Department of Energy
Pacific Northwest Site Office
P.O. Box 350, K9-42
Richland, Washington 99352

12-PNSO-0075

DEC 15 2011

Mr. Michael Kluse, Director
Pacific Northwest National Laboratory
Battelle Memorial Institute
Pacific Northwest Division
Richland, Washington 99354

Dear Mr. Kluse:

CONTRACT NO. DE-AC05-76RL01830 – FY 2011 YEAR END EVALUATION OF BATTELLE FOR MANAGEMENT AND OPERATION OF PNNL

Enclosed is the DOE FY 2011 Year-End Evaluation Report of Battelle's Management and Operation (M&O) of PNNL. The basis for the evaluation is centered on performance expectations found within each of the common Office of Science Performance Objectives and Goals. The grades for each of the eight Goals are provided below. The evaluation focuses on the Contractor's contributions and performance within the areas of Science and Technology (S&T), and is supplemented with the Contractor's ability to manage and operate the Laboratory in the most efficient and effective manner. The Laboratory performance resulted in 94% of the S&T fee earned and 100% of the M&O fee multiplier earned.

Battelle's performance generally exceeded expectations within the S&T Goals (Goals 1-3), as evidenced by the evaluations provided by each of the DOE Headquarters Program Offices and other customers. Battelle's performance within the M&O Goals (Goals 4- 8) and their supporting Objectives either met or exceeded DOE's expectations in most areas.

Performance Goal	**Grade**
1.0 Mission Accomplishment	A-
2.0 Design, Fabrication, Construction	B+
3.0 S&T Program Management	A-
4.0 Leadership/Stewardship	A
5.0 ES&H	B+
6.0 Business Systems	B+
7.0 Infrastructure	A-
8.0 Safeguards/Security	A-

We look forward to working with Battelle throughout FY 2012 to further enhance the value of the Laboratory as it continues to pursue its mission.

If you have any questions, please contact me, or your staff may contact Lance Vickerman, Laboratory Stewardship Division, at (509) 372-4028.

Sincerely,

Roger E. Snyder
Manager

LSD:LRV

Enclosure

cc w/encl:
S. F. Ashby, PNNL
L. P. Berube, PNNL
M. D. Conger, PNNL
P. M. Dehmer, SC-2, HQ
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J. B. Leaumont, PNNL
J. A. McBrearty, SC-3, HQ
D. Ray, PNNL
M. H. Schlender, PNNL

Attachment

U.S. Department of Energy

Office of Science

Fiscal Year 2011

Performance Evaluation Report of the Battelle Memorial Institute for Management and Operations of Science and Technology at the Pacific Northwest National Laboratory

For the period October 1, 2010, to September 30, 2011

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I. OVERALL SUMMARY RATING/FEE

Performance-Based Score and Adjectival Rating:

The basis for the evaluation of Battelle Memorial Institute (the Contractor) management and operations of the Pacific Northwest National Laboratory (the Laboratory) during FY 2011 centered on the Objectives found within the following Performance Goals:

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

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

Calculating Individual Goal Scores and Letter Grades:

Each Objective is assigned the earned numerical score by the evaluating office as stated above. The Goal rating is then computed by multiplying the numerical score by the weight of each Objective within a Goal. These values are then added together to develop an overall numerical score for each Goal. For the purpose of determining the final Goal grade, the raw numerical score for each Goal will be rounded to the nearest tenth of a point using the standard rounding convention discussed below and then compare to Figure 1. A set of tables is provided at the end of each Performance Goal section of this document to assist in the calculation of Objective numerical scores to the Goal grade. No overall rollup grade shall be provided. The raw numerical score for S&T and M&O will be rounded to the nearest tenth of a point of purposes of determining fee. A standard rounding convention of x.44 and less rounds down to the nearest tenth (here, x.4), while x.45 and greater rounds up to the nearest tenth (here, x.5).

Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Total Score	**4.3-4.1**	**4.0-3.8**	**3.7-3.5**	**3.4-3.1**	**3.0-2.8**	**2.7-2.5**	**2.4-2.1**	**2.0-1.8**	**1.7-1.1**	**1.0-0.8**	**0.7-0**

Figure 1. FY 2011 Contractor Letter Grade Scale

The eight performance Goal grades shall be used to create a report card for the laboratory (see Figure 2, below).

Performance Goal	Grade
1.0 Mission Accomplishment	A-
2.0 Design, Fabrication, Const	B+
3.0 S&T Program Management	A-
4.0 Leadership/Stewardship	A
5.0 ES&H	B+
6.0 Business Systems	B+
7.0 Infrastructure	A-
8.0 Safeguards/Security	A-

Figure 2. Laboratory Report Card

Determining the Amount of Performance-Based Fee Earned:
SC uses the following process to determine the amount of performance-based fee earned by the Contractor. The S&T score from each evaluator shall be used to determine an initial numerical score for S&T (see Table A, below),and the rollup of the scores for each M&O Performance Goal shall be used to determine an initial numerical M&O score (see Table B, below).

Program	Numerical Score	Weight*	Total Score
ASCR	3.5	0.9%	
BER	3.3	21.0%	
BES	3.4	3.7%	
FES	3.5	0.1%	
DHS	3.9	12.2%	
DNN	3.8	41.4%	
EERE	3.0	14.3%	
EM	3.6	3.2%	
IN	4.0	3.3%	
Initial S&T Score			**3.6**

Table A. Fiscal Year Contractor Evaluation Initial S&T Score Calculation
***Note:** Weight = Program cost divided by total cost*

M&O Performance Goal	Numerical Score	Weight	
5.0 ES&H	3.4	25.0%	
6.0 Business Systems	3.4	25.0%	
7.0 Infrastructure	3.7	25.0%	
8.0 Safeguards/Security	3.5	25.0%	
Initial M&O Score			**3.5**

Table B. Fiscal Year Contractor Evaluation Initial M&O Score Calculation

These initial scores will then be adjusted based on the numerical score for Goal 4.0 (See Table C, below).

	Numerical Score	Weight	
Initial S&T Score	3.6	75%	
Goal 4.0	3.8	25%	
Final S&T Score			**3.7**
Initial M&O Score	3.5	75%	
Goal 4.0	3.8	25%	
Final M&O Score			**3.6**

Table C. Fiscal Year Final S&T and M&O Score Calculation

The percentage of the available performance-based fee that may be earned by the Contractor shall be determined based on the final score for S&T (See Table C) and then compared to Figure 3, below. The final score for M&O from Table C shall then be utilized to determine the M&O fee multiplier (see Figure 3) which will determine the final percentage of fee earned (see Table D). The actual amount of performance-based fee earned for FY 2011 is then calculated as shown in Table E.

Overall Weighted Score from Table A	Percent S&T Fee Earned	M&O Fee Multiplier
4.1 to 4.3	100.00%	100.00%
3.8 to 4.0	97.00%	100.00%
3.5 to 3.7	**94.00%**	**100.00%**
3.1 to 3.4	91.00%	100.00%
2.8 to 3.0	88.00%	95.00%
2.5 to 2.7	85.00%	90.00%
2.1 to 2.4	75.00%	85.00%
1.8 to 2.0	50.00%	75.00%
1.1 to 1.7	0.00%	60.00%
0.8 to 1.0	0.00%	0.00%
0.0 to 0.7	0.00%	0.00%

Figure 3.-Performance Based Fee Earned Scale

Overall Fee Determination	
Percent S&T Fee Earned From Table C.	**94.00%**
M&O Fee Multiplier From Table C.	**X 100.00%**
Overall Earned Performance-Based Fee	**94.00%**

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

Earned Fee Calculation	
Available Fee	**$9,000,000.00**
Overall Earned Performance - Base Fee (Table D)	**X 94.00%**
Earned Fee	**$8,460,000.00**

Table E.-Earned Fee Calculation

II. PERFORMANCE GOALS, OBJECTIVES, AND MEASURES/TARGETS

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

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

Objectives

1.1: Provide Science and Technology Results with Meaningful Impact on the Field

1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.

Advanced Scientific Computing Research (ASCR)

PNNL has some very talented researchers that are having an impact within ASCR programs and in other DOE mission areas.

Basic Energy Sciences (BES)

Some, but not all, MSE-supported projects at PNNL continue to produce high-quality, impactful science. PNNL successfully exploits EMSL user facilities and other resources at the Laboratory to advance DOE mission goals.

PNNL has successfully met its notable requirement ("Deliver impactful science for the Energy Frontier Research Center: Center for Molecular Electrocatalysis").

In general, CSGB-supported research at PNNL continues to be successfully executed and of high scientific merit and mission relevance.

PNNL successfully recruited an internationally recognized scientist to lead the lab's catalysis effort, but at a half-time appointment.

Biological and Environmental Research (BER)

The Lab is producing impactful science across a range of the BER portfolio. In particular they are making substantial contributions to the development of models that leverage experimental results with impacts on research in climate, integrated assessment, subsurface biogeochemistry, "omics," and low dose.

Fusion Energy Sciences (FES)

The Pacific Northwest National Laboratory (PNNL) has done an excellent job, both scientifically and managerially, in the conduct of their structural materials research for fusion first wall applications. Working primarily with the Oak Ridge National Laboratory (ORNL) and the University of California, Santa Barbara, they have helped to lead the development of reduced activation ferritic alloys as the prime candidate structural material for fusion facilities beyond ITER.

Department of Homeland Security (DHS)

PNNL has provided significant leadership and expertise to the Domestic Nuclear Detection Office (DNDO), the Science and Technology (S&T) Directorate, U.S. Customs and Border Protection (CBP), Federal Emergency Management Agency (FEMA), Immigrations and Customs Enforcement (ICE), and the National Biosurveillance Center (NBIC) within the Office of Health Affairs (OHA). Because of their proven capability for transitioning scientific approaches and innovative technologies to the field, DHS routinely calls upon PNNL to support the DHS operational components as well as other federal agencies engaged in homeland security work. The lab has done an exceptional job addressing a broad range of critical mission requirements that have significant impact on the Department's ability to protect our Nation.

Energy Efficiency and Renewable Energy (EERE)

Biomass:

The PNNL team has continued a tradition of excellence from their work with the program in the areas of terrestrial biomass conversion (both biochemical and thermochemical conversion) to fungible fuels, and has emerged as a lead laboratory in the area of algal biofuels.

Building Technologies Program:
Pacific Northwest National Laboratory can significantly improve in this area by providing consistency across the program/subprogram areas through management integration and hands on quality assurance practices. Individual contributors should be evaluated to ensure that they continue to produce original creative concepts to move forward in the area of code development and deployment in a timely manner.

Vehicle Technologies Program:
PNNL consistently provides exceptional research and results in the area of materials. For example: 1) in a series of projects running since the 1990s, PNNL has helped to develop aluminum forming processes such as superplastic forming which have found application in a variety of light- and heavy-duty vehicles; 2) several high-quality projects utilize a combined modeling-experimental approach to more efficiently and effectively support vehicle weight reduction that have successfully demonstrated on increasing cast magnesium (Mg) ductility and improving riveting techniques for Mg; 3) the goal of reduced dependence on rare earth elements for alloys of Mg is making good progress on a computational approach to understanding how Mg behaves when alloyed with rare earth elements so that non rare earth elements can be developed with the same or improved performance; and 4) development of new titanium processing techniques and alloy compositions for ground vehicle applications.

Office of Defense Nuclear Nonproliferation (DNN)

NA-21 Comments: The PNNL provides significant technical, scientific, and management expertise to the three key subprograms of GTRI–Convert, Remove, and Protect—supporting the comprehensive GTRI approach to achieving its mission to reduce and protect vulnerable nuclear and radiological material worldwide, and denying terrorists access to nuclear and radiological materials that could be used in weapons of mass destruction or other acts of terrorism. PNNL continues to do an excellent job is efficiently and effectively achieving meaningful results to further NNSA/DNN/GTRI's ability to meet Presidential and Departmental goals.

Of the $94,420,539.61 provided to PNNL, 96 percent supports the protect subprogram - which is used for the protection of high priority nuclear and radiological materials worldwide (the funds are evenly split at PNNL between domestic and international protection efforts). Of the remaining funds about 2 percent goes to reactor conversion, fuel development, and Mo-99 efforts and the final 2 percent is for Emerging Threat efforts.

PNNL's support to projects was outstanding in FY2011. PNNL exceeded all material protection performance and financial targets that were set for them in FY2011. As of September 2011, PNNL will have exceeded their target of 60 domestic buildings and at 16 international buildings upgraded. Specifically in FSU and Asia, PNNL completed protection upgrades at 28 buildings in FSU and Asia and the joule target for FY2011 was 13 buildings.

As the designated management lead for the coordination and integration of the BN-350 Spent Fuel Disposition Program, PNNL did an excellent job in FY 2011 PNNL efforts were critical to complete the final shipments and security upgrades at Kazakhstan's BN-350 which culminates a 10 year effort to secure the largest cache of weapons-grade material in a non-weapons state.

Also PNNL provided excellent support for the Electron GAZ removal project that consolidated a very large quantity of radiological material and secured them in a GTRI funded storage facility. PNNL provides technical, scientific, and management expertise to IMPC to achieve its mission to secure vulnerable nuclear material worldwide, and denying terrorists access to nuclear and radiological materials that could be used in weapons of mass destruction or other acts of terrorism. PNNL continues to do very well in efficiently and effectively achieving meaningful results to further IMPC's ability to meet Presidential and Departmental goals.

Office of Environmental Management (EM)

The Contractor has demonstrated creative results, scientific progress on transforming scientific solutions into practical application. They have been eager and aggressive in developing relationships with the broader research community in the development of these technologies for implementation in the EM program. They have made themselves aware of needs across the complex and not just for the needs at Hanford. They have supported the office of Technology Innovation and development through the portfolio planning process and ancillary meetings.

