

Final
Annual Evaluation Report
of
Argonne National Laboratory
for the Period
October 1, 2001 through September 30, 2002
(Fiscal Year 2002)

Performed by the Department of Energy, Chicago Operations Office, Argonne Area Office
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1.0 Executive Summary:

In accordance with the performance-based contract with DOE, the University of Chicago is responsible for the management and operation of Argonne National Laboratory (ANL). This contract requires DOE to establish formal expectations and to perform an annual performance evaluation of the University of Chicago for that contract work. The payment of fee to the University of Chicago is contingent on the results of the annual DOE performance evaluation. Since the inception of the ANL performance-based contract in 1995, the University of Chicago performance has been rated very highly by the sponsoring DOE Program Offices and by the DOE Chicago Operations Office Argonne Area Office (CH-AAO).

For FY-02, the overarching performance expectations assigned to the ANL Contract were:

Science and Technology: ANL will deliver innovative, forefront science and technology consistent with the DOE strategic goals. ANL will conceive, design, construct, and operate world-class user facilities, all in a safe, environmentally sound and efficient manner.

Contractor Management: The University of Chicago will provide leadership, guidance, and oversight that add value to the overall management of ANL.

Operations: ANL will conduct all work and operate facilities cost effectively and with distinction, integrated with and supportive of its missions in science, technology, energy, and environment, while being fully protective of its workers, its users, the public, and the environment.

As required under the contract, individual performance measures and system assessment measures were established for these three overarching performance expectations. For FY-02, the University of Chicago was rated as "Outstanding" (the highest rating) for the Science and Technology and Contractor Management Performance Measures by CH-AAO. The Operations expectation includes the Infrastructure and Cyber-Security Performance Measures, which were both rated as "Outstanding". In addition, an "Excellent" rating (the second highest rating) was given for the Integrated Safety Management Performance Measure. For the twelve General Operations System Assessment Measures (SAMs), the University of Chicago received an overall "Outstanding" rating.

Based on the FY-02 DOE ratings, the University of Chicago earned \$2,856,700.00 of a total possible \$2,915,000.00 for the management and operation of Argonne National Laboratory.

2.0 Background:

Beginning in June 1995, the DOE has maintained a performance-based contract with the University of Chicago for the management and operation of Argonne National Laboratory (ANL). Effective October 1, 1999, the performance-based contract between the DOE and the University of Chicago was renewed for a second 5-year term. The success of the performance-based concept, implemented in the previous contract (October 1995 - September 1999), led to a decision to continue the performance-based management approach for the ANL contract through September 30, 2004.

In accordance with the terms of the ANL contract, the CH-AAO establishes formal performance expectations at the beginning of each fiscal year and evaluates the performance of the University of Chicago against those performance expectations at the end of each fiscal year. For FY-02, Appendix B of the ANL contract includes two performance categories. These two categories are Mission Critical Performance Measures and General Operations System Assessment Measures. Both of these performance categories are evaluated annually using a pre-defined process. A formal evaluation by CH-AAO is a key part of the rating process. This report is the documentation of that annual rating process. The first performance category, "Mission Critical (Performance Measures)", or Performance Measures is tied directly to the annual fee earned by the University of Chicago. The second performance category, "General Operations (Systems Assessment Measures)" or SAMs is not tied directly to fee. For FY-02, there are twelve functional areas that make up the SAM Section.

For FY-02, the Performance Measures that directly impact fee include the following five areas: 1) Science and Technology, 2) Contractor Management, 3) Integrated safety Management, 4) Infrastructure, and 5) Cyber-Security. All of these Performance Measures are considered critical to successfully achieving the ANL Science and Technology Mission. The four non Science and Technology performance measures are considered critical because they have a direct and significant impact on the ability of ANL to successfully achieve the outstanding Science and Technology mission. The twelve SAMs, are considered important to ANL successfully achieving their Science and Technology mission, but have not been deemed to be critical to the successful accomplishment of the ANL mission.

Appendix B of the ANL contract requires the University of Chicago to perform an annual self-assessment that is considered by the CH-AAO in its overall evaluation of the University of Chicago performance. For the Science and Technology Performance Measure, the University of Chicago conducts a highly regarded peer review process as its self-assessment. Copies of the documented peer reviews are provided to CH-AAO and appropriate DOE-HQ Program sponsors. A significant component of the annual performance evaluation is a separate evaluation of the ANL Science and Technology work by the sponsoring DOE Headquarters (HQ) Program Offices. The DOE-HQ Program sponsors evaluation includes, as input, the results of the University of Chicago Science and Technology self-assessment. The University of Chicago Self-Assessment is included as a Reference to this report.

The CH-AAO evaluation includes both the "objective" Contract performance expectations for each area and the "subjective" aspects that include significant accomplishments, opportunities for improvement, results of other appraisals, and any other data that is relevant to the Laboratory's performance. The overall process for evaluating ANL performance and determining the annual fee is described in Attachment A to this report.

For FY-02, the University of Chicago was rated as "Outstanding" (the highest rating) for the Science and Technology, Contractor Management, Infrastructure, and Cyber-Security Performance Measures. An "Excellent" rating (the second highest rating) was given for the Integrated Safety Management Performance Measure. For the twelve General Operations System Assessment Measures (SAMs), the University of Chicago received an overall "Outstanding" rating. An "Outstanding" rating means that ANL significantly exceeds the standard of performance that noteworthy results have been

achieved. An “Excellent” rating means that ANL exceeds the standard of performance; although there may be room for improvement in some elements better performance in all other elements more than offset this. A fee table in the contract, negotiated each year along with the individual performance measures, is used to determine the annual monetary fee earned based on the assigned adjectival ratings.

A summary evaluation of the SAMs by CH-AAO determined that an overall “Outstanding” rating was appropriate. This means that the University of Chicago performance in General Operations significantly exceeds the standard of performance established for management and operating contractors for multi-purpose laboratories. For some SAMs, there remains room for improvement, but, in general, better performance in other areas more than offset the areas in need of improvement.

3.0 Evaluation of Performance Measures

Table 1 is a summary of the five FY-02 Performance Measure ratings for ANL. The ratings assigned to each of these five Performance Measures (four in Critical Operations and one in Science and Technology) have a direct impact on the fee calculations.

