



Department of Energy

Oak Ridge Office
P.O. Box 2001
Oak Ridge, Tennessee 37831----

March 23, 2010

Mr. Michael J. Fietze, Director
Prime Contract Administration
UT-Battelle, LLC
P.O. Box 2008
Oak Ridge, TN 37831-6262

Dear Mr. Fietze:

CONTRACT NO. DE-AC05-00OR22725 - MODIFICATION NO. 339

A fully executed copy of the subject contract modification is enclosed for your retention. This modification is issued to obligate American Recovery and Reinvestment Act (Recovery Act) of 2009 funds in the amount of \$54,991,492 to the contract for Office of Energy Efficiency and Renewable Energy projects. The total amount of funds obligated under this contract since its inception is increased by \$54,991,492 from \$11,005,034,708.58 to \$11,060,026,200.58.

If you have any questions, please contact me at 576-4523.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Million".

Mark A. Million
Contracting Officer

Enclosure

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 4
2. AMENDMENT/MODIFICATION NO. 339	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. 10SC003809	5. PROJECT NO. (If applicable)
6. ISSUED BY Oak Ridge U.S. Department of Energy P.O. Box 2001 Oak Ridge TN 37831	CODE 00518	7. ADMINISTERED BY (If other than Item 6) Oak Ridge U.S. Department of Energy P.O. Box 2001 Oak Ridge TN 37831	CODE 00518
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) UT-BATTELLE, LLC Attn: Michael J. Freitze, Director Prime Contract Administration Post Office Box 2008 OAK RIDGE TN 37831-6231		(x) 9A. AMENDMENT OF SOLICITATION NO.	
CODE 099114287 FACILITY CODE		9B. DATED (SEE ITEM 11)	
		x 10A. MODIFICATION OF CONTRACT/ORDER NO. DE-AC05-00OR22725	
		10B. DATED (SEE ITEM 13) 10/18/1999	

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 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 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) Net Increase: \$54,991,492.00
 See Page 3.

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

CHECK ONE	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)
X	970.5232-4 OBLIGATION OF FUNDS (DEC 2000), P.L. 111-5 and P.L. 95-91
E. IMPORTANT:	Contractor <input checked="" type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ 0 _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
 The administrative office (administrative contracting activity) for this award/modification/amendment is 00518.

The administrative office (administrative contracting activity) code is needed by the contractor/recipient for reporting to FederalReporting.gov concerning awards made with funding from the American Recovery and Reinvestment Act of 2009 (ARRA or Recovery Act).
 Subj to Retent: N

Recovery TAS::89 0331::TAS

Continued ...

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)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Mark A. Million
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED
158. CONTRACTOR/OFFEROR	159. DATE SIGNED
16B. UNITED STATES OF AMERICA Mark A. Million (Signature of Contracting Officer)	16C. DATE SIGNED 03/22/2010

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	DE-AC05-00OR22725/339	2	4

NAME OF OFFEROR OR CONTRACTOR
 UT-BATTELLE, LLC

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	See Page 3. FOB: Destination Period of Performance: 04/01/2000 to 03/31/2010				

Block 12 “ACCOUNTING AND APPROPRIATIONS DATA,” continued.

Funds Obligated for Recovery Act Projects:

All required accounting and appropriations data, including the Treasury Accounting Symbol and Fund Code is hereby provided as Attachment 2 to this modification.

Block 14 “DESCRIPTION OF AMENDMENT/MODIFICATION,” continued.

- A. This modification is issued to obligate American Recovery and Reinvestment Act (Recovery Act) of 2009 funds in the amount of \$54,991,492 to the contract for the Office of Energy Efficiency and Renewable Energy projects identified in the Work Authorizations reflected in section C below.
- B. Accordingly, pursuant to Section I Contract Clause – DEAR 970.5232-4 entitled “Obligation of Funds,” additional funds in the amount of \$54,991,492 are hereby obligated in support of Recovery Act activities. The total amount of funds obligated under this contract since its inception is increased from \$11,005,034,708.58 to \$11,060,026,200.58.
- C. The specific Contractor Recovery Act Statement of Work, Milestones, Outcomes and Measures, and Deliverables funded by this modification are identified in the following referenced Work Authorizations:

Work Authorization Number	Work Authorization Title
WA No. BA-470002-20886-10 (Attachment 1A)	Carbon Fiber Technology Center
WA No. BA-470002-20887-10 (Attachment 1B)	Construction Part of Carbon Fiber Technology Center
WA No. BA-470002-20842-10 (Revision 1) (Attachment 1C)	2004140-Lab Call for Facilities and Equipment
WA No. BA-470002-20842-10 (Revision 2) (Attachment 1D)	2004140-Lab Call for Facilities and Equipment
WA No. IF-470002-20416-10 (Attachment 1E)	Energy-Intensive Processes R&D
(Numbers from Block 8 of the Work Authorizations)	

- D. The work described in this modification shall be performed using funds obligated under this contract, which have been appropriated under the Recovery Act of 2009, (Pub. L. 111-5), and as such, is subject to the special statutory conditions and the additional contractual terms and conditions that are listed in section E below and previous contract modifications related to the Recovery Act. The funds obligated hereunder shall only be used to accomplish the work as set forth in section C above and may not be used for any other purpose without the prior written consent of the Contracting Officer.

- E. The Contractor shall complete all Recovery Act Work funded by this modification in accordance with Recovery Act requirements, including the required completion dates specified therein, and by the completion date identified in the approved work authorization for the activity.
- F. All other terms and conditions remain unchanged.

