

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE 1 OF 2
2. AMENDMENT/MODIFICATION NO. M083	3. EFFECTIVE DATE July 7 th , 2009	4. REQUISITION/PURCHASE REQ. NO. NA27344	5. PROJECT NO. (If applicable)
6. ISSUED BY CODE		7. ADMINISTERED BY (If other than Item 6)	
U.S. Department of Energy/NNSA SC M&O Contract Support Division P.O. Box 5400 Albuquerque, NM 87185-5400		U.S. Department of Energy/NNSA Livermore Site Office M/S L-293 7000 East Avenue Livermore, CA 94550	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, country, State, and ZIP Code)		9A. AMENDMENT OF SOLICITATION NO.	
Lawrence Livermore National Security, LLC Lawrence Livermore National Laboratory M/S L-294 7000 East Avenue Livermore, CA 94550			
		9B. DATED (SEE ITEM 11)	
		X	
		10A. MODIFICATION OF CONTRACT/ ORDER NO. DE-AC52-07NA27344	
		10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE	May 8, 2007	
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 or as amended by one of the following methods: (a) By completing Items 8 and 25, 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 ACKNOWLEDGEMENT 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) see attached			
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 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 data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103 (b).			
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: X Clause H-19 Modification Authority, Clause I-120 changes, and Mutual Agreement			
D. OTHER (Specify type of modification and authority)			
E. IMPORTANT: Contractor __ is not, <u>X</u> is required to sign this document and return <u>2</u> 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 include American Recovery and Reinvestment Act of 2009 WA#: AT/NS50/9/ARRA-1 in clause B-9999. The work to be performed using funds obligated under this Contract and appropriated under the Recovery Act is subject to special statutory conditions under the Recovery Act. All other terms and conditions remain unchanged. Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.			
15A. NAME AND TITLE OF SIGNER (Type or print) Paul Rosenkoetter, Director, Prime Contract Management		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Ronna Promani, Contracting Officer U.S. Department of Energy/NNSA	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 7/8/09	16B. UNITED STATES OF AMERICA By _____ (Signature of Contracting Officer)	16C. DATE SIGNED 7/8/09
30-105		STANDARD FORM 30	

The following changes are hereby made to the Contract:

B-9999 American Recovery and Reinvestment Act Work Values:

Total Funds authorized including maximum available performance fee, if any, for work funded under the American Recovery and Reinvestment Act (Recovery Act).

<u>Year</u>	<u>Total Funds Authorized</u>
2009	Work Authorization KB/NS50/9/ARRA-1: \$675,000
2009	Work Authorization AT/NS50/9/ARRA-1: \$728,000





The Contractor shall not start work funded under the Recovery Act until the Contractor receives a Work Authorization and funds are placed into the Contract. The Contractor is authorized to incur costs not to exceed the amount as stipulated under each Work Authorization, consistent with the other Contract terms and conditions, including the Work Authorization(s). Additional fee, if any, for the performance of work under the Recovery Act shall be determined by NNSA in accordance with Section B-2 and applicable NNSA policy.

No other changes are made as a result of this modification. All other terms and conditions remain unchanged.

**U.S. DEPARTMENT OF ENERGY
CONTRACT WORK AUTHORIZATION
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009: 89-09/10-0227**

1a. Project Title: Fusion Energy Sciences – DIII-D Facility Upgrades (2005290)		1b. Work Proposal Number (if applicable): Various	
2. Headquarters Program Point of Contact. Name: Edmund Synakowski Organization Code: SC-24 Telephone No.: (301) 903-4941			
3. Headquarters Budget Point of Contact. Name: Karen Summers Organization Code: SC-41 Telephone No.: (301) 903-4947			
4. Responsible Program: Fusion Energy Sciences		5. Responsible Secretarial Officer: Under Secretary for Science	
6. Responsible Field Organization: Livermore Site Office			
7a. Site and Facility Management Contractor: Lawrence Livermore Nat'l Security (Lawrence Livermore National Laboratory)		7b. Contractor Point of Contact. Name: Steve Allen Telephone No.: 858-455-4137	
8. Work Authorization Number: AT/NS50/9/ARRA-1		9. Revision Number: 00	
10. Funds Authorized (\$ in thousands). B&R Code: AT Previous: \$0 Change: +\$728 Current: \$728*			
11. Performance Period Covered by Funds. From: 02/17/09 To: 09/30/10		12. Work Start Date: 6/2009	13. Expected Completion Date: 9/2011
14. Statement of Work: see attached <p>This Work Authorization is issued for the sole purpose of authorizing work in support of the American Recovery and Reinvestment Act of 2009, (Pub. L. 111-5) (Recovery Act). All contract terms and conditions apply to the work identified herein, in particular contract provision H.999 applies. The work described in this work authorization shall be performed using funds obligated under the contract, appropriated under the Recovery Act and as such is subject to special statutory conditions.</p> <p>The Office of Science (SC) is committed to conducting all work authorized herein, in a manner that ensures protection of the workers, the public, and the environment. Protecting the workers, the public, and the environment is a direct and individual responsibility of all SC managers and SC-supported contractors. Funds provided by SC will be applied as necessary to ensure that all supported activities are conducted safely and in an environmentally conscientious manner. Only work conducted in this manner will be supported.</p> <p><u>Specific Recovery Act Statement of Work:</u></p> <p>\$728,000 is provided under AT5502 to procure and install two high-speed infrared camera systems on the DIII-D tokamak. These cameras will measure the surface heat flux on the divertor and other plasma facing components in the tokamak. In addition, funds will support design and fabrication of a wide-angle IR/visible periscope for installation on DIII-D. This periscope is similar to instrumentation proposed for ITER that the U.S. plans to supply as part of its in-kind contributions. An additional \$82,000 is anticipated in a subsequent AFP following the risk assessment process, bringing the total to \$810,000.</p> <p>Attachment A, Contractor Recovery Act Performance Requirements, identifies the Contractor Recovery Act Schedule Milestones, Performance Measures and Outcomes and Deliverables for this Work Authorization. The contractor's performance against the identified requirements in Attachment A will be evaluated under the Office of Science laboratory appraisal process.</p>			

Continuation – DIII-D Facility Upgrades (2005290) - LLNL
AT/NS50/9/ARRA-1, Rev 00

15. Reporting Requirements (Status reports, scientific and technical information or similar): The recipient of funding in this Work Authorization is responsible for meeting all reporting requirements established by the Department of Energy for activities funded by the American Recovery and Reinvestment Act of 2009.		
16. Work Authorization Program Official. Name (typed): Edmund Synakowski	Signature: 	Date: 6/30/09
17. DOE Field Office Representative Name (typed): CONTRACTING OFFICER	Signature: 	Date: 7/8/09
18. Contractor's Authorized Representative. Name (typed): Paul E. Rosenkoetter	Signature: 	Date: 7/9/09
19. DOE Contract Officer (Designated representative). Name (typed): CONTRACTING OFFICER	Signature: 	Date: 7/8/09

* Includes Operating of \$328,000 and Equipment of \$400,000.