3.1 Science and Technology

An overall rating of “Outstanding” was assigned to the University of Chicago for their performance in the area of Science and Technology. This critical area represents 65% of the total fee for FY-02. Fifty-five percent is assigned to Part I - Argonne East Science and Technology Program while ten percent is assigned to Part II - Argonne West Science and Technology Program. The Science and Technology Performance Measure is based on the following DOE HQ Program Office evaluations:

- Office of Science and Technology evaluation dated January 27, 2003
- Office of Nuclear Energy, Science and Technology evaluation, dated April 18, 2003
- Office of Program and Project Management, dated December 20, 2002

The detailed DOE-HQ Program evaluations are included as Attachment B to this report. The highly regarded peer review process, conducted by the University of Chicago during FY-02, supports this overall rating of “Outstanding” in Science and Technology. A list of the Peer Review Reports is included as Attachment C. CH-AAO accepts the evaluations of the DOE-HQ Program Sponsors.

3.1.1 Part I – Argonne East Science and Technology Program

ANL operates three National User Facilities, discussed below, that served more than 2300 users during FY-02 and had an average reliability exceeding 96%. Some specific ANL-E accomplishments during FY-02 include the following:

- 1) Operation of the Advanced Photon Source (APS) continues to exceed expectations for beam current, flexibility, and beam stability. The APS has developed an elliptical undulator to extract two separate x-ray beams from a single straight section, effectively doubling the number of experiments that can be performed simultaneously. During FY-02, researchers at the APS solved the three-dimensional structure of one of the toxins that make anthrax so deadly, and the molecular structure of a protein that is key to interbacterial communication. They also created the first images of antiferromagnetism within

a solid and identified evidence suggesting that the Earth's core contains two forms of exotic iron.

- 2) Operation of the Intense Pulsed Neutron Source (IPNS) continues with very high reliability and availability of service to users. A new metastable state of ice has been discovered at the IPNS that may have implications in the cryopreservation of biomolecules.
- 3) Operation of the ATLAS Facility continues to be very successful. Precise measurements of Se, As, and Ge masses have been made which contribute to the understanding of neutron stars and the observed x-ray bursts.

In addition to the User Facility operation, ANL achieved the following additional accomplishments:

- 4) ANL received three R&D 100 awards for the development of the Globus Toolkit, Smart Sensor Development Kit and the Advanced Electrodeionization Technology for Product Desalting. The Globus Toolkit also won an "Editors' Choice" award for "most promising new technology" among the R&D 100 winners.
- 5) As part of the High Energy Physics Program, the first two supermodules in support of the Fermilab Minos detector were completed in July 2002. The 1-ton submodules for the ATLAS Hadronic Calorimeter have been completed for the Large Hadron Collider.
- 6) ANL has developed a novel technique for fabricating nanoscale materials using self-assembly through electrochemical growth of ordered arrays of nanopores in aluminum oxide. This process has the possibility for significant cost savings in self-assembly processes.
- 7) I-WIRE, an advanced network infrastructure linking major research institutions, including both ANL and the University of Chicago, was launched in April 2002.

The Office of Science (SC) provides over one-half of the DOE-HQ funding to ANL and has consistently recognized the high quality of Science and Technology work at ANL. For FY-02, SC rated ANL as "Outstanding" for Science and Technology work. SC has identified opportunities for improvement that ANL should pursue to increase individual ratings under the overall Science and Technology rating. These include:

- 1) Increased focus on reducing the transition period for assuming the role of operating APS beamlines.
- 2) Increased attention to planning activities in fusion research.

3.1.2 Part II – Argonne West Science and Technology Program

The Office of Nuclear Energy, Science, and Technology (NE) is the second largest DOE program sponsor of work at ANL. Most of this effort is conducted at ANL-W. For FY-02, based on the level of success in constructing and operating nuclear research and related facilities, ANL has been rated as "Outstanding" by NE. ANL-W was recognized nationally and internationally for their successful production-scale treatment of sodium-

bonded spent nuclear fuel, high quality pyroprocessing research and development, and for the continuing development and characterization of waste forms. Some specific ANL-W accomplishments during FY-02 include the following:

- 1) As one of two lead organizations managing the preparation of the Generation IV Nuclear Energy Systems Initiative Technology Roadmap, ANL has anticipated bottlenecks and taken prompt corrective action.
- 2) ANL exceeded the Presidential goal of treating 500 kilograms of sodium-bonded spent nuclear fuel by over 100 kilograms and the work was completed six weeks ahead of schedule.
- 3) Experimental Breeder Reactor II closure was completed on schedule (March 2002) and within budget.
- 4) Based on leadership by ANL, a strong cooperative effort is underway with France in systems, separations and fuels irradiation as part of the Advanced Fuel Cycle Initiative Program. In addition, ANL led the development of a transmutation fuel development plan that will be carried out in coordination with multiple national laboratories.

NE has consistently recognized the high quality of Science and Technology work at ANL and believes that the ANL-W management systems are key to supporting the above accomplishments. One opportunity for improvement involves increased ANL management attention to the planning for Nuclear Energy Research Initiative (NERI) projects to maximize timely task completions.

3.1.3 Office of Program and Project Management Science and Technology Program

The Office of Program and Project Management rated ANL performance in the Environmental Restoration area during FY-02 as "Outstanding". ANL-East efforts include accomplishing work under remedial projects, and continued efforts in a manner to complete remedial work by the end of FY-03.

ANL-E accomplished Decontamination and Decommissioning work for FY-02 within cost and without incident, including orderly shut-down of the program.

The following accomplishments are noted within the area of Waste Management, Waste Minimization, and Pollution Prevention:

- 1) Significant progress was made by ANL-E in managing cost-effective disposition of legacy and routine waste. Nearly twice the planned quantities of legacy waste were made during FY-02, and considering delays beyond ANL's control, progress was made in disposal of transuranic waste to WIPP.
- 2) ANL-W made notable progress in defining the Scope of Work and cost for the Remote Treatment Facility (RTF), including development of sound documentation for the path forward. ANL-W is also to be commended for its assistance to INEEL in the area of contact-handled transuranic waste disposal.

- 3) ANL-E initiatives in identifying pathways for excess stored nuclear materials and sources have gained laboratory-wide interest and serve as a model for other CH laboratories.
- 4) In the area of environmental stewardship (waste minimization and pollution prevention), ANL has positioned itself as the lead among Office of Science and Chicago Operations Office laboratories. Environmental liabilities have been reduced at ANL-E through cost savings and cost avoidance initiatives. Various efforts such as sustainable design, return-on-investment waste generation reduction projects, process waste assessments, and reduction or elimination of toxics, added to the list of accomplishments which supported official recognition by the Secretary of Energy in the area of pollution prevention.

