

**Fiscal Year 2002  
Annual Performance Appraisal  
Lawrence Livermore National Laboratory**



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Prepared by:

**Oakland Operations Office  
National Nuclear Security Administration  
December 2002**

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## CONTRACTING OFFICER'S EVALUATION

The NNSA 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 Livermore National Laboratory. Based upon this process and a unanimous vote of the members of this board, an adjectival rating of "**Outstanding**" is granted, based on a numeric rating of **921** points. This report, the "Fiscal Year 2002 Annual Performance Evaluation and Appraisal - Lawrence Livermore National Laboratory" provides the basis for my determination, and is hereby endorsed and approved.

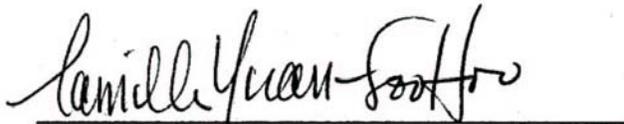
Recommendation:



James Hirahara  
Deputy Manager, Acting  
Chairperson, Performance Review Board

Date: 12/10/02

Approval:



Camille Yuan-Soo Hoo  
Manager  
Oakland Operations Office

Date: 12/10/02

FY 2002 Annual Performance Appraisal  
for  
Lawrence Livermore National Laboratory

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## **Introduction**

This report was produced by the U. S. Department of Energy (DOE) National Nuclear Security Administration (NNSA), Oakland Operations Office (OAK) to provide the Contracting Officer's written assessment of the Contractor's performance at the Lawrence Livermore National Laboratory (LLNL) under contract W-7405-ENG-48, Appendix F. Successful Appendix O performance is a gateway to UC's eligibility to earn program performance fee based on the Objective Standards of Performance listed in Appendix F of the contracts. NNSA performed an annual assessment in FY2001 and FY2002, on a "pass/fail" basis of the Contractor's performance in accomplishing actions under the five Appendix O Initiatives. UC attained a "pass" assessment on all five initiatives described in Appendix O, and is eligible to earn At Risk Fee amounts for its performance under Appendix F. Contract Appendix F defines the Objective Standards of Performance agreed to by DOE/NNSA and the University of California (Contractor or UC) to annually measure the Contractor's overall performance of Laboratory Management, Science and Technology (S&T), and Operations and Administration (O&A).

There may be programs, systems, compliance requirements or observations not covered by Appendix F presented in this report. These additional observations are limited to items of performance that require the attention of the Laboratory Director, but are not effectively covered by Appendix F performance measures. Although these items are included in this report, they do not contribute to the basis for the overall rating of Contractor performance under Appendix F.

## **Evaluation Process**

The University and NNSA have agreed to use a performance-based management system for Laboratory oversight as part of the contract. 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 H.007 and Appendix F to this contract. Self-assessments are the principal means by which the Contractor evaluates compliance with the performance objective described in Appendix F. 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 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 the Contracting Officer's evaluation of the Contractor's performance.

NNSA HQ and OAK review and validate Contractor performance using the established Appendix F performance objectives, the UC/LLNL self-assessment and functional manager evidence files. This effort is accomplished by teams reflecting expertise in the various functional

disciplines required by the Appendix F administrative and operational systems. All teams have the opportunity to observe the Laboratory's independent evaluation of its self-assessment, and review and validation of the Contractor's performance. The primary objective of this report is to provide a summary of the annual Contracting Officer's written assessment of the Contractor's performance and the amount of earned Program Performance Fee as specified in contract clause H.007 and H.014, respectively.

### **Self-Assessment Period**

Designed to capture performance for Fiscal Year 2002, the self-assessment period for the Laboratory is October 1, 2001 through September 30, 2002, unless specified in the Performance Objective. Significant performance between the later date and the end of the Fiscal Year is to be assessed by the Laboratory and provided as a supplement to the self-assessment. The Contractor provides the self-assessment of LLNL and proposed rating to OAK on October 25, 2002.

## Overall Appraisal Results

The following are the OAK ratings for the Contractor's FY 2002 performance

Overall LLNL Score	Outstanding	at	92.1%
Laboratory Management	Outstanding	at	93.2%
Science and Technology	Outstanding	at	94.1%
Operations & Administration	Excellent	at	89.3%

The Overall FY2002 rating was comparable to last year's 92.2 percent. This is the second year in a row the Contractor has earned an Outstanding rating.

The Laboratory Management rating was up slightly from last year's 91.1 percent.

The Science & Technology (S&T) score was nearly identical to last year's rating of Outstanding at 93.8 percent, and an increase from FY 2000's rating of Excellent at 89.6 percent. Of particular note, the Stockpile Maintenance score increased from last year's 86 percent to this year's 95.2 percent.

Operations and Administration (O&A) performance dropped from an Outstanding to an Excellent, although the point drop was only from 90.5 percent to 89.3percent. The excellent rating is accounted for by the ES&H score (80.4) and the ERWM score (87.8). UC received outstanding ratings in seven of the nine functional areas. Particularly noteworthy are the ratings for Financial Management (96.8), Procurement (96) and Property Management (95).

Appendix A contains the computation of performance ratings for FY 2002. In addition, it contains an 8 year trend graph of overall performance.

## Laboratory Management

The overall performance in Laboratory Management was **Outstanding** at 93.2 percent for FY 2002.

### Executive Leadership

During FY 2002, the contractor's performance in the area of planning was outstanding. Through its institutionalized top-down strategic planning process, the strategic vision and direction for the Laboratory aligned clearly and specifically with those of NNSA. The Laboratory successfully completed the two-year Appendix O program, addressing Management Accountability, Safeguards & Security, Facility Safety, Critical Skills, and Project and Construction Management concerns. In the past two years, 11 of 17 senior managers are new to their current positions, and the number of new appointments has delayed the start-up of a new strategic planning cycle. The Director's A-List included as a top priority the start of a strategic planning effort with the selection of the new Director, and new to this year's list was the institutional goal of building a strong counter-terrorism program.

