the unique capabilities of the Advanced Light Source in new scientific directions. LBNL's health programs are mirrored in securing National Institutes of Health support for projects complementary to the DOE-funded effort. In particular, Work for Others now accounts for about 38 percent of the Life Sciences Division's support.

The programmatic assessment of the Laboratory is based upon self assessment and peer review of science and technology, contractors evaluation, and DOE HQ program managers and DOE OAK counterpart's validation. The assessment of performance for research programs is comprised of a combined evaluation of the following programs: Biomedical and Environmental Research, Basic Energy Sciences, Computing Sciences, Nuclear Physics, High Energy Physics, Fusion Energy Sciences, and Energy Efficiency and Renewable Energy.

Overall rating for Science and Technology is **outstanding** for FY 1998 with a score of 90.4 percent.

Biomedical and Environment Research

Lawrence Berkeley National Laboratory (LBNL) continues to conduct outstanding research in the life sciences. This is evidenced by internal as well as external review groups. One outstanding contribution was LBNL's role in establishing the DOE Joint Genome Institute and the construction of the Production Sequencing Facility (PSF). The PSF will enhance genomic research well into the next century, and assist the Department to meet its national goals to perform 10 percent of the human genome effort by the year 2003. The Life Sciences Division has a strong publication record and extramural support, and established excellent collaborations with investigators at other institutions and industry.

Overall rating for Biomedical and Environmental Research is **outstanding** with a score of 90.0 percent.

Basic Energy Sciences

Basic Energy Sciences programs continue to emphasize new and forefront research projects for the synthesis, processing, and characterization of advanced materials. Excellent research is carried out on the fundamental features of evolving microstructures in solids; alloy-phase stability; structure and properties of transforming interfaces; and the structures of magnetic, optical, and electrical thin films and coatings. The Chemical Sciences program has long excelled in fundamental, chemical dynamics research using molecular-beam techniques. Geochemical studies focus on advanced interpretations of low-temperature flow processes, innovations in analytical geochemistry, isotope and trace-element chemistry with mass spectrometric, and synchrotron-based analyses. Engineering research is concerned with the development of modern nonlinear dynamics with applications to problems in

engineering sciences. The physics of the photosynthetic apparatus and on the genesis of subcellular organelles is the focus of the Energy Biosciences program efforts.

Overall rating for Basic Energy Sciences is **excellent** with a score of 87.5 percent.

Computing Sciences

Lawrence Berkeley National Laboratory's (LBNL) work in Computing Sciences and network research continues to be one of the most productive and highest quality groups in the world. Laboratory applied and computational mathematicians conduct research in the areas of turbulence modeling, numerical analysis, numerical linear algebra, parallel algorithm development, and large-scale scientific computing and visualization that is directed at solving DOE grand challenge class problems of importance to LBNL, DOE, and the Nation. The National Energy Research Scientific Computing (NERSC) Center is one of the world's leading unclassified computer centers and ranks in the top ten in computing resources. It currently has the expertise to collaborate on an equivalent basis with its users in all the Office of Science (SC). There are active collaborations with other DOE SC laboratories on application-specific algorithms, visualization techniques, and Grand Challenge applications. LBNL has been actively involved in a number of Research and Development projects that were initiated under the DOE 2000 program and both National Collaboratory Pilots, as well as the coordination of the effort across all participating organizations. Integration is a key element to assuring the success of the program and LBNL has shown excellent leadership in this area. Energy Sciences Network (Esnet) at LBNL has made significant advances in Networks linkages with NERSC users and is in the process of transferring the operational capability to enable science and other DOE missions. LBNL's Laboratory Technology Research (LTR) continues to make valuable contributions to DOE mission objectives such as the project involving studies of light emitting diodes that emit in both the green and blue. This project has the potential for low cost lighting and flat panel display technologies.

Overall rating for Computing Sciences is **outstanding** with a score of 92.5 percent.

Nuclear Physics

LBNL's Nuclear Physics Division provides a leadership role in the highest priority nuclear research in the areas of nuclear structure physics, relativistic heavy ion physics, and in the development of the facilities at the Sudbury Neutrino Observatory. The nuclear theory group conducts an excellent program of research, primarily on topics relevant to ultra-relativistic heavy ion physics. The facilities and research are well managed.

Overall rating for Nuclear Physics is **outstanding** with a score of 95.0 percent.

High Energy Physics

Outstanding contributions have been made by Lawrence Berkeley National Laboratory's (LBNL) Physics Division in major High Energy Physics programs. These programs include Charge Parity (CP) violations, United States A Toroidal LHC (Linear Hadron Collider) Apparatus (ATLAS) computing effort, accelerator research and development for future high energy physics facilities, and detector electronics for facilities in the United States and Europe. Management of research and budget has been excellent.

Overall rating for High Energy Physics is **outstanding** with a score of 92.5 percent.

Fusion Energy Sciences

As the lead institution for the DOE Office of Fusion Energy Sciences' Inertial Fusion Energy (IFE) program, Lawrence Berkeley National Laboratory (LBNL) has done an outstanding job. The Laboratory remains dedicated to developing, at minimum cost, heavy-ion inertial fusion as a safe, economical energy source. LBNL's excellent record of beam research experiments was furthered in FY 1998 with the beam merging experiment conducted on the re-activated Multiple Beam Experiment (MBE-4) accelerator. Continued involvement in driver and target studies under a "Tri-Laboratory" collaboration with Lawrence Livermore National Laboratory and Sandia National Laboratory led to an important experiment with Naval Research Laboratory (NRL) in self-pinched final target focusing.

Overall rating for Fusion Energy Sciences is **outstanding** with a score of 91.7 percent.

Energy Efficiency and Renewable Energy

The Lawrence Berkeley National Laboratory (LBNL) Environmental Energy Technologies Division (EETD) received about two-thirds of its funding from DOE (mostly from the Office of Energy Efficiency and Renewable Energy (EERE)) and about one-third from "Work for Others" (WFO) sponsors (mostly from Environmental Protection Agency (EPA)). It is comprised of four departments with a diverse, multi-disciplinary staff of over 300. It also houses an Atmospheric Processes, Effects, & Analysis Program with personnel matrixed from the four divisions. EETD has close ties and is co-resident with the

California Institute for Energy Efficiency (CIEE), a research unit of the University of California. EETD also retains a small project office in Washington DC. Numerous staff members also have active involvement in National Academy of Science (NAS) committees and professional associations, and the head of the EETD Indoor Environment group serves as the Chair of EPA's Science Advisory Board.

EETD is seeking to establish itself as a center of excellence in energy technologies and related analysis, with particular emphasis on commercial buildings, advanced batteries and fuel-cells for transportation, combustion and air quality computational modeling, and broad energy analysis in support of national and international energy policies and performance standards. The division has remained innovative and adept at "mining" energy efficiency opportunities within its areas of expertise. The cost-savings and economic payback alone resulting from much of the division's work is enormous, easily running into the billions of dollars.

Some notable EETD research accomplishments during FY 1998 include:

- development of new coating technique for the next-generation of (electrochromic) window coatings (R&D 100 winner)
- discovery of promising new low-cost thin films that potentially can be used as photo or electrochromic materials
- testing of new aerosol and other air duct sealants, and "de-mything" the (non)-effectiveness of duct tape (received much media attention)
- analysis of appliance stand-by power losses that may lead to a new "1-watt" standard (also got media attention)
- prototype development of mini high-intensity discharge (HID) light to replace incandescents
- updated version of major building energy modeling design tool used worldwide (DOE 2.2)
- computational modeling of soot and Nitrogen Oxide (Nox) emissions to reveal design options for the development of "clean diesels"
- development of sampling device and testing protocol for emissions from heavy oil storage tanks
- utility sector analysis in support of national policy to deregulate United States electricity markets
- Lead participation in a DOE assessment of fundamental research needs for carbon management

Overall rating for Energy Efficiency & Renewable is **excellent** with a score of 88.3 percent.

Conclusions and Recommendations

Laboratory Management

The Lawrence Berkeley National Laboratory continued its **outstanding** effort to assure the Institutional viability of this critically important national asset. The leadership of the Laboratory provided the vision and direction necessary to plan and manage its limited assets/resources, address community issues, enforce accountability and maintain commitments. This materially contributed to the successful execution of the Laboratory's mission.

Environment Safety & Health

It is recommended that Laboratory management continue the implementation of its Integrated Safety Management System (ISMS) program. The program indicates a strong Laboratory commitment towards safety. As it matures at LBNL, the Laboratory will benefit from an even more effective ES&H program.

It is also recommended that the Laboratory management ensure that line management fully understand and execute their responsibilities under the new Laboratory ISMS. It is particularly important for line management to fully engage workers in applying the principles of ISMS and its core work functions. Validation of divisional training records by Laboratory and DOE personnel show significant variations in the percentages of workers that have attended the required training. Additionally, some divisions have no documented training records for their workers. These conclusions were noted in previous years' assessments.

It is recommended that the Laboratory develop criteria for instructor selection/qualification, and course content. Laboratory courses attended by DOE personnel showed a wide disparity in the information presented by the instructor, and the intended course outline. In one instance, a course element was not even mentioned by the instructor.

It is recommended that Laboratory management review their criteria for the scheduling and performance of Management Environment, Safety & Health (MESH) appraisal. For the last two years, scheduled MESH appraisals have not been completed. DOE OAK views these appraisals as indicators of management involvement in LBNL's work safe philosophy. These appraisals are an important indicator, in that they review the effective implementation of institutional, as well as divisional requirements.

Financial Management

Lawrence Berkeley National Laboratory's (LBNL's) overall performance is **excellent**. The new financial management system implemented by LBNL had resulted in more consistent and accurate information for both internal customers and DOE transmissions. There were improvements in monitoring high risk areas and the Laboratory proactively supported DOE initiatives. It is recommended that more emphasis be placed on reconciling DOE Management Analysis and Reporting System (MARS) accounts. We also suggest that LBNL work closer with DOE OAK with respect to

identifying cost account practice changes requiring disclosure and approval. In addition, further validation by LBNL on allocation of space costs needs to be performed.

Information Management

The Laboratory is managing information as a corporate resource to improve the productivity of its customers. It continues to plan for and implement new technologies and systems that have reduced costs and enhanced its customers' capabilities.

Property Management

It is recommended the Laboratory implement a philosophy of strict accountability for personal property, and that the philosophy be actively supported by executive management. It is also recommended that a joint executive group from the Laboratory and OAK meet to discuss alternatives on how to effectively approach orchestrating improved performance in the area of Personal Property Management.

Operations & Administration

Performance Area: LABORATORY MANAGEMENT

Performance Objective: #1 Laboratory Leadership

Laboratory leadership, in support of Laboratory missions, ensures the stewardship and viability of the institution. **(Weight = 100%)**

Criteria: 1.1 Institutional Stewardship and Viability

Evaluation of Laboratory senior management's approach, deployment and results for ensuring that the institution is capable of executing its current and future missions. **(Weight = 70%)**

Performance Measure: 1.1.a Planning

Evaluation of management's approach for strategic planning that aligns Laboratory missions, core competencies, strategic direction, and funding sources with DOE strategic plans and objectives. The assessment will focus on achievement of the key objectives contained in the Laboratory's plans and how this information is reviewed with DOE. **(Weight = 17%)**

Performance Gradient:

Weighting for Approach/Deployment and Results:
A/D = 40%
R = 60%
 Gradients (see table 1)

Performance Narrative:

Approach/Deployment:

The Lawrence Berkeley National Laboratory (LBNL) continued to conduct planning activities that are recognized across the Office of Science laboratory complex as best-in-class. The focus of these activities was programmatic planning that provided clear alignment of the Laboratory's programs with DOE's strategic plans. Laboratory leadership has emphasized close customer interaction with DOE program sponsors to determine appropriate future program directions. Laboratory leadership and planning staff also contributed directly to developing the framework for and input to DOE's Strategic Laboratory Missions Plan. These activities uniformly involved significant levels of communication and interaction with DOE.

Results:

Results for planning efforts include notable achievements in realizing programmatic goals. Examples include the development of the Advanced Light Source Science Roadmap and the formulation of plans for the Joint Gnome Institute and its associated sequencing goals. These efforts resulted in notable improvements in scientific performance for these areas.

The Laboratory also excelled in its efforts to plan and achieve DOE objectives in institutional and facility operations areas. An Integrated Safety Management Plan was prepared and approved by OAK. This plan, and the Division Safety Plans at its foundation, are considered models in the DOE system. The Laboratory was a key player in the assessment of the potential for the regulation of radiological operations by the Nuclear Regulatory Commission. LBNL provided input to the external regulation pilot study helping to formulate positions on the issues facing the DOE. Site-wide facility planning has been particularly successful in promoting several improvements to the infrastructure. These efforts have produced up to date planning documents and planning forums. They have been conducted with a high level of communication and engagement with DOE. The Berkeley Laboratory cosponsored the Advanced Light Source Workshop on Scientific Directions with the Office of Basic Energy Sciences. There was active cooperation with the Office of Mathematics and Information Sciences in the development of planning materials for the Strategic Simulation Plan. Finally, the Berkeley Laboratory worked closely with DOE OAK and DOE HQ in the development of the Integrated Safety Management Plan and the External Regulation Pilot Study.

Performance Rating (Adjectival): Outstanding	95.00%
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Performance Measure 1.1b	Establishing and Communicating Performance Expectations
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<p>Evaluation of management's effectiveness in establishing and communicating performance expectations. Assessment will focus on communication with Laboratory line management and senior management at the DOE Headquarters, Operations Office, and UC that reinforces performance goals.</p> <p style="text-align: right;">(Weight = 16.6%)</p>
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Performance Gradient:

Weighting for Approach/Deployment and Results:

A/D = 40%

R = 60%

Gradients (see table 1)

Performance Narrative:

Approach/Deployment:

This performance measure incentivizes good communication between LBNL management and senior DOE managers at DOE HQ and Operations Offices. LBNL continued to effectively utilize several standing forums with DOE and UC, to encourage good communication and the discussion of performance expectations. Several forums were utilized including the annual DOE On-Site review of the Institutional Plan, inter-lab committees formed to discuss Laboratory operations, computing and facilities, and regular meetings with OAK senior management.

Results:

The 1999-2003 Institutional Plan reflects the Director's expectations for realizing research-based strategic initiatives. These initiatives were significantly advanced including:

- Increased scientific productivity at the Advanced Light Source
- Exploiting National Energy Research Super Computing (NERSC) Center computational science
- Fulfilling Joint Genome Institute milestones
- Upgrading the National Center for Electron Microscopy

In addition to science accomplishments, the leadership of the Laboratory focused on communicating expectations for performance in two priority areas for DOE, safety and advancing credibility with the public and stakeholders. As a result, LBNL completed an Integrated Safety Management Plan which was approved by the DOE. Division's safety plans have been completed which are considered models in the DOE system.

The Laboratory communicated regularly with its constituents regarding various concerns and issues. This included the City of Berkeley, community groups/forums and political dignitaries. These interactions have promoted the establishment of credibility and trust with stakeholders.

The LBNL Personal Property Program continues to struggle. Laboratory management has taken positive steps during the last three years to improve the program such as moving toward a decentralized property system, forming the Property System Task Force, acquiring a new property data base system and piloting the Property Performance Assessment Model (PPAM). However, Laboratory management has not been successful in implementing a philosophy of strict individual accountability for personal property-the cornerstone characteristic of a good property management program. It is essential that such a philosophy be instilled in the LBNL culture, and be visibly supported by executive management.

Performance Rating (Adjectival): Excellent	85.00%
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Performance Measure:1.1.c**Stewardship of Assets**

Evaluation of Laboratory management systems for making decisions that address stewardship of programmatic and institutional assets. Assessment will include the impact of planning on decision making, the use of prioritization processes, asset management, resource allocation, etc.

(Weight =16.6%)

Performance Gradient:

Weighting for Approach/Deployment and Results:

A/D = 40%

R = 60%

Gradients (see table 1)

Performance Narrative:

Approach/Deployment:

In this new performance measure for 1998, LBNL showed the effective use of systems that lead to quality decision-making concerning the allocation of programmatic and institutional assets.

The Laboratory leadership continues to pursue an effective strategy of investing significant amounts of indirect funding to the infrastructure while continuing to reduce administration and operations costs in support of science. The emphasis on maintaining high levels of expertise and excellence in the workforce is noteworthy. Several effective prioritization and integration schemes have been employed to identify funding priorities to DOE. An example of a new system, developed jointly by Berkeley Laboratory and DOE/OAK, is the Integrated ES&H and Infrastructure Management Plan.

Results:

The Laboratory Directed Research and Development program is a prime example of priority asset allocation where limited dollars must be leveraged to generate promising new LBNL programs. The Laboratory Directed Research and Development program plan (reviewed and approved by DOE) reflects a well thought out effort to foster new experimental science and capabilities in priority areas. The plan led directly to supporting several science initiatives in areas like the Advanced Light Source and Scientific Computing.

LBNL worked closely with DOE OAK to establish an integrated prioritization scheme for ES&H and infrastructure project decision-making. The system provides a consolidated risk-based look at priorities and funding decisions with limited resources in these areas. It encouraged greater accountability to HQ for the Laboratory and site office to deliver on priority projects.

The Comprehensive Facilities Plan is viewed as a model by the balance of the DOE complex for effective management of critically short office and Laboratory space. The plan enabled several key space decisions, including the leasing of off-site space and completion of sections of the Advanced

Light Source mezzanine. Particularly impressive was the ability to allocate funding for painting, roofing and repairs to the infrastructure where resources are extremely limited.

Performance Rating (Adjectival): Outstanding	95.00%
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Performance Measure: 1.1.d	Effective Resource Management
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<p>Evaluation of management's efforts to effectively manage funding and staff resources consistent with DOE and Laboratory goals. Assessment will focus on performance results which may include improvements in cost effectiveness such as the ratio of S&T to A&O staff, and other productivity or re-engineering indicators.</p>	<p>(Weight = 16.6%)</p>
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Performance Gradient:

Weighting for Approach/Deployment and Results:

A/D = 40%

R = 60%

Gradients (see table 1)

Performance Narrative:

Approach/Deployment:

The Laboratory Director places a major emphasis on resource management. His commitment has been widely disseminated throughout the Laboratory in a number of ways: the Laboratory's Vision 2000, the Institutional Plan, and the Strategic Plan. The Laboratory continues to review processes to identify reengineering opportunities and to achieve Laboratory-wide savings through sharing development costs or volume purchasing with other national laboratories.

LBNL uses a de-centralized resource management system in the programmatic areas where the resource managers work directly for the program manager. On the overhead and distributed cost side, the Laboratory Director and the Director's Action Committee, with the support of the Controller's staff, are directly involved with establishing the organizational and institutional overhead budget targets. LBNL employs a more centralized system for tracking and monitoring overhead costs against established budget targets.

Results:

LBNL demonstrated effective resource management and developed several cost containment initiatives. Examples of these initiatives are in the areas of travel, property management, procurement, training, and the reporting and analysis functions. The Laboratory Director continues to emphasize cost management with programs to reduce overhead and eliminate non-value added work. During this rating period, LBNL's proactive approach to control costs resulted in reductions in several institutional burdens and overhead rates, including the institutional overhead rate. These actions result in more efficient use of Science and Technology funds.

The Laboratory continues to review processes in the administrative, operations, and programmatic areas to identify re-engineering alternatives and to achieve lab wide savings. Cost saving initiatives in

3 areas were implemented with other Laboratory's that allow the Berkeley Lab to share knowledge, existing practices, and resources.

LBNL has been very proactive in their automation efficiencies. They implemented the Financial Management System (FMS), Procard, Electronic Banking, Labor Distribution System (LDRS) and Facilities Information System (MAXIMO). All of these enhancements allow LBNL to more efficiently manage their resources and become more effective in the way they conduct business. Specific cost savings are addressed in the respective functional areas throughout this report. They continue to develop, plan and implement additional enhancements in the future that will make the LBNL even more efficient, and provide greater flexibility and improved quality of resource management at both the institutional and programmatic levels. Once the budget module is implemented in FMS, the formulation process becomes streamlined, the execution process will result in more efficient funds control and management

As identified in the MacLauchlan metrics, LBNL continues to reduce the ratio of total costs for scientific and technical staff to administrative and operations staff. The average operating cost per research full time equivalent (FTE) has also trended downward over the past couple years. In FY 1996, the average operating cost per research FTE was \$124,000; in FY 1997, it declined to \$120,000. Further declines are anticipated for FY 1998. Together, these metrics reflect that LBNL is continuing to move in the direction of reduced support costs, and increased funding on the technical aspects of research.

In recent years, DOE implemented the Functional Support Cost Reporting (FSCR) system for its major operating contractor's. While LBNL does not manage and budget according to the FSCR system, its reported information has demonstrated positive results with respect to support cost trends. LBNL's percentage of Functional Support Cost (FSC) to Total Site Cost (TSC) has trended down from its baseline 37.8 percent in FY 1994 to 33 percent in FY 1997, the most recent period reported. This reduction is consistent with the Department's goal of maintaining or reducing functional support cost as a percentage of total site costs. On an absolute dollar basis Functional Support Cost increased by \$11.2 million or 10.9 percent from FY94 to FY97. However, for the same period, LBNL's Total Site Cost increased by \$73.6 million or 27 percent. This indicates that while LBNL's business volume was increasing, functional support costs increased at a much lower rate.

Performance Rating (Adjectival): Outstanding	92.00%
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Performance Measure: 1.1.e	Community Relations
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<p>Evaluation of management's awareness of public concern regarding Laboratory operations. Assessment will focus on management's effectiveness in addressing community issues in a proactive manner.</p> <p style="text-align: right;">(Weight = 16.6%)</p>
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Performance Gradient:

Weighting for Approach/Deployment and

Results:

A/D = 40%

R = 60%

Gradients (see table 1)

Performance Narrative:

Approach & Deployment:

The Lawrence Berkeley National Laboratory (LBNL) has faced many challenges in FY 1998 with its community relationships. To meet these challenges, a community relations coordinator was hired in November 1997. A draft plan for improving community relations was developed and parts of the plan are underway. This includes increased participation by Senior Laboratory Management in local and regional community relations activities. Following are results of these activities:

Results:

- 1) The Laboratory has excellent interaction with community stakeholders regarding Tritium issues and the Tritium Issues Work Group (TIWG). The Laboratory-initiated TIWG, co-chaired by the EPA and the State Department of Health Services (CDHS), was established as a way to resolve community concerns about the impact of emissions from LBNL. The primary purpose of the TIWG is to develop an independent testing survey of tritium emissions and the Laboratory has continued to emphasize the focus of the Tritium Issues Work Group toward the development of an independent sampling plan. The Tritium Issues Work Group is scheduled to meet monthly until its work is concluded.
- 2) The Laboratory issued a press release in July, 1998, giving notification of an above-normal release of tritium during a waste treatability study at the National Tritium Labeling Facility (NTLF). Even though there were no environmental violations or exceedances of regulatory standards and this information released was not required, by doing so LBNL management built more trust with the community by being open and honest.
- 3) As mentioned in LBNL's FY 1998 self assessment, in 1997, LBNL was sued by a community environmental organization that believed a full environmental review was required and necessary before the State of California could grant a modification to the operating permit for a new

Hazardous Waste Handling Facility. LBNL argued successfully that the completed 1990 EIR and other reviews conducted within the California Environmental Quality Act (CEQA) were more than adequate to satisfy the state’s legal requirements. The legal challenge was denied by an Alameda Superior Court Judge on June 18, 1998.

- 4) The perception of important customers like the Bay area communities, Congress and DOE; general and scientific news media; the University of California; and prospective business partners is essential to LBNL to fulfill its mission. During FY 1998, LBNL published 25 issues of *Currents*, their bi-weekly newsletter, and issued 32 press releases on exciting science and technology breakthroughs and news on important Laboratory issues. LBNL continues to improve their world wide web site which is a key communication vehicle for external audiences.
- 5) In October, 1997, LBNL held its second Open House which brought 6,000-plus visitors to the Laboratory. Guests included members of the community, tourists, Laboratory employees and their families, and students ranging from kindergarten to graduates. The event consisted of tours, lectures, exhibits, and a ceremony honoring Associate Director at Large, Glenn Seaborg. The Laboratory improved the event from the first Open House with more parking, shuttle buses, hands-on exhibits, and better signs.

The above activities are just a few examples of how LBNL is working towards improving relationships with the community, as well as building a sense of teamwork with both OAK and the University of California. For areas of improvement, DOE OAK would like to see LBNL be even more proactive with its community outreach efforts including developing a visitor’s center to house displays representing LBNL’s programs in science and energy research. In addition, DOE OAK would also like to see tours of LBNL’s program given on a more frequent and regular basis. These improvements would help to mitigate public concerns.

Performance Rating (Adjectival): Excellent	85.00%
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Performance Measure: 1.1.f	Accountability and Commitments
Evidence that systems ensure major commitments are met and information on status is timely and complete and that these systems allow informed management action. (Weight = 16.6%)	

Performance Gradient:

Weighting for Approach/Deployment and

Results:

A/D = 40%

R = 60%

Gradients (see table 1)

Performance Narrative:

Approach/Deployment:

LBNL continued to operate very effective systems for tracking commitments and assuring accountability/follow-up. This was accomplished by a combination of self assessments employed by line management, as well as independent support organizations (Office of Assessment and Assurance, Internal Audit Services and the ES&H Division). The leadership of the Laboratory continued to encourage a culture of follow-through.

Several systems are noteworthy and directly support DOE/OAK's oversight role. These include the Laboratory Corrective Action Tracking System, and Laboratory Self Assessment Data Bases. These systems provided very useful information for Oakland's operational awareness program and directly supported the ability to further decrease incremental reviews and audits.

Results:

The management of LBNL systems for maintaining commitments during the performance period was outstanding. Both the Laboratory Corrective Action Tracking System and the Internal Audit Services (IAS) Department delivered 100 percent of corrective actions on schedule. At the Division level, corrective action completion for FY 1998 was reported at 71 percent vice 72 percent in FY 1997 and 41 percent FY 1996.

Finally, the Safety Review Committee regularly reviews the divisions performance through Triennial reviews, and the ES&H division has assigned professional staff to assure that the Laboratory is responding to DOE and state and local regulatory agencies.

Performance Rating (Adjectival): Excellent	88.00%
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The performance expectation for each performance measure will use the scoring criteria indicated in Table 1 below. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

Table 1. Appraisal Scoring Guidelines for Laboratory Management

Narrative Rating	Score Range	Approach/Deployment	Results
Outstanding	90 - 100%	<ul style="list-style-type: none"> • a sound systematic approach, fully responsive to all requirements. • a very strong fact-based improvement process is a key management tool; strong refinement and integration - backed by excellent analysis. • approach is fully deployed without significant weaknesses or gaps in any areas or work units. 	<ul style="list-style-type: none"> • current performance is excellent in most areas of importance to the key business requirements. • excellent performance levels in most areas. • strong evidence of industry and benchmark leadership demonstrated in many areas.
Excellent	80-89%	<ul style="list-style-type: none"> • a sound systematic approach, responsive to the overall purposes. • a fact-based improvement process is a key management tool; clear evidence of refinement and improved integration as a result of improvement cycles and analysis. • approach is well developed, with no major gaps; deployment may vary in some areas or work units. 	<ul style="list-style-type: none"> • current performance is good to excellent in most areas of importance to the key business requirements. • most improvement trends and/or current performance levels are sustained. • many to most trends and/or current performance levels show areas of leadership and very good relative performance levels.
Good	70 - 79%	<ul style="list-style-type: none"> • a sound systematic approach, responsive to the primary requirements. • a fact-based improvement process in place in key areas; more emphasis is placed on improvement than on reaction to problems. • no major gaps in deployment, though some areas or work units may be in the very early stages of deployment. 	<ul style="list-style-type: none"> • improvement trends and/or good performance levels reported for many to most areas of importance to the key business requirements. • no pattern of adverse trends and/or poor performance levels in areas of importance to the key business requirements. • some trends and/or current performance levels show areas of strength and/or good to very good relative performance levels.
Marginal/ Unsatisfactory	50 - 69%	<ul style="list-style-type: none"> • beginning of a systematic approach to the primary purposes. • early stages of a transition from reacting to problems to a general improvement orientation. • major gaps exist in deployment that would inhibit progress in achieving the primary purposes. 	<ul style="list-style-type: none"> • early stages of developing; some improvements and/or early good performance level in a few areas.

Performance Area: ENVIRONMENT RESTORATION AND WASTE MANAGEMENT

Performance Objective: #1 Environmental Restoration and Waste Management

The Laboratory will conduct Environmental Management (EM) waste operations in a safe manner that protects human health, the environment and the public and prevents adverse impacts thereon; the Laboratory will develop innovative solutions to advance the Environmental Management Program; and the Laboratory’s Environmental Restoration Program will continually strive to improve efficiency and maximize remediation. **(Weight=100%)**

Criteria: 1.1 Waste Management

The Laboratory's facilities and operations for handling waste will be managed to minimize the impact on the environment and to maximize the efficient use of EM funds. The Laboratory operates its waste facilities to continually strive to improve efficiency and reduce the waste inventory. **(Weight=25%)**

Performance Measure: 1.1.a Waste Management

The Laboratory will collect data on the volume of waste shipped offsite plus made "road-ready" per total operations dollar per fiscal year. This data will be trended to demonstrate improvement in efficiency and compared to an established baseline. **(Weight=10%)**

Assumptions:

1. Total operations dollar is funding obligated at end of fiscal year for operating expense and capital equipment, relegated to the Facility Operations and Maintenance (FO&M) Activity Data Sheet (ADS), and corrected for inflation as determined by DOE.
2. Waste volumes shall be limited to those funded and tracked by EM-30.
3. “Road Ready” waste volumes are wastes that have an intended disposal site and are certified to that site’s waste acceptance criteria (WAC), but have yet to be shipped due to circumstances beyond the site’s control.
4. Waste identified as “road ready” will be considered disposed. Disposal credit for shipped “road ready” waste volumes is not allowed in subsequent performance period(s).

5. Wastewater discharged to sewer will be classified as low-level waste (LLW), mixed waste (MW), and/or hazardous waste (HW) for tracking purposes, as appropriate.
6. Conversion factor of the specific density of water (1.0) will be used to convert the weight of wastewaters to volumetric measurements.
7. Toxic Substances Control Act (TSCA) and medical waste volumes will be included with HW inventory.
8. MW is defined by the Federal Facilities Compliance Act (FFCAAct).
9. Legacy waste is defined as the backlog of stored waste for which a permanent disposition determination needs to be made or where insufficient characterization information exists to allow proper disposition.
10. Legacy waste volumes are determined by such inventory at the end of FY96, and will be classified as LLW, MW, and/or transuranic (TRU) waste for tracking purposes, as appropriate.
11. "Other Waste" (e.g., non-hazardous, sewerable) is defined as EM-30 waste not otherwise categorized as LLW, MW, HW, or TRU waste.
12. Due to its non-defense designation, TRU waste at LBNL is excluded as a waste type for the performance measure.
13. If sites do not receive funds that are within +/- 5% of the approved Current Year Work Plan (CYWP), then the Success Criteria will be renegotiated.

Success Criteria and Waste Type Matrix Elements will be renegotiated before the fiscal year performance period to account for any significant programmatic, regulatory, and/or fiscal changes.

Gradient:

The score for this performance measure will be based on the following table.

Success Criteria

<u>Rating:</u>	<u>Range:</u>
Outstanding	90-100%
Excellent	80-89%
Good	60-79%
Marginal/Unsatisfactory	<60%

The Success Criteria Gradient is calculated using the following formula:

$$\text{Score} = \Sigma \text{ Waste Type Matrix Points } \times 100\%$$

Total # of Waste Types

Basis:

The rating of Outstanding or Excellent can be attained only if each element of the summation is greater than or equal to 60%, excluding TRU waste.

Waste Type Matrix Points are assigned from the table below by calculating for each applicable waste type the Performance Improvement (PI) :

$$PI = \frac{\text{Baseline Year Factor} - \text{Performance Year Factor}}{\text{Baseline Year Factor}} \times 100\%$$

Where:

$$\text{Performance Year Factor} = \frac{\text{Total Operations Funding for Performance Year}}{\text{m}^3 \text{ Waste Type Disposed}}$$

$$\text{Baseline Year Factor} = \frac{\text{Total Operations Funding for Baseline Year}}{\text{m}^3 \text{ Waste Type Disposed}}$$

Note: Total Operations Funding is defined as total operations funding obligated.

Waste Type Matrix

Waste Type	PI < -5%	-5% < PI < 5%	5% < PI < 10%	10% < PI < 15%	PI > 15%
HW	0	1	1	1	1
LLW	0	0.25	0.5	0.75	1
MW	0	0.25	0.5	0.75	1
TRU	0	0.25	0.5	0.75	1
Other	0	1	1	1	1

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) continued streamlining program costs to maximize the use of Environmental Management (EM) funds for the safe and proper disposal of waste. Using the unit cost formula within the performance measure, the Laboratory improved upon its calculated baseline data. The improvement on the unit cost measure was due to LBNL’s success in reducing a backlog of inventoried waste.

LBNL disposed of a large amount of Low-Level Waste (LLW) inventory through commercial disposal companies. In addition, LBNL worked to meet its Site Treatment Plan (STP) commitments for Mixed Waste (MW). LBNL will be shipping more than its STP volumes in order to maximize the reduction of its MW inventory. LBNL exercised greater oversight on its hazardous waste subcontractor.

LBNL takes great care to use EM funds effectively and increased their level of productivity during this time period, enabling them to achieve an “outstanding” rating.

Performance Rating (Adjectival): Outstanding	95.00%
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Performance Measure: 1.1.b

The Laboratory will reduce low-level and mixed waste inventories through treatment and disposal activities. Treatment and disposal volumes will be tracked and compared to the EM Management Commitments. **(Weight=15%)**

Assumptions:

1. EM Management Commitments obtained from site-specific Ten Year Plan (TYP) submittal.
2. LBNL: treatment 1 m³ MW, 7.9 m³ LLW; disposal 1 m³ MW, 18.8 m³ LLW
3. The EM Management Commitments in Assumption 2 above contain significant amounts of newly generated wastes. Newly generated wastes will be considered to be EM Management Commitment waste minus Site Treatment Plan (STP) waste for MW and EM Management Commitment waste minus Legacy Waste Plan waste for LLW. Actual waste generation rates will be tracked and compared to the EM Management Commitments on a quarterly basis. The EM Management Commitments may be adjusted with DOE approval after July to match actual generation rates.
4. Treatment and disposal activities are defined by the Facility Operations and Maintenance (FO&M) Activity Data Sheet (ADS).
5. Waste volumes shall be limited to those funded and tracked by EM-30.
6. "Road Ready" waste volumes are wastes that have an intended disposal/treatment site and are certified to that site's waste acceptance criteria (WAC), but have yet to be shipped due to circumstances beyond the site's control.
7. Waste identified as "road ready" will be considered disposed. Credit for shipped "road ready" waste volumes is not allowed in subsequent performance period(s).
8. Wastewater discharged to sewer will be classified as low-level waste (LLW) and mixed waste (MW) for tracking purposes, as appropriate.
9. Conversion factor of the specific density of water (1.0) will be used to convert the weight of wastewaters to volumetric measurements.
10. MW is defined by the Federal Facilities Compliance Act (FFCA).
11. Legacy waste is defined as the backlog of stored waste for which a permanent disposition determination needs to be made or where insufficient characterization information exists to allow proper disposition.
12. Legacy waste volumes are determined by such inventory at the end of FY96, and will be classified as LLW and MW for tracking purposes, as appropriate.
13. If sites do not receive funds that are within +/- 5% of the approved Current Year Work Plan (CYWP), then the EM Treatment and Disposal Commitments will be renegotiated.

Success Criteria will be renegotiated before the fiscal year performance period to account for any significant programmatic, regulatory, and/or fiscal changes.

Gradient:

The score for this performance measure will be based on the following table:

Success Criteria	
Rating	Range
Outstanding	>95%
Excellent	90-95 %
Good	78-89%
Marginal/Unsatisfactory	<78%

The Success Criteria Gradient is calculated using the following formula:

$$\text{Score} = \frac{1}{4} \left[\frac{\text{Amount LLW Treated}}{\text{LLW EM Treatment Commitment}} + \frac{\text{Amount MW Treated}}{\text{MW EM Treatment Commitment}} + \frac{\text{Amount LLW Disposed}}{\text{LLW EM Disposal Commitment}} + \frac{\text{Amount MW Disposed}}{\text{MW EM Disposal Commitment}} \right] \times 100\%$$

Basis:

1. Each element of the formula is less than or equal to 1.2. That is, the highest individual treatment/disposal versus treatment/disposal commitment ratio that can be attained is 1.2.

The rating of Outstanding or Excellent can be received only if each element of the formula is greater than or equal to 78%.

Performance Narrative:

Lawrence Berkeley National Laboratory’s (LBNL) treatment and disposal commitments are derived from The Accelerated Cleanup: Paths to Closure document. The Laboratory was able to meet these commitments through their aggressive Low Level Waste (LLW) shipping schedule, continuing dialogue with Idaho National Engineering and Environmental Laboratory (INEEL), and streamlining of their operations.

LBNL has made use of commercial disposal options to meet its LLW commitment. In fact, the Laboratory exceeded its commitments well before the end of the performance period. LBNL secured a

burn slot for its mixed waste from the INEEL Waste Experimental Reduction Facility incinerator to meet their mixed-waste (MW) commitments. The MW is considered “Road Ready”.

Based on these volume metrics compared against the EM commitments LBNL achieved an **outstanding** rating for this performance measure.

Performance Rating (Adjectival): Outstanding	95.00%
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Criteria: 1.2 **EM Program Innovation**

The Laboratory will develop innovative solutions to advance the Environmental Management Program. The EM Program includes Environmental Restoration, Waste Management, and Technology Development. **(Weight=25%)**

Performance Measure: 1.2.a **Advancement of the EM Program**

The Laboratory will advance the state of the art technologies by implementing their usage; participate in the corporate advancement of the EM Program by providing solutions or assistance to other DOE/OAK sites; and identify and implement innovative technological solutions or business practices that result in savings. **(Weight=25%)**

Assumptions:

- The performance period will be a single DOE fiscal year.
- It is recognized that actions may result in cost savings that extend for more than one year. Credit for cost savings (Category 3) may be taken in each year in which cost savings are realized, up to a total of five years.
- In general, accomplishments are expected using existing resources. In some cases, additional funding may be required to undertake specific innovative solutions. With the agreement of both parties, DOE-HQ(EM) may provide additional funds and/or allow the Laboratory to use cost savings realized to meet this performance measure.

Gradient:

The degree of innovation achieved will be measured by a point system. Points will be awarded in each of several performance categories, with a total score from all categories being the final score for the performance measure. Projects which receive credit in one performance indicator category may also receive credit for any costs savings realized (Category 3), but may not receive credits in all three categories. The performance indicators and associated award points will be as follows:

Category 1

Advance the state of the art technologies by implementing the usage of Laboratory technologies at DOE or other Government sites, or utilize other EM technologies at the Laboratory.

- 1a - Use of non-LBNL EM developed technology at LBNL
1 point each technology

1b - Use of LBNL EM developed technology at other government sites
 1 point each technology

1c - Use of LBNL EM developed technology at any DOE site
 2 points each technology

Category 2

The Laboratory participates in the corporate advancement of the EM program by providing solutions or assistance on projects at other DOE sites. Projects should result in at least one of the following:

- 2a - Cost savings
 - 2b - Efficiency improvement (i.e., quicker, better quality, etc.)
 - 2c - Liability or risk reduction
 - 2d - Use of laboratory resources and/or facilities to aid others
- (1 point will be awarded for each project that meets one or more of the criteria listed.)

Category 3

Provide cost savings by identifying and/or implementing innovative technological solutions or business practices. Innovative technological solutions or business practices are defined as those that represent a significant change from current solutions or existing practices (technological or regulatory). They can not simply be refinements of existing technological or business practices, nor be cost savings due to a simple reduction in scope of work or deliverables.

- LBNL will be awarded 1 point for every \$100,000 saved
- LBNL will be awarded 1 point for incorporation of innovative technologies into a Program Baseline System (PBS) with adjusted baseline

<u>Rating:</u>	<u>Range:</u>
Outstanding	≥9
Excellent	>6-8
Good	3-5
Marginal/Unsatisfactory	0-2

Performance Narrative:

Environmental Management rating for this performance measure is **outstanding**. The majority of the points (12) were for the cost savings resulting from use of the "Old Trench" by the Environmental Restoration Program. DOE OAK Waste Management has concurred with the points claimed by Lawrence Berkeley National Laboratory (LBNL). DOE Environmental Restoration has determined that LBNL is entitled to 11 points for the cost savings for the old town trench. This does not affect LBNL's adjectival rating as greater than 9 points is needed for outstanding.

Performance Rating (Adjectival): Outstanding	99.00%
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Performance Criteria: 1.3 Environmental Restoration-LBNL

The Laboratory will target the number of potential release sites (Solid Waste Management Units and Areas of Concern) that are planned to be completed in the next FY based on budget for the next FY.

Performance Measure: 1.3.a Environmental Restoration-LBNL

This measure will track the number of potential release sites completed in the next FY and compare this number against expected completion levels. **(Weight=25%)**

Assumptions:

- Potential release sites are considered completed when the lead RCRA regulator approves “No Further Investigation(NFI)” or “No Further Action(NFA)” for the site.
- Representatives from LBNL and DOE have reviewed the difficulty of completing assessment of active units and divided them into three groups. The first group are those for which the chances of completing assessment and receiving NFA/NFI status from regulatory agencies are high (H). (A total of 17 units fit into this group.) The second group are those that the chances for their assessment completion is very difficult but not impossible (M). (A total of 14 units are in this group.) The third group are those units for which assessment completion will continue beyond FY-98 (L). (A total of 9 units are in this group.)
- Rating criteria will be developed, based on their difficulty to complete
- The main effort of LBNL Environmental Restoration Program (ERP) during FY-98 is concentrated on the assessment of active SWMUs and AOCs. It’s currently anticipated that the majority of sites which can be completed in a short time frame will be completed by the end of FY98. At that time, this measure will be revised to reflect the future character of the program.

Gradient:

Increase in number of units completed.