**ATTACHMENT A – CONTRACTOR RECOVERY ACT PERFORMANCE REQUIREMENTS
 DIII-D Facility Upgrades (2005290) - LLNL
 AT/NS50/9/ARRA-1, Rev 00**

Section A: <u>Contractor Recovery Act Schedule or Milestone Requirements</u>	
Begin engineering design for IR TV camera hardware on DIII-D	July 2009
Place procurements for two high-speed IR camera systems	August 2009
Begin design of the wide-angle visible/IR periscope for DIII-D	September 2009
Begin hardware fabrication and installation	October 2009
Install IR camera systems and viewing optics on DIII-D during the Long Torus Opening Activity	February 2011
Commission high-speed IR camera and periscope systems	July 2011
Section B: <u>Contractor Recovery Act Performance Outcomes and Measures</u>	
Camera and periscope system designs meet all requirements for installation on DIII-D	
Completed camera systems operate during DIII-D discharges to allow surface heat-flux measurements.	
Variation from total cost of effort will be less than 10%	
The task schedule will be coordinated and managed in conjunction with the planned DIII-D Long Torus Opening Activity (LTOA) such that this task does not delay the scheduled completion of the LTOA	
Initial data from the high speed IR TVs will be reported at open science meetings and conferences	
Section C: <u>Contractor Recovery Act Deliverables</u>	
The deliverable will be simultaneous measurements of surface heat flux at multiple locations inside the DIII-D tokamak using high speed cameras and a wide-angle periscope.	

American Recovery and Reinvestment Act Requirements

- A. The specific Statement of Work funded by this Work Authorization pursuant to contract DE-AC52-07NA27344 clause B-9999, clause H-9999 and to the American Recovery and Reinvestment Act, Pub. L. 111-5, (Recovery Act) is as follows:

Recovery Act Project
Statement of Work
▪ LLNL will procure and install two high-speed infrared camera systems on the D-IIID Tokamak. In addition, funds will support design and fabrication of a wide-angle IR/visible periscope for installation on the D-III-D.
Total overall estimated cost is \$810,000 including full burdens and fee.

- B. The specific milestones for this Work Authorization are as follows:

- 4Q FY 09: Begin engineering design for IR TV Camera Hardware on D-III-D.
- 4Q FY 09: Place procurements for two high-speed IR camera systems.
- 4Q FY 09: Begin design of the wide- angle visible/IR periscope doe D-III-D.
- 1Q FY 10: Begin hardware fabrication and installation.
- 2Q FY 11: Install IR camerasystems and viewing optics on D-III-D during the Long Torus Opening Activity.
- 4Q FY 11: Commission high-speed IR camera and periscope systems

- C. The specific deliverables for this Work Authorization are as follows:

- Simultaneous measurements of surface heat flux at multiple locations inside the D-III-Tokamak using high speed cameras and a wide angle periscope.
- Weekly reporting against the milestones in Paragraph B above shall be submitted each Thursday by 5:00pm (Pacific time) to: Mr. Samuel Brinker at samuel.brinker@oak.doe.gov, Mr. Edmund Synakowski at edmund.synakowski@science.doe.gov, and Ms. Karen Summers at karen.summers@science.doe.gov. Negative reports shall be submitted.

- D. The specific performance measures/expectations must be connected to the Recovery Act work under this Work Authorization. The specific performance measures/expectations for this Work Authorization are as follows:

- Camera and periscopesystem design meet all requirements for installation on DIII-D.
- Completed camera systems operate during DIII-D discharges to allow surface heat-flux measurements.
- Variation from total cost of the effort will be less than 10%

- The task schedule will be coordinated and managed in conjunction with the planned DIII-D Long Torus Opening Activity (LTOA) such that this task does not delay the scheduled completion of the LTOA.
- Initial data from the high speed IR TVs will be reported at open science meetings and conferences.

E. The funds authorized for this Work Authorization are subject to the following:

Pursuant to clause B-9999 and the clause in Section I, entitled “Obligation of Funds,” total funds in the amount \$728,000 are obligated herein and made available for payment of allowable costs and fee earned related only to the Recovery Act work from *July 7th, 2009* of this Work Authorization *AT/NS50/9/ARRA-1* through *September 30th, 2011*. The associated accounting and appropriation data can be found in modification A-084.

F. The other requirements mandated by the American Recovery and Reinvestment Act, which is applicable only to the Recovery Act work, are as follows:

1. Subcontracts: The Contractor is informed of the Government’s preference, to the maximum extent possible, when issuing subcontracts funded under this Work Authorization for Recovery Act work, the subcontracts should be awarded as fixed priced actions using competitive procedures and documented accordingly in the event fixed priced/competitive procedures are not utilized.

2. Definitions:

For purposes of this paragraph, “Covered Funds” means funds expended or obligated from appropriations under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5. Covered Funds will have special accounting codes and will be identified as Recovery Act funds. Covered Funds must be reimbursed by September 30, 2015.

Non-Federal employer means any employer with respect to Covered Funds – the contractor or subcontractor, as the case may be, if the contractor or subcontractor is an employer; and any professional membership organization, certification of other professional body, any agent or licensee of the Federal government, or any person acting directly or indirectly in the interest of an employer receiving Covered Funds; or with respect to Covered Funds received by a State or local government, the State or local government receiving the funds and any contractor or subcontractor receiving the funds and any contractor or subcontractor of the State or local government; and does not mean any department, agency, or other entity of the federal government.