ATTACHMENT 1A

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Solicitation/Project Title: Carbon Fiber Technology Center		1b. Work Proposal Number (if applicable):	
2. Headquarters Program Point of Contact: Name: Carol Schutte Organization Code: EE-2G Telephone No: (202) 287-5371			
3. Headquarters Budget Point of Contact: Name: Thomas Heavey Organization Code: EE-3B Telephone No: (202) 586-4501			
4. Responsible Program: Office of Energy Efficiency and Renewable Energy		5. Responsible Secretarial Officer: Catherine Zoi	
6. Responsible Field Element: Oak Ridge Operations Office			
7a. Site and Facility Management Contractor: University of Tennessee - Battelle (Oak Ridge National Laboratory)		7b. Contractor Point of Contact: Name: Ray Boeman Telephone No:	
8. Work Authorization Number: * BA-470002-20886-10		9. Revision Number: 1	
10. Funds Authorized during FY 2010 :			
<u>B&R Code</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
EB3603000-05794-1005301	\$0	\$20,000,000	\$20,000,000
11. Performance period covered by funds: From: 10/1/2009 To: 12/31/2012 3-15-2010		12. Work Start Date: 10/1/2009 3-15-2010	13. Expected Completion Date: 12/31/2013 3-14-2017 MWL
14. Statement of Work: 3-15-2011			
Specific Recovery Act Statement of Work			
Capital equipment funding in the amount of \$20,000,000 of unobligated carryover funds is authorized for EB3603000-05794-1005301 - Lab Call Facilities. These funds are made available for Project #20886 - Carbon Fiber Technology Center. These funds are to be distributed to Agreement #20921 - Carbon Fiber Technology Center - Equipment in accordance with AOP #ORNL_SOW_020210. These funds will be used to establish an open but controlled-access national facility that can be used by industry, academia, and national laboratories in partnership with ORNL researchers to (i) demonstrate scalability of LCCF technology, (ii) produce quantities of LCCF needed for material and process evaluations by original equipment manufacturers and their suppliers in multiple industries, and (iii) demonstrate low-cost, high-volume PMC technology. The laboratory recipient of the funds is responsible for reporting all funding obligations and costs to headquarters. The laboratory recipient must maintain obligations and cost data at the agreement level and the data must be made available to Energy Efficiency and Renewable Energy.			
ARRA funding information: Fund: 05794, Appropriation: 89-09/10-0331, Allottee: 30 B&R Code/Program Value: EB3603000-1005301 Project Code: 2004140			
Attachment A, Contractor Recovery Act Performance Requirements, identifies the Contractor Recovery Act Schedule or Milestones, Performance Outcomes and Measures and Deliverables for this Work Authorization. The contractor's performance against the identified requirements in Attachment A will be evaluated under the Office of Energy Efficiency and Renewable Energy laboratory appraisal process.			
15. Reporting Requirements: (Status reports, scientific or technical information or similar)			
16. Work Authorization Program Official:			
Name (typed): Catherine Zoi, Assistant Secretary, EERE		Signature: 	Date:
17. DOE Field Organization Official:			
Name (typed): M.G. Branton		Signature: M.G. Branton	Date: 3-12-2010
18. Contractor's Authorized Representative:			
Name (typed): Dana Christensen		Signature: Dana Christensen	Date: 12 March 2010
19. DOE Contracting Officer (or delegated representative)			
Name (typed): Mark A. Mullion		Signature: Mark A. Mullion	Date: 3/8/10

* The work authorization number will consist of the program code, AFP code, solicitation/project id and the fiscal year.

Attachment A - Contractor Recovery Act Performance Requirements

Section A: Contractor Recovery Act Schedule or Milestone Requirements:

Milestone: 44243; CD-1: Alternative selection and cost range approval - Plan Complete: 6/30/2010

Section B: Contractor Recovery Act Performance Outcomes and Measures:

ORNL will continually use its established in-house quality control and project performance evaluation procedures to ensure that the conduct of this project is in consistency with the guidelines and requirements of the American Recovery and Reinvestment Act of 2009; it will continually monitor and measure the progress made for this project, taking corrective steps when needed; and will use the services of both in-house personnel and outside experts to accomplish such outcome.

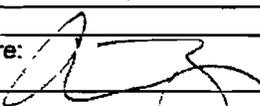
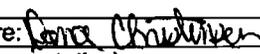
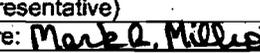
Section C: Contractor Recovery Act Deliverables:

(Milestone 44244: Equipment Fabricated: Conversion and melt spinning equipment delivered to site - Plan Complete: 12/31/2011) (Milestone 44245: Equipment Operational: Conversion and melt spinning equipment test acceptance documents: 5/31/2012)