3.2 Contractor Management

The Contractor Management Performance Measure focuses on nine activities/objectives that demonstrate a corporate commitment by the University of Chicago to the management of ANL. These are:

- 1) skilled Laboratory leaders
- 2) effective succession planning
- 3) limited acting/interim assignments
- 4) timely strategic guidance
- 5) timely identification and resolution of overall performance issues
- 6) periodic reviews of major programs and operations
- 7) periodic reviews of management systems and processes
- 8) University of Chicago involvement in the self-assessment process
- 9) U of C oversight of ANL resolution of important issues

The Contractor Management Performance Measure accounts for 5% of the ANL fee. This performance measure was modified for FY-02 to include a total of nine objectives. Three new objectives were added concerning strategic planning, timely issue resolution, and periodic reviews. The University of Chicago achieved an "acceptable" rating for all nine objectives. "Acceptable" is the highest rating category for these activities/objectives. An "Outstanding" rating was assigned by CH-AAO.

The ANL Director, Dr. Hermann Grunder, ANL Deputy Director, and other senior management positions at ANL continue to demonstrate strong leadership of the Laboratory. Both the ANL Director and the ANL Deputy Director have shown the necessary competence, aggressiveness, and responsiveness to DOE issues to support an "Outstanding" rating. During FY-02, the Director of ANL, working with the University of Chicago, appointed Dr. Robert Rosner as the Laboratory's Chief Scientist and Associate Laboratory Director for Physical, Biological, and Computing Sciences. In addition, Dr. John Sackett was selected as the Associate Laboratory Director for Engineering Research and Mr. Mike Derbidge was selected as the ANL Chief Operating Officer. ANL has also assigned Dr. Harvey Drucker to serve as a coordinator for all Homeland Security programs. All senior ANL management positions are filled and the associated management transitions have gone very smoothly.

The University of Chicago continues to demonstrate the necessary leadership involvement in the operation of the Laboratory. This leadership under Dr. Thomas Rosenbaum includes support for the development of innovative mechanisms for joint

research activities between the University of Chicago and ANL. The University of Chicago has instituted a limited appointment of ANL Division Directors of five years, renewable after a favorable evaluation. Each Associate Laboratory Director is now required to have a Deputy to enhance organizational effectiveness and better enable management successions. In addition, the University of Chicago continued with its distinguished peer review process and has reviewed numerous ANL business systems. The ANL Chief Financial Officer and the Office of Technology Transfer were reviewed during FY-02. The University of Chicago representatives meet regularly with the DOE Argonne Area Office to discuss initiatives and resolve issues. The relationship between DOE and the University of Chicago significantly exceeds the standard of performance.

The University of Chicago maintains a distinguished Board of Governors including distinguished scientists, including a Nobel Laureate; senior managers from industry such as Lucent Technologies and IBM; and former government executives such as the former Chairman of the U. S. Nuclear Regulatory Commission. The Scientific and Technical Advisory Committee (STAC) of the Board of Governors continued their involvement in reviews of the ANL Science and Technology programs to assist in the analysis and guidance on the strategic direction of the Laboratory. A revised STAC policy is now in place to govern the review process. The reviews now include both an evaluation and advisory role for STAC.

The University of Chicago self-assessment process continues to improve. For FY-02, ANL and the University of Chicago, due to the results of their formal self-assessment, reduced their performance ratings in two areas. ANL and the University of Chicago recognize that while the Appendix B expectations are important for measuring performance, these formal expectations do not represent the complete performance picture. The self-assessment results are a clear indication that ANL and the University of Chicago are using the self-assessment process to realistically evaluate their performance and identify areas where they believe enhanced performance is needed for them to become a truly outstanding Laboratory.

3.3 Integrated Safety Management

The objective of the ANL Integrated Safety Management System (ISMS) is to prevent or minimize potential adverse effects on workers, the public, property, and the environment as a consequence of Laboratory activities. The ISM Program also ensures that the Environment, Safety, and Health (ES&H) Program is applied by line management within the Laboratory as an integral part of the R&D mission of the Laboratory. Integrated Safety Management is one of the four FY-02 Mission Critical Performance Measures that focus on the operation of the Laboratory. ANL has a validated ISM System in place. When comparing ANL performance against other DOE Office of Science Laboratories, ANL performance is generally better than the Office of Science average in almost all areas. The CH-AAO standard of performance for ISM, however, has been and will continue to be very high. The overall CH-AAO rating for the ANL FY-02 ISM Program is "Excellent". ISM performance accounts for 20% of the fee.

The CH-AAO evaluation of the ANL ISM Program is based on a combination of objective data that is directly related to the ISM Performance Measure, as well as a combination of objective and subjective input that comes from a variety of sources, such as AAO ES&H Program Reviews, Facility Representatives' observations, audits, inspections, appraisals, and various operational awareness activities. An important source of information is the ANL FY-02 Self-Assessment and the CH-AAO Manager's overall evaluation of ANL

Management responsiveness to ISM issues.

CH-AAO believes that progress continues to be made toward a mature ISMS. Improvements in the Price Anderson Amendments Act Program are notable. However, continued attention is needed for the Alpha-Gamma Hot Cell Facility to minimize radiation exposures. ANL Management commitment to a safe work environment and an effective partnering relationship with DOE has been evidenced in FY-02 by an improving overall Argonne safety culture, a cooperative process for developing improved performance objectives and measures, productive weekly meetings with CH-AAO, and frequent positive interactions with DOE staff.

The DOE Office of Independent Oversight and Performance Assurance (OA) conducted an inspection of the ANL ES&H and Emergency Management (EM) Programs during FY-02. OA identified both strengths and weaknesses (11 ES&H findings and 5 EM findings) in the two Programs. ANL worked closely with CH-AAO to develop and implement a corrective action plan. All actions are being completed as planned.

It should be noted that ANL ISM performance against the quantitative ISM expectations in Appendix B has been commendable. The ISM Performance Measures include 4 major expectations and nine individual performance metrics. ANL achieved an "Outstanding" rating in five of the nine individual performance metrics.