Performance in the area of internal communications was excellent. The Laboratory leadership effectively communicated and reinforced performance expectations. Senior Management had in place mature systems that assure performance was monitored and achieved. LLNL Core Values promoted expected behaviors to Laboratory employees. These Core Values were reiterated in laboratory policies, procedures, and mandatory training, and were communicated by line management through various and numerous mechanisms. Weaknesses remained in the process to timely identify issues and to manage and track corrective actions. In addition, the trend of Laboratory employees and classes of employees filing complaints against the Laboratory for unfair treatment by management continued. Laboratory Senior Management's communication to line management and employees of its expectations on how these types of situations should be handled needs to improve so that small-scale employee relation issues do not evolve into large-scale problems.

The Laboratory's outstanding customer relations were integral to their strategic planning, decision-making, performance assessment, and issues resolution processes. The Laboratory Director and other senior managers established positive working relationships with its sponsors, most notably NNSA, and the University. This past year, LLNL and NNSA staff established procedures to assure timely NNSA approval of requests for LLNL expertise and resources in response to emergencies that are not covered under existing contract funded work. Close cooperation with NNSA, UC and LANL resulted in Livermore successfully meeting its Appendix O milestones for FY 2002.

### Mission

LLNL FY 2002 performance in support of NNSA missions was outstanding. The Laboratory's mission was well defined, and it is strategically aligned with the NNSA mission. The contractor ensured the performance of weapons systems in the U.S. nuclear stockpile and performed research into bringing into operation and applying significant new capabilities

required for nuclear weapons stockpile stewardship. Two notable programs were the National Ignition Facility (NIF) and the Accelerated Strategic Computing Initiative (ASCI) White. In addition, LLNL was involved in other major efforts in nonproliferation, energy and environment, bioscience and biotechnology, and basic science that lay the foundation for future viability of the Laboratory.

#### Mission Assets

In the area of mission assets, the Contractor earned an outstanding. Laboratory Senior Management identified a strong S&T base, Readiness in Technical Base and Facilities (RTBF), and critical skills maintenance as management challenges. The Laboratory met these challenges through effectively managing internal investments in long-term research activities, investments in the Laboratory's infrastructure, and investments in people that allow it to recruit and retain a diverse, highly-qualified staff.

#### Accountability and Commitments

In the area of accountability and commitments, the Contractor earned an excellent. LLNL had mature self-assessment programs at both the institutional and organizational level for managing accountability and commitments. Guidance, support, oversight, and commitment tracking and reporting were done by appropriate organizational elements at the Laboratory. The Laboratory maintained an internal audit and review function, oversight functions related to Environmental Safety and Health (ES&H), nuclear facilities, quality assurance, and institutional training requirements, and centralized administration. The contractor's self-assessment of both programmatic and operational results was shared with NNSA throughout the year as appropriate. Programmatic and operational oversight was provided by NNSA staff located at LLNL. Special emphasis areas for FY 2002, reported under this measure, include Safeguards and Security, Integrated Safety Management System (ISMS) implementation, Argus milestones in support of the Nuclear Materials Safeguards and Security Upgrade Project (NMSSUP), and Dual Axis Radiographic Hydrotest Facility (DARHT) milestones. However, increased Laboratory management attention in areas such as managing controversial issues like the Decontamination Waste Treatment Facility (DWTF), coordinating major media announcements and interfacing with the Defense Nuclear Facility Safety Board (DNFSB) is needed. This will become more critical in the months ahead as NNSA "stands up" its new organization structure, and the Laboratory assumes greater responsibility. Weaknesses in Laboratory Management are timely identification of ES&H and emergency management deficiencies/issues, managing and tracking corrective actions of issues to resolution, and senior management attention to assure commitments are met regarding timeliness and quality. In ES&H, there is insufficient feedback in place in tracking and correcting institutional issues until completion, and in ensuring the corrective actions implemented produce the intended results. In the emergency management program, several weaknesses identified in 1999 have not been sufficiently corrected by LLNL. The Inspection of Environment, Safety, and Health Management (SEMI) conducted by the Office of Independent Oversight and Performance Assurance (OA) in July 2002 gave LLNL a "Need Improvement" in the feedback function for continuing to have this system weakness.

Finally, under Appendix O, the Laboratory committed to implementing the Unreviewed Safety Question (USQ) requirements in accordance with 10 CFR 830, Part B, in FY 2002. Progress in this area was noted in the Superblock, although full confirmation is lacking for several facilities. Recognizing that final disposition has been rolled over to Appendix F for FY 2003, it is apparent that significant management attention has not been paid to this requirement in at least one non-Superblock facility (B231V) and, as a consequence, Laboratory Management needs to strengthen its commitment to implement 10 CFR 830 across the site.

#### Citizenship/Community Relations

During FY 2002 the Laboratory's performance within citizenship was outstanding. LLNL continued to make community relations a high priority. Its outreach efforts were numerous and included the extensive use of participatory forums to assure community concerns were addressed. For the Laboratory's 50<sup>th</sup> Anniversary celebration, Public Affairs Office (PAO) conducted a major community information campaign about the Laboratory's role in the community and its S&T accomplishments. Community outreach was also greatly expanded. PAO also played a key role in working with City of Livermore and Alameda County officials and the public on the NNSA-proposed East Avenue security upgrade that surfaced as an issue following the terrorist attacks of September 11, 2001.

## Science and Technology (S&T)

The overall performance in Science and Technology was **Outstanding** at 94.0 percent.

The Laboratory continued to perform leading edge research, and played a prominent role in the National Stockpile Stewardship Program. The assessment of performance for research programs was comprised of a combined evaluation of the following LLNL programs:

- Defense Programs
  - Directed Stockpile Work,
  - Campaigns,
- National Ignition Facility (NIF),
- Nuclear Nonproliferation (NN), and
- Non-NNSA Science and Technology (S&T).

### Defense Programs

Overall performance by LLNL was **Outstanding** in support of Defense Programs. Defense Programs rating is broken into two areas:

- Directed Stockpile Work, and
- Campaigns

### Directed Stockpile Work

LLNL work in support of the Directed Stockpile Work segment of Stockpile Stewardship in FY2002 was **Outstanding**.

Noteworthy accomplishments included: Completion of the Annual Stockpile Certification, acceptance of the refurbished W87 as a Standard Stockpile Item, beginning work on the W80 Life Extension project, strong support for operations at the production plants (particularly Pantex), and successful completion of the first W62 pit to undergo a formal “certified” surveillance at LLNL.