Office of Intelligence and Counterintelligence (IN)

PNNL has made exceptional contributions to the Office of Intelligence and Counterintelligence for fiscal year 2011. The lab consistently provided timely expertise and support to IN headquarters personnel, as well as held a leadership role in several national-level intelligence community (IC) working groups and interagency teams involving HQ staff, other U.S. government agencies and various national laboratories. All assigned missions were accomplished in a timely and efficient manner, and to the best of our knowledge, all IC customers were supported with 100% mission accomplishment and satisfaction. The Counterintelligence program is rated as Outstanding, and we give particularly high marks to the cyber program.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
Advanced Scientific Computing Research				
1.1 Impact	A-	3.5	50.0%	
1.2 Leadership	B+	3.4	50.0%	
Overall ASCR Total				3.5
Basic Energy Sciences				
1.1 Impact	B+	3.3	50.0%	
1.2 Leadership	A-	3.5	50.0%	
Overall BES Total				3.4
Biological and Environmental Research				
1.1 Impact	B+	3.3	60.0%	
1.2 Leadership	B+	3.3	40.0%	
Overall BER Total				3.3
Fusion Energy Sciences				
1.1 Impact	A-	3.5	50.0%	
1.2 Leadership	A-	3.5	50.0%	
Overall FES Total				3.5
Department of Homeland Security				
1.1 Impact	A	3.9	60.0%	
1.2 Leadership	A	3.8	40.0%	

Overall DHS Total				3.9
Energy Efficiency and Renewable Energy				
1.1 Impact	B+	3.1	60.0%	
1.2 Leadership	B+	3.1	40.0%	
Overall EERE Total				3.1
Office of Defense Nuclear Nonproliferation				
1.1 Impact	A-	3.7	60.0%	
1.2 Leadership	A-	3.6	40.0%	
Overall DNN Total				3.7
Office of Environmental Management				
1.1 Impact	A-	3.5	40.0%	
1.2 Leadership	A-	3.5	60.0%	
Overall EM Total				3.5
Office of Intelligence and Counterintelligence				
1.1 Impact	A+	4.3	55.0%	
1.2 Leadership	A-	3.7	45.0%	
Overall IN Total				4.0

Table 1.1 -- Program Performance Goal 1.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
Advanced Scientific Computing Research	A-	3.5	1.3%	
Basic Energy Sciences	B+	3.4	4.0%	
Biological and Environmental Research	B+	3.3	9.5%	
Fusion Energy Sciences	A-	3.5	0.2%	
Department of Homeland Security	A	3.9	13.4%	
Energy Efficiency and Renewable Energy	B+	3.1	15.6%	
Office of Defense Nuclear Nonproliferation	A-	3.7	49.0%	
Office of Environmental Management	A-	3.5	3.5%	
Office of Intelligence and Counterintelligence	A	4.0	3.6%	
Performance Goal 1.0 Total				**3.6**

Table 1.2 -- Overall Performance Goal 1.0 Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	**3.5-3.7**	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	**A-**	A	A+

Table 1.3 -- Goal 1.0 Final Letter Grade

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

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

Objectives

2.1: Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)

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

2.3: Provide Efficient and Effective Operation of Facilities

2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities

SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.

Biological and Environmental Research (BER)

The Lab is doing an excellent job of managing its user facilities, ARM Climate Research Facility and EMSL, to advance the climate, environmental, materials, and biological sciences.

- PNNL successfully moved forward with several construction/fabrication projects.
- PNNL has an exceptional outreach program for the ARM Climate Research Facility, a balance for access between internal and external users, and a strong resident research community.
- EMSL continued to reach out to the external user community to further strengthen its user base.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
Advanced Scientific Computing Research				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall ASCR Total				0.0
Basic Energy Sciences				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall BES Total				0.0
Biological and Environmental Research				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities	B+	3.2	10.0%	
2.3 Operation of Facilities	B+	3.2	80.0%	
2.4 S&T Results and Benefits to External User Communities	B+	3.4	10.0%	
Overall BER Total				3.2
Fusion Energy Sciences				
2.1 Support Laboratory Programs			0.0%	

2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall FES Total				0.0
Department of Homeland Security				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall DHS Total				0.0
Energy Efficiency and Renewable Energy				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall EERE Total				0.0
Office of Defense Nuclear Nonproliferation				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall DNN Total				0.0
Office of Environmental Management				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall EM Total				0.0
Office of Intelligence and Counterintelligence				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall IN Total				0.0

Table 2.1 -- Program Performance Goal 2.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
Advanced Scientific Computing Research			0.0%	
Basic Energy Sciences			0.0%	
Biological and Environmental Research	B+	3.2	100.0%	
Fusion Energy Sciences			0.0%	
Department of Homeland Security			0.0%	
Energy Efficiency and Renewable Energy			0.0%	
Office of Defense Nuclear Nonproliferation			0.0%	
Office of Environmental Management			0.0%	
Office of Intelligence and Counterintelligence			0.0%	
Performance Goal 2.0 Total				**3.2**

Table 2.2 -- Overall Performance Goal 2.0 Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	**3.1-3.4**	3.5-3.7	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	**B+**	A-	A	A+

Table 2.3 -- Goal 2.0 Final Letter Grade

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

The Contractor provides effective program vision and leadership; strategic planning and development of initiatives; recruits and retains a quality scientific workforce; and provides outstanding research processes, which improve research productivity.

Objectives

3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.

Advanced Scientific Computing Research (ASCR)

PNNL has made significant progress in playing a more significant role in ASCR activities.

Basic Energy Sciences (BES)

PNNL management provides effective planning and good vision for the MSE-supported programs by making excellent use of LDRD research to generate new initiatives and to bring new capabilities to the Laboratory.

PNNL management is responsive to Headquarters requests and communicates research highlights in a timely manner.

Biological and Environmental Research (BER)

PNNL is exceptionally responsive to BER needs, provides strong and interactive leadership across BER programs and is very proactive and effective in its research planning.

Fusion Energy Sciences (FES)

PNNL has several staff who are leaders in the FES community. This is evidenced by their participation in numerous groups, committees, and advisory bodies.

Department of Homeland Security (DHS)

PNNL continues to provide quality leadership in science and technologies relevant to the homeland security mission via pioneering development of new models, innovative approaches, attracting and retaining quality staff and mentoring new scientist. PNNL is working with other national labs, universities, DHS, and industry to initiate state-of-the-art, leading-edge science and engineering solutions to address critical needs across the Homeland Security Enterprise (HSE).

Energy Efficiency and Renewable Energy (EERE)

Biomass:

PNNL has consistently demonstrated research progress which reflects very well on their skills in project planning, implementation, management, and reporting.

Building Technologies Program:

As mission needs evolve, laboratory management needs to continuously assess the available resources and consider retraining to meet changing needs. In both the appliance standards and building codes area, the talented resources are overtaxed and fail to meet milestones. Building Technologies has consistently asked for a greater depth of knowledgeable persons to meet program needs.

Vehicle Technologies Program:

PNNL provides excellent program vision and leadership in key materials technology gaps that DOE is seeking to address. The lab consistently identifies and focuses on the most important and appropriate technology problems with well thought out plans that result in enabling capabilities that not only solve the immediate problem but also provide solutions to a broader set of related issues. The staff has a unique way of looking at an area and synthesizing a vision that enables others to see the work in a new way that opens up new solutions.

Office of Defense Nuclear Nonproliferation (DNN)

NA-25 Comments: Provide project management and procurement support for MPC&A programs.

Office of Environmental Management (EM)

In these lean budget times, the Contractor has been able to keep their scientific capability intact and has used leveraging and collaboration as a means to keep their people employed. Vision and leadership not just on the research end but also in the discussions with the regulators and stakeholders assists EM in the completion of their mission.

Office of Intelligence and Counterintelligence (IN)

PNNL is the most responsive lab in the entire DOE complex. Outstanding detailees, and excellence in the areas of nuclear fuel cycle analysis, cyber security and IT operations, and counterintelligence.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
Advanced Scientific Computing Research				
3.1 Efficient Strategic Planning and Stewardship	B+	3.4	30.0%	
3.2 Project/Program/Facilities Management	B+	3.1	40.0%	
3.3 Effective Communications and Responsiveness	B+	3.4	30.0%	
Overall ASCR Total				3.3
Basic Energy Sciences				
3.1 Efficient Strategic Planning and Stewardship	B+	3.4	40.0%	
3.2 Project/Program/Facilities Management	B+	3.3	30.0%	
3.3 Effective Communications and Responsiveness	B+	3.3	30.0%	
Overall BES Total				3.3
Biological and Environmental Research				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	20.0%	
3.2 Project/Program/Facilities Management	B+	3.1	30.0%	
3.3 Effective Communications and Responsiveness	A-	3.7	50.0%	
Overall BER Total				3.5

Fusion Energy Sciences				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	40.0%	
3.2 Project/Program/Facilities Management	A-	3.5	30.0%	
3.3 Effective Communications and Responsiveness	A-	3.5	30.0%	
Overall FES Total				3.5
Department of Homeland Security				
3.1 Efficient Strategic Planning and Stewardship	A	3.8	40.0%	
3.2 Project/Program/Facilities Management	A	3.9	35.0%	
3.3 Effective Communications and Responsiveness	A	3.9	25.0%	
Overall DHS Total				3.9
Energy Efficiency and Renewable Energy				
3.1 Efficient Strategic Planning and Stewardship	B	3.0	30.0%	
3.2 Project/Program/Facilities Management	B-	2.7	35.0%	
3.3 Effective Communications and Responsiveness	B	2.8	35.0%	
Overall EERE Total				2.8
Office of Defense Nuclear Nonproliferation				
3.1 Efficient Strategic Planning and Stewardship	A-	3.7	20.0%	
3.2 Project/Program/Facilities Management	A-	3.6	20.0%	
3.3 Effective Communications and Responsiveness	A	4.0	60.0%	
Overall DNN Total				3.9
Office of Environmental Management				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	25.0%	
3.2 Project/Program/Facilities Management	A-	3.5	25.0%	
3.3 Effective Communications and Responsiveness	A	3.8	50.0%	
Overall EM Total				3.7
Office of Intelligence and Counterintelligence				
3.1 Efficient Strategic Planning and Stewardship	A	4.0	40.0%	
3.2 Project/Program/Facilities Management	A+	4.2	30.0%	
3.3 Effective Communications and Responsiveness	A-	3.7	30.0%	
Overall IN Total				4.0

Table 3.1 -- Program Performance Goal 3.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
Advanced Scientific Computing Research	B+	3.3	0.5%	
Basic Energy Sciences	B+	3.3	4.2%	
Biological and Environmental Research	A-	3.5	15.2%	
Fusion Energy Sciences	A-	3.5	0.1%	
Department of Homeland Security	A	3.9	14.1%	
Energy Efficiency and Renewable Energy	B	2.8	16.5%	
Office of Defense Nuclear Nonproliferation	A	3.9	41.8%	
Office of Environmental Management	A-	3.7	3.7%	
Office of Intelligence and Counterintelligence	A	4.0	3.8%	
Performance Goal 3.0 Total				**3.6**

Table 3.2 -- Overall Performance Goal 3.0 Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	**3.5-3.7**	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	**A-**	A	A+

Table 3.3 -- Goal 3.0 Final Letter Grade

Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory

This Goal evaluates the Contractor Leadership capabilities in leading the direction of the overall Laboratory, the responsiveness of the Contractor to issues and opportunities for continuous improvement, and corporate office involvement/commitment to the overall success of the Laboratory.

4.1: Leadership and Stewardship of the Laboratory

The Laboratory senior leadership team is commended for developing and presenting a compelling vision for the future of PNNL. This presentation was the strongest to date from PNNL. The eight strategic initiatives are well defined and provide linkage across PNNL's multiple core capabilities. With respect to BER, PNNL management articulated a scientific vision in a fashion that strongly aligns with BER's strategic program priorities, and the Laboratory has made strong efforts to integrate capabilities, leverage individual efforts, and facilitate communication across the different PNNL organizations for the benefit of BER research programs.

Additionally, the Laboratory Director and senior leadership of the Laboratory has made significant progress over the previous year in realizing its vision for the Laboratory. The leadership has invested in strategic initiatives such as Laboratory Directed Research and Development (LDRD) and facilities at an increasing rate to maintain and build the capabilities needed to realize the vision. There is also evidence of major improvement over last year in PNNL's plans for computing and related ASCR research. SC does encourage PNNL to continue to stay in close communication with all of the programs that make use of the capabilities that could be affected by future planning for CRL Phase II.

PNNL does an outstanding job at leveraging its unique capabilities developed for practical applications to support fundamental science, and vice versa. The electric grid work and connection to industry are really unique to PNNL. PNNL's work for NNSA is outstanding. NNSA particularly values PNNL's science to solutions approach as well as their ability to attract and grow next generation staff. NNSA is appreciative of PNNL's honest brokerage of scientific capabilities across the SC complex. EERE and NNSA are interested in better understanding the PNNL business model for ensuring the ongoing strength of their capabilities, relative to the work the Laboratory performs for other parts of the Department and DHS. The Laboratory leadership team is encouraged to stay connected with the ongoing activities at other DOE/NNSA laboratories. PNNL is also well positioned to support many of the DHS priorities and has provided strategic vision and the ability to collaborate with other DOE laboratories that has been beneficial to DHS.

Decisions and actions taken by the Laboratory leadership continue to align work, facilities, equipment and technical capabilities with the Laboratory vision and plan as demonstrated by the successful completion of the Capability Replacement Laboratory and installation and operation of ARRA funded scientific capability in the Environmental Molecular Sciences Laboratory and the ACRF. PNNL is applauded for a very successful recruiting program. This is very impressive and has positioned PNNL to make advances in imaging and catalysis and greatly enhance expertise in performance modeling and architectural analysis.

PNNL leadership displays a proactive stance in establishing partnerships with the local academic community.

4.2: Management and Operation of the Laboratory

PNNL is an extremely well managed Laboratory. The maturity of the Contractor's assurance system has enabled excellent mission execution. A co-author of SC's approach to CAS, the Contractor continues to be a thought leader in the development and deployment of SC Contractor Assurance Systems.

The Contractor continued to deliver on contract requirements while systematically improving the Laboratory Management and Operations framework while keeping costs stable (e.g., BIS Roadmap, IMS deployment, HDI, and Enabling Excellence in Research Project Execution).

The Contractor matured the Laboratory's operational culture effort by streamlining processes and controls, optimizing organizational structures and R2A2s, implementing improvements in risk management and assurance, and enhancing the safety culture.