<u>Rating for NFA/NFI</u>	<u>Number of Units accepted</u>
Outstanding	Greater than 25
Excellent	20 to 25
Good	15 to 19
Marginal/Unsatisfactory	less than 15

Performance Narrative:

Twenty release sites were approved for No Further Action (NFA)/No Further Investigation (NFI) in FY 1998. Nine of the twenty sites were approved for No Further Action. An NFA is considered closed by the regulatory agency. Lawrence Berkeley National Laboratory (LBNL) continues to demonstrate its commitment to close contaminated sites in a timely and cost effective manner. The Laboratory works closely with the Department of Toxic Substances Control, Department of Energy, Health Services, City of Berkeley, and the Regional Water Quality Control Board to ensure sites attain either NFA or NFI status. It should be noted that site investigation is an iterative process, whereby the finding of unforeseen conditions may delay and/or inhibit obtaining NFA or NFI status. Program oversight by the principal investigator continues to administer the technical requirements in an effective and efficient manner. Achievements are demonstrated by its contribution to the other performance measures such as program innovation and cost and schedule variances.

Performance Rating (Adjectival): Excellent	80.00%
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Performance Criteria: 1.4 Cost and Schedule Variances

The Laboratory’s Environmental Management Program will be managed to improve project/program performance. The Laboratory measures its performance of projects/programs against schedule and cost baselines. **(Weight=25%)**

Performance Measure: 1.4.a

The cost measure will track Laboratory’s performance in executing projects in accordance with an approved project cost baseline. The schedule measure will track the Laboratory’s performance in executing projects in accordance with an approved overall schedule. **(Weight=25%)**

Assumptions:

- Cumulative percent cost variance (%CV) and cumulative percent schedule variance (%SV) will be obtained from the September Project Tracking System (PTS). The Cumulative CV and SV values will be for the fiscal year being evaluated.
- Baseline change proposals are reviewed and made, if approved, by DOE in 30 days.
- If the MARS Report contains an accounting error, CV and SV values provided by LBNL and verified by the respective DOE Site Representative may be used.
- Includes the following DOE-HQ(EM)-funded activities by ADS No.
- LBNL: SF148211, SF148231, SF148212, SF7100, and SF3931.
- These DOE-HQ(EM)-funded activities do not include ADSs measured in the other Performance Measures.

Gradient:

<u>Rating:</u>	<u>Range:</u>
Outstanding	$(CV+SV) > 5\%$
Excellent	$0\% < (CV+SV) \leq 5\%$
Good	$-5\% < (CV+SV) < 0\%$
Marginal/Unsatisfactory	$(CV+SV) \leq -5\%$

(A) **Cost.** The cost measure will track the Laboratory’s performance in executing projects in accordance with an approved project cost baseline.

$$\%CV = \frac{(\text{Annual BCWP} - \text{Annual ACWP}) \times 100}{\text{Annual BCWP}}$$

Given:

- CV = Cost Variance
- BCWP = Budgeted Cost of Work Performed
- ACWP = Actual Cost of Work Performed

(B) **Schedule.** The schedule measure will track the Laboratory’s performance in executing projects in accordance with an approved overall schedule.

$$\%SV = \frac{(\text{Annual BCWP} - \text{Annual BCWS}) \times 100}{\text{Annual BCWS}}$$

Given:

- SV = Schedule Variance
- BCWS = Budgeted Cost of Work Scheduled
- BCWP = Budgeted Cost of Work Performed

Performance Narrative:

Upon review of the Project Tracking System report for the end of the fiscal year (September 1998) the total Cost Variance was \$421,000 and the Budgeted Cost of Work Performed was \$9,420,000. Therefore, the Cost Variance is four percent. The total Schedule Variance was (\$38,000). Therefore, the Schedule Variance is essentially zero percent. Using both of these variance factors, the Environmental Restoration and Waste Management Program achieved an **excellent** rating. LBNL Waste Management has managed their program in a fiscally responsible manner. LBNL worked closely with DOE to reduce uncosted funds and to close out inactive ADS’s. ERWM recommends DOE OAK and LBNL revisit this performance measure for WM activities as there are conflicting goals.

Performance Rating (Adjectival): Excellent	88.00%
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Performance Area: ENVIRONMENT, SAFETY AND HEALTH

Performance Objective: #1	Protection and Prevention
Do work safely - The Laboratory systematically integrates ES&H into management and work practice at all levels so that missions are accomplished while protecting the worker, the public and the environment. (Weight=40%)	

Criteria: 1.1	Management Defines the Scope of Work Such That (ISMS Core Function #1):
<ul style="list-style-type: none"> Line management is responsible for the protection of the public, the workers, and the environment. (ISMS Principle #1) Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels within the Laboratory. (ISMS Principle #2) Resources are effectively allocated to balance programmatic, operational, and ES&H considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed. (ISMS Principle #4) (Weight=8%) 	

Performance Rating (Adjectival): Excellent	82.30%
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Performance Measure 1.1.a	Radiation Protection Of The Public And The Worker:
<ul style="list-style-type: none"> The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the public and the worker from all radiological hazards arising from Lab operations and research activities. Radiation doses to the maximally exposed individual (member of the public) and the worker, from all Lab operations, will be managed to assure that all applicable regulatory limits are not exceeded. Unplanned exposures to radioactive material and ORPS reportable occurrences of skin or personal clothing contamination are minimized. Radioactive material is managed so that it does not leave controlled areas in an uncontrolled fashion. Radiological public and worker protection processes are linked to select system outcomes; outcome information is used in ensuring public and worker safety from all radiological hazards arising from the Lab operations and research activities. 	

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. The weighting from high to low severity is: doses greater than 100 mrem, skin contamination, and clothing contamination.
- DOE and the Lab agree by 12/31/97 on the processes outcome linkage.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:

Good:

At least the first 3 of the following conditions are met through a mutual agreement between the Berkeley Lab and the DOE.

- The Lab shall provide evidence that outcome and processes are linked and effective.
- The Lab shall demonstrate that outcome is used to drive improvement and maintain the current level of excellence.
- The Lab shall demonstrate that criteria 1.1 has been used, that all 7 Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker and public from all applicable radiological workplace hazards.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent/Outstanding:

- Documented evidence exists for criteria 1.1. but below the thresholds for Far Exceeds; to qualify for Far Exceeds at least 6 of the following conditions are satisfied at the 90% level and the benchmarking condition has been satisfied.
- There is documented evidence that management defines the scope of work for at least 90% of work activities where there are lesser workplace radiological hazards and 100% activities where there are significant workplace radiological hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the public and worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for at least 90% of work activities where there are lesser radiological hazards and 100% where there are significant radiological hazards.
- The Lab provides documented evidence that at least 90% of the lesser radiological hazards have been identified and 100% of the significant or major radiological hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented.

- The Lab provides documented evidence that for at least 90% of work activities where there are lesser radiological hazards (not likely to cause significant harm to the public or worker) and 100% of the work activities where there are identified significant radiological workplace hazards, conditions and requirements for safe operation, are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that at least 90% of all personnel working where there are lesser radiological workplace hazards and 100% of the applicable personnel working where there are significant workplace radiological hazards, possess sufficient knowledge and skills to execute their duties safely and with due regard for the radiological safety of the public.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in public and worker radiological safety is implemented for at least 90% of the workplace areas where there are lesser radiological hazards and 100% of the work activities where there are significant radiological hazards.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for the rating of **excellent**.

To varying degrees, LBNL utilizes the five core principles of Integrated Safety Management System (ISMS) to perform work involving radioactive materials and radiation producing devices. The scope of each work activity is defined and maintained within the authorized envelope. Roles and responsibilities are clearly defined and documented.

Each work activity is analyzed for associated hazards before the work can begin. After hazards are identified, control measures (engineered and administrative) are incorporated to mitigate the hazards. Eventually the work is performed.

Work performed has not always adhered to the permitted/authorized provisions, of the Laboratory's Radioactive Work Authorization (RWA). All hazards cannot be controlled by engineered design alone. Some elements of the hazards can only be controlled through an informed/educated workforce. Radiation safety training is an integral part of performing the work safely. Evidence witnessed during the assessment period, and via operational awareness throughout the year, indicates a weakness in the Laboratory's Line Management responsibility to ensure a well trained work force, and a lack of supporting documentation on worker training records. Additionally, no criteria currently exists for the qualification of Laboratory instructors, and course content.

During the assessment period and throughout the year, auditing of commitments made by LBNL, within the Work Smart Standard Set, indicate that some requirements have not been implemented, i.e., Nuclear Medicine.

In the area of radiation protection of the public and the environment, LBNL is effective at defining and translating DOE Orders, regulatory guide drivers, and Environmental Protection Agency (EPA)

requirements into mission and work in the area of Environmental Radiological Protection (ERP). Radiological hazards have been analyzed and environmental monitoring and surveillance programs are well defined in a comprehensive Laboratory ERP program.

Performance Measure: 1.1.b**Safety Hazard Prevention And Protection Of The Worker**

- This Performance Measure encompasses the areas of Safety, Industrial Hygiene, Occupational Medicine, Natural Phenomena and Fire Prevention. Unless otherwise specified, the term “Safety” shall represent prevention and protection in all the above disciplines.
- The Lab uses 7 ISMS principles. These are used to develop and improve excellence in protecting the worker from all safety hazards arising from Lab operations and research activities.
- The Safety disciplines (including Health Physics) work together in an integrated manner to help prevent injury and illness. This integrated approach is extended into Line Management functions such that safety hazard prevention and protection is seamless.
- Worker protection processes are linked to select system outcomes; outcome information is used in ensuring worker safety from all hazards arising from the Lab operations and research activities.

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. Higher severity events include (but are not limited to): imminent danger situations (as defined by the Occupational Safety and Health Administration (OSHA)), worker exposures above OSHA Permissible Exposure Limits, biological exposures above the OSHA medical removal levels, and substantial property damage or personal injury due to fire.
- DOE and the Lab agree by 12/31/97 on the processes/outcome linkage.
- Subcontractor operations/personnel are included in any corrective actions if the subcontractor is performing part of the Laboratory’s operations. Subcontractor statistics are gathered separately for those subcontractors that report their hours to the Laboratory. Subcontractors are excluded if they are “servicing” the Laboratory (e.g., copy machine, vendors or other transient workers).
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:**Good:**

- At least 5 of the following conditions are met as judged by Berkeley Lab and DOE staff.
- The Lab shall provide evidence that outcome and processes are linked and effective.

- The Lab shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence.
- The Lab shall demonstrate that all criteria 1.1 have been used, that all Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker from all applicable workplace safety hazards.
- There is appropriate and documented follow-up or response to injuries and illnesses, and exposures above the appropriate and applicable nationally recognized standard (such as OSHA PEL and ACGIH TLV).
- The subcontractor work force (as defined in the assumptions) is included in accident prevention programs.
- The Lab provides documented evidence of emergency planning response and property protection.

Excellent:

- Continuous quality improvement of the interaction between Occupational Medicine and the Safety disciplines and Line Management will be based on the Annual Interdisciplinary Peer Review and Improvement Process.
- The Laboratory has identified areas for injury reduction and is applying appropriate resources and attention to accident prevention in those areas.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Outstanding:

- The first 6 and one additional of the following conditions are met or exceeded as judged by Berkeley Lab and DOE staff.
- The Lab provides documented evidence that an effective process exists for the elimination of workplace hazards, while ensuring that the lab mission continues to be met cost effectively.
- There is documented evidence that Lab management defines the scope of work for all activities where there are significant workplace safety hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for all work activities where there are significant safety hazards (this would be defined by the need for activity authorizations such as AHD's OSR's or SAD's).
- The Lab provides documented evidence that there is a process for regular periodic review and assessment of hazards and that all the significant or major safety hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented, while ensuring that the Lab mission continues to be met cost effectively.
- The Lab provides documented evidence that for all of the work activities where there are identified significant workplace safety hazards, conditions and requirements for safe operation are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that all personnel working where there are significant workplace safety hazards, possess sufficient knowledge and skills to execute their duties safely.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in worker safety is implemented for all of the work activities where there are significant safety hazards.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's

performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

- The Lab demonstrates that there is optimal two way communication between occupational medicine and all other applicable ES&H disciplines.
- The safety record of subcontractor companies is evaluated and considered in contracting.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for the rating of **excellent**.

The Laboratory has made significant progress in aligning its management programs with Integrated Safety Management System (ISMS). Examples include the Divisional Safety Plans and the Divisional Self Assessment Report.

Personnel responsible for individual Safety and Health Protection Programs are being required to review their programs, including statistical outcome data, and suggest ways to improve the program.

Occupational Medicine continues to interact on a daily basis with other Safety and Health disciplines.

The Laboratory completed a Benchmarking Study of occupational injury statistics, and established a 5-year goal to achieve the benchmark numbers.

The Laboratory falls short of an Outstanding rating in that there are still significant implementation problems with Staff Training. There are still problems with the Job Hazard Questionnaire (JHQ) process. Problems include getting JHQs updated annually, and following through to ensure that the courses required by the JHQ are completed, or staff is given credit for prior knowledge. Training percentages are less than 85 percent. DOE OAK Operational Awareness has noted weakness in training classes, with corresponding weaknesses in staff knowledge and implementation of safety controls. A program (such as testing) to validate staff knowledge upon completion of training was not evident. There is a weakness in the Authorizations program in that it requires training to be completed before work can be performed, yet all work is being authorized despite low training completion percentages.

The Fire Department conducts walkthrough inspections of buildings to inspect for certain life safety items such as aisle clearance and fire extinguishers. However, the Fire Protection Engineer has a program (schedule) to conduct building inspections, and these are not being done.

There is a Seismic Protection Program in place. Institutional (site-wide) hazard information is based on a roll-up from Divisional hazard analyses. However, it appears that the depth of inspection for seismic hazards at the Divisional level includes only internal building seismic hazards (such as furniture tie-down). The impact of external hazards (such as landslides, gas line ruptures, etc.) upon Divisional operations is not clear. Thus it is not clear how the Laboratory defines its scope of work for seismic hazards. For seismic hazards, the Lessons Learned Program appears to include only furniture tie-down issues.

Performance Measure: 1.1.c and	Waste Minimization, Pollution Prevention Protection of the Environment
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- The Lab uses 7 ISMS principles. These are used to develop and improve processes that maintain and enhance performance in environmental protection, waste minimization and pollution prevention associated with Lab operations and research activities.
- Environmental concerns will be managed to assure that all applicable regulatory limits are not exceeded, unplanned releases are minimized, and regulatory standards of operation are followed.
- The system for managing environmental protection, waste minimization and pollution prevention concerns will define environmental protection activities for establishing organization goals and policies, developing strategies for achievement, allocating resources for carrying out those strategies, providing structure and delineating roles, responsibilities, authorities, and accountabilities for accomplishing tasks, providing initiating mechanisms to produce the work effort, measuring, evaluating and correcting/improving performance.

Assumptions:

- Performance period for this measure is July 1, 1997 to June 30, 1998.
- Berkeley Lab and DOE agree by December 31, 1997 on the set of processes that are linked to the outcome measures.
- Performance will consider all aspects of the program that enhance and promote program objectives and overall compliance.
- The Laboratory has in place a system to evaluate new projects and activities for waste generation and pollution prevention opportunities.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall performance evaluation is based on not just the gradients but the effectiveness of the complete Environmental Protection, and Waste Minimization & Pollution Prevention program.

Gradient:**Good:**

At least 8 of the following conditions are met as judged by Berkeley Lab and DOE staff.

- The Laboratory has linked process and outcome measures.
- The Laboratory has outcome results to drive improvement in programs where additional improvement is technically possible, or to maintain the current level of excellence in programs where further improvement is not cost-effective.
- Individuals throughout the organization recognize the environmental aspects of their job responsibilities and take responsibility for protecting the environment, minimizing waste and preventing pollution.

- Environmental protection, waste minimization and pollution Prevention roles and responsibilities are well defined, clearly communicated, applicable to the work being performed and understood by all personnel whose activities may impact environmental performance.
- Top management demonstrates its commitment to environmental protection, waste minimization and pollution prevention through personnel and managerial actions.
- Formal programs are in place and kept up-to-date for the proper identification, management and control of hazardous materials and wastes to prevent or minimize their release into the environment.
- Environmental risks are assessed and used to select the appropriate level of control to prevent or mitigate releases to the environment.
- Environmental protection training needs are identified for all applicable Lab staff and tracked effectively.
- Source operating requirements are established and communicated to source operators.
- Formal programs are in place and kept up-to-date to effectively evaluate environmental protection, waste minimization and pollution prevention activities and communicate concerns and accomplishments within the Lab and to DOE.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent:

All of the conditions for meets are satisfied and one is judged as superior by Berkeley Lab and DOE staff.

- The Lab and the local DOE office shall agree on a set of processes for best class benchmarking.
- The Lab shall compare current performance with best in class benchmark data and if necessary develop and implement a strategy to meet best in class benchmark data.
- The Laboratory shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence (for those programs where no further cost effective improvement is possible).

Outstanding:

- All of the conditions for meets are satisfied and two or more are judged as superior by Berkeley Lab and DOE staff. Some of the Laboratory's pollution prevention projects address the transuranic, low level and low level mixed waste streams that are costly and difficult to manage.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

LBNL continues to maintain a superior environmental program. Their performance on environmental incidents and WMin/PP has been outstanding. LBNL has taken many steps to incorporate Integrated Safety Management System (ISMS) principals into their operation. LBNL has done much to comply with the gradients established by Appendix F. LBNL has met with all the gradients listed under the

“good” performance rating (only 8 of the 11 are needed for a good rating). These efforts would qualify them for a higher rating ; however the gradients for this performance measure states: *"The laboratory shall compare current performance with best-in-class benchmark data and , if necessary, develop a strategy to meet best-in-class benchmark data."* LBNL has not completed this effort and therefore does not qualify for an excellent rating.

LBNL has done an excellent job in evaluating waste reduction and current generator programs in order to drive continuous improvement. Strong awareness and outreach programs (i.e. mock billing, Earth Month activities, and the LBNL Pollution Prevention Web site) have influenced the laboratory culture and educated individuals in different aspects of preventing pollution and waste. Operational awareness and formal programs have been utilized to identify and manage wastes and materials, to evaluate activities and opportunities for reduction, and communicate concerns and accomplishments within the Laboratory and DOE. The Laboratory and DOE agree on a set of data for best-in-class benchmarking, however no comparisons have been made to date.

At LBNL, line management responsibility and accountability is established through the Operating and Assessment Plan (OAP) and the Regulations and Procedures Manual (RPM). Policies and roles and responsibilities regarding environmental protection are contained in Pub 3000. Waste Minimization and Pollution Prevention (WMin/PP) is also driven by California Senate Bill-14. Resources are allocated to maintain an effective environmental protection program. All new projects are reviewed by environmental professionals to identify and address environmental issues. For example, LBNL has made significant strides in their WMin/PP as discussed above.

Performance Criteria: 1.2	Protection & Prevention Involves Analyzing the Hazards and Developing and Implementing Controls Such That (ISMS Core Work Functions #2 and #3):
<ul style="list-style-type: none"> Laboratory administrative and engineering controls are established to provide adequate assurance that the workers, the public and the environment are protected from adverse consequences (ISMS Principle #5). The controls to prevent and mitigate hazards are tailored to the hazards and the work being performed (ISMS Principle #6) 	(Weight=10%)

Performance Rating (Adjectival): Excellent	85.00%
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Performance Measure: 1.2.a	Radiation Protection of the Public and the Worker:
<ul style="list-style-type: none"> The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the public and the worker from all radiological hazards arising from Lab operations and research activities. Radiation doses to the maximally exposed individual (member of the public) and the worker, from all Lab operations, will be managed to assure that all applicable regulatory limits are not exceeded. Unplanned exposures to radioactive material and ORPS reportable occurrences of skin or personal clothing contamination are minimized. Radioactive material is managed so that it does not leave controlled areas in an uncontrolled fashion. Radiological public and worker protection processes are linked to select system outcomes; outcome information is used in ensuring public and worker safety from all radiological hazards arising from the Lab operations and research activities. 	

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30 1998.
- The severity of events is to be considered in the evaluation. The weighting from high to low severity is: doses greater than 100 mrem, skin contamination, and clothing contamination.
- DOE and the Lab agree by 12/31/97 on the processes outcome linkage.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

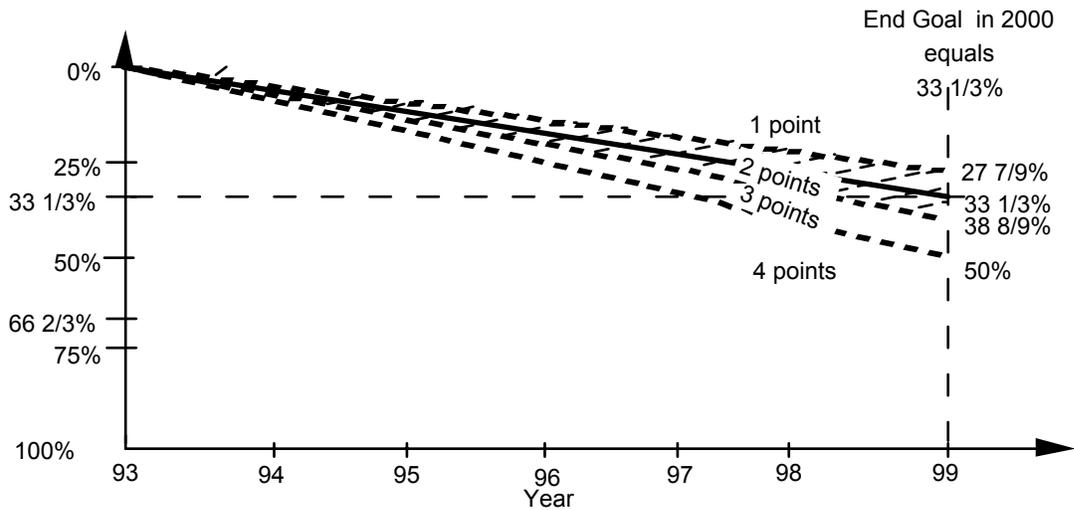
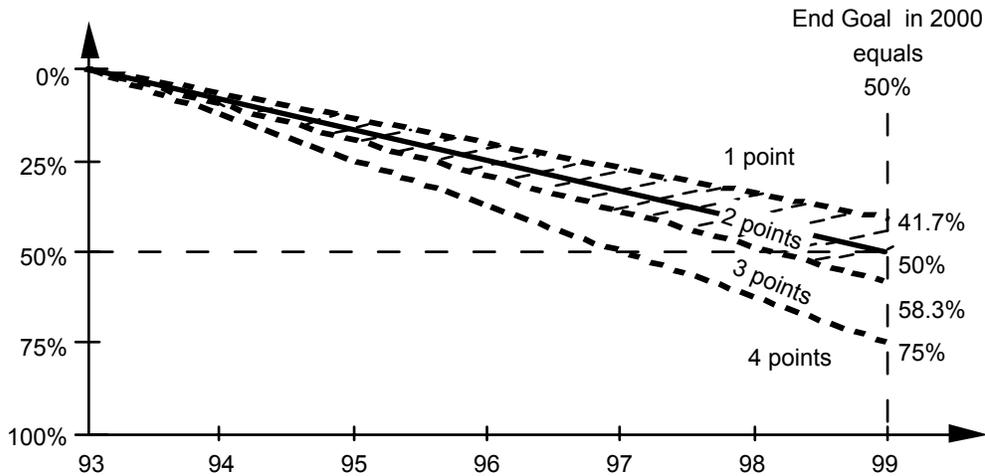
Gradient:**Good:**

- At least the first 3 of the following conditions are met through a mutual agreement between the Berkeley Lab and the DOE.
- The Lab shall provide evidence that outcome and processes are linked and effective.
- The Lab shall demonstrate that outcome is used to drive improvement and maintain the current level of excellence.
- The Lab shall demonstrate that criteria 1.1 has been used, that all 7 Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker and public from all applicable radiological workplace hazards.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent/Outstanding:

- Documented evidence exists for criteria 1.2. but below the thresholds for Far Exceeds; to qualify for Far Exceeds at least 6 of the following conditions are satisfied at the 90% level and the benchmarking condition has been satisfied.
- There is documented evidence that management defines the scope of work for at least 90% of work activities where there are lesser workplace radiological hazards and 100% activities where there are significant workplace radiological hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the public and worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for at least 90% of work activities where there are lesser radiological hazards and 100% where there are significant radiological hazards.
- The Lab provides documented evidence that at least 90% of the lesser radiological hazards have been identified and 100% of the significant or major radiological hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented.
- The Lab provides documented evidence that for at least 90% of work activities where there are lesser radiological hazards (not likely to cause significant harm to the public or worker) and 100% of the work activities where there are identified significant radiological workplace hazards, conditions and requirements for safe operation, are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that at least 90% of all personnel working where there are lesser radiological workplace hazards and 100% of the applicable personnel working where there are significant workplace radiological hazards, possess sufficient knowledge and skills to execute their duties safely and with due regard for the radiological safety of the public.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in public and worker radiological safety is implemented for at least 90% of the workplace areas where there are lesser radiological hazards and 100% of the work activities where there are significant radiological hazards.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's

performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.



Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **excellent**.

To varying degrees, LBNL utilizes the five core principles of Integrated Safety Management System (ISMS) to perform work involving radioactive materials and radiation producing devices. The scope of each work activity is defined and maintained within the authorized envelope. Roles and responsibilities are clearly defined and documented.

Each work activity is analyzed for associated hazards before the work can begin. After hazards are identified, control measures (engineered and administrative) are incorporated to mitigate the hazards. Eventually the work is performed.

Work performed has not always adhered to the permitted/authorized provisions, of the Laboratory's Radioactive Work Authorization (RWA). All hazards cannot be controlled by engineered design alone. Some elements of the hazards can only be controlled through an informed/educated workforce. Radiation safety training is an integral part of performing the work safely. Evidence witnessed during the assessment period, and via operational awareness throughout the year, indicates a weakness in the Laboratory's Line Management responsibility to ensure a well trained work force, and a lack of supporting documentation on worker training records. Additionally, no criteria currently exists for the qualification of Laboratory instructors, and course content.

During the assessment period and throughout the year, auditing of commitments made by LBNL, within the Work Smart Standard Set, indicate that some requirements have not been implemented, i.e., Nuclear Medicine.

In the area of radiation protection of the public and the environment, LBNL is effective at defining and translating DOE Orders, regulatory guide drivers, and Environmental Protection Agency (EPA) requirements into mission and work in the area of Environmental Radiological Protection (ERP). Radiological hazards have been analyzed and environmental monitoring and surveillance programs are well defined in a comprehensive Laboratory ERP program.

Performance Measure: 1.2.b**Safety Hazard Prevention and Protection of the Worker**

- This Performance Measure encompasses the areas of Safety, Industrial Hygiene, Occupational Medicine, Natural Phenomena and Fire Prevention. Unless otherwise specified, the term “Safety” shall represent prevention and protection in all the above disciplines.
- The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the worker from all safety hazards arising from Lab operations and research activities.
- The Safety disciplines (including Health Physics) work together in an integrated manner to help prevent injury and illness. This integrated approach is extended into Line Management functions such that safety hazard prevention and protection is seamless.
- Worker protection processes are linked to select system outcomes; outcome information is used in ensuring worker safety from all hazards arising from the Lab operations and research activities.

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30 1998.
- The severity of events is to be considered in the evaluation. Higher severity events include (but are not limited to): imminent danger situations (as defined by the Occupational Safety and Health Administration (OSHA)), worker exposures above OSHA Permissible Exposure Limits, biological exposures above the OSHA medical removal levels, and substantial property damage or personal injury due to fire.
- DOE and the Lab agree by 12/31/97 on the processes/outcome linkage.
- Subcontractor operations/personnel are included in any corrective actions if the subcontractor is performing part of the Laboratory’s operations. Subcontractor statistics are gathered separately for those subcontractors that report their hours to the Laboratory. Subcontractors are excluded if they are “servicing” the Laboratory (e.g., copy machine vendors or other transient workers).
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:**Good:**

- At least 5 of the following conditions are met as judged by Berkeley Lab and DOE staff.
- The Lab shall provide evidence that outcome and processes are linked and effective.

- The Lab shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence.
- The Lab shall demonstrate that all criteria 1.2 have been used, that all Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker from all applicable workplace safety hazards.
- There is appropriate and documented follow-up or response to injuries and illnesses, and exposures above the appropriate and applicable nationally recognized standard (such as OSHA PEL and ACGIH TLV).
- The subcontractor work force (as defined in the assumptions) is included in accident prevention programs.
- The Lab provides documented evidence of emergency planning response and property protection.

Excellent:

- Continuous quality improvement of the interaction between Occupational Medicine and the Safety disciplines and Line Management will be based on the Annual Interdisciplinary Peer Review and Improvement Process.
- The Laboratory has identified areas for injury reduction and is applying appropriate resources and attention to accident prevention in those areas.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Outstanding:

The first 6 and one additional of the following conditions are met or exceeded as judged by Berkeley Lab and DOE staff.

- The Lab provides documented evidence that an effective process exists for the elimination of workplace hazards, while ensuring that the lab mission continues to be met cost effectively.
- There is documented evidence that Lab management defines the scope of work for all activities where there are significant workplace safety hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for all work activities where there are significant safety hazards (this would be defined by the need for activity authorizations such as AHD's OSR's or SAD's).
- The Lab provides documented evidence that there is a process for regular periodic review and assessment of hazards and that all the significant or major safety hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented, while ensuring that the Lab mission continues to be met cost-effectively.
- The Lab provides documented evidence that for all of the work activities where there are identified significant workplace safety hazards, conditions and requirements for safe operation are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that all personnel working where there are significant workplace safety hazards, possess sufficient knowledge and skills to execute their duties safely.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in worker safety is implemented for all of the work activities where there are significant safety hazards.

- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.
- The Lab demonstrates that there is optimal two way communication between occupational medicine and all other applicable ES&H disciplines.
- The safety record of subcontractor companies is evaluated and considered in contracting.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **excellent**.

The Laboratory has made significant progress in aligning its management programs with Integrated Safety Management System (ISMS). Examples include the Divisional Safety Plans and the Divisional Self Assessment Report.

Personnel responsible for individual Safety and Health Protection Programs are being required to review their programs, including statistical outcome data, and suggest ways to improve the program.

Occupational Medicine continues to interact on a daily basis with other Safety and Health disciplines.

The Laboratory completed a Benchmarking Study of occupational injury statistics, and established a 5-year goal to achieve the benchmark numbers.

The Laboratory falls short of an Outstanding rating in that there are still significant implementation problems with Staff Training. There are still problems with the Job Hazard Questionnaire (JHQ) process. Problems include getting JHQs updated annually, and following through to ensure that the courses required by the JHQ are completed, or staff is given credit for prior knowledge. Training percentages are less than 85%. DOE Operational Awareness has noted weakness in training classes, with corresponding weaknesses in staff knowledge and implementation of safety controls. A program (such as testing) to validate staff knowledge upon completion of training was not evident. There is a weakness in the Authorizations program in that it requires training to be completed before work can be performed, yet all work is being authorized despite low training completion percentages.

The Fire Department conducts walkthrough inspections of buildings to inspect for certain life safety items such as aisle clearance and fire extinguishers. However, the Fire Protection Engineer has a program (schedule) to conduct building inspections, and these are not being done.

There is a Seismic Protection Program in place. Institutional (site-wide) hazard information is based on a roll-up from Divisional hazard analyses. However, it appears that the depth of inspection for seismic hazards at the Divisional level includes only internal building seismic hazards (such as furniture tie-down). The impact of external hazards (such as landslides, gas line ruptures, etc.) upon Divisional operations is not clear. Thus it is not clear how the Laboratory defines its scope of work for seismic hazards. For seismic hazards, the Lessons Learned Program appears to include only furniture tie-down issues.

PERFORMANCE MEASURE: 1.2.c Waste Minimization, Pollution Prevention and Protection of the Environment

- The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or enhance performance in environmental protection, waste minimization and pollution prevention associated with Lab operations and research activities.
- Environmental concerns will be managed to assure that all applicable regulatory limits are not exceeded, unplanned releases are minimized, and regulatory standards of operation are followed.
- The system for managing environmental protection, waste minimization and pollution prevention concerns will define environmental protection activities for establishing organization goals and policies, developing strategies for achievement, allocating resources for carrying out those strategies, providing structure and delineating roles, responsibilities, authorities, and accountabilities for accomplishing tasks, providing initiating mechanisms to produce the work effort, measuring, evaluating and correcting/improving performance.

Assumptions:

- Performance period for this measure is July 1, 1997 to June 30, 1998.
- Berkeley Lab and DOE agree by December 31, 1997 on the set of processes that are linked to the outcome measures.
- Performance will consider all aspects of the program that enhance and promote program objectives and overall compliance.
- The Laboratory has in place a system to evaluate new projects and activities for waste generation and pollution prevention opportunities.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall performance evaluation is based on not just the gradients but the effectiveness of the complete Environmental Protection, and Waste Minimization & Pollution Prevention program.

Gradient:

Good:

At least 8 of the following conditions are met as judged by Berkeley Lab and DOE staff.

- The Laboratory has linked process and outcome measures.
- The Laboratory has outcome results to drive improvement in programs where additional improvement is technically possible, or to maintain the current level of excellence in programs where further improvement is not cost-effective.

- Individuals throughout the organization recognize the environmental aspects of their job responsibilities and take responsibility for protecting the environment, minimizing waste and preventing pollution.
- Environmental protection, waste minimization and pollution Prevention roles and responsibilities are well defined, clearly communicated, applicable to the work being performed and understood by all personnel whose activities may impact environmental performance.
- Top management demonstrates its commitment to environmental protection, waste minimization and pollution prevention through personnel and managerial actions.
- Formal programs are in place and kept up-to-date for the proper identification, management and control of hazardous materials and wastes to prevent or minimize their release into the environment.
- Environmental risks are assessed and used to select the appropriate level of control to prevent or mitigate releases to the environment.
- Environmental protection training needs are identified for all applicable Lab staff and tracked effectively.
- Source operating requirements are established and communicated to source operators.
- Formal programs are in place and kept up-to-date to effectively evaluate environmental protection, waste minimization and pollution prevention activities and communicate concerns and accomplishments within the Lab and to DOE.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent:

- All of the conditions for meets are satisfied and one is judged as superior by Berkeley Lab and DOE staff.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop and implement a strategy to meet best in class benchmark data.
- The Laboratory shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence (for those programs where no further cost-effective improvement is possible).

Outstanding:

- All of the conditions for meets are satisfied and two or more are judged as superior by Berkeley Lab and DOE staff. Some of the Laboratory's pollution prevention projects address the transuranic, low level and low level mixed waste streams that are costly and difficult to manage.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

LBNL continues to maintain a superior environmental program. Their performance on environmental incidents and WMin/PP has been outstanding. LBNL has taken many steps to incorporate ISMS

principals into their operation. LBNL has done much to comply with the gradients established by Appendix F. LBNL has met with all the gradients listed under the “good” performance rating (only 8 of the 11 are needed for a “good” rating). These efforts would qualify them for a higher rating ; however the gradients for this performance measure states: *"The laboratory shall compare current performance with best-in-class benchmark data and , if necessary, develop a strategy to meet best-in-class benchmark data."* LBNL has not completed this effort and therefore does not qualify for an excellent rating.

LBNL has done an excellent job in evaluating waste reduction and current generator programs in order to drive continuous improvement. Strong awareness and outreach programs (i.e. mock billing, Earth Month activities, and the LBNL Pollution Prevention Web site) have influenced the laboratory culture and educated individuals in different aspects of preventing pollution and waste. Operational awareness and formal programs have been utilized to identify and manage wastes and materials, to evaluate activities and opportunities for reduction, and communicate concerns and accomplishments within the Laboratory and DOE. The Laboratory and DOE agree on a set of data for best-in-class benchmarking, however no comparisons have been made to date.

LBNL takes steps to assure that adequate controls are put in place to prevent environmental releases and reduce and/or prevent the generation of pollution. All new projects are reviewed by the ES&H division for environmental considerations. The ES&H division keeps abreast of the latest environmental requirements. LBNL uses the NEPA/CEQA process to evaluate environmental considerations for each new project.

CRITERIA:	1.3	Operational Requirements Guiding the Performance of Work Are Such That (ISMS Core Work Function #4):	
		<ul style="list-style-type: none"> • Personnel possess the experience, knowledge, skills, and abilities to discharge their responsibilities (ISMS Principle #3). • The conditions and requirements for operations to be initiated and conducted are established (ISMS Principle #7). 	(Weight=10%)

Performance Rating (Adjectival):	Good
	75.60%

PERFORMANCE MEASURE:	1.3.a	Radiation Protection of the Public and the Worker:	
		<ul style="list-style-type: none"> • The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the public and the worker from all radiological hazards arising from Lab operations and research activities. • Radiation doses to the maximally exposed individual (member of the public) and the worker, from all Lab operations, will be managed to assure that all applicable regulatory limits are not exceeded. Unplanned exposures to radioactive material and ORPS reportable occurrences of skin or personal clothing contamination are minimized. Radioactive material is managed so that it does not leave controlled areas in an uncontrolled fashion. • Radiological public and worker protection processes are linked to select system outcomes; outcome information is used in ensuring public and worker safety from all radiological hazards arising from the Lab operations and research activities. 	

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. The weighting from high to low severity is: doses greater than 100 mrem, skin contamination, and clothing contamination.
- DOE and the Lab agree by 12/31/97 on the processes outcome linkage.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:**Good:**

- At least the first 3 of the following conditions are met through a mutual agreement between the Berkeley Lab and the DOE.
- The Lab shall provide evidence that outcome and processes are linked and effective.
- The Lab shall demonstrate that outcome is used to drive improvement and maintain the current level of excellence.
- The Lab shall demonstrate that criteria 1.3 has been used, that all 7 Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker and public from all applicable radiological workplace hazards.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent/Outstanding:

- Documented evidence exists for criteria 1.3. but below the thresholds for Far Exceeds; to qualify for Far Exceeds at least 6 of the following conditions are satisfied at the 90% level and the benchmarking condition has been satisfied.
- There is documented evidence that management defines the scope of work for at least 90% of work activities where there are lesser workplace radiological hazards and 100% activities where there are significant workplace radiological hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the public and worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for at least 90% of work activities where there are lesser radiological hazards and 100% where there are significant radiological hazards.
- The Lab provides documented evidence that at least 90% of the lesser radiological hazards have been identified and 100% of the significant or major radiological hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented.
- The Lab provides documented evidence that for at least 90% of work activities where there are lesser radiological hazards (not likely to cause significant harm to the public or worker) and 100% of the work activities where there are identified significant radiological workplace hazards, conditions and requirements for safe operation, are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that at least 90% of all personnel working where there are lesser radiological workplace hazards and 100% of the applicable personnel working where there are significant workplace radiological hazards, possess sufficient knowledge and skills to execute their duties safely and with due regard for the radiological safety of the public.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in public and worker radiological safety is implemented for at least 90% of the workplace areas where there are lesser radiological hazards and 100% of the work activities where there are significant radiological hazards.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's

performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

To varying degrees, LBNL utilizes the five core principles of Integrated Safety Management System (ISMS) to perform work involving radioactive materials and radiation producing devices. The scope of each work activity is defined and maintained within the authorized envelope. Roles and responsibilities are clearly defined and documented.

Each work activity is analyzed for associated hazards before the work can begin. After hazards are identified, control measures (engineered and administrative) are incorporated to mitigate the hazards. Eventually the work is performed.

Work performed has not always adhered to the permitted/authorized provisions, of the Laboratory's Radioactive Work Authorization (RWA). All hazards cannot be controlled by engineered design alone. Some elements of the hazards can only be controlled through an informed/educated workforce. Radiation safety training is an integral part of performing the work safely. Evidence witnessed during the assessment period, and via operational awareness throughout the year, indicates a weakness in the Laboratory's Line Management responsibility to ensure a well trained work force, and a lack of supporting documentation on worker training records. Additionally, no criteria currently exists for the qualification of Laboratory instructors, and course content.

During the assessment period and throughout the year, auditing of commitments made by LBNL, within the Work Smart Standard Set, indicate that some requirements have not been implemented, i.e., Nuclear Medicine.

In the area of radiation protection of the public and the environment, LBNL is effective at defining and translating DOE Orders, regulatory guide drivers, and EPA requirements into mission and work in the area of Environmental Radiological Protection (ERP). Radiological hazards have been analyzed and environmental monitoring and surveillance programs are well defined in a comprehensive Laboratory ERP program.

PERFORMANCE MEASURE: 1.3.b Safety Hazard Prevention and Protection of the Worker

- This Performance Measure encompasses the areas of Safety, Industrial Hygiene, Occupational Medicine, Natural Phenomena and Fire Prevention. Unless otherwise specified, the term “Safety” shall represent prevention and protection in all the above disciplines.
- The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the worker from all safety hazards arising from Lab operations and research activities.
- The Safety disciplines (including Health Physics) work together in an integrated manner to help prevent injury and illness. This integrated approach is extended into Line Management functions such that safety hazard prevention and protection is seamless.
- Worker protection processes are linked to select system outcomes; outcome information is used in ensuring worker safety from all hazards arising from the Lab operations and research activities.

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. Higher severity events include (but are not limited to): imminent danger situations (as defined by the Occupational Safety and Health Administration (OSHA)), worker exposures above OSHA Permissible Exposure Limits, biological exposures above the OSHA medical removal levels, and substantial property damage or personal injury due to fire.
- DOE and the Lab agree by 12/31/97 on the processes/outcome linkage.
- Subcontractor operations/personnel are included in any corrective actions if the subcontractor is performing part of the Laboratory’s operations. Subcontractor statistics are gathered separately for those subcontractors that report their hours to the Laboratory. Subcontractors are excluded if they are “servicing” the Laboratory (e.g., copy machine vendors or other transient workers).
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:

Good:

- At least 5 of the following conditions are met as judged by Berkeley Lab and DOE staff.
- The Lab shall provide evidence that outcome and processes are linked and effective.

- The Lab shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence.
- The Lab shall demonstrate that all criteria 1.3 have been used, that all Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker from all applicable workplace safety hazards.
- There is appropriate and documented follow-up or response to injuries and illnesses, and exposures above the appropriate and applicable nationally recognized standard (such as OSHA PEL and ACGIH TLV).
- The subcontractor work force (as defined in the assumptions) is included in accident prevention programs.
- The Lab provides documented evidence of emergency planning response and property protection.

Excellent:

- Continuous quality improvement of the interaction between Occupational Medicine and the Safety disciplines and Line Management will be based on the Annual Interdisciplinary Peer Review and Improvement Process.
- The Laboratory has identified areas for injury reduction and is applying appropriate resources and attention to accident prevention in those areas.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Outstanding:

- The first 6 and one additional of the following conditions are met or exceeded as judged by Berkeley Lab and DOE staff.
- The Lab provides documented evidence that an effective process exists for the elimination of workplace hazards, while ensuring that the lab mission continues to be met cost effectively.
- There is documented evidence that Lab management defines the scope of work for all activities where there are significant workplace safety hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for all work activities where there are significant safety hazards (this would be defined by the need for activity authorizations such as AHD's OSR's or SAD's).
- The Lab provides documented evidence that there is a process for regular periodic review and assessment of hazards and that all the significant or major safety hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented, while ensuring that the Lab mission continues to be met cost-effectively.
- The Lab provides documented evidence that for all of the work activities where there are identified significant workplace safety hazards, conditions and requirements for safe operation are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that all personnel working where there are significant workplace safety hazards, possess sufficient knowledge and skills to execute their duties safely.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in worker safety is implemented for all of the work activities where there are significant safety hazards.

- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.
- The Lab demonstrates that there is optimal two way communication between occupational medicine and all other applicable ES&H disciplines.
- The safety record of subcontractor companies is evaluated and considered in contracting.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

The Laboratory has made significant progress in aligning its management programs with Integrated Safety Management System (ISMS). Examples include the Divisional Safety Plans and the Divisional Self Assessment Report.

Personnel responsible for individual Safety and Health Protection Programs are being required to review their programs, including statistical outcome data, and suggest ways to improve the program.

Occupational Medicine continues to interact on a daily basis with other Safety and Health disciplines.

The Laboratory completed a Benchmarking Study of occupational injury statistics, and established a 5-year goal to achieve the benchmark numbers.

The Laboratory falls short of an Outstanding rating in that there are still significant implementation problems with Staff Training. There are still problems with the Job Hazard Questionnaire (JHQ) process. Problems include getting JHQs updated annually, and following through to ensure that the courses required by the JHQ are completed, or staff is given credit for prior knowledge. Training percentages are less than 85%. DOE Operational Awareness has noted weakness in training classes, with corresponding weaknesses in staff knowledge and implementation of safety controls. A program (such as testing) to validate staff knowledge upon completion of training was not evident. There is a weakness in the Authorizations program in that it requires training to be completed before work can be performed, yet all work is being authorized despite low training completion percentages.

The Fire Department conducts walkthrough inspections of buildings to inspect for certain life safety items such as aisle clearance and fire extinguishers. However, the Fire Protection Engineer has a program (schedule) to conduct building inspections, and these are not being done.

There is a Seismic Protection Program in place. Institutional (site-wide) hazard information is based on a roll-up from Divisional hazard analyses. However, it appears that the depth of inspection for seismic hazards at the Divisional level includes only internal building seismic hazards (such as furniture tie-down). The impact of external hazards (such as landslides, gas line ruptures, etc.) upon Divisional operations is not clear. Thus it is not clear how the Laboratory defines its scope of work for seismic hazards. For seismic hazards, the Lessons Learned Program appears to include only furniture tie-down issues.

PERFORMANCE MEASURE: 1.3.c Waste Minimization, Pollution Prevention and Protection of the Environment

- The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain and enhance performance in environmental protection, waste minimization and pollution prevention associated with Lab operations and research activities.
- Environmental concerns will be managed to assure that all applicable regulatory limits are not exceeded, unplanned releases are minimized, and regulatory standards of operation are followed.
- The system for managing environmental protection, waste minimization and pollution prevention concerns will define environmental protection activities for establishing organization goals and policies, developing strategies for achievement, allocating resources for carrying out those strategies, providing structure and delineating roles, responsibilities, authorities, and accountabilities for accomplishing tasks, providing initiating mechanisms to produce the work effort, measuring, evaluating and correcting/improving performance.

Assumptions:

- Performance period for this measure is July 1, 1997 to June 30, 1998.
- Berkeley Lab and DOE agree by December 31, 1997 on the set of processes that are linked to the outcome measures.
- Performance will consider all aspects of the program that enhance and promote program objectives and overall compliance.
- The Laboratory has in place a system to evaluate new projects and activities for waste generation and pollution prevention opportunities.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall performance evaluation is based on not just the gradients but the effectiveness of the complete Environmental Protection, and Waste Minimization & Pollution Prevention program.

Gradient:

Good:

- At least 8 of the following conditions are met as judged by Berkeley Lab and DOE staff.
- The Laboratory has linked process and outcome measures.
- The Laboratory has outcome results to drive improvement in programs where additional improvement is technically possible, or to maintain the current level of excellence in programs where further improvement is not cost-effective.

- Individuals throughout the organization recognize the environmental aspects of their job responsibilities and take responsibility for protecting the environment, minimizing waste and preventing pollution.
- Environmental protection, waste minimization and pollution Prevention roles and responsibilities are well defined, clearly communicated, applicable to the work being performed and understood by all personnel whose activities may impact environmental performance.
- Top management demonstrates its commitment to environmental protection, waste minimization and pollution prevention through personnel and managerial actions.
- Formal programs are in place and kept up-to-date for the proper identification, management and control of hazardous materials and wastes to prevent or minimize their release into the environment.
- Environmental risks are assessed and used to select the appropriate level of control to prevent or mitigate releases to the environment.
- Environmental protection training needs are identified for all applicable Lab staff and tracked effectively.
- Source operating requirements are established and communicated to source operators.
- Formal programs are in place and kept up-to-date to effectively evaluate environmental protection, waste minimization and pollution prevention activities and communicate concerns and accomplishments within the Lab and to DOE.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent:

- All of the conditions for meets are satisfied and one is judged as superior by Berkeley Lab and DOE staff.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop and implement a strategy to meet best in class benchmark data.
- The Laboratory shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence (for those programs where no further cost effective improvement is possible).

Outstanding:

- All of the conditions for meets are satisfied and two or more are judged as superior by Berkeley Lab and DOE staff. Some of the Laboratory's pollution prevention projects address the transuranic, low level and low level mixed waste streams that are costly and difficult to manage.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

LBNL continues to maintain a superior environmental program. Their performance on environmental incidents and WMin/PP has been outstanding. LBNL has taken many steps to incorporate ISMS principals into their operation. LBNL has done much to comply with the gradients established by Appendix F. LBNL has met with all the gradients listed under the "good" performance rating (only 8 of the 11 are needed for a "good" rating). These efforts would qualify them for a higher rating ; however the gradients for this performance measure states: *"The laboratory shall compare current performance with best-in-class benchmark data and , if necessary, develop a strategy to meet best-in-class benchmark data."* LBNL has not completed this effort and therefore does not qualify for an excellent rating.

LBNL has done an excellent job in evaluating waste reduction and current generator programs in order to drive continuous improvement. Strong awareness and outreach programs (i.e. mock billing, Earth Month activities, and the LBNL Pollution Prevention Web site) have influenced the laboratory culture and educated individuals in different aspects of preventing pollution and waste. Operational awareness and formal programs have been utilized to identify and manage wastes and materials, to evaluate activities and opportunities for reduction, and communicate concerns and accomplishments within the Laboratory and DOE. The Laboratory and DOE agree on a set of data for best-in-class benchmarking, however no comparisons have been made to date.

LBNL has established a number of methods to assure that personnel posses the knowledge and skills needed. Environmental permits are handled centrally through the Environmental Protection Group. The personnel responsible for these permits are knowledgeable and effective in carrying out their jobs. LBNL offers training and other professional enrichment to maintain proficiency.

CRITERIA:	1.4	Continuous Improvement to Achieve Excellence in ES&H is Accomplished Through (ISMS Core Work Function #5):	
		<ul style="list-style-type: none"> • Approaches to ES&H management that are part of the total activity continuous improvement process, e.g: <ul style="list-style-type: none"> -Self assessment -Lessons learned -Collaboration and peer review -Benchmarking key outcomes and processes to “Best in Class” -Improved understanding between DOE and the Laboratory 	(Weight=10%)

Performance Rating (Adjectival): Excellent	83.00%
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PERFORMANCE MEASURE:	1.4.a	Radiation Protection of the Public and the Worker:	
		<ul style="list-style-type: none"> • The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the public and the worker from all radiological hazards arising from Lab operations and research activities. • Radiation doses to the maximally exposed individual (member of the public) and the worker, from all Lab operations, will be managed to assure that all applicable regulatory limits are not exceeded. Unplanned exposures to radioactive material and ORPS reportable occurrences of skin or personal clothing contamination are minimized. • Radioactive material is managed so that it does not leave controlled areas in an uncontrolled fashion. • Radiological public and worker protection processes are linked to select system outcomes; outcome information is used in ensuring public and worker safety from all radiological hazards arising from the Lab operations and research activities. 	

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. The weighting from high to low severity is: doses greater than 100 mrem, skin contamination, and clothing contamination.
- DOE and the Lab agree by 12/31/97 on the processes outcome linkage.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is

recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:

Good:

At least the first 3 of the following conditions are met through a mutual agreement between the Berkeley Lab and the DOE.

- The Lab shall provide evidence that outcome and processes are linked and effective.
- The Lab shall demonstrate that outcome is used to drive improvement and maintain the current level of excellence.
- The Lab shall demonstrate that criteria 1.4 has been used, that all 7 Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker and public from all applicable radiological workplace hazards.
- The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent/Outstanding:

- Documented evidence exists for criteria 1.4. but below the thresholds for Far Exceeds; to qualify for Far Exceeds at least 6 of the following conditions are satisfied at the 90% level and the benchmarking condition has been satisfied.
- There is documented evidence that management defines the scope of work for at least 90% of work activities where there are lesser workplace radiological hazards and 100% activities where there are significant workplace radiological hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the public and worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for at least 90% of work activities where there are lesser radiological hazards and 100% where there are significant radiological hazards.
- The Lab provides documented evidence that at least 90% of the lesser radiological hazards have been identified and 100% of the significant or major radiological hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented.
- The Lab provides documented evidence that for at least 90% of work activities where there are lesser radiological hazards (not likely to cause significant harm to the public or worker) and 100% of the work activities where there are identified significant radiological workplace hazards, conditions and requirements for safe operation, are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that at least 90% of all personnel working where there are lesser radiological workplace hazards and 100% of the applicable personnel working where there are significant workplace radiological hazards, possess sufficient knowledge and skills to execute their duties safely and with due regard for the radiological safety of the public.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in public and worker radiological safety is implemented for at least 90% of the workplace areas where there are lesser

radiological hazards and 100% of the work activities where there are significant radiological hazards.

- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

To varying degrees, LBNL utilizes the five core principles of Integrated Safety Management System (ISMS) to perform work involving radioactive materials and radiation producing devices. The scope of each work activity is defined and maintained within the authorized envelope. Roles and responsibilities are clearly defined and documented.

Each work activity is analyzed for associated hazards before the work can begin. After hazards are identified, control measures (engineered and administrative) are incorporated to mitigate the hazards. Eventually the work is performed.

Work performed has not always adhered to the permitted/authorized provisions, of the Laboratory's Radioactive Work Authorization (RWA). All hazards cannot be controlled by engineered design alone. Some elements of the hazards can only be controlled through an informed/educated workforce. Radiation safety training is an integral part of performing the work safely. Evidence witnessed during the assessment period, and via operational awareness throughout the year, indicates a weakness in the Laboratory's Line Management responsibility to ensure a well trained work force, and a lack of supporting documentation on worker training records. Additionally, no criteria currently exists for the qualification of Laboratory instructors, and course content.

During the assessment period and throughout the year, auditing of commitments made by LBNL, within the Work Smart Standard Set, indicate that some requirements have not been implemented, i.e., Nuclear Medicine.

In the area of radiation protection of the public and the environment, LBNL is effective at defining and translating DOE Orders, regulatory guide drivers, and Environmental Protection Agency (EPA) requirements into mission and work in the area of Environmental Radiological Protection (ERP). Radiological hazards have been analyzed and environmental monitoring and surveillance programs are well defined in a comprehensive Laboratory ERP program.

PERFORMANCE MEASURE: 1.4.b Safety Hazard Prevention and Protection of the Worker

- This Performance Measure encompasses the areas of Safety, Industrial Hygiene, Occupational Medicine, Natural Phenomena and Fire Prevention. Unless otherwise specified, the term “Safety” shall represent prevention and protection in all the above disciplines.
- The Lab uses 7 ISMS principles. These are used to develop and improve processes to maintain or improve excellence in protecting the worker from all safety hazards arising from Lab operations and research activities.
- The Safety disciplines (including Health Physics) work together in an integrated manner to help prevent injury and illness. This integrated approach is extended into Line Management functions such that safety hazard prevention and protection is seamless.
- Worker protection processes are linked to select system outcomes; outcome information is used in ensuring worker safety from all hazards arising from the Lab operations and research activities.

Assumptions:

- The performance period for this measure is July 1, 1997 to June 30, 1998.
- The severity of events is to be considered in the evaluation. Higher severity events include (but are not limited to): imminent danger situations (as defined by the Occupational Safety and Health Administration (OSHA)), worker exposures above OSHA Permissible Exposure Limits, biological exposures above the OSHA medical removal levels, and substantial property damage or personal injury due to fire.
- DOE and the Lab agree by 12/31/97 on the processes/outcome linkage.
- Subcontractor operations/personnel are included in any corrective actions if the subcontractor is performing part of the Laboratory’s operations. Subcontractor statistics are gathered separately for those subcontractors that report their hours to the Laboratory. Subcontractors are excluded if they are “servicing” the Laboratory (e.g., copy machine vendors or other transient workers).
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall Performance is based upon evaluation many factors including but not limited to the ones listed below.

Gradient:

Good:

- At least 5 of the following conditions are met as judged by Berkeley Lab and DOE staff.
- The Lab shall provide evidence that outcome and processes are linked and effective.
- The Lab shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence.

- The Lab shall demonstrate that all criteria 1.4 have been used, that all Integrated Safety Management System principles and that the five core work functions have been addressed in processes aimed at protecting the worker from all applicable workplace safety hazards.
- There is appropriate and documented follow-up or response to injuries and illnesses, and exposures above the appropriate and applicable nationally recognized standard (such as OSHA PEL and ACGIH TLV).
- The subcontractor work force (as defined in the assumptions) is included in accident prevention programs.
- The Lab provides documented evidence of emergency planning response and property protection.

Excellent:

- Continuous quality improvement of the interaction between Occupational Medicine and the Safety disciplines and Line Management will be based on the Annual Interdisciplinary Peer Review and Improvement Process.
- The Laboratory has identified areas for injury reduction and is applying appropriate resources and attention to accident prevention in those areas.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Outstanding:

- The first 6 and one additional of the following conditions are met or exceeded as judged by Berkeley Lab and DOE staff.
- The Lab provides documented evidence that an effective process exists for the elimination of workplace hazards, while ensuring that the lab mission continues to be met cost effectively.
- There is documented evidence that Lab management defines the scope of work for all activities where there are significant workplace safety hazards.
- The Lab provides documented evidence that there is line management responsibility for protection of the worker and that resources are effectively allocated (in balance with programmatic, operational and ES&H considerations) for all work activities where there are significant safety hazards (this would be defined by the need for activity authorizations such as AHD's OSR's or SAD's).
- The Lab provides documented evidence that there is a process for regular periodic review and assessment of hazards and that all the significant or major safety hazards are analyzed and that appropriate (i.e. tailored to the operation) administrative and engineering controls have been developed and implemented, while ensuring that the Lab mission continues to be met cost-effectively.
- The Lab provides documented evidence that for all of the work activities where there are identified significant workplace safety hazards, conditions and requirements for safe operation are identified, and work is conducted in accordance with these conditions and requirements.
- The Lab provides documented evidence that all personnel working where there are significant workplace safety hazards, possess sufficient knowledge and skills to execute their duties safely.
- The Lab provides documented evidence that continuous improvement through self assessment, corrective actions, lessons learned and collaboration and peer review, in worker safety is implemented for all of the work activities where there are significant safety hazards.
- The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

- The Lab demonstrates that there is optimal two way communication between occupational medicine and all other applicable ES&H disciplines.
- The safety record of subcontractor companies is evaluated and considered in contracting.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **excellent**.

The Laboratory has made significant progress in aligning its management programs with Integrated Safety Management System (ISMS). Examples include the Divisional Safety Plans and the Divisional Self Assessment Report.

Personnel responsible for individual Safety and Health Protection Programs are being required to review their programs, including statistical outcome data, and suggest ways to improve the program.

Occupational Medicine continues to interact on a daily basis with other Safety and Health disciplines.

The Laboratory completed a Benchmarking Study of occupational injury statistics, and established a 5-year goal to achieve the benchmark numbers.

The Laboratory falls short of an Outstanding rating in that there are still significant implementation problems with Staff Training. There are still problems with the Job Hazard Questionnaire (JHQ) process. Problems include getting JHQs updated annually, and following through to ensure that the courses required by the JHQ are completed, or staff is given credit for prior knowledge. Training percentages are less than 85%. DOE Operational Awareness has noted weakness in training classes, with corresponding weaknesses in staff knowledge and implementation of safety controls. A program (such as testing) to validate staff knowledge upon completion of training was not evident. There is a weakness in the Authorizations program in that it requires training to be completed before work can be performed, yet all work is being authorized despite low training completion percentages.

The Fire Department conducts walkthrough inspections of buildings to inspect for certain life safety items such as aisle clearance and fire extinguishers. However, the Fire Protection Engineer has a program (schedule) to conduct building inspections, and these are not being done.

There is a Seismic Protection Program in place. Institutional (site-wide) hazard information is based on a roll-up from Divisional hazard analyses. However, it appears that the depth of inspection for seismic hazards at the Divisional level includes only internal building seismic hazards (such as furniture tie-down). The impact of external hazards (such as landslides, gas line ruptures, etc.) upon Divisional operations is not clear. Thus it is not clear how the Laboratory defines its scope of work for seismic hazards. For seismic hazards, the Lessons Learned Program appears to include only furniture tie-down issues.

PERFORMANCE MEASURE:	1.4.c	Waste Minimization, Pollution Prevention and Protection of the Environment
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- The Lab uses 7 ISMS principles. These are used to develop and improve processes that maintain and enhance performance in environmental protection, waste minimization and pollution prevention associated with Lab operations and research activities.
- Environmental concerns will be managed to assure that all applicable regulatory limits are not exceeded, unplanned releases are minimized, and regulatory standards of operation are followed.
- The system for managing environmental protection, waste minimization and pollution prevention concerns will define environmental protection activities for establishing organization goals and policies, developing strategies for achievement, allocating resources for carrying out those strategies, providing structure and delineating roles, responsibilities, authorities, and accountabilities for accomplishing tasks, providing initiating mechanisms to produce the work effort, measuring, evaluating and correcting/improving performance.

Assumptions:

- Performance period for this measure is July 1, 1997 to June 30, 1998.
- Berkeley Lab and DOE agree by December 31, 1997 on the set of processes that are linked to the outcome measures.
- Performance will consider all aspects of the program that enhance and promote program objectives and overall compliance.
- The Laboratory has in place a system to evaluate new projects and activities for waste generation and pollution prevention opportunities.
- Peer reviews, existing procedures, implementing memoranda, Lab tracking system data and other work process products shall serve as demonstrable evidence in contribution to satisfaction of measure gradients. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or are necessary to perform the work.
- The intent of the process measure is to drive the Lab ES&H programs toward the Integrated Safety Management System. Its gradients are deliberately linked to the 7 ISMS principles. It is recognized that success is measured on a sliding subjective scale and that satisfaction of a level of excellence does not necessarily mean that all gradients are completely met. Overall performance evaluation is based on not just the gradients but the effectiveness of the complete Environmental Protection, and Waste Minimization & Pollution Prevention program.

Gradient:**Good:**

1. At least 8 of the following conditions are met as judged by Berkeley Lab and DOE staff.
2. The Laboratory has linked process and outcome measures.
3. The Laboratory has outcome results to drive improvement in programs where additional improvement is technically possible, or to maintain the current level of excellence in programs where further improvement is not cost-effective.

4. Individuals throughout the organization recognize the environmental aspects of their job responsibilities and take responsibility for protecting the environment, minimizing waste and preventing pollution.
5. Environmental protection, waste minimization and pollution Prevention roles and responsibilities are well defined, clearly communicated, applicable to the work being performed and understood by all personnel whose activities may impact environmental performance.
6. Top management demonstrates its commitment to environmental protection, waste minimization and pollution prevention through personnel and managerial actions.
7. Formal programs are in place and kept up-to-date for the proper identification, management and control of hazardous materials and wastes to prevent or minimize their release into the environment.
8. Environmental risks are assessed and used to select the appropriate level of control to prevent or mitigate releases to the environment.
9. Environmental protection training needs are identified for all applicable Lab staff and tracked effectively.
10. Source operating requirements are established and communicated to source operators.
11. Formal programs are in place and kept up-to-date to effectively evaluate environmental protection, waste minimization and pollution prevention activities and communicate concerns and accomplishments within the Lab and to DOE.
12. The Lab and the local DOE office shall agree on a set of measures for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop a strategy to meet best in class benchmark data.

Excellent:

1. All of the conditions for meets are satisfied and one is judged as superior by Berkeley Lab and DOE staff.
2. The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall compare current performance with best in class benchmark data and if necessary develop and implement a strategy to meet best in class benchmark data.
3. The Laboratory shall demonstrate that outcome is used to drive improvement or maintain the current level of excellence (for those programs where no further cost effective improvement is possible).

Outstanding:

1. All of the conditions for meets are satisfied and two or more are judged as superior by Berkeley Lab and DOE staff. Some of the Laboratory's pollution prevention projects address the transuranic, low level and low level mixed waste streams that are costly and difficult to manage.
2. The Lab and the local DOE office shall agree on a set of processes for best in class benchmarking. The Lab shall use best in class benchmark data in implementing strategies that move the Lab's performance toward best in class benchmark levels. Excellence is achieved when the Lab's performance meets or exceeds best in class benchmark level.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has met the criteria for a rating of **good**.

LBLN validates environmental compliance with their Environmental Monitoring program. Problems uncovered during the execution of this program are addressed and corrected immediately. LBNL has fully supported this program.

LBLN has an effective Lessons Learned program.

Progress has been made on the environmental benchmarking effort; however, LBNL has not implemented their benchmarking program to determine if they are “best in class”.

Partnering efforts between DOE and LBNL have remained good. There are a number of regular interactions between them such as the monthly environmental meetings. Subject matter experts from DOE and LBNL interact regularly.

LBLN has done an excellent job in evaluating waste reduction and current generator programs in order to drive continuous improvement. Strong awareness and outreach programs (i.e. mock billing, Earth Month activities, and the LBNL Pollution Prevention Web site) have influenced the laboratory culture and educated individuals in different aspects of preventing pollution and waste. Operational awareness and formal programs have been utilized to identify and manage wastes and materials, to evaluate activities and opportunities for reduction, and communicate concerns and accomplishments within the Laboratory and DOE. The Laboratory and DOE agree on a set of data for best-in-class benchmarking, however no comparisons have been made to date.

LBLN has done much to comply with the gradients established by Appendix F. LBNL has complied with all the gradients listed under the “good” performance rating (only 8 of the 11 are needed for a “good” rating). LBNL has not complied with the gradient requiring them to “compare current performance with best in class benchmark data”, that is required for an excellent rating.

TOTAL SYSTEM OUTCOME PERFORMANCE MEASURES (Weight = 60%)

CRITERIA: 1.5 System Outcome measures
 System outcome measures are linked to the process measures. System outcomes are used to drive process excellence. **(Weight=60%)**

PERFORMANCE MEASURE: 1.5.a Routine Exposures from Routine Activities
 Occupational radiation doses to individuals (excluding accidental exposures) from DOE operations will be managed to assure that applicable 10 CFR 835 limits are not exceeded. **(Weight=5%)**

Assumptions:

- For FY98 the performance period is July 1, 1997 through June 31, 1998.
- Any actual or anticipated significant changes in workloads or badged worker population (interpreted to be an increase or decrease of 5% or more) that would affect radiation doses will be brought to the attention of UC and DOE and appropriate adjustments will be made.
- Some variability is expected which may not be indicative of a trend.
- This measure is directed toward current management and control of radioactive materials.

Gradient:

Good:

The number of individuals with annual measurable exposures of less than 100 mrem, greater than or equal to 100 mrem and less than 250 mrem, and greater than or equal to 250 mrem and less than or equal to 500 mrem do not exceed the laboratory's 3 year running average for those 3 categories.

Excellent:

- No individual exposures in excess of 500 mrem.
- The number of individuals with annual measurable exposures of less than 100 mrem, greater than or equal to 100 mrem and less than or equal to 250 mrem, and greater than or equal to 250 mrem and less than 500 mrem are below the laboratory's 3 year running average in two respective dose categories.

Outstanding:

The number of individuals with annual measurable exposures of less than 100 mrem, greater than or equal to 100 mrem and less than 250 mrem, and greater than or equal to 250 mrem and less than 500 mrem are below the laboratory's 3 year running average in all three categories.

Performance Narrative:

The Laboratory has demonstrated, and has provided evidence to DOE that it has met and complied with all of the criteria for good, excellent and outstanding gradients. Therefore, a rating of **outstanding** is achieved.

Performance Rating (Adjectival): Outstanding	95.00%
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PERFORMANCE MEASURE: 1.5.b Radiation Protection of the Public and the Environment

Public radiation doses to the maximally exposed individual (member of the public) and radiological emissions to the environment, from all Lab operations, will be managed to assure that all applicable regulatory limits are not exceeded. (Weight=5%)

Assumptions:

- For FY98 the performance period is January 1, 1997 through December 31, 1997
- Any actual or anticipated significant change in workloads (interpreted to be an increase or decrease of 10% or more) that would affect radiation doses or radiological emissions will be brought to the attention of UC and DOE and appropriate adjustments will be made.
- Each Laboratory will define any change in its site control level for the maximally exposed individual dose in coordination with its local DOE office by October 1 for use during the following year.
- Expectations cited for “Exceeds” are consistent with ALARA goals.

Gradient:**Good:**

- Radiation doses to the maximally exposed individual (member of the public) is greater than 4% and less than or equal to 10% of applicable regulatory limits.
- Radiological emissions to the environment are greater than 10% and less or equal to 20% of applicable regulatory limits.

Excellent:

- Radiation doses to the maximally exposed individual (member of the public) is less than or equal to 4% of applicable regulatory limits.
- Radiological emission to the environment are less than or equal to 10% of applicable regulatory limits.

Outstanding:

- Radiation doses to the maximally exposed individual (member of the public) is less than or equal to 1% of applicable regulatory limits.
- Radiological emissions to the environment are less than or equal to 1% of applicable regulatory limits.

Performance Narrative:

The Laboratory has demonstrated, and has provided evidence to DOE that it has met and complied with the criteria for good and excellent gradients. The Laboratory did not achieve the gradients for outstanding. This was due to an uncontrolled release to the environment during the assessment period. Therefore, a rating of **excellent** is achieved.

Performance Rating (Adjectival): Excellent	88.00%
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PERFORMANCE MEASURE:	1.5.c	Prevention of Unplanned Radiation Exposures
Unplanned radiation exposures and ORPS reportable occurrences of skin or personal clothing contamination are managed and minimized.		
		(Weight=5%)

Assumptions:

- For FY98 the performance period is July 1, 1997 through June 30, 1998. Supplemental data will be provided for the period January 1, 1997 through June 30, 1997.
- The severity of the events is to be considered in the evaluation. The weighting from high to low severity is: unplanned radiation doses of greater than 100 mrem (weighting factor =1), skin contamination (weighting factor = 0.75), then personal clothing contamination (weighting factor = 0.5). If the ORPS event is classified as an Unusual Occurrence, the weighting factor is increased by a factor of 1.5.
- Data for this measure is reported as a normalized number of occurrences or exceedances.
- Some variability is expected which may not be indicative of a trend.

Gradient:

Good:

The weighted number of occurrences will be maintained within one unit of the three year running average or equal to the ALARA goal.

Excellent:

The weighted number of occurrences is less than the ALARA goal (currently this number is 4) for this measure set by the Berkeley Lab Radiation Safety Committee and agreed upon by Berkeley Lab and the local DOE office.

Outstanding:

The weighted number of occurrences is less than or equal to 2.

Performance Narrative:

The Laboratory has demonstrated, and has provided evidence to DOE that it has met and complied with all of the criteria for good, excellent and outstanding gradients. Therefore, a rating of **outstanding** is achieved.

Performance Rating (Adjectival): Outstanding	95.00%
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<p>PERFORMANCE MEASURE: 1.5.d Control of Radioactive Material</p> <p>Radioactive material, including radioactive sources and contaminated articles, is not found outside of controlled areas. (Weight=5%)</p>

Assumptions:

- For FY98 the performance period is July 1, 1997 through June 30, 1998. Supplemental data will be provided for the period January 1, 1997 through June 30, 1997.
- Data for this measure is reported as the normalized number of occurrences or exceedances. Off-normal occurrences have a weighting factor of 1 and unusual occurrences have a weighting factor of 1.5.
- Some variability is expected which may not be indicative of a trend.
- This measure is directed toward current management and control of radioactive materials.

Gradient:

Good:

The weighted number of occurrences will be maintained to within 1 unit of the 3 year running average or equal to the ALARA goal.

Excellent:

The weighted number of occurrences is less than the ALARA goal for this measure set by the Berkeley Lab Radiation Safety Committee and agreed upon by Berkeley Lab and the local DOE office.

Outstanding:

The weighted number of occurrences is less than or equal to 2.

Performance Narrative:

The Laboratory has demonstrated, and has provided evidence to DOE that it has met and complied with all of the criteria for good, excellent and outstanding gradients. Therefore, a rating of **outstanding** is achieved.

Performance Rating (Adjectival): Outstanding	95.00%
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PERFORMANCE MEASURE:	1.5.e	Chemical Exposure Prevention
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<p>The number of exposures to toxic materials and physical and biological agents that are above applicable occupational exposure and medical removal levels will be tracked. A decreasing trend is expected.</p> <p style="text-align: right;">(Weight=5%)</p>

Assumptions:

- For FY98 the performance period is July 1, 1997 through June 30, 1998.
- "Action level" is defined as one-half of 8-hour TWA, STEL and Ceiling for the OSHA PEL, ACGIH TLV[®], unless a different action level is specified by OSHA.
- Data for this measure is reported as the number of occurrences or exceedances versus the number of measurements taken.
- Exposure measurements will be corrected by the protection factor of the personal protective equipment in use.
- Some variability is expected which may not be indicative of a trend. Changes in operational levels or volumes shall be considered fully.
- Applicable exposures above the OSHA PELs resulting from an accident will be addressed by the local DOE office and the Laboratory.

Gradient:**Good:**

Ninety-five percent of the sampled exposures to toxic material/physical agents will be below the OSHA PEL.

Excellent:

Ninety-five percent of the sampled toxic material/physical agent exposures will be below the ACGIH TLV[®] or other published occupational health standards.

Outstanding:

100% of exposures above the action level have been followed up by an industrial hygienist and corrective measures have been implemented when appropriate.

Performance Narrative:

The Laboratory has demonstrated, and has provided evidence to DOE that it has met and complied with all of the criteria for good, excellent and outstanding gradients. Therefore, a rating of **outstanding** is achieved.

In the performance period for this measure, there was one measurement that exceeded the action level. This involved the scraping of lead-based paint in an air handling room. An off-normal occurrence report was generated and all corrective actions were completed in a timely fashion.

Performance Rating (Adjectival): Outstanding	95.00%
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PERFORMANCE MEASURE: 1.5.f Accident Prevention

The baseline period for comparison is the most recent 5 years of data. The Lab's Severity and frequency (defined as Lost Workday Incident Rate and Total Recordable Case Rate respectively) of accidents during the performance period will be compared to the baseline period. The number of Bureau of Labor Statistics reportable occurrences of these accidents will be tracked. A downward trend is expected as compared to the baseline years. **(Weight=7%)**

Assumptions:

- For FY98 the performance period is July 1, 1997 through June 30, 1998.
- Laboratory statistics will be collected for the baseline of Research and Services as reported to CAIRS.
- It is recognized that an initial increase may be experienced whenever a new prevention program is introduced and that some variability is expected which may not be indicative of a trend.
- Workers' Compensation costs will be considered during the self assessment.
- For FY97 and future years, the accident/injury types and baseline years will be updated by mutual agreement of the local DOE office and the Laboratory.
- Subcontractor operations/personnel are included in corrective actions. Subcontractor statistics will be maintained separately only for those subcontractors reporting hours worked to the Laboratory. Subcontractors are excluded if they are "servicing" the Laboratory (e.g., copy machine vendors or other transient workers).

Gradient:**Good:**

- A downward trend in frequency and/or severity for the Laboratory is achieved.
- The subcontractor work force (as defined in the assumptions) is included in accident prevention programs.
- The frequency and severity rates for the research, and services functions are kept below the last available 5-year DOE average for research, and service contractors respectively.

Excellent:

- A downward trend in frequency and severity for the Laboratory is achieved.
- The frequency and severity rates for the Research and Services functions are kept 20% below the last available 5-year DOE average for Research and Service Contractors respectively.

Outstanding:

- An exceptional reduction in frequency and severity for the Laboratory is achieved.
- The frequency and severity rates for the Research and Services functions are kept 50% below the last available 5-year DOE average for Research and Service Contractors respectively.
- An exceptional reduction in injury frequency or severity is achieved in an area targeted for injury reduction.

Performance Narrative:

The baseline period for comparison is the most recent five year DOE average for research and service contractors. LBNL has met the criteria for an **excellent** based on the gradient of 20% below this average.

The gradients for 'Good' and 'Excellent' are met. Two of three gradients for 'Outstanding' are met [not all gradients must be met]. Exceptional reduction in the severity rate was achieved for a targeted group, Lawrence Berkeley National Laboratory's, (LBNL) Administrative Services Department (ASD). Significant effort is being made with the Behavior Based Accident Prevention Program for the Facilities Department. Additional effort is being made in Workers Compensation case management.

Performance Rating (Adjectival): Excellent	88.00%
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PERFORMANCE MEASURE:	1.5.g	Occupational Safety and Health
Hazards are recognized during Occupational Safety and Health assessments and serious and imminent danger situations are appropriately mitigated.		(Weight=7%)

Assumptions:

- Data will be collected for the period of July 1, 1997 through June 30, 1998.
- Imminent Danger situations and Serious violations are as defined by the OSHA Field Inspection Reference Manual and by Section 13(a) of the Occupational Safety and Health Act.
- Subcontractor operations/personnel are included if the subcontractor is performing part of the Laboratory's operations. Subcontractors are excluded if they are "servicing" the Laboratory (e.g., copy machine vendor or other transient workers).

Gradient:**Good:**

- 70% of operations have documented evidence of annual safety inspection. All high hazard operations are inspected annually.
- Imminent Danger situations are mitigated immediately upon discovery.
- All Serious Violations are mitigated or corrected within 5 working days or an agreed-upon schedule. Until mitigation, equivalent protection or abatement will be implemented to ensure protection of workers.

Excellent:

- At least 90% of the scheduled formal self assessments have been completed and reports issued.
- At least 90% of the corrective actions have been completed on schedule.
- There is documented evidence that the lab has reviewed at least 90% of its workspaces, for those divisions reviewed in the current performance year, where there are hazards of medium and high level of concern as identified through the 1996 LBL IHA.

Outstanding:

- One hundred percent (100%) of the scheduled formal self assessments have been completed and reports issued.
- Corrective actions are consistently completed on schedule.
- There is documented evidence that the lab has reviewed 100% of its workspaces, for those divisions reviewed in the current performance year, where there are hazards of medium and high level of concern as identified through the 1996 LBL IHA.

Performance Narrative:

The Lawrence Berkeley National Laboratory (LBNL) continues to have a low number of Imminent Danger and Serious Violations situations. The Laboratory's construction Safety Inspector conducts regular inspections.

The Laboratory has a formal system for self assessment. Divisional self assessments are being completed annually, and have been aligned with Integrated Safety Management System (ISMS). Integrated Functional Appraisals, conducted by the Environment, Health & Safety Division, are also being completed on schedule. Though the Laboratory met the criteria for an excellent gradient, (completion of at least 90% of scheduled formal self assessment), a serious concern is that Management Environmental, Safety & Health (MESH) reviews are not being completed as scheduled. This is the second year in a row that only 1 of 4 scheduled appraisals was completed.

Performance Rating (Adjectival): Excellent	80.00%
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PERFORMANCE MEASURE: 1.5.h Tracking Environmental Incidents

The number of environmental incidents will be measured. Environmental incidents include:

- violations resulting from regulatory inspections or regulatory reporting.
- reportable occurrences of environmental releases exceeding regulatory or permitted levels.

(Weight=9%)

Assumptions:

- Performance period for this measure is January 1, 1997 to December 31, 1997.
- Audit is defined as an external review of a program that results in a formal report to the Laboratory, with any findings tracked by the appropriate organizational group (e.g., LBNL-OAA).
- Environmental releases or excursions that remain within compliance limits will not be counted as incidents by this measure.
- The Laboratory has the option to apply a weighting factor to each incident, depending on its severity and magnitude. All releases that are serious will be given a weighing factor of 1, on a scale of 0 to 1. A release is considered serious unless an alternate weighting factor is proposed by Berkeley Lab. The Laboratory and DOE technical counterparts will jointly agree upon the assignment of an appropriate weighting factor for non-serious releases.
- Percent increase is based upon comparisons made to the average of the 3 previous years.
- When the number of incidents is less than or equal to 3, scoring will be based solely on this number.

Gradient:

Good:

More than 3 incidents and an increase in incidents by less than or equal to 50%.

Excellent:

More than 1 and less than or equal to 3 incidents.

Outstanding:

1 incident or less.

Performance Narrative:

The Laboratory was successful in performing operations without any environmental releases above regulatory limits and without receiving any violations from its inspections.

Performance Rating (Adjectival): Outstanding	95.00%
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PERFORMANCE MEASURE: 1.5.i Waste Reduction and Recycling

The Laboratory continues to progress towards meeting the DOE's pollution prevention goals for the year 2000. (Weight=10%)
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Assumptions:

- DOE's pollution prevention goals by waste type, that are measured by this performance measure, are defined as follows:
- Reduce by 50% the generation of radioactive waste (defined as TRU and LLW) from routine operations;
- Reduce by 50% the generation of low-level mixed waste from routine operations;
- Reduce by 50% the generation of hazardous waste from routine operations; and
- Reduce by 33% the generation of non-hazardous waste from routine operations.
- For FY98 the performance period is January 1, 1997 through December 31, 1997.
- CY93 waste generation quantities will be used as a baseline for measuring waste reductions. (CY94, corrected to reflect previous years improvements, will be used for non-hazardous waste at LLNL. CY93 baselines for low level mixed and radioactive wastes will be determined by linear extrapolation of the high quality data for CY94 and CY95 at Berkeley Lab.)
- Recycling, reuse and exchange are considered to be methods of waste minimization and will be tracked.
- Any significant new project, activity or increase in workload will be evaluated for pollution prevention/waste minimization opportunities. After pollution prevention/waste minimization opportunities are implemented for the project or activity, the resulting new waste stream will not be included in the waste reduction calculation.
- Cleanup and stabilization waste (including environmental restoration waste, stabilization of nuclear and non-nuclear materials, and deactivation and decommissioning of facilities), legacy, construction debris and USEC waste will not be included in the calculations for meeting the waste reduction goals but will be included in the discussion on meeting the recycling goal.
- Waste generation will be reported and measured in the same way that it has been reported for this performance measure in previous years. (Routine hazardous waste generation at Berkeley Lab will be tracked using the total quantities shipped off site regardless of destination, as reflected in the EPA Biennial Reports).

Gradient:

Progress toward reduction goals are evaluated by either using the following charts or progress on an agreed- to "waste type" reduction plan:

Chart for or routine mixed, radioactive and hazardous waste streams:

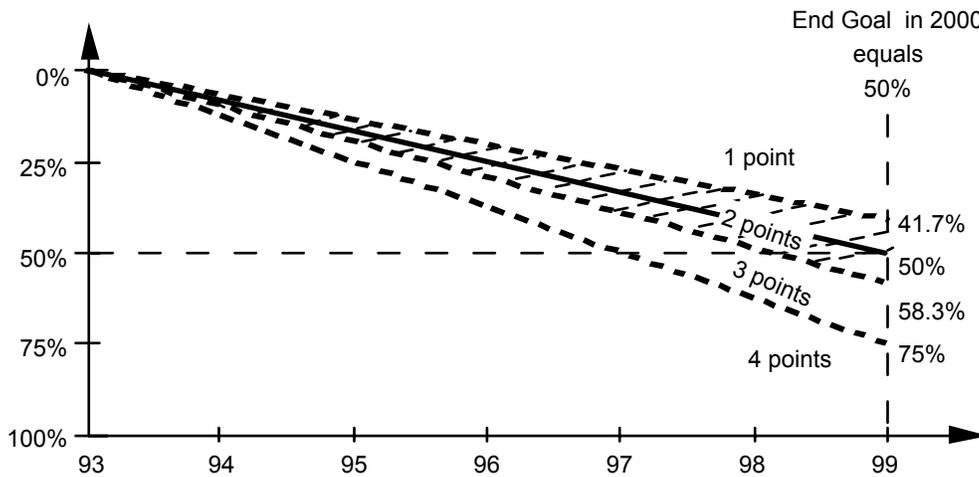
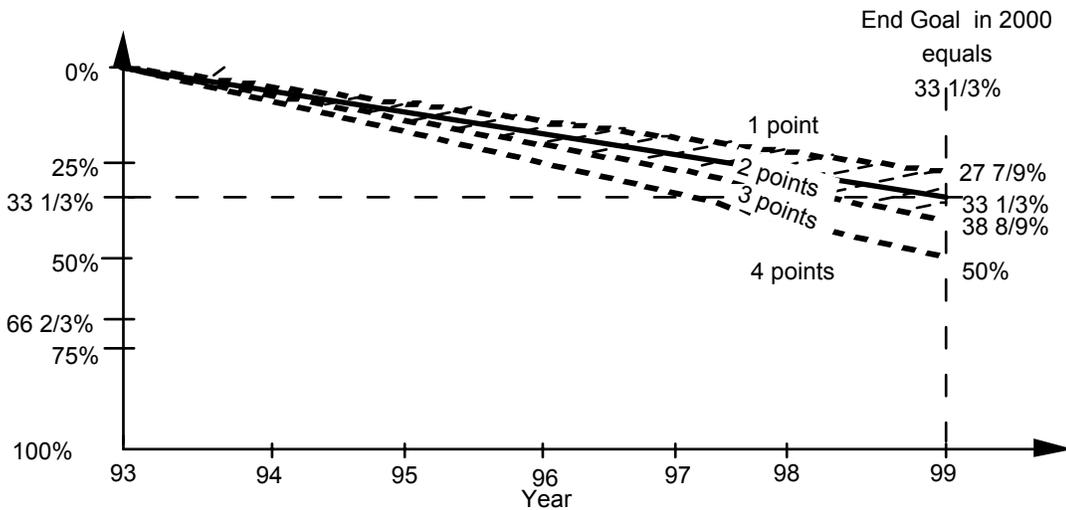


Chart for routine sanitary waste streams:



Good:

- A reduction in generation of each waste type is calculated and scored (1 to 4 points) then summed.
- The sum for the four waste types is 7, 8 or 9 points.