The integrated series of complex experiments (at all size scales and in multiple facilities in different locations) that are performed to compliment the theoretical and simulation development activities are also commended. Problems associated with the Contained Firing Facility (CFF) that have prevented some experiments from being conducted there should continue to receive priority attention so that this valuable facility can be fully utilized in support of Stockpile Stewardship.

## **Campaigns**

LLNL work in support of the Campaigns segment of Stockpile Stewardship in FY 2002 is **Outstanding**.

Noteworthy accomplishment included: Adoption by LLNL and LANL of Quantification of Margins and Uncertainties (QMU) as a unified approach to analyzing and assessing the issues associated with weapon certification in the absence of nuclear testing; continued development and application of QMU to several stockpile systems; continued support for providing the ASCI White computer for use by all three weapons laboratories; and successful completion of the 3D Prototype Full System Coupled Burn Code milestone.

A well balanced program of theory, modeling, simulation, and experimentation was also noted and commended. Problems associated with the design of the containment system for JASPER should continue to receive priority attention to get this facility back on schedule and available for actinide experiments.

## **Issues and Concerns for Defense Programs**

It is worth noting that the performance assessments for “Program Performance and Planning” and “Technical Development and Operation of Major Research Facilities” were frequently lower than those for “Quality of Science, Technology, and Engineering” and “Relevance to National Needs and Agency Mission.” In LLNL’s Self-Assessment and the NNSA assessment, eight of the nine ratings that were less than “Outstanding” were associated with the Program Planning or Facilities criteria.

For FY 2003, an increased level of attention to both “Program Performance and Planning” and “Technical Development and Operations of Major Research Facilities” is recommended. Given the uncertainties associated with the FY 2003 budget situation (starting the Fiscal Year under a Continuing Resolution), and the increasing challenges of executing a budget-constrained program in an era of rising costs, strong program management and optimal utilization of facilities will be required to maintain LLNL’s outstanding program quality.

## **National Ignition Facility (NIF)**

OAK’s evaluated rating of the NIF Directorate’s overall performance for FY 2002 was **Outstanding** for both the NIF Project and the NIF Demonstration Program.

Each of the NIF Project criteria elements was rated as outstanding. These ratings mirrored the FY 2002 UC President’s Council on National Laboratories ratings assigned to the National Ignition Facility Directorate. The National Ignition Facility project made substantial progress during FY 2002 including the completion of five Level 2 milestones ahead of schedule: (1) Complete Laser Bay 2 Cluster 3 Beampath Construction - October 2001; (2) Control Room

turned over to commissioning – December 2001; (3) Position Target Chamber in final position – December 2001; (4) Capacitor Bay #3 ready for Power Conditioning System Installation Contractor – February 2002; and (5) Laser Bay #2 ready for Transporter Automation – March 2002.

Each of the NIF Demonstration Program criteria elements was rated as outstanding. These ratings mirror the FY 2002 UC President's Council on National Laboratories ratings assigned to the National Ignition Facility Directorate. The Laser Demonstration Program made substantial progress during FY 2002 in preparing the NIF facility for NIF Early Light in FY 2003, one year ahead of schedule. Substantial progress has been made in enabling economic operation of the NIF including: extensive redesign within the Final Optics Assembly (FOA) of the component arrangement and the focusing lens itself, redesign of FOA packages to facilitate on-line replacement of components, systematic characterization of the various  $3\omega$  high fluence damage mechanisms that occur in fused silica and KDP frequency conversion crystals, discovery and partial implementation of damage mitigation schemes to stop damage spot growth, enhancement of a statistical model describing the onset and growth of  $3\omega$  damage sites, and demonstration of a cost effective, disposable debris shield.

## **Nuclear Nonproliferation**

The Contractor earned an **Outstanding** for this performance period.

The focus for this period was on three out of the five primary programmatic areas under the Nonproliferation, Arms Control and International Security (NAI) Directorate: Counterterrorism and Incident Response (\$69M), Proliferation Prevention and Arms Control (\$62M), and the Center for Global Security Research (\$1.9M) which together comprised approximately one-half of NAI's work. The September 11, 2001 events and its aftermath marked a significant escalation in the level of activities of NAI which is expected to increase further as the proposed Department of Homeland Security becomes a reality. NAI over the years has done an outstanding job in working to reduce the threats posed by proliferation or terrorist acquisition of Weapons of Mass Destruction, and has been well positioned to respond rapidly and effectively to the crisis. Their overall work during this period is highly commendable, and most definitely deserving of an outstanding rating in all areas. All indications from the program sponsors, including NNSA and other DOE entities, from the Department of Defense, and Intelligence Community clearly affirm and validate NAI's most exemplary performance. The work that NAI performs for National and International Security is now more important than ever, and will continue to be so, well into the future.

## **Non-NNSA Science & Technology**

### **Office of Science**

The overall performance rating was **outstanding**.

This rating was based on individual program ratings that ranged from excellent to outstanding. The Laboratory continues to make high quality contributions to the fusion energy sciences program. The "Kinetics of Phase Transformations in Welds" and the "Adhesion and Bonding at Internal Interfaces" projects are world class state-of-the-art research. The core capabilities and knowledge being developed in the LLNL Biosciences research program contributed to a growing national laboratory and U.S. biotechnology infrastructure that can be used to address NNSA mission needs in these areas. LLNL Life Sciences research had a significant and substantial impact on the scientific community. The Medical Technologies Division at LLNL is considered one of the best photo-optical research groups in the country. The Center for Advanced Scientific Computing (CASC) is rightly perceived nationally as being a world-class research program in computational mathematics. In all areas of research, LLNL's mission relevancy supported either: those of DOE's including energy sources, climate change, and computational sciences; those of NNSA including stockpile stewardship and High Average Power Lasers; or those of Homeland security including dispersion of nuclear, biological and chemical agents, and biotechnologies. Many of LLNL's science programs were carried out in collaboration with other National Laboratories and with Universities to make substantial contributions to the science community.