3. Flow Down Provision

The Contractor must include the requirements (from Paragraph 2 through Paragraph 15 of this Work Authorization) in every subcontract that is funded, in whole or in

part, by the Recovery Act unless the subcontract is with an individual or otherwise specifically exempted by the language within the paragraph (or FAR clause).

4. Segregation and Payment of Costs

The Contractor must segregate the obligations and expenditures related to funding under the Recovery Act. Financial and accounting systems should be revised as necessary to segregate, track and maintain these funds apart and separate from other revenue streams. No part of the funds from the Recovery Act shall be commingled with any other funds or used for a purpose other than that of making payments for costs allowable for Recovery Act projects. The Recovery Act funds can be used in conjunction with other funding as necessary to complete projects. However, the Contractor must ensure that the project contains the authorized Treasury Accounting Symbol (TAS) approved by the Contracting Officer to ensure linkage between procurement and financial data. The Contractor should issue separate contracts (if subcontracted) for the Recovery Act project tasks to ensure compliance with the tracking and reporting requirements of the Recovery Act and related Guidance.

5. Prohibition on Use of Funds

None of the funds provided under this work authorization derived from the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 may be used for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

6. Wage Rates

All laborers and mechanics employed by the Contractor and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan numbered 14 of 1950 (64 Stat. 1267, 5 U.S.C. App.) and section 3145 of title 40 United States Code. See <http://www.dol.gov/esa/whd/contracts/dbra.htm>.

7. Publication

Information about this work will be published on the Internet and linked to the website www.recovery.gov, maintained by the Accountability and Transparency Board. The Board may exclude posting contractual or other information on the website on a case-by-case basis when necessary to protect national security or to protect information that is not subject to disclosure under sections 552 and 552a of title 5, United States Code.

8. Registration requirements

The Contractor shall ensure that all first-tier subcontractors have a DUNS number and are registered in the Central Contractor Registration (CCR) within 10 days after receipt of subcontract.

9. Utilization of Small Business

The Contractor shall to the maximum extent practicable give a preference to small business in the award of subcontracts for projects funded by Recovery Act dollars.

10. Access

As required by the Recovery Act, the Recovery Accountability and Transparency Board (The Board) and its representatives are authorized to conduct audits and reviews of contracts that use Recovery Act funds. In addition to having access to records of the contractor and any of its subcontractors, and the right to interview any officer or employee of the contractor or subcontractor, the Board is also authorized to issue and enforce subpoenas to compel the testimony at public hearings, or otherwise, of persons who are not Federal officers or employees.

11. Certification

In order for the Contracting Officer to accept any products or services funded by the Recovery Act, the Contractor shall certify that the items were delivered and/or work was performed for a purpose authorized under the Recovery Act.

Note: The following paragraphs, 12, 13, 14, and 15 are interim FAR clauses that are only applicable to this Work Authorization. These interim FAR clauses are in effect until the FAR is amended to implement, in final, provisions of the Recovery Act. The Contractor agrees that the Contracting Officer may unilaterally modify this Work Authorization to incorporate the final FAR clauses that implement the Recovery Act, and the following paragraphs will no longer be valid, and this Work Authorization will be considered modified to add the final FAR clauses.

12. FAR 52.204-11 American Recovery and Reinvestment Act--Reporting Requirements (MAR 2009)

(a) *Definitions.* As used in this clause--

Contract, as defined in FAR 2.101, means a mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing. In addition to bilateral instruments, contracts include (but are not limited to) awards and notices of awards; job orders or task letters issued

under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications. Contracts do not include grants and cooperative agreements covered by 31 U.S.C. 6301, et seq. For discussion of various types of contracts, see FAR Part 16.

First-tier subcontract means a subcontract awarded directly by a Federal Government prime contractor whose contract is funded by the Recovery Act.

Jobs created means an estimate of those new positions created and filled, or previously existing unfilled positions that are filled, as a result of funding by the American Recovery and Reinvestment Act of 2009 (Recovery Act). This definition covers only prime contractor positions established in the United States and outlying areas (see definition in FAR 2.101). The number shall be expressed as "full-time equivalent" (FTE), calculated cumulatively as all hours worked divided by the total number of hours in a full-time schedule, as defined by the contractor. For instance, two full-time employees and one part-time employee working half days would be reported as 2.5 FTE in each calendar quarter.

Jobs retained means an estimate of those previously existing filled positions that are retained as a result of funding by the American Recovery and Reinvestment Act of 2009 (Recovery Act). This definition covers only prime contractor positions established in the United States and outlying areas (see definition in FAR 2.101). The number shall be expressed as "full-time equivalent" (FTE), calculated cumulatively as all hours worked divided by the total number of hours in a full-time schedule, as defined by the contractor. For instance, two full-time employees and one part-time employee working half days would be reported as 2.5 FTE in each calendar quarter.

Total compensation means the cash and noncash dollar value earned by the executive during the contractor's past fiscal year of the following (for more information see 17 CFR 229.402(c)(2)):

(1) *Salary and bonus.*

(2) *Awards of stock, stock options, and stock appreciation rights.* Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.

(3) *Earnings for services under non-equity incentive plans.* Does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.

(4) *Change in pension value.* This is the change in present value of defined benefit and actuarial pension plans.

(5) *Above-market earnings on deferred compensation which is not tax-qualified.*

(6) *Other compensation.* For example, severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property if the value for the executive exceeds \$10,000.

(b) This contract requires the contractor to provide products and/or services that are funded under the American Recovery and Reinvestment Act of 2009 (Recovery Act). Section 1512(c) of the Recovery Act requires each contractor to report on its use of Recovery Act funds under this contract. These reports will be made available to the public.

(c) Reports from contractors for all work funded, in whole or in part, by the Recovery Act, and for which an invoice is submitted prior to June 30, 2009, are due no later than July 10, 2009. Thereafter, reports shall be submitted no later than the 10th day after the end of each calendar quarter.

(d) The Contractor shall report the following information, using the online reporting tool available at <http://www.FederalReporting.gov>.

(1) The Government contract and order number, as applicable.

(2) The amount of Recovery Act funds invoiced by the contractor for the reporting period. A cumulative amount from all the reports submitted for this action will be maintained by the government's on-line reporting tool.

