

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE DE-AC07-05ID14517	PAGE 1 OF 6 PAGES
2. AMENDMENT/MODIFICATION NO. M045	3. EFFECTIVE DATE See Block 16c	4. REQUISITION/PURCHASE REQ. NO. NOPR	5. PROJECT NO. (If applicable)	
6. ISSUED BY US. Department of Energy Idaho Operations Office (DOE-ID) Site Services Division 1955 Fremont Avenue, MS 1240 Idaho Falls, ID 83415		CODE	7. ADMINISTERED BY (If other than Item 6) Diane Long, Contract Specialist (208) 526-0949	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and Zip Code) Battelle Energy Alliance, LLC P.O. Box 1625 Idaho Falls, ID 83415		CODE	9A. AMENDMENT OF SOLICITATION NO.	
			9B. DATED (SEE ITEM 11)	
			10A. MODIFICATION OF CONTRACT/ORDER NO. DE-AC07-05ID14517	
			10B. DATED (SEE ITEM 13) November 9, 2004	
CODE	FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

N/A

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS;
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (Specify authority): THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE-NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (Such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: DEAR 970.5215-1, Total Available Fee: Base Fee Amount And Performance Fee Amount
	D. OTHER (Specify type of modification and authority):

E. IMPORTANT: Contractor [] is not, **[X]** is required to sign this document and return **[3]** copies to the issuing office.


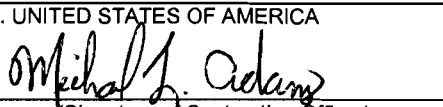
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

The purpose of this modification is to incorporate the Changes to Milestones 1.1.3, 3.1.1, 3.1.2, 3.1.3, 4.1.1, 9.1.3, 14.1.1, 14.1.3 and 20.1.1 to the FY 2006 Performance Evaluation Measurement Plan.

(See Continuation)

Except as provided herein, all terms and conditions of the document referenced in Items 9A or

10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) Art Clark Deputy for Operations Idaho National Laboratory		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) MICHAEL L. ADAMS Contracting Officer	
15B. CONTRACTOR/OFFEROR BY  (Signature of person authorized to sign)	15C. DATE SIGNED 6/22/06	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED 6/27/06

Continuation page

Part III Section J Attach K, is deleted in its entirety and replaced with Part III Section J Attach K. (Attached 31 pages)

Change(s)

- 1.1.3 Complete in-pile graphite irradiation creep experiment (AGC-1) design and testing of the mockup experiment hardware assembly in support of planned insertion of the experiment in the ATR in FY 2007 and submit a report to DOE that describes the final design, test plan and the results of the mockup testing by September 30, 2006.

Fee allocation: \$187K

- 3.1.1 Global Nuclear Energy Partnership (GNEP) Facility support deliverables:

Measure 1 - Submit documentation by March 31, 2006 in accordance with DOE O 413.3 to support Critical Decision (CD)-0 Approval of Mission Need for the AFCF, per direction of the Integrated Project Team Complete FY-06 conceptual design activities per the AFCF Conceptual Design Plan approved by the Federal Project Director by September 30, 2006.

Fee allocation: \$1122K

Measure 2 – By June 30, 2006, complete GNEP 5-year Technology Demonstration Program: Preliminary Plan and submit report.

Fee allocation: \$200K

Measure 3 - By August 31, 2006, organize and lead the 2006 National Physics Teacher Workshop with the theme "Nuclear Technology Addressing Worldwide Energy Demands," to be held in Idaho Falls; document completion of the event in a letter report.

Fee allocation: \$75K

Measure 4 –By September 30, 2006. complete GNEP Deployment Systems Analysis and submit report.

Fee allocation: \$200K

Measure 5 (Provisional Milestones:) By June 30, 2006, identify 3 - 4 provisional milestones based on the GNEP Technology Demonstration Program: Preliminary Plan. These milestones will be completed in FY-07, with progress shown towards completion in FY-06. FY-07 completion of these milestones will be predicated on the INL having responsibility and authority for the tasks in FY-06 and FY-07.

Fee allocation: \$460K

3.1.2 Deleted

3.1.3 Complete the following Advanced Fuel Cycle Initiative deliverables:

Measure 1 – By September 30, 2006, treat 108 kg of spent EBR-II fuel and document with milestone completion letter.

Fee allocation: \$ 450K

Measure 2 – By August 31, 2006, demonstrate and document the clean-in-place capability of 12.5-cm centrifugal contractor.

Fee allocation: \$ 50K

Measure 3 – By June 30, 2006, prepare FUTURIX-FTA test rods for shipment to France, including fabrication and inspection of the test rods, preparation of the container packaging, preparation of procedures for loading the container, submittal of the Certificate of Compliance Payload Amendment, submittal of the NRC Export License application, scoping and placement of the shipment contract, loading the containers and certifying the shipment.

Fee allocation: \$ 264K

Measure 4 – By September 30, 2006, complete post-irradiation examination of AFC-1 irradiation experiment and submit report in support of Level 1 milestone regarding AFCI irradiation experiments.

Fee allocation: \$ 300K

Measure 5 – By May 31, 2006, complete installation of prototype ceramic waste form furnace computer based control system and document with milestone completion letter.

Fee allocation: \$ 175K

Measure 6 – By September 30, 2006, complete and issue Metal Fuel Property Update to the AFCI Transmutation Fuel Handbook.

Fee allocation: \$ 75K

Measure 7 – By September 30, 2006, complete and document preliminary results of flowsheet testing of the FPEX process in 3.3 cm contactors.

Fee allocation: \$ 125K

Measure 8 – By September 30, 2006, complete and issue I-NERI reports for US-ROK collaborations on DEOX and Treatment of Oxide Fuels.

Fee allocation: \$ 100K

Measure 9 - By May 31, 2006, recommend Cs-Sr flowsheet for inclusion in ANL UREX+ Demo and document with milestone completion letter.

Fee allocation: \$ 50K

- 4.1.1 Establish facility capabilities to support national security projects by installing a second radioisotope power systems (RPS) fueling glovebox line and associated atmospheric control equipment and have that line functional by September 30, 2006, to provide the capability to support a parallel second line of RPS units for national security systems. Functional is defined to include atmospheric support systems, a validated operation procedure and trained operators for the glovebox (does not include project specific equipment inside glovebox, operator training to begin early in FY 2007 for nuclear fueling operations, and actual fueling operations to begin in March 2007 to support programmatic milestones).

Fee allocation: \$280K

- 9.1.3 Execute yearly milestones in the signature roadmaps and implementation plans (this measure will be modified to include the specific milestones approved by DOE by February 28, 2006).

1. INL websites will be established for each Distinctive Signature by June 30, 2006.
2. Each INL Distinctive Signature will establish a formal advisory committee. August 15, 2006

3. Each INL Distinctive Signature will have conducted and reported on a research planning session to better define near term (2-5 years) science objectives and research approaches. September 30, 2006
4. Each INL Distinctive Signature will have outlined and reported on near term (2-5 years) infrastructure (facilities, instrumentation, and equipment) needs. September 30, 2006

Fee allocation: \$187K

- 14.1.1 Achieve the selected items in the FY 2006 INL Safety Performance Objectives, Measures and Commitments (SPOMC).

Fee allocation: \$560K

High priority commitments have been designated to ensure focus on critical activities that must be achieved to demonstrate world-leading safety, environmental, and operational performance.

- To earn 100% of fee, BEA must achieve all of the high priority commitments and achieve at least 3 of the 4 other selected commitments.
- To earn 95% of the fee, BEA must achieve all of the high priority commitments and achieve at least 2 of the 4 other selected commitments.
- To earn 90% of the fee, BEA must achieve high priority commitments #1-3, VPP Merit Status, and 3 of the 4 other selected commitments.
- To earn 80% of the fee, BEA must achieve 3 of high priority commitments and 2 of the 4 other selected commitments.
- To earn 60% of the fee, BEA must achieve 2 of the high priority commitments and 3 of the 4 other selected commitments.