### **Work for Others / Technology Transfer / Laboratory Directed Research and Development (LDRD)**

Three institutional science and technology programs (Work for Others, Laboratory Directed Research and Development Program, and Technology Transfer) were rated overall at an **Outstanding** level.

The projects selected for these programs enhanced LLNL's core competencies in a variety of areas: Advanced sensors and instrumentation, Atomic and nuclear sciences/physics, Biological sciences, Computing and Mathematics, Energy Security, Engineering and Manufacturing, Space and Communications Technology, Atmospheric and GeoSciences and Environmental Remediation, and Chemistry.

Projects funded under the Work for Others program demonstrated relevancy to DOE/NNSA mission and support national needs. Work for Others sponsors attested they were not able to find any commercial source that is capable of meeting their needs. In following these requirements, the contractor ensures a high level quality of science, technology and engineering will exist at LLNL.

Significant advancements were achieved in the LDRD Program and in the transfer of technology to the private sector. The success of LLNL's industrial partnerships is in actually having products produced in the commercial marketplace and to improve the U. S. economic competitiveness in world markets and to enhance the quality of life of our nation.

LLNL won six awards for Research and Technology Development during 2002. The awards are given annually by the *R&D Magazine* for the top 100 technological achievements that promise to improve people's lives through breakthrough products, processes or services.

LLNL provided very timely assistance to our Nation's response to the events of September 11, 2001, and over fifty employees were deployed to help in rescue activities, support bio-defense, and provide analysis and assessment to expert personnel in the intelligence community. Some of these technologies utilized were developed using LDRD-funding. This is a perfect example of how funding projects several years ago are meeting current and future national security needs.

## Operations and Administration (O&A)

The overall rating for Operations and Administration was **Excellent**. The Laboratory received outstanding ratings in seven of the nine functional areas, and received an excellent in ERWM and ES&H.

The following functional areas are included in Operations:

- Environmental Restoration and Waste Management
- Environment, Safety and Health
- Facilities Management
- Safeguards and Security

The following functional areas are included in Administration:

- Financial Management
- Information Management
- Human Resources
- Procurement
- Property Management

## Operations

### Environmental Restoration/Waste Management

LLNL's overall performance in Environmental Restoration/Waste Management was **Excellent** for FY 2002. The contractor received an outstanding in Waste Management and EM Program Innovation. It also received a good in Environmental Restoration.

The Laboratory earned an outstanding in Waste Management. LLNL Hazardous Waste Management (HWM) was able to demonstrate a high level of productivity in managing the throughput of waste at their facilities. This measure was revised in FY 2001 and carried forward for this fiscal year to continue emphasis on being able to safely dispose of an amount of waste commensurate with the amount being generated, which LLNL was able to accomplish. LLNL did an outstanding effort on throughput performance for radioactive and non-radioactive wastes, and the reduction of low-level and mixed waste inventories through treatment and disposal activities.

The Laboratory earned an outstanding in EM Program Innovation. LLNL earned most of their points from Category 2, participating in the corporate advancement of the EM Program by providing solutions or assistance on projects at other DOE sites; and Category 3, the cost savings resulting from the use of innovative technologies in the Environmental Restoration and Waste Management program. The DOE Oakland Technical Project Officer concurred with the findings of the self assessment conducted by LLNL.

The rating for Environmental Restoration was good. LLNL increased the total contaminant mass removed from ground water per total environmental restoration budget through aggressive and proactive management of its remedial actions and optimization activities. LLNL's ability to direct appropriate resources for active remediation activities resulted in the removal of 120.74 kilograms of contaminated mass from ground water. This contaminant mass removal amount was lower than those reported in FYs 1999 - 2001. The continued reduction in mass removal since FY 2000 resulted from subsurface dewatering of treatment areas and decrease in overall contaminant concentrations due to long-term ground water extraction operations as well as the inability to fully operate treatment facilities, e.g., Treatment Facility A, due to constraints in treated ground water discharge. Both LLNL and LSO agree that the rating of "Good" is appropriate since Treatment Facility A was operating at approximately 20% of its treatment capacity during FY 2002. However, there is a recognition that this metric needs to be adjusted to allow for diminishing returns. Laboratory activities included, but were not limited to, the following: (1) systematic remediation practices to aggressively address contaminated areas, yielding greater ground water contaminant mass removal; (2) optimization of wellfields to maximize mass removal; and (3) use of mobile, cost-effective treatment units to expeditiously target areas with high ground water contaminant concentrations. The total contaminant mass removed in FY 2002 continued to support OAK commitment to protect human health and the environment from past releases of contaminants.

## **Environment, Safety and Health**

Overall, LLNL earned an **Excellent** rating in ES&H for FY 2002.

This rating was consistent with the overall UC rating for FY 2002 and the overall FY 2001 performance. Generally, OAK found that LLNL continued to implement a successful ES&H program. Reviews from external organizations and OAK operational awareness activities verified that the ISM system at LLNL was effective and continued to improve as various management systems have matured and new processes have been established. Weaknesses identified by OAK and by external organizations were recognized by LLNL through the self-assessment program. OAK is confident that LLNL management is fully committed to correct the system weaknesses to ensure continuous success in ISMS implementation. The areas of strength and weakness of the ES&H program are highlighted below:

### Successes:

- **Radiation Dose to the Public:** LLNL received an outstanding rating in this area for continuing to control the radiation exposure to members of the general public to only a fraction of the regulatory limit.