PNNL is commended for the strategic decisions it has made to manage its cost of doing business, while maintaining support for important priorities like investment in LDRD. The Contractor understands operational costs and has made significant progress at reducing overall costs and gaining control of those areas that historically have been out of their control. In the area of benefits, they have been able to make incremental improvements to the benefits system while at the same time reducing the costs. In the area of pension management they have continued to keep the fund and investments at a level that minimizes departmental risk. They continue to make significant improvements with transitioning site services such as occupational medicine and safeguards and security.

SC's validation of the Contractor's gap closure plan reaffirmed the "open campus" protection strategy and secured funding for unarmed guards. As a result, the Contractor has become the model and benchmark for all of SC on how to implement the Baseline Level of Protection in a cost effective manner.

PNNL management provides effective planning and good vision for the BES-supported programs by making excellent use of LDRD research to generate new initiatives and to bring new capabilities to the Laboratory. PNNL management is responsive to Headquarters requests and communicates research highlights in a timely manner.

PNNL maintains exceptionally responsive communication between the laboratory senior management and SC BER, and notifies senior leadership of upcoming strategic decisions or performance issues. Its management of subcontracted activities for BER-funded work is effective and efficient.

Notable Outcome: Demonstrate the use of the full suite of resources at their disposal (including the expertise of laboratory scientists and engineers) to develop innovative, crosscutting strategies for meeting the Executive Order 13514 Goals. (Objectives 4.2, 4.3).

PNNL not only met this notable outcome, but has demonstrated leadership across the SC complex in sustainability. PNNL took the lead to work with SC in developing a "portfolio" approach to sustainability, including an automated decision tool for prioritizing investments in projects that "move the needle" towards attainment of sustainability goals. Leadership at PNNL helped to socialize the portfolio approach with the other lab Chief Operating Officers (COO) across SC, and applied staff resources to develop the decision tool. The PNNL team worked with the Sustainability Performance Office (SPO) to align the input data for the decision tool with the latest Consolidated Energy Data Report (CEDR). They led a break-out session at the Sustainability Workshop at ANL in July 2011 to finalize the weighting criteria for the model, resulting in a working model at the end of that workshop. Since then, the SC portfolio approach has been endorsed by Dr. William Brinkman, Director of Science.

4.3: Contractor Value-added

Battelle has significantly exceeded SC's expectations in this area. In FY 2011, the Contractor took several leadership roles in the National Lab Directors Council (NLDC) and its CFO, CRO, CIO, and COO working groups. Battelle at PNNL is recognized both within SC and throughout the Department as a leader and a go-to source for assistance on important initiatives. For example, the Contractor is actively addressing complex-wide issues and improvement initiatives, which may result in streamlining the way DOE and contractors do business in certain areas, reducing costs and gaining efficiencies.

The Contractor continues to move forward with positive discussions on: the Use Permit transition to other contract mechanisms; the establishment of the Agreement to Commercialize Technology (ACT); and Lease negotiations with DOE for current contractor owned facilities.

The Contractor continues to maintain and build community relations. They have made significant progress with the local STEM school and other education and outreach activities.

The Contractor is effective in enabling the Laboratory to attract and retain a cohort of biological, environmental, and climate scientists carrying out research on DOE mission-relevant problems, as well as in making strategic hires for its BES-funded programs.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory				
4.1: Leadership and Stewardship of the Laboratory	A-	3.6	33.0%	
4.2: Management and Operation of the Laboratory	A	3.9	33.0%	
4.3: Contractor Value-added	A	3.9	34.0%	
			Total	**3.8**

Table 4.1 - 4.0 SC Program Office Performance Goal Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	3.5-3.7	**3.8-4.0**	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	A-	**A**	A+

Table 4.3 -- Goal 4.0 Final Letter Grade

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

This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated ES&H systems that efficiently and effectively support the mission(s) of the Laboratory.

The weight of this Goal is 25.0%.

5.1: Provide an Efficient and Effective Health and Safety Program

The Contractor meets expectation of performance against all aspects of the objective in question. The Contractor's systems function at a level that fully supports the Laboratory's current and future science and technology missions.

The Contractor's efforts have matured the Operational culture by utilizing an enterprise risk management approach to profile risks in order to facilitate decisions related to resource allocation and appropriate assurance methods. Laboratory leadership committed to implement a sustainable process to assess, measure, and continuously improve PNNL's operating culture. This work provided a credible framework for understanding and monitoring key factors driving operational performance, including safety performance, and provided a strategic, integrated Laboratory-wide improvement agenda. During FY 2011, the operating culture assessment and measurement process replaced the Voluntary Protection Program Evaluation methods and represented an innovative process that integrated VPP, ISM, and ISO 14001 principles into a single platform for continuous improvement.

The Contractor’s safety performance is again one of the top performing Office of Science Multi-program Laboratories. The occurrence and severity of safety events has been significantly reduced overt the last 3 years. This was done considering 2,100 staff were hired during the last 3 years, construction of the Environmental molecular Sciences Laboratory Q-wing is in progress, and hundreds of staff members have transitioned out of 300-Areal legacy facilities. In addition to the reductions in the number of more severe injury and illness cases, the reporting culture remains healthy.

A number of electrical safety concerns (NFPA 70 E) were identified by PNSO during FY 2011, including concerns in the areas of electrical safety competency, arc flash safety, and management of non-NRTL rated equipment. While the Contractor has taken appropriate mitigating actions to resolve immediate safety concerns, performance in this area was not as robust as expected and long-term institutional actions have yet to be completed. In addition, concerns were raised in FY 2011 regarding explosives safety management. These concerns have been addressed adequately.

Performance under the Notable Outcome within Goal 5 that includes elements of Objective 5.1 met overall expectations.

PNNL continues to be progressive in the area of safety and overall safety statistics were very good, especially during a challenging year. On balance, safety performance met expectations during FY 2011. This evaluation results in a score of 3.2 and a grade of B+.

5.2: Provide an Efficient and Effective Environmental Management System

The Contractor has exceeded expectations of the performance against all aspect of the objective in question. The Contractor did not have any significant releases to the environment, and no significant regulatory findings were identified in over 14 separate inspections involving 5 regulatory agencies. The Contractor also demonstrated outstanding performance in its waste handling activities via 90-day storage areas without a single incident. This is considered outstanding since the waste volume during FY11 was significantly increased due to transition from 300 Area, and an increase in the number and intensity of laboratory cleanout activities. Other areas of positive performance included: smooth CRL transition, obtaining approvals from Washington Department of Health and other agency environmental permits; and finally the safe/compliant transfer of hazardous materials to the new PNNL Site buildings.

In preparation of the external ISO 14001-2004 audit, auditors found no non-conformities during internal and external EMS assessments. PNNL has maintained ISO registration for nearly 10 years, which demonstrates the maturity and commitment to their PNNL EMS. External recognition of the PNNL Pollution Prevention (P2) program, 5 years in a row, demonstrates their implementation of life cycle, (cradle to grave) concepts from improvements in affirmative procurement to streamlined processes for disposal of materials.

The Contractor is on track to complete all Transportation and Packaging Corrective Actions, and was success in closing out all corrective actions. This was documented in a comprehensive external assessment of the transportation program and allowed PNSO to recommend closure of the FY10 NTS, Noncompliance with DOE-Approved Transportation Safety Basis. Finally, PNNL EPRP reanalyzed 100% of requirements (101) and accomplished transition to work flows and controls processes ahead of schedule.

This evaluation results in a score of 3.6 and a grade of A-.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 5.0: Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection				
5.1: Provide an Efficient and Effective Health and Safety Program	B+	3.2	50.0%	
5.2: Provide an Efficient and Effective Environmental Management System	A-	3.6	50.0%	
			Total	**3.4**

Table 5.1 - 5.0 SC Program Office Performance Goal Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	**3.1-3.4**	3.5-3.7	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	**B+**	A-	A	A+

Table 5.3 -- Goal 5.0 Final Letter Grade

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

This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated business systems that efficiently and effectively support the mission(s) of the Laboratory.

The weight of this Goal is 25.0%.

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

The Contractor continues to demonstrate cutting edge techniques relative to the management of the overall cost of doing business while at the same time enhancing R&D and mission accomplishment. Management of the overall cost of doing business is validated by performance on the Contractor's internal cost management baselines as well as the successful onsite visit conducted by the General Accountability Office (GAO). PNNL's overall cost of doing business increased only 4.6% compared to FY 2010 as measured by the average hourly charge-out rate. Contractor leadership at the highest levels and across all organizations continues to be fully engaged in managing costs in a manner which balances achieving S&T goals with sound and well thought out business strategies. Further, the Contractor's financial M&O Programs have demonstrated continuous improvement toward improved integration with other "non-financial" M&O Programs (e.g., Facilities, Acquisitions, Human Resources, Security, and Safety). Not only has this helped reduce operating cost and administrative burden on research staff, it has also reduced business and operational risks. These efforts will help ensure the sustainability and competitiveness of PNNL as an institution.

The financial elements of the Business Information Systems (BIS) Roadmap effort to replace business IT systems continue to appear to be on track. This is a critically important project that will result in more resources being available for direct R&D -- not only in terms of hard dollar savings, but also in terms of reduced burdens on researchers due to streamlined business processes and systems. Additionally, important enhancements were made to existing systems that not only reduced risk, but also facilitated implementation of the BIS Roadmap. Transparency and communication on this issue has been excellent.

The Contractor continued to provide financial leadership at both the Departmental level through the National Laboratory CFOs (NLCFO) as part of the National Laboratory Directors Council (NLDC). Additionally, the Contractor led a group of other DOE contractors in developing and piloting the new institutional cost reporting process that was designed to replace functional cost reporting and to provide transparency of DOE laboratory costs. On a local level, in the area of shared services with the Hanford Site, the Contractor provided leadership toward resolving issues related to the implementation of the DOE PAC system.

The Contractor's approach to the revamped Financial Management Self-Assessment is innovative and impressive. It is the result of continuous improvement efforts, and overall effectiveness has improved both through better measures and metrics on the front end and improved alignment and integration with other business functions on the back end. Significant effort was made in reducing and realigning the A-123 Controls process and the Financial Management Self-Assessment. Each Financial Management Self-Assessment measure was mapped to the related A-123 controls. Additionally, this resulted in the reduction of 250 controls in A-123.

In the area of budget and financial operations, despite having a large volume of complex data to report (including ARRA), the Contractor's financial operations performance exceeds expectations in terms of quality, timeliness, and professionalism. Overall performance on audits and responses to various formal exercises and deliverables also met, and in some cases, exceeded expectations (e.g., ARRA, A-123, budget deliverables, financial statements, pensions, etc.). Additionally, DOE implemented a comprehensive internal control assessment program in FY 2011 called the Financial Management Assurance (FMA). As part of FMA, the Contractor was required to perform a rigorous evaluation of its internal controls. The Contractor provided timely information and deliverables while transitioning to the FMA and Entity Assessment Tool approach.

While overall expectations were met, there were some issues that occurred during FY2011 that warrant focus in FY 2012. The Contractor submitted its annual Institutional General Plant Project (IGPP) planning letter for approval in

FY 2011. The plan lacked sufficient project detail to determine whether an EMSL-related project should be an IGPP or General Plant Project (GPP). Also, DCAA issued a report regarding the Contractor's Earned Value Management System (EVMS). DCAA reported that the March 2010 internal contract performance reports evaluated did not reflect accurate actual costs and differed from both the accounting records and the Monthly Performance Reports provided to DOE. The discrepancy between the internal and external reports was caused by a failure in the Financial Processing System (FPS) during month end processing to recognize manually input accruals. The Contractor stated it had identified and resolved the accrual system issues in April 2010, and has since operated without discrepancies between the accounting and reporting information submitted to DOE. In addition, the Contractor initiated an FPS improvement project enabling proactive identification of financial processing issues to ensure the EVMS properly reconciles with the data in FPS.

This evaluation results in a score of 3.5 and a grade of A-.

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

PNSO is encouraged that the Contractor met or exceeded the performance in the Balance Scorecard measures; continued a trend of steady system improvements to the M&O Program; enhanced multiple acquisition work flow processes; successfully integrated with other management systems to standardize/streamline cross functional processes, procedures, training, and implemented Work Authorization Lifecycle System (WALS) for Work for Others (WFO) funding and Inter-entity Work Orders (IWOs), resulting in reducing the acquisition process cycle time, eliminating significant number of acquisition transactions across the Laboratory, and also achieved a $55.5M in procurement savings on a total purchase order authorized amount of $314M (17.1%) for FY 11.

The Contractor improved integration across the Laboratory by utilizing multiple communication vehicles to educate and change the Laboratory culture by emphasizing the importance of early engagement of the contracts staff and the importance of continuing to improve the quality of requisitions submitted and in some cases, inappropriate actions taken by non-contracts staff. Finally, the Contractor enhanced the Acquisition Core Team through the successful implementation of a four year ESI Government Contracts Training Program for acquisition staff, implementation of an Acquisition Review Board to review the quality of statement of work/Specification, providing increased training to acquisition staff, and quality delivery to the customer. Those areas have seen significant improvement over the year and also from the previous year.

The increased volume of acquisition due to American Recovery and Reinvestment Act (ARRA) dollars has to date been successfully managed; despite the increase in the acquisition business volume. The pressure of delivering large or complex subcontracts for customers has stretched the entire acquisition system to perform very large important acquisitions in short timeframes and to their credit they have continually satisfied their customers. Additionally, performance under the Notable Outcome within Goal 6 that includes elements of Objective 6.2 met overall expectations.

While the Contractor met overall expectations and made significant progress this year, there are areas that warrant focus in FY 2012. The Contractor's Request for approval to utilize Use of Other than U.S. Flag Carrier for the Radiation Detection Straddle Carrier Relocation Project failed to document all of the requirements associated in the request, which attributed to PNSO violating the CARGO Preference Act Requirement; therefore, the Contractor needs to continue to evaluate ongoing subcontracts to identify and document the potential risk areas. The Contractor needs to continue to improve the integration between Acquisition and other M&O Program related to adequately preparing the technical requirements that are incorporated into subcontracts and adequately document subcontract, ILA & IWO files; and continue to focus on the implementation of ACT.

Performance under the Notable Outcome within Goal 6 that includes elements of Objective 6.2 met overall expectations. This evaluation results in a score of 3.4 and a grade of B+.

6.3: Provide an Efficient, Effective, and Responsive Property Management System(s)

The PNNL Property Management system has performed to expectation in FY11.

