

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 356	3. EFFECTIVE DATE 05/15/2013	4. REQUISITION/PURCHASE REQ. NO. 13EM001856	5. PROJECT NO. (If applicable)	
6. ISSUED BY Savannah River Operations U.S. Department of Energy Savannah River Operations P.O. Box A Aiken SC 29802	CODE 00901	7. ADMINISTERED BY (If other than Item 6) Savannah River Operations U.S. Department of Energy Savannah River Operations P.O. Box A Aiken SC 29802		CODE 00901
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC Attn: LLOYD CLEVINGER 203 LAURENS ST SW AIKEN SC 298012421		(x)	9A. AMENDMENT OF SOLICITATION NO.	
			9B. DATED (SEE ITEM 11)	
		x	10A. MODIFICATION OF CONTRACT/ORDER NO. DE-AC09-08SR22470	
			10B. DATED (SEE ITEM 13) 01/10/2008	
CODE 798861048	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> 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 9 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) No change to accounting data				
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:			
X	D. OTHER (Specify type of modification and authority) Section I, DEAR 970.5211-1 Work Authorization (May 2007)			
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.)				
A. The purpose of this modification is to incorporate the Contract Work Authorizations listed below:				
1) No. SL-410003-13, Rev 2, for Solar Energy 2) No. KL/W/SR1/13, Rev 1, for Workforce Development for Teachers and Scientists 3) No. SR071801-5-13, for Attenuation-Based Remedies for the Subsurface Applied Field Research Initiative at SR 4) No. 89X0319, Rev 4, for Fuel Cycle Technologies 5) No. KC/SR1/3, Rev 2, for Basic Energy Sciences - Energy Frontier Research Centers 6) No. IN13012, Rev 3, for Energy and Threat 7) No. IN13021, Rev 1, for Energy and Threat 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)		15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
		Marie A. Garvin		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	15B. UNITED STATES OF AMERICA	16C. DATE SIGNED	
(Signature of person authorized to sign)		Signature on File	05/15/2013	
		(Signature of Contracting Officer)		

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-AC09-08SR22470/356

PAGE OF
2 2

NAME OF OFFEROR OR CONTRACTOR
SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

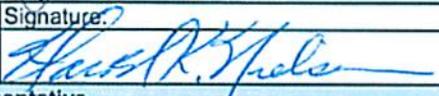
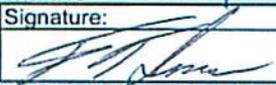
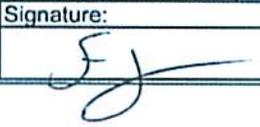
ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>8) No. HQ1001-0-SR, Rev 4, for Advanced Simulation Capability for Environment Management 9) HQ091101, Rev 2, for Advanced Simulation Capability for Environment 10) No. 410003, Rev 3, for Funding for the Packaging and Certification Program and Packaging and Transportation Operations Support 11) No. HI-410003-13-5-13, Rev 1, for Fuel Cell Technologies Program 12) No. HI-410003-13-5-13, Rev 2, for Fuel Cell Technologies 13) No. HQTd1000, Rev 5, for Technical Planning, Integration and Risk Management 14) No. 89X0319, Rev 5, Fuel Cycle Technologies</p> <p>The above reference contract work authorizations are provided as attachment 1 through 14, hereto. Funds are allocated under FINPLAN numbers 12, 14, and and 15, for Fiscal Year 2013, by separate modifications.</p> <p>B. This modification formally incorporates the above referenced contract work authorizations as part of the contract. As stated under DEAR 970.5211-1 Work Authorization (May 2007), paragraph (b), the work authorization, whether issued bilaterally or unilaterally shall become a part of the contract.</p> <p>C. The contract estimated value and all other terms and conditions remain unchanged.</p>				