- Occupational Safety and Health Findings and Violations: LLNL received an outstanding rating in this area for correcting all safety imminent and serious situations within the specified time periods.
- Environmental Releases: LLNL received an outstanding rating in this area for controlling the number of environmental releases to only one release during the performance period.
- Criticality Safety: LLNL received an outstanding in this area for meeting all of the critical requirements to maintain an effective nuclear criticality safety program.
- Environmental Violations: LLNL received an excellent rating in this area for being able to control the number of validated NOV to only two during this period. This rating was a significant improvement from the FY 2001 period.
- Waste Reduction and Recycling: LLNL received an excellent rating in this area for continuing to make good progress toward the DOE FY 2005 waste reduction goals.
- Exposure to Chemical, Physical, and Biological Agents: LLNL received an excellent rating in this area, primarily for its ability to maintain a low ratio of exposures to measurements. However, OAK validation of the occupational exposure database found some limitations in retrieving useful information from the database.
- Nuclear Safety: LLNL received an excellent rating in this area for continuing to make progress toward the implementation of the Nuclear Safety Rule. However, OAK observed that significant progress in the nuclear safety program was limited to the Superblock facilities while opportunities for improvements can be made at the remaining nuclear facilities (see Opportunities for Improvements below).
- Integrated Safety Management System: The Office of Independent Oversight and Performance Assurance (OA) conducted an Inspection of Environment, Safety, and Health (SEMI) at LLNL in July 2002 and found that the ISMS program at LLNL had significantly improved as various management systems have matured and new processes have been established, and that LLNL senior management demonstrated strong leadership to effect the cultural change necessary for the implementation of ISMS. However, the OA also identified some areas of weakness within LLNL ISMS program (see Weaknesses below).

Weaknesses:

- Emergency Management: LLNL received a marginal rating in this area due to the less than acceptable quality of the base documents that describe protocols and processes of the site's comprehensive EM program. LLNL senior management has committed to making the EM program a priority in FY 2003. OAK has been assured that the appropriate resources and budget will be available to implement upgrades to the EM program.
- Feedback Function: The OA review and OAK validation of corrective actions activities found a weakness in the LLNL corrective action management system in that it was not sufficiently rigorous to ensure timely documentation, evaluation, and resolution of ES&H and emergency management deficiencies. This is a recurring institutional weakness at LLNL, and was also recognized as such by the LLNL

Assurance Review Office (ARO) in the Annual Report for CY 2001. OAK urges LLNL management to put a high priority in FY 2003 to effectively correct this deficiency.

- Nuclear Safety: The Laboratory was not appropriately identifying Safety Significant (SS) Systems, Structures and Components (SSC). In many cases the OAK Safety Evaluation Report identified SS and Safety Class (SC) controls due to omission by the Laboratory. In Superblock facilities, these controls were usually addressed immediately and actions appropriately taken. However, outside of Superblock facilities, there was significant reluctance to take actions that preserve operability and maintainability of these newly identified systems.

#### Opportunities for Improvement:

The areas below are not areas of concern. However, OAK identified opportunities for improvements in performance within these programs:

- Radiation Dose to Worker: LLNL receives a good rating in this area as the result of a discovery in July 2002 of one individual who exceeded the DOE radioactive exposure dose limits. Even though the over exposure occurred outside of the performance period of this measure, OAK, LLNL, and UC agreed to include the incident in this year's evaluation due to its severity. OAK will monitor LLNL progress in the corrective actions to ensure that the issues identified in the Accident Investigation Report are addressed.
- Injury and Illness Prevention: LLNL received a good rating in this area. Even though LLNL continued to reduce its injury and illness rates, further improvement is needed to achieve UC injury and illness goals for FY 2003.

### **Project/Facilities/Construction Management (Excluding NIF)**

LLNL overall performance for Project, Facilities and Construction Management was rated **Outstanding**.

For the second straight year all functional areas (Real Property Management, Physical Asset Planning, Project Management, Maintenance Management and Utilities/Energy Conservation) received a rating of outstanding. This is a very noteworthy accomplishment because each year LLNL and NNSA representatives meet to develop a new set of performance tasks and associated milestones for the coming year. As a service organization, LLNL Plant Engineering's annual performance tasks are designed to provide improved services for LLNL Programs and to meet DOE expectations, and Plant Engineering was successful in doing so.

Real Property Management completed all 16 tasks planned for the year, including completing and validating their portion of the Facilities Information Management System, meeting their goal for rehabilitation/demolition of substandard and excess space and working with LLNL

Programs to solve pressing space problems. In addition, LLNL had significant accomplishments managing their off-site leases and licenses, completing City and County vacating of existing easements on East Avenue that will result in reduced security concerns, and signing a Memorandum of Agreement with San Joaquin County for the widening of Corral Hollow Road at Site 300.

Physical Asset Planning completed all eight tasks planned for the year. A major initiative aimed at providing improved services to LLNL Programs was the continuation of the FY 2001 effort to produce Sector Plans designed to better understand capabilities, the condition of facilities, and opportunities for site development. The Space and Site Planning organization produced updates to their “General Site Development Planning Sourcebook” and “Parking Master Plan” and ensured this information was well integrated with the LLNL’s Ten Year Comprehensive Site Plan.

LLNL’s Project Management rating was based upon schedule and cost performance. LLNL was scheduled to complete 17 project management milestones associated with six construction line item projects and two General Plant Projects. Two of the 17 milestones were deleted with DOE approval and the remaining 15 milestones were completed as scheduled. As of September 2002, all six construction line items had estimated costs equal to their performance baseline costs. ‘Estimated Costs’ equal to ‘Baseline Costs’ in FY 2002 coupled with excellent or better performance in the previous three years resulted in an Outstanding rating for FY 2002.

LLNL’s Maintenance Management rating was based upon completion of mutually agreed upon tasks and a comparison of LLNL’s performance with that of Energy Facility Contractors Group’s (EFCOG) for selected performance indicators. Of the original 19 tasks, two were cancelled and one was deferred into FY 2003 with DOE’s concurrence. The remaining 16 tasks were completed as planned, including an important GAP analysis for DOE Order 413.1 requirements. Achievement of these safety and improved business systems tasks was evidence of LLNL Plant Engineering’s and Utilities Telecommunications’ commitment to continued process improvement. Of the four EFCOG performance indicators, LLNL was ‘best in class’ for the indicator “Total Number of Maintenance Caused Operational Incidents” and above average or better in the remaining three. The LLNL Plant Engineering Department also hosted the annual EFCOG Maintenance Conference this year which featured themes on maintenance backlog and employee safety. Considering FY 2002 milestone selection, effectiveness and overall performance, LLNL’s maintenance program rating was outstanding.

LLNL Utilities/Energy Conservation was based upon reliable electric service, energy consumption, and completion of mutually agreed upon tasks. Electric service (excluding planned outages) was provided to Laboratory customers at a 12 month average rate of 99.9937%. Energy consumption at LLNL in FY 2002 was 26.4% below the 1990 baseline year and well ahead of DOE’s Year 2005 goal of 20% reduction. All six of the LLNL Energy Management Plan tasks were completed as scheduled. In addition, LLNL received Federal

and DOE awards for the project titled, “Drain-Down Recovery of Heating and Cooling Circulating Water”.