The implementation of the new storage initiatives has been a success in FY11. This started with the completion of the new storage warehouse (Laboratory Storage Warehouse) and the implementation of an E-Storage software to help track all accountable property in the warehouse. These improvements have helped to get some large items out of lab space and into storage. Most of this equipment is being stored for future projects, which helps PNNL to more efficiently manage to the requirements in DOE O 580.1 ("Department of Energy Personal Property Management Program") regarding Equipment Held For Future Projects.

The Contractor has also done a good job managing the Balanced Scorecard metrics, which are required by HQ for managing property systems. Most all of the metrics are on track with respect to targets. Fleet utilization has been a frequent issue, but the Contractor, with increased oversight, has done a good job of managing utilization issues in this area. Also, the Contractor has done a good job with respect to pre-planning for the upcoming fleet reductions. PNNL will be expected to reduce its fleet by 15% by December FY11. In most cases, the Contractor has identified the vehicles that will be reduced, and is ahead of schedule.

The Contractor is currently behind in the implementation of systems, descriptions, and procedures in the core business process for Property, and attention will be needed in this area in FY12.

This evaluation results in a score of 3.4 and a grade of B+.

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

The Contractor had a positive DOE review of their Compensation System and has approval to implement in a phased approach as long as no pay raises are given due to the Salary Freeze. The Contractor also was a benchmark laboratory for their implementation of the Salary Freeze and 2% allowance.

The planning for workforce restructuring is still in process and needs to be completed soon. Also, no agreement has been reached on Appendix A of the PNNL contract.

The Contractor continues to look for and implement opportunities for cost savings in the benefits area.

This evaluation results in a score of 3.2 and a grade of B+.

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

The Contractor has exceeded expectations in Objective 6.5. The development and deployment of the Integrated Management System (IMS) has been transformational in enhancing mission delivery. The utilization of Management and Operations (M&O) Programs and Core Business Processes has enabled improved project execution and laboratory stewardship.

The Contractor continued to deliver on contract requirements while systematically improving the Laboratory Management and Operations framework and keeping costs stable (e.g., BIS Roadmap, IMS deployment, HDI, and Enabling Excellence in Research Project). The Contractor made good progress in the enterprise architecture transformation (BIS roadmap) as well as other lab-level systems. The Contractor was selected as an early adopter for a unique Oracle-based enterprise IT system. Also, the Contractor delivered against assurance attributes through continuous improvements toward proactive/predictive assurance outcomes across the Lab. Additionally, improvements were made to the requirements management area that included a 100% reanalyzation of source requirements which led to the elimination of unnecessary requirements. Finally, the Internal Audit, Independent Oversight, and Quality organizations continued to improve assessment planning through stronger collaboration efforts.

While the Contractor exceeded expectations and made progress towards robust business systems that enable mission, there are a few areas that warrant attention. The numerous management initiatives and continuous improvement plans need integrated analysis and planning (i.e., interdependencies and implementation timeframes). The contactor should continue to focus on requirements management and assurance of weaknesses identified in the electrical (NFPA70E) and explosives programs during FY 2011. Lastly, current and near-term revisions to many DOE requirements in HSS effort may impact the Laboratory's management of requirements.

Performance under the Notable Outcome within Goal 6 that includes elements of Objective 6.5 met overall expectations. This evaluation results in a score of 3.5 and a grade of A-.

6.6: Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets

The Contractor exceeded targets for number of invention disclosures, number of patent applications, number of granted patents, and number of licenses, options. Total consideration, IP revenue, IP net operating margin, and use at facility funds were significantly exceeded in FY 2011.

The Contractor was awarded two Federal Laboratory Consortium (FLC) Excellences in Technology Transfer awards which were also recognized in the form of FLC FarWest Region awards. The Contractor also received two R&D 100 awards. Several of the Contractor's 35 executed licenses/options were notable.

Several members of the Contractor's staff were appointed to key positions on various committees, commission and/or boards. They also continue to be proactive in their internal and external efforts to enhance the Technology Transfer area.

Finally, the Contractor played a key role in the development of the Agreements for Commercializing Technology (ACT).

This evaluation results in a score of 3.4 and a grade of B+.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 6.0: Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)				
6.1: Provide an Efficient, Effective, and Responsive Financial Management System(s)	A-	3.5	20.0%	
6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System(s)	B+	3.4	10.0%	
6.3: Provide an Efficient, Effective, and Responsive Property Management System(s)	B+	3.4	10.0%	
6.4: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program	B+	3.2	10.0%	
6.5: Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; Assurance System and Other Administrative Support Services as Appropriate	A-	3.5	40.0%	
6.6: Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets	B+	3.4	10.0%	
			Total	**3.4**

Table 6.1 - 6.0 SC Program Office Performance Goal Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	**3.1-3.4**	3.5-3.7	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	**B+**	A-	A	A+

Table 6.3 -- Goal 6.0 Final Letter Grade

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

This Goal evaluates the overall effectiveness and performance of the Contractor in planning for, delivering, and operations of Laboratory facilities and equipment needed to ensure required capabilities are present to meet today and tomorrow mission(s) and complex challenges.

The weight of this Goal is 25.0%.

7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs

The Contractor has demonstrated the ability to manage and operate the laboratory assets and exceeds DOE's expectations. The Facilities and Operations (F&O) Directorate's strong safety performance has been sustained for this reporting period with a notable decrease in the number of lost work days and injury severity compared to the same reporting period of FY10. This performance has exceeded previous years in a challenging environment that included normal operations; maintenance, construction (Radiochemical Processing Laboratory) and the transition of the Chemical and Biological Science Facilities (CSF/BSF) and Physical Sciences Facility (PSF) to full operations. In the area of excessed facilities in the 300 area, F&O played a significant role in successfully transitioning seven PNNL managed EM facilities to the D&D contractor; this was done within established budgets and went beyond requirements by transitioning one facility ahead of schedule, by five months.

Facilities, associated with the Public Safety and Radiological Resource Program (PSRPP), were successfully transferred to the appropriate Hanford contractor. F&O maintained high marks in their customer service, demonstrating an improved working relationship with the Research and Development (R&D) staff, which minimized the impact of major moves of equipment and personnel on the R&D mission. F&O has taken the template of the improved PSF procedures to revise the remaining 300 area facilities' procedures and is currently working to field them to the laboratory. There have been no F&O operational occurrences or adverse impacts that reduced or affected the R&D mission during this period, demonstrating an outstanding degree of reliability in facility operations. F&O's asset utilization continues to exceed the building occupancy requirements, set by DOE, without impact to staff satisfaction or mission accomplishments. F&O's process for forecasting its maintenance budget ensures that they meet the maintenance funding profile identified in the Integrated Facility and Infrastructure (IFI) Crosscut.

PNNL continues to make progress in meeting the sustainability goals outlined in the FY2011 Site Sustainability Plan. PNNL provided significant support and thought leadership to DOE headquarters by developing five of the documents and tools required to implement the DOE-SC Sustainability Program; PNNL also facilitated two sustainability summits in support of the headquarters program. It also published the Site Sustainability Plan (used as the SC model for the sites) and Sustainability Report. Retro-commissioning reports identified areas for improvement and the Energy Efficiency Measures (EEMs) from these reports have been analyzed for implementation. The EMSL Photovoltaic Array is complete and feeding power to the EMSL facility; at full production the array generates 110KWe which is 3% of EMSL's requirements. F&O has partnered with research to achieve the High Performance Sustainable Building (HPSB) LEED-Existing Buildings goal by registering Sigma II, III, and IV. This process normally takes 2-3 years and F&O's verification team went beyond the normal process by submitting the data packages by December of this year, which will achieve this action in seven months instead of years. Leveraging on the laboratory R&D capabilities, F&O teamed up with PNNL researchers to integrate the Decision Support for Operations and Maintenance (DSOM) software with the recently completed Building Operations Control Center (BOCC). This system monitors, analyzes, and provides real time, operating data utilizing advanced metering data, which was installed under the Metering Plan Program and exceeded HQ's schedule for installation of advanced metering.

In summary, the F&O base program performance has exceeded expectations during a time of significant challenges with the completion of the Capability Replacement Laboratory (CRL) and implementing significant requirements associated with Executive Order 13514, with no significant impact on the R&D mission or F&O's safety record. Performance for FY2011 exceeds expectations.

Performance under the Notable Outcome within Goal 7 that includes elements of Objective 7.1 met overall expectations. This evaluation results in a score of 3.6 and a grade of A-.

7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to Support the Continuation and Growth of Laboratory Missions and Programs

The Contractor has been effective in planning for and delivering the necessary facilities and infrastructure required to support the continuation and growth of Laboratory missions and programs during fiscal year 2011. The highlight of the year was the successful completion of the Physical Sciences Facility (CD-4b received February 8); 270,000 gross square feet of new building space and refurbished radiological and non-radiological science and support facilities. These replacement facilities are helping to advance consequential research and development activities, such as high-performance materials development and testing for next-generation energy, construction, and transportation technologies and systems. The facilities also are enabling radiation-detection methods needed to identify weapons of mass destruction and terrorist activities, and verify international treaties and agreements. The PSF Project was completed under budget and ahead of schedule and the Start-up and Readiness for the new facilities was completed ahead of schedule. The Readiness Assessment (RA) for the Radiochemical Processing Laboratory (RPL) resulted in one pre-start finding with readiness approved on December 28.

The completion of this major project was made possible only by outstanding project execution by the Laboratory. Over the life of the Project, many critical issues had to be overcome. These accomplishments warrant specific recognition. They include:
• Managing a multi-customer acquisition via creative and cooperative funding arrangement between two agencies and three major programs
• Resolving significant high bid for the construction of the balance of facilities
• Successful Safety Evaluation Report for the 325 Facility Documented Safety Analysis and Technical Safety Requirements (an existing Hazard Category-2 Nuclear Facility on the Hanford Site)
• LEED Silver Certification
• Completed the 325 readiness assessment in approximately half of the schedule duration even with the complications associated with the fabrication and installation of the hot cells and gloveboxes.
• Constructed a $2M storage facility as new scope with conserved contingency funding
• Project was completed ahead of schedule and under budget.
Other acquisitions completed this fiscal year include:
• Build-out of room 1206 in the BSF (below cost)
• Sigma 5 Carbon Sequestration lab space
• RPL chiller replacement (ahead of schedule)
• PSF Trailer Parking Lot Upgrade

All were completed within cost and schedule variance tolerance. In addition, favorable cost and schedule performance was realized on the ongoing facility infrastructure projects throughout the year (15 projects). Lab upgrades and recent acquisition of leased facilities will positively impact Core Capabilities/Mission Readiness.

In regard to the planning for Campus development, an upgrade to the Campus Master Plan was initiated to expand its applicability toward investment strategies and capability-based space management, and a five year F&I investment baseline was established and is under change control. Pre-project planning (alternative analyses and conceptual designs) is being accomplished for the projects contained in the 5-year baseline. A laboratory design standard was developed to optimize the flexibility of lab space. The annual Laboratory Mission Readiness planning process was implemented effectively with much improvement over the past. The Laboratory's process governing the project management of these acquisitions was revised and approved this year.

Other acquisitions in the planning stages include the Chemical Sciences and Imaging Laboratory (CSIL) and the High Resolution and Mass Accuracy Capability (HRMAC). The Contractor collaboratively supported the Site Office in drafting the Mission Need Statement for the CSIL, which was substantially through approvals in FY 2011. The Critical Decision 2/3a for the HRMAC was attained following substantial planning and peer reviews. This

established the performance baseline for the acquisition and allowed the Contractor to award the long lead procurement contract.

While overall expectations were met, there were some issues that occurred during FY2011 that warrant focus in FY 2012.

An estimating error on the EMSL Q-Wing General Plant Project caused need for additional Programmatic funding and baseline change. This affected performance measurement while the issue was resolved.

Institutional General Plant Project (IGPP) scope definition was not as focused as it should have been, not taking into account the complexities of PNNL, when seeking authorization to expend these funds. The resolution of this issue affected the initiation of other IGPP acquisitions. Additional supporting details need to be included in future IGPP submissions.

The electronic repository for small capital project acquisition projects has been set up, but there are still some discrepancies on the site regarding the availability of project documentation.

Though completed mid-year, RPL hot cells and glove boxes remained unused in FY 2011 (~8 months).

Performance under the Notable Outcome within Goal 7 that includes elements of Objective 7.2 met overall expectations. Due primarily to the life cycle success of the PSF Project, this evaluation results in a score of 3.8 and a grade of A.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 7.0: Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs				
7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs	A-	3.6	50.0%	
7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to Support the Continuation and Growth of Laboratory Missions and Programs	A	3.8	50.0%	
			Total	**3.7**

Table 7.1 - 7.0 SC Program Office Performance Goal Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	**3.5-3.7**	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	**A-**	A	A+

Table 7.3 -- Goal 7.0 Final Letter Grade

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

This Goal evaluates the Contractor's overall success in safeguarding and securing Laboratory assets that supports the mission(s) of the Laboratory in an efficient and effective manner and provides an effective emergency management program.

The weight of this Goal is 25.0%.

8.1: Provide an Efficient and Effective Emergency Management System

The Contractor is on track/target in their efforts to provide an efficient & effective Emergency Management System. Performance summary is as follows: 1) Satisfactorily completed facility drills/exercises in accordance with Emergency Management Plan and schedule; 2) Emergency Preparedness awareness rated high during interviews and walkthrough surveillances; and, 3) Successfully completed several Emergency Preparedness program activities to include self-assessments, procedure/plan updates, and conducted training.

The Contractor's performance during this reporting period meets expectations. This evaluation results in a score of 3.4 and a grade of B+.

8.2: Provide an Efficient and Effective System for Cyber-Security and National Security Systems (NSS)

The Contractor is mostly on track/target in their efforts to provide an efficient & effective System for Cyber Security & National Security Systems. Performance summary is as follows: 1) Successfully processed certification and accreditation packages for approval to operate request on several stand-alone systems to include facsimile systems; 2) Decommissioned several classified stand-alone workstations --reduces the risk and asset footprint; 3) Successful and overall satisfactory performance during the Office of Health, Safety and Security (HSS) Federal Information Security Management Act (FISMA) review, Safeguards Security (SAS) Periodic Survey, and the annual IG inspection demonstrating effective Classified and Unclassified Cyber Security Programs; and 4) appropriate and timely response to Zero-day cyber incident with effective recovery.