FY 2006 COMMITMENTS

High Priority

- * 1. Successfully pass the DOE Phase I Verification of the INL ISMS.
2. Attain ISO 14001 Certification for the INL EMS.
3. Complete FY 2006 scheduled integrated behavior-based safety/human performance training and implementation.
4. Attain VPP Star status for the INL Safety and Health Program.
5. Complete FY 2006 scheduled actions** in PLN-1838, "Electrical Safety Improvement Plan."

Other Selected Commitments

1. Complete FY 2006 scheduled actions** in PLN-13090, "Implementation of Quality Assurance Graded Approach."
 2. Develop and implement pollution prevention and energy efficiency actions for FY 2006.
 3. Complete FY 2006 scheduled enforceable environmental milestones.
 4. Revise the Contractor Assurance System description to address requirements in DOE Order 226.1, *Implementation of Department of Energy Oversight Policy* and submit to DOE-ID for approval.
- * Fee will be earned provisionally if DOE is not able to perform the ISMS Phase I Verification in this reporting period.
- ** Changes to scheduled action completion dates within FY 2006 may be made at the discretion of BEA. Changes to scheduled action completion dates into FY 2007 and beyond require DOE-ID Technical Monitor concurrence.

14.1.3 ATR Life Extension Program (LEP). The following measures shall be completed for this incentive.(These measures are based on funding levels of the ATR LEP as submitted by INL in FY06 funding guidance letter):

Measure 5 – Project Planning: Based on the approved Capital Project Strategy, prepare and deliver a complete/final Critical Decision (CD) – 0 documentation package for the agreed upon highest priority Line Item Capital Projects (LICP) (one or two projects) identified in the Capital Project Strategy to DOE by June 30, 2006.

Fee allocation: \$67K

20.1 Reinvestment in the INL Facilities and Capabilities. Johnson, Sack/Keele, Grover

Endstate:

The Idaho National Laboratory is operated with an internal environment of continuous improvement and collaborative, mission-driven, risk-based resource allocation resulting in the most cost-effective use of resources. There has been a ten-year, \$200M cumulative reinvestment in the laboratory.

20.1.1 Deleted

Introduction

Purpose and Measure Development Approach

The purpose of the FY 2006 Performance Evaluation Measurement Plan is to provide performance requirements and measures for evaluation of performance and distribution of potential fee to be earned. The performance measures are derived from the INL Strategic Plan and focus on key outcomes desired by the Department of Energy as defined in the INL request for proposal and INL contract. The INL PEMP development process follows guidelines established for performance based incentives contained in the DOE Acquisition Guide, Chapter 71.1 to ensure performance measures are clearly tied to the critical strategic objective of the site, focus on outcomes and results rather than processes or activities and are structured to drive contractor performance to achieve desired endstates.

The INL Strategic Plan presents the objectives that will transform the INL during the next ten years to lead the renaissance in Nuclear Energy. Three areas of emphasis include 18 strategic objectives:

- Multiprogram National Laboratory – embodies the key mission areas for the INL: Nuclear Energy Leadership; and National and Homeland Security Leadership; Energy Security; and Crosscutting.
- Science and Engineering Capabilities – represent the fundamental skills in science and engineering that enable successful achievement of INL missions.
- The Critical Enablers – define the necessary elements of infrastructure, laboratory management and operations and public trust and confidence to enable the mission strategy.

Endstates for each of the 18 strategic objectives have been included in the PEMP to summarize the expected outcome for the INL by the year 2014. With the end state clearly in mind, specific, outcome-based goals were defined for each year and are included in a ten-year synopsis worksheet. The FY 2006 PEMP is comprised of objective measures that were developed based on the necessary outcomes as well as three subjective measures. The subjective measures are structured to provide DOE with a mechanism to evaluate performance against emerging issues as well as to evaluate overall performance in mission accomplishment, scientific and engineering capability and critical enablers. Evaluation of performance workscope within cost and schedule constraints is included in the subjective evaluation criteria.

Fee Allocation

Fee is allocated for each measure based on consideration of the cost of performing work, the risk associated with the work and the value of the result for DOE. All elements of the measure must be achieved to earn fee unless otherwise stated in the measure.

Performance Status and Evaluation Process

The PEMP administration process is defined in the INL Contract Management Plan (section 12) and includes requirements for monthly status reports, change control, close out of measures and final fee determination. Performance to each measure is evaluated by DOE to determine if performance met expectations. In accordance with the contract, partial fee may be paid in recognition of partial achievement of a performance measure that results in a tangible benefit to the government.

Multi-program National Laboratory (objectives 1 – 8)

Fee: 51%

Nuclear Energy Leadership

Endstate:

Consistent with the 2005 Energy Policy Act (EPACT), lead and deliver the Generation IV research and development activity for a plant downselect in FY 2011. Major elements of program development are evident in advanced nuclear energy systems, fuel cycles, space power and propulsion, and with industry organizations and regulators.

1. Lead and deliver the Generation IV research and development and demonstration (RD&D) plant. (C-3, II 4-101-105) Lake/Furstenau

Endstate:

The Generation IV downselect activity is successfully managed under the leadership of the INL, with substantial collaborations of domestic and international participants. Success is evident by the following:

- The R&D needs for Generation IV are being met within the scope of an industry-driven design specification.
- Qualified codes and standards applicable to Generation IV, and software analysis tools for design and licensing of the Generation IV plant have been developed and are in use.
- The qualification irradiation tests for the fuel have been completed. Hydrogen production via high temperature electrolysis and one thermo chemical method has been demonstrated at the pilot plant scale.

- 1.1.1 Given DOE concurrence, initiate Generation IV system design studies with industry teams by issuing an RFP for industry design teams to begin pre-conceptual designs of a Generation IV Research, Development and Demonstration Plant and awarding subcontracts for industry design work by September 30, 2006.

Fee allocation: \$374K

- 1.1.2 An Experiment Safety Assurance Package (ESAP) is approved by the Safety Operations Review Committee (SORC) in accordance with SP-10.6.2.1 “*Experiment Safety Assurance Package Preparation and Approval*” by September 30, 2006, to support AGR-1 fuel test insertion into a first quarter FY 2007 Advanced Test Reactor cycle.

Fee allocation: \$748K

- 1.1.3 Complete in-pile graphite irradiation creep experiment (AGC-1) design and testing of the mockup experiment hardware assembly in support of planned insertion of the experiment in the ATR in FY 2007 and submit a report to DOE that describes the final design, test plan and the results of the mockup testing by September 30, 2006.

Fee allocation: \$187K

- 1.1.4 Complete High Temperature Electrolysis integrated lab scale experiment design in accordance with Work Package ID16EL11 Milestone 1 by July 1, 2006, and submit the Integrated Lab Scale Stack Specification Mechanical Design Report to DOE by August 15, 2006, including at a minimum:

- Integrated Laboratory Scale (ILS) performance specification.
- Space requirements and lab configuration.
- Heat input requirements.
- Electrical design.
- Heat exchanger requirements.
- Gas handling configuration.
- Instrumentation & control configuration.
- Non-cell component specifications.
- Cell definition (size, format).
- Cell materials determination.
- Component parts list.
- Piping and Instrumentation Diagram (P&ID).
- mechanical design.
- Ordering documentation for components.