## **Safeguards and Security**

LLNL’s overall performance in Safeguards and Security was rated **Outstanding**.

Reviews of LLNL Safeguards and Security programs by OAK and the DOE Office of Independent Assessment (OA) during the performance rating period resulted in satisfactory overall and topical area ratings. The survey results reflected that the LLNL Safeguards and Security program provided sufficient assurance that personnel, property, and classified and sensitive information and materials including special nuclear materials were adequately protected. The survey results reflected that corrective action planning to resolve survey findings may be improved by LLNL.

Improvements included the implementation of an LLNL Integrated Safeguards and Security Management Program (ISSM). This program began the systematic integration of safeguards and security into management and work practices at all levels to accomplish missions securely and effectively with respect to programmatic requirements and costs. Also, LLNL implemented significant safeguards and security enhancements quickly and effectively in response to elevated National Terrorist Threat Levels and initiated planning to identify and mitigate LLNL vulnerabilities to contemporary terrorist threats.

## **Administration**

The overall rating for Business Administration was **Outstanding** at **94.7%**. Business Management practices were found to be effective, efficient and support mission requirements. All five functional areas received an outstanding rating.

## **Financial Management**

Financial Management earned an **Outstanding**.

LLNL accomplished an outstanding rating in the Financial Management area by conforming to gradients necessary for a higher rating. LLNL was outstanding in managing the accounting operation. LLNL continued to ensure effective processes are in place for disbursing funds, monitoring accounts receivable, and managing assets. The Laboratory was successful in effectively limiting the cost of transactions. LLNL met all requirements of the Cost Accounting Standards in the measured areas. Of note, LLNL proposed and implemented, with OAK input and approval, two major cost accounting change proposals on Institutional General Plant Projects and NIF public relations.

LLNL continued its diligent efforts in the area of budget formulation. The Laboratory Budget staff worked closely with the Oakland staff to continue progress on joint budget validation reviews. All DOE Field Budget Submission requirements were met. LLNL successfully controlled costs within the established control limits as set in the contract. The Laboratory was responsive, timely and accurate in the reporting of budgetary information. Items such as the Functional Cost report, the Analysis of Uncosted Balances report and Defense Programs FTE reports were completed in the manner requested. LLNL's Distributed Budget processes were comprehensive and well measured which resulted in accurate budget proposal and execution.

The Laboratory demonstrated aggressive targeting of audit findings in the financial area. The Controller's Organization continued its strong commitment to not only maintaining effective internal controls but also to improving systems for identifying, reviewing, and correcting financial management internal control/compliance processes.

## **Human Resources**

LLNL performed at an overall **Outstanding** level for the FY 2002 appraisal period, with six of the seven performance measures rated outstanding individually.

A significant amount of effort was applied by the Human Resources staff in FY 2002 to analyze and respond to feedback from the Employee Survey. Upon receipt of findings from the survey, the Laboratory established Survey Action Teams (SAT) to analyze and provide

recommendations relevant to the primary themes that surfaced from the feedback. SAT membership consisted of personnel from all levels throughout the Laboratory, who were allowed to dedicate up to 40 percent of their time to addressing the issues of their team. Twenty-five projects were approved by the Senior Management Group in response to the recommendations of the SATs, with six completed within this appraisal period. Worklife issues were among the first to be addressed, leading to the implementation of Flexible Work Options, a new employee store, the TIME ZONE, with UPS services, exploration of dry cleaning services and expanded childcare services, a facility for employee networking groups to meet, planning for construction of a Sport Court and a new Central Cafeteria, and conversion of the South Gate area for worklife uses such as fitness.

In the area of Compensation, LLNL performance reflected improvement relevant to six of the eight compensation standards contained in Appendix A of the contract, with each an example of Human Resources' commitment to the continued vitality of its program. LLNL integrated its three salary committees into one to provide more cohesiveness in its strategic compensation management, improved the accuracy of several classifications, continued to validate its salary pricing methods, provided tools to allow organizations to monitor compensation costs, formulated a Survey Action Team to respond to input on the performance management system, and strove to improve supervisors' and employees' level of understanding of the salary review and increase process. In addition, Human Resources began implementation of several new web-based tools designed to streamline the recruitment and hiring process as well as personnel action processing and workforce planning, and completed a relatively seamless conversion to PeopleSoft 8, a web-based application providing expanded capabilities for HR staff and their customers.

In Employee Relations, both the number of informal and formal complaints remained low, and no significant trends requiring management action were identified. Workforce planning continued to be performed at an outstanding level, as it has for the last three years. LLNL recruitment staff met with 11 (91.7 percent) of the Laboratory directorates to discuss the organization's particular staffing needs and recruitment/retention issues, and worked with them to develop strategies to address skill gap areas. Specialized recruitment strategies were developed for 15 organizations, including University Relations, for the recruitment of post-docs, Chemistry and Materials Sciences, by designing training on how to recruit good talent, and Plant Engineering, with the formulation of a campaign to increase applicant pools and improve diversity, as well as development of six Apprentice Programs for those in the 800 and 900 classification series. Human Resources also provided additional tools through a workforce planning web site to enhance managers' ability to conduct workforce planning on a continual basis. Managers were given the ability to compare the demographics of their own organization with that of the rest of the Laboratory, and explore the effects of new strategies through an interactive tool on the web site. In addition, the web site contained institutional studies on demographics and Laboratory trends, and archived studies such as the Chiles Report. Another tool that proved essential to LLNL success under Appendix O, Initiative 4, was the database developed by Human Resources to track the critical skill needs and monitor the skills gap. This database allowed them to analyze attrition, demographics, and hires for

each critical skill, and from that, determine the necessity for recruitment, retention and training strategies for the critical skill workforce as well as the “pipeline”. NNSA is hopeful this database will also provide LLNL with the ability to track offers made to pipeline candidates, as a reflection of the effectiveness of the Laboratory’s critical skill recruitment efforts.