FED 10-7073-RA AFP Apr

ATTACHMENT 1B

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Solicitation/Project Title: Construction part of Carbon Fiber Technology Center		1b. Work Proposal Number (if applicable):	
2. Headquarters Program Point of Contact: Name: Carol Schutte		Organization Code: EE-2G	Telephone No: (202) 287-5371
3. Headquarters Budget Point of Contact: Name: Thomas Heavey		Organization Code: EE-3B	Telephone No: (202) 586-4501
4. Responsible Program: Office of Energy Efficiency and Renewable Energy		5. Responsible Secretarial Officer: Catherine Zoi	
6. Responsible Field Element: Oak Ridge Operations Office			
7a. Site and Facility Management Contractor: University of Tennessee - Battelle (Oak Ridge National Laboratory)		7b. Contractor Point of Contact: Name: Ray Boeman Telephone No:	
8. Work Authorization Number: * BA-470002-20887-10		9. Revision Number: 1	
10. Funds Authorized during FY 2010 :			
<u>B&R Code</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
39EB00000PRN10EE05001-05794-1005306	\$0	\$14,700,000	\$14,700,000
11. Performance period covered by funds: From: 10/1/2009 To: 9/30/2010 <u>3/15/2010 - 10/1/2009</u> <u>3/17/2010</u>		12. Work Start Date: <u>3/17/2010</u>	
		13. Expected Completion Date: <u>9/30/2010</u> 8-14-2010 <u>(MNE)</u>	
14. Statement of Work: <u>3/19/2010</u>			
Specific Recovery Act Statement of Work			
Construction funding in the amount of \$14,700,000 of unobligated carryover funds is authorized for 39EB00000PRN10EE05001-05794-1005306-Carbon Fiber Tech. These funds are made available for Project #20887 – Construction-of Carbon Fiber Technology Center. These funds are to be distributed to Agreement #20922 – Construction- Carbon Fiber Technology Center in accordance with the ORNL carbon fiber SOW. The objectives of this facility project are to establish an open but controlled-access national facility that can be used by industry, academia, and national laboratories in partnership with ORNL researchers to (i) demonstrate scalability of LCCF technology, (ii) produce quantities of LCCF needed for material and process evaluations by original equipment manufacturers and their suppliers in multiple industries, and (iii) demonstrate low-cost, high-volume PMC technology. The laboratory recipient of the funds is responsible for reporting all funding obligations and costs to headquarters. The laboratory recipient must maintain obligations and cost data at the agreement level and the data must be made available to Energy Efficiency and Renewable Energy.			
ARRA funding information: Fund: 05794, Appropriation: 89-09/10-0331, Allottee: 30 B&R Code/Program Value: 39EB00000PRN10EE05001-1005306 Project Code: 2004140			
Attachment A, Contractor Recovery Act Performance Requirements, identifies the Contractor Recovery Act Schedule or Milestones, Performance Outcomes and Measures and Deliverables for this Work Authorization. The contractor's performance against the identified requirements in Attachment A will be evaluated under the Office of Energy Efficiency and Renewable Energy laboratory appraisal process.			
15. Reporting Requirements: (Status reports, scientific or technical information or similar)			
16. Work Authorization Program Official:			
Name (typed): Catherine Zoi, Assistant Secretary, EERE	Signature: 	Date: <u>2/23/10</u>	
17. DOE Field Organization Official:			
Name (typed): Michele G. Branton	Signature: 	Date: <u>3-12-2010</u>	
18. Contractor's Authorized Representative:			
Name (typed): Dana Christensen	Signature: 	Date: <u>12 March 2010</u>	
19. DOE Contracting Officer (or delegated representative)			
Name (typed): MARK A. MILLION	Signature: 	Date: <u>3/8/10</u>	

* The work authorization number will consist of the program code, AFP code, solicitation/project id and the fiscal year.

Attachment A - Contractor Recovery Act Performance Requirements

Section A: Contractor Recovery Act Schedule or Milestone Requirements:

Section B: Contractor Recovery Act Performance Outcomes and Measures:

ORNL will continually use its established in-house quality control and project performance evaluation procedures to ensure that the conduct of this project is in consistency with the guidelines and requirements of the American Recovery and Reinvestment Act of 2009; it will continually monitor and measure the progress made for this project, taking corrective steps when needed; and will use the services of both in-house personnel and outside experts to accomplish such outcome.

Section C: Contractor Recovery Act Deliverables:

(CD-1: Alternative selection and cost range approval 6/30/2010) (CD-2 Performance baseline approval 11/30/2010); (CD-3 Carbon fiber and composites research building construction approval 5/30/2011); (CD-4 and project closeout 12/30/2011)