Fee allocation: \$187K

2. Lead the global nuclear energy agenda. (II 4-11) Bennett/Furstenau

Endstate:

The INL leads the yearly development and review of the national and international agendas (i.e., top-level plans and actions) for the advancement of all aspects of nuclear energy, both power and non-power. The agenda is authoritative, comprehensive, impartial and widely supported. Within the U.S., there is widespread participation of national laboratories, industries and universities in setting and advancing the agenda. The top-level plans help to guide the administration and legislature in formulating key policies, programs and supporting appropriations. The agenda enables the INL to lead the development of yearly Field Work Proposals (FWPs) for nuclear energy across the DOE complex. Industry finds the agenda to be both supportive of their nearer-term needs as well as forward-looking in their interest, and academia finds the agenda to be engaging and challenging. Internationally, there are a majority of the Generation IV International Forum (GIF) Members engaged in the advancement of the agenda.

Note: No measure proposed for Fiscal Year 2006 in Objective 2

3. Build the fuel cycle of the future. (C-4, II 4-101-105) Lake/Furstenau

Endstate:

The Idaho National Laboratory is recognized as the leading laboratory in systems analysis, fuel development, and separations technologies, which are the primary components needed to develop a fuel cycle for the future. This recognition is evident through the following:

- INL has developed a multi-institutional, multi-national simulation network for modeling global nuclear energy infrastructure and fuel cycles.
- INL's systems analysis capability is being used by DOE and policy makers to guide the priorities and outcomes of the Advanced Fuel Cycle Initiative (AFCI).
- The costs associated with advanced fuel cycles are understood and used to make decisions on technologies for deployment.
- The INL Advanced Fuel Cycle Facility (AFCF) is in operation and has modules to develop and demonstrate advanced separations and transmutation fuel fabrication. This facility, together with the modeling and simulation network, is being used to demonstrate the proliferation resistance of the advanced fuel cycle.
- ALWR transmutation fuel has been developed and selected for licensing, and an associated separations process identified and tested.
- The AFCI program has a preliminary understanding of the feasibility of fast reactor transmutation fuel.
- The integrated Spent Fuel Recycle Program has been completed.

3.1.1 Global Nuclear Energy Partnership (GNEP) Facility support deliverables:

Measure 1 - Submit documentation by March 31, 2006 in accordance with DOE O 413.3 to support Critical Decision (CD)-0 Approval of Mission Need for the AFCF, per direction of the Integrated Project Team Complete FY-06 conceptual design activities per the AFCF Conceptual Design Plan approved by the Federal Project Director by September 30, 2006.

Fee allocation: \$1122K

Measure 2 – By June 30, 2006, complete GNEP 5-year Technology Demonstration Program: Preliminary Plan and submit report.

Fee: \$200K

Measure 3 - By August 31, 2006, organize and lead the 2006 National Physics Teacher Workshop with the theme "Nuclear Technology Addressing

Worldwide Energy Demands," to be held in Idaho Falls; document completion of the event in a letter report.

Fee: \$75K

Measure 4 –By September 30, 2006. complete GNEP Deployment Systems Analysis and submit report.

Fee: \$200K

Measure 5 (Provisional Milestones:) By June 30, 2006, identify 3 - 4 provisional milestones based on the GNEP Technology Demonstration Program: Preliminary Plan. These milestones will be completed in FY-07, with progress shown towards completion in FY-06. FY-07 completion of these milestones will be predicated on the INL having responsibility and authority for the tasks in FY-06 and FY-07.

Fee: \$460K

3.1.2 Deleted

3.1.3 Complete the following Advanced Fuel Cycle Initiative deliverables:

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Fee allocation: \$ 450K

Measure 2 – By August 31, 2006, demonstrate and document the clean-in-place capability of 12.5-cm centrifugal contractor.

Fee allocation: \$ 50K

Measure 3 – By June 30, 2006, prepare FUTURIX-FTA test rods for shipment to France, including fabrication and inspection of the test rods, preparation of the container packaging, preparation of procedures for loading the container, submittal of the Certificate of Compliance Payload Amendment, submittal of the NRC Export License application, scoping and placement of the shipment contract, loading the containers and certifying the shipment.

Fee allocation: \$ 264K

Measure 4 – By September 30, 2006, complete post-irradiation examination of AFC-1 irradiation experiment and submit report in support of Level 1 milestone regarding AFCI irradiation experiments.

Fee allocation: \$ 300K

Measure 5 – By May 31, 2006, complete installation of prototype ceramic waste form furnace computer based control system and document with milestone completion letter.

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Measure 6 – By September 30, 2006, complete and issue Metal Fuel Property Update to the AFCI Transmutation Fuel Handbook.

Fee allocation: \$ 75K

Measure 7 – By September 30, 2006, complete and document preliminary results of flowsheet testing of the FPEX process in 3.3 cm contactors.

Fee allocation: \$ 125K

Measure 8 – By September 30, 2006, complete and issue I-NERI reports for US-ROK collaborations on DEOX and Treatment of Oxide Fuels.

Fee allocation: \$ 100K

Measure 9 - By May 31, 2006, recommend Cs-Sr flowsheet for inclusion in ANL UREX+ Demo and document with milestone completion letter.

Fee allocation: \$ 50K

3.1.4 Complete the FY 2006 draft of the Technical Options Report (input to the Secretarial recommendation on a second repository).

Between 2007 and 2010, the Secretary of Energy is required to make a recommendation on the need for a second geological repository. Work performed under the AFCI supports this decision and recommendation. By September 30, 2006, INL will deliver to DOE a draft Technical Options Report summarizing program data that supports this decision. As a minimum, the options report will address the following:

- Fuel cycle system architecture.
- Description of process, waste, and disposal streams.

- Benefits of the system to increasing the capacity of the geological repository.
- Approximate costs of the system.

Fee allocation: \$374K

- 3.1.5 Complete documentation of post-irradiation examination results for fuel test LWR-1A. The documentation, as specified in workpackage I0204L11, consists of a post-irradiation examination report supplied to the DOE by March 31, 2006.

Fee allocation: \$467K

4. Power space exploration for the Nation. (C-5-6, II 4-101-102, 110) Lake/
Furstenau (Schwartz)

Endstate:

INL has demonstrated leadership in radioisotope power systems and testing of nuclear fission systems adapted for propulsion, spacecraft power, and surface power. A strong university/industry interface through the Center for Space Nuclear Research exists. All nuclear operations associated with the production of Plutonium-238 (Pu-238) power systems are consolidated in Idaho. From one to four radioisotope power systems are being assembled, tested, and delivered to customers annually. Neptunium targets for irradiation in ATR are being produced and processed in a new facility to produce Pu-238. Processing and encapsulation of Pu-238 is also being accomplished in this new facility, and assembly and testing of heat sources and generators continues in the Space and Security Power Systems Facility (SSPSF). The Center for Space Nuclear Research has a mature organization that leverages the INL's capabilities through collaboration with universities and industry, while directing more than \$5M in competitive research grants and space nuclear education.

- 4.1.1 Establish facility capabilities to support national security projects by installing a second radioisotope power systems (RPS) fueling glovebox line and associated atmospheric control equipment and have that line functional by September 30, 2006, to provide the capability to support a parallel second line of RPS units for national security systems. Functional is defined to include atmospheric support systems, a validated operation procedure and trained operators for the glovebox (does not include project specific equipment inside glovebox, operator training to begin early in FY 2007 for nuclear fueling operations, and actual fueling operations to begin in March 2007 to support programmatic milestones).

Fee allocation: \$280K

- 4.1.2 Support preparations for launch of the New Horizons spacecraft at the Kennedy Space Center.

INL will deliver the Radioisotope Thermoelectric Generator (RTG) to Kennedy Space Center and provide high quality, on-time support maintenance, transportation, and mating of the RTG unit in accordance with NASA- and DOE-approved procedures and drawings to observatory in time for the scheduled launch.