Attachment 1

Work Authorization No. SL-410003-13, Rev 2

Project Title: Solar Energy

2013-70

U. S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Project Title Solar Energy		1b. Work Proposal Number AOP #2013; Agreement No. 25835 and 25683	
2. Headquarters Program Point of Contact			
Name: Minh Le	Organization Code:	Telephone No. 202-287-1372	
3. Headquarters Budget Point of Contact			
Name: Kyra Humphreys	Organization Code: EE-3B	Telephone No. 202-586-8138	
4. Responsible Program Office of Energy Efficiency and Renewable Energy		5. Responsible Secretarial Officer David Danielson	
6. Responsible Field Organization Savannah River Site Office			
7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC		7b. Contractor Point of Contact Name: John W. Temple Telephone No. (803) 952- 7210	
8. Work Authorization Number SL-410003-13		9. Revision Number 2	
10. Funds Authorized (See NOTE below)			
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act." Funds will be divided by Agreement as listed: Agreement 25835 - \$105,931.00 Agreement 25683 - \$278,873.00			
Budget and Reporting Code: SL0100000	Previous \$ 900,225.00	Change \$ 384,804.00	Current \$ 1,285,029.00
11. Performance Period Covered by Funds (See NOTE in Block 10) From: 10/1/2012 To: 9/30/2013		12. Work Start Date 10/1/2012	13. Expected Completion Date 9/30/2013
14. Statement of Work (Includes attachments)			
Funding in the amount of \$384,804 is authorized by the Solar Energy to perform work in the areas of : The U.S. Department of Energy (DOE) SunShot Initiative and Solar Energy Technologies Program (SETP) authorizes funding in accordance with the program Annual Operating Plan (AOP). This operating plan authorizes specific funding amounts for each project and agreement, and requires detailed performance milestones and deliverable be met or completed within the period of performance. Please refer to the Work Proposal Number (1b) to determine which section(s) of the AOP for which this authorization provides funding.			
15. DOE-SR Program Point of Contact			
Name (printed): JOHN CHRISTIAN	Signature: 	Date: 5/3/2013	
16. DOE-SR Budget Official (Field CFO)			
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/3/2013	
17. Contractor's Authorized Representative			
Name (typed): John W. Temple FDK	Signature: 	Date: 5/9/2013	
18. DOE Contracting Officer (or delegated representative)			
Name (typed): Scott Langston	Signature: 	Date: 5/10/13	

2013-70

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Program Title: Solar Energy		1b. Work Proposal Number (if applicable): AOP #2013, AOP #2013 <i>Approved # 25835</i>	
2. Headquarters Program Point of Contact:			
Name: Minh Le		Organization Code:	Telephone No: (202) 287-1372
3. Headquarters Budget Point of Contact:			
Name: Kyra Humphreys		Organization Code: EE-3B	Telephone No: (202) 586-8138
4. Responsible Program:		5. Responsible Secretarial Officer:	
Office of Energy Efficiency and Renewable Energy		David Danielson	
6. Responsible Field Element:			
Savannah River Site Office			
7a. Site and Facility Management Contractor:		7b. Contractor Point of Contact:	
Savannah River Nuclear Solutions, LLC		Name: John Christian	Telephone No:
8. Work Authorization Number:*			
SL-410003-13		2	
10. Funds Authorized:			
<u>Congressional Control Point</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
SL0000000	\$900,225.00	\$384,804.00	\$1,285,029.00
11. Performance period covered by funds:		12. Work Start Date:	13. Expected Completion Date:
From:10/01/2012 To:09/30/2013		10/01/2012	09/30/2013
14. Statement of Work:			
<p>Funding in the amount of \$384,804.00 is authorized by the Solar Energy to perform work in the areas of : The U.S. Department of Energy (DOE) SunShot Initiative and Solar Energy Technologies Program (SETP) authorizes funding in accordance with the program Annual Operating Plan (AOP). This operating plan authorizes specific funding amounts for each project and agreement, and requires detailed performance milestones and deliverable be met or completed within the period of performance.</p> <p>Please refer to the Work Proposal Number (1b) to determine which section(s) of the AOP for which this authorization provides funding.</p>			
15. Reporting Requirements (Status reports, scientific and technical information or similar):			
16. Work Authorization Program Official:			
Name (typed): John Conboy, Proxy for Minh Le	Signature: 564c7fd2-929d-4dbd-8b4e-8f662c77e921	Date: 4/15/2013	
17. DOE Field Organization Official:			
Name (typed):	Signature:	Date:	
18. Contractor's Authorized Representative:			
Name (typed):	Signature:	Date:	
19. DOE Contracting Officer (or delegated representative):			
Name (typed):	Signature:	Date:	