Excellent:

- A reduction in generation of each waste type is calculated and scored (1 to 4 points) then summed.
- The sum for the four waste types is greater than 9 points but less than 12.

Outstanding:

- A reduction in generation of each waste type is calculated and scored (1 to 4 points) then summed.
- The sum for the four waste types is greater than 12 points and less than 16.

- An annual increase in the types and amounts of wastes and materials recycled and/or reused onsite or offsite (after adjustment for source reduction).

Performance Narrative:

It is agreed that the Lawrence Berkeley National Laboratory (LBNL) continues to make outstanding progress towards DOE's pollution prevention goals for the year 2000. A reduction in generation was reported for three out of the four waste types. Non-hazardous, waste generation from routine operations is slightly increased. Based on the Laboratory performance, the scores for sanitary, hazardous, mixed, and low-level waste reduction are:

Waste Type	Score
- Sanitary	4
- Hazardous	4
- Low-level	2
- Mixed	4
Total	14

The total number of 14 meets the criteria for an **outstanding** for this performance measure.

DOE also commends LBNL for the elimination of ozone depleting substance use for cleaning purposes, the mixed waste reduction resulting from analytical process changes in the Life Sciences Division, and the early evaluation and implementation of pollution prevention opportunities in the design and construction of the Joint Genome Production Facility.

Performance Rating (Adjectival): Outstanding	94.00%
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Performance Area: FACILITIES MANAGEMENT

Performance Objective: #1 Real Property Management
 The Laboratory will effectively manage Real Property. **(Weight = 5%)**

Criteria: 1.1 Real Property Management
 Real property is effectively managed consistent with mission, requirements, and DOE direction. **(Weight = 5%)**

Performance Measure: 1.1.a Program Implementation
 Number of completed milestones/milestones scheduled for completion. **(Weight = 5%)**

Assumptions:

Intent is to measure the effectiveness, completeness, and timeliness of implementation of Real Property management actions. Milestones will be established in partnership with DOE and made a matter of record in the first month of the fiscal year. Milestones may be established for Facilities Information Management System completeness, office space utilization, substandard building space conversion, facility leases, etc.

Gradient:

- Outstanding - 0.90
- Excellent - 0.80
- Good - 0.70
- Marginal/Unsatisfactory - less than 0.70

Performance Narrative:

The Lawrence Berkeley National Laboratory (LBNL) earned an **outstanding** rating for meeting all thirteen milestones identified in LBNL's letter of 28 October 1997. LBNL is in the process of consolidating their off-site leases under one contract agreement and this be accomplished during FY 1999. LBNL's proposed space consolidation plan, when implemented, will result in significant annual rent savings. The administration of the Facilities Information Management System (FIMS) was exceptional this performance year. The new administrator, who assumed the position unexpectedly, worked diligently to learn, understand, and be responsive to major FIMS activities for FY 1998 - Seismic and Deferred Maintenance reporting.

Performance Rating (Adjectival): Outstanding	98.00%
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Performance Objective: #2 Physical Assets Planning
 The Comprehensive Integrated Planning Process should reflect current and future Laboratory needs.
 (Weight = 14%)

Criteria: 2.1 Comprehensive Integrated Planning Process
 The Laboratory develops, documents, and maintains a comprehensive integrated planning process that is aligned with DOE mission needs.
 (Weight = 14%)

Performance Measure: 2.1.a Effectiveness of Planning Process
 Assess how the planning process is executed to achieve maximum effectiveness in anticipating and articulating DOE and Laboratory needs.
 (Weight = 14%)

Assumptions:

The Laboratory will work with DOE counterparts in a cooperative effort to continuously evaluate the effectiveness of the comprehensive land-use planning process through the development of Laboratory specific planning elements. Site specific planning elements will be made a matter of record in the first month of the fiscal year.

Gradient:

- Outstanding - 0.90
- Excellent - 0.80
- Good - 0.70
- Marginal/Unsatisfactory - less than 0.70

Performance Narrative:

DOE OAK has assessed Lawrence Berkeley National Laboratory’s (LBNL) Comprehensive Integrated Planning (CIP) Process for FY1998 as **outstanding** with a rating of 92.5 percent. LBNL continued to execute outstanding performance in FY1998 as it utilized the Life Cycle Asset Management (LCAM) Partnering Agreement with LBNL and DOE OAK to propel itself. Through operational awareness,

LBNL improved in the of continuing interaction with stakeholders and DOE counterparts (instant access via the LBNL planning website); the updating of planning processes and systems; meeting National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) timelines; continuing site and environmental planning; and space planning. LBNL continues to proceed within DOE mission needs. It should be mentioned that in FY 1998 NEPA/CEQA responsibilities were merged with LBNL CIP responsibilities. The significance of the merge is the added assurance of integrating NEPA/CEQA issues and policies early into the planning stages which is consistent with NEPA.

Twenty-eight milestones (including one "on-going" milestone) were identified in the work plan for FY 1998. All but one milestone was completed as scheduled with no requests for date changes. The uncompleted milestone was dependent upon decisions made by a Laboratory Program division which has yet to be made at the time of this report. DOE OAK expects LBNL to remain aggressive in their planning activities for FY 1999 and to continue outstanding performance.

Performance Rating (Adjectival): Outstanding	92.50%
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Performance Objective: #3 **Project Management**

The Laboratory will complete construction projects within approved budgets and schedules. **(Weight = 33%)**

Criteria: 3.1 **Construction Project Performance**

Construction projects greater than \$500K (regardless of type of funds) achieve schedule, and performance objectives. **(Weight = 20%)**

Performance Measure: 3.1.a **Work Performed**

Number of milestones completed/number milestones planned for completion. **(Weight = 20%)**

Assumptions:

The intent is to measure actual progress against that planned for the fiscal year and for the Laboratory to execute projects and cost project funds in a timely manner. A milestone list for all active projects will be negotiated with DOE and made a matter of record in the first month of the fiscal year. Only significant milestones will be listed, but each active project will have at least one milestone per year. By mutual agreement between the Laboratory and DOE, milestones may be weighted for significance and/or for late/early completion. Negotiated milestones are not to be interpreted as baseline change approval. Milestones must be consistent with either approved or proposed baselines. Completion is defined as Critical Decision 4, construction completion or beneficial occupancy, as mutually agreed.

Gradient:

- Outstanding - 1.00
- Excellent - 0.90
- Good - 0.80
- Marginal/Unsatisfactory - less than 0.80

Performance Narrative:

Performance against schedule baselines for construction projects greater than \$500,000 (regardless of type of funds) was **outstanding**. Originally, eight projects with a total of 15 milestones were made a matter of record in LBNL's letter of 28 October 1998. Subsequently, the users of the B2 Lithography Lab deleted the requirement for installation of clean room equipment. In March 1998, a milestone for Beneficial Occupancy of the B88 Upgrade Glovebox System was added. Lawrence Berkeley National Laboratory (LBNL) requested and received approval from OAK for these two changes.

Project milestones completed on schedule / Project milestones scheduled for completion =
 $15/15 = 1.00$.

DOE OAK has an outstanding working relationship with the LBNL staff who are responsive and efficient. During the Monthly Project Status meetings, LBNL staff reviews all the project milestones with DOE OAK and relays their status. LBNL completed every planned construction project milestone on or before scheduled baselines.

Performance Rating (Adjectival): Outstanding	98.00%
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Criteria: 3.2	Construction Project Cost
Line-Item projects (including any project \$2000K and over regardless of type of funds) meet cost baselines.	
	(Weight = 13%)

Performance Measure: 3.2.a	Total Estimated Cost (TEC)
Estimated cost at completion for all active projects/performance baseline TEC for all active projects.	
	(Weight = 13%)

Assumptions:

The intent is to measure Laboratory performance in executing projects within the approved TEC. The performance baseline is the original approved baseline adjusted for allowed cost or work scope changes. DOE determines whether cost or work changes are allowed. The method of calculating estimated cost at completion and how to handle contingency will be made a matter of record in the first month of the fiscal year. Disposition of pending Baseline Change Proposals, for the purposes of this measure, will be made by mutual agreement in the tenth month of the fiscal year. By mutual agreement between the Laboratory and DOE, projects may be weighted for significance.

Gradient:

- Outstanding - 0.96
- Excellent - 0.98
- Good - 1.00
- Marginal/Unsatisfactory - greater than 1.00

Performance Narrative:

Three line item projects were rated for FY 1998. The current baseline total estimated cost (TEC) vs the actual/estimated cost at completion for all active projects were as follows:

Project	<u>Baseline TEC</u>	<u>Actual/Estimated</u>
Electrical Systems Rehabilitation, Phase IV	\$6,500,000	\$6,500,000
Human Genome Laboratory	\$24,634,000	\$24,537,000
Sanitary Sewer Restoration	<u>\$2,400,000</u>	<u>\$2,400,000</u>
Totals:	\$33,534,000	\$33,437,000

Estimated cost at completion for all active projects / Performance baseline TEC for all active projects = \$33,437,000 / \$33,534,000 = 0.997.

Lawrence Berkeley National Laboratory staff has worked diligently to keep DOE OAK apprised of project costs at the Monthly Project Status meetings. All three projects were executed within their approved TEC. The Human Genome Laboratory project showed a savings to the government of \$97,000 (0.39 percent). By this subcriteria's gradient, LBNL met, but did not exceed performance expectations.

Performance Rating (Adjectival): Good	73.00%
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With limited funding resources, Lawrence Berkeley National Laboratory successfully implemented an aggressive maintenance program in FY 1998. Planned milestones included six new maintenance activities and ten from the prior UC Contract's maintenance program goals. These milestones are established and documented in LBNL's letter of 28 October 1997. All sixteen milestones were completed as originally scheduled for a ratio of 1.00 which is considered **excellent** by the performance gradient. Most noteworthy was the completion of the Underground Piped Water Condition Assessment Report which lead to the development of a modernization design package to improve the water system reliability.

Performance Rating (Adjectival): Excellent	89.00%
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Criteria: 4.2	Maintenance Program
The facility maintenance program is effectively managed and performed. (Weight = 20%)	

Performance Measure: 4.2a	Maintenance Index
Calculate quality performance index based on EFCOG Maintenance Performance Indicators. (Weight = 20%)	

Assumptions:

A composite index will be calculated using a weighted average for selected performance indicators. The list of performance indicators, and the calculation algorithm will be made a matter of record in the first month of the fiscal year. Performance gradient calculations will consider "Best-in-Class" for comparable Energy Facility Contractors Group (EFCOG) benchmarking participants and the EFCOG average for comparable activities/sites.

Gradient:

Outstanding	-	1.00
Excellent	-	0.90
Good	-	0.80
Marginal/Unsatisfactory - less than		0.80

Performance Narrative:

Lawrence Berkeley National Laboratory's (LBNL) quality performance index was **outstanding** for FY 1998. This rates LBNL's maintenance performance comparable to the "Best-in-Class" among the Energy Facility Contractors Group (EFCOG) benchmarking participants for the selected performance indicators. The "Proactiveness of Craft Hours" performance element had a greater influence on the index than anticipated. Accordingly, DOE OAK recommends for FY 1999 minor adjustments to selected element weights to increase the validity of the index and improve performance in critical areas.

Performance Rating (Adjectival): Outstanding	92.00%
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Performance Objective: #5	Utilities/Energy Conservation
The Laboratory will maintain a reliable utility system and conserve energy. (Weight = 15%)	

Criteria: 5.1	Reliable Utility Service
Maintain reliable utility service. (Weight = 8%)	

Performance Measure: 5.1.a	Utility Service
Total number of customer hours of utility service less the number of customer hours of unplanned outages/total customer hours. (Weight = 8%)	

Assumptions:

Unplanned outages that are caused by occurrences outside the boundary of the Laboratory's utility system may be excluded. Utilities to be measured, with assigned weights will be made a matter of record in the first month of the fiscal year. Definition of "Customer Hours" will be defined separately for each utility measured. A 12-month running average will be reported.

Gradient:

- Outstanding - 99.995%
- Excellent - 99.990%
- Good - 99.982%
- Marginal/Unsatisfactory - less than 99.982%

Performance Narrative:

Laboratory performance against this Performance Measure was **outstanding**, with a reliability ratio of 99.996% against the outstanding Gradient of 99.995%. This rates an outstanding score of 92.

Performance Rating (Adjectival): Outstanding	92.00%
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Criteria: 5.2	Energy Consumption	
Effectively manage energy usage.		(Weight = 2%)

Performance Measure: 5.2.a	Building Energy	
The reduction in energy usage from FY85 levels in BTUs per gross square feet of building expressed as a percent of FY85 energy usage.		(Weight = 2%)

Assumptions:

Reduction for FY98 interpolated from the DOE goal of a 30% reduction from FY85 levels by FY2005.

Gradient:

- Outstanding - 25%
- Excellent - 22%
- Good - 19%

Marginal/Unsatisfactory - less than 19%.

Performance Narrative:

Lawrence Berkeley National Laboratory's (LBNL) FY 1998 building energy use per square foot was reduced 36.1 percent, compared to the FY 1985 base year. While performance places the Laboratory well beyond DOE's goal of a 30 percent reduction by FY 2005, LBNL continues to pursue measures to further reduce energy use and costs. In addition to these efforts, the Laboratory should assess its energy using facilities, with a view toward removing energy intensive process use from the buildings category.

Performance Rating (Adjectival): Outstanding	100.00%
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Criteria: 5.3	Energy Management
Energy initiatives are managed consistent with a comprehensive energy management plan. (Weight = 5%)	

Performance Measure: 5.3.a	Energy Goals
Energy goals accomplished/goals scheduled to be accomplished in accordance with the plan. (Weight = 5%)	

Assumptions:

The energy management plan will be made a matter of record in the first month of the fiscal year. Areas to be addressed in the plan are: (1) surveys and inspections for identifying cost-effective energy and water conservation measures, including completion of Comprehensive Facility Audits by March 2004, energy conservation in surplus facilities, identification of low cost opportunities and solar/renewable energy applications; (2) completion of FEMP funded studies within budget and within one year of funding; (3) progress toward installing all cost-effective energy and water conservation measures identified by Comprehensive Facility Audits, by January 2005; (4) completion of FEMP funded retrofit projects within schedule and within two years of funding; (5) design and construction of new buildings and building alterations according to federal energy Reports and building commissioning; (6) provisions for cost-effective energy and water conservation in real property leases; (7) use of alternative project financing, including Energy Savings Performance Contracts and demand-side management programs; (8) energy management training; (9) employee awareness; and, (10) procurement of energy efficient and water saving products.

Gradient:

Outstanding	-	0.95
Excellent	-	0.85
Good	-	0.75
Marginal/Unsatisfactory - less than 0.75		

Note: Plans, lists, and milestones made a matter of record in the first month of the fiscal year may be revised during the year by mutual agreement between the Laboratory and DOE.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) successfully completed 14 of 15 FY 1998 Energy Management Plan goals. These goals were well thought out, aggressive, measurable and completions were properly documented. Results of these and prior year energy management plan accomplishments are reflected in reduced energy use and costs.

Performance Rating (Adjectival): Excellent	88.00%
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Performance Area: FINANCIAL MANAGEMENT

Performance Objective: #1	Customer Focus and Satisfaction
Financial Management's practices are customer oriented. (Weight=20%)	

Criteria : 1.1	Methods to Evaluate Customer Expectations
Maintain systematic methods/programs to collect information and determine internal and external customer needs and levels of satisfaction. (Weight=10%)	

Performance Measure: 1.1.a	Effectiveness of Methods
Degree to which effective and systematic methods to collect, document, and use customer feedback information are defined and deployed. (Weight=10%)	

Assumptions:

Identify internal and external customer groups. Describe what and how information is collected, frequency and methods of collection, and how the finance and budget organizations evaluate and improve their processes for determining customer satisfaction, requirements, expectations, and preferences in support of missions.

Gradient:

A Good rating is achieved by developing and implementing the capability for systematically obtaining customer feedback.

Factors that will be considered for a higher rating include how well:

- coverage of customer groups is identified
- the methods used are effective customer communication tools
- customer learning strategies have continuity and are consistently deployed
- customer feedback is used to improve products/services provided to customers

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) exceeds the expectations for this measure. LBNL’s Chief Financial Officer (CFO) identified their customer groups and developed a systematic approach for understanding and meeting customer needs and expectations. This comprehensive approach, also allows flexibility to adjust to customer requests. The financial management system conversion and subsequent updates, provides the CFO with an additional tool to satisfy customer requirements. Implementing a new comprehensive financial management system required extensive collaboration and communication efforts between most LBNL organizations to develop an efficient and comprehensive system that benefits the Laboratory’s internal and external customers.

LBNL’s CFO has consistently expressed the high degree of success with verbal and frequent interactions and close working relationships. However, LBNL has incorporated DOE concerns regarding documentation as part of this years methodology to document their customer satisfaction efforts. The methods used by LBNL to determine if their communication tools are effective are comprehensive and supportable. Utilizing questionnaires to target groups, group meetings and personal interviews, LBNL has improved its documentation and analysis capabilities. Using a “case write-up” for each customer interaction, the Budget Office now documents, analyzes and verifies follow up on all customer requirements. Using this method, they have established a base, to determine their effectiveness and customer satisfaction.

The noticeable changes by LBNL reflect how the CFO now views customer service. It is now a high priority, exercised by leadership at top and middle management levels to nurture a service culture throughout the organization. It is also included in individual work plans and managerial objectives.

For the improvement in customer service, LBNL receives an **excellent** rating.

Performance Rating (Adjectival): Excellent	87.00%
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Criteria:	1.2	Customer Satisfaction
Improved levels of customer satisfaction.		(Weight=10%)

Performance Measure:	1.2.a	Customer Satisfaction Results
Improved levels of customer satisfaction over time.		(Weight=10%)

Assumptions:

Describe current levels and trends in key measures and/or indicators of customer satisfaction and dissatisfaction.

Gradient:

A Good rating is achieved by demonstrating that Finance and Budget customers are generally satisfied with the products and services provided.

Factors that will be considered for a higher rating include:

- demonstrated improved or sustained high levels customer satisfaction
- customer satisfaction is maintained across most customer groups
- no general dissatisfaction exists with primary products/services provided

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) exceeds the expectations for this measure. The internal customers are generally satisfied with the products and service provided, given the financial system has been revised and upgraded. In the long term, these changes by LBNL will make the CFO organization more supportable and effective to the customers. The Laboratory's Finance Division conducted a study to determine what the customers thought of the new Financial Management System (FMS) and if they will be better supported. The feedback was positive. The customers realize the benefits of the system enhancements and unified budgeting system. However, all involved in the budget process requested clarification of roles and responsibilities between the CFO Budget office and programmatic budget personnel. Results from a newly implemented telephone survey of frequent users of the Travel Office has expressed a high level of customer satisfaction.

For their improved customer satisfaction, their increased awareness of customer support requirements, and the being proactive with the enhancement of their systems, LBNL receives an **excellent** rating in this area.

Performance Rating (Adjectival): Excellent	85.00%
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Performance Objective #2

Operational Effectiveness

Achieve cost effective and efficient financial management operations by applying available resources to continuous improvement efforts. **(Weight=40%)**

Criteria: 2.1

Leadership in Improving Financial Management Efficiency and Effectiveness

Consistent with DOE requirements and plans, take proactive leadership role to improve the financial management effectiveness and efficiency of the budget and financial processes and the financial reporting systems. **(Weight=17%)**

Performance Measure:

2.1.a

Quality Performance in Reporting Processes

Budgets and financial reports and information, analyses, estimates, and proposals submitted will be evaluated for minimal time/form/ content deficiencies and incorporate budget validation and other systematic customer feedback. **(Weight=5%)**

Assumptions:

The annual budget process and DOE routine periodic reports will be measured for timeliness and quality by measuring on-time performance. A narrative will describe the continuous process/product improvements, internal process used to validate the estimates including a discussion of the balances between programmatic and distributed budget requirements, and the proactive activities related to this Performance Measure.

Gradient:

A Good rating is achieved by meeting customer due dates and by demonstrating tangible incremental improvements in these processes and/or in the products developed.

Factors that will be considered for a higher rating include:

- reductions in cycle time and/or cost, automation improvements and initiatives
- proactive activities such as training and development of Financial Management's staff and internal customers, and coordination with other divisions/ organizations to address financial concerns
- customer feedback and other relevant information
- early submission of accurate and complete reports such as MARS/FIS, budgets, and DIMS prior to DOE's due dates.

Assumptions:

The measurement of special ad hoc DOE requests regarding budgets, financial information, analyses, estimates, and proposals submitted will include only formal written requests with deadlines of 8 or more working hours. Narrative will include customer satisfaction information from 1.1.

Gradient:

A Good rating is achieved with 90% of on-time performance with acceptable quality as determined from customer feedback.

Factors that will be considered for a higher rating include:

- on-time performance greater than 90%
- good customer feedback
- process improvements, cost, and cycle time reductions
- handling a higher volume or more complex requests

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) exceeds the expectations for this measure by meeting all of their customer due dates and demonstrating tangible improvements, specifically their budget formulation process and their internal budget validation process. Implementation of the new Financial Management System (FMS) has already produced significant improvements and will expand the CFO's reporting and control capabilities.

Following the April 1998 submission of the FY 2000 budget, the OAK and LBNL Budget Offices conduct a joint budget validation. This validation for this submission consisted of the Computational and Technology Directorate, which covers \$40 million of the LBNL budget, or approximately 20 percent. We reviewed the Field Work Proposals, verified the consistency of the overhead and labor rates used, and ensured that backup documentation was maintained and justifiable.

The Laboratory continues to reduce costs, as reflected by the savings realized in printing the budget submission. Even though recently implemented, the FMS has already realized reduced cycle time, improved reporting, and enhanced budgeting initiatives. The system has also resulted in more consistent and accurate information for both internal customers and DOE transmissions. The enhancements also improve the automation and availability to customers, allowing them to more effectively manage the programs.

The CFO has been proactive in their financial training and development programs at the Lab. This action reflects their desire to be proactive in addressing the Laboratory's financial concerns and overall knowledge. The CFO has undertaken the responsibility for the training of staff and internal customers on the FMS, and hold bimonthly Steering Committee meetings to addresses financial concerns within the Laboratory community. To interact more closely with other divisions, the Budget

office conducts monthly Financial Forums, where all of the division financial administrators meet to discuss specific financial issues.

The CFO customers are generally satisfied with the products and service provided, given the financial system has been revised and upgraded. In the long term, these changes by LBNL will make the CFO organization more supportable and effective to the customers. The Laboratory's Finance Division conducted a study to determine what the customers thought of the new Financial Management System (FMS) and if they will be better supported. The feedback was positive. The customers realize the benefits of the system enhancements and unified budgeting system.

LBNL submitted their FY 2000 Budget Submission early and provided Financial Information System (FIS) transmissions early.

The CFO continues to respond to DOE ad hoc requests timely, with 98 percent on-time ratio, and almost 80 percent of them early. DOE is satisfied with their responses and appreciates their efforts to provide them early. With the implementation of FMS, they have reduced the cycle time and costs associated with responding to a variety of the ad hoc requests. The CFO was required to handle 52 percent more responses than FY 1997, and some of the responses were more complex than in previous years. They include reports on uncosted balances, WFO, and functional costs.

For all these successes, LBNL receives an **outstanding** rating.

Performance Rating (Adjectival): Outstanding	95.00%
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Performance Measure: 2.1.b**Leadership in Systems Improvements**

Degree to which proactive leadership supports DOE and Laboratory initiatives for continued contractor financial systems improvements. **(Weight=12%)**

Assumptions:

Narrative will describe the Laboratory's progress in support of this criterion, using existing tools and the Financial Management Systems (FMS) plan.

Gradient:

Factors that will be considered for Good rating include:

- timeliness of the FMS plan
- efforts are directed at initiatives with the most value added
- involvement in DOE's initiatives
- progress towards short-term initiatives

Factors considered for a higher rating include:

- progress towards long-term initiatives
- proactiveness in seeking opportunities for supporting DOE initiatives
- improved capacities, capabilities, and/or cost efficiencies for other financial processes not addressed in measure 2.2
- positive customer feedback

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) prepares an annual update to its FMS plan. The FY 1998 update was timely, forward-looking, logic-based and will help the Laboratory and the CFO achieve improved business and financial capabilities. The plan was comprehensive and well organized. It appropriately described the current systems activities and major plans for 1998 and 1999. The plan highlighted accomplishments related to the new FMS and reported on progress toward migrating from legacy systems and applications in the current year. Refining of the new general ledger system including project costing modules and training Laboratory staff how to use them received major emphasis in 1998 because it provides great value immediately. This was in addition to the implementation of a new Labor Distribution System early in the fiscal year. Benefits of the Labor Distribution System include more efficient distribution of labor and payroll burden, easier resource adjustments, and avoiding errors that occurred under the previous outdated system.

The general ledger and accessory systems respond to DOE’s needs and initiatives by allowing for interactive project set up and automatic linking to DOE’s Management Analysis and Reporting System, Budget and Reporting codes, and appropriations.

LBNL accomplished all gradients required for a good rating plus several other gradients that contribute to higher rating.

Long-Term Initiatives: LBNL's Financial Management Systems Plan updated in May 1998, includes a vision schematic showing completed and ongoing systems improvements, eminent and longer-term plans. It is evident that LBNL prioritized near-term enhancements in financial systems to provide additional information, make information more useful to internal and external users, and provide better integration between major systems and personal computers software. There are longer-term plans to incorporate data enhancements for space administration, travel, sponsored project tracking, work for others, and accounts payable. There is ample evidence that there is focus on long-term enhancements.

Pro Active in Supporting DOE Initiatives: As reported in its self assessment, LBNL actively developed systems in support of DOE initiatives. Joint developments between the Laboratory CFO and other groups are contributing to electronic data interchange for payments and data to measure performance and productivity. The Laboratory also restructured its own accounts according to the Government Standard General Ledger chart of accounts in advance of DOE. During FY 1998 Work for Others order numbers were inserted in funding and cost accounts, and Work for Others funding was reconciled. At year end, LBNL was successful in automating the process to re-distribute costs according to DOE's responsibility and business lines segments.

Improved Capacities, Capabilities and Efficiencies: Laboratory CFO staff continue to provide timely and accurate responses to more frequent and more detailed DOE requirements despite new systems and staff changes. This is an indication that systems are working properly.

OAK is pleased to note LBNL plans to make improvements to facilities information management systems as this is an area that seems to need attention. In the past LBNL has been slow in closing construction projects to completed plant. There seem to be variances between Laboratory detailed information and the DOE summary level. Transactions recorded do not always fall within MARS edit parameters, and data in DOE's accounts for plant, construction work-in-process, and inventories do not always summarize properly.

Positive Customer Feedback: The Laboratory's performance presentations related to customer service and self assessment report presents documentation that meeting customer needs is important in systems planning and development. In addition, users were provided instruction and assistance in using new systems. It appears that concerted effort to identify and meet customer needs received ample emphasis in designing and implementing systems.

Performance Rating (Adjectival): Outstanding	94.00%
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Criteria:	2.2	Transaction Processing Improvements
Reduce cycle times and/or costs while improving quality and accuracy for the processes identified. (Weight=13%)		

Performance Measure:	2.2.a	Demonstration of Improvement
Evaluation of improvement trends for processes selected for improvement towards best practices as compared with benchmarking information. Showcase areas of excellence. (Weight=13%)		

Assumptions:

The Laboratory’s finance and budget organizations will conduct benchmarking studies for financial processes identified in the study methodology every two years. The Laboratory will analyze the benchmarking results and select processes to be measured and improved prior to the next benchmarking study. The Laboratory will present its study findings and areas selected for improvement to its DOE customer for concurrence. Additional improvement processes may be selected in conjunction with the DOE. The Laboratory will also use the benchmarking information to select and demonstrate areas of excellence to feature in its self assessment. The selected processes will be measured and featured in the annual self assessments during the two years between benchmarking studies. Where necessary and appropriate, benchmarking measures will be augmented with qualitative information and other performance indicators for the selected processes.

Gradient:

A Good rating is achieved by demonstrating that selected process improvements are progressing in accordance with the Laboratory’s plan.

Factors that will be considered for a higher rating include:

- process improvements resulting in performance above the benchmarking median
- processes performed close to the benchmarking study’s first quartile level
- high levels of product/service quality are maintained
- effective linkage to Objective 1.0
- percent of processes maintained above the benchmarking median
- featured areas of excellence reflect outstanding performance

Performance Narrative:

Areas to be addressed in this measure are selected processes performed by general accounting, accounts payable, accounts receivable, payroll, and travel and associated efficiencies. Topics include management of suspense accounts, accounts receivable including “bridge funding,” accounts payable, discounts and payment scheduling, which were identified as areas to be highlighted in a meeting between DOE Finance, LBNL and UC Laboratory Administration on March 28, 1998. Another highlighted topic related to asset accounting is addressed in measure 3.2a.

Overall performance in the areas included in this measure was sustained and satisfies the gradient for a good rating. As discussed below, performance and efficiency improved for some processes while others slipped.

The Laboratory’s cost per transaction in accounts payable, accounts receivable, payroll and travel is better than the IMA benchmarks. High level of service and quality were achieved in accounts payable, managing interim funding for non-DOE work, i.e. bridge funding, and quick closing the general ledger at month end. These areas are considered very important to the Department as they have been areas of concern in the past and are emphasized currently.

Management of Suspense Accounts

Performance in monitoring and clearing suspense accounts in 1998 was not as good as in prior years. The average cumulative amount posted to suspense in 1998 was \$287K, about \$200K less than in 1996, but more than \$100K than in 1997. The Laboratory reasonably explained the decline in performance in 1998 is due to the systems and procedures changes, and faster closing of General Ledger. Laboratory information presented shows suspense balances were at an all time high in February 1998 and decreased slowly but steadily in the second half of the year. While the actual transactions and amounts posted to suspense increased, procedures for assigning responsibility and clearing suspense items were improved.

The Laboratory anticipates that as new subsidiary systems are debugged and cross referenced to the general ledger a greater percentage of costs will be correctly recorded directly to the general ledger rather than rejected and temporarily posted in suspense. At FY 1998 year-end all suspense balances were cleared as required.

Based on the expectation that it takes time to debug new systems and procedures, and on the improving performance in the second half of the year, DOE OAK considers performance in this area good despite the increase in amounts posted to suspense. It is expected that number of transactions and cumulative values posted to suspense at the end of interim months should decrease dramatically in FY 1999.

General Ledger Cycle Time

The number of days to close the Laboratory's General Ledger averages 2.5 days, less in some months. Consequently the Laboratory has been transmitting monthly MARS data earlier than DOE OAK's deadline.

Accounts Payable

Accounts Payable was highlighted as an area of excellence for FY 1998. Performance improved over last year in two of three elements of accounts payable functions which includes discounts, on-time payments, and cost per transaction. Approximately 85 percent of available discounts were taken

which was about the same as previous years. However, 92 percent of payments were made on time compared to 86 percent in 1997 while the cost per transaction decreased from \$5.90 to \$5.21.

The Laboratory reported that when compared to the IMA's Continuous Improvement Center benchmarks of 0.161 percent for first quartile, and 0.249 percent median, its 1998 transaction processing cost of 0.154 percent of total revenue is below the first quartile.

Accounts Receivable

LBNL's performance in collecting and maintaining current Accounts Receivable was very good in 1998 although not quite the outstanding level achieved in FY 1997. Accounts more than 90 days past due increased from \$83K at September 30, 1997 to \$222K at September 30, 1998. However, as noted by the Laboratory in its self assessment report, invoiced revenue also increased over 20 percent in 1998.

At the same time, the Laboratory reports that efficiency was maintained or improved. In its self assessment the Laboratory reported that its \$11.48 cumulative average processing cost per billing compares favorably with IMA benchmark standards of \$12.60 minimum and \$11.65 target. Also, processing costs as a percentage of prior year's revenue falls within the first quartile of participants in the IMA study for participants with revenues under one billion dollars. However, it came to our attention that the information presented in the Laboratory's self assessment, i.e. \$11.48 cumulative average processing cost was not comparable to previous years reported data. LBNL's costs per invoice billed in previous years' were \$7.07 in 1995, \$4.91 in 1996, and \$5.20 in 1997. OAK/FIN was unable to reconcile this reporting discrepancy during the validation period since the responsible LBNL CFO staff person was unavailable. Accordingly, we requested the Laboratory's Accounts Receivable unit to provide the 1998 cost per invoice on the same basis as prior years. LBNL indicated the comparable cost is \$4.62 per invoice. Therefore, DOE OAK concludes that efficiency in this area improved slightly from prior years.

The average monthly funding provided by the University to cover lapses in funding (Bridge Funding) was under \$100K in 1998, slightly lower than the \$107K in 1997. Monthly reports submitted by the Laboratory indicate funding is monitored closely and arrangements made to assure funding is on hand before cost is incurred.

The Laboratory was proactive in seeking ways to accelerate collection from Defense agencies who have historically been slow in paying. The Laboratory provided DOE OAK with a list of their Defense customers which was forwarded to DOE HQ to determine which customers are on the Government's On Line Payment and Collection system. This project is ongoing.

Payroll

The payroll Department was organizationally realigned in 1998 providing an opportunity for Payroll and Human resources to matrix one full time equivalent position contributing to a favorable cost performance. In addition, service to employees improved as the reorganization aligned payroll, benefits and other human resource services in one department.

Performance exceeded target in that actual cost of \$4.59 per payroll payment was lower than the target of \$5.11 based on IMA standard although actual cost per transaction increased from \$2.90 in 1997 and \$3.35 in 1996. Performance exceeded the IMA benchmark median, .0987 percent of Laboratory revenue, for payroll costs.

The payroll department has taken advantage of technology to file required state and Federal payroll reports electronically. Staff were trained in Federal and State legal requirements and all requirements were met.

Travel

Practically all (99.9 percent) domestic travel vouchers were closed within the target of 7 days. The Laboratory intends to establish future maintenance targets with appropriate consideration to management priorities. Travel Accounting and General Ledger are collaborating to implement electronic funds transfer for travel payments. DOE OAK supports this plan since use of electronic payments is a "Best Practices" goal that provides customer service while keeping costs down.

The amount of outstanding advances, i.e. unsettled vouchers reported in Account 1413, decreased about \$3K during FY 1998 to \$43K at the end of the year. The Laboratory's cumulative cost per travel claim through June 1998 is \$25.66 which is below the IMA standard target of \$33.75.

Performance Rating (Adjectival): Outstanding	90.00%
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Criteria:	2.3	Work Force Management
Develop a highly skilled, motivated, empowered Financial Management Work Force.		(Weight=10%)

Performance Measure:	2.3.a	Effective Work Force Management
Evaluation of processes, systems, and initiatives related to Financial Management work force management.		(Weight=10%)

Assumptions:

Narrative to describe the management of processes, systems, and initiatives related to the finance and budget work force.

Gradient:

A Good rating is achieved by establishing a systematic approach to Financial work force management.

Factors that will be considered for a higher rating include:

- span of control ratios
- number and effectiveness of self-directed work teams
- merging of related functions
- training and development activities
- alignment of individual performance objectives/appraisals with Financial Management objectives

Performance Narrative:

Lawrence Berkeley National Laboratory’s (LBNL) CFO implemented many innovative processes and initiatives during FY 1998 to ensure a comprehensive systematic approach to work force management as well as continued those determined to be effective last year. LBNL has also incorporated the following areas to support the higher rating: span of control ratios, number and effectiveness of self-directed work teams, merging of related functions, training and development activities, alignment of individual performance objectives/appraisals with Financial Management Objectives.

Systematic Approach to Financial Work Force Management. A comprehensive program, “Taking Advantage of Change,” was implemented this year. This major training effort directed training at both management and staff and provided both with the necessary tools to shape and direct change efforts beneficial to both. The framework and outcomes of the various workshops, retreats and management

sessions were reviewed. As with any new process, some changes are quick and apparent, however, the full impact may take some time to be felt.

Span of Control Ratios/Merging of Related Functions. The CFO organization decreased in staffing by 14 percent during FY 1998. The corresponding workloads were absorbed by the elimination of work, improved processes and new systems. Budget and Cost Accounting areas were impacted by loss of staff when combined under the comptroller. DOE OAK validated the restructuring of several of the CFO organizations, however, the CFO did not provide any span of control ratios for this assessment period.

Number and Effectiveness of Self-Directed Work Teams. Although not supported by narrative in the final self assessment statement, LBNL continues to perform many tasks and projects utilizing the concept of self directed work teams. DOE OAK validated the results of a work team tasked with reviewing the accounts payable process from receipt of invoices through payment. The outcome included reorganizing vendors along alpha structure rather than by type of purchase mechanism.

Training and Development activities. LBNL CFO heavily emphasizes training for its staff. In addition to the major effort, “Taking Advantage of Change”, advanced training has begun for the new FMS system implemented in the previous year. DOE OAK validated a Cost Accounting Standard (CAS) seminar that was heavily attended by CFO staff. It was also noted, training notification and registration is easily accessible via email, the web, CFO’s weekly newsletter and word of mouth. A successful transition from the Macintosh platform to a Windows environment is in process.

Alignment of Individual Performance Objectives/Appraisals with Financial Management Objectives. Four areas were realigned and/or new initiatives implemented during FY 1998. A win/win initiative was implemented in the Accounts Payable (A/P) area. A/P implemented a new way of doing business which resulted in faster and more effective customer service for its vendors; cross training for A/P staff; and a more efficient way for management to provide oversight and improve related processes.

Overall, LBNL’s performance was **outstanding** in the development of a highly skilled, motivated, empowered Financial Management Workforce. An opportunity for improvement for LBNL CFO would be to assure and document staff input/feedback into the process of developing a highly skilled, motivated and empowered financial management workforce.

Performance Rating (Adjectival): Outstanding	90.00%
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Performance Objective: #3	Financial Stewardship and Integrity
Financial Management's practices provide for financial stewardship, including compliance and data integrity. (Weight=40%)	

Criteria: 3.1	Cost and Commitments are Managed Properly
Ensure that all costs and commitments are within DOE-authorized funding levels and that costs and commitments in excess of such levels are properly reported and recorded. (Weight=10%)	

Performance Measure: 3.1.a	Costs and Commitments are Controlled to Appropriate Funding Levels
Effectiveness of the Laboratory to Control costs to B&R Level 9 and control costs plus commitments within authorized major funding levels (Obligation Control Level). (Weight=5%)	

Assumptions:

Within funding levels defined as within identified funding in the contract modifications.

"Commitments" are defined as uncosted balances under contracts awarded by the Laboratory that are set aside or encumbered, including purchase orders issued; contracts and subcontracts awarded, including the full liability under lease purchases and capital leases; termination cost for incrementally funded firm fixed price contracts, operating lease agreements, and multi-year service contracts that contain termination clauses; and other agreements for the acquisition of goods and services not yet received and uncosted balances related to other integrated M&O contractor liabilities.

Meeting the objective of this performance measure is applicable only at year end for Construction, Operating and Capital Equipment funds. Line item capital equipment and construction is applicable monthly. A narrative will be written to describe the Laboratory's performance relative to this measure. The narrative will identify the number of Obligation Control Level (OCL), B&R Level 9, line item capital equipment, and construction funding categories being measured.

Gradient:

A Good rating is achieved by staying within funding levels as defined above.

Factors that will be considered for a higher rating include:

- training and development
- other proactive activities to effectively manage and control funds
- controlling costs within funding levels identified in the contract modification
- for each accounting period

Performance Narrative

Lawrence Berkeley National Laboratory (LBNL) exceeds the objectives for this measure by maintaining costs and commitments within authorized funding levels (ECOR) and having processes in place to monitor and control costs at the B&R level 9 during the entire fiscal year. No reportable violations have occurred. LBNL has engaged in numerous proactive activities to improve the effectiveness of funds control. Communication between the Controller’s staff and the programmatic administrators has improved. This involves formal meeting and working together with the programmatic divisions, developing meaningful reports, and including them in the development of the FMS. With the joint effort of the divisions, the CFO is now able to more efficiently control costs.

LBNL continues to expand their training and development program. They now have the Finance Forum with division administrators to discuss and review financial policies and procedures. The annual Budget Workshop is conducted to provide training on the federal budget process, the DOE funding process and cost estimating.

The B&R Status report has been improved to include all funding types and to show monthly liens so that costs and commitments are monitored. With this tool, Budget is proactive in the process to ensure action plans are in place covering projects at the 80 percent completion level.

LBNL goes beyond the minimum requirements of this measure by controlling costs and commitments within the identified funding levels. As they continue to improve their training and development program, the resource administrators become more efficient managers of their funds. Their enhanced FMS systems and updated reports leads to better cost decisions and control. For all these reasons, LBNL receives an **outstanding** rating.

Performance Rating (Adjectival): Outstanding	94.00%
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Performance Measure: 3.1.b	Control of Funds
Evaluation of proactive activities designed for control of funds.	(Weight = 5%)

Assumptions:

Narrative describing initiatives.

Gradient:

A Good rating is achieved by implementing an effective process for mitigating administrative control of funds violations.

Factors that will be considered for a higher rating include:

- process improvements
- identify control improvements and enhancements
- awareness training
- timely notification to DOE of significant changes in projected year-end uncosted balances.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) exceeds the objectives of this performance measure by demonstrating they have a process in place to avoid funds control violations. Some of the controls include providing automated reports to advise of potential cost overruns and meeting with project managers to analyze and identify potential cost overruns.

To further enhance and improve their control process, the new Financial Management System (FMS) was implemented this past year. The budget system that will benefit all was developed with the input of the internal customers. Once fully implemented, LBNL will have much greater reporting and control for the customers as well as the central financial office.

The B&R Status report has been improved to include all funding types and to show monthly liens so that costs and commitments are monitored. With this tool, Budget is better able to assist the programmatic administrators with the control and management of their funds.

LBNL continues its awareness training, with the Budget Workshop, Finance Forum, on line Cost Accounting Standards Cookbook, and individual training.

Process enhancements to provide more effective and timely information, increased training in resource management, improved communication with the program administrators all reflect that LBNL is **outstanding** in this measure.

Performance Rating (Adjectival): Outstanding	92.00%
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Criteria:	3.2	Financial Management Practices
<p>Ensure that financial management and reporting practices fully disclose the results of operations and contain accurate, useful, timely information for program and fiscal management needs.</p> <p style="text-align: right;">(Weight=20%)</p>		

Performance Measure:	3.2.a.	Financial Policies, Practices, Data, and Reports
<p>Evaluation of the level to which the Laboratory's financial policies, practices, data, and reports conform with applicable DOE requirements.</p> <p style="text-align: right;">(Weight=20%)</p>		

Assumptions:

Provide a narrative description of the financial management practices performed to better manage DOE's accounts with primary emphasis on accounts or processes identified by the Laboratory and DOE as high risk.