Fee allocation: \$280K

- 4.1.3 Complete documentation and preparations to support a CD-1 process for the Pu-238 Consolidation Project in accordance with DOE Order 413.3 and supporting documents by September 30, 2006.

Fee allocation: \$375K

- 5. Build strategic relationships with industry organizations and regulators.** (C-11, II 4-25, 4-101-102, 104-105) Lake & Lance/Furstenau (Mc Clellan)

Endstate:

The INL is unique in the DOE complex for its diverse and effective relationships with industry organizations, including EPRI, INPO and NEI, and regulators. While responsive to the specific needs and objectives of our other collaborative partners, the INL facilitates and integrates roles with industry organizations and regulators that bring the INL's capabilities to bear on their needs without conflict of interest.

Important attributes and outcomes that signal INL's success include:

- Research projects on nuclear technology with industry organizations and regulators.
- Increasing high-level support activities for the NRC. Examples include serving on advisory committees, participating in policy working groups, etc.
- Increasing interactions with IAEA, WANO, NEA, INPO and other international nuclear organizations.

- 5.1.1 The Center for Nuclear Fuels and Materials Research (CNFMR) will complete non-destructive examination of the North Anna Pilot Project Fuel as evidenced by the following:

- Complete nondestructive examination of the North Anna Pilot Project Fuel in accordance with BEA WFO Agreement No. 05823 and ship it offsite by July 30, 2006.
- Issue a summary report describing lessons learned based on experience with the pilot project fuel by September 30, 2006.

This measure will be modified if factors beyond the control of the contractor delay shipment (for example, if the ANL hot cell is not available to receive the fuel).

Fee allocation: \$374K

National & Homeland Security Leadership

6. Build five primary development and testing capabilities and two technology platforms into leading roles in nonproliferation and critical infrastructure protection. Ananth/Furstenau (Macdonald)

Endstate:

Capitalizing on its reactor and fuel cycle expertise and facilities, the INL is recognized as a leading national laboratory in the areas of signatures and detection, material and process security, and advanced safeguards technology development for nuclear non- and counter proliferation in the context of the fuel cycle. Through the use of the Critical Infrastructure Test Range and laboratory personnel and partnerships, the INL is recognized as the leading center for protection of the nation's critical infrastructure in energy distribution process control systems, and process control systems supporting other critical infrastructure sectors. Cyber security and telecommunications are key elements of process control systems. National and Homeland Security programs have grown to \$205M annually, and recognition is evident through the following:

- Designation as a Center of Excellence for Critical Infrastructure Protection by DHS, DOE, or DOD.
- Designation as a Center of Excellence in Nonproliferation Safeguards and Security by NNSA, Department of State, or the International Atomic Energy Agency.
- Positive external peer review.
- Substantial programmatic portfolio and diverse program office sponsors and customers.

6.1.1 Develop a major Nonproliferation Lab-wide Initiative and validate by Peer Review by September 30, 2006. The initiative will have a completed program plan and an identified Initiative leader. The Peer Review will be complete when the Nonproliferation Advisory Committee validates the objectives of the initiative in accordance with criteria established by DOE-ID.

Fee allocation: \$500K

6.1.2 Obtain a new Material Protection, Control and Accountability (MPC&A) Training Program (at least \$100K) by September 30, 2006, as evidenced by commitment of new business funding from NA-25 to provide training that

will support U.S. objectives for nuclear material protection, control, and accountability.

Fee allocation: \$185K

- 6.1.3 Convert reactors at University of Florida and Texas A&M University to Low Enriched Uranium (LEU) fuel by September 30, 2006 per the July 2005 RERTR Program Direction agreement between DOE-ID and The Office of Global Threat Reduction (NA-21). The measure will be achieved when the University of Florida and Texas A&M University reactors have been fueled with LEU fuel.

Fee allocation: \$500K

- 6.1.4 Obtain a program (at least \$100K) from Utility Sector to reduce electrical power grid vulnerability in the form of direct Work for Others (WFO) program funding commitment from an electric utility focused on reducing electrical grid vulnerability by September 30, 2006. Work will be performed in accordance with the scope of work defined in the WFO contract.

Fee allocation: \$499K

- 6.1.5 Obtain a program (at least \$100K) from one international client (government or commercial) with regard to process control security assessments in the form of direct Work for Others (WFO) program funding commitment from an international client to perform a process control security assessment (focus on the cyber security of industrial control systems that control the processes within critical infrastructure) by September 30, 2006. Work will be performed in accordance with the scope of work defined in the WFO contract.

Fee allocation: \$185K

Energy Security

- 7. Establish a vital energy security business.** (C-7, II 4-101-102, 106-107)
Rogers/Furstenau

Endstate:

INL demonstrates expertise in the design of economically sound, safe, secure, and environmentally sustainable energy systems. It is the site of choice for pilot-scale energy plants. INL demonstrates expertise in the design, development, test, and demonstration of regulation-compliant waste management systems that close the back end of the nuclear fuel cycle and provide innovative solutions to challenges in long-term environmental stewardship. The energy security business has grown to \$120M annually.

- 7.1.1 By September 30, 2006, INL will provide to DOE, Office of Biomass a draft report on distributed preprocessing of dry feedstock biomass. The data in this report will provide the analytical underpinning to validate the DOE, Office of Biomass 2009 feedstock supply budget target of \$45/ton.

Fee allocation: \$187K

- 7.1.2 Execute all INL FY 2006 interim milestones for Big Sky Partnership on Carbon Sequestration by September 30, 2006, as defined in the March 2005 Big Sky Partnership Field Work Proposal approved by DOE. Specific INL interim milestones include the following:

Fee allocation: \$187K

- Milestone 1: Investigate enhanced coal bed CO₂. Two options for coal bed sequestration of CO₂ derived from the burning of fossil fuels are: 1) inject the entire flue gas stream from a power plant including the produced CO₂, and 2) separate the CO₂ from the flue gas stream and then inject it into a coal seam. This task will begin to assess the costs associated with the second option by analyzing the technical challenges and costs associated with CO₂ separation from a flue gas stream and transportation of the separated CO₂ from the point source to an appropriate sequestration target. An interim status report will be prepared that details the data generated and analysis performed in FY-06, as described as follows:
 1. The report will include the selection of a specific coal-fired power plant for the application of CO₂ separation technology. An appropriate CO₂ separation technology will be identified from existing commercial technologies.
 2. The report will also include a process design for the chosen technology tailored to the selected power plant that will be used to obtain accurate costs of separating the CO₂ from the flue gas. In addition, an analysis of the costs for compression and transportation of the CO₂ from the point-source to an appropriate coal bed sequestration site will be included in the report
- Milestone 2: Develop and demonstrate an initial numerical hydrodynamic models for mafic rock (basalt) pilot testing. This task will prepare models to ultimately support the field demonstration of carbon injection in mafic rock. An interim status report will be prepared that details the data generated and analysis performed in FY-06, as described as follows:

1. Acquire, compile, and test TOUGHREACT, a FORTRAN source code. Establish user accounts and any special compilation from the INL supercomputing center. Model at least one test case and compare the results against published values.
 2. Define geologic and geochemical conceptual models. Gather data on the geologic environment (basalt aquifer) where the CO₂ will be injected and build a conceptual model of the physical flow system. In conjunction with this activity, a geochemical conceptual model will also be developed, in which initial flow, transport, and reaction property sets will be developed.
 3. Build and run a preliminary reactive transport model. Perform modeling and explore the model sensitivity to the conceptual models developed in b) above. The model developed in this phase will be used to refine our conceptual models, build confidence in our methods, and evaluate model sensitivity to selected input parameters.
- Milestone 3: Develop GIS information in support of Big Sky Carbon Sequestration Program. This task will develop geospatial data layers for Wyoming and Montana for the Carbon Atlas and create metadata (lineage documentation) for sequestration data layers. An interim status report will be prepared that details the data generated and analysis performed in FY-06. Combine, format, and transfer geospatial information developed by U of Idaho during Phase I for the Oil and Gas provinces of WY and MT. This information includes suitability characterization modeling results for carbon dioxide sequestration potential for each formation within each play area. The resulting data will be accessible via the Carbon Atlas (<http://www.bigskyco2.org/carbon-atlas.htm>), and will provide estimated sequestration volumes and costs.
 - Milestone 4: Develop Regulatory compliance support for geologic sequestration. This task will start to develop the regulatory infrastructure required to implement carbon sequestration within the Big Sky region. An interim status report will be prepared that details the data generated and analysis performed in FY-06, as described as follows:
 1. Survey existing CO₂ sequestration related policies and regulations, including existing regulations and occupational exposure limits of CO₂ as promulgated by federal and state agencies. To the extent possible, establish via consensus with

individual regulatory entities the basis behind these policies and the prospects for their modification in the near-term (i.e. the time period within Big Sky Phase 2 work, 2005 - 2009).

