

**Part III - List of Documents,
Exhibits, And Other Attachments**

Section J

Appendix H

**Department of Energy Office of Science
Mission Stretch Goal(s) Performance Evaluation and Measurement Plan**

APPENDIX H

**MISSION STRETCH GOAL(S)
PERFORMANCE EVALUATION AND MEASUREMENT PLAN**

FY 2004 - 2007

**MISSION STRETCH GOAL(S) PERFORMANCE EVALUATION AND
MEASUREMENT PLAN**

for

**Management and Operations of the
Pacific Northwest National Laboratory**

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I. INTRODUCTION

This document describes the Mission Stretch Goal(s) developed to incentivize Battelle's (hereafter referred to as "the Contractor") performance in several specific programs carried out within the Pacific Northwest National Laboratory (hereafter referred to as "the Laboratory") for the evaluation period from October 1, 2003, through September 30, 2007. Mission stretch goals identify multi-year, specific exceptional results that the Contractor is incentivized to achieve over the duration of the contract. These goals are designed to inspire enhanced Contractor performance above and beyond that which is expected to be accomplished in meeting program goals within the annual performance evaluation and measurement plan (Appendix E). The commitment or use of existing or new programmatic funds as appropriate to accomplish stretch goals is neither required nor precluded. The intent is to encourage the Contractor to undertake extraordinary efforts to reach truly exceptional performance. Three programs within the Department of Energy (DOE) Headquarters (HQ) Office of Science (SC) have been identified and are listed below. Although these programs represent the current set of mission stretch goals for the contract period identified above, other DOE HQ program offices (i.e., EM, NA, IN, CN, EE, FE) may identify additional mission stretch goals, which upon agreement of the parties would be added to this appendix via formal modification of the contract; provided, however, that if the parties cannot reach agreement on such mission stretch goals, objectives, and/or performance measures, the Contracting Officer shall have the unilateral right to establish reasonable new mission stretch goals, objectives, and/or performance measures.

- Biological and Environmental Research (BER): 79%
- Basic Energy Sciences (BES): 14%
- Advanced Scientific Computing Research (ASCR): 7%

The weightings for the above mission stretch goals were calculated based on FY 2002 data provided in the FY 2002 – FY 2006 PNNL Institutional Plan dated January 2002. The numbers represent the percentage of each individual program's funding at the Laboratory relative to the others.

This document also describes the distribution of the total available mission stretch goal incentive fee and the methodology for determining the amount of fee earned by the Contractor as stipulated within the clauses entitled, "Determining Total Available Mission Stretch Goal(s) Incentive Fee and Fee Earned," "Conditional Payment of Fee, Profit, or Incentives," and "Total Available Fee: Base Fee and Performance Fee Amount." In partnership with the Contractor and key customers, the DOE HQ program office(s) and the Richland Operations Office (RL) have defined the mission stretch goals that serve as incentives to extend the Contractor's otherwise outstanding performance in each of the critical areas identified for the future of the Laboratory.

The overall performance against this mission stretch goal plan will be utilized to determine the amount of the total available mission stretch goal incentive fee earned by the Contractor as stipulated within the contract clauses "Determining Total Available Mission Stretch Goal(s) Incentive Fee and Fee Earned" and "Total Available Fee: Base Fee and Performance Fee Amount." Battelle may receive a mission stretch goal incentive fee of up to \$3.0M based on the Contractor's ability to meet the mission stretch goals set forth within this document. The fee amount identified above, as well as the weightings assigned to each mission stretch goal, is based solely on the current set of identified mission stretch goals and may be increased/changed upon agreement of the parties, as appropriate, based on the addition of any mission stretch goals; provided, however, that if the parties cannot reach agreement on the total available fee for any additional mission stretch goals or the weighting of the mission stretch goals, the Contracting Officer shall have the unilateral right to establish a new total available mission stretch goal fee and new weightings assigned to each mission stretch goal.

Section II provides information on how the DOE will determine if the mission stretch goals have been met by the Contractor, as well as how the mission stretch goal incentive fee earned (if any) will be determined.

Section III provides the detailed information concerning the mission stretch goals, objectives, and performance measures.