Gradient:

A Good rating is achieved by demonstrated incremental improvement in financial management practices of the high risk areas to ensure that financial practices, policies, data, and reports are consistent with DOE requirements.

Factors that will be considered for a higher rating include:

- results of financial statement audits
- results of CAS Disclosure Statement reviews/revisions
- significant improvement in the financial practices of high risk accounts or processes
- improvement in the financial practices of other low risk accounts while maintaining good practices for high risk accounts
- proactive interaction with the DOE with respect to financial management matters

Performance Narrative:

Financial management practices related to several highlighted functions were discussed under Measure 2.2a. LBNL continued to maintain and upgrade the Laboratory financial management system and supporting subsystems to provide all the required financial information to the Department. DOE required changes, i.e. additional accounts, changes in budget and reporting codes, addition of project

codes, and addition of order numbers were implemented correctly as scheduled. Financial policies, practices, accounts and reports were consistent with DOE requirements throughout the year.

In addition, the Laboratory put special efforts into analyzing procedures related to closing construction projects to completed plant in response to an Inspector General audit finding in 1997. The Laboratory revised its project closing procedures and provided training to Laboratory staff to assure projects are closed timely. The "Capitalization Recap Form" used as the source to record completed plant was revised in December 1997 to capture the earlier date, i.e. beneficial occupancy, or project completion. The Laboratory's Work in Process account decreased by more than \$32 million in FY 1998. Laboratory staff have made plans to continue analyzing the accounts related to plant assets and monitoring construction close out procedures in FY 1999. No new control weaknesses were identified in the FY 1998 Inspector General audit.

There were improvements or continuing monitoring of emphasized areas as discussed in measure 2.2a. In addition, LBNL consistently monitored its vendor and payroll bank accounts and effectively kept balances in the accounts to a minimum by computing the amount to be drawn from DOE's letter of credit correctly and timing the drawdowns appropriately.

Laboratory CFO staff pro actively supported DOE initiatives in many financial areas including:

- Work Order numbers in DOE's MARS.
- Submitting regular reports or specific responses on financial management areas including technology transfer, accounts receivable, funding status, banking, property management, and inventory.
- Analyzing or documenting annual updates to unfunded liabilities.
- Managerial Cost Reporting.
- Financial Statement Analysis and supplemental information.

During FY 1998 LBNL revised Part IV, Indirect Cost, of its CAS Disclosure Statement to reflect all accounting practice changes approved by DOE OAK as well as several changes to reflect organizational changes since the last Disclosure Statement was issued. LBNL has generally been proactive in interactions with DOE and responsive to issues and concerns raised during our interactions. LBNL continues to explore ways to refine and streamline its cost distribution practices by obtaining input from laboratory scientific and administrative division personnel.

During FY 1998 LBNL implemented its new Financial Management System (FMS) based on its disclosed cost accounting practices. Early in FY 1998 after indirect cost distributions were made, division personnel indicated "fellowships" should not be charged/allocated organizational burden costs based on established practices. LBNL brought this issue to DOE OAK's attention and was going to research it further. LBNL acknowledged, however, the established practice was not proposed by LBNL nor approved by DOE in the CAS Disclosure Statement. During our validation LBNL stated organization burden is charged to all projects, including fellowships, consistent with LBNL's disclosed practices.

LBNL has been involved in the DOE departmental efforts to improve the reliability and usefulness of Functional Support Cost and MacLachlan Metrics by participating in peer reviews, surveys and other meetings.

Usually proposals for submission of provisional rates are documented and well supported. The FY 1999 proposal for accounting practice changes requiring DOE approval, however, was incomplete.

OAK's concurrent review of the FY 1999 through FY 2004 Provisional Indirect Cost rates disclosed two cost distribution practice changes which were not disclosed to OAK because LBNL felt they were organizational but not accounting practice changes. During the discussions with LBNL, it was not clear who at LBNL was responsible or LBNL's methodology for determining whether Clause 3.9 of the Contract 98 was met with respect to cost accounting practice changes requiring disclosure and approval. This may be an area LBNL could describe and self assess as part of its internal controls/compliance management in FY 1999.

In addition, during our Laboratory Directed Research and Development Certification Review, we noted apparent inconsistencies in space charging practices. We asked LBNL what financial management policies or practices exist to achieve equitable and consistent charging practices. LBNL indicated no financial management policies exist which specifically address the allocation of space costs. DOE OAK considers this an area of increasing financial management risk in terms of accurate cost distribution and reporting since the space recharge rate per square meter has increased from \$38.48 (FY 1997) to \$78.00 (FY 1998) to \$110.00 (FY 1999) or by 189 percent from FY 1997 to FY 1999. LBNL financial management should validate the appropriateness of space allocation to final cost objectives at LBNL. Accordingly, this is a recommend area for LBNL to describe and self assess in its internal controls/compliance management in FY 1999. This recommendation was discussed with LBNL CFO staff during the validation effort, and LBNL CFO staff concurred.

Performance Rating (Adjectival): Excellent	89.00%
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Criteria: 3.3	Effective Internal Controls and Compliance
Provide for effective internal controls and ensure timely and effective resolution of identified weaknesses. (Weight=10%)	

Performance Measure: 3.3.a	Internal Controls/Compliance Management
Degree to which an effective system for identifying, reviewing, and correcting (if identified) financial management internal control/compliance processes. (Weight=10%)	

Assumptions:

Describe and self assess the effectiveness of the internal controls and financial management techniques employed to minimize and mitigate risks for the major financial management processes identified in conjunction with DOE.

Gradient:

A Good rating is achieved by accurately describing well designed and well deployed systems/processes for managing internal controls and compliance concerns/weaknesses.

Factors that will be considered for a higher rating include:

- a risk prioritization system that demonstrates laboratory focus on high risk financial management control/compliance areas
- prompt completion of corrective actions
- process improvements
- aggressiveness of corrective action schedules
- effective process for identifying with DOE, annual target areas
- proactive leadership in addressing and correcting internal and external audit findings and concerns related to financial management practices

Assumptions:

Where appropriate incorporate, in the self assessment, historical trends as the data becomes available.

Laboratory-specific targets identified by end of January of each year contingent on availability of benchmarking results.

Laboratory-wide cost savings initiatives require the highest level of visibility and

Laboratory commitment. For this reason, Performance Objectives, Criteria and Measures (POCMs) addressing cost savings are included in the Laboratory Management POCMs instead of here in the Financial Management section.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) and DOE OAK jointly selected five areas LBNL would self assess during FY 1998. DOE OAK's comments on the jointly selected areas are as follows:

1. Related Party Transactions. LBNL's most recent published financial statement for FY 1996 identifies work performed for related party sponsors. This represents an incremental improvement over prior financial statements for "inflow" transactions. In addition, LBNL's self assessment indicated reports were developed that track payments to date against related party purchase orders using a coding matrix and these reports would be used periodically and at year-end to identify and disclose "outflow" transactions. In addition, we asked LBNL its process for identifying and disclosing those "outflows" based on non-purchase order transactions. LBNL indicated it had not yet fully developed the process because related party transactions are not considered a high risk area. However, a contributing factor may also have been a lack of personnel continuity since the person who previously worked with DOE OAK early in the fiscal year to develop the coding matrix is no longer with LBNL. During our validation effort, since the FY 1997 financial statements had not yet been completed, we requested LBNL run the reports for FY 1997 and FY 1998 which identify the universe of all related party transactions. LBNL CFO staff indicated they would continue working to develop a system to fully identify the universe of related party transactions and provide the results to DOE OAK.

2. Operating versus Capital Accounts. LBNL was to self assess the sufficiency of documentation and processes that determine whether a project is an operating or a capital asset. Also, document the lease vs. purchase decision, with specific attention to process by which the lease is determined to be operating vs. capital and document the process whereby Work-in-Process is turned into a capital asset on capital projects.

In response to an audit finding, LBNL took prompt actions to implement process improvements which include the beneficial occupancy capitalization requirement. However, LBNL's self assessment did not discuss its documented process for determining lease versus purchase decisions. During our validation effort, LBNL CFO staff indicated it doesn't have any leases, but would coordinate with its Procurement Department and follow-up with DOE OAK at a later date.

3. Cost Transfers. Under LBNL's new FMS system the terminology for "cost transfer" has been changed to "resource adjustment." Accordingly, we will use the term cost transfer and resource adjustment interchangeably in this section.

LBNL proposed to follow-up on an Internal Audit of the cost transfer process, especially for transfers less than \$1,000 in value. LBNL's CFO staff performed a survey to determine the feasibility of eliminating cost transfers below a certain dollar threshold. OAK did not concur with the focus on eliminating cost transfers but rather to focus on analysis and reduction of the volume of cost transfers identified. For example, based on the statistics cited in the internal audit report and the concept of materiality, a significant number of individually small transactions can become material. That is, 73

percent of 37,200 resource adjustments is 27,156 transactions less than \$1,000. This equates to a potential exposure of \$27,156,000, which in our opinion is material.

LBNL CFO has delegated to the divisions the authority to enter and perform the initial validation on resource adjustments. The division's also maintain the supporting documentation. CFO staff perform an online budget validation and processes the transaction by posting it to the ledger. During our validation, CFO staff indicated they do not necessarily plan to test check the quality and accessibility of the back-up documentation maintained by the divisions. We believe certain resource adjustments are inherently high risk and require financial management focus to assure accuracy of the accounting data being processed and reported. CFO should devise a plan for periodic testing of support documentation. Numerous process improvements were implemented to streamline the automated input of resource adjustments and reduce the number of corrections required due to implementation of front end controls.

4. Procard Reconciliation. LBNL proposed reconciliation with the General Ledger (GL) of 50 percent of the Pro-Card Transactions by FY 1998. Reconciliation of the GL procard liability account to the procard bank statements are underway. The reconciliation is made more difficult because the bank's statement closing dates differ from LBNL's monthly closing dates. To improve the process: (i) on a monthly basis Procurement is performing a cross-check by comparing the number of transactions and dollar amounts on the ProValue Phase 2 report to the totals generated by the GL and (ii) Procurement provides AP (Accounts Payable) copies of all spending and payment reports from the bank.

5. Accounts Payable Reconciliation. LBNL proposed to identify and analyze the remaining reconciliation items in the Liability Accounts by Fiscal Year Ending September 1998, including a proposed work plan and time-line for completion. During our validation effort, LBNL indicated it has completed its FY 1997 reconciliation and is current through January 1998. According to LBNL, it has not identified any material adjustments. LBNL also will initiate efforts to reduce the number of liability accounts from the 27 it currently has.

In addition to the five areas selected for self assessment, to be considered for a higher rating LBNL must demonstrate: (i) focus on high risk financial management areas, (ii) leadership in prompt and aggressive completion of corrective actions resulting from findings and concerns related to financial management practices, and (iii) process improvements.

Financial Management Risk Assessment. LBNL's Controller receives monthly assurance letters from the General Accounting and Accounts Payable Manager's which state the manager has reviewed all high risk areas under his/her sphere of responsibility. Those areas rated high or medium risk require a plan of action. In FY 1998 this process lead to the Accounts Payable manager getting an additional FTE to focus on procard and accounts payable reconciliation's. As the responsibilities of the Controller have increased during FY 1998, he may want to consider expanding this program to other financial management functions. Also, as discussed, discussions of risk areas are an ongoing process. In our opinion, completion of the assurance letters on a quarterly basis would serve as adequate documentation of the process.

Corrective Action Tracking. LBNL's self assessment included information only on audit reports issued during FY 1998 without discussing comprehensive data on the universe of findings/concerns and scheduled completion dates which demonstrate prompt completion of corrective actions. As part of our validation effort, we requested that LBNL provide the universe of open/current corrective actions being tracked. The initial tracker provided to DOE OAK did not include the two reports which

LBNL cited in its self assessment. After our discussions, LBNL subsequently updated the tracker to include those reports. The reports in question had not been received by the staff person who updates the tracker. LBNL should assess its process for audit report distribution since the corrective action tracking process begins upon receipt of completed reports which require corrective actions. On a quarterly basis, follow-up with the responsible CFO Unit is conducted. When identified as completed, documentation of the completed action is requested.

Overall, LBNL has demonstrated incremental improvements in internal controls/compliance management during FY 1998 based on its risk prioritization system and focus on high risk activities. We encourage LBNL to broaden its internal concept of risk to include consideration of risks to DOE (related party transactions) and establish processes to promote continuity in the event of changes in personnel.

Performance Rating (Adjectival): Excellent	83.00%
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Performance Area: HUMAN RESOURCES

Performance Objective: #1 Cost Effectiveness

The Laboratory will strive to achieve cost effective HR systems and practices. **(Weight=32%)**

Criteria: 1.1 Review and Evaluation of HR Systems and Processes

HR systems are processes reviewed and evaluated in order to optimize the delivery of services with respect to quality and cost. **(Weight=11%)**

Performance Measure: 1.1.a Evaluation of HR Systems and Processes

The Laboratory will critically examine HR systems and processes. **(Weight=11%)**

Agreements:

1. The Laboratory will critically examine and document the system for identifying supervisors, managers and confidential employees.
2. The examination will emphasize increasing efficiencies and eliminating redundant work.

Gradient:

Good:

Identification and accurate quarterly reporting of the names of supervisors, managers, and confidential employees to ensure that employees are correctly classified.

Excellent:

No unfair labor practices charges or grievances are received based upon incorrect identification of supervisors, managers, or confidential employees.

Outstanding:

The Laboratory completes the system review identified for FY 98, implements appropriate actions to correct identified deficiencies and begins another high priority HR system review.

Performance Narrative:

The Lawrence Berkeley National Laboratory (LBNL) Human Resources staff critically examined during FY 1998 the Laboratory systems and processes for identifying supervisors, managers and confidential employees as defined under the Higher Education Employee Relations Act (HEERA). This examination revealed that the LBNL's past systems/processes did not maintain current information needed to identify and subsequently track supervisors, managers, and confidential employees, and resulted in utilization of the PeopleSoft Human Resource Information System (HRIS) as the tool for maintaining data on supervisors, managers, and confidential employees. LBNL anticipates that HRIS will increase efficiency and eliminate redundant work by allowing those who know the employees and their work best (i.e. division personnel) to input initial data on supervisors and managers.

The Laboratory reports receipt of one unfair labor practice charge based on incorrect identification of supervisors, managers or confidential employees. LBNL is in the process of trying to resolve the charge.

The completion of the Laboratory's critical examination and documentation of the system to identify supervisors, managers, and confidential employees should result in an efficient system which reports accurate information on these groups of employees. Thus, a rating of **good**, is provided for the Laboratory's FY 1998 performance under this measure.

Performance Rating (Adjectival): Good	78.00%
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Criteria:	1.2	Workforce Planning/Staffing
The Laboratory has an effective, integrated workforce planning system		(Weight=10%)

Performance Measure	1.2.a	Workforce Planning
Evaluation of the effectiveness of the Laboratory's workforce planning system.		(Weight=4%)

Agreements:

HR will initiate a process for partnering with the Directorate and the major programmatic division customers (Computing Sciences, Energy Sciences, General Sciences, Life Sciences) to develop proactive workforce pre-planning consistent with new scientific initiatives.

1. "Process" will be regular meetings, at least quarterly, with the Directorate and key programmatic division customers.
2. HR will produce tailored staffing/recruitment/training plans to address new scientific initiatives.
3. Workforce planning strategies will be aligned with the Laboratory's Institutional Plan and supportive of the principle of the DOE contractor HR Strategic Plan.

Gradient:

Good:

Quarterly pre-planning meetings are held with the Directorate and the major programmatic division customers (Computing Sciences, Energy Sciences, General Sciences, Life Sciences) to develop proactive workforce pre-planning consistent with new scientific initiatives.

Excellent:

A plan with milestones and a schedule is developed for conducting a baseline assessment of current workforce composition and demographics.

Outstanding:

A dynamic methodology (i. e., one that is responsive to changing circumstances) is developed to connect current workforce with future needs.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) initiated a process for partnering with the Directorate and the major programmatic division customers, as agreed under this performance measure. Although the process was initiated, a mid-year change in the LBNL-HR managers resulted in less than "orderly or consistent" implementation of the process. Meetings with major programmatic division customers

were held during the first quarter of the fiscal year prior to the change in HR leadership. The new HR Manager continued implementation of LBNL-HR's effort to partner with the Directorate and major programmatic customers and restored order and consistency to the process. The Laboratory's commitment to work force planning is expected to solidify HR linkage with customers.

Significant steps were taken by LBNL-HR during the assessment period to support work force planning at the Joint Genome Institute facility at Walnut Creek. LBNL-HR is also finalizing a questionnaire (currently in draft) to be used as a planning tool during discussions with each division. Although no target date was given for implementation, LBNL-HR does plan to obtain input, about projected uses, from division management prior to implementation of the questionnaire. Areas to be discussed with divisions include needed skills, succession planning and identification of training needs.

Performance Rating (Adjectival): Good	78.00%
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Performance Measure: 1.2.b Staffing/Recruiting/Supplemental Workforce

Evaluation of the effectiveness of the Laboratory's system, policies, and procedures for the appropriate, cost effective management of recruiting programs, hiring processes, and supplemental labor workforce. **(Weight=6%)**

Agreements:

Recruiting programs

- 1) The Laboratory's recruiting program will be analyzed to determine the most cost effective recruiting strategies.
- 2) "Recruitment strategies" will include newspaper ads, journal ads, trade shows, search firms, Web technology.
- 3) Because FY 98 is the first year of this PM, sufficient data for meaningful analysis may not be reasonably collected within the assessment period.

Supplemental labor

- 1) The results of the critical review will form the basis for tracking and trending the use of supplemental labor.

Hiring Processes

- 1) The Laboratory will not evaluate hiring processes under this Performance Measure.

Gradient:

Recruiting:

Good:

Baseline data collected for future comparison and planning.

Excellent:

Analysis of baseline data and development of a plan to increase the effectiveness of various recruitment strategies.

Outstanding:

Areas for improvement are addressed and demonstrated improvements are indicated by virtue of cost per hire, and evidence of qualified and diverse applicant pools.

Supplemental Labor:**Good:**

Completion of a critical review of the process for identifying and reporting on supplemental labor.

Excellent:

Policy on appropriate use of supplemental labor is developed

Outstanding:

Evidence of forecasting the use of supplemental labor including cost projections and evaluation for cost effectiveness.

Performance Narrative:

Under this performance measure, Lawrence Berkeley National Laboratory (LBNL) agreed to analyze its recruiting program to determine the most cost-effective recruitment strategies and to conduct a “critical” review of supplemental labor usage.

Recruitment: LBNL uses the Resumix system to collect data on recruitment sources. The system identifies the Current Jobs Bulletin as its primary source, and to a significantly less degree, newspaper advertisements, employee referrals, the World Wide Web, and former contract labor. Although the Laboratory was able to determine total FY 1998 advertising costs \$325K through accounting records, a determination of the cost effectiveness of each recruitment strategy could not be made. LBNL is currently reviewing the entire recruitment program and intends to conduct a cost-benefits analysis to decide whether to upgrade its Resumix System or switch to another vendor which will permit tracking of recruitment costs.

One area the Laboratory chose to emphasize under this measure involved recruitment strategies for high priority job groups under the Equal Opportunity Objective #3. This approach was commendable, in that it validates that the recruitment strategies that produce results for general recruitment are beneficial for those areas identified as priorities for the Laboratory. The data collected (other than cost) confirmed that the primary recruitment source for high priority job groups was LBNL’s “Current Jobs Bulletin,” consistent with the finding for general recruitment.

For this part of Performance Measure 1.2.b, a rating of good, above midpoint, is appropriate, given the Laboratory’s recruitment program review and plan to upgrade data collection capability to include collection of cost data.

Supplemental Labor: For the supplemental labor portion of this performance measure, the Laboratory’s performance is considered excellent, above midpoint. The Laboratory’s review of supplemental labor usage included evaluation of the effectiveness of systems, policies, and procedures in place for cost effective management. The review validated the supplemental labor force population with regard to classifications, distribution among divisions and departments, and length of service at the Laboratory. The review has resulted in a 33.7 percent decrease in usage, with significant decline in usage by the three major user organizations (Administrative Services, Facilities and Computing Sciences). In addition, an improved data collection system is now producing timely information on usage and cost Laboratory-wide.

LBL's thorough and critical review of the manner in which **supplemental** labor usage was being managed resulted in development of Guidelines for Managing Supplemental Labor Personnel and a draft policy (to be implemented in early FY 1999).

Performance Rating (Adjectival): Excellent	85.00%
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Criteria:	1.3	Compensation
Compensation is administered in a cost competitive manner which takes into account external and/or internal equity.		(Weight=11%)

Performance Measure:	1.3.a	Baselining
Baseline evaluation of the Laboratory's research and support FTE costs.		(Weight=6%)

Agreements:

1. "Research FTE" are defined as professional staff who are programmatically funded.
2. "Support FTE" are defined as technical and administrative staff who are funded from either overhead or programmatic funds.
3. "Like R&D facilities" will be defined as multi-disciplinary research organizations with representation from both the public and private sectors as mutually agreed between DOE and the Laboratory. "Career" (i.e. benefit accruing) vs. supplemental labor will be reported in separate graphs.

Gradient:

Good:

100% of research and support FTE costs baselined.

Excellent:

Results of baseline evaluation analyzed and presented to Laboratory Management.

Outstanding:

Demonstrated implementation of appropriate recommendations to provide data that will enable management to make informed decisions regarding FTE costs.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) is commended for the commitment and effort to baseline the Laboratory's research and support FTE costs. The Laboratory reports 100 percent of the research and support FTE costs were baselined during the assessment period. An analysis was completed utilizing the "run-rate" method of analysis. LBNL will provide some refinements to the data before presenting it to Laboratory management. DOE OAK considers the establishment of a baseline, and the analysis conducted, a significant step toward the ultimate objective of being able to

provide data to management to help make informed decisions regarding FTE costs. LBNL's performance under this measure warrants a rating of excellent.

Performance Rating (Adjectival): Excellent	82.00%
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Performance Measure: 1.3.b	Effectiveness of Implementation of Market-Based Pay Policy Benchmarking
Benchmark evaluation of the Laboratory's research and support FTE costs in like R&D facilities.	
(Weight=5%)	

Agreements:

1. "Research FTE" are defined as professional staff who are programmatically funded.
2. "Support FTE" are defined as technical and administrative staff who are funded from either overhead or programmatic funds.
3. "Like R&D facilities" will be defined as multi-disciplinary research organizations with representation from both the public and private sectors as mutually agreed between DOE and the Laboratory.
4. "Career" (i.e. benefit accruing) vs. supplemental labor will be reported in separate graphs.

Gradient:

Good:

A comprehensive plan, milestones and schedule in place which includes identification of comparators and job titles included in the research and support categories.

Excellent:

Quarterly status reports reflect progress towards milestones.

Outstanding:

Plan is completed and results are analyzed and presented to Laboratory Management.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) initiated its benchmark evaluation of research and support FTE costs in like R&D facilities. The Laboratory developed a plan that included eight R&D comparator facilities, and appropriate job titles in research and support categories. These multi-disciplinary comparator research organizations include four DOE national laboratories, including Lawrence Livermore and Los Alamos, and four private sector organizations. The Laboratory intends to establish target dates, assignments and more detailed task descriptions for the plan, and provide quarterly reports to assess progress; however LBNL was unable to accomplish these aspects of the measure in FY 1998 due to staffing losses. LBNL's ability to accomplish at least the identification of comparator facilities under this challenging measure warrants a rating of **good**, at midpoint.

Performance Rating (Adjectival): Good	75.00%
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Performance Objective: #2	Work Force Excellence
The Laboratory will develop and motivate its work force to excel in meeting programmatic needs of the Laboratory and its customers.	
	(Weight=16%)

Performance Criteria: 2.1	Performance Management
Effective employee performance management.	
	(Weight=8%)

Performance Measure: 2.1.a	Currency of Performance Appraisals
Evaluation of the system that ensures that each employee is appraised on an annual basis against pre-established, job-related performance criteria is in place.	
	(Weight=8%)

Agreements:

1. The review will consider the following factors:
 - Position description is in place and is appropriate to the job classification.
 - If an Individual Development Plan is required, it is in place.
 - The rating is consistent with the narrative.
 - The appraisal has been completed consistent with institutional guidelines.
2. A 5% random sample will be used which includes proportionate representation from S&E, Admin./Clerical, and Technical job classifications.

Gradient:

Good:

A 5% random sample is completed per the Agreements noted. Feedback is provided to line management and training or other remediation is provided as appropriate.

Excellent:

Analysis for trends which may reflect problems, e.g., poor business practice, liability exposure, cost inefficiencies, and implementation of training or remediation as appropriate based on the results of the analysis.

Outstanding:

Actions to address trend or assessments that the appraisal system is being implemented consistently in all organizations.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) reviewed a 5 percent random sample (133) of Performance Progress Review (P2R) forms for completeness and quality. These P2R forms were reviewed against three gradation levels of quality and completeness and assigned ratings of 1 - 3. The Laboratory reported that 82 percent of the 133 P2R forms reviewed were assigned ratings of 1 or 2, reflecting that all documents were completed. Analysis of those assigned ratings of 2 or 3 disclosed that deficiencies were primarily due to incomplete or missing development plans. LBNL has identified issues particular to each division, and will present training to them which will focus on deficiencies and promote consistent implementation of the performance management system.

A rating of **excellent** is appropriate, given the completion of the random sample, analysis and planned remediation through training.

Performance Rating (Adjectival): Excellent	85.00%
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Criteria: 2.2	Effectiveness of Employee/ Labor Relations
Effectiveness of employee/labor relations programs.	(Weight=8%)

Performance Measure 2.2.a
Measure the effectiveness of complaint resolution.
(Weight=8%)

Agreements:

The Laboratory will trend formal complaints from employees by type of complaint, division/department, job class, type of appointment (also by bargaining unit for represented employees) in order to identify problem areas in need of corrective action.

1. Trend data will be collected and reported quarterly.
2. "Formal complaints" will include administrative reviews, grievances, mediation, litigation and external agency charges. In addition, for labor relations trending, "formal complaints" will also include unfair labor practice charges.
3. It is acknowledged that formal complaints may result from multiple causes. Because FY1998 is the first year of this PM, sufficient data for meaningful trending may not be reasonably collected within the assessment period.

Gradient:

Good:
Trending is conducted per the Agreements.

Excellent:
Data are analyzed and provisions made for corrective action.

Outstanding:
Evidence of reduced number of formal complaints in problem areas identified.

Performance Narrative:

Under this performance measure, Lawrence Berkeley National Laboratory (LBNL) agreed to trend formal complaints from employees in order to identify areas in need of corrective action. As agreed the Laboratory collected trend data and reported it quarterly. Data cuts by appointment type, job class and bargaining unit, as required by the measure, were not considered statistically significant.

Therefore, LBNL determined the most beneficial indicator would be by division or department. This approach is acceptable to DOE OAK.

The Laboratory's Labor and Employee Relations (ER) unit has done an excellent job in identifying the types of complaints received, the organizations in which they occurred, and the determination of appropriate follow-up corrective actions. Performance issues were the most frequently raised concerns by employees during FY 1998. There were 65 (39 percent) complaints related to the performance review process. The next most frequent employee complaint was in the area of attendance with 11 cases.

Corrective actions planned or implemented during FY 1998 include; Performance Review, Sexual Harassment/Hostile Work Place, Employee and Labor Relations training; informal one-on-one or group management sessions; and the assignment of Labor and Employee Relations (LER) specialists to work directly with specifically identified organizations. Finally, it is the Laboratory's position that the authority granted by UC to negotiate independently with several bargaining units will lead to fewer formal complaints from represented employees. This bargaining authority gives LBNL greater flexibility in tailoring terms and conditions of employment with bargaining units.

Performance Rating (Adjectival): Excellent	88.00%
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Performance Objective: #3 Equal Opportunity

Strengthen the commitment to and accountability for equal opportunity, affirmative action and work force diversity. **(Weight=24%)**

Performance Criteria: 3.1 Employment of Women and Minorities

Promote work force diversity and improve the representation of minorities and women in the work force through the development and implementation of strategies and other affirmative action "good faith efforts." **(Weight=24%)**

Performance Measure: 3.1.a Employment of Minorities

An assessment of planning and implementation of good faith efforts designed to improve recruitment, selection and retention of minorities in high priority underutilized job groups. **(Weight=12%)**

Agreements:

1. High priority underutilized groups will be selected at the beginning of the assessment period as defined by each Laboratory. For LBNL, this is October 1. The following factors may be utilized for the designation of high priority areas: underutilization levels, availability levels, placement opportunities and typical size and diversity of applicant pools.
2. The Laboratory will provide a results oriented plan with a purpose of improving organizational performance in the recruitment, selection, and retention of minorities in the selected high priority areas. The plan will display the specific actions which will be targeted for achievement during the fiscal/calendar year and assigned responsibility for those actions. The plan shall incorporate, at a minimum, good faith efforts designed to enhance the following:
 - coupling of outreach and recruitment efforts in high priority job groups
 - systematic effort to measure and report outcomes and impact of the outreach and recruitment process
 - diversity and viability of candidate pools
 - efforts to educate and sensitize the work force to diversity awareness
 - integration of diversity issues in Laboratory operations and the daily fabric of Laboratory life
 - active top management support of diversity considerations, including affirmative action and educational outreach efforts
 - representation of minorities as defined in the Laboratory's Affirmative Action Program

Gradient:

Good:

Plan Development and Execution:

1. Plan Development -- The Laboratory developed a results-oriented plan which clearly communicates the Laboratory's commitment and investment in carrying out its good faith efforts to develop strategies and actions to improve employment and retention of minorities in high priority underutilized job groups. The plan must incorporate, at a minimum, good faith efforts as outlined above.
2. Plan Execution -- Specific actions identified in plan were carried out substantially in the manner and time-frames identified in the plan.

The Laboratory will summarize how the plan was executed relative to the specific actions taken to improve the recruitment, selection and retention of minorities. The summary should include a narrative describing the efforts taken, and any significant outcome or events resulting from the process. The summary should also include statistical analyses assessing the representation of minorities in candidate pools, interviews, placements, and attrition in the specified job groups.

Excellent:

In the aggregate, high priority underutilized job groups show improvement toward full utilization. Job groups not designated as high priority also show improvement or remain at the same level of utilization.

Outstanding:

In addition to the criteria for Excellent, improvement toward full utilization is achieved for each designated high priority group or full utilization is achieved in any of the high priority job groups.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL), as agreed, selected high priority underutilized job groups at the beginning of the assessment period. The Laboratory provided a results-oriented plan for improving performance in employment and retention within high priority underutilized job groups selected. In support of plan execution, data was submitted on applicant pools, interviews, hires and attrition. A summary was not provided, however, to validate implementation of actions identified in the plan.

In a move designed to enhance equal opportunity, affirmative action, and diversity efforts, the Laboratory's Work Force and Diversity Office was relocated near the Laboratory's Human Resources organization. Both Laboratory units consider the move a positive one, and have high expectations for improved partnering and results in this area.

The assessment period for this measure was revised through a Memorandum of Understanding to the nine month period of January 1, 1998 through September 30, 1998. LBNL, however, provided underutilization data for October 1, 1998 through June 30, 1998, and supplemental data addressing only the plan execution for July 1, 1998 through September 30, 1998. It was subsequently agreed that OAK would utilize the data provided to evaluate the measure.

LBNL selected seven high priority underutilized job groups and designed results-oriented strategies to improve representation of minorities in each. In the aggregate, improvement was not achieved in the selected high priority job groups for minorities, as shown below.

High Priority Job Groups	Total Pop.	10/01/97			06/30/98		
		Minorities	%	Total Pop.	Minorities	%	
B04 Comp. Sci/Math Statistics	235	45	19.2	246	48	19.5	
B11 Res. Assoc.	196	58	29.6	207	55	26.6	
C02 Mech. Techs.	109	16	14.7	110	16	14.6	
C03 Elect. Techs.	84	19	22.6	67	17	25.4	
C07 Tech. Assoc.	48	7	14.6	50	7	14.0	
C08 Accel. Oper.	16	3	18.8	13	3	23.1	
E01 Machinists (Entry)	<u>26</u>	<u>6</u>	<u>23.1</u>	<u>27</u>	<u>4</u>	<u>14.8</u>	
Total	714	154	21.6	720	150	20.8	

As shown above, in the aggregate, representation of minorities, in the seven high priority groups, declined slightly from 154 (21.6 percent) to 150 (20.8 percent) during the nine month assessment period, 10/01/97 to 6/30/98. Minority representation increased in three of the seven priority groups during the period.

The Laboratory's Human Resources unit and Work Force Diversity Office (WFDO) met regularly during the assessment period and periodic meetings were held with division directors to discuss plan execution and progress. To help correct problems identified in the data collection area, LBNL has hired a Resumix consultant and temporary Resumix Systems Administrator. Difficulty in collecting complete and accurate data has been a concern for several years.

Given the Laboratory's planning, including involvement of managers, and improved partnering with LBNL-HR, a performance rating of **good** is achieved.

Performance Rating (Adjectival): Good	75.00%
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Performance Measure: 3.1.b	Employment of Women
<p>An assessment of planning and implementation of good faith efforts designed to improve recruitment, selection and retention of women in high priority underutilized job groups.</p> <p style="text-align: right;">(Weight=12%)</p>	

Agreements:

High priority underutilized groups will be selected at the beginning of the assessment period.

1. For LBNL, this is October 1. The following factors may be utilized for the designation of high priority areas: underutilization levels, availability levels, placement opportunities and typical size and diversity of applicant pools.
2. The Laboratory will provide a results oriented plan with a purpose of improving organizational performance in the recruitment, selection, and retention of women in the selected high priority areas.

The plan will display the specific actions which will be targeted for achievement during the fiscal/calendar year and assigned responsibility for those actions. The plan shall incorporate, at a minimum, good faith efforts designed to enhance the following:

- coupling of outreach and recruitment efforts in high priority job groups
 - systematic effort to measure and report outcomes and impact of the outreach and recruitment process
 - diversity and viability of candidate pools
 - efforts to educate and sensitize the work force to diversity awareness
 - integration of diversity issues in Laboratory operations and the daily fabric of Laboratory life
 - active top management support of diversity considerations, including affirmative action and educational outreach efforts
 - representation of women as defined in the Laboratory’s Affirmative Action Program
3. LBNL will observe the dates, deliverables and modified gradient language specified in the Memorandum of Agreement signed by LBNL, DOE, and UCLAO 10/17/97.

Gradient:

Good:
Plan Development and Execution

1. Plan Development -- The Laboratory developed a results-oriented plan which clearly communicates the Laboratory’s commitment and investment in carrying out its good faith efforts to develop strategies and actions to improve employment and retention of women in high priority underutilized job groups. The plan must incorporate, at a minimum, good faith efforts as outlined above.

2. Plan Execution -- Specific actions identified in plan were carried out substantially in the manner and time-frames identified in the plan.

The Laboratory will summarize how the plan was executed relative to the specific actions taken to improve the recruitment, selection and retention of women. The summary should include a narrative describing the efforts taken, and any significant outcome or events resulting from the process. The summary should also include statistical analyses assessing the representation of women in candidate pools, interviews, placements, and attrition in the specified job groups.

Excellent:

In the aggregate, high priority underutilized job groups show improvement toward full utilization. Job groups not designated as high priority also show improvement or remain at the same level of utilization.

Outstanding:

In addition to the criteria for Excellent:, improvement toward full utilization is achieved for each designated high priority group or full utilization is achieved in any of the high priority job groups.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL), as agreed, selected high priority underutilized job groups at the beginning of the assessment period. The Laboratory provided a results-oriented plan for improving performance in employment and retention within high priority underutilized job groups selected. In support of plan execution, data was submitted on applicant pools, interviews, hires and attrition. A summary was not provided, however, to validate implementation of the actions identified in the plan.

In a move designed to enhance equal opportunity, affirmative action and diversity efforts, the Laboratory's Work Force and Diversity Office was relocated near the Laboratory's Human Resources organization. Both Laboratory units consider the move a positive one, and have high expectations for improved partnering and results in this area.

The assessment period for this measure was revised through a Memorandum of Understanding to the nine month period of January 1, 1998 through September 30, 1998. LBNL, however, provided underutilization data for October 1, 1998 through June 30, 1998, and supplemental data addressing only the plan execution for July 1, 1998 through September 30, 1998. It was subsequently agreed that OAK would utilize the data provided to evaluate the measure.

The Laboratory selected six high priority underutilized job groups and designed a results-oriented plan to improve representation of women in each. In the aggregate, LBNL achieved significant improvement in these priority job groups as total employee population declined during the assessment period. This reflects positively on efforts to retain women in the high priority job groups. Additionally, LBNL reported improvement in 5 of the 6 individual high-priority job groups with regard to the representation of women.

10/01/97

06/30/98

	High Priority Job Groups	Total Pop.	Women	%	Total Pop.	Women	%
A03	Admin. Mgt.	66	21	31.8	60	23	38.0
B03	Physicists	181	10	5.5	164	11	7.0
B09	Econ./Anal.	23	1	4.4	26	2	8.0
C02	Mech./Techs.	109	3	2.8	110	3	3.0
C03	Elect./Techs.	84	4	4.8	67	3	4.0
C06	Hlth./Med.	<u>25</u>	<u>9</u>	<u>36.0</u>	<u>30</u>	<u>12</u>	<u>40.0</u>
	Total	488	48	10.0	457	54	12.0

As can be seen above, representation of women improved from 10.0 percent to 12.0 percent during the assessment period. This improvement in representation was achieved as the total employee population declined 6.4 percent, from 488 as of 10/01/97, to 457, as of 6/30/98.

Performance Rating (Adjectival): Excellent	85.00%
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Performance Objective: #4	Customer Needs
Human Resources has a system for identifying and evaluating customer needs and for building and maintaining positive customer relationships. (Weight=14%)	

Criteria: 4.1	Customer Needs Analysis
Requirements, expectations and preferences of internal and external customers are collected and addressed. Strategies to evaluate and anticipate needs are in place. (Weight=14%)	

Performance Measure: 4.1.a	Customer Needs Input
Evaluation of the implementation and utilization of internal and external customer input mechanisms. (Weight=14%)	

Agreements:

Mechanisms will be used to gather customer input regarding HR practices. Practices could be policies, services, programs, systems, processes and procedures. These mechanisms are varied and could include customer surveys, focus groups, customer feedback forms, etc. Measurement will include the extent of utilization of customer input in improving HR practices and will include closing the loop with the customers. Measurement deliverable will be a narrative description of how the laboratory addresses the performance criterion and objective.

Gradient:

Good:

Internal and external customer input mechanisms exist and are utilized to evaluate and improve human resources practices. Input and any changes to practices, whether resulting from feedback or not, are communicated to the customers, as appropriate.

Excellent:

Internal and external customer requirements, expectations and preferences are collected and utilized in a methodical manner to evaluate and improve human resources practices. Methodical manner means the information sought from customer feedback mechanisms and the frequency of collection are clearly defined. New or changes to existing practices are clearly linked to feedback results as well as the laboratory's strategic direction and communicated to the customers, as appropriate.

Outstanding:

In addition to the items identified under Excellent:, other data such as industry standards, utilization of services and operational effectiveness indicators are collected and taken into consideration. Furthermore, Human Resources evaluates and improves its processes for determining customer requirements, expectations and preferences.

Performance Narrative:

Lawrence Berkeley National Laboratory - Human Resources (LBNL-HR) continued its commitment and effort to build upon and maintain positive and productive relationships with internal and external customers. There were staffing concerns, including two changes at the HR Manager level during the assessment period, which affected consistency of implementation of customer input mechanisms. LBNL-HR was able to maintain its focus, and continue efforts to gather customer input as the new HR Manager settled into his position. Meetings between the HR Manager and customers, to obtain input, were resumed immediately after each HR manager came on board. Follow-up actions by selected HR staff were taken to determine customer’s specific concerns and support needs. A primary focus, internally, were concerns and support needs of division directors and other members of the senior management staff.

A number of noteworthy input mechanisms involving internal customers were implemented or planned during the assessment period. These included the expansion of the Labor and Employee Relations (LER) unit, assignment of LER specialists to assist individual divisions, the development of a Web site to facilitate receipt of employee comments on proposed policies, one-on-one meetings between the HR Manager and division directors to obtain feedback on HR services and customer needs, and one-on-one meetings between the Compensation Manager and division managers to ascertain compensation-related needs. Input mechanisms of a more methodical nature include training evaluation forms, exit interview questionnaires, beta testing of new forms and procedures, and the use of focus groups. In addition, the Human Resources Generalists in the decentralized Human Resource Centers have proven to be effective sources of feedback on the operational effectiveness of programs, policies, and procedures and the identification of customer needs within the divisions the Generalists service.

External input mechanisms include frequent meetings between DOE OAK and the current LBNL-HR Manager and staff, and meetings with UC on various issues/actions. These meetings have proven to be beneficial in establishing communication on ongoing needs and issues, and in the resolution of issues in the compensation and labor relations areas.

Performance Rating (Adjectival): Excellent	88.00%
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Performance Objective: #5

**HR Leadership in Deploying
Mission/Business Strategy**

The Laboratory aligns its HR plan with the Laboratory strategic or institutional plan and supports the principle of the DOE contractor HR strategic plan. **(Weight=14%)**

Performance Criteria: 5.1

Alignment of HR Programs

HR programs and policies in recruitment and staffing, compensation and benefits, labor and employee relations, diversity and training are aligned with Laboratory business strategies. **(Weight=14%)**

Performance Measure: 5.1a

Deployment of Strategy

Evaluation of the HR planning process that addresses alignment of HR programs and practices with business plans as well as the well being of the entire work force. Measurement will also include the strategy to communicate with employees, supervisors, and managers regarding HR programs and practices. **(Weight=14%)**

Agreements:

Measurement Deliverable: Narrative description of the above.

Gradient:

Good:

Documented plan to align HR programs and practices with the Laboratory business plans or strategy.
Documented communication strategy.

Excellent:

Evidence of implementation of documented HR plan.

Outstanding:

Evidence of implementation of the HR documented plan and communication strategy that addresses key aspects of the HR planning elements. In addition, the work force planning process addresses the alignment of the work force with business needs such as core mission requirements, cost cutting or budget requirements and streamlining efficiency initiatives, while balancing such requirements with the needs of employees. The organization demonstrates a balance between work force and organizational needs by effectively implementing strategies for targeted recruitment, skill mix requirements, internal placements, appropriate retraining programs, outplacement activities, etc.