FED 10-7073-RA AFP Apr

ATTACHMENT 1C

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Solicitation/Project Title: 2004140-Lab Call for Facilities and Equipment		1b. Work Proposal Number (if applicable):	
2. Headquarters Program Point of Contact: Name: Ronald Lewis Organization Code: EE-2J Telephone No: (202) 586-8423			
3. Headquarters Budget Point of Contact: Name: Jay Schell Organization Code: Telephone No: (202) 586-0660			
4. Responsible Program: Office of Energy Efficiency and Renewable Energy		5. Responsible Secretarial Officer: Catherine Zoi	
6. Responsible Field Element: Oak Ridge Operations Office			
7a. Site and Facility Management Contractor: University of Tennessee - Battelle (Oak Ridge National Laboratory)		7b. Contractor Point of Contact: Name: Patrick J. Hughes Telephone No: (865) 574-9337	
8. Work Authorization Number: * BA-470002-20842-10		9. Revision Number: 1	
10. Funds Authorized during FY 2010:			
<u>B&R Code</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
39EB00000PRN10EE05002-05794-1005307	\$0	\$19,300,000	\$19,300,000
11. Performance period covered by funds: From: 10/1/2009 To: 9/30/2013		12. Work Start Date: 10/1/2009 3/15/2010	13. Expected Completion Date: 9/30/2013
14. Statement of Work: Specific Recovery Act Statement of Work Construction funding in the amount of \$19,300,000 is authorized for 39EB00000PRN10EE05002-05794-1005307-Int Net-Zero Energy. These funds are made available for Project #20842 - 2004140-Lab Call for Facilities and Equipment. These funds are to be distributed to Agreement # 20824-Expand and Upgrade Building Technologies Research & Integration Center (BTRIC) in accordance with AOP# 2004140. Agreement 20824; Expand and Upgrade Building Technologies Research & Integration Center (BTRIC) ARRA Project# 2004140-Lab Call for Facilities and Equipment. The DOE Office of Energy Efficiency and Renewable Energy (EERE) allocated a portion of funds from the American Recovery and Reinvestment Act (ARRA) to a competitive solicitation known as the Facilities and Equipment Upgrade Lab Call #09-002 (hereafter referred to as #09-002). The solicitation objective was to strengthen the R&D capabilities of the national laboratories in three areas – carbon fiber, advanced batteries, and buildings – by upgrading and expanding laboratory facilities and equipment. Oak Ridge National Laboratory (ORNL) was awarded \$20.2 million under the buildings topic within #09-002. With these resources ORNL will expand and leverage its extensive existing capabilities in developing and integrating innovative building technologies by placing into service two flexible research platforms (for transitioning “test buildings” – a.k.a. small commercial buildings – through their design, construction, commissioning, operation, de-commissioning and removal life-cycle in approximately a year), several new laboratories, and will also upgrade equipment in several existing building technologies laboratories. Collectively, the existing and new facilities are called the Building Technologies Research & Integration Center, or BTRIC User Facilities. The ORNL proposal under #09-002, entitled “Integrated Net-Zero Energy Buildings Research Laboratory at Oak Ridge National Laboratory (ZLAB)” requested \$25 million for specific new facilities and existing facility upgrades hence the mission and scope will be reduced, in consultation with the Building Technologies Program and as necessary with other awardees, during the facilities development process to match the resources provided. BTP will provide guidance to the development of CD-1, CD-2, CD-3 and CD-4 and approval by BTP will be obtained at each CD stage before the next stage commences. All requirements in the original #09-002 including the requirement to comply with DOE O 413.3A will be satisfied and constitute as deliverables, as proposed, during the facilities development process. ORNL will also obtain any necessary NEPA document approval. The laboratory recipient of the funds is responsible for reporting all funding obligations and costs to headquarters. The laboratory recipient must maintain obligations and cost data at the agreement level and the data must be made available to Energy Efficiency and Renewable Energy. ARRA funding information: Fund: 05794, Appropriation: 89-09/10-0331, Allottee: 30 B&R Code/Program Value: 39EB00000PRN10EE05002-1005307 Project Code: 2004140			

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3/15/2010

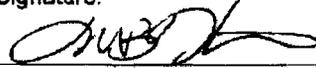
Attachment A, Contractor Recovery Act Performance Requirements, identifies the Contractor Recovery Act Schedule or Milestones, Performance Outcomes and Measures and Deliverables for this Work Authorization. The contractor's performance against the identified requirements in Attachment A will be evaluated under the Office of Energy Efficiency and Renewable Energy laboratory appraisal process.

15. Reporting Requirements: (Status reports, scientific or technical information or similar)

16. Work Authorization Program Official:

Name (typed): Kathleen Hogan,
Deputy Assistant Secretary for
Energy Efficiency

Signature:



Date:

3/2/10

17. DOE Field Organization Official:

Name (typed): M.G. Branton

Signature:



Date:

3-12-2010

18. Contractor's Authorized Representative:

Name (typed): Dana Christensen

Signature:



Date:

12 March 2010

19. DOE Contracting Officer (or delegated representative)

Name (typed): Mark A. Millon

Signature:



Date:

3/8/10

* The work authorization number will consist of the program code, AFP code, solicitation/project id and the fiscal year.

Attachment A - Contractor Recovery Act Performance Requirements

Section A: Contractor Recovery Act Schedule or Milestone Requirements:

CD-0 Approval Mission Justification

Section B: Contractor Recovery Act Performance Outcomes and Measures:

CD-1 Approval Project Definition / Conceptual Design CD-2 Approval Preliminary Design / Baseline CD-3 Approval Detailed Design

Section C: Contractor Recovery Act Deliverables:

CD-4 Approval Construction Complete

FED 10-9051RA AFP Jan

ATTACHMENT 1D

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Solicitation/Project Title: 2004140-Lab Call for Facilities and Equipment		1b. Work Proposal Number (if applicable):	
2. Headquarters Program Point of Contact: Name: Ronald Lewis		Organization Code: EE-2J	Telephone No: (202) 586-8423
3. Headquarters Budget Point of Contact: Name: Jay Schell		Organization Code:	Telephone No: (202) 586-0660
4. Responsible Program: Office of Energy Efficiency and Renewable Energy		5. Responsible Secretarial Officer: Catherine Zoi	
6. Responsible Field Element: Oak Ridge Operations Office			
7a. Site and Facility Management Contractor: University of Tennessee - Battelle (Oak Ridge National Laboratory)		7b. Contractor Point of Contact: Name: Patrick J. Hughes Telephone No: (865) 574-9337	
8. Work Authorization Number: * BA-470002-20842-10		9. Revision Number: 2	
10. Funds Authorized during FY 2010 :			
<u>B&R Code</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
EB3603000-05794-1005301	\$0	\$900,000	\$900,000
11. Performance period covered by funds: From: 10/1/2009 To: 9/30/2013		12. Work Start Date: 10/1/2009 8/15/2010	13. Expected Completion Date: 9/30/2013 <i>mul</i>
14. Statement of Work: Specific Recovery Act Statement of Work Capital equipment funding in the amount of \$900,000 is authorized for EB3603000-05794-1005301-Lab Call Facilities. These funds are made available for Project #20842 - 2004140-Lab Call for Facilities and Equipment. These funds are to be distributed to Agreement # 20824-Expand and Upgrade Building Technologies Research & Integration Center (BTRIC) in accordance with AOP# 2004140. Agreement: 20824; Expand and Upgrade Building Technologies Research & Integration Center (BTRIC) ARRA Project# 2004140-Lab Call for Facilities and Equipment. The DOE Office of Energy Efficiency and Renewable Energy (EERE) allocated a portion of funds from the American Recovery and Reinvestment Act (ARRA) to a competitive solicitation known as the Facilities and Equipment Upgrade Lab Call #09-002 (hereafter referred to as #09-002). The solicitation objective was to strengthen the R&D capabilities of the national laboratories in three areas – carbon fiber, advanced batteries, and buildings – by upgrading and expanding laboratory facilities and equipment. Oak Ridge National Laboratory (ORNL) was awarded \$20.2 million under the buildings topic within #09-002. With these resources ORNL will expand and leverage its extensive existing capabilities in developing and integrating innovative building technologies by placing into service two flexible research platforms (for transitioning "test buildings" – a.k.a. small commercial buildings – through their design, construction, commissioning, operation, de-commissioning and removal life-cycle in approximately a year), several new laboratories, and will also upgrade equipment in several existing building technologies laboratories. Collectively, the existing and new facilities are called the Building Technologies Research & Integration Center, or BTRIC User Facilities. The ORNL proposal under #09-002, entitled "Integrated Net-Zero Energy Buildings Research Laboratory at Oak Ridge National Laboratory (ZLAB)" requested \$25 million for specific new facilities and existing facility upgrades hence the mission and scope will be reduced, in consultation with the Building Technologies Program and as necessary with other awardees, during the facilities development process to match the resources provided. BTP will provide guidance to the development of CD-1, CD-2, CD-3 and CD-4 and approval by BTP will be obtained at each CD stage before the next stage commences. All requirements in the original #09-002 including the requirement to comply with DOE O 413.3A will be satisfied and constitute as deliverables, as proposed, during the facilities development process. ORNL will also obtain any necessary NEPA document approval. The laboratory recipient of the funds is responsible for reporting all funding obligations and costs to headquarters. The laboratory recipient must maintain obligations and cost data at the agreement level and the data must be made available to Energy Efficiency and Renewable Energy. ARRA funding information: Fund: 05794, Appropriation: 89-09/10-0331, Allottee: 30 B&R Code/Program Value: EB3603000-1005301 Project Code: 2004140			

8/15/2010

Attachment A, Contractor Recovery Act Performance Requirements, identifies the Contractor Recovery Act Schedule or Milestones, Performance Outcomes and Measures and Deliverables for this Work Authorization. The contractor's performance against the identified requirements in Attachment A will be evaluated under the Office of Energy Efficiency and Renewable Energy laboratory appraisal process.

15. Reporting Requirements: (Status reports, scientific or technical information or similar)

16. Work Authorization Program Official:

Name (typed): Roland J. Risser,
Program Manager RTP

Signature:

Roland J. Risser

Date:

3/11/10

17. DOE Field Organization Official:

Name (typed): M.G. Branton

Signature:

M.G. Branton

Date:

3-12-2010

18. Contractor's Authorized Representative:

Name (typed): Dana Christensen

Signature:

Dana Christensen

Date:

12 March 2010

19. DOE Contracting Officer (or delegated representative)

Name (typed): MARK A. MILLION

Signature:

Mark A. Million

Date:

3/8/10

* The work authorization number will consist of the program code, AFP code, solicitation/project id and the fiscal year.

Attachment A - Contractor Recovery Act Performance Requirements

Section A: Contractor Recovery Act Schedule or Milestone Requirements:

CD-0 Approval Mission Justification Fourth quarter of second year-Conduct a series of industry workshops to prepare facilities operational plan and schedule Third quarter of second year-Enter into CD-3 initiation of construction

Section B: Contractor Recovery Act Performance Outcomes and Measures: rformance Outcomes and Measures:

CD-1 Approval Project Definition / Conceptual Design CD-2 Approval Preliminary Design / Baseline CD-3 Approval Detailed Design

Section C: Contractor Recovery Act Deliverables:

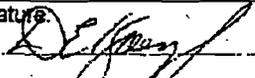
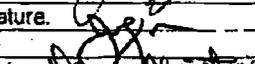
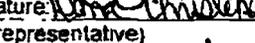
CD-4 Approval Construction Complete