II. DETERMINING THE CONTRACTOR'S PERFORMANCE IN MEETING MISSION STRETCH GOALS AND MISSION STRETCH GOAL INCENTIVE FEE EARNED

The DOE shall verify and validate Contractor’s success in meeting the mission stretch goals based on the criteria outlined in Section III, Mission Stretch Goals, Objectives, & Performance Measures. The mission stretch goals shall be evaluated and incentive fee earned awarded independent of each other. Each of the mission stretch goals are comprised of an objective(s) and performance measures which will be utilized to determine the Contractor’s overall success in meeting each mission stretch goal. In order to earn a value point for a performance measure, the Contractor must meet, to the satisfaction of the Office of Associate Manager for Science and Technology and the appropriate program office, all of the components of the measure. For each measure that is fully met by the Contractor, the measure shall be awarded one (1) value point. Should a measure be only partially met, or not met at all, a value point of zero (0) shall be indicated for that measure. The overall objective rating will then be computed by multiplying the value points by the weight of each performance measure within an objective. These values are then added together to develop an overall score (percentage) for each objective. The score (percentage) for each objective within a mission stretch goal is computed in the same manner and is used to develop an overall score (percentage) for each mission stretch goal. A set of tables is provided at the end of each mission stretch goal section of this document to assist in the calculation of the measures, to objective score(s), to the overall mission stretch goal score. These scores (percentages) shall be indicated within Table A to calculate the overall mission stretch goal incentive fee earned by the Contractor.

Table A indicates the total available incentive fee for each of the mission stretch goals and will be utilized to indicate the amount earned for each:

Mission Stretch goal	Weight	Available Incentive Fee	Percentage Earned	Total Mission Stretch Goal Incentive Fee Earned
Office Of Biological And Environmental Research (BER)	79%	\$2,370,000.00		
Office Of Basic Energy Science	14%	\$420,000.00		
Office Of Advanced Scientific Computing Research (ASCR)	7%	\$210,000.00		
Total Incentive Fee Earned				

Table A. Mission Stretch Goal Incentive Fee for the Contract Period

Furthermore, in order to earn any mission stretch goal fee, the Contractor must maintain an overall performance evaluation rating of “Outstanding” within Science and Technology for each year of the term of this contract, as determined by the Performance Evaluation and Measurement Plan, documented within Section J, Appendix E, of this contract. Should the Contractor not meet the above standards, the overall available mission stretch goal incentive fee for all current mission stretch goals shall be reduced by 25 percent for each year the standard is not met; provided however that, if the Contractor’s rating in Science and Technology falls below “Outstanding” for any three performance periods the Contractor shall not be eligible to earn any mission stretch goal incentive fee.

Unless otherwise agreed upon by the parties, final verification/validation of the mission stretch goals shall be conducted during the final quarter of the contract term (fourth quarter FY 2007). A determination will be made whether the mission stretch goal(s) were met or not and shall be provided to the Contractor, to include authorization to draw-down any mission stretch goal incentive fee earned, concurrently with the year-end performance evaluation report issued in accordance with Section J, Appendix E, “Performance Evaluation and Measurement Plan.”

Should the Contractor believe it has successfully met a mission stretch goal and/or objective prior to the fourth quarter of FY 2007, the Contractor shall notify the DOE in writing. Upon such notification, the DOE may, at its sole discretion, verify/validate such completion and award any mission stretch goal incentive fee earned. The Contractor may be provisionally paid the mission stretch goal incentive fee through a withdrawal against the payments cleared financing arrangement as provided in writing by the Contracting Officer. In the event the Contractor does not meet the required performance standards, which resulted in the total available mission stretch goal incentive fee being reduced, any overpayment plus interest shall be redeposited by the Contractor to the payments cleared financing arrangement within 30 calendar days, or otherwise as directed by the Contracting Officer. Interest shall be computed from the date of the end of the performance period in which the Contractor did not meet the above mentioned standards to the date of repayment using the interest rate specified by the Secretary of the Treasury pursuant to Pub. L. 92-41 (85 Stat. 97).

III. MISSION STRETCH GOALS, OBJECTIVES, & PERFORMANCE MEASURES

The following sub-sections describe the mission stretch goals, objective(s), and associated performance measures for the contract period (FY 2004 – 2007). These mission stretch goals are each extraordinary, and accomplishment of them will represent exceptional performance.