Additionally, the Contractor's performance during SIPRNet evaluation concluded less than adequate support and guidance from Program sponsor, resulting in a compliance gap. The Contractor also needs to focus on implementing corrective actions identified during recent inspections/surveys in a timely manner.

The Contractor's performance during this reporting period just misses meeting expectations of performance against a few aspects of the Objective in question. This evaluation results in a score of 3.0 and a grade of B.

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

The Contractor is on track/target in their efforts to provide an efficient & effective system for the physical security and protection of special nuclear materials, classified matter, & property. Performance summary is as follows: 1) Safeguards and Security subject matter experts completed the final security alarm performance testing and certification for the Physical Sciences Facility's vault type room; 2) Successful and overall satisfactory performance during recent Safeguards and Security Periodic Survey conducted by the SC Integrated Support Center; 3) Completed gap analysis on implementing SC's Baseline Level of Protection (BLP) initiative and subsequently submitted a plan to self-perform the Protective Force function to close the gap. SC's validation of the Contractor's gap closure plan reaffirmed the "open campus" protection strategy and secured funding for unarmed guards. As a result, the Contractor has become the model and benchmark for all of SC on how to implement the BLP in a cost effective manner; and 4) Continues to evaluate the asset footprint to reduce and/or maintain low risk.

The Contractor's performance during this reporting period notably exceeds expectations of performance against all aspects of the Objective in question. This evaluation results in a score of 3.7 and a grade of A-.

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

The Contractor is on track/target in their efforts to provide an efficient & effective system for the protection of classified & sensitive Information. Performance summary is as follows: 1) Continued to demonstrate leadership and commitment to the overall protection program by the integration of classified and sensitive information protection program elements into the culture of the organization through an effective Security Education and Awareness Program and OPSEC Program; 2) The Contractor is performing exceedingly well in the area of deterring, detecting and reporting incidents of security concern; 3) Successful and overall satisfactory performance during recent Safeguards and Security Periodic Survey conducted by the SC Integrated Support Center; 3) The continued maintenance and utilization of security systems and measures for the protection of classified and sensitive information to include risk identification, prevention, and control processes/activities has been effective; and 4)Completed gap analysis on implementing SC's Baseline Level of Protection (BLP) initiative and subsequently submitted a plan to self-perform the Protective Force function to close the gap. SC's validation of the Contractor's gap closure plan reaffirmed the "open campus" protection strategy and secured funding for unarmed guards. As a result, the Contractor has become the model and benchmark for all of SC on how to implement the BLP in a cost effective manner.

The Contractor's performance during this reporting period notably exceeds expectations of performance against all aspects of the Objective in question. This evaluation results in a score of 3.7 and a grade of A-.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 8.0: Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems				
8.1: Provide an Efficient and Effective Emergency Management System	B+	3.4	25.0%	
8.2: Provide an Efficient and Effective System for Cyber-Security and National Security Systems (NSS)	B	3.0	25.0%	
8.3: Provide an Efficient and Effective System for the Physical Security and Protection of Special Nuclear Materials, Classified Matter, and Property	A-	3.7	25.0%	
8.4: Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information	A-	3.7	25.0%	
			Total	**3.5**

Table 8.1 - 8.0 SC Program Office Performance Goal Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	**3.5-3.7**	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	**A-**	A	A+

Table 8.3 -- Goal 8.0 Final Letter Grade

APPENDIX

List of programs:

Advanced Scientific Computing Research (ASCR)
Basic Energy Sciences (BES)
Biological and Environmental Research (BER)
Fusion Energy Sciences (FES)
Energy Efficiency and Renewable Energy (EERE)
Office of Defense Nuclear Nonproliferation (DNN)
Department of Homeland Security (DHS)
Office of Intelligence and Counterintelligence (IN)
Office of Environmental Management (EM)

Advanced Scientific Computing Research
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 80.00%

Score: 3.5 **Grade:** A-

Goal Evaluation:

PNNL has some very talented researchers that are having an impact within ASCR programs and in other DOE mission areas.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 50.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
PNNL has demonstrated growing strength in key areas with a strong research staff that includes many young, promising PIs including an Early Career Research Program award "New Dimension Reduction Methods and Scalable Algorithms for Multi-Scale Nonlinear Phenomena" . The project will focus on developing new multiscale methods to improve the accuracy and efficiency of computational models in a wide variety of scientific applications. PNNL continued its established leadership in SciDAC groundwater efforts and strong contributions to others such as Biology and Climate. PNNL has also established a growing role in uncertainty quantification and growing leadership in mathematical methods supporting the electric grid.

Good solid publication record across ASCR investments.

PNNL collaborative efforts are connecting well to larger projects and outreach to DOE applied communities is impacting other mission-relevant research.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 50.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:
PNNL leadership in ASCR research areas is growing. PNNL has taken on some high-risk ASCR activities and is gaining ground in terms of innovation due to young and talented staff.

Efforts toward documenting ASCR PMM metric for software effectiveness is a critical ASCR activity that PNNL runs very effectively.

PNNL researchers made significant contributions to the laboratory exascale planning efforts.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 20.00%

Score: 3.3 **Grade:** B+

Goal Evaluation:

PNNL has made significant progress in playing a more significant role in ASCR activities.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 30.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:
PNNL made significant contributions to laboratory planning for exascale.

PNNL scientific vision in ASCR space is improving.

PNNL has significantly improved in developing core competencies, including attracting talent.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 40.00%

Score: 3.1 **Grade:** B+

Objective Evaluation:
PNNL is improving in planning and management, with significant contributions to exascale.

PNNL successfully links ASCR efforts with those in the applied DOE programs (especially with regard to electric grid) and is working on better linkages with Defense and Homeland security.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 30.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:
PNNL has been very responsive to ASCR requests in FY10.

PNNL has kept ASCR program managers informed with regard to events at the laboratory and progress in the research activities, and it is usually clear who is on-point for what.

Basic Energy Sciences
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 60.00%

Score: 3.4 **Grade:** B+

Goal Evaluation:

Some, but not all, MSE-supported projects at PNNL continue to produce high-quality, impactful science.

- PNNL successfully exploits EMSL user facilities and other resources at the Laboratory to advance DOE mission goals.
- PNNL has successfully met its notable requirement, Deliver impactful science for the Energy Frontier Research Center: ***Center for Molecular Electrocatalysis (CME). In general, CSGB-supported research at PNNL continues to be successfully executed and of high scientific merit and mission relevance.***
- PNNL successfully recruited an internationally recognized scientist to lead the lab's catalysis effort, but at a half-time appointment.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 50.00%

Score: 3.3 **Grade:** B+

Objective Evaluation:
PNNL has successfully achieved the Notable Outcome Goal to deliver impactful science for the Energy Frontier Research Center: "Center for Molecular Electrocatalysis." The Center Director and Associate Director have developed an informal management style which is both collegial and effective. They have been responsive to recommendations from the 2010 Management Review (CME's external advisory committee's role has been clarified and membership expanded; regular teleconferences with partners outside of PNNL established). CME is an active participant in monthly teleconferences including contributing monthly highlights. Fourteen members of CME attended the recent EFRC Summit and Forum, presenting three talks and six posters. Collaborations with the Fuels from Sunlight Energy Innovation Hub (JCAP) have recently been initiated. This is a well-managed EFRC with a growing list of accomplishments in a critical area of research that seeks to advance the science of catalysis for efficient conversion of energy resources into usable forms.

The Separations and Analysis portfolio at PNNL was assessed by both site and mail review in FY 2011. The site review resulted in excellent comments concerning the ongoing research of the two mid-career PIs. A proposed new effort was not recommended for funding. An onsite review of the Chemical Kinetics and Dynamics portion of the Condensed Phase and Intermolecular Sciences Program was conducted in late FY2011. The review is not yet finalized. However, reviewer reports and BES observations indicate that this program continues its record of high scientific merit and quality, with an excellent level of productivity. The research is a core element of the BES Chemical Physics activity, and it has direct relevance for many other BES research programs and DOE missions. A new FWP on liquid and interfacial systems far from equilibrium was reviewed favorably and work was initiated as a new component of the existing FWP. Two Hydrogen Fuel Initiative projects were reviewed in FY 2011. The project on solar hydrogen production received outstanding peer review comments and was renewed. The theoretical project related to hydrogen storage received poor reviews and was terminated. Ongoing supported programs in Catalysis Science, Geosciences, and Physical Biosciences were not reviewed in FY 2011; they continue to be successfully executed, of high scientific merit and quality, and advancing the DOE mission.

Ongoing MSE-supported programs at PNNL were not reviewed in FY 2011. They continue to demonstrate good scientific progress and impact in some niche areas such as, oxide MBE and molecular nanocomposites for energy storage. Review of publications from some FWPs indicate a lower than desired impact, such as in radiation effects and mechanical property activities. In addition, a proposal to replace an activity discontinued due to the departure of a senior investigator, while an important research topic, did not review well.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 50.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
Chemical Sciences, Geosciences, and Biosciences: The HFI project in Solar Photochemistry is led by an internationally recognized scientist, who has exhibited outstanding leadership in integrating this work with that conducted in the Catalysis Science program. The other programs, including those reviewed or not reviewed in FY 2011, have nationally and internationally recognized investigators. The successful recruitment of a world-leading scientist to head the PNNL Institute for Interfacial Catalysis is a significant success for the laboratory.

MSE-supported programs at PNNL, because they exploit the unique capabilities at EMSL user facility, are clear leaders in the respective topical areas. Noteworthy are the ongoing long term efforts in doped oxide films with novel electronic and magnetic properties and molecular nanocomposites, which are strongly aligned with DOE mission goals. Two other FWPs have not been productive. Departure of the leader of radiation-tolerant materials activity has created a void.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 40.00%

Score: 3.3 **Grade:** B+

Goal Evaluation:

- PNNL management provides effective planning and good vision for the MSE-supported programs by making excellent use of LDRD research to generate new initiatives and to bring new capabilities to the Laboratory.
- PNNL management is responsive to Headquarters requests and communicates research highlights in a timely manner.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 40.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:
PNNL management continues to present a clear, concise, and bold scientific vision for the research programs supported by the CSGB Division. PNNL management continues to define and propose an aggressive and expansive vision for the future of BES basic catalysis science and its integration with applied catalysis R&D

at PNNL. The new laboratory initiative and investment in chemical imaging builds on strengths in the chemical sciences at PNNL and is well connected to current research emphasis in the CSGB Division.

The PNNL program coordinator for MSE-supported projects provides effective program vision and leadership. PNNL has developed a good scientific vision for the MSE-support research and is well-aligned with the laboratory's strategic goals and vision. The laboratory continues to make effective use of LDRD research to generate new initiatives and bring new, unique capabilities to the lab. MSE programs at PNNL make excellent use of signature capabilities at EMSL and have been successful in the recent equipment competition by winning two awards.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 30.00%

Score: 3.3 **Grade:** B+

Objective Evaluation:
PNNL management is to be commended on the successful recruitment of a senior, world-respected scientist to lead the Institute for Integrated Catalysis. This is an excellent addition to the laboratory, in both strategic leadership and new scientific directions for the catalysis science effort at PNNL. However, his effectiveness in this position in a half time appointment remains to be determined. More generally, PNNL management is commended for its continued success in the recruitment of excellent scientific staff and for dealing with difficult staffing issues in the chemical sciences, including the removal of non-performing investigators from BES funding.

PNNL management continues to actively manage the MSE-funded projects. In response to the departure of the lead principal for one project, the laboratory has submitted a white paper for a new research activity in a related field. The lab was encouraged to submit a full proposal which was seed-funded; however, resubmission is required to address peer review concerns.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 30.00%

Score: 3.3 **Grade:** B+

Objective Evaluation:
Communication between CSGB and PNNL management was again strong in FY 2011 and featured regular program briefings that are very effective.

Communication between PNNL management and MSE division is very good with frequent contacts and an effective laboratory management review presentation. PNNL coordinator communicates program research highlights in a timely fashion. One of the PIs in the program served as the Meeting Co-Chair of the recent Synthesis and Processing Science Principal Investigators' Meeting. PNNL management is responsive to headquarters' needs and requests.

Biological and Environmental Research
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 25.00%

Score: 3.3 **Grade:** B+

Goal Evaluation:

The Lab is producing impactful science across a range of the BER portfolio. In particular they are making substantial contributions to the development of models that leverage experimental results with impacts on research in climate, integrated assessment, subsurface biogeochemistry, "omics," and low dose.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 60.00%

Score: 3.3 **Grade:** B+

Objective Evaluation:

- PNNL manages a Science Focus Area (SFA) program and two Integrated Field Research Challenge (IFRC) sites for BER's Subsurface Biogeochemical Research (SBR) program. During the FY2011, the science plan for the SFA program was accepted with revisions. All PNNL-managed projects and programs for SBR continue to produce solid contributions in the literature.
- PNNL manages three Science Focus Area (SFA) programs for BSSD. During the FY2011, two of these SFA programs underwent trienniel reviews and were accepted with revisions. The Genomic Science Program Foundational Science Focus Area (FSFA) is still being re-oriented to this new approach to BER research at the National Laboratories. The FSFA has thus produced only a modest number of results but shows promise that this will increase in the coming year.
- The technological research within the Pan-Omics program continues to produce new technological capabilities with high impact on its field. More than 60 research papers were published in FY 2011, an outstanding record. Most were in collaboration with biological researchers, demonstrating the high value of the facility to the research community.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 40.00%

Score: 3.3 **Grade:** B+

Objective Evaluation:

- PNNL researchers continue to maintain a leadership presence at DOE Subsurface Biogeochemistry Research (SBR) meetings with stakeholders at the Hanford site and at Legacy Management sites. PNNL continues to maintain functional collaborations with external researchers as an integral part of each PNNL-managed Integrate Field Research Challenge site project or SFA program for SBR.
- PNNL scientists continue to provide sustained leadership in DOE atmospheric research venues (members of standing committees and working groups of ARM/ASR and lead PI roles for two

campaigns).

- PNNL scientists are leaders in the broader climate modeling scientific community. Many proposals submitted by the PNNL team reviewed well and were funded as part of interagency solicitations.
- Twelve papers were published by the Pan-Omics program in *Analytical Chemistry*, the leading journal for new technological research findings.