(3) A list of all significant services performed or supplies delivered, including construction, for which the contractor invoiced in this calendar quarter.

(4) Program or project title, if any.

(5) A description of the overall purpose and expected outcomes or results of the contract, including significant deliverables and, if appropriate, associated units of measure.

(6) An assessment of the contractor's progress towards the completion of the overall purpose and expected outcomes or results of the contract (i.e., not started, less than 50 percent completed, completed 50 percent or more, or fully completed). This covers the contract (or portion thereof) funded by the Recovery Act.

(7) A narrative description of the employment impact of work funded by the Recovery Act. This narrative should be cumulative for each calendar quarter and

only address the impact on the contractor's workforce. At a minimum, the contractor shall provide--

- (i) A brief description of the types of jobs created and jobs retained in the United States and outlying areas (see definition in FAR 2.101). This description may rely on job titles, broader labor categories, or the contractor's existing practice for describing jobs as long as the terms used are widely understood and describe the general nature of the work; and
- (ii) An estimate of the number of jobs created and jobs retained by the prime contractor, in the United States and outlying areas. A job cannot be reported as both created and retained.

(8) Names and total compensation of each of the five most highly compensated officers of the Contractor for the calendar year in which the contract is awarded if--

(i) In the Contractor's preceding fiscal year, the Contractor received--

(A) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(B) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(ii) The public does not have access to information about the compensation of the senior executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986.

(9) For subcontracts valued at less than \$25,000 or any subcontracts awarded to an individual, or subcontracts awarded to a subcontractor that in the previous tax year had gross income under \$300,000, the Contractor shall only report the aggregate number of such first tier subcontracts awarded in the quarter and their aggregate total dollar amount.

(10) For any first-tier subcontract funded in whole or in part under the Recovery Act, that is over \$25,000 and not subject to reporting under paragraph 9, the contractor shall require the subcontractor to provide the information described in (i), (ix), (x), and (xi) below to the contractor for the purposes of the quarterly report. The contractor shall advise the subcontractor that the information will be made available to the public as required by section 1512 of the Recovery Act. The contractor shall provide detailed information on these first-tier subcontracts as

follows:

(i) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has a parent company.

(ii) Name of the subcontractor.

(iii) Amount of the subcontract award.

(iv) Date of the subcontract award.

(v) The applicable North American Industry Classification System (NAICS) code.

(vi) Funding agency.

(vii) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.

(viii) Subcontract number (the contract number assigned by the prime contractor).

(ix) Subcontractor's physical address including street address, city, state, and country. Also include the nine-digit zip code and congressional district if applicable.

(x) Subcontract primary performance location including street address, city, state, and country. Also include the nine-digit zip code and congressional district if applicable.

(xi) Names and total compensation of each of the subcontractor's five most highly compensated officers, for the calendar year in which the subcontract is awarded if--

(A) In the subcontractor's preceding fiscal year, the subcontractor received--

(1) 80 percent or more of its annual gross revenues in Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; and

(2) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; and

(B) The public does not have access to information about the compensation of the senior executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986.

13. FAR 52.215-2 Audit and Records -- Negotiation (Alt I) (Mar 2009)

(a) As used in this clause, “records” includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) *Examination of costs.* If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor’s plants, or parts of them, engaged in performing the contract.

(c) *Cost or pricing data.* If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor’s records, including computations and projections, related to --

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the contract, subcontract, or modification; or
- (4) Performance of the contract, subcontract or modification.

(d) *Comptroller General or Inspector General.* (1) The Comptroller General of the United States, an appropriate Inspector General appointed under section 3 or 8G of the Inspector General Act of 1978 (5 U.S.C. App.), or an authorized representative of either of the foregoing officials, shall have access to and the right to--

(i) Examine any of the Contractor's or any subcontractor's records that pertains to and involves transactions relating to this contract or a subcontract hereunder; and

(ii) Interview any officer or employee regarding such transactions.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) *Reports.* If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating --

(1) The effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports; and

(2) The data reported.

(f) *Availability.* The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition -

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g)(1) Except as provided in paragraph (g)(2) of this clause, the Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract. The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(2) The authority of the Inspector General under paragraph (d)(1)(ii) of this clause does not flow down to subcontracts.

14. Buy American. **52.225-21 Required Use of American Iron, Steel, and Other Manufactured Goods--Buy American Act--Construction Materials (MAR 2009) and FAR 52.225-23 Required Use of American Iron, Steel, and Other Manufactured Goods--Buy American Act--Construction Materials Under Trade Agreements (MAR 2009)**

Not applicable

15. **52.203-15 Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (MAR 2009)**

(a) The Contractor shall post notice of employees rights and remedies for whistleblower protections provided under section 1553 of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5).

(b) The Contractor shall include the substance of this clause including this paragraph (b) in all subcontracts.



Department of Energy
Washington, DC 20585

MEMORANDUM FOR: DISTRIBUTION
(See Attached List)

FROM:

for EDMUND SYNAKOWSKI *Ed Synakowski*
ASSOCIATE DIRECTOR
FOR FUSION ENERGY SCIENCES
OFFICE OF SCIENCE

SUBJECT: American Recovery and Reinvestment Act Initial Approved
Funding Program Guidance

This guidance is for funding made available by the American Recovery and Reinvestment Act of 2009. This act includes specific reporting requirements upon receipt of this funding. Further guidance will be provided as to the means recipients will use when reporting data for these requirements, but be aware that, at a minimum, the following data will be required.

1. The total amount of recovery funds received from that agency.
2. The amount of recovery funds received that were obligated and expended to projects or activities. This reporting will also include unobligated Allotment balances to facilitate reconciliations.
3. A detailed list of all projects or activities for which recovery funds were obligated and expended, including:
 - (A) The name of the project or activity;
 - (B) A description of the project or activity;
 - (C) An evaluation and milestones of the progress toward completion of the project or activity and a list of metrics that will be used to measure the performance of work; and
 - (D) An estimate of the number of jobs created and the number of jobs retained by the project or activity.
4. Detailed information on any subcontracts or subgrants awarded by the recipient to include the data elements required to comply with the Federal Funding Accountability and Transparency Act of 2006 (P.L. 109-282), allowing aggregate reporting on awards below \$25,000 or to individuals, as prescribed by the Director of OMB.