* The work authorization number will consist of the program code, AFP code, and the fiscal year

FED 13-11083 - May

U.S. DEPARTMENT OF ENERGY
FUNDS DISTRIBUTION SYSTEM
APPROVED FUNDING PROGRAM

89X0321 - ENERGY EFFICIENCY AND RENEWABLE ENERGY
FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 5

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
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OPERATING EXPENSES : 89X0321.91 (05450)

O HT HYDROGEN AND FUEL CELLS TECHNOLOGIES

2013	NEW OA	2,553,164.00	291,155.00	2,844,319.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	2,553,164.00	291,155.00	2,844,319.00
O HT TOTAL, HYDROGEN AND FUEL CELLS TECHNOLOGIES	NEW OA	2,553,164.00	291,155.00	2,844,319.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	2,553,164.00	291,155.00	2,844,319.00

O SL SOLAR ENERGY

2013	NEW OA	900,225.00	384,804.00	1,285,029.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	900,225.00	384,804.00	1,285,029.00
O SL TOTAL, SOLAR ENERGY	NEW OA	900,225.00	384,804.00	1,285,029.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	900,225.00	384,804.00	1,285,029.00

TOTAL, OPERATING EXPENSES (05450)

NEW OA	3,453,389.00	675,959.00	4,129,348.00
UNOB BAL	0.00	0.00	0.00
TOTAL OA	3,453,389.00	675,959.00	4,129,348.00

TOTAL, DIRECT FUNDING

NEW OA	3,453,389.00	675,959.00	4,129,348.00
UNOB BAL	0.00	0.00	0.00
TOTAL OA	3,453,389.00	675,959.00	4,129,348.00

TOTAL, OBLIGATIONAL AUTHORITY

NEW OA	3,453,389.00	675,959.00	4,129,348.00
UNOB BAL	0.00	0.00	0.00
TOTAL OA	3,453,389.00	675,959.00	4,129,348.00

Attachment 2

Work Authorization No. KL/W/SR1/13, Rev 1

Project Title: Workforce Development for Teachers and Scientists

2013-31

U. S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Project Title Workforce Development for Teachers and Scientists		1b. Work Proposal Number Various	
2. Headquarters Program Point of Contact			
Name Patricia M. Dohmer	Organizational Code SC-27	Telephone 202.287.6490	
3. Headquarters Budget Point of Contact			
Name Andrea Conrad	Organizational Code SC-41	Telephone 301.903.3310	
4. Responsible Program Workforce Development for Teachers and Scientists		5. Responsible Secretarial Officer Under Secretary for Science	
6. Responsible Field Organization U.S. Department of Energy, Savannah River Operations			
7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC		7b. Contractor Point of Contact Name: John W. Temple Telephone No. (803) 952- 7210	
8. Work Authorization Number KLW/SR1/13		9. Revision Number 1	
10. Funds Authorized (See NOTE below)			
NOTE: Reference Appropriation Act for Fiscal Year 2013: "Appropriations and funds made available and authority granted pursuant to this joint resolution shall be available until whichever of the following first occurs: (1) the enactment into law of an appropriation for any project or activity provided for in this joint resolution; (2) the enactment into law of the applicable appropriations Act for fiscal year 2013 without any provision for such project or activity; or (3) March 27, 2013.			