Performance Narrative:

Lawrence Berkeley National Laboratory’s (LBNL’s) assessment of performance under this measure revealed continued focus on improving alignment with internal customers in furtherance of mission requirements/research efforts. For FY 1998, LBNL-HR shaped its activities and objectives with a focus on the Laboratory’s strategic and institutional plans, as well as the Operations Vision Statement and the Laboratory’s Vision 2000. An “FY98 Human Resources Strategic Plan” was developed, specifically identifying Human Resources initiatives, down to the Unit level of responsibility, in support of identified sections of LBNL’s Strategic Plan. Included in this Plan is the communications strategy utilized by Human Resources.

Institutionally, LBNL-HR is considered an integral part of Laboratory Operations, providing the infrastructure to support the Laboratory’s programs and research efforts. In a move to provide cost-effective programs and services in support of the Laboratory’s mission/research efforts, the Staffing function was relocated with the Administrative Services unit. Efforts are underway to locate LBNL-HR staff in closer proximity to Division customers to streamline and improve HR processes, as well as improve the interface between the HR central unit staff and division-based HR staff.

As stated under Performance Objective #3, the Work Force Diversity Office has been co-located with LBNL-HR to cooperatively work to improve organizational recruitment and outreach efforts. This co-location of these two critical functions should result in more efficient, cost-effective support of institutional efforts and commitments within the equal opportunity, affirmative action and diversity area. In addition, an HR staff member has been assigned responsibility for diversity outreach recruitment to support equal opportunity employment and affirmative action.

Other areas the LBNL-HR unit has been involved in with regard to support of the Laboratory’s business strategies have been discussed under earlier measures in this report. These include; review of HR systems and processing, including a major focus on identification and reporting out on employees who are supervisors, managers, and confidential employees; obtaining funds to improve the retention of critical skills, work force planning, involving quarterly meetings with Directorates and key customers; recruiting and usage of supplemental work force, including analysis of cost effectiveness and tracking and trending; and baselining and benchmarking of research and support FTE costs.

The rating of **outstanding**, at midpoint, is based upon LBNL’s development of a plan and communication strategy that have clearly directed the efforts of the Human Resources division to support the strategic objectives of the Laboratory, and have ensured a balance between workforce and organizational needs.

Performance Rating (Adjectival): Outstanding	95.00%
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Performance Area: INFORMATION MANAGEMENT

Performance Objective: #1 Information Management Program

The Laboratory manages information as a corporate resource to improve the quality of its products, to add value to scientific programs and customer services, and as a tool to improve its work processes. **(Weight=100%)**

Criteria: 1.1 Strategic and Tactical Planning

Information Management practices will be guided by programmatically coordinated strategic and tactical planning. **(Weight=20%)**

Performance Measure: 1.1.a Planning Initiatives

Evaluation of evidence that IM planning supports the Laboratory’s mission. **(Weight=20%)**

Assumptions:

Measurement deliverable - IM plans or narrative descriptions of IM initiatives that support the mission and plans of the Laboratory. IM planning supports both programmatic and operational/administrative needs. Reference may be made to accessible work products or other existing Laboratory documentation.

Gradient:

Good:

Planning, evidenced by documentation, that effectively supports the Laboratory’s missions and customer requirements. Planning documents demonstrate the effectiveness of the planning approach of (1) aligning with the Laboratory’s missions (2) determination of customer requirements and expectations (3) integration of the various components of information resources.

Excellent and Outstanding factors to be considered:

Existence of one or more of the following:

- substantial progress against milestones under challenging conditions.
- external recognition of excellence in IM planning.

- implementation of tools to facilitate IM planning.
- demonstrated support of the Laboratory's mission through IM planning that exceeds the Laboratory's targets, goals or objectives.

Performance Narrative:

The Lawrence Berkeley National Laboratory (LBNL) has a comprehensive planning process that integrates planning for Information Management (IM) with the Laboratory's mission. There is evidence of heavy customer involvement and top management involvement with the planning process. IM organizations identified the critical few FY 1998 objectives, all parties agreed and were successful in achieving these objectives.

For Information Systems and Services (ISS) activities, efforts toward the vital few resulted in a new Web-based report distribution system, increased IRIS reporting capability from the Financial Management System, and conversion of 1,200 users to the new email system. CIS/ISS is also achieving Year 2000 compliance. Most critical systems are on Oracle and PeopleSoft, which are certified to be Year 2000 compliant. High visibility of the Year 2000 issue has been provided through a series of articles distributed throughout the Laboratory.

The excellent efforts demonstrated by the Telecommunications Services Center resulted in the successful implementation of new and innovative technology, as well as various critical telecommunications projects. These accomplishments are as follows:

- Successfully identified mission critical and non-critical Year 2000 telecom requirements.
- New Voicemail System Implementation.
- PCS/Wireless and PBX Integration.
- Provide Web Based Customer Billing Services .
- Implemented PC Based Visual Voicemail Messaging Services.
- Upgraded Direct Outward Dialing Facility Services.
- Utilized DOE Headquarters TELIS contract for Installation of Telephone and Voicemail Services.

FY1998 Highlighted Radio Frequency Management accomplishments are as follows:

- Successfully identified mission critical and non-critical Year 2000 Radio Frequency Management requirements.
- Identified Requirements to Replace Radio Equipment with Narrow band Trunking System in FY 1999 through FY 2005.

The Archives and Records Office, one of two groups within the Technical and Electronic Information Department (TEID) demonstrates successful implementation of tools to facilitate planning to leverage the use of web-based technology at the Laboratory. It also has made excellent progress in the implementation of the recommendations of the LBNL Internal Audit Department to improve the quality of records management at the Laboratory. In addition, TEID has made progress in improving its Job Tracking and Accounting System, redesigning its Organizational Structure, implementation of a central storage and file archiving system, revitalization of the Records Liaison Officers program, and reprocessing of records in the warehouse. Successes include the following:

- Successfully executed plans to leverage use of web-based technology for Archives & Records Office
- Implemented a central storage and file archiving system
- Improved quality of Records Management at the Laboratory
- Revitalization of the Records Liaison Officers Program
- Reprocessing of Records in the Warehouse

In the area of Printing and Reproduction, TEID made diligent plans to successfully close their printing facility. A reduction in force and the replacement of the Docutech with two other reproduction machines will reduce the Laboratory's printing costs by about \$100,000 per year. In an effort to improve turn-around time and quality in printing, a new workflow has been developed. TEID has also formed a group who periodically meets with customers to discuss new services and receive feedback about ongoing services. The results from these discussions are incorporated into the Department's daily meetings and become part of the planning process. TEID prepared the Printing and Publishing Activities Three Year Plan and submitted to DOE OAK annually as requested. The report contains data on unit volumes, revenues, and costs, and aids in tracking printing and duplicating activity and costs.

In the area of Unclassified Computer Security, the LBNL Computer Protection Program Manager (CPPM) successfully completed all FY 1998 Computer Security Implementation Plan (CSIP) milestones, as discussed in detail under Performance Measure 1.2a. In addition, the Laboratory successfully deployed a new E-mail system which allows for the electronic distribution of specific software throughout the Laboratory's user community. This has enhanced their computer security posture by facilitating the distribution of security patches and promotes compliance with the Laboratory's standard system configuration.

Overall, the IM organizations have done an excellent job in the area of planning. Strong top management involvement and customer involvement at all levels, results in a process where customers' needs and requirements are constantly identified and addressed.

Performance Rating (Adjectival): Excellent	89.00%
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Criteria:	1.2	Self Assessment Program
Maintain a self assessment program that evaluates the effectiveness of management and operational practices.		(Weight=25%)

Performance Measure:	1.2.a	
Evaluation that self assessments are taking place and that corrective actions, where necessary, are accomplished in a timely and effective manner.		(Weight=25%)

Assumptions:

Measurement deliverable – self assessment of the Information Management functions accompanied by appropriate supporting material. The narrative description may be accomplished through reference to accessible work products or other existing Laboratory documentation. The Laboratory and its DOE Operations Office will agree to develop and document in writing guidelines for self assessment criteria to be used. These written guidelines for the SA criteria to be used to assess the performance of the DOE/Laboratory agreed-to IM focus areas will be completed by October 1, 1997 and will be shared with all members of the IM team. IM focus area results must be incorporated in the Laboratory's Self Assessment Report.

Gradient:

Good:

The self assessment addresses all agreed-upon criteria. The self assessment is based upon objective supporting material where appropriate. Deficiencies noted in previous assessments have been corrected or have corrective action plans under development or in place. Results of self assessments demonstrate that compliance issues are being effectively and efficiently addressed

Excellent and Outstanding factors to be considered:

- System for rescheduling missed milestones established.
- System for timely communication of changes to appropriate management implemented.
- Cost effective and/or innovative approaches to achieving the objectives of the self assessment program.
- Results of self assessments demonstrate that compliance issues were addressed in advance of target dates and goals were exceeded, or are addressed with results that demonstrate significant cost-savings and efficiencies attributable to Information Management innovation.

Performance Narrative:

Lawrence Berkeley National Laboratory (LBNL) has a robust self assessment program that has identified opportunities for improvement. Customer involvement is an integral part of the process. The Laboratory has responded to findings from past efforts and has been successful in addressing them.

Information Systems and Services' (ISS) strategy for replacing its legacy systems has proven highly successful, and current assessments are underway for maximizing the use of its new systems. The formation of the Computer Infrastructure Support (CIS) Department consolidated help desk and other support services. Accomplishments based on their on going self assessment program include the following:

- Formation of the CIS Department
- Replacement of Labor Distribution and Effort applications
- Outsourcing the processing of legacy applications to Litton
- Replacement of the Property Management system
- IRIS data warehouse
- Web based front ends to Purchasing and time collection applications.

The Telecommunications Service Center self assessment program resulted in reduced repeated telecommunications outages, and minimized the risk of fraud, waste, and abuse. FY 1998 Highlighted Telecommunications accomplishments are as follows:

- Successfully detected and identified several external Toll Fraud attempts
- Successfully reduced the number of repeated outages.

The Radio Frequency Management program implemented quarterly meetings with the Communications Engineering Unit and the Electronic Maintenance Unit to address self assessment requirements. All outstanding action items from the quarterly meetings have been addressed in an appropriate manner. FY 1998 Highlighted Radio Frequency Management Accomplishments are as follows:

- Implemented Quarterly meeting with the Communications Engineering Unit to address outstanding spectrum issues.
- Implemented Radio Repair Rate and Cost recovery program.

In the area of Records Management, since the agreement developed by the Federal Records Center (FRC) and the Archives and Records Office (ARO) to follow the quality guidelines, no accessions have been rejected by the FRC. As a result of the level of records management awareness among records submitters at the Laboratory, there has been excellent improvement in the quality of accessions submitted to the Archives and Records Office. Fewer than 1 percent of the orders submitted for FY 1998 were rejected by the Laboratory Archives & Records Office. Finally, TEID has made excellent progress in developing an action plan to accomplish the recommendations of the Archives and Records Group audit prepared by the LBNL Internal Audit Department. In addition, the ARO revamped their website to include a complete set of regulations and procedures for all records management personnel at the Laboratory. Procedures have been initiated to ensure that records will be created, maintained, and stored in an efficient manner at the Laboratory.

In the area of printing, TEID had delivered almost 100 percent of their jobs on time. In addition, TEID did a good job in getting 91 percent of the printing jobs done through GPO and internally delivered on time.

The Laboratory made excellent progress in addressing past computer security deficiencies, as identified in their FY 1996 and FY 1997 assessments. The LBNL Computer Security Program achieved each milestone established in its FY 1998 CSIP. Minimum training standards were established for system administrators, and a program for annual training as well as the tracking of this training was defined. In addition, the Laboratory arranged to start implementing its training plans ahead of schedule, and a one-day computer security class was presented to over 200 attendees. A standard configuration for UNIX systems was published on the LBNL Computer Security web page and its URL was publicized. Necessary data for the LBNL host database was identified and procedures were defined for each LBNL division to update this information. The Laboratory also established a web-based method for distributing Secure Shell (SSH) for Mac and PC clients, and scripts for installing SSH on UNIX servers were made available as well. Actual deployment of SSH has exceeded expectations, with approximately 85-90 percent of all root access on LBNL systems being performed via SSH. In addition to the above, the LBNL network monitoring system (Bro), detected 53 out of 54 intrusion attempts (over 98 percent detected), and the Laboratory's virus wall detected an average of twelve viruses per week, which overall resulted in at least 500 viruses that were contained in e-mail enclosures being disinfected before they could contaminate any LBNL systems.

The self assessment programs for Information Management continue to identify opportunities for improvement and customer requirements. As its customers become familiar with the new IM systems, they are expected to identify new requirements based on the capabilities of the new system. The IM organizations have the processes in place to continue to identify these requirements.

Performance Rating (Adjectival): Excellent	87.00%
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Performance Criteria: 1.3	Information Management Program Results
The information management program provides cost-effective quality products and services that meet customer requirements. (Weight=55%)	

Performance Measure: 1.3.a	Level of Customer Satisfaction
Evaluation of annual reviews of customer satisfaction which compare results with previous reviews, trend customer satisfaction, and implement activities toward improvement. (Weight=25%)	

Assumptions:

Measurement deliverable - the results of the customer satisfaction reviews.

Gradient:

Good:

A demonstrated approach in response to the measurement of customer satisfaction levels. The approach will include the rationale for process by which customer input is acquired. Evidence of customer involvement in development of information management plans, including conceptual, deployment, maintenance, and transition. Clear evidence of meeting commitments to customers requirements.

Excellent and Outstanding:

Factors to be considered:

- Cost effective and/or innovative approaches to measuring customer satisfaction.
- Aggressive responses to information derived in determining customer satisfaction levels.
- Customer involvement in all stages of information management activities, including conceptual, deployment, maintenance, and transition.
- Evidence of improvement in customer satisfaction levels relative to product and service innovation.
- Evidence of significant improvements in systems and process and demonstrated results attributable to timely analysis of customer requirements, or evidence of multiple cycles of improvements with significant results.

Performance Narrative:

Information Management activities resulted in a high level of customer satisfaction and increased satisfaction from last year. In addition, Lawrence Berkeley National Laboratory (LBNL) has done an excellent job in surveying its Information Management customers. Service levels have been met and several indicators show a high level of acceptance of new products.

Information Systems and Services (ISS) customer feedback continues to show improving customer satisfaction with ISS services. Survey shows 64 percent strong agreement and 34 percent agreement that ISS/ Computing Infrastructure Support (CIS) has improved its capability to meet user needs. Almost all responses to ISS's survey are in the strongly agree or agree range. In addition the email conversion survey shows a high level of customer satisfaction with the migration and helpfulness of the staff. Indicators of customer satisfaction include the following:

- Web Information Subscription System is being accessed 7,000 times per month, and replaces 1,000 hardcopy reports printed per month.
- IRIS replacing Focus Toolkit shows a decline in toolkit reports from 3400 to 1400. At the same time Integrated Reporting and Information System (IRIS) is producing 4700 reports on line.
- Number of Purchases through ProCard has tripled over the past year.

LBNL's Telecommunications Service Center established an outstanding customer survey and satisfaction program which resulted in a 98 percent customer satisfaction approval rating.

The Laboratory 's Radio Frequency Management, although it has not established a formal customer survey program, has verbal spot checks and these checks have indicated that the Radio Customer Base is satisfied with the quality of service. Highlighted Radio Frequency Management Customer Satisfaction Accomplishments were not listed in the self assessment.

In the Records Management area, TEID has an excellent program to measure satisfaction in response to customer satisfaction surveys and improvement of awareness of services provided by ARO. It uses a variety of proven methods to assess customer satisfaction levels and to communicate with customers. Through these questionnaires, meetings with customers, and the creation of an Account manager group, TEID demonstrates aggressive action and substantial progress in responding to the customer satisfaction program.

Printing and Reproduction formed a group who periodically meets with customers to discuss new services and receive feedback about ongoing services. TEID receives valuable feedback from the Operations customers and incorporated some of the suggestions made for improving services into their procedures. TEID received excellent scores from its customers on its printing services survey.

Overall, the Laboratory has done an excellent job in satisfying its customers' IM needs. Processes in place should provide for continued increases in customer satisfaction levels.

Performance Rating (Adjectival): Excellent	88.00%
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Performance Measure: 1.3.b**Operational Effectiveness**

Evaluation of measurable improvements and cost-effective operations.

(Weight=30%)**Assumptions:**

Measurement deliverable - narrative description of the information management program's accomplishments which have resulted in measurable improvements in the provision of cost-effective, quality products. The narrative description may be accomplished through reference to accessible work products or other existing Laboratory documentation.

Gradient:

Good:

Examples that demonstrate cost-effective, quality IM services and products. A system for measuring performance. Establishment of cost-efficiencies and cost-savings goals.

Excellent and Outstanding factors to be considered:

- Results from cost effective and/or innovative approaches to improving information management.
- Successful implementation of new technologies in support of programmatic requirements.
- Evidence of successful results from prioritization efforts.
- Demonstrated application of best business practices.
- Benchmarking initiatives indicate best-in-class performance.
- Peer review findings recognize operational effectiveness.
- Demonstrated results which clearly indicate that cost-efficiencies and cost-savings goals were exceeded; demonstrated significant improvement results attributable to performance measurement systems.

Performance Narrative:

The Information Management (IM) organizations continue to improve their operational effectiveness. Lawrence Berkeley National Laboratory (LBNL) reported nearly 3 million dollars in cost avoidance this year, mostly from the ISS. The elimination of legacy systems reduced the number of FTEs needed and also provided better capability to its users. TEID's web site has earned national recognition, ISS's LETS system has been implemented by Kaiser-Hill, and ISS consulted other facilities on its experiences with PeopleSoft systems.

ISS has implemented large systems such as FMS and IRIS. It also has made numerous improvements that have resulted in smaller savings. Below are the larger cost avoidances.

- Maximo system reduced outside data entry costs by \$180,000 per year.

- Reduced stock returns and errors resulted in estimated soft savings of \$18,000 per year.
- Efficiency gains in work order processing, work tracking and staff assignments have resulted in a cost savings of \$36,000 per year.
- IMAP4 email system will result in reduction of 6 FTE's.
- Outsourcing of training for desktop software will result in a \$250,000 cost avoidance per year.
- Standardization of the PC Desktop has resulted in a support savings cost of about 4,000 staff hours
- Savings for standardized software total about \$534,000 in cost avoidance.
- Elimination of Task Management System and Account Authorization system resulted in yearly savings of \$75,000.
- Micron contract for standard desktop PC has resulted in \$115,000 in discounts and an estimated cost avoidance in setup costs of \$250,000 per year.
- Outsourcing of mainframe computing has resulted in \$30,000 month reduction in operations costs.
- Implementation of Electronic Data Interchange (EDI) has resulted in a \$50,000 first-year cost avoidance.

FY1998 Highlighted Telecommunications accomplishments are as follows:

- Telecommunications Cost Savings/Avoidance Reported - \$272,000.
- Implemented Web Based Telecommunications Invoicing Services.
- Established Service Proficiency Report.
- Reduced Repeated Telecommunications Outages.
- Implemented PCS/Wireless Communications Services.

TEID implemented the Account and Production Managers and job tracking and accounting system. This gives TEID the ability to determine necessary changes in workflow and procedures. The Archives and Records Office provides professional records management service to departments, and by the use of job tracking and a billing system, TEID automates the way it tracks jobs. Document Management and Workflow web-based software has been introduced by TEID to enhance the productivity of staff to secure access to Laboratory documents when on travel. Due to TEID's performance, the Laboratory's Web Site received national recognition. The Archives and Records Office instituted a new customer-oriented recharge service with professional Records Managers assisting individual offices with records processing, arrangement, and storage services. TEID demonstrated enhanced capabilities, cost-effective delivery of services, and successful implementation of new technologies to support programmatic requirements.

In the area of Printing and Reproduction, TEID's Clients & Profits system provides timely financial statements, job reports, and management summaries. Everyone from an account executive to the Department Head uses the same software to share information. Vital information (jobs, dates, hours, and costs) is entered only once. A reduction in force and the replacement of the Docutech with two (2) less expensive machines will reduce the Laboratory's printing cost by approximately \$100,000 per year.

The Laboratory demonstrated its outstanding support for improving LBNL's computer security posture through increases and reorganizations in staffing. With an increase in its computer security budget, the Laboratory hired a full time CPPM. This increase in effort will enable the Laboratory to improve its computer security posture much more rapidly. LBNL created a new help desk component

which provides an additional avenue for LBNL system users to receive help with virus, system configuration problems, and other computer security issues. In addition, enhancements to the Laboratory's e-mail system will facilitate the distribution of security patches. The Laboratory installed an antispam filter on its main e-mail server which enabled them to reject approximately 200 spam messages a day. Laboratory e-mail recipients now save significant effort and expense by not having to deal with each spam message individually. The Laboratory also updated its virus wall defenses with a new version that improved its performance, resulting in significant cost and effort avoidance by stopping over 500 virus infections. Several enhanced features were deployed on the Laboratory's network monitoring system, which continues to provide LBNL with excellent protection and detection capabilities.

Overall, the Laboratory has done an outstanding job in continuing to improve operational efficiencies and effectiveness. Particularly, the development and implementation of new systems which significantly reduced costs and added capabilities for the users.

Performance Rating (Adjectival): Outstanding	92.00%
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Performance Area: PROCUREMENT

Performance Objective: #1	Management of Procurement Business Requirements
<p>The Laboratory shall have systems in place that ensure Procurement programs are consistent with policies and procedures approved by DOE. (Weight=30%)</p>	

Criteria: 1.1	System Evaluation
<p>The Procurement organization conducts, documents, and reports annually, the results of a successful assessment of its purchasing system against established evaluation criteria. (Weight=30%)</p>	

Performance Measure: 1.1.a	Assessing System Operations
<p>The Procurement organization shall develop and submit a risk-based system evaluation plan to DOE and UC no later than October 1, 1997, for review and concurrence. The procurement system shall be assessed against system evaluation criteria as identified in the plan. In addition, an aggressive, cost effective management plan for resolution of system deficiencies and opportunities for process improvement shall be developed. Management of the results of the system evaluation shall be evaluated. System deficiencies will include those identified by the Procurement organization, internal Laboratory organizations and external organizations. (Weight=30%)</p>	

Gradient:

Good:

There is a sound, systematic approach, responsive to the primary purpose of the system evaluation. Cost benefit analyses and risk assessments are good when addressing deficiencies and/or opportunities for improvement. Implementation of remedial actions is appropriate and demonstrates responsible leadership in many to most cases.

Excellent:

The requirements for a Good rating are met. There is a sound, systematic approach, responsive to the overall purpose of the system evaluation. In addition, cost benefit analyses and risk assessments are rated good to excellent when addressing deficiencies and/or opportunities for improvement. Implementation of remedial actions is sound and demonstrates responsible leadership in most cases.

Outstanding:

The requirements for an Excellent rating are met. There is a sound, systematic approach, fully responsive to all the requirements of the system evaluation. In addition, cost benefit analyses and risk assessments are rated excellent when addressing deficiencies and/or opportunities for improvement. Implementation of remedial actions is sound and demonstrates strong leadership in most cases.

Performance Narrative:

Approach: Lawrence Berkeley National Laboratory (LBNL) has a sound, systematic, and well planned approach to assess all the purchasing system elements. The plan is well documented and specifies the review schedule, approach, sampling techniques, corrective action strategy, and criteria. The plan is agreed to annually in advance of the assessments. The quarterly assessment schedules are followed meticulously throughout the year. The assessment team is led by an individual external to Procurement. Procurement operations conducts a thorough review of all the major system elements over the required 3-year cycle with high risk elements assessed annually.

Cost benefit/risk assessments: Each individual system evaluation thoroughly documents the cost benefit and risk assessments in system compliance, cost and efficiency, and effectiveness. The self assessment reports address the risk assessment, deficiencies, corrective actions, improvement opportunities, cost benefit analyses, priorities, risk assessment and the Procurement Manager’s response. The Procurement Manager’s leadership and management of the corrective actions are excellent. The Procurement Manager prioritizes the corrective actions and implements the activities to improve the system.

Implementation of remedial actions: Implementation of remedial actions is excellent and timely; validation of corrective actions are performed within six months of implementation. For example, in the Procard evaluation, three deficiencies (use of outdated item lists, receipts not consistently acknowledged, and statement of account not approved) were handled by management efficiently and in a timely manner with maximum influence to preclude fraud, waste, and abuse, thus reducing potential Laboratory liability by revoking the offender’s credit cards.

Performance Rating (Adjectival): Outstanding	97.00%
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Performance Objective: #2 Procurement System Cost Effectiveness and Efficiency

The Procurement organization shall ensure that business is being conducted at an optimum operational efficiency level. **(Weight=40%)**

Criteria: 2.1 Pursuing Best Practices

The Procurement organization successfully uses benchmarking data and industry standards to identify targets of opportunity for improving operational efficiency related to service, cycle times and/ or cost and pursues opportunities aggressively. **(Weight=40%)**

Performance Measure: 2.1.a Measuring Efficiency Gains

The Procurement organization will be measured against benchmarks or industry standards/practices in areas prescribed in the Value-Based Self Assessment (VBSA) Model. The Procurement organization will establish final baselines, goals and gradients no later than December 1, 1997. **(Weight=40%)**

Assumptions:

- The current core areas identified for pursuing cost effectiveness and efficiency under the VBSA Model are cycle time, process cost, effective competition, and product/service cost savings/avoidance.
- The weight of the measure will be distributed evenly among the applicable categories unless otherwise agreed to in coordination with DOE and UC.

Gradient:

In partnership with DOE and UC, the Laboratory shall identify benchmarks/industry standards in each procurement area identified as a core requirement in the VBSA Model and establish and justify goals in pursuit of those standards. The Laboratory may propose gradients based on data other than benchmarks or industry standards if the Laboratory provides adequate support of other optimum operating levels.

Performance Narrative:

Procurement measures benchmarks itself with industry standards and practices in the core areas of cycle-time, process cost, effective competition, and product/service cost savings/avoidance. A total of six benchmarks, along with the goals and gradients by categories, were jointly agreed to with DOE OAK, Lawrence Berkeley National Laboratory (LBNL) and UC and are below:

Cycle-time on Commodity Orders of \$5K to \$25K

Baseline: 4 days
 Gradient:
 Good: 5.6 days - 6 days
 Excellent: 5.1 days - 5.5 days
 Outstanding: 5 days or better
 Result: 5 Days

Cycle-time on Commodity Orders of \$25K to \$100K

Baseline: 9 days
 Gradient:
 Good: 13.1 days - 15 days
 Excellent: 11.1 days - 13 days
 Outstanding: 11 days or better
 Result: 8 days

Process Cost: Administrative Cost

Baseline: 1.76%
 Gradients:
 Good: 1.91% - 2.10%
 Excellent: 1.71% - 1.90%
 Outstanding: 1.70% or better
 Result: 1.23%

Process Cost: Cost as a Percentage of Revenue

Baseline: 0.89%
 Gradients:
 Good: 0.881% - 1.00%
 Excellent: 0.861% - 0.88%
 Outstanding: 0.86% or better
 Result: 0.72%

Effective Competition

Baseline: 72.0%
 Gradients:
 Good: 71.0% - 72.9%
 Excellent 73.0% - 74.9%
 Outstanding: 75% or better
 Result: 79.1%

Cost Savings (or Avoidance) through Credit Card Usage

Baseline: 33.5%
 Gradients:
 Good: 35.1%
 Excellent: 36.9%
 Outstanding: 38.5%
 Result: 56.8%

LBNL met or exceeded all six benchmark categories, achieving important gains in efficiency of operations. The cycle-time of commodity orders of \$5K to \$25K exhibited consistent performance at five days, while the cycle-time of commodity orders of \$25K to \$100K improved to eight days from nine days in FY 1997. Administrative cost-to-spend decreased from 1.76 percent in FY 1997 to 1.23 percent in FY 1998. Cost as a Percentage of Revenue decreased from 0.89 percent in FY 1997 to 0.72 percent in FY 1998. Competition increased from 72 percent in FY 1997 to 79.1 percent in FY 1998. Credit card usage increased from 33.5 percent (14,171 transactions in FY 1997) to 56.8 percent (24,707 transactions in FY 1998). The aggregate savings using the purchase card amounted to \$815K, an increase of \$348K over the \$467K attained in FY 1997.

Performance Rating (Adjectival): Outstanding	96.00%
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Performance Objective: #3	Customer Satisfaction
The Procurement organization shall maintain a focus on satisfying customer needs.	
(Weight=15%)	

Criteria: 3.1	Customer Feedback
The Procurement organization listens and responds to its internal and external customers and stakeholders in a fair and open process that encourages dialogue and participation.	
(Weight=15%)	

Performance Measure: 3.1.a	Working Customer Needs
Based on the results of the FY97 customer survey, the Procurement organization shall select areas to work in partnership with its customers in order to effect customer-driven improvements in the procurement area. Improved customer satisfaction will be measured in comparison to a baseline established from the FY97 customer survey. The Procurement organization will submit areas for customer interaction and its plan of action by November 1, 1997.	
(Weight=15%)	

Gradient:

Good:

Identify customers (end users) and methods for customer interaction. Establish methods for determining customer satisfaction. Implementation plan with scheduled milestones are met. Documentation of results as outlined in the implementation plan verifies that customer satisfaction improvement goals for a Good rating, as identified by the Laboratory in partnership with DOE and UC, have been achieved.

Excellent:

The requirements for a Good rating are met. Documentation of results as outlined in the implementation plan verifies that customer satisfaction improvement goals for an Excellent rating, as selected by the Laboratory in partnership with DOE and UC, have been achieved.

Outstanding:

The requirements for an Excellent rating are met and, in addition, documentation of results as outlined in the implementation plan verifies that customer satisfaction improvement goals for an Outstanding rating, as selected by the Laboratory in partnership with DOE and UC, have been achieved.

Note: The same customer survey that was employed in FY97 to measure the success of deployment of results will be employed in FY99.

Performance Narrative:

Identifying Customers: The FY 1997 survey results was used to identify the customers and the focus area to baseline for customer improvement during this performance year. The three customers selected by Procurement and agreed to with DOE OAK, Lawrence Berkeley National Laboratory (LBNL), and UC are listed below with the baseline, target goal and gradient:

	<u>Procurement</u>	<u>Vendors</u>	<u>Requesters</u>
Baseline:	75.2	80.4	67.4
Target Goal	78.2	83.4	70.4

Gradient:

Good: Meeting or exceeding one of the above target goals

Excellent: Meeting or exceeding two of the above target goals

Outstanding: Meeting or exceeding all three target goals

A mini survey of the customers during this performance year will serve as the basis for measurement against the baselines above.

Methods: Procurement implemented the successful 5-step customer satisfaction process used in FY 1996. This 5-step process consists of involvement by Procurement with each of the three selected customers to confirm the issue, jointly work the recommended improvements, jointly validate and review the improvement methods, implement the improvement, and measure customer satisfaction. A schedule and implementation plan was established and followed throughout the year. Procurement's self assessment describes the details of each of the 5 steps with the three customers.

Results verifying customer satisfaction: A mini survey was used to measure the results of a year long partnership to improve customer satisfaction. Procurement improved customer satisfaction by approximately 11 percentage points each for Procurement Employees and Requesters. Procurement achieved excellent results exceeding two of the target goals. The Vendors results remained at a constant level despite Procurement's efforts to facilitate vendors understanding of the Laboratory procurement process. The following are the results:

	<u>Procurement</u>	<u>Vendors</u>	<u>Requesters</u>
Baseline:	75.2	80.4	67.4
Target Goal	78.2	83.4	70.4
Survey Result	86.1	80.0	78.4
Percentage Point Improvement	10.9	0	11.0

Performance Rating (Adjectival): Excellent	85.00%
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Procurement expanded on its FY 1997 pilot for managing suppliers in pursuit of their long-term objective of 90 percent or better on-time delivery of major commodities from key suppliers. The following goals and gradients agreed to by DOE OAK, Lawrence Berkeley National Laboratory (LBNL), and UC specify the path forward to the long-term objective.

Baseline: Average on-time delivery rate of key suppliers: 59.3 percent.

Gradient:

Good: The Laboratory has identified its key suppliers and measures their performance against the baseline established for each of those suppliers. In addition, the Laboratory achieves an aggregate supplier on-time delivery rate of 80 percent.

Excellent: The requirements of a "Good" rating are achieved and in addition, the Laboratory achieves an aggregate supplier on-time delivery rate of 85 percent .

Outstanding: The requirements of a "Excellent" rating are achieved and in addition, the Laboratory achieves an aggregate supplier on-time delivery rate of 90 percent.

Results: Procurement achieved an on-time delivery rate of 86 percent. This is excellent performance improvement toward closing the gap on supplier's on-time deliveries. Procurement's success is due to management's emphasis to the buyers on monitoring suppliers, improved tracking methods, and assertiveness with the supplier on the importance of on-time delivery. This area has more growth potential for improvement in the future.

Performance Rating (Adjectival): Excellent	85.00%
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Criteria:	4.2	Socioeconomic Subcontracting
The Procurement organization shall support and promote socioeconomic subcontracting programs. <p style="text-align: right;">(Weight = 5%)</p>		

Performance Measure:	4.2.a	Meeting Socioeconomic Commitments
Meeting Socioeconomic Commitments The percentage of actual subcontract dollar obligations (not subcontract face value) in the following 4 categories will be compared against goals negotiated for FY98. <ul style="list-style-type: none"> (a) Small Business (b) Small Business Set-Asides (c) Small Disadvantaged Business (d) Women-Owned Small Business The Procurement organization will propose and provide supporting rationale and statistical support for socioeconomic goals. <p style="text-align: right;">(Weight=5%)</p>		

Assumptions:

Obligations qualifying in more than 1 category may be counted in more than 1 category, e.g., Small Business and Small Business Set-Asides.

The purchasing base for purposes of this measure is all obligations incurred during the fiscal year period, excluding: (1) Subcontracts with foreign corporations which will be performed entirely outside of the United States; (2) Utilities (gas, sewer, water, steam, electricity and regulated telecommunications services); (3) Federal Supply Schedule Orders when all terms of the GSA contract apply; (4) GSA Orders when all terms of the GSA contract apply; (5) Agreements with DOE management and operating contractors and University campuses; (6) Federal government and DOE mandatory sources of supply; Federal prison industries, industries of the blind and handicapped; and (7) Procurement card purchases.

The schedule for submitting and negotiating goals will be followed per Appendix D.

Gradient:

It is recognized that pursuit of cost effectiveness and best business practices may impact on the establishment of socioeconomic goals and/or on the final achievement of such goals. Consideration will be given to this impact during forecasting and mid-year updates of goals and during evaluation of self assessments.

Good:

Meeting all goals with consideration given to changes in funding profiles, changes in forecast, deletion of requirements, etc., should goals not be met

Excellent:

Exceeds three of the four goals and meets the fourth goal. Consideration will be given to such factors as awards/recognition, pilot program participation, or other support for DOE socioeconomic programs when the Laboratory is borderline to meeting a goal that leads to a rating of Excellent.

Outstanding:

Exceeds all goals. Consideration will be given to such factors as awards/ recognition, pilot program participation, or other support for DOE socioeconomic programs when the Laboratory is borderline to meeting a goal that leads to a rating of Outstanding.

Performance Narrative:

The following are the small business established goals and results.

Category	<u>Goals</u>	<u>Results</u>	<u>Dollars</u>
Total small business	38.0%	44.2%	\$50.0M
Small Business Set-Asides	12.5%	28.1%	\$31.8M
Small Disadvantaged Business	11.7%	10.4%	\$11.8M
Women-owned Business	6.1%	6.2%	\$ 7.1M

Based on a year-to-date procurement base of \$113.3M

Lawrence Berkeley National Laboratory’s (LBNL’s) Small Business Subcontracting Program continues to demonstrate a high level of support and effectiveness in implementing DOE program objectives and meeting the established goals. Procurement met or exceeded three of the four goals this performance year. This is a commendable achievement given the increase in program obligations in the Joint Genome Institute and Supercomputer projects, and the reductions in obligations to contract labor contracts and the internal business decision to reduce small business opportunities in construction projects. Consideration is given to the efforts that extended and intensified outreach to the local small business sector, accomplished via partnership forums conducted with the local municipality (City of Berkeley Chamber of Commerce), DOE OAK, and the Small Business Administration.

Performance Rating (Adjectival): Excellent	86.00%
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Performance Area:

PROPERTY MANAGEMENT

Performance Objective #1

Accountability for Equipment and Sensitive Property, and Precious Metals

The Laboratory shall ensure accountability for equipment and sensitive personal property and precious metals. **(Weight=45%/Total Points=225)**

Criteria: 1.1

Accountability for Equipment and Sensitive Property

The Laboratory shall conduct successful personal property inventories as established in its inventory plan. **(Weight=25%/Total Points=125)**

Performance Measure: 1.1.a

Property Accounted For

The percentage of personal property accounted for, as described in the approved inventory plan, will be measured. **(Weight=25%/Total Points=125)**

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

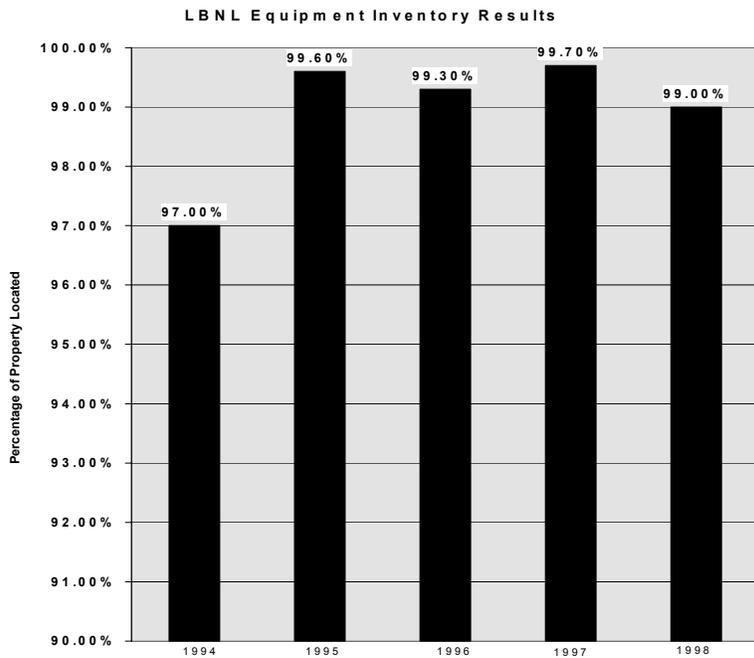
The Laboratory conducted a wall-to-wall inventory of both sensitive property and equipment during Fiscal Year FY 1998. The inventory plan submitted by Lawrence Berkeley National Laboratory (LBNL) called for a January 30, 1998, start date, with a completion date of September 25, 1998, to include the reconciliation phase. The approved inventory plan called for each division to conduct physical inventories of their respective areas, with the Property Management Division conducting an inventory validation with a sample size adequate to provide a 95% confidence level in the results.

During the inventory the LBNL Property Manager was in constant communication with division inventory representatives, and held periodic status meetings. However, as late as April 1998, very little inventory progress had been made by division representatives. As with previous LBNL inventories, regular status reports and briefings provided to the Organizational Property Management Officer (OPMO) by the LBNL Property Manager reflected an apparent lack of commitment and support on the part of certain Laboratory organizations to devote necessary resources and focus on the

timely completion of the inventory. Procrastination on the part of those organizations during the inventory campaign resulted in the decision to deploy Property Management Division personnel to actively conduct physical inventories in order to ensure completion. In the final weeks of the inventory campaign, upper management intervention was necessary to stimulate active participation by divisional property representatives in completing the inventory. It is likely that upper management recognition and endorsement of the inventory process from the beginning would have alleviated this situation, and produced better results.

Overall, the inventory resulted in a 99 percent find rate for equipment and 99.1 percent find rate for sensitive property. This is an improvement over past LBNL wall-to-wall inventories, and falls in the performance range of “Good.” It must be emphasized that future LBNL inventories would benefit greatly from upper Laboratory management recognizing the importance and supporting the process of inventory from planning stages, through completion.

The OAK OPMO conducted an additional random sample inventory validation of 45 items from a total population of 1,022 which were inventoried during September, the final month of the LBNL inventory. Based on that validation effort, seven of the 45 sample items identified should not have been part of the sample population. Following the completion of the inventory, they had already been disposed of, but were not retired from the LBNL database. This is representative of basic record keeping errors which reflect negatively on the accuracy and integrity of the LBNL personal property database.



Performance Rating (Adjectival): Good	100	78.00%
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Criteria:	1.2	Precious Metals Inventory
The Laboratory shall conduct successful precious metals inventories as established in its inventory plan.		
(Weight=5%/Total Points=25)		

Performance Measure:	1.2.a	Precious Metals Inventory Results
The percentage of precious metals accounted for, as described in the approved inventory plan, will be measured.		
(Weight=5%/Total Points=25)		

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

The FY 1998 LBNL precious metals inventory resulted in no precious metals being unaccounted for. The OPMO participated on validation of five separate precious metals holdings within the Life Sciences Division. All weights were verified against current inventory database information as correct. The equates to an **outstanding** performance level.

Performance Rating (Adjectival):	Outstanding	25	98.00%
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Criteria: 1.3	Identification of Items Subject to Inventory
The Laboratory will ensure personal property items which are subject to inventory are accurately identified. (Weight=15%/Total Points=75)	

Performance Measure:	1.3.a	Accuracy of Identification
The percentage of items accurately identified in the property database will be measured. (Weight=15%/Total Points=75)		

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

Three distinct elements contribute to this overall area at LBNL: 1) percent of property tagged by receiving when received, 2) percent of property requiring tagging in the field tagged within 15 days, and 3) the percent of property correctly identified in the database (determined by floor to database sampling).

During FY 1998, LBNL achieved performance in the “Good” range (92.8 percent) for property tagged when received, the target being 90 percent for that performance element. This is important in that during this stage of the property management life cycle accountability and controls for property are initiated. This is of great importance in ensuring the completeness and reliability of the property management database. Success in this area greatly reduces the number of items requiring research and tagging in the field.

Tagging of property in the field (not tagged in receiving) within 15 days of request is an area which has seen improvement during the year (from approximately 30 percent during the first quarter to 64.9 percent, cumulatively.) It is noted however, that fourth quarter results were markedly lower at 46.2 percent. The overall performance falls well below the “Good” level of 90 percent. This is also an important process in that it acts as a check and balance by ensuring the timely identification and recording of property not tagged and identified in receiving. It is necessary that the improvement trend reflected during the second and third quarters of FY 1998 continue during the FY 1999 performance period.