The ANL/University of Chicago Self-Assessment provides additional data including accomplishments and self-identified opportunities for improvement that assist in determining the complete picture of the ANL/University of Chicago ISMS performance. CH-AAO reviewed the ANL/University of Chicago Self-Assessment to determine the following:

- 1) Significant activities/issues that ANL has not identified in their self-assessment that would support an increase or reduction in their final rating for the assigned functional area.
- 2) Significant issues that ANL has identified in their self-assessment that were either under-assessed or over-assessed in determining a final rating for the assigned functional area.
- 3) Overall self-assessment quality and completeness.

The ANL Self-Assessment appears generally complete and addresses a broad spectrum of ANL ISM activities, accomplishments, and opportunities for improvement. The quality of the ANL Self-Assessment continues to improve. To test the depth of ISM implementation at the Laboratory, an internal ANL management assessment was conducted of all ANL Divisions in FY-02.

CH-AAO concurs that opportunities for improvement, self-identified by ANL/University of Chicago, exist in the areas of 1) improvement in "lagging" divisions' implementation of ISM, 2) timeliness of reporting for OSHA and ORPS events, (3) evaluation of ORPS incidents to improve corrective actions and lessons learned, and (4) completion of the Cultural Resource Management Plan. In addition, CH-AAO believes that "lagging" safety statistics, such as the Lost Workday Case Rate, should be examined further to identify why these indicators do not reflect the initiatives taken by ANL to improve ISMS performance. Identifying the links between improving safety performance and "lagging" safety statistics may provide additional opportunities for improvement.

Line Management responsibilities for environmental protection represents an additional opportunity for improvement. The ANL Self-Assessment did not specifically address a Notice of Violation that was issued in November 2001 for Hazardous Waste Permit Conditions at ANL-W. Stewardship of ecological resources represents an important part of the ANL ISM Program. Consistent wetland protection considerations, early in the planning process for new construction, will minimize impacts to construction project schedules.

In summary, CH-AAO agrees with the ANL Self-Assessment and final rating of "Excellent". Overall, CH-AAO is very satisfied with the progress being made, the level of cooperation with DOE, and the continued ANL commitment to ISM excellence.

3.4 Infrastructure

For FY-02, the Infrastructure Performance Measure continues to be sub-divided into an ANL-E Infrastructure Performance Measure and a Cyber-Security Performance Measure. The ANL Infrastructure Performance Measure represents a total of 10% of the fee, which is shared equally between the two sub-categories. CH-AAO rates ANL as "Outstanding" for the ANL-E Infrastructure and "Outstanding" for Cyber-Security. Argonne-West Infrastructure is evaluated separately under Section 3.1.2 – ANL-W Science and Technology.

3.4.1 ANL-E Infrastructure

ANL-E Infrastructure includes Project Management and Facility Management. ANL is compliant with DOE Order 430.1A Life Cycle Asset Management and DOE Order 413.3 Program and Project Management for the Acquisition of Capital Assets. Specific activities associated with ANL-E infrastructure management include construction, upgrades, and maintenance of facilities and infrastructure, and environmental projects.

Based on performance expectations, CH-AAO rated the ANL-E Infrastructure Performance Measure as "Outstanding". ANL-E Infrastructure performance accounts for 5% of the FY-02 fee. Maintaining the ANL-E Infrastructure has consistently been a Laboratory priority for the last 10 years. ANL-E performance in maintaining the Laboratory infrastructure is considered "above average" when compared to the suite of Office of Science Laboratories and "well above average" when compared to the suite of SC Multi-Program Laboratories. ANL successfully completed all 14 major conventional projects in FY-02 when measured against CH-AAO approved project baselines. This performance measure also includes ANL-E activities associated with the environmental management funded activities that have been a success story within the DOE complex. ANL continues to be very aggressive in the achievement of cost and schedule baselines for construction and maintenance projects to ensure that the ANL plant and facilities are ready to serve the needs of the ANL research community.

CH-AAO recognizes the achievements for ANL-E during FY-02. These include the following:

- 1) Successfully completed the Building 202 Biosciences Laboratory Upgrades.
- 2) Central Supply Facility Project was successfully completed. This facility achieved an award Leadership in Energy Efficient Design (LEED).
- 3) Intense Pulsed Neutron Source Power Distribution System Upgrade was completed within budget and ahead of schedule.

- 4) Demolition of Buildings 4, 5, and 6 resulted in the removal of the last Quonset huts. This is part of the ANL Program to eliminate very old and costly-to-maintain buildings on the site.
- 5) The 2002 DOE Pollution Prevention Awards program chose ANL's Environmental Remediation Project as the national award winner for Environmental Restoration.
- 6) CH-AAO performed a systems review of the ANL Project Management System and Maintenance Management Systems in FY-02. No significant deficiencies or findings were identified.

Facility management includes the overall effectiveness of the site maintenance and energy management programs. FY-02 Facility Management accomplishments include the following:

- 1) continued decrease in energy usage from baselines
- 2) continued decrease in emergency work requests to less than 1% of all work requests
- 3) continued involvement with industry in facilities operation benchmarking
- 4) reductions in specific environmental discharges and implementation of habitat restoration work activities
- 5) maintenance of building occupancy at about 98%
- 6) development of a Strategic Facilities Plan
- 7) continue preparation and issuance of annual ESH&I Priority process
- 8) assistance to DOE in the negotiation of special rates for electricity (4% lower than regulated rates) and natural gas (\$50K a year in savings)

CH-AAO has assigned an "Outstanding" rating in the Infrastructure Management Critical Performance Measure and has seen a continuously improving process for the management of the facility infrastructure. This evaluation is supported by a number of reviews, inspections, and audits conducted by CH-AAO during FY-02.

3.4.2 Cyber-Security

"Cyber-Security" is associated with maintaining the safe and secure use of information technology at ANL. This includes establishing robust and integrated architectures, developing procedures and conducting appropriate training, and providing detection and remediation systems. Cyber-Security is considered a significant part of the effective operation of the science and technology program at ANL.