Budget and Reporting Code:	Previous:	Change:	Current:
KL1001000	\$ 10,000.00	\$ (8,726.50)	\$ 1,273.50
KL1002000	\$ 10,000.00	\$ (8,726.50)	\$ 1,273.50
KL Total	\$ 20,000.00	\$ (17,453.00)	\$ 2,547.00
11. Performance Period Covered by Funds		12. Work Start Date	13. Expected Completion Date
10/1/2012	9/30/2013	10/1/2012	9/30/2013
14. Statement of Work (Includes attachments)			
The FY 2013 Approved Funding Program provides funding to accomplish Workforce Development for Teachers and Scientists activities, generally consistent with the Field Work Proposal submissions and modifications and specific guidance provided by the enclosed memorandum. The Office of Workforce Development for Teachers and Scientists (WDTS) 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 WDTS managers and WDTS-supported staff. Funds provided by WDTS will be applied as necessary to ensure that all WDTS activities are conducted safely and in an environmentally conscientious manner. Only work conducted in this way will be supported. The following are required for the Workforce Development for Teachers and Scientists program: analysis reports as produced, a fiscal year end report, and a final report.			
15. DOE-SR Program Point of Contact			
Name (printed): JOHN CHRISTIAN	Signature: 	Date: 5/3/2013	
16. DOE-SR Field Budget Official			
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/3/2013	
17. Contractor's Authorized Representative			
Name (typed): John Temple FOI	Signature: 	Date: 5/9/2013	
18. DOE Contracting Officer (or delegated representative)			
Name (typed): Scott Langston	Signature: 	Date: 5/10/13	



Department of Energy
Office of Science
Washington, DC 20585

APR 24 2013

MEMORANDUM FOR: DR. DAVID MOODY
MANAGER
SAVANNAH RIVER

FROM:

PATRICIA M. DEHMER *Patricia M. Dehmer*
DEPUTY DIRECTOR FOR SCIENCE PROGRAMS
OFFICE OF SCIENCE

SUBJECT: FY 2013 Office of Science Approved Funding Program -
Savannah River Nuclear Solutions

The attached budget detail and program comments relate to the May AFP recently submitted to the Chief Financial Officer for the Workforce Development for Teachers and Scientists program.

Also attached, in accordance with DOE Order 412.1A, is the FY 2013 Work Authorization for the M&O contract with Savannah River Nuclear Solutions to support funding in the May AFP.

There should not be any variance in performance from this guidance during the year prior to changes being coordinated and approved by the appropriate Headquarters program manager and documented by a program letter from Headquarters. This is essential to maintain accountability for the utilization of these funds.

If you have any questions regarding the attached please call Andrea Condrad (301-903-3310) or the appropriate program manager at Headquarters.

Attachment

cc:

L. Roberson, SR

D. Ryan, AMEST, SR

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

1a. Project Title: Workforce Development for Teachers and Scientists		1b. Work Proposal Number (if applicable): Various	
2. Headquarters Program Point of Contact. Name: Patricia M. Dehmer Organization Code: SC-27 Telephone No.: (202) 287-8490			
3. Headquarters Budget Point of Contact. Name: Andrea Conrad Organization Code: SC-41 Telephone No.: (301) 903-3310			
4. Responsible Program: Workforce Development for Teachers and Students		5. Responsible Secretarial Officer: Under Secretary for Science	
6. Responsible Field Organization: Savannah River Operations Office			
7a. Site and Facility Management Contractor: Savannah River Nuclear Solutions, LLC		7b. Contractor Point of Contact. Name: Telephone No.:	
8. Work Authorization Number: KL/ W/SR1/13		9. Revision Number: 01	
10. Funds Authorized (\$ in thousands). B&R Code: KL Previous: \$20 Change: \$-17 Current: \$3*			
11. Performance Period Covered by Funds. From: 10/01/12 To: 09/30/13		12. Work Start Date: 10/01/12	13. Expected Completion Date: 09/30/13
14. Statement of Work: The FY 2013 Approved Funding Program provides funding to accomplish Workforce Development for Teachers and Scientists activities, generally consistent with the Field Work Proposal submissions and modifications and specific guidance provided by the enclosed memorandum. The Office of Workforce Development for Teachers and Scientists (WDTS) 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 WDTS managers and WDTS-supported staff. Funds provided by WDTS will be applied as necessary to ensure that all WDTS activities are conducted safely and in an environmentally conscientious manner. Only work conducted in this way will be supported.			
15. Reporting Requirements (Status reports, scientific and technical information or similar): The following are required for the Workforce Development for Teachers and Scientists program: analysis reports as produced, a fiscal year end report, and a final report.			
16. Work Authorization Program Official. Name (typed): Patricia M. Dehmer Signature: <i>Patricia M. Dehmer</i> Date: 4/23/13			
17. DOE Field Organization Official. Name (typed): Signature: Date:			
18. Contractor's Authorized Representative. Name (typed): Signature: Date:			
19. DOE Contracting Officer (or delegated representative). Name (typed): Signature: Date:			

*Includes Operating of \$2,546.

**Workforce Development for Teachers and Scientists
FY 2013 May Program Guidance Attachment**

Savannah River National Laboratory (410003)

Internships and Visiting Faculty Activities

SULI (KL-10-01)

\$8,726.50 is withdrawn and provided to ORISE for SULI support. Authorization is provided for support of 2 2013 Summer Term SULI participants.

CCI (KL-10-02)

\$8,726.50 is withdrawn and provided to ORISE for SULI support.

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89X0222 - SCIENCE
 FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 6

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89X0222.91 (00500)									
O KC	BASIC ENERGY SCIENCES								
			2013	NEW OA	280,000.00		21,000.00		301,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	280,000.00		21,000.00		301,000.00
O KC TOTAL, BASIC ENERGY SCIENCES				NEW OA	280,000.00		21,000.00		301,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	280,000.00		21,000.00		301,000.00
O KL	WDTS								
			2013	NEW OA	20,000.00		17,453.00-		2,547.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	20,000.00		17,453.00-		2,547.00
O KL TOTAL, WDTS				NEW OA	20,000.00		17,453.00-		2,547.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	20,000.00		17,453.00-		2,547.00
O KP	BIOLOGICAL AND ENVIRONMENTAL RESEARCH								
			2013	NEW OA	278,000.00		0.00		278,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	278,000.00		0.00		278,000.00
			2012	NEW OA	0.00		0.00		0.00
				UNOB BAL	25,000.00		0.00		25,000.00
				TOTAL OA	25,000.00		0.00		25,000.00
O KP TOTAL, BIOLOGICAL AND ENVIRONMENTAL RESEARCH				NEW OA	278,000.00		0.00		278,000.00
				UNOB BAL	25,000.00		0.00		25,000.00
				TOTAL OA	303,000.00		0.00		303,000.00
TOTAL, OPERATING EXPENSES (00500)				NEW OA	578,000.00		3,547.00		581,547.00
				UNOB BAL	25,000.00		0.00		25,000.00
				TOTAL OA	603,000.00		3,547.00		606,547.00

Workforce Development for Teachers and Scientists
FY 2013 May Program Guidance Attachment

RPT7.RPT
B&R: KL 89X0222
Lab: All
SETASIDES: Exclude -- UA Reserves
Current Stage: 2013-07-01
Proposed Stage: 2013-08-01
\$: Whole