The percent of property found and recorded in the property management database during floor to record sampling was 98.6 percent (Outstanding.) Of the 931 items validated during the floor to record

sample validation, 918 were correctly recorded in the LBNL database. The OAK OPMO participated on-site during the validation of 72 of the items. Overall, this area is rated as **good**.

Performance Rating (Adjectival): Good	60	75.00%
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Performance Objective #2

Stewardship Over Personal Property

The Laboratory shall ensure that both stewardship and custodianship for personal property is maintained. **(Weight=20%/Total Points = 100)**

Criteria: 2.1

Organizational Stewardship and Individual Custodianship

The Laboratory will ensure organizational and individual accountability (stewardship and custodianship, respectively) for property. **(Weight = 20%/Total Points = 100)**

Performance Measure: 2.1.a

Timeliness of Assignment

The accountable individual is identified for equipment and sensitive property, and the timeliness of such identification is measured. **(Weight=20%/Total Points=100)**

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

The assignment and on-going maintenance of the accuracy of individual custodial assignments is an area requiring attention at Lawrence Berkeley National Laboratory (LBNL). Of the total 628 sensitive items validated for custodial assignment accuracy during organizational property reviews, only 474 were accurately assigned to the actual using individuals. This equates to an accuracy rate of just over 75 percent which is well below the established acceptable level of 90 percent. This element is critical to achieving organizational stewardship and employee accountability, and also contributes to achieving effective inventory management. Without accurately maintaining and tracking custodial assignments of property, difficulties in locating assigned property during inventory are greatly amplified.

Likewise, out of a population size of 234 total equipment items sampled for custodial validation, the percentage of accuracy for custodial assignments was 66.2 percent, as only 155 items were accurately assigned.

Custodial assignments within 60 days is an important performance indicator as it is recognized that the longer property is unassigned, the greater the vulnerability and susceptibility to loss and theft, etc.

During FY 1998, LBNL achieved a 77.3 percent overall of custodians assigned within 60 days. Although reflecting a trend of improvement throughout the performance period from 55.1 percent to 92.9 percent through the third quarter, the cumulative score falls below the “Good” performance range.

Improved performance in this area is expected FY 1999. Performance is rated as **marginal**.

Performance Rating (Adjectival): Marginal	60	65.00%
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Performance Objective: #4	Information to Improve/Maintain Processes(Systems Evaluation)
The Laboratory ensures that Property Management programs are consistent with policies and procedures approved by DOE.	
	(Weight=15%/Total Points=75)

Criteria: 4.1	Self Assessment of Policies and Procedures
The Laboratory shall plan, conduct, document, and report annually, the results of a successful property management system evaluation.	
	(Weight=15%/Total Points=75)

Performance Measure: 4.1.a	Assessing Support Processes
The property processes shall be measured against identified system evaluation criteria established in the plan.	
	(Weight=15%/Total Points=75)

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

During FY 1998, Lawrence Berkeley National Laboratory (LBNL) Property Management Division conducted an assessment of support processes in the areas of Property Management, Stores Management, and Storage Management. Under the Property Performance Assessment Model (PPAM), the assessment is conducted utilizing a self assessment plan/worksheet which contains mutually agreed-to activities for assessment and performance ranges. Based on the assessed performance, the Laboratory is granted a number points by each activity. A total of 75 points is allotted for the entire assessment.

For FY 1998, LBNL earned a total of 63 points out of the total 75. Of the areas assessed, those requiring improvement are: the percentage of property loans processed within five days of receipt, the percentage of borrowed items either returned or other action taken within 30 days of agreement expiration, and percentage of borrow agreements addressed on the correct borrow document, and the documentation of controlled substance usage. Also of particular note is the review of items in storage to include equipment held for future projects. During 1998, LBNL had very poor results from organizations in justifying continued retention of items in storage. A letter signed by the Deputy

Director, dated October 15, 1998, was distributed to organizations with items still in storage for which no justifications had been provided. So far 85 percent of the organizations have responded with justifications, and to date, about 31 percent of those items subject to the review have been dispositioned as a result of the storage review. Overall, this area is assigned a rating of **marginal**.

Performance Rating (Adjectival): Marginal	63	68.00%
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PERFORMANCE OBJECTIVE #5	Customer Alignment
<p>The Laboratory shall ensure that there is a property management program for identifying and evaluating customer needs and for building and maintaining positive customer relations. (Weight=5%/Total Points=25)</p>	

Criteria: 5.1	Monitoring Customer Alignment
<p>The Property Management organization shall ensure that the property management programs are responsive to customer expectations. (Weight=5%/Total Points=25)</p>	

Performance Measure: 5.1.a	Aligning Customer Expectations
<p>The Laboratory will have processes in place to monitor customer expectations of property management tools and products with regard to ease of use, timeliness, accuracy, and certainty. (Weight=5%/Total Points=25)</p>	

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory.

Performance Narrative:

During FY 1998, Lawrence Berkeley National Laboratory (LBNL) conducted customer satisfaction surveys in order to obtain customer feedback on a number of property management processes effecting internal customers, including: walk-throughs, training, inventory, borrows, and loans, etc. Although, limited response and comments were obtained, LBNL Property Management did make the effort to conduct the surveys, and analyze and evaluate the results. Based on the responses that were obtained, the LBNL Property Manager indicates that action plans will be developed and implemented which address customer input for improvements. Therefore, a **good** rating is assigned.

Performance Rating (Adjectival): Good	20	78.00%
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Performance Objective #6	Balancing Performance and Cost
The Laboratory ensures that property is managed appropriately to balance performance and cost. (Weight=10%/Total Points=50)	

Criteria: 6.1	Performance/Cost Efficiency
The Laboratory shall ensure that property processes/products are provided in the most cost efficient manner while maintaining desired levels of performance. (Weight=10%/Total Points=50)	

Performance Measure: 6.1.a	Measuring Cost Efficiency/Effectiveness
The Laboratory shall measure its ability to effectively balance property management costs and performance. (Weight=10%/Total Points=50)	

Basis for Rating:

The LBNL Property Performance Assessment Plan (see Exhibit II), provides the activities to be measured, point value for each activity, frequency of reporting, and performance ranges (gradients) which have been agreed upon by DOE, UC, and the Laboratory. The matrix provided below will be used to score the selected activities.

GRADIENT

Cost Vs Baseline Plan Developed Each Year	Performance Level			
	Higher Gradient or Outstanding	Same Gradient	Lower Performance and Not Less Than Good	Lower Performance and/or Less Than Good
Less Cost	Outstanding	Excellent	Good	Marginal
Same Cost	Excellent	Good	Marginal	Unsatisfactory
More Cost	Good	Marginal	Unsatisfactory	Unsatisfactory
More Cost More Requirements	Renegotiate Performance Gradients for Critical Activities			

Performance Narrative:

During FY 1998, Lawrence Berkeley National Laboratory (LBNL) addressed the functions of initial custodial assignment and the tagging of property in the field as opportunities for balancing costs and performance. The intent of this measure is to assess the functions for possible opportunities to reduce the cost of performing functions while achieving like or better performance against the established baselines.

In the area of initial custodial assignments, LBNL Property Management assessed various opportunities for streamlining the process such as the forms used, and a revised methodology for assigning custodians to newly procured personal computers. Although, it appears that efforts were expended in trying to improve this process, one of the three LBNL divisions assessed during this process actually experienced an increase in the level of effort associated with initial custodial assignments. The net result for all three divisions assessed was an increase of 45 percent in the time for assigning per item.

For the function of property tagged in the field, LBNL was able to reduce the time spent per item to tag property in the field from one and a half hours per item to between 45 and 60 minutes. This was accomplished by reassigning the task from a support contractor employee to a member of the Property Management staff. Although, the performance results of this function has fluctuated greatly through the performance period, overall the minimum performance threshold of 90 percent of items tagged in the field within 15 days was not met. A performance rating of **marginal** is assigned.

Performance Rating (Adjectival): Marginal	35	65.00%
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**EXHIBIT I
PROPERTY MANAGEMENT
SCORING TABLE**

PPAM Points Earned	Translation to Appendix F Contractual Scoring	Adjectival Rating
493-500	98	Outstanding
484-492	95	
475-483	92	
469-474	88	Excellent
460-468	85	
450-459	82	
433-449	78	Good
417-432	75	
400-416	72	
384-399	68	Marginal
368-383	65	
352-367	62	
336-351	58	Unsatisfactory
320-335	55	
304-319	52	

EXHIBIT II (VARIATION)
Lawrence Berkeley National Laboratory
Property Performance Assessment Plan

PILOT FY98
2/18/98

Customer Satisfaction = The Quality of the Product + The Quality of the Process

Revision

	Measured Activities/Sub-Gauges Activity/Support Processes	Report Frequency	Gradient 80/90/100	Value of Activity	Activity Score	Core Measures Critical Activity	Desired Outcomes	Final Product
	PRODUCT QUALITY							
1	The Quality of the Personal Property Inventory							
1.a	% of sensitive inventory items located by acquisition value (according to approved inventory plan).	Annually	98.7/99.2/99.5	62		Property Accounted for	Accountability for Equipment and Sensitive Property and Precious Metals	
1.b	% of equipment inventory items located by acquisition value (according to approved inventory plan).	Annually	98.7/99.2/99.5	63		"	"	
1.2	The Quality of the Precious Metal Inventory							
1.2.a	% of precious metals accounted for by weight in grams.	Annually	99.0/99.6/99.8	25		Precious Metal Accounted for	Accountability for Equipment and Sensitive Property and Precious Metals	
1.3	The Quality of the Database							
1.3.a	% of property tagged when received.	Quarterly	90.0/95.5/98.0	25		Identification	Accountability for Equipment and Sensitive Property and Precious Metals	
1.3.b	% of tagging requests completed by field personnel within 15	Quarterly	90.0/95.5/98.0	25		"	"	
1.3.c	% of property identified in database (floor-to-database	Quarterly	90.0/95.5/98.0	25		"	"	
2	Accountability							
2.1.a	% of accurate custodian assignments for sensitive property.	Quarterly	90.0/95.5/98.0	30		Accountability	Stewardship	
2.1.b	% of accurate custodian assignments for equipment.	Quarterly	90.0/95.5/98.0	30		"	"	
2.1.c	% of initial custodians assigned within 60 days.	Quarterly	90.0/95.5/98.0	40		"	"	
3	Vehicle Utilization							
3.1.a	% of essential vehicles meeting utilization criteria.	Quarterly	90.0/95.5/98.0	12		Vehicle Utilization	Vehicle Utilization	
3.1.b	% of discretionary vehicles meeting utilization criteria.	Quarterly	90.0/95.5/98.0	13		"	"	
	PROCESS QUALITY							
4	Self Assessment/Support Processes							
4.1.a	Evaluation of Personal Property programs including High Risk Program.	Quarterly	Scoresheet	50		Self Assessment of Policy and Procedures	Information To Improve/Maintain Processes (Systems Evaluation)	
4.1.b	Evaluation of Stores Management program.	Quarterly	Scoresheet	13		"	"	
4.1.c	Evaluation of Storage Management program.	Quarterly	Scoresheet	12		"	"	
5	Customer Surveys/Products and Tools							
5.1.a	Were the methods to determine customer satisfaction accomplished as outlined in the plan? Ease of Use - Timeliness - Accuracy - Certainty - Reliability	Quarterly	Yes/No	25		Process for Understanding Our Customers Expectations and	Customer Alignment	
6	Cost/Performance (Cost = Effort)							
6.1.a	Cost of determining custodian assignments vs. performance.	Quarterly	Scoresheet	25		Balancing Product Output/Customer Satisfaction/Cost Ratios	Balancing Performance and Cost	
6.1.b	Cost of performing tagging on-site vs. performance.	Quarterly	Scoresheet	25		"	"	

Science & Technology

Science and Technology/Programmatic Performance

Lawrence Berkeley National Laboratory's (LBNL) Institutional Level Assessment addresses the challenges and issues faced by the Laboratory in the last year, along with perspectives on plans for the future. The Director's statement provides insight into where the attention of LBNL's leadership has been directed during the past year. LBNL continues to excel in their ability to develop and execute scientific programs. The Laboratory's strategic planning process allows for the establishment of clear direction, priorities, and ensuring LBNL's viability in the future.

LBNL's management of the Laboratory-Directed Research and Development (LDRD) and Work for Others (WFO) programs continue to direct the Laboratory's resources toward exciting scientific challenges consistent with its mission and to keep the Laboratory on the cutting edge of science and technology. Over the past several years, the Laboratory has been funding the LDRD program at about 3 percent to 3.5 percent of the total LBNL funding. Recent major strategic thrusts supported with LDRD funds have included computational projects in all of LBNL's scientific divisions and projects that apply the unique capabilities of the Advanced Light Source in new scientific directions. The strength of LBNL's health programs is mirrored in its success in securing National Institutes of Health support for projects complementary to the DOE-funded effort. In particular, Work for Others now accounts for about 38 percent of the Life Sciences Division's support.

The programmatic assessment of the Laboratory is based upon the LBNL self-assessment and peer review of science and technology and the University of California overlay, and is validated by DOE HQ program managers and their DOE OAK counterparts. The assessment of performance for research programs is comprised of a combined evaluation the following programs: Biomedical and Environmental Research, Basic Energy Sciences, Computing Sciences, Nuclear Physics, High Energy Physics, Fusion Energy Sciences, and Energy Efficiency and Renewable Energy.

The overall rating for Science and Technology is **OUTSTANDING** for FY 1998.

LBNL, UC and DOE evaluated the programs against the following four criteria:

Criteria 1: Quality of science

Recognized indicators of excellence, including impact of scientific contributions, leadership in the scientific community, innovativeness, and sustained achievement will be assessed as appropriate. Other performance measures such as publications, citations, and awards may be considered.

Criteria 2: Relevance to national needs and agency missions

The impact of Laboratory research and development on the mission needs of the Department of Energy and other agencies funding the programs will be assessed in the reviews. Such considerations include energy policy, economic competitiveness, and national environmental goals, as well as the goals of DOE and other Laboratory funding agencies in advancing fundamental science and strengthening science education. The impact of Laboratory programs on industrial competitiveness and national technology needs will be assessed. The assessment will include characteristics that are not easily measured, including relevance of research programs to national technology needs and effectiveness of outreach efforts to industry. As appropriate, they may also consider such performance measures as licenses and patents, collaborative agreements with industry, and the value of commercial spin-offs.

Criteria 3: Performance in the technical development and operation of major research facilities

Performance measures include success in meeting scientific and technical objectives, technical performance specifications, and user availability goals. Other considerations may include the quality of user science performed, extent of user participation and user satisfaction, operational reliability and efficiency, and effectiveness of planning for future improvements, recognizing that DOE programmatic needs are considered to be primary when balanced against user goals and user satisfaction.

Criteria 4: Programmatic performance and planning

The assessment should focus on broad programmatic goals, including meeting established technical milestones, carrying out work within budget and on schedule, satisfying the sponsors, providing cost-effective performance, planning for orderly completion or continuation of the programs, and appropriate publication and dissemination of scientific and technical information. In assessing the effectiveness of programmatic and strategic planning, the reviewers may consider the ability to execute projects in concert with overall mission objectives, programmatic responsiveness to changes in scope or technical perspective, and strategic responsiveness to new research missions and emerging national needs. In the evaluation of the effectiveness of programmatic management, consideration may include morale, quality of leadership, effectiveness in managing scientific resources (including effectiveness in mobilizing interdisciplinary teams), effectiveness of organization, and efficiency of facility operations.

Performance Area: Biomedical and Environmental Research

Overall Performance Rating: Outstanding

**Criteria 1: Quality of science:
Rating: Excellent**

The LBNL Life Sciences Division has an outstanding group of investigators, and they continue to conduct outstanding research under the direction of the Division Director. The Laboratory's genome research continues to be world class. Recognition has also been given to the environmental research being conducted at LBNL. The Laboratory has also submitted a number of highly rated and successful proposals to the Biomedical and Environmental Research (BER) Health Effects program restructuring solicitation in FY 1998.

**Criteria 2: Relevance to national needs and agency mission
Rating: Outstanding**

LBNL's research programs are highly relevant to the DOE mission. Their contributions to the DOE Joint Genome Institute (JGI) are critical to the current success of the JGI and address central goals of the DOE and United States Human Genome Programs. Similarly, LBNL's program addresses goals of the new DOE/BER low dose research program, a program noted in the FY 1998 Energy & Water Appropriations.

**Criteria 3: Performance in the technical development and operation of major research
Rating: Outstanding**

LBNL has had principal responsibility for coordinating developments of the DOE's production Sequencing Facility (PSF), the high through-put DNA sequencing facility of the JGI. The PSF has met most of its construction/renovation goals for FY 1998 and will begin moving equipment and staff into the facility within the first weeks of FY 1999, only slightly behind the initial schedule.

**Criteria 4: Programmatic performance and planning
Rating: Excellent**

Overall, LBNL's Life Science programs are highly focused on and responsive to DOE and BER program needs. Strong efforts have been made by the Director to coordinate and develop the life sciences programs into a coordinated effort that is greater than the sum of its individual parts. This was especially evident in some of the proposals submitted to the BER Health Effects program restructuring solicitation in FY 1998. This same degree of coordinated responsiveness is needed for LBNL's contributions to the JGI. LBNL's JGI staff needs to be more responsive to JGI management, and not LBNL management, for issues relating to their role and contributions to the JGI.

Performance Area: Basic Energy Sciences

Overall Performance Rating: Excellent

**Criteria 1: Quality of science:
Rating: Outstanding**

The Lawrence Berkeley National Laboratory (LBNL) is home to major Basic Energy Sciences (BES)-supported research efforts in materials and chemical sciences as well as to efforts in geosciences, engineering, and biosciences.

The Materials Sciences program supports outstanding research efforts in laser spectroscopy, superconductivity, thin films, femtosecond processes, biopolymers, polymers and composites, surface science, and theory. Outstanding research is carried out on the fundamental features of evolving microstructures in solids; alloy-phase stability; structure and properties of transforming interfaces; and the structures of magnetic, optical, and electrical thin films and coatings. In the Center for Advanced Materials, high-quality research is conducted in the processing, mechanical fatigue, and high-temperature corrosion of structure ceramics and ceramic coatings; the synthesis, structure and properties of advanced semiconductor and semiconductor-metal systems; polymers; surface science and catalysis; and structure, development and magnetic properties of high performance metals and alloys.

The Chemical Sciences program has long excelled in fundamental, chemical dynamics research using molecular-beam techniques. Femtosecond spectroscopy studies of energy transfer on surfaces has also been developed. LBNL is recognized for its outstanding research in radiochemistry, the chemistry of the actinides, inorganic chemistry, and both homogeneous and heterogeneous chemical catalysis. The quality of the scientific programs at LBNL sponsored by the Chemical Sciences Division remains very high as measured through regularly scheduled peer reviews and the awards and honors received by the supported individuals. The quality of the research at LBNL is marked by seminal and innovative new ideas and important contributions to the literature. The programs are directed at very basic research issues underlying heavy element chemistry, catalysis, and combustion, all of which are priority science issues for the DOE. The chemical dynamics beamline at the Advanced Light Source (ALS) is relevant to the broad science objectives of the chemical physics program in the Chemical Sciences Division. The scientific program in atomic, molecular, and optical (AMO) physics is excellent. Recent multi-Principal Investigator (PI) efforts towards measurement of the electron dipole moment may have major impact on "The Standard Model"; an interesting use of AMO physics. The collision experiments are in the mainstream of the sub-field.

The Geosciences program supports high quality experimental and computational research on rock physics of porous and fractured rock, subsurface imaging through both seismologic and electromagnetic methods, and hydrologic research on fluid flow through both pores and fractures. Geochemical studies focus on advanced interpretations of low-temperature flow processes, innovations in analytical geochemistry, isotope and trace-element chemistry with mass spectrometric and synchrotron-based analyses. These LBNL researchers in geomechanics, geochemistry, and

geophysics continue their outstanding research, with significant contributions in these research areas in the peer-reviewed literature. They have been active participants in the National Academy of Science/Nuclear Regulatory Commission (NAS/NRC) committees, Earth Sciences Council, and Basic Energy Science (BES)-investigator workshops. Recent research proposals in geomechanics, geophysics, geochemistry, and hydrology have received outstanding ratings from the community.

Engineering research is concerned with the development of modern nonlinear dynamics with applications to problems in engineering sciences. The Energy Biosciences program efforts focus on the physics of the photosynthetic apparatus and on the genesis of subcellular organelles. Both of these smaller program efforts produce outstanding results.

Principal Investigators at LBNL funded by BES win major prizes and awards sponsored by professional societies and by others; in addition, many are elected to fellowship in major scientific professional societies and other organizations.

Criteria 2: Relevance to national needs and agency mission

Rating: Excellent

The Materials Sciences program is relevant to the long-term science mission of DOE. For example, LBNL is responsible for the ion source for the Spallation Neutron Source. This part of the project has met all of its goals and is ready for the start of construction in FY 1999. LBNL research in Geosciences is recognized for its impact on the DOE technology programs, especially in Fossil Energy (Oil and Gas program) and Environmental Management. Leadership in combining fundamental geochemical, geomechanical, and hydrologic investigations of fluid-flow processes in the shallow crust serves as an outstanding foundation for collaboration and integration of basic and applied research.

Criteria 3: Performance in the technical development and operation of major research

Rating: Excellent

LBNL is also the site of two BES supported user facilities – the ALS and the National Center for Electron Microscopy (NCEM).

The ALS, which began operations in October 1993, is one of the world's brightest sources of ultraviolet light and soft X-rays. Soft X-rays of the ALS are an ideal tool for probing a wide range of electronic structural studies and are particularly useful for X-ray microscopy, surface science, and solid state physics of carbides, actinides and oxides. Such regions of the spectrum also offer special opportunities for research in chemical physics, electron spectroscopy, microscopy, and holography. The Laboratory's performance for operating the ALS has improved significantly. A new director has been appointed, and there is significant improvement in the relations with the users and in the scientific directions.

The NCEM provides instrumentation for high-resolution, electron-optical microcharacterization of atomic structure and composition of metals, ceramics, semiconductors, superconductors, and magnetic

materials. The facility is home to the Nation's highest voltage microscope, one which specializes in high resolution studies. The NCEM continues to provide an outstanding national user facility resource for outside researchers from academia, other national laboratories, and the private industrial sector. The NCEM continues to play a major role in the DOE 2000.

Criteria 4: Programmatic performance and planning
Rating: Excellent

The management of the basic research programs in the various divisions of LBNL has been timely, responsive, and forward looking as evidenced above by the outstanding rating for the quality of the science that is produced. The Laboratory's management should be complimented for their response to the Basic Energy Sciences Advisory Committee (BESAC) panel report on the ALS. The changes they have made are all in the right direction.

Performance Area: Computing Sciences

Overall Performance Rating: Outstanding

**Criteria 1: Quality of science:
Rating: Outstanding**

The work in computer science and network research on distributed disk caches, advanced network protocols, and scientific data management continues to be one of the most productive and highest quality groups in the world. The joining of these efforts to begin serious efforts in wide area data intensive computing, will continue this leadership well into the future.

The Lawrence Berkeley National Laboratory's (LBNL) applied mathematics research program supported by the Mathematical Information and Computational Sciences (MICS) Division is one of the premier applied and computational mathematics research efforts in the country. Laboratory applied and computational mathematicians conduct research in the areas of turbulence modeling, numerical analysis, numerical linear algebra, parallel algorithm development, and large-scale scientific computing and visualization that is directed at solving DOE grand challenge class problems of importance to LBNL, DOE, and the nation. The expertise of the group is both broad and deep, enabling it to make lasting contributions to basic research in applied and computational mathematics and to applied problems in fluid dynamics, materials science and combustion of relevance to LBNL and DOE disciplinary programs.

Applied mathematicians at LBNL have shown that the widely used "law of the wall" for calculating the force exerted on a solid object (or "wall") by turbulence, which forms the basis for designing airfoils, engine compressors, and other devices subjected to turbulent stresses, fails in many important engineering applications, predicting stresses that are far too low. Further analytical and computational work is underway to develop more accurate and reliable models for these important problems.

Applied mathematicians at LBNL have developed a powerful set of analytical and numerical methods to determine how the level curves or contours of physically important quantities like temperature and concentration evolve in time and space. These "level set" methods are used to simulate topographic changes in silicon wafers as the wafers are processed into devices, locate and resolve fluid interfaces such as shock and interior layers, and enhance and refine images obtained from medical or surveillance procedures.

Applied and computational mathematicians at LBNL completed an adaptive mesh refinement algorithm for incompressible flows governed by the Navier-Stokes equations that offers the capability of modeling and simulating variable-density effects in two and three space dimensions. This algorithm was successfully implemented on distributed memory parallel architectures like the Cray T3E.

Applied mathematicians at LBNL, working with colleagues at Los Alamos National Laboratory (LANL), New York University, and the diesel industry, developed software based on adaptive mesh techniques for simulating diesel combustion in three-dimensional geometries. This is a preliminary step to producing industrial-strength codes that engineers can use in designing actual diesel engines.

The National Energy Research Scientific Computing (NERSC) Center at LBNL is one of the world's leading unclassified computer centers. It ranks in the top ten in computing resources. The NERSC Center was re-invented upon its move to Berkeley from Livermore. Not only does it have superior computing capabilities, but the support staff now has the expertise to collaborate on an equivalent basis with its users in all the Offices of Science (SC). For that reason this project can now be evaluated in terms of the quality of research in which it actively participates and not just in terms of the capabilities it provides to its 1500 users. The Center now has efforts in new computing technologies that are carried out in collaboration with the University of California campuses not only at Berkeley (Millennium, the Networks of Workstations (NOW) and the Titanium Language projects) but at San Diego (Multi-Threaded Architecture evaluation project). There are active collaborations with all other DOE/SC laboratories not only in computing technology, but on application-specific algorithms, visualization techniques, and on Grand Challenge applications. Though the research effort at the Center ranks outstanding, there is still room for improvement - the efforts are only in their infancy. The elements of the NERSC Center and its scientific prowess can be discovered on www.nersc.gov/aboutnersc/information.

Over the past year, LBNL has been actively involved in a number of Research and Development (R&D) projects that were initiated under the DOE2000 program and both National Collaboratory Pilots, as well as the coordination of the effort across all participating organizations. All these efforts involve integrated activities across multiple laboratories and organizations. This integration is a key element to assuring the success of the program and LBNL has shown excellent leadership in this area. The work done by LBNL is outstanding and the contribution to the MICS program in the respective project areas is very valuable. For example, the R&D project to develop a networking quality of service for Energy and Sciences Network (ESnet) led to the first successful demonstration of differentiated services-a video stream passed unimpeded through congested traffic to its destination. A testbed using this approach is in planning stages and other organizations, such as Internet 2, are very interested in adopting this approach. The scaleable security architecture is another project that is proceeding quite well and has wide applicability and interest. It relies on commercial products where possible, building on these to meet the specific requirements associated with scientific research. It is well coordinated with other related efforts in the department as well as outside, and the leadership shown in developing this keystone for enabling successful collaboratories is highly respected.

ESnet at LBNL has made significant advances in Networks and is in the process of transferring the operational capability to enable science and other DOE missions. Some of the most notable ones are: Public Key Infrastructure (PKI), Kerberos - now in Netscape, Differentiated services, Asynchronous Transfer Mode (ATM) high speed routing advances to name a few.

LBNL continues to be a first-rate scientific establishment. LBNL proposals for new multi-year projects to the Laboratory Technology Research (LTR) program fared very well. More proposals passed the external peer review than the LTR program had funds to support. As an example, a multi-year project initiated in FY 1998 will characterize and design molecular lubrication of computer disks for less expensive, higher performance, and more reliable computer systems. This year, three LBNL multi-year projects were subjected to a mid-program peer review. Early indications are that the reviews were very favorable.

Criteria 2: Relevance to national needs and agency mission
Rating: Outstanding

The work supported under computer science and network research is important for DOE programs ranging from High Energy Nuclear Physics to biology. In addition, the tools discovered here are a critical component of the Department's efforts to improve remote access to facilities.

The LBNL applied and computational mathematics effort plays a unique role in the scientific life of the laboratory and the nation. MICS-supported applied and computational mathematicians are making important contributions by developing enabling numerical algorithms and software for parallel and distributed computing platforms that are used by the national scientific and engineering communities; as well as by providing modeling and computing expertise to agency and national programs involving simulation science (SSP), national security (ASCI), global climate modeling and simulation (CHAMMP), and materials science. The MICS-supported applied and computational mathematicians also interact regularly with industrial partners in the areas of semiconductor modeling and diesel combustion. As an illustration, etching and deposition software for simulating chip design developed at LBNL is used by chip designers. This software is based on ideas from fundamental research on level-set and front-tracking numerical schemes supported by MICS over the years. The program has a long-standing collaboration with the diesel engine manufacturers.

Partnering across science and technology programs is an important element to the structure and goals of the MICS program that supports these projects. LBNL fully supports this partnering and provides effective championing of this goal within the broader community.

Since the NERSC Center is the major computational resource to over 1500 SC investigators affiliated with about 200 research institutions, it is clearly relevant to the DOE Missions. The advances these researchers have made with the aid of the NERSC capabilities are detailed on www.nersc.gov/research/nerscresearchers.html. As computational/information science gains in significance in the scientific method, the NERSC Center is establishing its role in providing the computational technology needed by the Nation. Some examples are the excellent effort the NERSC Center staff is providing on coupled global atmospheric-ocean models, on high speed distributed systems, on storage and data management and on effective visualization techniques, and the methods of using clusters of Commercial-Off-The-Shelf (COTS) workstations. The NERSC Center also worked closely with Silicon Graphics Incorporated/Cray Research Incorporated (SGI/CRAY) on several issues of national interest. For example, the NERSC staff and SGI/CRAY demonstrated the first system checkpoint and restart on a Massively Parallel Processing (MPP) system this last year - see www.lbl.gov/CS/Archive/headlines 10-21-97. The relevancy of the Center and its research and technology efforts are outstanding.

LBNL's LTR continues to make valuable contributions to DOE mission objectives. First class research on each multi-year LTR project meets at least one DOE mission need. A good example may be found in the project involving studies of light emitting diodes (LEDs) that emit in both the green and blue. This project has the potential for low cost lighting and flat panel display technologies. Another LBNL project, involving zinc/nickel oxide batteries, has enormous potential for use in an electric car.

LBNL also conducts an active rapid access program by providing the expertise of LBNL researchers to industry. One example involves a personnel exchange for a Raman study of catalysts with high potential for the chemical industry.

Criteria 3: Performance in the technical development and operation of major research
Rating: Outstanding

LBNL is a participant in the Materials Micro Characterization Collaboratory (MMC) pilot, an important element of which is the development of a common user interface and basis for accessing instrumentation at Materials User Facilities from off-site locations. The goal of the pilot is to introduce a new paradigm in scientific research by developing a cohesive virtual laboratory accessible from anywhere on the Internet. This offers great potential for positively impacting the effectiveness of the facilities by making them more accessible and in some cases more highly utilized. Significant progress has been made towards this goal. For example, automating the positioning and focusing of the microscope at LBNL through the development of advanced computer vision algorithms has been implemented that allows experimenters at remote locations to “drive” the microscope, obviating the latency effect from the network. They are able to change magnification, scan the sample, alter its orientation, and trigger a range of experimental conditions. Collaborators are able to do this through a computing environment that includes the necessary video-conferencing tools.

It is in this category that the NERSC Center really shines. The Center is one of the top ten largest unclassified computing centers in the world and perhaps now the most integrated facility, in that it contains a strong research effort, is the home of Esnet, a strong new technology effort and the user services section, which is now setting the pace for other centers. The resources at the Center are at the cutting edge, yet the user support has made the equipment accessible and very useful to the ER investigators. In the DOE complex, the NERSC Center was commended in a recent General Accounting Office (GAO) audit for its high utility, which is actually better than the report states. The strong use of Web services for users convenience is making the Center known for its user-friendliness. The proof of the utility of the Center is, of course, in the advances in our understanding of nature developed through its services. Illustrations are at www.nersc.gov/research/nerscresearchers.html The NERSC Center is providing and helping SC investigators make use of its top-rank computing facilities in a truly outstanding way.

Criteria 4: Programmatic performance and planning
Rating: Excellent

The computer science and network research program at LBNL has been quite effective in the past year in planning for the future and determining how to align its R&D with the needs and missions of the Department.

The LBNL applied and computational mathematics research effort has been consistently successful in meeting and exceeding long-term goals of developing analytical and numerical methods of fundamental value and wide applicability and shorter-term goals that involve collaborations with LBNL, UC Berkeley, and DOE disciplinary scientists on programs such as the Grand Challenges and ASCI. During the past year the applied mathematics group, the large-scale computing group, and the advanced algorithms group, have forged strong ties that will further strengthen their ongoing modeling, analysis, and large-scale simulation projects. LBNL has hired from National Aeronautics

and Space Administration - Ames (NASA), an expert in performance evaluation and algorithm development for parallel and distributed computing platforms. He will serve as a bridge between MICS-supported applied and computational mathematicians and the more hardware-oriented computer scientists at the laboratory. There is an emerging synergy among the various applied mathematics and computing groups that can only strengthen the LBNL applied mathematics effort. For example, LBNL's large scale computing group is working on turbulence simulation with the applied mathematics group and using these results to improve critical turbulence submodels in their diesel combustion collaboration with the advanced algorithms group and researchers from LLNL and New York University. The NASA Ames expert and a principal deputy from LBNL's Computing Sciences are strengthening ties to the nearby Mathematical Sciences Research Institute (MSRI) in the areas of symbolic and geometric computing, in partnership with an MICS-supported researcher at MSRI. In sum, the overall LBNL applied mathematics program is poised for even greater successes in the years ahead.

The re-invented NERSC Center requires planning and collaboration across the full national SC complex and across computational science and SC scientific disciplines. The management team at the Center uses various methods of providing the channels of communication that are necessary to make this work. For example, there are monthly telemeetings with the Energy Research Scientific computing Users Group (ERSUG) and extensive use of World Wide Web (WWW) keep users and collaborators informed. Because of the additional complexity of the present high-end computing equipment marketplace, the Center has created new procurement methods that have served the SC community well. The management of the Center on the operational side and research/technology side both appear to be outstanding.

R&D projects involve planning across multiple organizations. This is done well and appropriate milestones are met. From a management perspective, the performance is outstanding. Strong leadership from their participation has been invaluable in helping maintain a cohesive collaborative effort across all the R&D projects, the pilots and the Advanced Computational Testing and Simulation (ACTS) projects. This applies generally as well as in the particular instance of the R&D and pilot projects involved. The efforts are completed in a timely fashion. Their collaborative activities within DOE are a positive contribution, and they also interface well with others in the research community, outside of DOE, who are pursuing R&D in the same or similar areas.

Being proactive in more operational long range planning by the Esnet operational personnel could be better. Better attendance at Federal Government interagency meetings for long range planning would also be beneficial. These can be through video or audio.

LBNL makes a very strong effort in carrying out its research goals in a timely fashion. However, the unique nature of the Cooperative Research and Development Agreement (CRADA) and the resultant negotiations required to implement CRADAs, make a rigorous timetable difficult to maintain. LBNL could improve its CRADA negotiation process, which would result in less delays in beginning research projects.

LBNL has taken the lead among the SC laboratories in responsiveness to requests from DOE Headquarters concerning conduct of the LTR program. Furthermore, LBNL has initiated and conducted a survey of industry partners for multi-year projects on their impressions of the LTR program. This survey provided valuable information which can be used to improve the conduct of the LTR program.

Performance Area: Nuclear Physics

Overall Performance Rating: Outstanding

Criteria 1: Quality of science:

Rating: Outstanding

The Quality of Science of the Nuclear Physics research program is considered to be excellent-outstanding. The staff of the Nuclear Science Division (NSD) are playing leadership roles in the areas of nuclear structure physics (using the 88" Cyclotron and the GAMMASPHERE (Argonne) in relativistic heavy ion physics (using facilities at CERN and the Alternating Gradient Synchrotron, AGS), and in the development of the facilities at the Sudbury Neutrino Observatory (SNO). The nuclear theory group conducts an excellent program of research, primarily on topics relevant to ultra-relativistic heavy ion physics.

Criteria 2: Relevance to national needs and agency mission

Rating: Outstanding

The research and development program in the NSD at Berkeley is focused on the highest priority areas in nuclear physics, as identified in the Long Range Plan for Nuclear Physics, 1995. These include the development and utilization of the RHIC facility at Brookhaven, the SNO detector in Canada, and the Gammasphere project (now at Argonne), and the development of a major radioactive beam facility. In many of these areas Berkeley is playing a major leadership role.

Criteria 3: Performance in the technical development and operation of major research

Rating: Outstanding

The 88 Inch cyclotron has operated very successfully as a national user facility, particularly in the recent past when it was the site of the Gammasphere detector. Berkeley has been particularly successful in the design, construction of the TPC chamber, the major component of the STAR Detector-Silicon TARget (STAR) at RHIC. TPC chamber was relocated to Brookhaven in FY 1998, and LBNL continues to play a leadership role in the completion of the assembly of the STAR detector.

Criteria 4: Programmatic performance and planning

Rating: Outstanding

The overall management of the research program is considered to be excellent to outstanding. The NSD has been positioned and repositioned over the years to play significant roles in addressing high priority areas of research in the international nuclear physics effort. The director has continued to move aggressively to recruit young very promising staff and to identify appropriate new initiatives.

Performance Area: High Energy Physics

Overall Performance Rating: Outstanding

Criteria 1: Quality of science:

Rating: Outstanding

The Physics Division has made outstanding contributions to: the measurement of Conservation of Parity (CP) violation in Hyperon decays; the design and construction of components for large, high-energy particle detectors (notably, but not exclusively, detector electronics) for BaBar at the B-factory and A Toroidal LHC (Large Hadron Collider) Detector (ATLAS), at the CERN Large Hadron Collider (LHC); Collider Detector Facility (CDF), and D0 upgrades at Fermilab; supernova search results in measuring the dynamics of the universe; the development of unique silicon detectors, such as large area IR-sensitive Charged Couple Devices (CCD's) to extend the range of the supernova search; and leadership in the successful development of pixel detectors for ATLAS.

The Accelerator and Fusion Research Division (AFRD) Center for Beam Physics activities are pioneering and world-class. For example, the work on laser-based acceleration schemes has impressed all reviewers, and they have made an excellent start on contributions to the LHC accelerator. The superconducting magnet program work is of outstanding quality and quantity, including the effective use of brittle conductor materials in high-field magnets and a potentially low-cost collider 2-in-1 dipole magnet design. This group recently produced the world's highest field dipole magnet.

Criteria 2: Relevance to national needs and agency mission

Rating: Outstanding

The Physics Division is making key contributions to major High Energy Physics (HEP) programs. LBNL has: a lead role in the U.S. ATLAS computing effort, using the National Energy Research Scientific Computer; a lead role in ATLAS pixels, semiconductor tracker, and related electronics; and a major role in the BaBar detector and the Fermilab CDF and D-Zero detector upgrades. The Particle Data Group is the national clearinghouse and distributor for information resulting from HEP experiments and conducts a highly regarded education and outreach program in particle physics.

The AFRD Center for Beam Physics is actively involved in accelerator R&D for future HEP facilities, including a possible upgrade to the Next Linear Collider, and the concept for a muon collider. The superconducting magnet group has a strong program in very high-field magnet.

R&D with application to a practical, cost-effective, very high-energy hadron collider (beyond the LHC). Through an active role in the annual Particle Accelerator Schools and through joint faculty appointments at the University of California at Berkeley, LBNL has a strong, effective commitment to education in accelerator physics.

Criteria 3: Performance in the technical development and operation of major research
Rating: Outstanding

The Physics Division is primarily a user of other major HEP facilities (Stanford Linear Accelerator Center (SLAC), Fermilab, CERN, e.g.), but the Division also contributes significant equipment to these facilities (BaBar components, etc.). A Division staffer led the team which conducted a very successful first run studying Hyperon CP violation at Fermilab. Preliminary results indicate the sensitivity of this measurement has been increased by several orders of magnitude, relative to previous methods.

The AFRD contributes accelerator design expertise and components to other major facilities. After some early difficulty as lead on the construction of the PEP-II Low Energy Ring at SLAC, LBNL, in collaboration with Lawrence Livermore National Laboratory (LLNL), and SLAC, has succeeded in maintaining the schedule for commissioning PEP-II in July 1998. Delivery of superconducting wire and cabling machinery to the LHC project at CERN has been on time.

Criteria 4: Programmatic performance and planning
Rating: Excellent

Physics Division. In spite of nearly flat budgets over the last several years, the quality of science in the HEP program at LBNL has been outstanding. However, there has been severe stress on several programs, such as D0 and theory, due to loss of manpower. It will take careful planning and prioritization for LBNL to maintain a critical mass in those HEP activities in which LBNL chooses to make the most impact.

The AFRD continues to be an institutional, national, and international resource in areas of accelerators and high-energy particle beams. However, the Division is partnering on several projects based at other institutions (Dual Axial Radiographic Hydro Testing (DARHT) at Los Alamos National Laboratory (LANL), PEP-II at SLAC, LHC at CERN) which places a severe burden on management of personnel. AFRD management has chosen to maintain full funding for a highly talented division by applying its strengths to niche areas in many projects and programs, which involves multi-tasking the most experienced personnel. This entrepreneurial approach requires the development of appropriate management tools, to be successful.

Although the superconducting magnet group has embarked on an exciting and potentially rewarding direction in high-field magnet development, careful planning is required to meet near-term goals, and the long-term program needs a more detailed outline.

Lawrence Berkeley National Laboratory has taken a leadership role in identifying ways that the Department's Scientific and Technical Information can be used to increase the visibility of the Department's R&D contributions.

Performance Area: Fusion Energy Sciences

Overall Performance Rating: Outstanding

Criteria 1: Quality of science:
Rating: Outstanding

The Lawrence Berkeley National Laboratory (LBNL) Fusion Energy Research (FER) group remains dedicated to developing, at minimum cost, heavy-ion inertial fusion (HIF) as a safe, economical energy source. As such, it is supporting industrial sources of improved accelerator materials and systematically developing higher performance, lower cost components for HIF drivers. Their excellent record of beam research experiments was furthered in FY98 with the beam merging experiment conducted on the re-activated MBE-4 accelerator. The group also continued its involvement in driver and target studies under a “Tri-Laboratory” collaboration with Lawrence Livermore National Laboratory (LLNL) and Sandia National Laboratory (SNL). This led to an important experiment with Naval Research Laboratory (NRL) in self-pinched final target focusing. The group has also collaborated in or supported key Inertial Fusion Energy (IFE) target chamber technologies such as liquid walls (for neutron protection and heat energy removal) and a rep-rated target injection and tracking system. Using the National Energy Research Scientific Computing Center (NERSC) at LBNL, the group has begun developing the capability to model ion beam propagation through the full length of an HIF driver.