2. Assess and develop a region-specific regulatory approach for geologic sequestration. Identify the regulatory approach and the controlling agencies for each state within the Big Sky region. Include CO₂ capture and storage approaches within this assessment. Compare to present international approaches to the extent data are available. Offer alternatives to the basic approach in order to allow decision-makers some flexibility of choice for the region.

Crosscutting

8. Deliver innovative technology through strategic partnerships and effective commercialization. Lake/Lance/Furstenau

Endstate:

The INL has developed the strong partnerships and business agreements between commercial industry and the laboratory that are necessary to support U.S. competitiveness in the global technologies market. Viable technologies have been developed and implemented in many areas of highest importance to the INL mission: energy security, nuclear technology, and infrastructure protection. The strategic agendas of nuclear energy and national security are supported by multiple industrial partners with ongoing service relationships between the laboratory, industry and the DOE. Extensive transactional partnerships are used to exploit commercially valuable technologies in all areas. Commercial research includes outstanding researchers drawn from the INL, the universities and industry. The Center for Nuclear Fuels and Materials Research (CNFMR) is established and successfully serving the needs of vendors and utilities. The INL has successfully obtained a *Use Permit* in 2007 and steadily implemented it for the mutual benefit of the laboratory and industry.

- 8.1.1 Install fuels evaluation and test equipment in CNFMR, provided by industry, that will be used in joint INL/industry nuclear R&D programs.

INL personnel will work with industry partners to install and test Light Water Reactor (LWR) fuels specific evaluation equipment. An eddy current system will be installed and operational at Hot Fuel Examination Facility (HFEF) for CNFMR work on North Anna fuel by September 30, 2006.

Fee allocation: \$187K

19.1 DOE Subjective Evaluation of Mission Advancement Bennett/Furstenau, McCoy

Demonstrate near-term progress toward establishing INL as a recognized leader in Nuclear Energy and National and Homeland Security, with strong emphasis on science and technology for Energy Security. Progress will be measured by DOE evaluation of the effectiveness of the actions and accomplishments that position the INL as a leader.

Develop an effective approach to INL mission advancement, evidenced by examples of the following:

- Effectiveness in driving the direction and setting the priorities of the INL missions.
- Pursuit of novel approaches and/or advancement of innovative solutions to problems.
- Visionary ideas for new research programs and facilities.
- Willingness to take on high-risk/high-payoff long-term research and demonstration.
- Articulation of the INL missions and objectives to meet national needs.
- Joint planning with the Research Development and Demonstration community.
- Growth of the INL missions.
- Recognized leadership, nationally and internationally.
- Measures met within the FWP cost and schedule baselines.

As measured by: strategic plans, program reviews, program plans, program execution, workshops, peer reviews, external recognition, proposals, strategic collaborative activities, program growth, new programs, etc.

- A to A+: INL advances all of its mission areas into national priority and high acclaim, and is recognized as a leader, nationally and internationally, in both innovation and program execution.
- B+: Advances several mission areas into national priority and high acclaim, and is recognized as a leader in both innovation and program execution in those areas.
- B: Advances at least one mission area into national priority and high acclaim, and is recognized as a leader in innovation or program execution.
- C: Continues its current mission areas, adapts innovations from others, and delivers sound program execution.

D: Lags in adapting innovations, or fails to deliver sound program execution.

F: Loses a major mission due to gross incompetence.

Fee allocation: \$561K

Award fee schedule for FY 2006:

A to A+ -- 98 to 100%

B+ -- 90 to 97%

B -- 80 to 89%

C -- 0 to 79%

D -- 0

Science and Engineering Capabilities (objectives 9 – 12) Fee: 15%

9. Establish a robust science base with five distinctive science signatures. (C-7 - 8, II 4-17 – 20) Rogers/Furstenau (Brookshire & McCoy)

Endstate:

INL has validated recognition for its five distinctive science signatures:

- Advanced Materials and Nuclear Fuels.
- Theory, Modeling and Simulation.
- Separations and Actinide Science.
- Microbiological and Geological Systems Science.
- Instrumentation, Control and Intelligent Systems.

Validation has been achieved through the record of peer review assessments of the signatures' capabilities, scientific records (e.g., publications, citations, presented papers, etc.), assigned leadership positions, and portfolios of completed and current programs. Peer review involves advisory committees with external/internal membership. The Center of Advanced Modeling and Simulation (CAMS) is fully operational and contributing to INL mission areas. Key contributions include: computational materials science, computational actinide chemistry, physics-based models for reactor systems, and subsurface transport models that use coupled processes and can transition from molecular to macro scales. CAMS staff are integral contributors to key INL programs. The science portion of INL's research portfolio has grown to \$70M annually. The cumulative total of competitively won research awards reaches \$50M in 2010. Major sponsors now include the Office of Science, other DOE science elements, and NIH, NASA, DOD and DHS science elements.

- 9.1.1 By September 30, 2006, increase INL peer reviewed publications (publications requiring at least two peer reviews prior to acceptance) 10% from prior year.

Fee allocation: \$187K

- 9.1.2 Submit at least six proposals in response to competitive calls, and receive notice of award of at least three new projects by September 30, 2006.

Fee allocation: \$374K

- 9.1.3 Execute yearly milestones in the signature roadmaps and implementation plans (this measure will be modified to include the specific milestones approved by DOE by February 28, 2006).

1. INL websites will be established for each Distinctive Signature by June 30, 2006.
2. Each INL Distinctive Signature will establish a formal advisory committee. August 15, 2006
3. Each INL Distinctive Signature will have conducted and reported on a research planning session to better define near term (2-5 years) science objectives and research approaches. September 30, 2006
4. Each INL Distinctive Signature will have outlined and reported on near term (2-5 years) infrastructure (facilities, instrumentation, and equipment) needs. September 30, 2006

Fee allocation: \$187K

- 9.1.4 Implement CAMS consistent with FY 2005 roadmap (INL/05-00635) by completing the following milestones:

- Establish an Advisory Board for CAMS by December 31, 2005.
- Conduct annual planning workshop and report to the CRO and CAMS Advisory Board on priority modeling and simulation issues by May 31, 2006.
- Deliver the HPC requirements document to DOE by June 30, 2006.
- Brief DOE NE, SC Offices of Scientific Computing Research and Basic Energy Sciences, and National Science Foundation on CAMS by July 30, 2006.

- Analyze the current software suite and project needs, and develop initial suite recommendations by September 30, 2006.
- Establish computational chemistry capability for actinides by September 30, 2006.