	Current	Approved Obligations Change	Proposed	Current	Approved Costs Change	Proposed
Savannah River Ops Office						
Operating Expenses						
SAVANNAH RIVER NATL LAB						
KL1001	10,000	-8,727	1,273	10,000	-8,727	1,273
KL1002	10,000	-8,727	1,273	10,000	-8,727	1,273
	20,000	-17,454	2,546	20,000	-17,454	2,546
	20,000	-17,454	2,546	20,000	-17,454	2,546
	20,000	-17,454	2,546	20,000	-17,454	2,546
	20,000	-17,454	2,546	20,000	-17,454	2,546

KL 1001000 - 2924406

Attachment 3

Work Authorization No. SR071801-5-13

**Project Title: Attenuation-Based Remedies for the Subsurface Applied Field
Research Initiative at Savannah River**

2013-72

U. S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Project Title Attenuation-Based Remedies for the Subsurface Applied Field Research Initiative at Savannah River		1b. Work Proposal Number SR071801-5-13	
2. Headquarters Program Point of Contact			
Name Grover Chamberlain	Organizational Code EM-12	Telephone 301.903.7248	
3. Headquarters Budget Point of Contact			
Name Jeffrey McMillan	Organizational Code EM-61	Telephone 301.903.7701	
4. Responsible Program Environmental Management		5. Responsible Secretarial Officer M. Gilbertson	
6. Responsible Field Organization U.S. Department of Energy, Savannah River Operations			
7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC		7b. Contractor Point of Contact Name: John W. Temple Telephone No. (803) 952- 7210	
8. Work Authorization Number SR071801-5-13		9. Revision Number 4	
10. Funds Authorized (See NOTE below) NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."			
Budget and Reporting Code: EY4049110	Previous: \$ 455,061.61	Change: \$ 35,000.00	Current: \$ 490,061.61
11. Performance Period Covered by Funds 10/1/2012 9/30/2013		12. Work Start Date 10/1/2012	13. Expected Completion Date 9/30/2013
14. Statement of Work (Includes attachments) Task 1: Enhanced Attenuation of Uranium and 129I by Humic Acid Pilot field-scale tests and optimization of this technology to move this technical approach from basic science to actual field deployment and regulatory acceptance. Task 2: Develop Strategy from SOMERS w/PNNL SRNL participation on the Scientific Opportunities for Monitoring Environmental Remediation Sites (SOMERS) team to develop improved strategies for monitoring subsurface groundwater contamination. Task 3: Road map for End Points w/PNNL SRNL participation on the DOE-EM Roadmap team that is tasked with defining technically defensible end states, systems based remediation approaches and systems-based monitoring strategies that include closure solutions that are cost-effective, sustainable, and protective of public health and natural resources at DOE sites. Task 4: Management of the Technical Assistance Program Management of the technical assistance program including helping site problem holders to develop technical needs statements, selection of the technical experts, contracting of non-SRNL participants, management of the team meeting, and preparation of the technical assistance team report. Note: Period of performance for this work scope ends September 30, 2013.			
15. DOE-SR Program Point of Contact			
Name (printed): JEAN CHRISTIAN	Signature: 	Date: 5/3/2013	
16. DOE-SR Field Budget Official			
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/3/2013	
17. Contractor's Authorized Representative			
Name (typed): John Temple FOR	Signature: 	Date: 5/9/2013	
18. DOE Contracting Officer (or delegated representative)			
Name (typed): Scott Langston	Signature: 	Date: 5/10/13	