Reporting requirements only apply to the prime non-Federal recipients of Federal funding, including reporting of the sub-awards (e.g., sub-grants and subcontracts) made by these prime recipients as indicated in point 4 above. Each subsequent sub-recipient is not required to report.



Reporting requirements can be found under the H Clause, entitled "H.999 Special provisions relating to work funded under American Recovery and Reinvestment Act of 2009 (Feb 2009)."

All modifications will specify schedule, milestone, and deliverable requirements. The modifications must also specify performance outcomes and measures that will be used to assess performance of the Recovery Act funds.

Recovery Act funds may be used in conjunction with other funding as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and this guidance. Obligations of Recovery Act funding must occur no later than September 30, 2010; expenditures must occur no later than September 30, 2015.

All funds provided under the Recovery Act must be obligated and expended consistent with the provisions of the Act, the text of which can be found at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?bdname=111_cong_bills&docid=f:h1enr.pdf. Additional details related to the Recovery Act can be found at www.recovery.gov. OMB's Updated Implementing Guidance for the American Recovery and Reinvestment Act of 2009 can be found at http://www.whitehouse.gov/omb/assets/memoranda_fy2009/m09-15.pdf.

The Office of Fusion Energy Sciences (FES) is committed to conducting work in a manner that ensures protection of the workers, the public, and the environment. Protecting the workers, the public and the environment is a direct and individual responsibility of all FES managers and FES-supported researchers and their staff. Funds provided by FES will be applied as necessary to ensure that all FES activities are conducted safely and in an environmentally conscientious manner. Only work conducted in this way will be supported.

The funds provided in this AFP should be used in accordance with the attached program guidance. There should not be any variance in performance from this guidance prior to changes being coordinated and approved by the appropriate headquarters program manager and documented by a program guidance letter from headquarters. This is essential to maintain accountability for the utilization of these funds.

In addition, attached are a high-level summary document and a Major Milestone table for each Recovery Act project. Weekly reporting against the milestones is required to be submitted by the Site Office POC to the SC Program Office POC, with a copy to the SC Budget Office POC, by 8:00 PM (ET) on Thursday of each week according to the attached memorandum (Reporting American Recovery and Reinvestment Act activities by Management and Operating [M&O] Contractors) from Patricia Dehmer and George Malosh dated April 21, 2009. This reporting requirement applies to both SC as well as non-SC laboratories.

Also attached, in accordance with DOE Order 412.1A, are the Work Authorizations for the Management and Operating (M&O) contractors under your cognizance.

If you have questions regarding the attached, please call Karen Summers on 301-903-4947 or the appropriate program manager at headquarters.

Attachments:

As stated

ADDRESSEE LIST – RECOVERY ACT FY 2009 FES PROGRAMMATIC
GUIDANCE

Roxanne Purucker, Manager
Chicago Office

cc: M. Sunderland, CH (mary.sunderland@ch.doe.gov)
D. Feller, CH (david.feller@ch.doe.gov)
M. Foster, FES (mark.foster@science.doe.gov)

Alice C. Williams, Manager
Livermore Site Office

cc: D. Hatrup, NNSA SC (brmdwa@doeal.gov)
R. Pacheco, NNSA SC (rpacheco@doeal.gov)
J. Hodges, LSO/BMD (Jeffrey.hodges@oak.doe.gov)
G. Miller, Director, LLNL (miller21@llnl.gov)
C. Bothwell, LLNL (bothwell1@llnl.gov)

Aundra M. Richards, Manager
Berkeley Site Office

cc: R. Purucker, Manager, CH (Roxanne.purucker@ch.doe.gov)
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Gerald G. Boyd, Manager
Oak Ridge Office

cc: C. Seymour, OR (seymourcm@oro.doe.gov)
T. Mason, Director, ORNL (masont@ornl.gov)
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Jerry W. Faul, Manager
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M. Patty Wagner, Manager
Sandia Site Office

cc: D. Hatstrup, NNSA SC/BRMD (brmdwa@doeal.gov)
R. Pacheco, NNSA SC (rpacheco@doeal.gov)
D. Sanchez, SSO (dsanchez@doeal.gov)
R. Nygren, SNL (renygre@sandia.gov)



Department of Energy
Washington, DC 20585

April 21, 2009

MEMORANDUM FOR DISTRIBUTION

FROM:

PATRICIA DEHMER *Patricia M. Dehmer*
ACTING DIRECTOR
OFFICE OF SCIENCE

GEORGE MALOSH *George Malosh*
DEPUTY DIRECTOR FOR FIELD OPERATIONS
OFFICE OF SCIENCE

SUBJECT:

Reporting American Recovery and Reinvestment Act activities
by Management and Operating (M&O) Contractors

To meet the White House Office of Management and Budget (OMB) and Department of Energy (DOE) weekly reporting requirements on American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5) (Recovery Act) activities, the Office of Science (SC) must collect weekly reports from each recipient receiving funds from SC through the Recovery Act. The attached point of contact (POC) list and the following guidance is provided to facilitate the process of weekly reporting of financial and activity milestones on SC Recovery Act activities conducted through the SC M&O contracts. Separate guidance will follow for reporting on financial assistance awards under the Recovery Act. The information required for the weekly reporting is identified in the attached template to be filled out by the recipient.

For purposes of reporting, the "recipient" refers to the prime contractor receiving funds, in this case the SC M&O contractor. The recipient is responsible for collecting all required reporting information from the prime contract activity and on all subsequent first tier sub-contracts. An M&O contractor "Laboratory" POC for each SC Recovery Act project is identified in the attached POC list who will be responsible for providing timely reporting directly to the Site Office on behalf of the contractor for the given Recovery Act project.

The relevant SC Site Office POC is responsible for sending the reporting information directly to the SC Program Office POC, with a copy to the SC Budget Office POC by 8:00 p.m. (ET) on Thursday of each week. Site Office POCs should work with the Laboratory POCs to identify a reasonable deadline for reporting to the Site Office to make the 8:00 p.m. (ET) Thursday deadline to SC Headquarters.