1.0 OFFICE OF BIOLOGICAL AND ENVIRONMENTAL RESEARCH (BER) MISSION STRETCH GOAL (79%)

The Contractor shall accomplish, within the contract period, a mission stretch goal in environmental biology, and a measurable substantial increase in the scientific impact of the Environmental Molecular Sciences Laboratory (EMSL).

The understanding of how naturally occurring microbes impact the fate and transport of contaminants in the environment is vital to the Department's ability to make risk-based remediation decisions as well as new technologies for remediation at DOE contaminated sites, of which there are over 7,000 that have been identified. A molecular understanding of these processes involves the interplay between the disciplines of chemical, geological, and biological sciences. The ability to make risk-based decisions on remediation could potentially save DOE \$100 billion over 30 years and would also be applicable to other contamination problems such as mining and industrial contamination. In addition, such knowledge will contribute to the understanding of how cells interact with mineral or metal surfaces, which will have a broad impact in the biology community. Users from fields beyond the environmental sciences will also use EMSL's capabilities to understand how cells receive and send messages from and to their environment and their neighbors. Fundamental advances in cell signaling will help us understand not only microbes but also human development and disease leading to the discovery of new medicines for diseases, ranging from developmental disorders to cancer. This new knowledge of how cells communicate will even speed our efforts to understand the biological effects of low doses of radiation and thus improve the scientific basis for future radiation protection standards.

- 1.1 The Contractor will work to establish an international reputation for EMSL as a leading environmental and biology laboratory specializing in interdisciplinary research. Success will be assessed based on the importance and the scientific excellence of the research conducted at the Environmental Molecular Sciences Laboratory (EMSL). Specific measures of success are:
 - 1.1.1 Minimum of 8 journal publications in Science, Nature, or PNAS.
 - 1.1.2 Develop and deploy to the user community a minimum of 5 new or improved capabilities/methodologies for investigation of environmental and biology problems verified and validated by EMSL's User Advisory Committee (UAC) which provides a recommendation to BER regarding the completion of the measure.

- 1.2 The Contractor will increase the scientific impact of the EMSL user program within the environmental and biology research community. Specific measures of success are:
- 1.2.1 Development and implementation within the EMSL user program of two scientific grand challenges in the areas of subsurface fate & transport and biology. The increased scientific impact of the user program by one of these grand challenges will be verified and validated by a subcommittee of BERAC which will provide recommendation to BER regarding the successful completion of this measure.
- 1.2.2 Over the period of the contract, 15% or more of the total user time available in 4 of the major facilities in EMSL (CPCS, ESB, HFMR, HPMS, INS, MSC) will be utilized by users associated with the grand challenges.

ELEMENT	Value Points	Indicator Weight	Total Score	Objective Weight	Total Score
1.0 OFFICE OF BIOLOGICAL AND ENVIRONMENTAL RESEARCH (BER) MISSION STRETCH GOAL					
1.1 The Contractor will work to establish an international reputation for EMSL as a leading environmental biology laboratory,					
1.1.1 Publications in prestigious journals.		70%			
1.1.2 New or improved capabilities/methodologies.		30%			
Objective 1.1 Total				50%	
1.2 The Contractor will increase the scientific impact of EMSL					
1.2.1 Establish grand challenges in subsurface fate & transport and biology.		70%			
1.2.2 Use of major facilities by grand challenge users.		30%			
Objective 1.1 Total				50%	
Mission Stretch goal 1.0 Total					

Table 1.1. BER Mission Stretch Goal Evaluation Score Calculation

2.0 OFFICE OF BASIC ENERGY SCIENCE (BES) MISSION STRETCH GOAL (14%)

The Contractor shall accomplish, within the contract period, an increased national position for the Laboratory in condensed-phase and interfacial chemical physics and an active engagement of leading scientists and students external to the Laboratory.

Condensed-Phase and Interfacial Chemical Physics is the study of the chemical and physical properties of molecules in solution and at the boundaries between surfaces and solutions. Understanding molecular scale behavior in such systems is the key to controlling chemistry, chemical transport, and materials properties in the condensed phase. Meeting this mission stretch goal will accelerate the dissemination of the scientific methods and theories that the Laboratory develops with BES support. This in turn will accelerate research discoveries throughout the Nation by significantly enhancing the ability of scientists to understand, design, and optimize the processes associated with new sources of energy, chemical manufacturing, and environmental remediation that will lead to more effective separations methods for chemical analysis; more specific, efficient, and environmentally friendly catalysts; enhanced capability for detecting chemical species in complex environments; and improved understanding of the migration of chemicals in natural environments.