Fee allocation: \$187K

10. Maintain and enhance a strong engineering base. (II 4-20-23) Rogers/Furstenau

Endstate:

INL has a recognized cadre of the engineering and associated disciplines needed to deliver large-scale engineering projects. This engineering capability is constantly demonstrated by the successful completion of large-scale engineering projects. Recognition is achieved through external peer reviews and the fact that INL's projects attract talent from world-class engineering institutions. The strong engineering base has contributed to the development of the science base, and the success of the nuclear and national and homeland security programs.

- 10.1.1 Obtain (as evidenced by commitment of funding) one additional national or international contract (at least \$100K) for INL's Compressed Natural Gas/Liquefied Natural Gas technology supporting INL Alternate Fuels and Energy program and U.S. Energy Policy goals by September 30, 2006.

Fee allocation: \$93.5K

- 10.1.2 Complete Fast Flux Test Facility Criticality Analysis with Advanced Neutron Absorber plate material per the National Spent Nuclear Fuel Program (NSNFP) QA procedures by August 31, 2006.

Fee allocation: \$93.5K

- 10.1.3 Issue an interim report to DOE documenting results of Vacuum Induction Melting (VIM) studies performed to define:

- VIM deoxidation/desulphurization practice of Ni-Cr-Mo-Gd alloy.
- Interaction of gadolinium with VIM furnace lining.

This activity directly supports production scale up of the INL developed and patented advanced neutron absorber needed for repository disposal of DOE and commercial spent nuclear fuel. (September 30, 2006)

Fee allocation: \$93.5K

10.1.4 Submit for DOE Review a draft NRC topical report on DOE Spent Nuclear Fuel canister survivability from a transportation accident. (September 30, 2006)

Fee allocation: \$93.5K

11. Revitalize nuclear science and engineering education and training. (C-5, II 4-20-23, 101-102, 104-105) Klein/ McCoy

Endstate:

Universities are fully engaged in all of the activities of the INL including the planning of research objectives at all levels; the preparation of joint proposals to agencies for direct funding of research activities; the execution of the research objectives in alignment with the priorities of the INL, including the dissemination results. INL and campus-based user facilities are widely utilized by researchers within the INL, other national labs, and universities. Large numbers of university faculty, research staff, and students spend significant parts of their year actively working on research of direct impact to the INL's mission. The INL has two very active university consortia: the National University Consortium (NUC) comprised of the leading national university partners, and the Idaho University Consortium (IUC) comprised of the three Idaho research universities. The consortia are involved in the planning, development, and research activities in all of the research centers at the INL, especially the Center for Advanced Energy Studies (CAES). The INL is actively engaged in the support and improvement of high quality pre-college and higher education programs and curricula development.

11.1.1 Establish and achieve the following first year targets for INL / University engagement:

- Complete benchmark study and report on education programs at national labs (DOE and non-DOE) by June 30, 2006.
- Complete report that defines the criteria and establishes an index for INL/University Engagement by September 30, 2006.
- Complete report on role of INL in training the nuclear workforce by September 30, 2006.
- Establish Education Advisory Committee with members from INL, Idaho University Consortium, and National University Consortium constituencies by June 30, 2006.

Fee allocation: \$281K

11.1.2 Develop the CAES into a recognized energy research organization by completing the following milestones as defined in the CAES Project Plan (PLN/EXT-05-00729):

- Establish legal framework for CAES through appropriate MOA/MOU and other agreements to link partners and collaborating organizations by September 30, 2006.
- Establish the Energy Policy Institute in CAES by January 15, 2006.
- Create an INL process to support joint appointments for CAES Associate Director for Research and CAES Associate Director for Energy Policy and negotiate agreements with each of the three universities by April 15, 2006, as evidenced by MOA (s) between INL, ISU, UI, and BSU and the legal and financial framework for joint appointments including any required employment agreements.
- Establish CAES Affiliate Faculty Program and appoint a minimum of 5 CAES Affiliate Faculty by September 30, 2006.

Fee allocation: \$374K

11.1.3 Establish a University Academic Center of Excellence (ACE) at each of the 5 National University Consortium campuses (Oregon State, Massachusetts Institute of Technology, North Carolina State, University of New Mexico, and Ohio State), and establish one combined Idaho University Consortium University ACE by September 30, 2006, evidenced by the following:

- Director for each ACE is appointed.
- Documented ceremonial designation of each center by the sponsoring university.
- Organizational workshop conducted by each ACE to promote interaction with the research community and INL.

Fee allocation: \$281K

12. Establish and apply three resource networks. Bennett/McCoy

Endstate:

The INL derives significant benefits from three interconnected networks that serve to communicate its goals and opportunities effectively, thereby drawing the needed resources of academia, laboratories and industries to accomplish its major objectives. Three resource networks are established: First is an academic network centered on

the CAES hub, having five regional nodes at MIT, NCSU, Ohio State, UNM and Oregon State and three Idaho nodes at Idaho State, Boise State and the University of Idaho. This network benefits the universities by revitalizing their nuclear science and engineering programs with opportunities to define leading-edge research in support of DOE's mission and build careers for their students and faculty. The second is an industrial network, initially centered on the ATR and the INL's associated materials examination and fuel cycle test facilities and broader energy security capabilities such as the Critical Infrastructure Test Range. It is an active channel for executing R&D work by mobilizing the necessary facilities and human resources on new projects and expanding programs in energy security. The third is a laboratory network with U.S. national laboratories, initially centered on the NGNP project and the AFCI, but now expanded to include a variety of major projects in advanced reactors and fuel cycle technologies, as well as a variety of international laboratories and institutions. There are national and international nodes, for example, at MIT (MITR-II), ORNL (HIFR and other), JNC (Joyo), and CEA (Atalante and other). Like the industrial network, it is also an active channel for executing R&D work.

Note: No measure proposed for Fiscal Year 2006 in Objective 12.

19.2 DOE Subjective Evaluation of Science and Engineering Capability. Rogers/ Furstenau, McCoy

Demonstrate near-term progress in developing and maintaining the science and engineering capabilities at INL to perform work to support our missions in nuclear energy, home land security, and energy security.

Progress in developing science and engineering capability and culture will be evidenced by progress in the following areas:

- Increasing external recognition through creative works, and relationships with regional and national universities, and professional societies/organizations.
- Establishing external review committees to support developing capabilities.
- Developing effective programs to support staff development and scientific recognition including mentoring.
- Increasing research and development that crosscuts major research missions.
- Maintaining critical staff.
- Achieving measures within the FWP cost and schedule baselines.

A to A+: Significantly advance all aspects of capabilities
B+: Significantly advance most aspects of capabilities
B: Significantly advance at least one aspect of capabilities
C: Maintain and enhance current capabilities and performance evident in rates of publication, awards, recognition, etc.

D: Lose significant needed capabilities and performance evident in rates of publication, awards, recognition, etc.

F: Gross scientific incompetence and/or scientific fraud.

Fee allocation: \$561K

Award Fee Schedule for FY06:

A to A+ -- 98 to 100%

B+ -- 90 to 97%

B -- 80 to 89%

C -- 0 to 79%

D -- 0

Critical Enablers (objectives 13 – 18)

Fee: 34%

13. Develop public trust and confidence in INL and nuclear energy. (C-2, 9, II 4-103) Lindsay, Lake/Furstenau (Bugger)

Endstate:

The nation has a renewed public trust and confidence in nuclear energy. Nuclear energy programs and initiatives are supported through the expressed statements of decision makers and opinion leaders at all levels, and supported by the public.

13.1.1 After DOE review and approval of revision 2 of the contractor's plan "Building Public Trust and Confidence in the Idaho National Laboratory and Nuclear Energy: A Strategic Communications Plan," adopt the plan and its deliverables as a measure of contractor performance. Contractor performance will be measured by whether it produces all of the deliverables identified in the plan by the due dates identified in the plan.