FED 10-9051RA AFP Jan

ATTACHMENT 1E

WORK AUTHORIZATION

**U.S. DEPARTMENT OF ENERGY
CONTRACT WORK AUTHORIZATION**

1a Solicitation/Project Title Energy-Intensive Processes R&D		1b Work Proposal Number (if applicable) AOP# tbd	
2 Headquarters Program Point of Contact Name Isaac Chan Organization Code: EE-2F Telephone No (202) 586-4981			
3 Headquarters Budget Point of Contact Name: Norman Hurwitz Organization Code: Telephone No (202) 287-5588			
4 Responsible Program Office of Energy Efficiency and Renewable Energy		5 Responsible Secretarial Officer: Catherine Zoi	
6 Responsible Field Element Oak Ridge Operations Office			
7a Site and Facility Management Contractor University of Tennessee - Battelle (Oak Ridge National Laboratory)		7b. Contractor Point of Contact Name Craig Blue Telephone No (865) 574-4351	
8 Work Authorization Number * IF-470002-20416-10		9 Revision Number 8	
10. Funds Authorized during FY 2010.			
<u>B&R Code</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
ED1908000-05794-1004889	\$0	\$91,492	\$91,492
11 Performance period covered by funds. From 12/1/2009 To 12/30/2010		12. Work Start Date: 12/1/2009	13. Expected Completion Date 12/30/2010
14 Statement of Work <u>Project Number: 2004320</u> Carryover funding in the amount of \$91,492 is authorized for Energy-Intensive Process R&D. These funds are made available for Project #20416 Energy-Intensive Processes R&D. These funds are to be distributed to Agreement # 18977-Nanocatalytic conversion of biomass into second-generation biofuels in accordance with AOP# tbd. This concept definition project will focus on the potential for nanocatalysis in playing a significant role in the development of efficient processes for biomass conversion into biofuels. Second-generation biofuels (i.e. those from catalytic conversion of ligno-cellulosic biomass/wastes) serve as alternatives to gasoline and diesel fuels and offer great benefits in both energy and carbon. This project proposes to investigate the use of clay-based nanocatalysts to facilitate the breakdown of refractory organics from unconventional sources: primarily from lignin, but also from bitumen and oil shale into feedstocks that can be used for transportation fuels and for the chemical industry. Advances in the use of clay minerals as economical catalysts will be coupled with the advantages posed by nanomaterials to greatly enhance the efficiency and economics of the processing of refractory materials. In particular, lower temperature conversions and more rapid processing is predicted from the use of nanotechnology in this area. In particular, this study will focus on economical, naturally abundant clay-based layered nanocatalysts, and will evaluate issues related to production of the nanocatalysts and their performance in reducing waste and energy usage in the production of biofuels and chemicals from renewable sources. CFO Project Code: 2004320. Funding provided in this work authorization is not approved for obligation of any type of support service contract either as a prime or subcontract award. The laboratory recipient of the funds is responsible for reporting all funding obligations and costs to headquarters. The laboratory recipient must maintain obligations and cost data at the agreement level and the data must be made available to EERE.			
15 Reporting Requirements (Status reports, scientific or technical information or similar)			
16 Work Authorization Program Official			
Name (typed), Douglas E Kaempf, Program Manager	Signature 	Date 9/23/09	
17 DOE Field Organization Official			
Name (typed), Johnny O. Moore	Signature 	Date 12/2/09	
18 Contractor's Authorized Representative			
Name (typed) Dana Christenson	Signature 	Date 3 Dec 2009	
19 DOE Contracting Officer (or delegated representative)			
Name (typed) MARK A. MILLION	Signature 	Date 12/1/09	

ATTACHMENT A – CONTRACTOR RECOVERY ACT PERFORMANCE REQUIREMENTS

Section A: Contractor Recovery Act Schedule or Milestone Requirements

Task 1 – Architected Nanomembranes for In-Situ Energy Conversion

Milestone – Complete evaluation of engineering processing concepts for architected nanocomposite membranes; August 2010

Task 2 – Nanocatalytic Conversion of Biomass into Second-Generation Biofuels

Milestone – Complete analysis of extending technology to unconventional sources of carbon-based compounds; August 2010

Task 3 – Oxide-Nanoparticle Containing Coatings for High Temperature Alloys

Milestone – Complete initial processing trials and characterization of materials with and without electromagnetic stirring; August 2010

Task 4 – Synthesis of Highly Ordered TiO₂ Nanotubes using Ionic Liquids for Photovoltaics (PV)

Milestone - Identify preferable molecular structures of ionic liquids and synthesis parameters based on characterization of nanostructures, crystalline phases and PV; May 2010

Task 5 – Nanocomposite Materials for Lithium Ion Batteries

Milestone – Develop transport models & complete characterizations; September 2012

Task 6 – Pulsed Thermal Processing of Self-Assembled Quantum Dot Structures

Milestone - Complete optical evaluation of quantum dot structures; June 2010

Task 7 – Mesoporous Carbon Membranes for Selective Gas Separations

Milestone – Develop scalable methodology for preparing supported mesoporous carbon membranes supported on anodized alumina membranes for gas separation; August 2010

Task 8 – Nanocrystallization of LiCoO₂ Cathodes for Thin Film Batteries

Milestone – Determine optima PIP parameters for achieving desired performance from Thin Film Battery cathodes; August 2010

Task 9 – Improving Heat Recovery in Biomass-Fired Boilers

Milestone – Submit draft report with results of field corrosion probe studies; June 2012

Section B: Contractor Recovery Act Performance Outcomes and Measures

All tasks described under this effort will be completed by 9-30-2012, within the budget allocated to each task. Completion of each task will be determined by the submission of a final task report to the sponsor's designated representative.