The measure “Employment of Minorities and Women” was rated Good due to the lack of the “results-oriented plan” required as the foundation by which the Laboratory would address the recruitment needs of its “High Priority Job Groups” (HPJGs) within the appraisal period. LLNL reported on the HPJGs from the FY2001 appraisal period, within which the Laboratory commendably exceeded availability in its new-hires of both women and minorities in Job Group BB, Physicists.

## **Information Management**

The IM program performed at an **Outstanding** level in providing cost-effective products and improved services to the Lawrence Livermore National Laboratory customers.

The Laboratory Information Management Organizations implemented aggressive programs that have been highly beneficial in supporting cost reductions, improved operational effectiveness and benchmarks to “best-in-class” operations. The Laboratory’s long-term cost reduction strategies returned significant buying power to the programs. This year’s activities resulted in cost savings and avoidance totaling approximately \$22.5 million. LLNL continued to improve their systems and processes for providing outstanding customer service and working to provide employees opportunities to be a part of further enhancing business approaches and technologies.

## **Procurement**

LLNL’s overall performance in Procurement was rated **Outstanding** for FY 2002.

The Contractor had a well-developed, comprehensive self-assessment, and evaluation program. The methodology, approach and analysis performed by the Procurement staff were exemplary and demonstrated a sound basis for evaluating the contractor’s purchasing system. Procurement operations maintained a very comprehensive risk-based self assessment program that ensured compliance with internal and external policies and procedures. Procurement transaction reviews identified some low risk findings which were analyzed and corrected in a timely manner. As in previous years, Procurement and Materiel (P&M) personnel reengineered two procurement systems, that when implemented in FY 2003, will contribute to a more effective and efficient organization. The Contractor continued to reduce cycle time for the more complex and large dollar procurements and to pursue alternate procurement approaches to reduce the cost of a procurement action. The purchasing card (UniCard) and

blanket agreement releases were very successful in decentralizing procurements to technical personnel. P&M closely monitored transactions outside of Procurement for UniCard and blanket agreement releases. This process provided for disciplinary action to card holders for inappropriate transactions. Working to develop and continue successful long-term relationships with key suppliers remained a top priority and a success. This year, more procurement dollars were awarded to Small Businesses, compared to last fiscal year, with the Contractor exceeding the Veteran-Owned Small Business goal. Based on surveys and partnering with suppliers and laboratory personnel on the procurements resulted in more satisfied customers and employees. The Contractor continued its superiority and leadership in ensuring that accurate information was available and needed information is provided to the staff to perform their functions. This resulted in improved expertise among the P&M staff and increased the number of quality procurements consistent with best business practices. The P&M organization had a strong leadership and management structure and, in conjunction with an educated staff, maintained accurate and current policies and practices, fostered and maintained excellent relationships with internal and external customers, and developed and implemented innovative improvement projects to reduce procurement costs which all contribute to a successful purchasing system.

## **Property Management**

The Lawrence Livermore National Laboratory again earned a rating of **Outstanding** in the functional area of Personal Property Management for FY 2002.

LLNL has consistently produced annual inventory find rates exceeding 99 percent: in FY 2002 equipment and sensitive items were inventoried at 99.9 and 100 percent of acquisition value respectively, and precious metals at 100 percent by weight.

Although certain property identification performance elements fell below the outstanding level for FY 2002, the overall property management system was mature and supported by a motivated and well-trained staff. Most of the above referenced performance elements showed signs of rebounding at the end of the performance period. The strong points for FY 2002 were: motor vehicle utilization, inventory management, custodianship and stewardship.

The Laboratory's Personal Property Management Program reflected an absolute commitment to performance management. The "critical few" performance measures have been identified and were objectively measured. In addition, the LLNL Property Management Program did not rest on its laurels. Change for the sake of improvement is embraced, which leads to continuous seeking of opportunities for improvement. During the FY 2002 rating period, three key property management group leaders were rotated between assignments as an opportunity for personal growth, yet the property management program continued to perform at the outstanding level. The LLNL Personal Property Management Program remained a benchmark within the Department.

## **Observations not covered by Appendix F**

### **Appendix O**

The University of California (UC), in conjunction with the Los Alamos National Laboratory (LANL) and the Livermore National Laboratory (LLNL) earned a “**Pass**” rating for the Fiscal Year 2002 Appendix O Assessment. UC and the Laboratories successfully completed the milestones established for the year, and these efforts resulted in integrating improvements into the Laboratories. Those sub-initiatives still open are either on schedule, or are continuous reporting initiatives with no intent to close. All five Appendix O Initiatives earned a “pass” rating. In order to ensure the continuing success of the improvements realized, selected areas in Appendix O have been incorporated into Appendix F for both LANL and LLNL in the FY 2003 performance standards.

Appendix A –Scores

**Overall Scores**

<b>FUNCTIONAL AREA</b>	<b>POINTS POSSIBLE</b>	<b>SCORE</b>	<b>PERCENT</b>	<b>ADJECTIVAL RATING</b>
<b>Laboratory Management</b>	<b>100</b>	<b>93.2</b>	<b>93.2</b>	<b>Outstanding</b>
<b>Science and Technology</b>	<b>500</b>	<b>470.3</b>	<b>94.1</b>	<b>Outstanding</b>
<b>Operations &amp; Administration</b>	<b>400</b>	<b>357.2</b>	<b>89.3</b>	<b>Excellent</b>
<b>Total LLNL Score</b>	<b>1,000</b>	<b>920.7</b>	<b>92.1</b>	<b>Outstanding</b>

**Laboratory Management**

<b>FUNCTIONAL AREA</b>	<b>POINTS POSSIBLE</b>	<b>SCORE</b>	<b>PERCENT</b>	<b>ADJECTIVAL RATING</b>
<b>Institutional Planning, Internal Communication, Customer Relation</b>	<b>20</b>	<b>18.4</b>	<b>92.0</b>	<b>Outstanding</b>
<b>Mission Support</b>	<b>50</b>	<b>47.5</b>	<b>95.0</b>	<b>Outstanding</b>
<b>Mission Assets</b>	<b>25</b>	<b>22.5</b>	<b>90.0</b>	<b>Outstanding</b>
<b>Citizenship</b>	<b>5</b>	<b>4.8</b>	<b>95.0</b>	<b>Outstanding</b>
<b>TOTAL</b>	<b>100</b>	<b>93.2</b>	<b>93.2</b>	<b>Outstanding</b>