Fee allocation: \$187K

14. Demonstrate world-leading safety, environmental and operational performance. (C-8, 12 - 13, II 4-4, 27-31, 101-102, 103, 109-109, 111) Williams, Alvarez Richardson, Kudsini/Wilbur (Beausoleil)

Endstate:

The INL is recognized for its integrated Human Performance and Behavior Based safety process that has effected a 50% improvement in injury/illness rates within a ten-year period and demonstrates a continuous improvement trend. External reviews and certifications (VPP, ISO 14001, ISMS, etc.), technical publications, participation in international nuclear industry forums, and offering globally attended reactor technology and safety courses validate the INL's status as world-class safety, environmental and operational performers.

14.1.1 Achieve the selected items in the FY 2006 INL Safety Performance Objectives, Measures and Commitments (SPOMC).

Fee allocation: \$560K

High priority commitments have been designated to ensure focus on critical activities that must be achieved to demonstrate world-leading safety, environmental, and operational performance.

- To earn 100% of fee, BEA must achieve all of the high priority commitments and achieve at least 3 of the 4 other selected commitments.
- To earn 95% of the fee, BEA must achieve all of the high priority commitments and achieve at least 2 of the 4 other selected commitments.
- To earn 90% of the fee, BEA must achieve high priority commitments #1-3, VPP Merit Status, and 3 of the 4 other selected commitments.
- To earn 80% of the fee, BEA must achieve 3 of high priority commitments and 2 of the 4 other selected commitments.
- To earn 60% of the fee, BEA must achieve 2 of the high priority commitments and 3 of the 4 other selected commitments.

FY 2006 COMMITMENTS

High Priority

- * 1. Successfully pass the DOE Phase I Verification of the INL ISMS.
- 2. Attain ISO 14001 Certification for the INL EMS.
- 3. Complete FY 2006 scheduled integrated behavior-based safety/human performance training and implementation.
- 4. Attain VPP Star status for the INL Safety and Health Program.
- 5. Complete FY 2006 scheduled actions** in PLN-1838, "Electrical Safety Improvement Plan."

Other Selected Commitments

- 1. Complete FY 2006 scheduled actions** in PLN-13090, "Implementation of Quality Assurance Graded Approach."
- 2. Develop and implement pollution prevention and energy efficiency actions for FY 2006.
- 3. Complete FY 2006 scheduled enforceable environmental milestones.
- 4. Revise the Contractor Assurance System description to address requirements in DOE Order 226.1, *Implementation of Department of Energy Oversight Policy* and submit to DOE-ID for approval.

- * Fee will be earned provisionally if DOE is not able to perform the ISMS Phase I Verification in this reporting period.

** Changes to scheduled action completion dates within FY 2006 may be made at the discretion of BEA. Changes to scheduled action completion dates into FY 2007 and beyond require DOE-ID Technical Monitor concurrence.

14.1.2 ATR Design Basis Reconstitution (DBR) Program. The following must be accomplished:

- DBR shall Develop DBRP Resource Loaded Project Schedule and submit to ID by February 15, 2006;
- DBR shall initiate and complete Design Basis Document Preparation according to the resource loaded project schedule for those systems and/or topics listed to be completed by September 30, 2006. NOTE: The resource loaded project schedule will be available to DOE by February 15, 2006, and will be the baseline schedule against which performance of this measure will be judged. By March 1, 2006, ID and BEA will agree to sub-allocated amounts of fee for specific systems and/or topics listed to be completed by September 30, 2006.
- A DBR review of the Accident Analysis Chapter of the ATR Upgraded Safety Analysis Report (UFSAR Chapter 15) will be completed by September 30, 2006.

Fee allocation: \$467.5K

14.1.3 ATR Life Extension Program (LEP). The following measures shall be completed for this incentive (These measures are based on funding levels of the ATR LEP as submitted by INL in FY06 funding guidance letter):

Measure 1 - Material Condition Assessment: Complete material condition assessments for 10 ATR systems and issue a report documenting the results of these assessments by September 30, 2006.

Fee allocation: \$150K

Measure 2 – Seismic Evaluation: issue a final SSI Report (Task 5 as identified in PLN-588 Rev 2) by September 30, 2006.

Fee allocation: \$100K

Measure 3 - Probabilistic Risk Assessment: Complete the ATR System Fault Tree Analysis Update (Task 4.2.4 as defined in PLN-2047 Rev 0, “*Advanced Test Reactor Probabilistic Safety Assessment Program Plan*”) and issue draft report documenting results by September 30, 2006.

Fee allocation: \$100K

Measure 4 – Project Strategy: Develop and issue a capital project strategy for ATR. The strategy should identify capital upgrades, operating funding projects or capital equipment replacements BEA considers appropriate to maintain and improve the ATR safety posture. Additionally, the plan should address upgrade projects needed to support continued operation of the ATR, based on current material condition knowledge. The strategy shall present the scope, projected range of costs, and schedule for completing upgrades/modifications/replacements to ATR, and shall include a prioritized list of projects for inclusion in the INL Ten Year Site Plan (TYSP). The final capital projects strategy shall be included as part of the June 2006 update to the TYSP.

Fee allocation: \$50K

Measure 5 – Project Planning: Based on the approved Capital Project Strategy, prepare and deliver a complete/final Critical Decision (CD) – 0 documentation package for the agreed upon highest priority Line Item Capital Projects (LICP) (one or two projects) identified in the Capital Project Strategy to DOE by June 30, 2006.

Fee allocation: \$67K

14.1.4 Achieve the planned FY 2006 milestones to implement Design Basis Threat requirements within 10% of baseline (on quarterly basis) by September 30, 2006.

Fee allocation: \$374K

14.1.5 Define testing criteria for FY 2006 scope for systems tests to support Office of Security and Safety Performance Assurance by January 2006 and complete systems tests to defined performance expectations by September 30, 2006.

Fee allocation: \$187K

14.1.6 Achieve SMC Production rates.

Measure 1 Complete SA production. Produce 250 units according to the agreed upon specification, and in accordance with the SMC annual budget. To earn full fee for this measure, produce 250 units by September 30, 2006. If less than the required units are produced there will be a reduction of \$10K for each unit not produced. No fee will be earned if less than 225 units are completed.

Fee allocation: \$250K

Measure 2 Complete AB production. Produce 125 units with 100% quality acceptance according to the agreed upon specification and in accordance with the SMC annual budget. To earn full fee for this measure, produce 125 units by September 30, 2006. If less than the required units are produced there will be a reduction of \$20K for each unit not produced. No fee will be earned if less than 100 units are completed by September 30, 2006.

Fee allocation: \$500K

15. Create three modern laboratory campuses. (II 4-29, 31, 101-102, 108 -109, 111)
Johnson/Wilbur (Jones)

Endstate:

The INL has consolidated facilities in three primary campuses dedicated fully or in part to research and development activities. These campuses are a combination of over 400,000 sq. ft. of newly constructed facilities, and pre-existing facilities that have been renovated to meet mission demands. The INL's offices, laboratories, general purpose and common use space have been incorporated into an overall INL Space Management System. This management system has driven the optimization of all types of space. A total of 1,100,000 sq. ft. of facilities no longer needed for the INL mission have been placed in a minimal cost status or transferred to another entity for use or decommissioning. Deferred maintenance has been considerably reduced as a result of the implementation of the campus concept and space optimization efforts.

15.1.1 Achieve footprint reduction of 100,000 sq. ft.

Footprint reductions include the following:

- Square footage for facility leases that are terminated.
- Square footage placed in cold, dark, dry condition (min-safe condition as defined by DOE).
- Square footage transferred to other entities.
- Square footage deactivated and demolished.
- Square footage that falls under State Historical Preservation Office (SHPO) jurisdiction but otherwise could be considered deactivated and demolished.