2.1 Over the contract period the Contractor shall establish the Laboratory in a national leadership role in the area of theoretical and experimental condensed phase and interfacial chemical physics research which will lead to more efficient and effective separations methods for chemical manufacturing and chemical analysis, more specific, efficient, and environmentally friendly catalysts, enhanced capability for detecting chemical species in complex environments, and improved understanding of the migration of chemical species in natural environments. Work in condensed-phase catalysis may have strong and near-term societal relevance, because over 90% of all commercial chemical processes are catalytic. Economic impacts can be substantial. For example, the catalytic process known as Ziegler-Natta polymerization, a process that currently produces about 100 billion pounds of plastics per year worldwide, is based on designs that were first introduced by BES supported investigators. Successful achievement of a national leadership role will be evidenced by:

- 2.1.1 Establishment of a visible visiting distinguished scientist program with the goal of productive scientific and intellectual exchange. The contractor shall host at least 16 visiting senior scientists (tenured faculty from major research universities or equivalent form industrial or national laboratories) for a duration of not less than 10 weeks (one scientist may constitute multiple visits during the period, but not more than once per year) over the contract period. Two of the 16 visits can be accomplished by a compilation of shorter duration visits. A total of 20 visitor weeks will be deemed equivalent to one 10 week visit.
- 2.1.2 Establishment of a summer school (at least two weeks in duration) to educate graduate students and young scientists in state-of-the-art theory, simulation, and experimental measurement, with a total attendance of at least 60 over the contract period.

ELEMENT	Value Points	Indicator Weight	Total Score	Objective Weight	Total Score
2.0 OFFICE OF BASIC ENERGY SCIENCE (BES) MISSION STRETCH GOAL					
2.1 The Contractor shall establish the Laboratory in a national leadership role in the area of theoretical and experimental condensed phase and interfacial chemical physics research....					
2.1.1 Establishment of a visible visiting scientist program.		50%			
2.1.2 Establishment of a summer school to educate graduate students and young scientists in state-of-the-art theory, simulation, and experimental measurement.		50%			
Objective 2.1 Total				100%	
Mission Stretch Goal 2.0 Total					

Table 2.1. BES Mission Stretch Goal Evaluation Score Calculation

3.0 OFFICE OF ADVANCED SCIENTIFIC COMPUTING RESEARCH (ASCR) MISSION STRETCH GOAL (7%)

The Contractor shall accomplish, within the contract period, significant improvements in the effectiveness of the HP 11-TeraFLOPS computer at the EMSL as a tool for scientific discovery.

Parts 3.1.1 and 3.1.2 below are in computational chemistry; part 3.1.3 in computational biology; and part 3.1.4 in large-scale simulation of subsurface processes. Attainment of this mission stretch goal will require performance improvements over existing methods in computational performance by 20%

in some areas to 100% in other areas. It will also require substantial improvements in algorithms and other areas. Accomplishment of these goals will enable the Laboratory to exercise world leadership in computational chemistry and biology.

3.1 The Contractor will achieve sustained efficiencies at peak speeds (11-TeraFLOPS) as evidenced by the following calculations. ASCR will convene an independent review group to review the data with respect to the achievement of the efficiency targets and provide a recommendation to ASCR regarding the successful completion of the measures.

- 3.1.1 60% for high level correlation energy calculations.
- 3.1.2 20% for density functional theory calculations.
- 3.1.3 15% for molecular dynamics simulations.
- 3.1.4 15% for operator split reactive transport calculations.

ELEMENT	Value Points	Indicator Weight	Total Score	Objective Weight	Total Score
3.0 OFFICE OF ADVANCED SCIENTIFIC COMPUTING RESEARCH (ASCR) MISSION STRETCH GOAL					
3.1 The Contractor will achieve sustained efficiencies at peak speeds (11-TeraFLOPS)					
3.1.1 60% for high level correlation energy calculations.		50%			
3.1.2 20% for density functional theory calculations.		15%			
3.1.3 15% for molecular dynamics simulations.		15%			
3.1.4 15% for operator split reactive transport calculations.		20%			
Objective 3.1 Total				100%	
Mission Stretch Goal 3.0 Total					

Table 3.1. ASCR Mission Stretch Goal Evaluation Score Calculation