Appendix A –Scores

**Science And Technology**

FUNCTIONAL AREA	POINTS POSSIBLE	SCORE	PERCENT	ADJECTIVAL RATING
<b>DP Programs</b>	<b>200</b>	<b>185.9</b>	<b>93.0</b>	<b>Outstanding</b>
<b>Directed Stockpile Work</b>	<b>60</b>	<b>54.9</b>	<b>91.5</b>	<b>Outstanding</b>
<b>Stockpile Maintenance</b>	21	20	95.2	Outstanding
<b>Stockpile Research &amp; Development</b>	39	34.9	89.5	Excellent
<b>Campaigns</b>	<b>140</b>	<b>131.0</b>	<b>93.6</b>	<b>Outstanding</b>
<b>Primary Certification/Advanced Radiography</b>	12	11.6	96.7	Outstanding
<b>Dynamic Materials Properties</b>	7	6.3	89.3	Excellent
<b>Secondary Certification / Nuclear Survivability / ICF/HEDP</b>	54	51.1	94.6	Outstanding
<b>Enhanced Surveillance</b>	9	8.5	94.3	Outstanding
<b>Advanced Design and Production Technologies</b>	2	1.9	92.5	Outstanding
<b>Advanced Simulation and Modeling</b>	56	51.6	92.1	Outstanding

Appendix A –Scores

**Science And Technology (continued)**

<b>FUNCTIONAL AREA</b>	<b>POINTS POSSIBLE</b>	<b>SCORE</b>	<b>PERCENT</b>	<b>ADJECTIVAL RATING</b>
<b>National Ignition Facility</b>	120	115.4	96.2	<b>Outstanding</b>
<b>NIF Project</b>	75	72.3	96.5	<b>Outstanding</b>
<b>NIF Demonstration Project</b>	45	43.1	95.8	<b>Outstanding</b>
<b>Nuclear Non-Proliferation</b>	50	47.8	95.6	<b>Outstanding</b>
<b>Non-NNSA S&amp;T</b>	130	121.2	93.2	<b>Outstanding</b>
<b>Office of Science</b>	45	41.2	91.5	<b>Outstanding</b>
<b>Work For Others/DOD</b>	49	46.2	94.3	<b>Outstanding</b>
<b>Work For Others/Other Federal Agencies</b>	12	11.4	95	<b>Outstanding</b>
<b>Tech Transfer Non-Federal Agencies</b>	24	22.4	93.3	<b>Outstanding</b>
<b>Laboratory Directed Research and Development</b>	0	0	97.7	<b>Outstanding</b>
<b>TOTAL</b>	<b>500</b>	<b>470.3</b>	<b>94.1</b>	<b>Outstanding</b>

Appendix A –Scores

<b>Operations And Administration</b>				
<b>FUNCTIONAL AREA</b>	<b>POINTS POSSIBLE</b>	<b>SCORE</b>	<b>PERCENT</b>	<b>ADJECTIVAL RATING</b>
<b>Environment Restoration &amp; Waste Management</b>	<b>40</b>	<b>35.1</b>	<b>87.8</b>	<b>Excellent</b>
<b>Environment, Safety &amp; Health</b>	<b>100</b>	<b>80.4</b>	<b>80.4</b>	<b>Excellent</b>
<b>Project/Facilities/Construction Mgt.</b>	<b>85</b>	<b>79.9</b>	<b>94.0</b>	<b>Outstanding</b>
<b>Safeguards And Security</b>	<b>100</b>	<b>90.8</b>	<b>90.8</b>	<b>Outstanding</b>
<b>Financial Management</b>	<b>15</b>	<b>14.5</b>	<b>96.8</b>	<b>Outstanding</b>
<b>Human Resources</b>	<b>15</b>	<b>13.7</b>	<b>91.0</b>	<b>Outstanding</b>
<b>Information Management</b>	<b>15</b>	<b>14.1</b>	<b>94.0</b>	<b>Outstanding</b>
<b>Procurement</b>	<b>15</b>	<b>14.4</b>	<b>96.0</b>	<b>Outstanding</b>
<b>Property Management</b>	<b>15</b>	<b>14.3</b>	<b>95.0</b>	<b>Outstanding</b>
<b>Total</b>	<b>400</b>	<b>357.2</b>	<b>89.3</b>	<b>Excellent</b>

## Appendix A

### Computation of Appendix F Element of Laboratory Performance

Performance Area	Rating	%	x	Pts	=	Score
Science & Technology						
DP Programs	Outstanding	93.0	x	200	=	185.9
National Ignition Facility	Outstanding	96.2	x	120	=	115.4
Non-Nuclear Proliferation	Outstanding	95.6	x	50	=	47.8
Non-NNSA S&T	Outstanding	93.2	x	130	=	121.2
 Total Science & Technology	 Outstanding	 94.1	 x	 500	 =	 470.3
 Laboratory Management	 Outstanding	 93.2	 x	 100	 =	 93.2
 Operations and Administration						
Environment Restoration & Waste Mgmt	Excellent	87.8	x	40	=	35.1
Environment, Safety and Health	Excellent	80.4	x	100	=	80.4
Project/Facilities/Construction Mgt.	Outstanding	94.0	x	85	=	79.9
Safeguards and Security	Outstanding	90.8	x	100	=	90.8
Financial Management	Outstanding	96.8	x	15	=	14.5
Human Resources	Outstanding	91.0	x	15	=	13.7
Information Management	Outstanding	94.0	x	15	=	14.1
Procurement	Outstanding	96.0	x	15	=	14.4
Property Management	Outstanding	95.0	x	15	=	14.3
 Total Operations and Administration	 Excellent	 89.3	 x	 400	 	 357.2
 <b>Overall Total</b>	 <b>Outstanding</b>	 <b>92.1</b>	 	 	 	 <b>920.7</b>

## Appendix A Overall Ratings/Trends (FY 1995 – FY 2002)