In FY-02, Cyber-Security was included under the Infrastructure Performance Measure to ensure continuing attention to this performance area. ANL has a Cyber-Security Program Plan (CSPP) to address issues and vulnerabilities. ANL continues to follow the key elements of their plan. During FY-02, ANL had 50% fewer computer systems incidences than in FY-01 and the consequences of the intrusions were less severe. Additional defenses, network segregation, internal scanning, and the development of a Foreign National Risk Assessment continue to enhance the protection of the ANL computer systems. Based on an external cyber-security review of ANL, a "Satisfactory" (the highest rating) was achieved. Based on the steady progress that ANL has made in the Cyber-Security Program, CH-AAO has assigned an "Outstanding" rating for FY-02 and will include Cyber-Security as a SAM instead of a fee-bearing Performance Measure in FY-03.

4.0 Evaluation of System Assessment Measures

The SAMs provide information to support an evaluation of the overarching performance expectation for ANL “General Operations”. This section is organized by using the DOE-HQ Office of Science (SC) High Level Expectations as topical headings. These SC expectations are in place for all ten of its Management and Operating Contractors. The individual SAMs were grouped according to the appropriate SC expectation. For FY-02, the CH-AAO evaluation of the University of Chicago performance resulted in an overall rating of “Outstanding” for the SAMs.

4.1 Business Management Expectation

For the ANL business management systems, compliance and internal controls continue to meet DOE requirements. Enhancements in these business systems continue without increasing the overall staff levels or costs. All of the ten ANL business management systems were rated as “Outstanding” or “Excellent”. For FY-02, CH-AAO began a change in the management of the ANL contract by focusing on the validation or certification of ANL systems, while reducing the emphasis on approving individual transactions. During FY-02, CH-AAO completed the formal review and successful certification of the ANL Property System, ANL High Risk Property System, ANL Procurement System and ANL Compensation System. These systems were certified against the associated DOE requirements, including DOE Orders, Prime Contract Clauses, and Federal Regulation. The Business Management SAMs include:

- 1) Financial Management
- 2) Human Resources
- 3) Diversity
- 4) Procurement
- 5) Personal Property
- 6) Legal Management
- 7) Scientific and Technical Information
- 8) Information Management
- 9) Integrated Safeguards and Security Management
- 10) Counter-Intelligence

For the Financial Management SAM, ANL has consistently been found to have adequate and effective internal management controls and effective cash and debt management practices to assure the safeguarding of DOE financial assets. Uncosted balances are controlled and the Laboratory has taken aggressive steps to control overhead. Based on the year-end results, all six performance metrics were in the “Outstanding” range. In addition, the FY-01 Opportunities for Improvement have all been addressed. CH-AAO has rated this area as “Outstanding”.

The overall management of Human Resources continues to be rated as “Outstanding” by CH-AAO based on the Appendix B performance expectations. The focus for FY-02 was for ANL to perform a Balanced Scorecard assessment of their performance and to complete the certification of the ANL Compensation System. ANL successfully completed both of these activities. During FY-02, ANL developed a new web-based open enrollment system, provided on-line educational assistance, re-defined the role of supervisor for EEO purposes, implemented a bar code scanning of training programs, and developed on-line employee access to retirement and benefits information. In addition, the Human Resources Policy and Procedures Manual was completely re-

written, ANL outsourced some temporary services to obtain some cost savings, and negotiated reductions in the HMO premiums. It is very noteworthy that there have been no work stoppages by any of the ten ANL employee unions in the last ten years.

For the Diversity SAM, ANL rated themselves as “Excellent”. This is lower than they achieved through the Appendix B performance expectations scoring. ANL Management has established commendable and very high standards for their affirmative action programs for women and minorities at ANL. Program budgets have been constrained, some downsizing has occurred, and very little recruitment is being conducted by ANL at this time, so the ability to impact women and minority status at ANL has decreased. ANL Management believes that additional innovative actions are needed, under the circumstances, to meet the aggressive goals of their affirmative action program. CH-AAO believes that an overall rating of “Excellent” is appropriate.

The management of procurement at ANL continues to be rated by CH-AAO as “Outstanding”. The rating focuses on the successful implementation of a Balanced Scorecard and the ANL Self-Assessment that was consistent with the system indicators as agreed to between CH-AAO and ANL for FY-02. Overall, ANL scored very high on the Balanced Scorecard. The ANL Procurement Department is well managed. The U. S. Small Business Administration rated the ANL Small Business Program as “Highly Successful” during FY-02. Both the ANL AMOS and PARIS procurement systems support the effectiveness and efficiency of ANL procurement operations.

The Appendix B expectations for the Personal Property SAM focus on implementing the Balanced Scorecard and developing a High Risk Property Program for DOE validation. CH-AAO rates the University of Chicago performance for Personal Property as “Outstanding”. The rating included the results of the completed Balanced Scorecard Program, the successful CH-AAO certification of the ANL Property System, and the ANL High Risk Property System certification. The loss rates of property at ANL remains very low.

The CH Assistant Chief Counsel’s Office rated ANL Legal Services as “Outstanding” based on a detailed review. The review included a validation of the ANL Self-Assessment, a determination that ANL legal systems complied with DOE requirements, and they were likely to continue to do so. ANL was determined to have quality, timely, and cost effective legal services that protect the interests of the Laboratory and the Government. No significant non-compliances were identified with ANL’s approved Litigation Management Program. ANL also gave increased consideration to Alternate Dispute Resolution techniques including techniques to minimize the risk of disputes. The ANL Legal Department is considered to be very well run. Innovation and process improvements are strengths of ANL. These strengths are evidenced by numerous benchmarking efforts, individual and organizational development opportunities and the overall proactive efforts of the ANL Legal Department. CH-AAO is impressed with the benefits that have accrued from the Client Interest Group Initiative and the quarterly meetings between CH Legal Counsel and the ANL Legal Department.

Scientific and Technical Information includes the Research Library System, Scientific and Technical Publishing, and Records Management. Consistent with DOE Order 241.1, ANL provided its technical and conference papers to the DOE Office of Scientific and Technical Information. During FY-02, ANL continued to upgrade its records management database to expedite searches. ANL effectively disseminates Laboratory R&D results and supports the ANL researcher community, as needed with writing,

editing, and visual arts capabilities. CH-AAO rates the University of Chicago as “Outstanding” for Scientific and Technical Information.

CH-AAO rates the University of Chicago as “Outstanding” for Information Management (IM). IM supports all business and programmatic areas of the Laboratory. ANL successfully completed the Information Technology (IT) Strategic Plan and the IT Service Level Agreements during FY-02. Working with the University of Chicago, a revised site-wide agreement with Microsoft desktop software is expected to save almost \$700K per year. Improvements have been made in disaster recovery capabilities at the Laboratory and customer satisfaction was very high for the operation of telephone services.