The SC Program POC will verify the information, consulting with the Site Office and Laboratory POCs as needed. The SC Program POC for each project will provide the



consolidated reporting information to the SC Budget Office POC by 4:00 p.m. (ET) each Friday, with a copy to Kathleen Klausing, SC Office of Budget Director.

As approved SC Recovery activities are initiated and the remaining Recovery Act activities receive final OMB and DOE approval, this POC list will be updated and distributed.

Kathleen Klausing will serve as the point of contact on this topic. She can be reached at 301-903-3541 or via email at kathleen.klausing@science.doe.gov.

Attachments

DISTRIBUTION

Gerald Boyd, Manager, Oak Ridge Office
Roxanne Purucker, Manager, Chicago Office
Cynthia Baebler, Manager, Ames Site Office
Ronald Lutha, Manager, Argonne Site Office
Aundra Richards, Manager, Berkeley Site Office
Michael Holland, Manager, Brookhaven Site Office
Joanna Livengood, Manager, Fermi Site Office
Johnny Moore, Manager, ORNL Site Office
Michael Weis, Manager, Pacific Northwest Site Office
Jerry Faul, Manager, Princeton Site Office
Paul Golan, Manager, Stanford Site Office
Jim Turi, Manager, Thomas Jefferson Site Office
Harriet Kung, Associate Director, Office of Basic Energy Sciences
Michael Strayer, Associate Director, Office of Advanced Scientific Computing Research
Anna Palmisano, Associate Director, Office of Biological and Environmental Research
Dennis Kovar, Associate Director, Office of Biological and Environmental Research
Gene Henry, Acting Associate Director, Office of Nuclear Physics
Steve Eckstrand, Acting Associate Director, Office of Fusion Energy Sciences
Bill Valdez, Director, Office of Workforce Development for Teachers and Scientists
Marc Jones, Associate Director, Office of Safety, Security, and Infrastructure

cc:

Julie Carruthers, SC-2
Jeffrey Salmon, SC-4
Kathleen Klausing, SC-4
Anna Lising, SC-3
Joe Arango, SC-3
Devon Streit, SC-32
Berta Schreiber, SC-32

Weekly Recovery Act Reporting: DOE Office of Science

Project Name: *[Use Official SC ARRA Activity Title]*

Reporting Period: *[provide dates for Fri. – Thurs.]*

Laboratory M&O Contractor:

WAS Number:

Laboratory POC: *[From POC list]*

SC Program POC: *[From POC list]*

Site Office POC: *[From POC list]*

SC Budget Office POC: *[From POC list]*

Total Funding Under this WAS:

FUNDING OBLIGATIONS AND OUTLAYS			
Funds Obligated This Reporting Period		Funding Outlays to Date	
Funds Obligated to Date			
Total Indirect Costs to Date			

JOBS			
	Prime Contract	First Tier Sub-contracts	
Jobs Created to Date	<i>[In FTEs]</i>	<i>[In FTEs]</i>	
Jobs Retained to Date	<i>[In FTEs]</i>	<i>[In FTEs]</i>	

RECOVERY ACT MILESTONES			
Recovery Act Milestones (From SC Program Milestone Table)	Date	Progress Towards Next Milestones	Completed (Yes/No)
<i>[Cut and paste the next target milestone to be completed from SC Program ARRA activity milestone table; this milestone table is attached to the WAS guidance letter; be certain you have the most up-to-date milestone table from SC Program POC]</i>	<i>[Milestone Due Date]</i>	<i>[Describe steps taken and general progress towards nearest milestone]</i>	
<i>[Cut and paste the second to next target milestone from SC program activity milestone table; this milestone table is attached to the WAS guidance letter]</i>	<i>[Milestone Due Date]</i>	<i>[if applicable, describe steps taken and general progress towards this milestone]</i>	

Additional Notable Milestones	Date	Progress Towards Next Milestone	Completed (Yes/No)
<i>[Add any notable milestone the contractor views that the SC program may want to consider including in the official milestone table for the ARRA activity that occurred in the current reporting period or will occur in the next reporting period]</i>	<i>[Expected Completion Date]</i>		

PERFORMANCE METRICS			
Recovery Act Milestones (From SC Program Milestone Table)	FY Quarter	Progress Towards Next Milestones	Completed (Yes/No)
<i>[Insert next "Project-Level Quarterly Performance Milestone" from the SC Programs "Project Operating Plan" (POP); i.e. cut and paste. The SC Program POC will provide the Performance Milestones once they have been finalized.]</i>	<i>[First/Second Year, Q1/2/3/4]</i>	<i>[Weekly reporting will begin for this element after final POP's document has been approved by DOE and OMB; recipients will describe qualitative actions taken towards meeting the current FY quarter's project-level]</i>	
<i>[Insert the "Project-Level Quarterly Performance Milestone" from the SC Programs "Project Operating Plan" for the following quarter]</i>	<i>[above FY/Q + 1Q]</i>		

WEEKLY REPORTS ARE DUE TO SC HQ BY 8:00 pm (ET) EACH THURSDAY

Definitions

Term	Abbrev.	Comments
Management and Operating	M&O	Contract Operator of the DOE Laboratory
Work Authorization Statement	WAS	Each ARRA activity at each DOE laboratory should have a unique WAS
Office of Science	SC	
Recovery Act Milestone	n/a	These are the Recovery Act Milestones described in the SC Programs' milestones tables that are provided with the guidance letter that accompany the WAS. There may be small changes to some of the milestones as projects progress. The SC Program POC should provide the latest versions to the Laboratory POC and Site Office POC whenever they are updated.
American Recovery and Reinvestment Act of 2007	ARRA	
Full-Time Equivalents	FTEs	Jobs numbers are to be reported in FTEs to the nearest 0.5 FTE, full-time equivalents, calculated as cumulatively as all hours worked divided by the total number of hours in a full-time schedule. Full-time schedule is defined by the recipient.
Jobs Created	n/a	Those new positions created and filled, or previously existing unfilled positions that are filled, as a result of the Recovery Act funding.
Jobs Retained		Those previously existing filled positions that are retained as a result of the Recovery Act funding.