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

Weight: 50.00%

Score: 3.2 **Grade:** B+

Goal Evaluation:

The Lab is doing an excellent job of managing its user facilities, ARM Climate Research Facility and EMSL, to advance the climate, environmental, materials, and biological sciences.

- PNNL successfully moved forward with several construction / fabrication projects.
- PNNL has an exceptional outreach program for the ARM Climate Research Facility, a balance for access between internal and external users, and a strong resident research community.
- EMSL continued to reach out to the external user community to further strengthen its user base.

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

Weight: 10.00%

Score: 3.2 **Grade:** B+

Objective Evaluation:

- During FY11, EMSL achieved CD-2/3a for the High Resolution and Mass Accuracy (HRMAC) project, CD-2 for the $4.5M Radiochemistry Capability GPP project, and CD-2 for the $3.2M Oxygen Plasma Assisted Molecular Beam Epitaxy (OPA-MBE) project, and for the $4.5M NanoSIMS project. Over the course of FY11, EMSL has implemented strong project management oversight for these projects.

Objective 2.3: Provide Efficient and Effective Operation of Facilities

Weight: 80.00%

Score: 3.2 **Grade:** B+

Objective Evaluation:

- During FY11, EMSL continued to make progress toward having more high impact user publications, with 2 in Science, 3 in PNAS and more than a dozen journal covers. The overall operating hours continued to meet targets. User satisfaction continues to be extremely high (>90% satisfied).
- PNNL exceeded expectations in activities designed to expand the capabilities of the facility. Their management of the Recovery Act implementation was exceptional.
- **PNNL brought the Evergreen Cluster online and on time for its Integrated Assessment**

research under very challenging conditions as it required close collaboration and coordination with a third party.

- During FY11, the EMSL Recovery Act project performance has been on track.

Objective 2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities

Weight: 10.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:

- EMSL continued to reach out to the external user community through a variety of communications mechanisms. Coordination with several of the on-going Science Focus Area (SFA) programs at PNNL that are funded by BER (i.e., Subsurface Biogeochemical Research, Low Dose, Pan-omics, Foundational, and Bioenergy) continues to be very strong.
- PNNL has exceeded expectations for ARM criteria. PNNL has an exceptional outreach program, a balance for access between internal and external users, and a strong resident research community. The FY2011 review of the facility highlighted several examples of exceptional facility capabilities.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 25.00%

Score: 3.5 **Grade:** A-

Goal Evaluation:

PNNL is exceptionally responsive to BER needs, provides strong and interactive leadership across BER programs and is very proactive and effective in its research planning.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 20.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:

- PNNL researchers continue to participate in and provide a subsurface scientific perspective at DOE stakeholder meetings at the Hanford site and at Legacy Management meetings. PNNL researchers continue to utilize and incorporate the new analytical capabilities available at EMSL into its scientific planning for the SFA program and IFRC activities.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 30.00%

Score: 3.1 **Grade:** B+

Objective Evaluation:

- PNNL continues to optimize and strengthen its subsurface science personnel and will seek additional expertise in environmental metagenomics to complement new efforts in a revised science plan for the SBR SFA program. The science plan was reviewed favorably in FY2011 and is under revision. PNNL continues to provide effective leadership of both Integrated Field Research Challenge site projects and the SFA program.
- The Pan-Omics program is managed effectively. The large staff and many instruments are highly productive thanks to the efforts of the PIs and senior staff.
- The GSP FSFA is still in the process of becoming an integrated program led by its PNNL PIs. This could have been completed more quickly if management had been more proactive in the transition period.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 50.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:

- PNNL continues to maintain good communication with Subsurface Biogeochemical Resaerch program managers, particularly ahead of the SFA review in FY2011. On site preparations for the review were good. After the review PNNL complied with an SBR request to brief program managers at HQ to clarify/revise scientific issues related to the SFA review. Annual reports for both Integrated Field Research Challenge site projects were received in a timely fashion.
- PNNL climate modeling scientists are very responsive to request from the program managers. They will be coordinating and developing a website for the Modeling program. They have been very effective in communicating the results of their scientific work with DOE program managers. The laboratory has instilled a culture that emphasizes good communication practices, and these practices are implemented at all appropriate levels in the laboratory.
- PNNL management provides information on new developments, opportunities and problems on a regular basis, without requiring prompting from BER staff. Communication is proactive and strategic.

Fusion Energy Sciences
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 65.00%

Score: 3.5 **Grade:** A-

Goal Evaluation:

The Pacific Northwest National Laboratory (PNNL) has done an excellent job, both scientifically and managerially, in the conduct of their structural materials research for fusion first wall applications. Working primarily with the Oak Ridge National Laboratory (ORNL) and the University of California, Santa Barbara, they have helped to lead the development of reduced activation ferritic alloys as the prime candidate structural material for fusion facilities beyond ITER.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 50.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
The quality of PNNL's work on fusion materials has been excellent. They are very effective in collaborations both domestically and internationally. Their technical expertise in their areas of research on ferritic/martensitic steels and silicon carbide composites is well recognized. PNNL has published in the field and had researchers present their results at numerous domestic and international conferences. In F 2011, PNNL scientists published 27 peer reviewed publications and presented 14 papers at domestic and international conferences.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 50.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
PNNL staff are involved in numerous fusion related groups and committees and maintain leadership roles in most of them. An example of this would be a leadership role in the FES Fusion Nuclear Science Pathways Assessment (FNSPA) study which is trying to determine various paths of research that must be done to move fusion forward. A senior PNNL scientist has responsibility for coordinating all of the materials input and engaging with the members of the broader group involved with completing the FNSPA.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 35.00%

Score: 3.5 **Grade:** A-

Goal Evaluation:

PNNL has several staff who are leaders in the FES community. This is evidenced by their participation in numerous groups, committees, and advisory bodies.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 40.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
PNNL staff help to shape the vision of the FES materials program through participation in numerous groups including chairing the group of FES materials researchers to help coordinate their scientific activities (i.e. MASCO), chairing the FNSPA materials working group, and being key participants of the International Energy Agency (IEA) Executive Committee for the Implementing Agreement on Fusion Materials Research.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 30.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
PNNL staff are involved in numerous project/program and facilities management activities. Some examples of projects/programs are MASCO, IEA executive committee for materials, and two US-Japan fusion materials agreements.

PNNL added a new materials science and technology facility this year that will be used to help FES execute its research mission. The new facility is fully equipped to work with radioactive materials.

PNNL has been involved in numerous research activities dealing with materials such as silicon carbide, nanostructured ferritic alloys, and steels. PNNL has helped building components for irradiation in places like the ORNL High Flux Isotope Reactor. These components include a thin layer of Ni-based material, which upon irradiation, mimics helium bubble generation and subsequent embrittlement.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 30.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
PNNL is responsive to FES needs. The best example of this is their MASCO leadership role, which involves coordinating with all of the other fusion material program principle investigators their involvement in the IEA, US-Japan and FNSPA and engaging with FES about the direction and focus of the materials program.

Energy Efficiency and Renewable Energy
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 60.00%

Score: 3.1 **Grade:** B+

Goal Evaluation:

Biomass:

The PNNL team has continued a tradition of excellence from their work with the program in the areas of terrestrial biomass conversion (both biochemical and thermochemical conversion) to fungible fuels, and has emerged as a lead laboratory in the area of algal biofuels.

Building Technologies Program:
Pacific Northwest National Laboratory can significantly improve in this area by providing consistency across the program/subprogram areas through management integration and hands on quality assurance practices. Individual contributors should be evaluated to ensure that they continue to produce original creative concepts to move forward in the area of code development and deployment in a timely manner.

Vehicle Technologies Program:
PNNL consistently provides exceptional research and results in the area of materials. For example: 1) in a series of projects running since the 1990s, PNNL has helped to develop aluminum forming processes such as superplastic forming which have found application in a variety of light- and heavy-duty vehicles; 2) several high-quality projects utilize a combined modeling-experimental approach to more efficiently and effectively support vehicle weight reduction that have successfully demonstrated on increasing cast magnesium (Mg) ductility and improving riveting techniques for Mg; 3) the goal of reduced dependence on rare earth elements for alloys of Mg is making good progress on a computational approach to understanding how Mg behaves when alloyed with rare earth elements so that non rare earth elements can be developed with the same or improved performance; and 4) development of new titanium processing techniques and alloy compositions for ground vehicle applications.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 60.00%

Score: 3.1 **Grade:** B+

Objective Evaluation:
Biomass:

PNNL has made a major impact on the bioenergy community

- PNNL is one of the leading laboratories in bioenergy-related publications in peer reviewed society journals demonstrating the scientific impact of the research PNNL is performing. Selected journals include *Genome Research, Journal of Physical Chemistry, Energy & Fuels, Water Resources Research, Journal of American Chemical Society.* In total, approximately 17 peer reviewed journal articles have been published or submitted for publication in FY 11 and 10 more are in preparation

- PNNL has an additional 6 new U.S. patent applications filed in FY11, an additional 22 pending patents and an additional 12 foreign patents granted in FY11

- PNNL's journal article "National Microalgae Biofuel Production Potential and Resource Demand" provided the first spatially-explicit estimate of open pond microalgae production potential and resource demands for the conterminous United States. Interest in the paper has been significant as illustrated by the mention and interview with the authors on the work in "Algae: The scum solution" by Neil Savegl in Nature 23 June, 2011 (474) S15-S16.

Building Technologies Program:

- Residential Code Proposal development is not transparent, repeatable or well documented. Laboratory personnel do not consistently utilize or document sources of data and assumptions. Repairing the process has proven to be difficult because of Pacific Northwest National Laboratory (PNNL) management resistance to an open process.
- Software marketed and utilized by the public such as REScheck and COMcheck are cumbersome to use and have not been updated to incorporate available market improvements in Information Technology (IT). The underlying code requirements are updated regularly as states adopt recent codes.
- In support of lighting technologies excellent articles on technical issues appeared in major lighting industry media, such as Lighting Design & Application. Pacific Northwest National Laboratory (PNNL) created quality data bases on lighting performance of market-available products for industry and consumer use that are frequently referenced, such as Lighting Facts and Caliper.

Vehicle Technologies Program:

- PNNL results in several areas provide significantly meaningful impact on the field of materials: 1) in the area of metal forming and formability, particularly for automotive sheet products, PNNL demonstrated as much as 100% increase in formability for aluminum sheet by pulse pressure forming for certain forming conditions; 2) by combining experimental and simulation results, PNNL demonstrated a microstructural model of an advanced steel that predicted the effects of varying material parameters and hence provide a target for improved properties; and 3) in the area of friction stir welding, PNNL employs the combination of unique equipment and exceptional personnel to advance this mission critical area for lightweight materials. · PNNL has contributed to the development of standards related to communication between plug-in vehicles and the electric grid.
- PNNL is recognized internationally as a science and technology leader in catalysis that is addressing critical performance and cost barriers in emissions reduction technologies for fuel-efficient lean-burn engines. This research is routinely showcased in high-impact journals such as Science. Over the last year, PNNL has published six journal articles in Journal of Catalysis, Catalysis Today, etc. and has given thirteen presentations at Gordon Research Conference, North American Catalysis Society meeting, Society of Automotive Engineeers (SAE), American Society of Mechanical Engineers (ASME) conferences that addressed fundamental questions about metal-support interaction and role of additives in lean nitrogen oxide (NOx) traps, and the excellent NOx reduction activity and hydrothermal stability of the latest copper-zeolite catalyst and the competitive adsorption phenomenon during the selective catalytic reduction reaction, to help improve the NOx reduction performance and minimize the precious group metals usage.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 40.00%

Score: 3.1 **Grade:** B+

Objective Evaluation:
Biomass:
PNNL's biomass researchers have many notabable collaborations including DOE's Office of Science, Intergovernmental Panel on Climate Change to prepare a report on climate change and two DOE-funded Bioenergy Consortia - National Advanced Biofuel Consortium, focused on advanced hydrocarbon biofuels

from cellulosic biomass, and the National Alliance for Advanced Biofuels and Bio-products, focused on algal biomass as a source of advanced biofuels

- PNNL's biomass researchers have served in positions of science and technology leadership. Examples include the Executive Organizing Committee of the 18th European Biomass Conference, Hamburg PNNL's, the IEA Bioenergy Agreement's Pyrolysis Task 34., Member of the National Advisory Board for the Canadian Agriculture and Agrifood Canada-Natural Resources Canada-National Resource Council National Bioproducts Program, the review committee for the DOE-Office of Biological and Environmental Research Bioenergy Centers and the Executive Board of the North American Catalysis Society
- An international team of researchers led by PNNL's Fungal team completed a study that compared the genome sequences of two strains of *Aspergillus niger* (Genome Res. 2011, 21(6):885-897). *Aspergillus niger* is an integral player in the carbon cycle, it possesses an arsenal of enzymes that can be deployed in breaking down plant cell walls to free up sugars that can then be fermented and distilled into biofuel. The highly accessed research paper was also featured on the DOE Joint Genome Institute web page (http://www.jgi.doe.gov/News/news_11_05_13.html) and the DOE energy blog (http://blog.energy.gov/blog/2011/06/21/could-common-household-fungus-reduce-oil-imports) and learning about the two *Aspergillus niger* strains enables exploitation of the genomes towards more efficient production of biofuels.

Building Technologies Program:

- Requested innovative approach to Residential Code development; however, no milestones have been submitted. This action places the residential code advancement goal in jeopardy. Focus needs to be placed on identifying, developing and promoting buy-in for energy improvements.
- Pacific Northwest National Laboratory resource pool proved to be intelligent but lacked experience needed to support the Appliance Standards (AS) rulemaking function. The talent pool is shallow with only two persons technically competent and well versed in the skills needed for regulatory analysis. These two individuals have demonstrated that they can see past normal constraints to imagine novel approaches resulting in technically sound solutions. Other PNNL team members supporting the Appliance Standards rulemaking function are intelligent but lack the experience needed to perform independently.
- Reports on cutting edge lighting issues, such as lumen maintenance, glare, and dimming are often referenced by industry. Great results such as Lumen Maintenance (LM)-79 and LM-80, were produced from collaborative efforts with code witting bodies, such as National Institute of Science and Technology, National Electrical Manufacturers Association, International Commission on Illumination (CIE), and American Society for Testing and Materials.