The objective of the Integrated Safeguards and Security Management (ISSM) at ANL is to provide the necessary and appropriate protection, at both ANL sites for special nuclear material, information, personnel, and property. As required by DOE Order 470.1, ANL ISSM was evaluated for its effectiveness in the following sub-programs:

- 1) program management
- 2) information security
- 3) materials control and accountability
- 4) personnel security

For FY-02, the ISSM SAM was rated by CH-AAO as “Outstanding”. ANL has completed a number of significant accomplishments in FY-02. The most significant is the continued upgrade of physical protection systems at ANL-W. ANL has also demonstrated innovative approaches to meeting the requirements for the Foreign Visits and Assignments Program and the Export Control Program. ANL has also successfully responded to a number of requests including changes in the Security Condition (per DOE N 473.6), providing assistance to the Presidential visit, and revisions to the ANL-E Safeguards and Security Plan.

The Counter-intelligence SAM includes an evaluation of the effectiveness of the following sub-programs:

- 1) Program Planning and Management
- 2) Foreign Visits and Assignments
- 3) Investigations
- 4) Counterintelligence Cyber-Security
- 5) Foreign Travel – Briefing/Debriefing
- 6) Analysis and CI Awareness/Training

The Director of the Office of Counterintelligence at DOE-HQ submitted a written evaluation of ANL performance during FY-02 to CH-AAO (see Attachment D). This evaluation proposed an “Outstanding” rating and provided a basis for the rating. CH-AAO recognizes the proactive approach taken by ANL and the positive changes that continued to occur in the Counterintelligence Program at ANL during FY-02. A Counterintelligence inspection of ANL-E was conducted by DOE-HQ in September 2001 where it was determined that the Counterintelligence sub-program areas were rated as “Satisfactory”, the highest rating that can be achieved in this area. The ANL-W Counterintelligence Program was inspected in July 2002 and the overall Program was rated as “Satisfactory”. The ANL Counterintelligence Program includes a full suite of briefings, debriefings, interviews, training, and investigations. The ANL-E CI

Investigations program is highly rated. CH-AAO rates ANL as “Outstanding” for the Counterintelligence Program.

4.2 Stakeholder Relations Expectation

Stakeholder Relation includes the following two SAMS:

- 1) Communications and Trust
- 2) Technology Transfer

Communications and Trust performance is critical to the success of all DOE National Laboratories. “Trust” is a measurement of the effectiveness of the relationship between the Laboratory, DOE, and the local community, including key stakeholders. “Communications” is the foundation for the trust relationship and also measures the interactions between DOE and ANL, as well as, the University of Chicago. Communications and Trust are areas where ANL has consistently demonstrated a high level of performance. While CH-AAO established some objective metrics for Communications and Trust within Appendix B of the contract, subjective performance evaluations are unavoidable and viewed as an important element of the rating. Communications and Trust was rated as “Outstanding” by CH-AAO for FY-02, based on the overall ANL performance, as measured by the objective and subjective information. ANL has continued to work cooperatively with DOE-CH in support of the Community Leaders Round Table and other outreach programs. A cooperative relationship is clearly evidenced in the interactions between ANL Management and DOE (both the CH-AAO Office and DOE-HQ). In addition, the communications between the University of Chicago and DOE have been notable. ANL Management continues to place a priority on the establishment and maintenance of a very positive relationship between ANL and the local communities, including key stakeholders.

With respect to the Technology Transfer Program, which includes the Work-for-Others Program, ANL maintains a strong relationship with “other than DOE” sponsors. Repeat work is common. The University of Chicago and ANL management have increased their emphasis on ensuring that useful technologies are identified and available to US industry. CH-AAO rates the ANL Technology Transfer as “Outstanding”.

5.0 Other Issues/Relevant Factors/Opportunities for Improvement

For FY-02, the final CH-AAO performance ratings were the same as those proposed by the University of Chicago in the University of Chicago Self-Assessment. This consistency has been improving over the last several review cycles and reflects the following factors:

- 1) Improved overall University of Chicago/ANL performance.
- 2) Increased ANL and University of Chicago management attention to ANL issues.
- 3) Improved quality and objectivity in the University of Chicago/ANL end-of-year self-assessment.
- 4) Development of a University of Chicago mid-year self-assessment to identify issues as early as possible and to take appropriate corrective action.
- 5) Improved CH-AAO mid-year evaluations of ANL performance. This included identification of issues and a more thorough review of the University of Chicago/ANL mid-year self-assessment.

ANL continues to receive State of Illinois support for construction of new science facilities such as the Center for Nanoscale Materials and early design money for the Rare Isotope Accelerator Science Center in addition to funding for the operation of State of Illinois beamlines at the APS.

With respect to vehicle utilization, the vehicle utilization core measure was not met. DOE-CH and the Laboratory are working together to resolve utilization issues (local use objectives) and usage reporting inconsistencies.

An important opportunity for improvement includes the need for a permanent manager for the Argonne Office of Public Affairs (OPA) and a closer working relationship between the scientific divisions and OPA at the Laboratory. This is expected to lead to a more proactive and better coverage of discoveries/developments at the Laboratory. Little progress was experienced in these two areas during FY-02.

ANL needs to ensure that environmental impacts are considered in sufficient detail as early as possible in the development of project planning. This maximizes the number options that are available to mitigate those impacts and to consult with the appropriate regulatory body.

ANL needs to focus some attention on the process for timely submittals to DOE for review and approval of modifications to Intellectual Property terms and conditions in Work-for-Others agreements.

ANL needs to examine the ES&H “lagging” performance indicators in more detail to determine the next level of improvements for the ISMS. In addition, ANL needs to continue to examine the radiation exposures at the Alpha-Gamma Hot Cell with the goal of reducing the exposures.

While ANL Emergency Management Program has seen significant improvements during the latter part of FY-02, additional attention is still required in FY-03 to address findings from the OA Review.

None of the above issues are deemed significant enough to modify any of the ratings to Performance Measures or SAMs.