Section C: Contractor Recovery Act Deliverables

Task 1 – Architected Nanomembranes for In-Situ Energy Conversion

Deliverable, Final Report

Task 2 – Nanocatalytic Conversion of Biomass into Second-Generation Biofuels

Deliverable, Final Report

Task 3 – Oxide-Nanoparticle Containing Coatings for High Temperature Alloys

Deliverable, Final Report

Task 4 – Synthesis of Highly Ordered TiO₂ Nanotubes using Ionic Liquids for Photovoltaics (PV)

Deliverable, Final Report

Task 5 - Nanocomposite Materials for Lithium Ion Batteries

Deliverable, Final Report

Task 6 - Pulsed Thermal Processing of Self-Assembled Quantum Dot Structures

Deliverable, Final Report

Task 7 - Mesoporous Carbon Membranes for Selective Gas Separations

Deliverable, Final Report

Task 8 - Nanocrystallization of LiCoO₂ Cathodes for Thin Film Batteries

Deliverable, Final Report

Task 9 – Improving Heat Recovery in Biomass-Fired Boilers

Deliverable, Final Report

ATTACHMENT 2

FINANCIAL PLAN REPORT

Financial Plan Report - Detail

OR22725 - UT-BATTELLE (RECOVERY ACT - 8909/100331)

Rpt Entity	Fund Code	Leg FT	Program	Legacy B&R	Obj. Class	Local Use	Project	WFO	Legacy Order Number	Beginning Uncosted Obs	Previous	BA Change	Revised	Total Available
470002	05794	ZT	1005307	39EB00000P	32001	0473188	2004140	0000000		0.00	0.00	19,300,000.00	19,300,000.00	19,300,000.00
<i>AY 2009 - Work Authorization Number BA-470002-20842-10; Appropriation Symbol 8909/100331</i>														
470002	05794	ZT	1005306	39EB00000P	32001	0473189	2004140	0000000		0.00	0.00	14,700,000.00	14,700,000.00	14,700,000.00
<i>AY 2009 - Work Authorization Number BA-470002-20887-10; Appropriation Symbol 8909/100331</i>														
Total for Program Parent/Control Point: 39EB00000PRN10EE05000										0.00	0.00	34,000,000.00	34,000,000.00	34,000,000.00
470002	05794	ZT	1004172	BM0102030	25400	0000000	2004020	0000000		705,763.85	0.00	0.00	0.00	705,763.85
470002	05794	ZT	1004173	BM0102060	25400	0000000	2004000	0000000		655,029.94	0.00	0.00	0.00	655,029.94
470002	05794	ZT	1004173	BM0102060	25400	0000000	2004570	0000000		4,999,613.74	4,170,000.00	0.00	4,170,000.00	9,169,613.74
<i>AY 2009 - Work Authorization Number BM-470002-20472-10; Appropriation Number: 8909/100331</i>														
Total for Program Parent/Control Point: BM0100000										6,360,407.53	4,170,000.00	0.00	4,170,000.00	10,530,407.53
470002	05794	ZT	1004210	BT0101000	25400	0000000	2004060	0000000		0.00	4,592,000.00	0.00	4,592,000.00	4,592,000.00
<i>AY 2009 - Work Authorization Number BT-470002-20742-10; Appropriation Number 8909/100331 (\$4,267,000)</i>														
<i>Work Authorization Number BT-470002-20727-10; Appropriation Number 8909/100331 (\$325,000)</i>														
470002	05794	ZT	1004212	BT0201000	25400	0000000	2004080	0000000		0.00	500,000.00	0.00	500,000.00	500,000.00
<i>AY 2009 - Work Authorization Number BT-470002-20743-10; Appropriation Symbol 8909/100331</i>														
470002	05794	ZT	1004214	BT0301000	25400	0000000	2004100	0000000		0.00	1,200,000.00	0.00	1,200,000.00	1,200,000.00
<i>AY 2009 - Work Authorization Number: BT-470002-20745-10; Appropriation Number 8909/100331</i>														
Total for Program Parent/Control Point: BT0000000										0.00	6,292,000.00	0.00	6,292,000.00	6,292,000.00
470002	05794	ZT	1004248	EB2103000	25400	0000000	2004420	0000000		0.00	935,000.00	0.00	935,000.00	935,000.00
<i>AY 2009 - Work Authorization SL-470002-20479-10 Appropriation # 8909/100331.91</i>														
Total for Program Parent/Control Point: EB2100000										0.00	935,000.00	0.00	935,000.00	935,000.00
470002	05794	ZT	1004255	EB2501030	25400	0000000	2004480	0000000		0.00	50,000.00	0.00	50,000.00	50,000.00
<i>AY 2009 - Work Authorization Number WW-470002-20464-10 Appropriation 8909/10-0331</i>														
Total for Program Parent/Control Point: EB2500000										0.00	50,000.00	0.00	50,000.00	50,000.00
470002	05794	ZT	1005301	EB3603000	31003	0000000	2004140	0000000		0.00	0.00	20,900,000.00	20,900,000.00	20,900,000.00
<i>AY 2009 - Work Authorization Number: BA-470002-20886-10; Appropriation Symbol: 8909/100331 \$20,000,000</i>														
<i>Work Authorization Number: BA-470002-20842-10; Appropriation Symbol: 8909/100331 \$900,000</i>														
Total for Program Parent/Control Point: EB3600000										0.00	0.00	20,900,000.00	20,900,000.00	20,900,000.00
470002	05794	ZT	1004281	EB4005020	25400	0000000	2004190	0000000		1,920,000.00	1,924,000.00	0.00	1,924,000.00	3,844,000.00
<i>AY 2009 - Work Authorization Number GT-470002-20685-10; Appropriation Symbol: 8909/100331</i>														
Total for Program Parent/Control Point: EB4000000										1,920,000.00	1,924,000.00	0.00	1,924,000.00	3,844,000.00
470002	05794	ZT	1005098	EB5100000	25400	0000000	2004040	0000000		0.00	350,205.00	0.00	350,205.00	350,205.00
<i>AY 2009 - Work Authorization Number: 471999-20758-10B; Appropriation Number 8909/100331</i>														
470002	05794	ZT	1005098	EB5100000	25400	0473100	2004040	0000000		150,291.32	400,000.00	0.00	400,000.00	550,291.32
<i>AY 2009 - Work Authorization Number 470002-20476-10; Appropriation Symbol 8909/100331</i>														
<i>Work Authorization Number: 470002-20698-10; Appropriation Number 8909/100331</i>														
Total for Program Parent/Control Point: EB5100000										150,291.32	750,205.00	0.00	750,205.00	900,496.32