Vehicle Technologies Program:

- Examples of PNNL's leadership in the field of materials include the following: a member of the PNNL Energy Materials and Manufacturing group indicated leadership in the field by co-chairing the 2011 National Science Foundation Magnesium (Mg)Science and Technology workshop in Arlington, VA and was also co-editor for the 2010 Minerals, Metals, and Materials Society (TMS) Magnesium Technology symposium; and another staff member served as a session chair and co-editor at the 2011 TMS Annual Meeting for the Friction Stir Welding and Processing 6 symposium. PNNL undertook a project to explore large strain extrusion machining of Mg sheet. This is a very novel process that was not certain to succeed, however initial results suggest that the process yields the desired improvements in grain size and ductility. These results have been published in peer reviewed journals.
- PNNL has effectively collaborated with other labs and industry in vehicle/grid communications standards, but the role has been more of a contributor rather than a leader.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 40.00%

Score: 2.8 **Grade:** B

Goal Evaluation:

Biomass:
PNNL has consistently demonstrated research progress which reflects very well on their skills in project planning, implementation, management, and reporting.

Building Technologies Program:
As mission needs evolve, laboratory management needs to continuously assess the available resources and consider retraining to meet changing needs. In both the appliance standards and building codes area, the talented resources are overtaxed and fail to meet milestones. Building Technologies has consistently asked for a greater depth of knowledgeable persons to meet program needs.

Vehicle Technologies Program:
PNNL provides excellent program vision and leadership in key materials technology gaps that DOE is seeking to address. The lab consistently identifies and focuses on the most important and appropriate technology problems with well thought out plans that result in enabling capabilities that not only solve the immediate problem but also provide solutions to a broader set of related issues. The staff has a unique way of looking at an area and synthesizing a vision that enables others to see the work in a new way that opens up new solutions.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 30.00%

Score: 3.0 **Grade:** B

Objective Evaluation:
Biomass:

- Through partnerships with industry, other labs, PNNL successfully executed the first year of key Consortia that provide a scientific and technical vision to enhance DOE's program efforts in the area of advanced biofuels.
- PNNL had a significant role in preparing for, organizing and holding the Biobased Products meeting for the Biomass Program at Iowa State University. The expert researchers are experienced and growing with the program. Additionally the newer staff that have come on have shown a willingness to be involved and an understanding of the research area.
- PNNL projects with International Collaborators have successfully built strong scientific programs that are leveraging the DOE-Biomass Core program and reviewed well in the 2011 Biomass Program reviews - China/PNNL developed a significantly better understanding of the role of catalyst supports in influencing catalyst performance and led to a publication and in collaborations with Europe, PNNL successfully gained information to improve the production of enzymes from fungal species through collaboration with Technical University of Denmark, Chalmers University in Sweden and the Technical University of Vienna. As part of this collaboration, four externally funded researchers from Europe spent time at PNNL and work has led to several publications.

Building Technologies Program:

- Energy codes workshop was successfully restructured to meet changing mission needs but only after intensive review and input by Headquarters staff. However, Pacific Northwest National Laboratory (PNNL) staff represented the program at the International green Construction Code (IgCC) proceedings but failed to fully meet the DOE goal for outcome based code development.
- The needs of the Appliance Standards Team (AS) require individuals with a reasonably high level of competency in engineering, economic and market analysis to be assigned on the products the AS team covers. PNNL is also required to articulate the findings by writing cogent, fact-based,

articulate, readable documents that will be published in the Code of Federal Regulations. This information will be read by a well versed and technically competent community. The AS Team sought the expertise of a second national lab to communicate the findings of PNNL. PNNL was subsequently relegated to editing the written material. PNNL struggles with regulatory writing and needs to develop this core competency.

- Notable achievement in strategic planning that integrates market forces and technical drivers, as seen in the "Multi-Year Solid State Lighting Market Development Support Plan," which includes input from numerous lighting market participants.

Vehicle Technologies Program:

- PNNL lead the effort in the heavy duty vehicles workshop in March 2011 that provided input for DOE Material's updated roadmapping efforts. They jointly planned this meeting with ORNL where >130 experts attended and provided DOE with input on materials requirements for light weighting and propulsion materials for 2025 and 2050. PNNL staff were involved in planning, marketing, and analysis activities; the contributions from PNNL helped to execute a successful workshop.
- PNNL has developed a core competency in testing and validation of vehicle/grid communications standards, and the integration of plug-in vehicles with renewable electricity generation.
- PNNL continues to contribute substantially to the vision, planning and execution of the VT-Advanced Combustion Engine (ACE) program. Technical leadership and advice is provided through numerous exchanges with technical associations, through consortiums and through the Cross-cut Lean Exhaust Emissions Reduction Simulations (CLEERS) program. PNNL has hosted workshops, planning sessions, and project reviews that have led to focused recommendations for the VT program. This has included co-organizing the annual CLEERS workshop with ORNL and monthly CLEERS web meetings with participation by about 30 researchers from around the world. Staff is engaged with the 21st Century Truck Partnership (21CTP) through regularly scheduled teleconferences, site visits, and reviews. PNNL staff supported the formal review of the 21CTP conducted by the National Academies, as well as participates in the Quadrennial Technology Reviews.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 35.00%

Score: 2.7 **Grade:** B-

Objective Evaluation:
Biomass:

- PNNL co-chaired a DOE effort with industry and universities to assess the production of chemical products from biomass resulting in a summary document to be published by DOE.
- PNNL continued to provide key analyses to DOE in FY11 in the pyrolysis area. Revisions of the pyrolysis Design Case and development of the State of Technology assessment for pyrolysis resulting in greater integration with the feedstocks area in the Multi-Year Program Plan.
- The Biomass Program leveraged PNNL's Joint Global Change Research Institute and unique community tools such as the Global Change Assessment Model (GCAM) to analyze policies and technology scenarios in which biomass energy will play a major role both in U.S. and global contexts and over several decades to a century.

Building Technologies Program:

- Pacific Northwest National Laboratory (PNNL) did not make all the necessary decisions critical to moving the work forward. When technical issues were encountered that should have been resolved at PNNL or recommendations provided to Building Technologies Program (BTP), the issues were instead referred to Headquarters (HQ) which resulted in missed milestones. This resulted in HQ staff having to resolve PNNL generated issues on several occasions.
- Work required to support the Appliance Standards (AS) regulatory function is very specialized. At

this time, PNNL does not have sufficient depth of talent to efficiently perform all of the required analysis work. There are few organizations outside of AS that go into the detailed engineering, market and economic modeling and analysis to determine energy efficiency of manufactured products. Therefore, the available hiring pool to do this work is also limited. Most of the skills needed to be successful are learned on the job.

- Pacific Northwest National Laboratory displayed excellent management skills in the Solid State Lighting (SSL) market deployment area, that includes several projects and subcontractors, and minimized the risk of shortfalls on deliverables or technical problems with deliverables.

Vehicle Technologies Program:

- PNNL has demonstrated consistently that it has efficient and effective project and program planning. The vision and scope of PNNL's activities are captured thoroughly through a yearly annual operating plan. As part of this plan and program structure, PNNL routinely integrates with DOE-SC programs in Basic Energy Science, as well as leveraging the DOE-SC user facility located at PNNL – the Environmental Molecular Sciences Laboratory (EMSL). PNNL has Product Line Managers who are assigned to projects, including those sponsored by VT. These managers are accountable for expert delivery on project, ensure quality or technical products, conduct bi-annual reviews of projects, progress, and proactively work with project principal investigators to identify risk and mitigation pathways.
- Project and program management at PNNL are generally well executed. For example, a project focused on high strength Super Plastic Forming of Al was not meeting targets so funding was moved to a project in a similar technology but with a different approach (Aerodynamic LW Structural Cab Components).

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 35.00%

Score: 2.8 **Grade:** B

Objective Evaluation:
Biomass:

- PNNL provides invaluable technical, and organizational assistance to DOE staff as exampled by PNNL's expertise being used as a pool of expert peer reviewers for a variety of Federal Government solicitations, provided technical assistance and guidance to industries, universities, and others following referral by DOE which provides DOE with a way to guide interested parties to technical expertise.
- PNNL assisted multiple small business innovation research proposal teams, academic and industrial partners in developing winning proposals.
- PNNL's management system is easy to follow and provides the appropriate contacts for tasks and expertise associated with the projects and topics of interest to the Biomass Program.

Building Technologies Program:

- PNNL products are consistently late and numerous products are sent back because they are either incomplete or do not adequately respond to the original issue. Examples include: return of energy codes curriculum numerous times, restructuring, reorganizing and defining content of code cost analysis Request For Information (RFI) by Headquarters (HQ) staff and defining the cost database specifics several times for PNNL staff by HQ.
- For the Appliance Standards (AS) program PNNL was very timely in response to requests for information and/or editing of documentation. They provided citations and pointed out inconsistencies to Building Technologies Program staff and DOE's General Counsel's office within the scope of reviewing and writing various test procedures. However, given the scope of work required by the Appliance Standards Team, PNNL does not show the ability to carry out the full

complement of needed AS requirements.

- For the Solid State Lighting (SSL) research activities, PNNL was exemplary in communications to HQ and response to HQ requests, as seen in weekly progress phone calls, and extensive monthly progress reports, including problem resolution and changes in direction due to unplanned events when interfacing with the lighting program requirements.

Vehicle Technologies Program:

- The PNNL team has consistently met program office needs. In the past year the Annual Reports, Annual Review presentations, and semi-annual review presentations were all submitted in a timely manner. There is a clear point of contact who is helpful and easy to work with. Laboratory personnel frequently keep HQ "in the loop" on project developments.
- PNNL has been responsive overall to requests for information and status updates, but has not provided consistent updates to HQ without being prompted.

Office of Defense Nuclear Nonproliferation
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 65.00%

Score: 3.7 **Grade:** A-

Goal Evaluation:

NA-21 Comments: The PNNL provides significant technical, scientific, and management expertise to the three key subprograms of GTRI–Convert, Remove, and Protect—supporting the comprehensive GTRI approach to achieving its mission to reduce and protect vulnerable nuclear and radiological material worldwide, and denying terrorists access to nuclear and radiological materials that could be used in weapons of mass destruction or other acts of terrorism. PNNL continues to do an excellent job is efficiently and effectively achieving meaningful results to further NNSA/DNN/GTRI's ability to meet Presidential and Departmental goals.

Of the $94,420,539.61 provided to PNNL, 96 percent supports the protect subprogram - which is used for the protection of high priority nuclear and radiological materials worldwide (the funds are evenly split at PNNL between domestic and international protection efforts). Of the remaining funds about 2 percent goes to reactor conversion, fuel development, and Mo-99 efforts and the final 2 percent is for Emerging Threat efforts.

PNNL's support to projects was outstanding in FY2011. PNNL exceeded all material protection performance and financial targets that were set for them in FY2011. As of September 2011, PNNL will have exceeded their target of 60 domestic buildings and at 16 international buildings upgraded. Specifically in FSU and Asia, PNNL completed protection upgrades at 28 buildings in FSU and Asia and the joule target for FY2011 was 13 buildings.

As the designated management lead for the coordination and integration of the BN-350 Spent Fuel Disposition Program, PNNL did an excellent job in FY 2011 PNNL efforts were critical to complete the final shipments and security upgrades at Kazakhstan's BN-350 which culminates a 10 year effort to secure the largest cache of weapons-grade material in a non-weapons state.

Also PNNL provided excellent support for the Electron GAZ removal project that consolidated a very large quantity of radiological material and secured them in a GTRI funded storage facility. PNNL provides technical, scientific, and management expertise to IMPC to achieve its mission to secure vulnerable nuclear material worldwide, and denying terrorists access to nuclear and radiological materials that could be used in weapons of mass destruction or other acts of terrorism. PNNL continues to do very well in efficiently and effectively achieving meaningful results to further IMPC's ability to meet Presidential and Departmental goals.

NA-25 Comments:

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 60.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:
NA-22: Grade:A- Numerical Score:3.5

-Our internal review process assures that a significant number of the projects we sponsor exceed the expectations laid out in our Goals Objectives and Requirements documents. Our demand that the products of the research we sponsor appear in peer-reviewed journals assures that the S&T is of exceptional merit and quality. PNNL research on information barriers for imaging for arms control application is innovative.

NA-24:

Grade: A Numerical Score:3.8

-A major technology resource for International Nonproliferation Export Control Program – led the program's X-ray fluorescence tool development and deployment. Laboratory technical experts have also been a much utilized resource for work on eCIT – a cutting-edge product for enforcement agencies and export license reviewers now being offered to International Nonproliferation Export Control Program partner countries worldwide.
-Exceeded expectations in research areas for Global Initiatives for Proliferation Prevention through creative efforts that allow greater scientific reach and collaboration with Russian and Former Soviet Union institute scientists.
-The establishment and maintenance of continuity of knowledge of dismantled weapons components is also a vital consideration for the Warhead and Fissile Material Transparency (WFMT) Program. PNNL continues to demonstrate technical leadership in the development and understanding of tamper-indicating devices (TID) and tamper-indicating enclosures (TIEs) and their ability to not be defeated. PNNL experts are the world leaders in radionuclide science and technology, and PNNL expertise is largely responsible for the highly positive impact of U.S. re-engagement on Comprehensive Nuclear-Test-Ban Treaty (CTBT) radionuclide issues. PNNL experts are always strong contributors to U.S.-Russia Plutonium Production Reactor Agreement (PPRA) monitoring visits and are critical to resolving program issues.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 40.00%

Score: 3.6 **Grade:** A-

Objective Evaluation:
NA-22: Grade:A- Numerical Score:3.5

NA-24:

Grade: A- Numerical Score: 3.7

-Repeatedly showed themselves to be extremely adept at coming up with novel solutions to difficult problems. They are seen by their colleagues at the other labs as the "go-to" people for issues dealing with International Nonproliferation Export Control Program's engagement in Central Asia.
-Frequent leadership and participation by laboratory staff members in NNSA-sponsored workshops and strategic planning activities.
A PNNL senior staff member provided exceptional leadership as the chair of a Chain of Custody Working Group for a very important U.S.-UK Monitoring Exercise. PNNL experts are in leadership positions in the U.S. and international CTBT efforts.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 35.00%

Score: 3.9 **Grade:** A

Goal Evaluation:

NA-25 Comments: Provide project management and procurement support for MPC&A programs.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 20.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:
NA-24:

Grade: A Numerical Score:3.8

-Strong technical expertise in all areas that International Nonproliferation Export Control Program is currently engaged. Project management continued to improve and resource allocation by the laboratory exceeded the program's expectations.
-Succeeded in developing new core competencies of outstanding quality in areas both exploratory, high-risk research and research that is vital to the Global Initiatives for Proliferation Prevention mission.
-PNNL has sought to invest in its general R&D infrastructure to improve the quality of its future results. PNNL's CTBT-related expertise is recognized as world-leading and attracts/retains world-leading scientists. PNNL continues to provide excellent reactor and plutonium fuel cycle expertise to verification issues associated with countries of concern.