Office: DOE, Office of Fusion Energy Sciences, SC-24
 Recovery Project Name: DIII-D Facility Upgrades (Project Code 2005200)

Major Milestones

For Grants, Contracts, and Hiring Actions associated with implementing Recovery Act, provide dates for the major milestones. For NEPA reviews, provide the type of review expected and the associated major milestones with dates. Include dollar amounts where appropriate. Add duplicate lines as needed. Provide comments as needed to highlight and clarify milestones.

	Grants	DATE	Amount (\$M)	Comments
1	Post synopsis on grants.gov/recovery.gov			
2	Post full announcement on grants.gov			
3	Close Date for proposals			
4	Complete proposal reviews			
5	Select Grant(s) for Award(s)			
6	Award Grant(s)			
7	Initial Funds Distribution			
8	Intermediate Funds Distribution(s) (i.e. expected draw schedule)			
9	Final Funds Distribution			

	Use of Existing Grants	DATE	Amount (\$M)	Comments
1	Request a Revised Budget/Terms and Conditions	3/8/2009		
2	Negotiate Revised Budget/Terms and Conditions	3/20/2009		
3	Award Revised Budget/Terms and Conditions	6/30/2009		
4	Initial Recovery Act Funds Distribution	7/31/2009	9.977	
5	Intermediate Recovery Act Funds Distribution(s)			
6	Final Recovery Act Funds Distribution	9/30/2011		

	Use of Existing Contracts	DATE	Amount (\$M)	Comments
1	Request a Revised Proposal/Contract	3/10/2009		
2	Negotiate Revised Proposal/Contract	3/31/2009		
3	Award Modification after Signature	6/15/2009		
4	Initial Recovery Act Funds Distribution	6/30/2009	1.763	
5	Intermediate Recovery Act Funds Distribution(s)			
6	Final Recovery Act Funds Distribution	9/30/2011		

	Contracts	DATE	Amount (\$M)	Comments
1	Post synopsis at FBO/Recovery.gov			
2	Post RFP on DOE website			
3	Close Date for RFP Submissions			
4	Complete RFP Evaluations (technical and cost/price)			
5	Select Source(s)			
6	Award Instrument after Signature			
7	Initial Funds Distribution			
8	Intermediate Funds Distribution(s) (i.e. monthly disburseals)			
9	Final Funds Distribution			

	NEPA Anticipated level of NEPA review, i.e. CX, EA or EIS (for CX, cite which one is applicable.)	DATE	Comments
1	Begin DOE NEPA Review		Anticipate CX determination (e.g., B3.12, Magnetic fusion experiments, no lithium fuel use)
2	Initial Determination on CX, EA, or EIS if CX, cite which one is applicable.		
3	if EA, complete EA (including state/tribal review)		
4	if EA demonstrates no significant impact, issue FONSI		
5	if EA identifies potentially significant impact, initiate EIS		
6	if EIS, publish Notice of Intent in Federal Register with minimum 30-day comment period		
7	if EIS, publish Draft EIS with minimum 45-day comment period		
8	if EIS, conduct public hearing(s) for Draft EIS		
9	if EIS, publish Final EIS		
10	Complete NEPA Review/Issue Record of Decision		

	HR	DATE	Comments
1	Identify hiring requirement		
2	Develop position description and crediting plan		
3	Announce position		
4	Close announcement		
5	Issue Selection Certificates		
6	Complete interviews		
7	Select new hire(s)		
8	Negotiate employee start date		
9	New employee(s) begins work		

Office:
Recovery Project
Name:

DOE, Office of Fusion Energy Sciences, SC-24
DIII-D Facility Upgrades (Project Code 2006200)

Major Milestones

For Grants, Contracts, and Hiring Actions associated with implementing Recovery Act, provide dates for the major milestones. For NEPA reviews, provide the type of review expected and the associated major milestones with dates. Include dollar amounts where appropriate. Add duplicate lines as needed. Provide comments as needed to highlight and clarify milestones.

Weekly/Monthly Milestones Provide weekly milestones through May 09 and monthly milestones thereafter through Sept. 2011 (add lines as necessary)		DATE	Amount (\$M)	Comments
1	Request for cooperative agreement revised budgets/supplemental proposal required for DIII-D upgrades	3/6/2009		
2	Request for revised FWP budgets/proposals required for DIII-D upgrades	3/13/2009		
3	Acceptance of final cooperative agreement revised budgets and supplemental proposal for DIII-D upgrades	3/20/2009		
4		3/27/2009		
5	Issuance of procurement request to CH for obligation of funds for DIII-D upgrades	7/10/2009		
6	Allocation of funds to laboratory contracts	7/10/2009		
7	Obligation of funds for DIII-D upgrades to cooperative agreement/grants	7/31/2009		
8	Begin initial edge diagnostic work by laboratories	Jul-09	0.045	
9	Begin design of Electron Cyclotron Heating socket and transmission line	Aug-09	0.004	
10	Begin initial edge diagnostic work by grant recipients	Aug-09	0.005	
11	Begin design of High voltage power supply	Aug-09	0.034	
12	Begin core and Test Blanket Module diagnostic design	Aug-09	0.027	
13	Begin additional staff acquisitions to support diagnostic and experiment analysis	Aug-09	0.017	
14	Complete Test Blanket Module diagnostic design	Sep-09	0.07	
15	Begin core and Test Blanket Module diagnostic fabrication	Sep-09	0.07	
16	Begin edge diagnostic procurements	Sep-09	0.215	
17		Oct-09		
18	Complete design of Electron Cyclotron Heating socket and transmission line	Nov-09	0.194	
19	Install Test Blanket Module diagnostic	Nov-09	0.389	
20	Begin Electron Cyclotron Heating socket and transmission line procurement	Dec-09	0.118	
21	Begin gyrotron procurement	Dec-09	0.066	
22	Begin high voltage power supply procurement	Dec-09	0.066	
23	Begin Electron Cyclotron Heating launcher procurement	Dec-09	0.066	
24	Begin fabrication of Electron Cyclotron Heating socket and transmission line	Jan-10	0.118	
25	Complete high voltage power supply design	Feb-10	0.066	
26	Complete first phase of gyrotron manufacturing	Feb-10	0.18	
27		Mar-10		
28		Apr-10		
29	Complete core diagnostic upgrades/new diagnostics	May-10	0.168	
30	Begin high voltage power supply fabrication	Jun-10	0.066	
31		Jul-10		
32	Complete second phase of gyrotron manufacturing	Aug-10	0.066	
33	Complete Electron Cyclotron Heating socket and transmission line procurement	Aug-10		
34	Begin Electron Cyclotron Heating socket and transmission line installation	Sep-10	0.066	
35	Complete high voltage power supply procurement	Oct-10	0.066	
36	Complete edge diagnostic procurements	Oct-10	0.066	
37		Nov-10		
38		Dec-10		
39	Delivery of gyrotron	Jan-11	0.066	
40		Feb-11	0.066	
41	Complete fabrication of Electron Cyclotron Heating socket and transmission line	Feb-11	0.066	
42	Complete high voltage power supply fabrication	Feb-11		
43	Install and test high voltage power supply	Mar-11	0.066	
44		Apr-11		
45	Complete high voltage power supply	May-11	0.066	
46	Complete Electron Cyclotron Heating socket and transmission line installation	May-11	0.066	
47		Jun-11		
48		Jul-11		
49	Complete installation of upgraded/new edge diagnostic systems	Aug-11	0.066	
50	Complete final gyrotron acceptance testing	Aug-11	0.066	
51	Complete additional staff acquisitions to support diagnostic and experiment analysis	Aug-11		costs will be apportioned generally equally by month from June FY09
52	Delivery of Electron Cyclotron Heating launcher	Oct-11	0.066	