6.0 Fee Determination:

For the Mission Critical Performance Measures, ANL achieved an Outstanding rating for the Science and Technology Performance Measure (both ANL-E and ANL-W), Contractor Management Performance Measure, and Infrastructure Performance Measure (both the ANL-E Infrastructure and Cyber-Security were rated as “Outstanding”). The Integrated Safety Management System Performance Measure was rated as “Excellent”. Attachment E uses the performance ratings to calculate a total earned FY-02 fee of \$2,856,700.00. The final rating for General Operations SAMs is an “Outstanding”. No fee is tied to the General Operations SAM rating.

TABLE 1

**SUMMARY OF FY- 2002
PERFORMANCE MEASURE RATINGS**

Appendix B Number	Performance/ Functional Area	ANL Ratings Based Solely on Appendix B Performance Expectations	ANL Ratings based on the ANL Self-Assessment	CH-AAO Summary Rating
Science and Technology				
I.1 Part I	ANL-East	Outstanding	Outstanding	Outstanding
I.1 Part II	ANL-West	Outstanding	Outstanding	Outstanding
Mission Critical Areas				
I.2	Contractor Management	Outstanding	Outstanding	Outstanding
I.3a	Integrated Safety Management	Outstanding/Excellent	Excellent	Excellent
I.3b	Infrastructure	Outstanding	Outstanding	Outstanding
I.3b	Cyber-Security	Outstanding	Outstanding	Outstanding

**Table 2
Summary of FY-2002
System Assessment Measure Ratings**

Appendix B Number	Functional Area	ANL Self Ratings Based Solely on Appendix B Performance Expectations	ANL Self-Assessment Ratings	CH-AAO Summary Rating
Business Operations				
II.1.a	Financial Management	Outstanding	Outstanding	Outstanding
II.1.b	Human Resources	Outstanding	Outstanding	Outstanding
II.1.c	Diversity	Outstanding	Excellent	Excellent
II.1.d	Procurement	Outstanding	Outstanding	Outstanding
II.1.e	Personal Property	Outstanding	Outstanding	Outstanding
II.1.f	Legal Management	Outstanding	Outstanding	Outstanding
II.1.g	Scientific and Technical Information	Outstanding	Outstanding	Outstanding
II.1.h	Information Management	Outstanding	Outstanding	Outstanding
II.1.i	Integrated Safeguards and Security Management	Outstanding	Outstanding	Outstanding
II.1.j	Counterintelligence	Outstanding	Outstanding	Outstanding
Stakeholder Relations				
II.2.a	Communications and Trust	Outstanding	Outstanding	Outstanding
II.2.b	Technology Transfer	Outstanding	Outstanding	Outstanding
Summary for Operations		Outstanding	Outstanding	Outstanding

ANL, through their self-assessment process determined that a weighted average of all the System Assessment Measures would be an "Outstanding" rating. CH-AAO has determined that an appropriate weighted average is "Outstanding".

7.0 References

Appendix B “Performance Criteria and Measures” (Modification M384), of the Contract between the University of Chicago and DOE for the Management and Operation of Argonne National Laboratory (W-31-109-ENG-38)

The University of Chicago “Argonne National Laboratory Self-Assessment of Operations Performance” dated November 30, 2002.

Attachment A
Evaluation Process

Attachment A Evaluation Process

1.0 Background:

On May 24, 1995, the University of Chicago and the U.S. Department of Energy (DOE) established a new performance based contract for the management and operation of Argonne National Laboratory (ANL). The contract includes the use of performance measures agreed to each year in advance by DOE and the University of Chicago, as standards against which ANL's scientific, technical, operational, and managerial performance are evaluated. Performance measures are adjectivally rated. The definitions of the five adjectival ratings used in these evaluations are found in Table 1. While the selected performance measures are considered critical for measuring ANL's success, they are not viewed as a comprehensive basis for evaluating ANL performance. Peer reviews, audits, appraisals, and other reviews conducted during the evaluation period are also considered.

Each year, the University of Chicago/ANL is required to perform a formal, comprehensive self-assessment of their overall performance. This self-assessment examines the ANL performance against the performance measures and includes other factors that the University of Chicago/ANL believe are important to the success of the ANL mission. Finally, DOE conducts an evaluation of ANL's performance in "Science and Technology" and "Operations". This evaluation is based on the CH-AAO review of the University of Chicago/ANL Self-Assessment, as well as, the results of the contractual performance measures, peer reviews, audits, appraisals, and other reviews conducted during the evaluation period. The CH-AAO evaluation determines the fee to be awarded by DOE to the University of Chicago under the contract.

2.0 Process:

Each year, prior to the beginning of the fiscal year, performance measures are negotiated between the University of Chicago and CH-AAO. The ANL contract is modified each year to include the negotiated performance measures. For FY-02, a total of seventeen functional areas were selected for measuring ANL performance. ANL performance is divided into two distinct categories. The first category, Science and Technology includes one major functional area, although ANL-E and ANL-W are evaluated separately. The second category, Operations includes 17 functional areas which are further subdivided into Mission Critical Operations and General Operations. The Mission Critical Performance Measures (which includes the Science and Technology Performance Measure) are fee-bearing. The General Operations area consists of System Assessment Measures (SAMs) that are not fee-bearing. Weighting factors are also assigned and agreed to for each of the functional areas prior to the beginning of the fiscal year.

For the CH-AAO evaluation of the ANL "Operations" performance, a three-step process is performed annually at the end of the evaluation period. These steps are:

- 1) The University of Chicago/ANL evaluate their own performance against agreed to Performance Measures and SAMs.

- 2) The University of Chicago/ANL performs a self-assessment of their overall performance. This self-assessment is based on their performance against the Performance Measures and SAMs evaluated under step #1 and other relevant factors that directly affect performance.
- 3) CH-AAO conducts an evaluation of the University of Chicago/ANL's performance based on the University of Chicago/ANL Self-Assessment; validates the University of Chicago/ANL performance against the contractual performance measures; and identifies and considers other relevant factors that directly influence the evaluation of University of Chicago/ANL's performance.

If there are disagreements between CH-AAO and University of Chicago on functional area ratings, then CH-AAO meets with ANL functional area staff to determine if additional information is available that should be considered in the final evaluation and rating. Several sessions were conducted at mid-year based on the CH-AAO mid-year evaluation and the end of the FY-02 evaluation period.