Financial Plan Report - Detail

OR22725 - UT-BATTELLE (RECOVERY ACT - 8909/100331)

Rpt Entity	Fund Code	Leg FT	Program	Legacy B&R	Obj. Class	Local Use	Project	WFO	Legacy Order Number	Beginning Uncosted Obs	Previous	BA Change	Revised	Total Available
470002	05794	ZT	1004383	ED1904032	25400	0000000	2004320	0000000		10,401,949.12	8,408,822.00	0.00	8,408,822.00	18,810,771.12
<i>AY 2009 - Work Authorization Number: IF-470002-20421-10; Appropriation Number: 8909/100331</i>														
470002	05794	ZT	1004383	ED1904032	31003	0000000	2004320	0000000		4,490,655.42	0.00	0.00	0.00	4,490,655.42
470002	05794	ZT	1004397	ED1907042	25400	0000000	2004310	0000000		1,224,800.00	0.00	0.00	0.00	1,224,800.00
470002	05794	ZT	1004889	ED1908000	25400	0000000	2004320	0000000		3,076,640.05	1,730,189.00	91,492.00	1,821,681.00	4,898,321.05
<i>AY 2009 - Work Authorization Number: F-470002-20416-10; Appropriation Number 8909/100331</i>														
Total for Program Parent/Control Point: ED0000000										19,194,044.59	10,139,011.00	91,492.00	10,230,503.00	29,424,547.59
470002	05794	ZT	1004578	EL1702010	25400	0000000	2004160	0000000		646,120.72	0.00	0.00	0.00	646,120.72
470002	05794	ZT	1004580	EL1703010	25400	0000000	2004160	0000000		984,443.83	0.00	0.00	0.00	984,443.83
470002	05794	ZT	1004582	EL1704000	25400	0000000	2004160	0000000		519,945.39	0.00	0.00	0.00	519,945.39
Total for Program Parent/Control Point: EL1700000										2,150,509.94	0.00	0.00	0.00	2,150,509.94
470002	05794	ZT	1005113	WI1100000	25400	0000000	2004380	0000000		2,477,283.34	0.00	0.00	0.00	2,477,283.34
Total for Program Parent/Control Point: WI1100000										2,477,283.34	0.00	0.00	0.00	2,477,283.34
Total for Fund Type: ZT										32,252,536.72	24,260,216.00	54,991,492.00	79,251,708.00	111,504,244.72
470002	05796	ZV	1005116	WI1001020	25400	0000000	2004350	0000000		16,789,712.89	0.00	0.00	0.00	16,789,712.89
Total for Program Parent/Control Point: WI1001000										16,789,712.89	0.00	0.00	0.00	16,789,712.89
Total for Fund Type: ZV										16,789,712.89	0.00	0.00	0.00	16,789,712.89
470002	05797	ZW	1004760	WI0702000	25400	0000000	2004360	0000000		11,568,008.19	0.00	5,800,000.00	5,800,000.00	17,368,008.19
<i>AY 2009 - Work Authorization Number WI-470002-20455-10; Appropriation Symbol 8909/100331 - 5.8M; Reallocation to new Project</i>														
470002	05797	ZW	1004760	WI0702000	25400	0000000	2004370	0000000		0.00	5,800,000.00	-5,800,000.00	0.00	0.00
<i>AY 2009 - Work Authorization Number WI-470002-20455-10; Appropriation Symbol 8909/100331 - 5.8M; Reallocation to new Project</i>														
Total for Program Parent/Control Point: WI0702000										11,568,008.19	5,800,000.00	0.00	5,800,000.00	17,368,008.19
Total for Fund Type: ZW										11,568,008.19	5,800,000.00	0.00	5,800,000.00	17,368,008.19
Total for Recipient Code: OR										60,610,257.80	30,060,216.00	54,991,492.00	85,051,708.00	145,661,965.80
Total for Reporting Entity: 470002										60,610,257.80	30,060,216.00	54,991,492.00	85,051,708.00	145,661,965.80
Total for OR22725 - UT-BATTELLE (RECOVERY ACT - 8909/100331)										60,610,257.80	30,060,216.00	54,991,492.00	85,051,708.00	145,661,965.80

Financial Plan Number: 5

Fiscal Year: 2010

Fiscal Month: 06

Contract Modification Number: ** No MOD **

Rpt Entity: OR OR3/OR4 - Oak Ridge National Lab, X-10, UT-Batelle

Financial Plan Report - Detail

Site: OR

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Report: RFP0001

OR22725 - UT-BATTELLE (RECOVERY ACT - 8909/100331)

Report Generated on: March 18, 2010 at 10:05:27 AM

<u>Agency</u>	<u>Obligation Change Amount</u>
Total Appropriated Funds (Program 40):	0.00
Total DOE and Non-Appropriated Funds:	54,991,492.00
Grand Total:	54,991,492.00
Total Non-Appropriated Funds:	0.00