DIII-D Facility Upgrades

Program/Project Activity: DIII-D Facility Upgrades (Project Code: 2005290)

Program Office: SC-24, Fusion Energy Sciences

POC: Stephen Eckstrand, steve.eckstrand@science.doe.gov, 301-903-4941

1. What are you going to accomplish with the stimulus funding?

The American Recovery and Reinvestment Act (Recovery Act) funding will provide for enhancements to DIII-D auxiliary heating systems and improvements to several diagnostics systems. These activities will increase the scientific productivity of the program through higher reliability and availability of the DIII-D tokamak facility by providing resources to allow for operations at full system capability with less unscheduled maintenance impact. The activities will also increase experimental measurements for comparisons with theory and computational models. Some of the funding will be used to increase scientific staff of the DIII-D program to support the increased measurement capability. This activity will consist of the following subtasks: 1) core diagnostic improvements, 2) edge diagnostic improvements, 3) new high voltage power supply, 4) additional high power microwave tube (gyrotron), 5) additional microwave transmission line and support infrastructure, 6) additional electron cyclotron heating launcher, and 7) staff augmentation to support diagnostic upgrades. The Recovery Act overall funding is \$12.0M with an SBIR/STTR deduction of \$0.27M, which leaves a net amount of \$11.73M.

2. Description of Milestones:

Please see associated excel file for milestones and schedule information.

3. Procurement Plan:

The work will be performed largely under the auspices of the existing cooperative agreement with General Atomics (GA) for operation of the DIII-D National Fusion Facility. GA will submit a supplemental request for Recovery Act funding with detailed budgets and milestones, and Recovery Act funds will be provided via a supplement to the existing cooperative agreement. Some new diagnostics or equipment may be provided by national laboratories, or universities under existing contracts or grants, after appropriate review of supplemental proposals. Much of the proposed effort has already undergone such review.

Prior to obligation of funds, an H Clause modification will be put in place on the Management and Operating M&O contract to ensure that expenditure of Recovery Act funds meets the requirements established by the Act. An Approved Funding Program (AFP) guidance memorandum will be issued. This AFP guidance memorandum will serve as the work authorization for executing project scope, and will also include minimum reporting requirements and guidance on meeting additional Recovery Act requirements. In the field, appropriate funding modifications will be enacted to implement the AFP and segregate the Recovery Act funds for reporting purposes.

Work Authorization Statements and/or Financial Plan Changes will be prepared and submitted within 30 days of receipt of funding based on previously approved review results. For this activity, it is anticipated that the funding will be obligated in July 2009. The diagnostic and facility upgrades that are planned are similar to others that have been carried out in the past. As was the case with these previous upgrades, each upgrade task will have a separate completion milestone that will be tracked by the Office of Fusion Energy Sciences via weekly reports.

4. Program Goals:

By improving the reliability and capability of the DIII-D auxiliary heating system infrastructure, the operational efficiency of the facility will be improved, thus increasing the amount of high quality research on the DIII-D tokamak. The diagnostic improvements will greatly enhance the plasma parameters that can be measured and thus increase our ability to compare experimental results with theoretical models and validate our understanding of basic fusion plasma physics. The fusion program is currently developing a combined experiment and theory research campaign goal for FY 2011. The candidate issues being considered are all very important to improving ITER design and predicting ITER performance. The DIII-D diagnostic improvements in FY 2009 and FY 2010 will contribute significantly to this FY 2011 research campaign.

5. Support of President's Energy Goals:

This activity directly supports the President's goal of "**Restoring Science Leadership: Strengthen America's Role as the World Leader in Science and Technology.**" It also supports the administration's energy goal of diversifying our energy sources by enhancing the knowledge base that will ultimately allow realization of commercial fusion energy production.

6. Major Implementation Issues:

There are no major implementation issues for this effort.

7. Future Budget Needs:

There will be no impact separate from the stimulus for this effort.

8. Leads:

Lead manager:

Erol Oktay, erol.oktay@science.doe.gov, 301-903-4928

Lead performing institution:

General Atomics

Lead national laboratory:

N/A

-----	Approved Obligations	-----	-----	Approved Costs	-----
Current	Change	Proposed	Current	Change	Proposed

National Nuclear Security Administration

LAWRENCE LIVERMORE NATL LAB

Operating Expenses

AT55	Facility Operations							
AT5502	Doublet III-D							
	OPE	0	328,000	328,000	0	328,000	0	328,000
	EQU	0	400,000	400,000	0	400,000	0	400,000
	Total AT5502	0	728,000	728,000	0	728,000	0	728,000
	Total AT55	0	728,000	728,000	0	728,000	0	728,000
	Total Operating Expenses	0	728,000	728,000	0	728,000	0	728,000
	Total LAWRENCE LIVERMORE NATL LAB	0	728,000	728,000	0	728,000	0	728,000