For the DOE-HQ evaluation of the ANL "Science and Technology" performance, a three-step process is performed annually. These steps are conducted at the end of each evaluation period:

- 1) CH-AAO requests and receives appraisals from the DOE-HQ Program Organizations that fund significant Science and Technology work at ANL.
- 2) CH-AAO develops a single rating for Science and Technology based on the evaluations that were received from the DOE-HQ Program Offices. A final rating for Science and Technology is developed by weighting each DOE-HQ Program rating by the level of funding provided by that Program Office.
- 3) CH-AAO prepares an Annual Evaluation Report that summarizes ANL performance and establishes the basis for a fee determination.

3.0 Data Sources for CH-AAO Evaluation:

The University of Chicago/ANL Self-Assessment and the individual ratings of ANL performance against the Performance Measures and System Assessment Measures are key data to the CH-AAO evaluation. Validation of the performance measures data is also performed by CH-AAO. For the performance evaluations in the areas of operations, input comes from the CH-AAO staff, CH functional divisions and offices that support CH-AAO in oversight of particular laboratory functions, as well as from HQ functional units.

CH-AAO has primary responsibility for evaluating the University of Chicago/ANL performance under the Mission Critical Operations and General Operations categories, with the exception of Science and Technology, the DOE-HQ Program Offices have primary responsibility for evaluating the University of Chicago/ANL performance under the Science and Technology category. Table 1 and Table 2 of the CH-AAO Annual Evaluation Report list all of the functional areas and the adjectival ratings assigned by both CH-AAO and University of Chicago/ANL for FY-02. CH-AAO has responsibility for preparing the Annual Evaluation Report and determining the total fee to be awarded based on the individual ratings.

Input to the Science and Technology summary appraisal was solicited from sources having a significant interface with the University of Chicago and ANL. Input from DOE-HQ Program Offices has been solicited by CH-AAO for providing feedback and rating ANL programs. Where possible, consolidated information for program ratings at the DOE Assistant Secretarial level was requested. The University of Chicago also conducts peer reviews for Science and Technology and this information is made available to DOE-HQ.

4.0 Rating System

For FY-02, adjectival ratings were:

Outstanding	Significantly exceeds the standard of performance; achieves noteworthy results.
Excellent	Exceeds the standard of performance. Although there may be room for improvement in some elements, better performance in all other elements more than offset this.
Good	Meets the standard of performance. Deficiencies do not substantively affect performance.
Marginal	Below the standard of performance; deficiencies are serious and may affect overall results: management attention and corrective action are required.
Unsatisfactory	Significantly below the standard of performance; deficiencies are serious, may affect overall results, and urgently require senior management attention.

The Standard of Performance is that which is reasonably expected of Management and Operating Contractors on the basis of applicable DOE Orders, Prime Contract Requirements, regulations, and on observations of the performance of comparable R&D organizations. It includes, for example, making effective use of sound management judgment, administrative, and business practices within existing funding constraints.

Attachment B

DOE-HQ Program Office Evaluations

Attachment C

List of University of Chicago Peer Review Reports

University of Chicago Reviews for ANL Conducted in FY02

<u>Programmatic Reviews</u>
Chemical Technology Division
Intense Pulse Neutron Source Facility
Mathematics and Computer Science Division
Nuclear Technology Program
Reactor Analysis and Engineering Division
Decision Information Services Division
<u>Business Systems</u>
Chief Financial Officer
Office of Technology Transfer

Attachment D

Selected Performance Reports and Comments

Attachment E
Fee Calculations

**Attachment E
Fee Calculation**

A. Science and Technology Part I – Argonne East (55% of the fee)

Three DOE-HQ Program Offices (sponsors) responded to a written request for an annual rating of ANL for the Science and Technology work that they sponsored at ANL-E. The Final report reflects the ratings assigned by the Program sponsors.

<u>Sponsor</u>	<u>FY-02 Program Sponsor Funding</u>	<u>Rating</u>	<u>Points</u>
Office of Science	\$ 240M	Outstanding	960
Office of Program and Project Management	\$ 10M	Outstanding	40
Total Funding	\$ 250M		
Total Points			1000

Final weighted average is: $1000/250 = 4.00$ (Outstanding)

The Final weighted average uses the individual Program funding level as a weighting factor. The funding amounts were taken from the FY-02 ANL Institutional Plan. The funding numbers are rounded to the nearest \$1M. Only those DOE-HQ Program Offices that provide more than \$5M per year were solicited for ratings. Only DOE-HQ Office of Science provided an evaluation for ANL-E. The points column in the above table was calculated by multiplying the individual Program sponsor funding level by a numerical rating assigned to the rating where:

Outstanding = 4; Excellent = 3; Good = 2; Marginal = 1; Unsatisfactory = 0

B. Science and Technology Part II - Argonne West (10% of fee)

The Science and Technology Program at ANL-W is evaluated separately. The Office of Nuclear Energy, Science, and Technology (NE) is the primary sponsor for ANL-W. The NE rating for ANL is an "Outstanding". CH-AAO agrees with this rating.

C. Fee Calculation (Using the performance ratings)

Outstanding for Science and Technology (65%)	\$1,894,750.00
Outstanding for Contractor Management (5%)	\$ 145,750.00
Excellent for Integrated Safety Management (20%)	\$ 524,700.00
Outstanding for Infrastructure (5%)	\$ 145,750.00
Outstanding for Cyber-Security (5%)	\$ 145,750.00
Total earned fee for FY-02 is:	\$2,856,700.00

Attachment E
System Assessment Measure Rating

Attachment E Fee Calculation - System Assessment Measures

<u>Number</u>	<u>Functional Area</u>	<u>Rating</u>	<u>Weight</u>	<u>Score</u>
Business Management				
3.a	Financial Management	4	0.1	0.4
3.b	Human Resources	4	0.1	0.4
3.c	Diversity	3	0.1	0.3
3.d	Procurement	4	0.1	0.4
3.e	Personal Property	4	0.1	0.4
3.f	Legal Management	4	0.08	0.32
3.g	Scientific and Technical Information	4	0.04	0.16
3.h	Information Management	4	0.04	0.16
3.j	Integrated Safeguards and Security	4	0.12	0.48
3.k	Counter-Intelligence	4	0.06	0.24
Stakeholder Relations				
4.a	Communications and Trust	4	0.08	0.32
4.b	Technology Transfer	4	0.08	0.32
	Total	47	1.0	3.90
Final Score is				3.90

The final rating for the System Assessment Measures is: 3.90 (Outstanding)
where:

Outstanding = 4
Excellent = 3
Good = 2
Marginal = 1
Unsatisfactory = 0