NA-25:

Grade: A- Numerical Score: 3.5

-PNNL has drafted excellent strategic planning documentation, and has led the SLD effort to procure next generation radiation portal monitors (RPMs) (including competing the contract, conducting testing, downselecting, and final selection) an d innovative mobile detection technologies such as the Mobile Radiation Detection and Inspection System (MRDIS) and the Radiation Detection Straddle Carrier (RDSC). PNNL's development of the Help Desk has been innovative and shows remarkable flexibility in approach. Additionally, PNNL has been instrumental in the development of new Sustainability Assessment tools which will improve SLD's evaluation of our progress to transition sites/ports to partner country ownership.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 20.00%

Score: 3.6 **Grade:** A-

Objective Evaluation:
NA-21: Grade:A Numerical Score:4.0

-PNNL also provided vital leadership in project management and risk analysis efforts for GTRI's reactor conversion, Mo-99, and fuel development programs. PNNL is the lead project management integrator of multiple-lab teams for each of these programs. In this role, PNNL established performance baselines and detailed risk analyses and risk management plans for each of these programs, and is currently leading the lab teams in providing status for the baselines and plans. PNNL's team continues to provide outstanding service to GTRI in this area that has been invaluable to progress in achieving these complex programs' missions.
-PNNL provides expert project management and physical protection expertise. Their cross-cutting protection support on Search and Secure, centralized equipment procurement, equipment test bed management, and the GTRI Protection and Sustainability Criteria document has been critical to GTRI's Protect mission. PNNL continues to do a great job of performing its project management duties and providing physical protection expertise for international radiological protect projects.

NA-24:

Grade: A Numerical Score:3.8

-Instrumental in the planning and curriculum development of the first technical nuclear forensics course sponsored by the International Atomic Energy Agency and Confidence Building Measures Program to be hosted at PNNL in February 2012. The PNNL staff has been effective in keeping plans within budget, making reasonable assessments of technical risk, and leveraging other lab resources and expertise.
-Took extraordinary measures to deliver products of critical importance to the Global Initiatives for Proliferation Prevention mission. Ensured the successful continuation of cooperative research and development projects with Russian and Former Soviet Union institutes.
-Demonstrated willingness to make tough decisions (i.e., cut programs with sub-critical mass of expertise, divert resources to more promising areas, etc.).
-PNNL proactively reached out to discuss areas where they could support International Nuclear Security, identified new areas of work, and participated actively in the International Nuclear Security program review.
PNNL program managers manage the portfolio very effectively, including tracking of spending and shifting resources from non-competitive elements. In addition, PNNL managers effectively handled a continuing-resolution-induced anomaly in FY11.
PNNL program and project managers demonstrated exceptional project oversight and engagement with NNSA HQ. They consistently meet or exceed expectations in resource management and effective engagement with HQ in implementing S&T projects for the Warhead and Fissile Material Transparency Team. PNNL's response to Fukushima was exemplary, and PNNL management recently took strong action related to Mo-99 supply that was not popular with producers but was right for nonproliferation efforts. PNNL continues to perform above expectations within and often below budget, despite changing fiscal conditions and priorities.

NA-25:

Grade: B+ Numerical Score: 3.1

-ORNL has effectively tracked and reported on PWPs and Annexes, provide contractual and project management functions with Russian contractor counterparts.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 60.00%

Score: 4.0 **Grade:** A

Objective Evaluation:
NA-21: Grade:A Numerical Score: 4.0

PNNL has helped GTRI to fill critical needs in project management and physical protection expertise through the M&O contractors that it provides. The M&O's have continually demonstrated themselves to be knowledgeable, professional, and critical pieces of the project teams.

NA-24:

Grade:A Numerical Score: 3.9

-Responsive throughout the planning process of the International Atomic Energy Agency nuclear forensics course. Headquarters was always and promptly informed of any updates whether positive or negative.
-PNNL program management responds promptly and effectively to HQ responses and is quick to initiative discussion on emerging issues. Laboratory management has instilled a culture throughout the lab that emphasizes good communication practices. Communication channels are well-defined and information is effectively conveyed. Responses to HQ requests for information from all Laboratory representatives are prompt, thorough, correct and succinct; important or critical information is delivered in real-time.

NA-25:

Grade: A Numerical Score:4.0

-PNNL has effectively communicated and responded to customer needs and requirements in order to deliver results in a timely fashion.

Department of Homeland Security
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 60.00%

Score: 3.9 **Grade:** A

Goal Evaluation:

PNNL has provided significant leadership and expertise to the Domestic Nuclear Detection Office (DNDO), the Science and Technology (S&T) Directorate, U.S. Customs and Border Protection (CBP), Federal Emergency Management Agency (FEMA), Immigrations and Customs Enforcement (ICE), and the National Biosurveillance Center (NBIC) within the Office of Health Affairs (OHA). Because of their proven capability for transitioning scientific approaches and innovative technologies to the field, DHS routinely calls upon PNNL to support the DHS operational components as well as other federal agencies engaged in homeland security work. The lab has done an exceptional job addressing a broad range of critical mission requirements that have significant impact on the Department's ability to protect our Nation.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 60.00%

Score: 3.9 **Grade:** A

Objective Evaluation:
Specific comments:

- PNNL teams are providing outstanding support to the DHS Chemical Forensics Program (CFP) in 8 different FY10 and 8 different FY11 projects. PNNL has distinguished itself as having produced the most articles in peer-reviewed journals - a key CFP performance metric.
- PNNL is evaluating the next generation of public health actionable assays and developing new methods for forensic analysis of chemical and biological threats so that leaders can have confidence in decisions to protect the public.
- PNNL has expanded the science of chemical and biological agent detection and transferring standard operating procedures to the field, working with stakeholders to implement more robust recovery strategies and developing new approaches to visualize and manage incidents.
- PNNL's Precision Information Environments project is developing a cutting edge set of tools that will dramatically increase emergency manager's ability to understand data and collaborate on response and recovery.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 40.00%

Score: 3.8 **Grade:** A

Objective Evaluation:
Specific comments;

- PNNL proactively partners with end users, industry, and academia to bring its unique capabilities in

chemical and biological sciences , cyber security, explosives detection, information analytics, radiation and nuclear detection, and systems engineering to bear on DHS's most challenging problems, rapidly developing solutions to address DHS's mission area needs.

- PNNL's internally funded LDRD efforts are addressing critical capability gaps, such as statistically significant protein analysis techniques for fingerprinting biological agents, low-frequency electromagnetic interrogation techniques to identify shipping container contents, and integration of cyber and physical security vulnerability assessments.
- PNNL worked tirelessly with DHS S&T and the Transportation Security Administration (TSA) to facilitate the effective transition of s tunnel plug technology to protect key transit tunnels from flooding after disasters, potentially saving livings and critical infrastructure.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 40.00%

Score: 3.9 **Grade:** A

Goal Evaluation:

PNNL continues to provide quality leadership in science and technologies relevant to the homeland security mission via pioneering development of new models, innovative approaches, attracting and retaining quality staff and mentoring new scientist. PNNL is working with other national labs, universities, DHS, and industry to initiate state-of-the-art, leading-edge science and engineering solutions to address critical needs across the Homeland Security Enterprise (HSE).

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 40.00%

Score: 3.8 **Grade:** A

Objective Evaluation:
Additional Program Manager Comments:

- "PNNL, in my estimation, executed high quality work in support of NBIC and OHA this year. Work involved close collaboration with multiple experts and stakeholders which was managed and coordinated thoughtfully and responsively. Result was a high quality, broadly useful product."
- "PNNL supports DHS T&E via TES Test Area Management (TAM) practices. The individual providing this support is an integral part of the T&E community and provides valuable input to DHS T&E policy development and practices. PNNL also supports DHS Standards development not only for DHS S&T but also FEMA through activities in ASTM International and the National Fire Protection Association. The individual providing this support is a critical contributor to the DHS Incident Management and Emergency Management standards development initiatives."

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 35.00%

Score: 3.9 **Grade:** A

Objective Evaluation:
No additional comments.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 25.00%

Score: 3.9 **Grade:** A

Objective Evaluation:
No additional comments

Office of Intelligence and Counterintelligence
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 60.00%

Score: 4.0 **Grade:** A

Goal Evaluation:

PNNL has made exceptional contributions to the Office of Intelligence and Counterintelligence for fiscal year 2011. The lab consistently provided timely expertise and support to IN headquarters personnel, as well as held a leadership role in several national-level intelligence community (IC) working groups and interagency teams involving HQ staff, other U.S. government agencies and various national laboratories. All assigned missions were accomplished in a timely and efficient manner, and to the best of our knowledge, all IC customers were supported with 100% mission accomplishment and satisfaction. The Counterintelligence program is rated as Outstanding, and we give particularly high marks to the cyber program.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 55.00%

Score: 4.3 **Grade:** A+

Objective Evaluation:
PNNL provided superior support to DOE, NNSA and the IC during the nuclear crisis in Fukushima, Japan. PNNL did an outstanding job addressing the PNNL cyber attack this past year. Cyber Intelligence Center reporting provided unique and valuable insights to the intelligence community, and potentially saved the government millions of dollars. CIC reports also played an important role in 10 major DOE and national-level investigations.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 45.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:
PNNL continues to provide extraordinary leadership and technical expertise, including by detailing personnel to Headquarters. These analysts carry a significant portion of the foreign nuclear programs workload, more than from any other single lab, and also play a role in providing intelligence briefings to the Deputy Secretary's staff and the Deputy himself.

The Counterintelligence program is leading a major project to provide an electronic threat assessment that crosses the boundaries with IT, Safeguards and Security, and Computer Security. This capability will eventually provide a real-time risk profile for every project, system, facility and person at PNNL. It will have a significant and positive impact for all PNNL stakeholders because it will enable the enactment of proactive measures that will reduce identified risks, at the same time that it provides a better understanding to managers of potential threats. We provided very positive feedback on this effort, but wanted to make sure it made its way into the annual assessment.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 40.00%

Score: 4.0 **Grade:** A

Goal Evaluation:

PNNL is the most responsive lab in the entire DOE complex. Outstanding detailees, and excellence in the areas of nuclear fuel cycle analysis, cyber security and IT operations, and counterintelligence.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision

Weight: 40.00%

Score: 4.0 **Grade:** A

Objective Evaluation:
PNNL provided outstanding support to NMIP, and also provided invaluable training on graphite-moderated reactors and small-scale reprocessing techniques, bringing experts from the field at PNNL into the classroom to train members of the IC, DOD and DOE analysts. There was tremendous enthusiasm for the course, and a sizeable waiting list. Some of our attendees thought it was among the best of the courses offered by DOE anywhere.

PNNL also provides important, although infrequent support and peer review to DIA, NGA, NSA and CIA products on an aperiodic basis throughout the year.

PNNL's disaster recovery efforts greatly expanded the scope of their operation this past year, and have been very important to us, especially in the area of computing and network services.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 30.00%

Score: 4.2 **Grade:** A+

Objective Evaluation:
Four new employees joined the CI program and greatly expand the depth and breadth of the staff's experience base. The CIC was given additional mission responsibilities this past year, as a result of demonstrated performance, technical excellence, reliability and trustworthiness.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 30.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:
PNNL did a great job this year of supporting the new DOE-IN business model, which resulted in a significant spend-down of large uncosted balances held at the beginning of the year. Our IN-10 division directors praised the lab's program management practices. Extremely valuable IT capabilities were shared with an important partner, who will now be implementing a capability developed and demonstrated by PNNL. Continued development of MATRIX was another standout success for PNNL this year.

Office of Environmental Management
Pacific Northwest National Laboratory
FY 2011 Performance Evaluation
Office of Science

Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

Weight: 60.00%

Score: 3.5 **Grade:** A-

Goal Evaluation:

The Contractor has demonstrated creative results, scientific progress on transforming scientific solutions into practical application. They have been eager and aggressive in developing relationships with the broader research community in the development of these technologies for implementation in the EM program. They have made themselves aware of needs across the complex and not just for the needs at Hanford. They have supported the office of Technology Innovation and development through the portfolio planning process and ancillary meetings.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

Weight: 40.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
They work closely with National Labs, agencies and academic institutions to ensure that their efforts are well documented and the information is communicated. They have assumed a role as leaders in the applied research area for EM and are very active in communicating their work.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

Weight: 60.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
Excellent efforts at reaching out and collaborating on their own and from suggestions coming from their customers. Unique solutions to unique problems has become their standard. They have been effective in leading the site contractors to a solution that is far removed from their baseline suggestions.

Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

Weight: 40.00%

Score: 3.7 **Grade:** A-

Goal Evaluation:

In these lean budget times, the Contractor has been able to keep their scientific capability intact and has used leveraging and collaboration as a means to keep their people employed. Vision and leadership not just on the research end but also in the discussions with the regulators and stakeholders assists EM in the completion of their mission.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific

Capabilities and Program Vision

Weight: 25.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
They are very involved in all aspects of planning, from technical workshops to programmatic changes. For example, the revisions to the OTID R&D plan and their leadership in promoting a vision that is consistent across the complex dovetails with the Office of Science and other DOE offices.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management

Weight: 25.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:
Very effective in leveraging other areas of research with potential application to the EM Mission. Strategic plans are consistent with expectations and fit in with overall programmatic goals.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs

Weight: 50.00%

Score: 3.8 **Grade:** A

Objective Evaluation:
Communication is direct and honest. There are no surprises coming from the Lab. Getting in touch with someone on an unrelated or ancillary matter is extremely easy and facilitated by the staff.