Fee will be calculated on a per square foot basis. Total fee allocated /100,000 = per square foot fee. Fee earned = per square foot fee * total square footage reduced.

Fee allocation: \$187K

- 15.1.2 Obtain DOE approval to construct a third party financed laboratory facility at the Science and Technology Campus.

The current guidance provided by DOE titled "Interim Guidance for Evaluating Certain Contractor Proposals to Obtain the Use of Real Property" will be followed. Completion of this measure would consist of Mission Need (CD-0) and Conceptual Design (CD-1) approval of the project by DOE by September 30, 2006.

Fee allocation: \$374K

- 15.1.3 Modify the INL Ten Year Site Plan to support deliverables required by Section 955(c) of the Energy Policy Act of 2005.

- Complete Ten Year Site Plan update by March 1, 2006.
- Incorporate comments from the DOE-ID sponsored independent review into the plan by June 1, 2006.
- Complete revision by August 1, 2006, including draft revision to DOE by June 1, 2006, for review.

Fee allocation: \$374K

- 16. Develop, recruit and retain a world-class workforce.** (C-2, 10, II 4-8, 16-17, 20-23, 108-109) Arnold/McCoy

Endstate:

The INL has established employee development programs to ensure INL's human capital investments support a world-class laboratory and programmatic growth. A total of 50 strategic hires are completed by FY10. A diverse world-class workforce is sustained by INL with the critical skills that drive INL's preeminence in nuclear science and engineering.

- 16.1.1 Based on DOE approval of a comprehensive, competitive benefits package, achieve 10 (total) strategic hires (offers extended & offers accepted) in the nuclear, national and homeland security, and/or science and technology directorates that directly support INL mission and vision by September 30, 2006. Strategic hires are defined as senior scientists or engineers with a national and/or international reputation and established area of program support relevant to the INL mission and vision. Each strategic hire will be documented with a letter describing his or her qualifications.

Fee allocation: \$561K

17. Adopt best-in-class laboratory management systems and information technology. (C-9 - 10, II 4-3-7, 27-31, 101-102, 108-109, 111) Sack/Jensen

Endstate:

INL Management Systems and Information Technology are vital process infrastructures that:

- Further the mission of the laboratory with world-class infrastructure as measured by the applicable benchmarking comparisons with industry and within the DOE complex.
- Provide cost-effective, efficient, customer-oriented services and operate under the umbrella of continuous improvement, which are structured on a graded, risk-based approach, with inherent controls, balances and crosschecks commensurate with the risks.
- Enable high performance and scientific computing through a suite of computational tools and the internal/external bandwidth necessary for INL scientists to access world-class high performance computers.
- Incorporate an INL enterprise-wide IT architecture that provides the flexibility and vendor independence for the INL to select of 'best of breed', cost effective, and timely IT solutions.
- Provide the level of cyber security appropriate to manage the laboratory's digital risk with the minimum investment necessary to achieve this protection.
- Provide an electronic collaboration environment for world-class international research, strategic partners, universities, and INL scientists.

17.1.1 Improve INL IT support to mission achievement by completing the following milestones:

- Full operation of the Nuclear Collaboration Portal established by August 30, 2006. Operation will be defined as a public area for comment and two private areas from candidate areas such as: AFCI, CAES, Gene, Utility Advisory Board, Battelle Nuclear Labs, or ANS.
- Scientific Computing Infrastructure strategy completed and a central support structure is implemented by June 30, 2006. An Information Technology (IT) strategy for supporting INL High Performance Computing (HPC) stakeholders will be identified. The strategy will feature a central IT support organization, a newly hired Scientific Computing manager, improved funding mechanisms facilitating technical computing, and a collaborative implementation with applicable cyber security and service delivery agreements between IT and primary HPC customers.
- Full operability of the OC-48 external laboratory network connectivity is established by July 30, 2006. Full operability is measured by R&D-

related personnel's full access to this ESnet bandwidth securely for projects with 99% reliability.

Fee allocation: \$561K

18. Establish and leverage nine centers. Bennett/Furstenau

Endstate:

Nine centers at the INL have now emerged as research centers or centers of excellence. All of the centers are distinguished by leading-edge R&D in a particular science and engineering area central to the INL's mission. The centers provide technology development in the critical mission areas of their customers, notably the DOE, DOD, DHS, the intelligence community and the electric power industry. The centers also provide the focus for developing the human capital, equipment, and technologies that support the cultural change to the scientific inquiry and intellectual curiosity of a world-class laboratory.

Note: Measures for startup of centers are contained in other objective measures.

19.3 DOE Subjective Evaluation of Critical Enablers' Impact on Strategy Outcomes. Alvarez/McCoy

Demonstrate near-term progress toward:

- Defining and strengthening research management and laboratory operations practices through enhanced strategic and business planning, more disciplined research project management and execution, and more effective use of available investment resources.
- Making and sustaining substantial improvements in safety with strong emphasis on the work environment and culture.
- Implementing standards-based management system,
- Constructing world-class facilities,
- Improving management of financial, information technology and facilities operations.
- Addressing foreign access and related security controls.
- Meeting measures within the FWP cost and schedule baselines.

Progress will be measured by DOE's evaluation of the effectiveness of the actions and accomplishments that enhance the performance of the laboratory, via culture, facilities, strategic hiring, and improved operational performance. DOE's evaluation includes an assessment of how well management has taken actions and established processes to minimize undesirable performance, and how they address problems that do occur.

Critical Enablers are having the desired impact on desired performance as evidenced by:

- Design and implementation of new laboratory management and information technology systems focused on enabling R&D,
- Implementation of human resource practices that attract and retain strategic hires and that provide incentives to motivate laboratory staff to high standards of excellence,
- Advances in the acquisition of world-class facilities through DOE approval of Critical Decisions (DOE 413.3),
- Startup of new centers,
- Excellence in community relations, and
- Achieving Measures within FWP cost and schedule baselines.

As measured by: results of contractor assurance, customer, staff, and community feedback; assessments and surveillances; situational awareness; program reviews; external reviews; workshops, and third party testing/validation.

- A to A+: Significant progress across all improvement areas, positive validations by external reviews (e.g., ISO, OA), avoidance of high profile incidents, effective implementation of management system transformational initiatives according to plan, change is managed according to approved processes, and operational commitments are met.
- B+: Significant progress across most improvement areas, external reviews for the most part give a passing grade with few improvement areas, avoidance of high profile incidents, most transformational initiatives are on schedule, change is managed according to approved processes, operational commitments are met with few exceptions.
- B: Significant progress across one or more improvement areas and progress on a majority of areas, external reviews receive at least a passing grade with few weaknesses noted, avoidance of high profile incidents, a majority of transformational initiatives are on schedule, change is managed according to approved processes, operational commitments are met with some exceptions
- C: Progress across a few improvement areas, external reviews note several weaknesses, avoidance of high profile incidents, some transformational initiatives are on schedule, change is managed according to approved processes.
- D: Fails to make progress on improvement areas, external reviews indicate failing performance, transformational initiatives are not progressing as scheduled, change is inadequately managed.
- F: Fails to implement change in improvement areas or occurrence of a high profile incident that demonstrates gross incompetence in program execution.

Fee allocation: \$561K

Award Fee Schedule for FY06:

A to A+ -- 98 to 100%

B+ -- 90 to 97%

B -- 80 to 89%

C -- 0 to 79%

D -- 0

20.1 Reinvestment in the INL Facilities and Capabilities. Johnson, Sack/Keele

Endstate:

The Idaho National Laboratory is operated with an internal environment of continuous improvement and collaborative, mission-driven, risk-based resource allocation resulting in the most cost-effective use of resources. There has been a ten-year, \$200M cumulative reinvestment in the laboratory.