The group has a consistent record of innovation in both scientific and technology topics. Their publication efforts have also remained active, including contributions to several conference proceedings and technical reports, as well as refereed papers.

Criteria 2: Relevance to national needs and agency mission
Rating: Outstanding

The LBNL FER program is the national leader for the development of heavy-ion accelerators, still the driver of choice for IFE applications. IFE is appropriately considered a true “alternate concept” to the mainline Magnetic Fusion Energy (MFE) tokamak. DOE technical advisory groups have consistently recommended expanded resources for alternates in general and for IFE in particular, and Congress encouraged the same in the FY 1999 appropriations language. The program continues to outline a fusion energy development path based on heavy-ion IFE that is potentially more rapid and lower in total development costs than MFE approaches, *and* that could also offer other fundamental advantages to future utilities, e.g., better reliability/availability/maintainability (RAM) with the possibility of multiple target chambers and de-coupled driver and reactor(s).

Criteria 3: Performance in the technical development and operation of major research
Rating:

N/A

Criteria 4: Programmatic performance and planning
Rating: Excellent

With a modest budget and using mostly existing equipment, the LBNL IFE program has kept long-term goals in focus, and continued to advance heavy-ion accelerator technologies and IFE science. Scaled experimental and computational studies are being conducted to support the development of a proposal for a new, integrated IFE facility based on a heavy-ion accelerator within about five years.

The Laboratory Director has demonstrated strong support for a major increase in effort in this program, and has indicated a desire to leverage LBNL's contribution to the DP-funded DAHRT project at LANL to help sustain and expand the related expertise needed at the lab for the aforementioned integrated IFE facility. This has led to a new joint proposal with LLNL (and NRL, General Atomics, and the University of Rochester) to broaden the IFE program. The program also recently negotiated an agreement with the LLNL IFE program to form a "virtual laboratory," wherein the two programs will form a joint research team, including the relocation of some LLNL personnel to the LBNL site. This will enhance interactions between researchers, and potentially reduce some program costs.

Performance Area: Energy Efficiency & Renewable Energy

Overall Performance Rating: Excellent

**Criteria 1: Quality of science:
Rating: Excellent**

Performance feedback was received from Environmental Energy Technology Division's (EETD) two largest DOE program sponsors, the Office of Building Technology, State and Community Programs (OBTS) and the Office of Transportation Technologies (OTT), both within Energy Efficiency & Renewable Energy (EERE).

OBTS:

Commercial Buildings: LBNL/EETD is performing leading edge research on thermal distribution systems within commercial buildings. The level of detail and depth of investigative work is unmatched by any other research organization. LBNL's building technologies and design work continues to exceed all expectations. The staff does high quality work that continues to have a significant impact on the entire commercial buildings industry.

Building Technologies/Codes: LBNL expanded the options and capabilities of the life-cycle-cost spread sheet and National Energy Savings spreadsheets. By allowing users to insert alternative assumptions about inputs, e.g. Energy prices and appliance lifetimes, these spreadsheets enable users immediately to see the impacts on both the important life-cycle-cost and the national energy savings analytical results. These enhanced spreadsheets were well received by stakeholders at various appliance standards workshops.

Building Technologies/Tools: In the area of building design software, significant progress was made on releasing a number of software programs:

- pre-release of the Building Design Advisor was completed
- work with industry (IAI), version 1.5 of Industry Foundation Classes was released
- beta version of Simulation Problem Analysis and Research Kernel (SPARK) was released for testing.

Windows: Highlights of scientific work this year included the implementation of the R-100 award-winning ion gun for window coatings. Last year won the R&D 100 Award for development of a constricted glow discharge plasma source. The cylindrical version of the source was patented and a linear version was developed for full-size commercial coating systems. Courtaulds tested the source and reported a spectacular increase in deposition rates for a type of window film. LBNL completed two in-depth invited articles laying out the principles behind new optical methodology for expanding the range of existing standards. One paper deals entirely with the difficult problem of angle dependence, which is critical for accurate predictions of annual energy performance of windows with advanced coatings.

Lighting: LBNL is recognized in the lighting community for their past achievements and contributions in basic lighting science. Since the loss of key scientific staff several years ago, their

output suffered somewhat. For example, the number and quality of basic lighting scientific publications has decreased. More applied publications associated with controls, fixture design and system efficiency continue to be of very high quality but lack the basic science aspect the lighting community had associated with the Laboratory in the past. The quality of science is good, but room for improvement exists.

OTT:

The work of the Berkeley Electrochemical Research Center in support of OTT programs was outstanding in FY 1998. Specific accomplishments include:

- * Developed joint in-situ X-ray dispersion and X-ray absorption spectroscopy studies to study mixed oxides in rechargeable lithium-ion cells. The role of both transition metals in mixed -cation oxides was determined for nickel and copper substituted manganese spinels for use in lithium-ion batteries
- * Established a direct correlation between the electrochemical capacity of lithium-ion cells and ratio of basal-plane area to the edge area of graphite materials.
- * Developed a model of steady-state hydrogen atom transport in a metal-metal hydride electrode. The model shows the activity coefficients of hydrogen are not constant.
- * Developed a novel network generation technique to model the effects of manufacturing parameters on electrode connectivity
- * Developed in-situ characterization methods leading to an understanding of hydrogen and CO oxidation on Pt and Pt alloy surfaces and improved fuel cell catalysts
- * Discovered that thin transparent films of nickel hydroxide and titanium dioxide on a battery electrode can be photochromic and/or electrochromic, opening the possibility that these inexpensive materials can be developed for 'smart' energy-efficient windows and information display panels. A patent is pending.
- * Published over 26 refereed journal articles.

Criteria 2: Relevance to national needs and agency mission

Rating: Outstanding

OBTS:

Commercial Buildings: Activities to support the Rebuild America program have directly and positively impacted the national success of the program, which is providing measurable energy and carbon savings. Substantial work was also done to successfully demonstrate new energy efficiency technologies in real buildings, which will help speed the market acceptance of the new products and techniques.

Building Technologies/Codes: There is a National environmental goal of reducing carbon emissions, and LBNL's appliance standards analyses have consistently provided information about the carbon-reducing effects from reduced energy consumption associated with alternative energy-efficiency standard levels.

Windows: THERM 2 software, completed in 1998, represented a significant advance in fenestration thermal performance software in terms of accuracy and ease of use. This software is scheduled for adoption by the National Fenestration Research Council (NFRC) as the basis for window thermal performance software in the United States. It has been reported that the Russian Federation adopted for incorporation into their standards THERM 2.0 this year as well as WINDOW 4.1 (developed by LBNL and licensed to the Russian Federation).

Lighting: A good number of successful commercial spin-offs and collaborative opportunities have been demonstrated, especially in the area of lighting fixtures and designs. While the lighting community recognizes the need for the Laboratory to place a high priority on patents and licenses, concerns articulated by some potential and current industry partners have suggested that the intellectual property position demanded by the Laboratory is too restrictive and too costly. The lighting industry is characterized by very modest profit margins on a very diverse product mix. Industry expects this attitude to prevail with intellectual property rights as well. This perception may have an adverse effect on the Laboratory's ability to be more effective with outreach efforts.

OTT:

LBNL's battery and fuel cell research and development efforts support advanced battery systems under development by the U.S. Advanced Battery Consortium (USABC) and Partnership for a New Generation of Vehicle (PNGV), both major national initiatives. The Laboratory has been successful in transferring the most promising electrochemical technologies to the private sector, USABC, and the PNGV programs. For example, mathematical models describing the performance of batteries has been transferred to assist the battery developer's efforts, and collaboration with Superior Graphite has resulted in developing heat treatments of coke to enhance carbon morphology and lithium storage capacity. Electrocatalyst R&D results have been transferred to fuel cell development efforts at other National laboratories and to catalyst developers. These programs are essential to National needs related to energy security, clean air, and economic competitiveness.

Criteria 3: Performance in the technical development and operation of major research
Rating:

N/A

Criteria 4: Programmatic performance and planning
Rating: Excellent

OBTS:

Commercial Buildings: Overall, the planning and execution of activities is timely and within budget. Additional effort should be given to providing interim updates on the progress of research and activities throughout the life-cycle of projects.

Building Technologies/Tools: In the Building Design Tools area, all activities met their objectives and most major milestones. User participation has been satisfactory. DOE and stakeholders were kept informed about changes.

Building Technologies/Codes: For close to two decades, LBNL has been the principal source of analyses for DOE's efforts to improve the energy-efficiency of appliances. The analytical requirements of the Department's mission have been demanding, and LBNL has consistently managed to address successfully the most difficult challenges. As there has evolved increased stakeholder interest in DOE's appliance standards analyses, there has been a need for the Department to develop new analytical tools, both to satisfy growing stakeholder interest, as well as to extend its analyses to more precise levels. LBNL's efforts to make the appliance standards analyses simultaneously more transparent and more robust has greatly facilitated stakeholder understanding and acceptance of DOE's appliance standards program. In some areas, however, LBNL needs to increase their planning and management activities. For example, workshop materials were often delivered too late for DOE to review prior to being included in public workshops conducted by DOE. While many of the analytical submittals were of excellent quality, the quality of submittals was not consistent. In addition, LBNL staff do not coordinate their activities and submittals adequately among themselves; causing inconsistencies among rulemakings and creating additional work for DOE. Furthermore, if LBNL has completed the documentation of program results, i.e., databook, DOE, LBNL and others would have been better poised to provide timely and consistent metrics of program impacts.

Windows: LBNL performance has continued to improve in window and glazing research. LBNL is less late with proposed statements of work, but should take steps to submit a draft statement of work for FY 2000 in July 1999 with the final statement of work to be completed in August. Monthly reports have been consistently late, so monthly publication of the reports on an internal web site is being attempted, with detailed written reports on a quarterly basis. The target is to have brief web based reports within 7 days of the end of the month reported, but this has yet to occur. During the coming year, there are a few areas which deserve LBNL vigilance in the area of window and glazing research. These include technical coordination of the electrochromics industry consortia project for which LBNL is the lead technical laboratory. Over the last two years, the project has been plagued with test equipment problems at NREL, though significant steps have been taken to reduce the risk of future delays. The technical partnership with industry is now benefiting from more proactive technical assistance by the laboratories, and this should continue.

Lighting: Room for improvement exists in the area of programmatic performance monitoring and strategic planning for Lighting R&D. Several national laboratories have successfully implemented user-oriented information and dissemination programs. There are opportunities to do so in this area, and a plan to improve information dissemination to sponsors and users is needed. Historically, little technical detail is provided by the Laboratory upon which significant funding decisions must be made by OBTS. Also, periodic performance reports from the Laboratory have not always provided sufficient detail to enable adequate evaluation by OBTS. Similarly, little strategic planning to overcome key scientific staffing deficiencies have been articulated. This year for example, a specific request was made for a long-term strategic plan, but none has been received to date. Since a key management position within the Lighting R&D group has only recently been permanently filled, some time will be required to develop such a detailed strategic plan and reporting procedure. Both OBTS

and EETD management must prioritize this task and devote adequate resources to its achievement. The peer reviewers comments notwithstanding, there is an increasing desire for the Laboratory to become more involved with the details of the lighting market place. There needs to be a balance between basic lighting science and enabling technology that can be used by industry, with the Laboratory needing to be more involved in the market place. There is insufficient emphasis being placed on developing the basic technologies necessary to meet the DOE HQ energy conservation goal of 50% reduction in lighting energy by 2010. Low-cost, efficient alternatives to incandescent products are critically required as are improvements to lighting physiology and quality metrics. With the improvement in the staff capability, along with potential synergism by working with other research facilities, the expectation is that performance will improve.

OTT:

The LBNL/EETD principal investigators have done an outstanding job of addressing program objectives and system level performance targets. Technical milestones have been met and work is carried out within budget and on schedule. The leadership, planning, reporting and management of these interdisciplinary programs has been outstanding.

Appendices

Report Methodology

APPENDIX F - OBJECTIVE STANDARDS OF PERFORMANCE

This report provides the Contracting Officer's Fiscal Year 1998 evaluation and validation of the Contractor's self assessment of performance in its management and operation of Lawrence Berkeley National Laboratory (LBNL) for the DOE under the contract. In this contract, the University and DOE have agreed to use a performance-based management system for Laboratory oversight. These standards are used for the appraisal and evaluation of work under this contract and is supported by a system that includes: (1) the utilization of self assessment and integrated oversight methodologies, systems, and processes to enhance operational efficiency and performance effectiveness; (2) the use of peer review and self assessment in the appraisal and evaluation of science and technology/programmatic performance; and, (3) such other administrative processes and procedures as the Parties may mutually agree to, from time to time, as they deem necessary to effect the intent of Clause 2.6 and Appendix F to this contract. Self assessments are the principle means by which the Contractor evaluates compliance with the performance objective described in Appendix F. DOE OAK validates against the self assessment and evaluates the Contractor's performance. The validation effort is conducted by teams responsible for the various functional areas represented in Appendix F. These teams, with guidance from DOE OAK management, are responsible for developing an adequate, independent basis for assessing the quality, credibility, and accuracy of the Contractor's self assessment; and a basis for DOE OAK's evaluation of the Contractor's performance.

This report meets the following contract requirements by providing:

- a summary of the results from the conduct of the DOE OAK validation program and evaluation of performance of work under this contract as required by Clause 2.6.
- a written assessment of the Contractor's performance under the contract based upon the DOE OAK appraisal program and the Contracting Officer's evaluation of the Contractor's self assessment as required by Clause 2.6(e).
- the basis for determination of the Senior Management Salary Increase Authorization (SIA) Multiplier as required by Section III, paragraph (f), (6) and (8) of Appendix A and Section C, Part III of Appendix F.
- the basis for determination of the Contractor's Program Performance Fee, as required by Clause 5.3.

1. **Appendix F Components of Laboratory Evaluation Process**

The first component of the performance evaluation process is the evaluation of Science and Technology/Programmatic performance. The University of California President's Council on the National Laboratories performs a peer review and evaluates the quality of science and technology at the Laboratory. The Council prepares a report that the University's Laboratory Affairs Office uses to develop an adjectival and numeric rating for the evaluation of Science and Technology at the Laboratory. DOE Headquarters (DOE HQ) program managers and their DOE OAK counterparts validate the Science and Technology self assessment.

The second component of the performance evaluation process is the annual Contractor self assessment of the operations and administrative systems at LBNL included in Section B of Appendix F. The results of this self assessment and proposed corrective action plans are then presented to the University of California, Laboratory Administration Office (UCLAO) by the Laboratory. This becomes the foundation for the Contractors self assessment.

UCLAO management also evaluates the administrative systems for the Laboratory using the self assessments and corrective action plans provided by the Laboratory and the established Appendix F performance measures. UCLAO establishes an aggregate "rating" for the Laboratory based on the evaluation of each functional area and combines this result with the ratings for Science and Technology for a total adjectival and numeric rating.

DOE OAK reviews and validates Contractor performance using the established Appendix F performance objectives, the UCLAO rating of the Laboratory self assessment and corrective action plans. This effort is accomplished by teams reflecting expertise in the various functional disciplines required by the Appendix F operations and administration systems. All teams have the opportunity to observe the Laboratory's independent evaluation of its self assessment. This report is the product of their review and validation of the Contractor's performance. The primary objective of this report is to provide the annual Contracting Officer's a written assessment of the Contractor's performance under the contract. This report also documents the DOE determination of the Senior Management Salary Increase Authorization (SIA) Multiplier and the amount of earned Program Performance Fee in accordance with Contract terms.

2. **Self Assessment Period**

Designed to capture performance for Fiscal Year 1998, the self assessment period for the Laboratory is October 1, 1997 through September 30, 1998, unless specified otherwise in the performance objective. The Laboratory provided its self assessment to UC on September 30, 1998. The Contractor provided the self assessment of LBNL and proposed rating to DOE OAK on November 2, 1998.

The Contractor and DOE agreed to use the following table for adjectival graded and numeric scoring:

DOE-UC Rating Adjectives

Percentage Range	Adjectival Description	Definition
100-90 %	Outstanding	Significantly exceeds the standard of performance; achieves noteworthy results; accomplishes very difficult tasks in a timely manner
89-80 %	Excellent	Exceeds the standard of performance; although there may be room for improvement in some elements, better performance in all other elements offset this
79 - 70 %	Good	Meets the standard of performance; assigned tasks are carried out in an acceptable manner - timely, efficiently, and economically. Deficiencies do not substantively affect performance.
69- 60 %	Marginal	Below the standard of performance; deficiencies are such that management attention and corrective action are required.
< 60 %	Unsatisfactory	Significantly below the standard of performance; deficiencies are serious, and may affect overall results, immediate senior management attention, and prompt corrective action is required.

3. Methodology for Validation of Numerical Scoring for Contractor Self Assessment - Science & Technology FY 1998

a. Introduction

The programmatic assessment of the Laboratory is based upon the consideration of peer review and self assessment in the appraisal and evaluation of S&T/Programmatic Performance; and validated by DOE HQ and OAK program managers. Incorporating the programmatic assessment, the ratings for the science and technology is determined by applying the rating table below. To convert the adjectival rating to an equivalent numerical (percentage) score, the methodology outlined below is utilized.

b. Methodology

For each programmatic assessment and defined by the Parties appraisal area for FY 1998, a specific number is applied, as follows:

Scoring Crosswalk Table

Adjectival Rating	Range	Score
Outstanding	90-100 %	95
Excellent	80-89 %	85
Good	70-79 %	75
Marginal	60-69 %	65
Unsatisfactory	59 ↓ %	55

Example

Science and Technology	Adjectival Rating	Numeric Score	Weight	Weighted Score
Biomedical and Environmental Research	Outstanding	91.67	0.03	2.75
Criteria 1	Excellent	85		
Criteria 2	Outstanding	95		
Criteria 3	N/A			
Criteria 4	Outstanding	95		

(85 + 95 + 95 = 275/3=91.67=Outstanding)

The scoring range table is used because averaging yields results other than 95, 85, 75, 65, 55.

The overall score for the Science and Technology/Programmatic performance assessment is calculated by totaling the scores from each Research and Development (R&D) Scientific Division. All Divisions are not weighted equally in the calculation of the overall Science and Technology score. DOE adopted the weights used by the Contractor in their Science and Technology self assessment at the Division level. The weights are created using a balance between program budget. Thus, appraisal results for Divisions with a greater amount of resources are more heavily weighted than Divisions with a smaller number of resources.

DOE OAK weights all four criteria equally within each LBNL Scientific Division.

The weighted scores in the programmatic appraisal areas are totaled and the resulting percentage is assigned an adjectival rating based on the scoring range in the Scoring Crosswalk Table. Thus, for FY 1998, S&T's weighted score is 90.39 which equates to an **outstanding** adjectival rating. 90.4 percent of 500 when rounded equals 452 points for FY 1998. (See Appendix C - FY 1998 Science and Technology Scores.)

4. **Appendix F Appraisal Component Methodology**

The DOE OAK Functional Teams validate the Contractor's self assessment on quality, accuracy, and credibility. Consideration is also given to other sources of information, reviews, or tests. From this process the teams recommended a numeric and adjectival rating of the Contractor's performance. For Science & Technology the methodology is the same with a heavy reliance on assessment from DOE HQ program offices.

(i) Operations & Administration Functional Areas

The Parties agree that the operation area of "Environment, Safety and Health," is weighted at approximately 60 points over the other functional areas. All other operations and administration functional areas are equal, at 50 points, except for Environment Restoration and Waste Management which is weighted at 40 points.

(ii) Performance Objectives

The Parties establish the weights to be assigned at the performance objective and criteria level within the functional teams.

(iii) Performance Objectives Not Accomplishable During the Rating Period

The methodology used by DOE OAK is to assess these performance objectives where there is enough information available to render an assessment of Contractor performance. In cases where a performance assessment can not be made, it is decided to not rate the performance objective. In such cases the performance objective's weight is maintained, if feasible, by reassigning the performance criteria weights within that performance objective. If that is not possible, the weight of the objective is added proportionately to other performance objectives in the functional area.

(iv) Sources of Information

The initial source of information about performance was obtained from the Contractor self assessment and evaluation. Sources of information used by DOE to validate the credibility and conclusions of the self assessment and the review of the self assessment included, but were not limited to:

- Functional appraisals conducted by line and functional managers with input from Headquarters as appropriate.
- Assessment Management Plans for Operational oversight of the Contractor that include in their scope Appendix F performance objectives.
- Daily operational awareness activities, including interactions, walk-throughs, management meetings, or other modes of formal and informal contact with the Contractor.
- External and internal audits and evaluations, such as GAO/OIG reviews, ES&H assessments, inspections and evaluations, etc.
- Review and validation efforts of Appendix F measures during the two week performance assessment review of the Contractor.

(v) Factual Accuracy Check

A draft of the performance narrative of this report is provided to UC December 14, 1998, to check the factual accuracy of its contents. The University returned its comments on December 17, 1998.

PERFORMANCE APPRAISAL - APPENDIX B - OPERATIONS AND ADMINISTRATION SCORING

Column 1: **POINTS** - represents the total points allocated for the entire functional area. For example, the functional area of Laboratory Management is allocated 50 points of the 500 point total for all of the operations/administration section. This is the first tier for the weightings of each functional area; all other weightings within a functional area are subordinate to this overall weight [or points available.]

All functional areas are not equal to each other; they are weighted using a hierarchical method. For example, in FY 1998, the functional area of Environmental Restoration and Waste Management is allocated a total of 40 points; all other areas are allocated 50 points, with the exception of Environment, Safety and Health, which is allocated 110 points.

While column 1 (points) represents the total points available for that functional area, the total points available are further broken down [or allocated] by performance objective(s), and within each objective, by criteria and the actual performance measure(s).

Column 2: **SCORE** - represents the total points received, through the DOE evaluation process, for each functional area for the fiscal year. For example, if a functional area has 30 points available, the DOE evaluation would result in a numeric score of 30 or less. Thus, it represents the final scoring for the functional area. The summation of column 2 results in the overall score for operations/administration functional areas.

Column 3: **PERCENT** - represents the numeric score, expressed as a percentage of total points available. In the above example of a functional area with 30 points, if the functional area received 26 points, this would equate to 87 percent.

Unique Methodology For Property Management Scores

DOE OAK has used specific, unique methodology only applicable to the Property Management performance area in calculating the overall score, percent and adjectival rating for the FY 1998 performance. The Parties agree upon the use of a rating table designed to identify a range of **(PPAM)** points earned and the translation of such points to a numeric scoring for the purposes of the Appendix F performance rating for FY 1998. (See below).

**FY 1998 Appendix F
Property Scoring Table**

PPAM Points Earned	Translation to Appendix F Contractual Scoring	Adjectival Rating
493-500	98	Outstanding
484-492	95	
475-483	92	
469-474	88	Excellent
460-468	85	
450-459	82	
433-449	78	Good
417-432	75	
400-416	72	
384-399	68	Marginal
368-383	65	
352-367	62	
336-351	58	Unsatisfactory
320-335	55	
304-319	52	

Using the PPAM model, Property Management could earn from 0 up to 500 points in their performance. If the Contractor earns 480 points (performance in the range of 475 - 483) falls into the category of 92 percent for an outstanding adjectival rating. (Even though mathematically, the total scores for each element adds up to 43.1 out of a possible 45 points, or 95.9 percent)

Senior Management Salary Increase Authorization Multiplier (SAI)

The total points earned for in the performance in Science and Technology and Operations and Administration are used to determine the SIA. Using the table (Section C, Part III of Appendix F), the total points earned correspond to the agreed numeric equivalent. The numeric equivalent is used as a multiplier of each Senior Management merit pool.

Appendix B - Operations and Administration System Scores Summary
Lawrence Berkeley National Laboratory

FUNCTIONAL AREA	POINTS POSSIBLE	SCORE	PERCENT	ADJECTIVE
LABORATORY MANAGEMENT	50	45.0	90.0%	Outstanding
ENVIRONMENT RESTORATION AND WASTE MANAGEMENT	40	36.2	90.5%	Outstanding
ENVIRONMENT, SAFETY & HEALTH	110	96.4	87.6%	Excellent
FACILITIES MANAGEMENT	50	45.3	90.7%	Outstanding
FINANCIAL MANAGEMENT	50	44.7	89.3%	Excellent
HUMAN RESOURCES	50	42.1	84.1%	Excellent
INFORMATION MANAGEMENT	50	44.6	89.2%	Excellent
PROCUREMENT	50	46.5	93.1%	Outstanding
PROPERTY MANAGEMENT	50	34.0	68.0%	Marginal
TOTAL	500	435	87.0%	Excellent

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		POINTS	SCORE	PERCENT
LABORATORY MANAGEMENT		50.0	45.0	90.0%
PERFORMANCE OBJECTIVE #1	Laboratory Leadership	50.0	45.0	90.0%
		(Weight = 100%)		
1.1	Institutional Stewardship and Viability	50.0	45.0	90.0%
		(Weight = 100%)		
1.1.a	Planning	8.5	8.1	95.0%
1.1.b	Establishing and Communicating Performance Expectations	8.3	7.1	85.0%
1.1.c	Stewardship of Assets	8.3	7.9	95.0%
1.1.d	Effective Resource Management	8.3	7.6	92.0%
1.1.e	Community Relations	8.3	7.1	85.0%
1.1.f	Accountability and Commitments	8.3	7.3	88.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
ENVIRONMENT RESTORATION AND WASTE MANAGEMENT		40.0	36.2	90.5%
PERFORMANCE OBJECTIVE #1 Environmental Restoration and Waste Management (Weight = 100%)		40.0	36.2	90.5%
1.1 Waste Management	(Weight = 25%)	10.0	9.5	95.0%
1.1.a		4.0	3.8	95.0%
1.1.b		6.0	5.7	95.0%
1.2 EM Program Innovation	(Weight = 25%)	10.0	9.9	99.0%
1.2.a	Advancement of the EM Program	10.0	9.9	99.0%
1.3 Environmental Restoration	(Weight = 25%)	10.0	8.0	80.0%
1.3.a	Environmental Restoration	10.0	8.0	80.0%
1.4 Cost and Schedule Variances	(Weight = 25%)	10.0	8.8	88.0%
1.4.a		10.0	8.8	88.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
ENVIRONMENT, SAFETY & HEALTH		110.0	96.4	87.6%
PERFORMANCE OBJECTIVE #1 Do Work Safely		(Weight = 100%)	96.4	87.6%
1.1 Effective Protection and Prevention	(Weight = 10%)	11.0	9.1	82.3%
1.1.a	Radiation Protection of the Public and the Worker			
1.1.b	Safety Hazard Prevention and Protection of the Worker			
1.1.c	Waste Minimization, Pollution Prevention and Protection of the Environment			
1.2 Protection & Prevention	(Weight = 10%)	11.0	9.4	85.0%
1.2.a	Radiation Protection of the Public and the Worker			
1.2.b	Safety Hazard Prevention and Protection of the Worker			
1.2.c	Waste Minimization, Pollution Prevention and Protection of the Environment			
1.3 Operational Requirements	(Weight = 10%)	11.0	8.3	75.6%
1.3.a	Radiation Protection of the Public and the Worker			
1.3.b	Safety Hazard Prevention and Protection of the Worker			
1.3.c	Waste Minimization, Pollution Prevention and Protection of the Environment			
1.4 Continous Improvement	(Weight = 10%)	11.0	9.1	83.0%
1.4.a	Radiation Protection of the Public and the Worker			
1.4.b	Safety Hazard Prevention and Protection of the Worker			
1.4.c	Waste Minimization, Pollution Prevention and Protection of the Environment			

Appendix B - Administrative and Operational System Scores

1.5 System Performance Measures	(Weight= 60%)	66.0	60.5	91.7%
1.5.a Routine Exposures from Routine Activities	(Weight= 5%)	5.5	5.2	95.0%
1.5.b Radiation Protection of the Public and the Environment	(Weight= 5%)	5.5	4.8	88.0%
1.5.c Prevention of Unplanned Radiation Exposures	(Weight= 5%)	5.5	5.2	95.0%
1.5.d Control of Radioactive Material	(Weight= 5%)	5.5	5.2	95.0%
1.5.e Chemical Exposure Prevention	(Weight= 7%)	7.7	7.3	95.0%
1.5.f Accident Prevention	(Weight= 7%)	7.7	6.8	88.0%
1.5.g Occupational Safety and Health	(Weight= 7%)	7.7	6.2	80.0%
1.5.h Tracking Environmental Incidents	(Weight=9%)	9.9	9.4	95.0%
1.5.I Waste Reduction and Recycling	(Weight= 10%)	11.0	10.3	94.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
FACILITIES MANAGEMENT		50.0	45.3	90.7%
PERFORMANCE OBJECTIVE #1 Real Property Management (Weight = 5%)		2.5	2.5	98.0%
1.1 Real Property Management 1.1.a Program Implementation	(Weight = 5%)	2.5	2.5	98.0%
PERFORMANCE OBJECTIVE #2 Physical Assets Planning (Weight = 14%)		7.0	6.5	92.5%
2.1 Comprehensive Integrated Planning Process 2.1.a Effectiveness of Planning Process	(Weight = 14%)	7.0	6.5	92.5%
PERFORMANCE OBJECTIVE #3 Project Management (Weight = 33%)		16.5	14.5	88.2%
3.1 Construction Project Performance 3.1.a Work Performed	(Weight = 20%)	10.0	9.8	98.0%
3.2 Construction Project Cost 3.2.a Total Estimated Cost (TEC)	(Weight = 13%)	6.5	4.7	73.0%
PERFORMANCE OBJECTIVE #4 Maintenance (Weight = 33%)		16.5	15.0	90.8%
4.1 Facility Management	(Weight = 13%)	6.5	5.8	89.0%

Appendix B - Administrative and Operational System Scores

4.1.a	Program Implementation	6.5	5.8	89.0%
4.2	Maintenance Program	(Weight = 20%)		
4.2.a	Maintenance Index	10.0	9.2	92.0%
		10.0	9.2	92.0%
PERFORMANCE OBJECTIVE #5 Utilities/Energy Conservation (Weight = 15%)				
5.1	Reliable Utility Service	(Weight = 8%)		
5.1.a	Utility Service	4.0	3.7	92.0%
		4.0	3.7	92.0%
5.2	Energy Consumption	(Weight = 2%)		
5.2.a	Building Energy	1.0	1.0	100.0%
		1.0	1.0	100.0%
5.3	Energy Management	(Weight = 5%)		
5.3.a	Energy Goals	2.5	2.2	88.0%
		2.5	2.2	88.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
FINANCIAL MANAGEMENT		50.0	44.7	89.3%
PERFORMANCE OBJECTIVE #1 Customer Focus and Satisfaction (Weight = 20%)		10.0	8.6	86.0%
1.1 Methods to Evaluate Customer Expectations (Weight = 10%)		5.0	4.4	87.0%
1.1.a Effectiveness of Methods		5.0	4.4	87.0%
1.2 Customer Satisfaction (Weight = 10%)		5.0	4.3	85.0%
1.2.a Customer Satisfaction Results		5.0	4.3	85.0%
PERFORMANCE OBJECTIVE #2 Operational Effectiveness (Weight = 40%)		20.0	18.4	91.8%
2.1 Leadership in Improving Financial Management Efficiency and Effectiveness (Weight = 17%)		8.5	8.0	94.3%
2.1.a Quality Performance in Reporting Process		2.5	2.4	95.0%
2.1.b Leadership in Systems Improvements		6.0	5.6	94.0%
2.2 Transaction Processing Improvements (Weight = 13%)		6.5	5.9	90.0%
2.2.a Demonstration of Improvement		6.5	5.9	90.0%
2.3 Work Force Management (Weight = 10%)		5.0	4.5	90.0%
2.3.a Effective Work Force Management		5.0	4.5	90.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE #3 Financial Stewardship and Integrity		(Weight = 40%)	20.0	17.7	88.5%
3.1	Cost and Commitments are Managed Properly	(Weight = 10%)	5.0	4.7	93.0%
3.1.a	Cost and Commitments are Controlled to Appropriate Funding Levels		2.5	2.4	94.0%
3.1.b	Control of Funds		2.5	2.3	92.0%
3.2	Financial Management Practices	(Weight = 20%)	10.0	8.9	89.0%
3.2.a	Financial Policies, Practices, Data, and Reports		10.0	8.9	89.0%
3.3	Effective Internal Controls and Compliance	(Weight = 10%)	5.0	4.2	83.0%
3.3.a	Internal Controls/Compliance Management		5.0	4.2	83.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
HUMAN RESOURCES		50.0	42.1	84.1%
PERFORMANCE OBJECTIVE #1 Cost Effectiveness		16.0	12.7	79.6%
1.1	Review and Evaluation of HR Systems and Processes	(Weight = 11%)		
1.1.a	Evaluation of HR Systems and Processes	5.5	4.3	78.0%
		5.5	4.3	78.0%
1.2	Workforce Planning/Staffing	(Weight = 10%)		
1.2.a	Workforce Planning	5.0	4.1	82.2%
		2.0	1.6	78.0%
1.2.b	Staffing/Recruiting	3.0	2.6	85.0%
1.3	Compensation	(Weight = 11%)		
1.3.a	Baselining	5.5	4.3	78.8%
		3.0	2.5	82.0%
1.3.b	Effectiveness of Implementation of Market-Based Pay Policy	2.5	1.9	75.0%
PERFORMANCE OBJECTIVE #2 Work Force Excellence		8.0	6.9	86.5%
2.1	Performance Management	(Weight = 10%)		
2.1.a	Currency of Performance Appraisals	4.0	3.4	85.0%
		4.0	3.4	85.0%
2.2	Effectiveness of Employee Relations	(Weight = 6%)		
2.2.a	Measure the effectiveness of complaint resolution	4.0	3.5	88.0%
		4.0	3.5	88.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE #3 Equal Opportunity		(Weight = 24%)	12.0	9.6	80.0%
3.1	Employment of Women and Minorities	(Weight = 24%)	12.0	9.6	80.0%
3.1.a	Employment of Minorities		6.0	4.5	75.0%
3.1.b	Employment of Women		6.0	5.1	85.0%
PERFORMANCE OBJECTIVE #4 Customer Needs					
		(Weight = 14%)	7.0	6.2	88.0%
4.1	Customer Needs Analysis	(Weight = 14%)	7.0	6.2	88.0%
4.1.a	Customer Needs Input		7.0	6.2	88.0%
PERFORMANCE OBJECTIVE #5 HR Leadership in Deploying Mission/Business Strategy					
		(Weight = 14%)	7.0	6.7	95.0%
5.1	Alignment of HR Programs	(Weight = 14%)	7.0	6.7	95.0%
5.1.a	Deployment of Strategy		7.0	6.7	95.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
INFORMATION MANAGEMENT		50.0	44.6	89.2%
PERFORMANCE OBJECTIVE #1 Information Management Program (Weight = 100%)		50.0	44.6	89.2%
1.1 Strategic and Tactical Planning (Weight = 20%)		10.0	8.9	89.0%
1.1.a Planning Initiatives		10.0	8.9	89.0%
1.2 Self Assessment Program (Weight = 25%)		12.5	10.9	87.0%
1.2.a Self Assessment Program		12.5	10.9	87.0%
1.3 Customer Focused Information Management (Weight = 55%)		27.5	24.8	90.2%
1.3.a Level of Customer Satisfaction		12.5	11.0	88.0%
1.3.b Operational Effectiveness		15.0	13.8	92.0%

Appendix B - Administrative and Operational System Scores

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
PROCUREMENT		50.0	46.5	93.1%
PERFORMANCE OBJECTIVE #1	Mgmt. of Procurement Business Requirements (Weight = 30%)	15.0	14.6	97.0%
1.1	System Evaluation (Weight = 30%)	15.0	14.6	97.0%
1.1.a	Assessing System Operations	15.0	14.6	97.0%
PERFORMANCE OBJECTIVE #2	Procurement System Cost Effectiveness (Weight = 40%)	20.0	19.2	96.0%
2.1	Pursuing Best Practices (Weight = 40%)	20.0	19.2	96.0%
2.1.a	Measuring Efficiency Gains	20.0	19.2	96.0%
PERFORMANCE OBJECTIVE #3	Customer Satisfaction (Weight = 15%)	7.50	6.4	85.0%
3.1	Customer Feedback (Weight = 15%)	7.5	6.4	85.0%
3.1.a	Working Customer Needs	7.5	6.4	85.0%
PERFORMANCE OBJECTIVE #4	Professional & Social Responsibility (Weight = 15%)	7.5	6.4	85.3%
4.1	Supplier Performance (Weight = 10%)	5.0	4.3	85.0%
4.1.a	Measuring Supplier Performance	5.0	4.3	85.0%

Appendix B - Administrative and Operational System Scores

4.2 Socioeconomic Subcontracting	(Weight = 5%)	2.5	2.2	86.0%
4.2.a Meeting Socioeconomic Commitments	2.5	2.2		86.0%

PERFORMANCE OBJECTIVE		WEIGHT	SCORE	PERCENT
PROPERTY MANAGEMENT		50.0	34.0	68.0%
Points				
PERFORMANCE OBJECTIVE #1 Accountability for Equipment and Sensitive Property, anc (Weight = 45%)		22.5	185.0	
1.1 Accountability for Equipment and Sensitive Property (Weight = 25%)		12.5	100.0	
1.1.a Property Accounted For		12.5	100.0	
1.2 Precious Metals Inventory (Weight = 5%)		2.5	25.0	
1.2.a Precious Metals Inventory Results		2.5	25.0	
1.3 Identification of Items Subject to Inventory (Weight = 15%)		7.5	60.0	
1.3.a Accuracy of Identification		7.5	60.0	
PERFORMANCE OBJECTIVE #2 Stewardship Over Personal Property (Weight = 20%)		10.0	60.0	
2.1 Org.Stewardship and Individual Custodianship (Weight =20%)		10.0	60.0	
2.1.a Timeliness of Assignment		10.0	60.0	
PERFORMANCE OBJECTIVE #3 Vehicle Utilization (Weight = 5%)		2.5	25.0	
3.1 Fleet Management (Weight = 5%)		2.5	25.0	
3.1.a Vehicle Utilization		2.5	25.0	

PERFORMANCE OBJECTIVE #4	Information to Improve/Maintain Processes	(Weight = 15%)	7.5	63.0
4.1	Self-Assessment of Policies and Procedures	(Weight = 15%)	7.5	63.0
4.1.a	Assessing Support Processes		7.5	63.0
PERFORMANCE OBJECTIVE #5	Customer Alignment	(Weight = 5%)	2.5	20.0
5.1	Monitoring Customer Alignment	(Weight = 5%)	2.5	20.0
5.1.a	Aligning Customer Expectations		2.5	20.0
PERFORMANCE OBJECTIVE #6	Balancing Performance and Cost	(Weight = 10%)	5.0	35.0
6.1	Performance/Cost Efficiency	(Weight = 10%)	5.0	35.0
6.1.a	Measuring Cost Efficiency/Effectiveness		5.0	35.0

**Appendix C - Science and Technology Scores
Lawrence Berkeley National Laboratory**

Fiscal Year 1998 Performance

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	NUMERIC SCORE	FUNDING	WEIGHT	WEIGHTED SCORE
BIOMEDICAL AND ENVIRONMENTAL RESEARCH		OUTSTANDING	90.0	30.4	0.16	14.45
Criteria 1	Quality of Science	Excellent				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 3	Operational Performance and Planning	Outstanding				
Criteria 4	Operational Performance and Planning	Excellent				
BASIC ENERGY SCIENCES		EXCELLENT	87.5	55.0	0.29	25.41
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Excellent				
Criteria 3	Operational Performance and Planning	Excellent				
Criteria 4	Operational Performance and Planning	Excellent				

**Appendix C - Science and Technology Scores
Lawrence Berkeley National Laboratory**

Fiscal Year 1998 Performance

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	NUMERIC SCORE	FUNDING	WEIGHT	WEIGHTED SCORE
COMPUTING SCIENCES		OUTSTANDING	92.5	42.6	0.22	20.81
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 3	Operational Performance and Planning	Outstanding				
Criteria 4	Programmatic Performance and Planning	Excellent				
NUCLEAR PHYSICS		OUTSTANDING	95.0	16.6	0.09	8.33
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 3	Operational Performance and Planning	Outstanding				
Criteria 4	Programmatic Performance and Planning	Outstanding				

**Appendix C - Science and Technology Scores
Lawrence Berkeley National Laboratory**

Fiscal Year 1998 Performance

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	NUMERIC SCORE	FUNDING	WEIGHT	WEIGHTED SCORE
HIGH ENERGY PHYSICS		OUTSTANDING	92.5	20.4	0.11	9.96
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 3	Operational Performance and Planning	Outstanding				
Criteria 4	Operational Performance and Planning	Excellent				
FUSION ENERGY SCIENCES		OUTSTANDING	91.7	3.8	0.02	1.84
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 3	Operational Performance and Planning	N/A				
Criteria 4	Operational Performance and Planning	Excellent				

**Appendix C - Science and Technology Scores
Lawrence Berkeley National Laboratory**

Fiscal Year 1998 Performance

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	NUMERIC SCORE	FUNDING	WEIGHT	WEIGHTED SCORE
ENERGY EFFICIENCY & RENEWABLES		EXCELLENT	88.3	20.6	0.11	9.60
Criteria 1	Quality of Science	Excellent				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Excellent		189.4	1.0	90.39

ADJECTIVAL RATING	OUTSTANDING
PERCENTAGE SCORE	90.4%
APPENDIX F POINT SCORE	451.96

Computation of Salary Increase Authorization Multiplier

Appendix F Element of Laboratory Performance

Performance Area	Rating	%	x	Pts	=	Score
Science & Technology	Outstanding	90.4%	x	500	=	452
Administrative Systems						
Laboratory Management	Outstanding	90.0%	x	50	=	45.0
Environment Restoration and Waste Management	Outstanding	90.5%	x	40	=	36.2
Environment Safety and Health	Excellent	87.6%	x	110	=	96.4
Facilities Management	Outstanding	90.7%	x	50	=	45.3
Financial Management	Excellent	89.3%	x	50	=	44.7
Human Resources	Excellent	84.1%	x	50	=	42.1
Information Management	Excellent	89.2%	x	50	=	44.6
Procurement	Outstanding	93.1%	x	50	=	46.5
Property Management	Marginal	68.0%	x	50	=	34.0
Total Administrative Systems						435
Total of Science and Technology and Administrative Systems						887
Salary Increase Authorization Multiplier (from Appendix F)						
FY 98 Salary Increase Fund for UC Laboratories						
Executive Merit Pool (Based on S&E)	10.83%					
Executive Merit Pool (Appendix A & F)		10.83%	x	1.25	=	13.54%