OFFICE OF TECHNOLOGY INNOVATION & DEVELOPMENT (BM-30)								May 2012	
WORK AUTHORIZATION/TASK CHANGE REQUEST (TCR)									
Project Number :	SR021801	Date:	March 13, 2013	APP Change Month:	April 2013				
Project Title:	Attenuation Based Remedies APR								
Site/Contractor:	SRNL	Project Area from Roadmap:	2.3.1 GW&S01a	Technical Task Plan Attached:	Yes				
Contract Number if other than National Laboratory or DOR site contractor:									
Name of Principal Investigator: Miles Demham									
Name of Budget Analyst at the site where the contract is held:									
New BA (\$K) Requested	Prior Funding (\$K) in this FY	Total Uncosted (\$K) as of Beginning of this FY			Total Available Funding (\$K) including this request (add first three columns)				
60K 35K	40K 320K	100K			80K 455K				
Spend Plan for Total Available Funding (use actual costed funds for previous quarters)									
1 st Quarter of FY	2 nd Qtr of FY	3 rd Quarter of FY	4 th Quarter of FY	Projected uncosted at the end of this FY					
000	149	720	430	0					
Funding Codes (To be Completed by Budget Office)									
Fund	Year	Allofee	Reporting Entity	RGL	Object Class	Program	Project	Amount	
01250	2013	86	410003	6100000	25400	1110676	0003925	35,000	
Short Description of Work Scope Authorized/Changed for input in APP:	See Attached TTP: 1. Complete humane testing to sequester toline 129 2. Develop characterization and remediation tools for mercury at ORO 3. Optimize sampling & monitoring tools in conjunction with the SOMURS Strategic Plan 4. Develop underplannings for use of attenuation based remedies to facilitate risk informed end points.								
Submitted by:	Grover H Chamberlain <i>[Signature]</i>						Date: 2/12/13		
Headquarters Project Manager (Please Print & Sign)									
Field:	Karen Adams <i>[Signature]</i>						Date: 03-13-13		
Field DOE Representative (Please Print & Sign)									
Approved by:	Kurt Gerdes <i>[Signature]</i>						Date: 3/13/13		
Office Director (Please Print & Sign)									
Approved by:	<i>[Signature]</i>						Date:		
DAS Site Registration Mission Unit									
Submitted to:	<i>[Signature]</i>						Date: 4/22/2013		
USAMIP Budget Analyst for TDD to complete APP change									

FY2013 Technical Task Plan

NEEDS STATEMENT:

Remediation of subsurface contamination is a significant challenge facing the U.S. Department of Energy Office of Environmental Management (EM). EM manages one of the largest and most complex soil and groundwater cleanup programs in the world. Although EM has completed cleanup activities at many of their sites, many of the remaining sites are technically challenging, either due to the nature of the contaminants or to the nature of the subsurface environment. Although traditional standards-based closure goals have been successful at many sites, these approaches may not be technically or economically feasible at many of the remaining complex sites. EM has recently proposed the use of alternate endpoints to establish a path for cleanup that may include intermediate remedial milestones and transition points and/or regulatory alternatives at complex sites. Development and implementation of an alternate endpoint-based approach for remediation and waste site closure presents a number of challenges and opportunities. These challenges include scientific and technical, regulatory, institutional, and budget and resource allocation issues. Opportunities exist to develop and implement systems for remedial characterization, monitoring, and remediation that in many cases will combine both innovative and baseline approaches to reach the desired endpoint. Without these approaches and tools, many contaminated sites in the DOE complex will be unable to achieve acceptable end-states in a reasonable timeframe.

The objective of the Attenuation-Based Remedies for the Subsurface Applied Field Research Initiative (ABRS AFRI) at the Savannah River Site is to develop and deploy science-based approaches and tools to monitor and remediate difficult sites contaminated with combinations of metals, radionuclides, and recalcitrant organic compounds. Of particular importance is the development of strategies and tools that can be used to transition active/aggressive technologies that are reaching diminishing effectiveness to strategies that emphasize natural attenuation processes with an ultimate end state goal of monitored natural attenuation (MNA). There is a wealth of basic science information on attenuation mechanisms, yet the science and protocols for determining or demonstrating whether contaminants left in the subsurface pose an acceptable risk are immature. There is a major need for applied science that incorporates the basic science into a holistic understanding of how waste sites, especially the nature of the attenuated contaminants, evolve over time. These studies are critical in order to evaluate sites for applicability and selection of attenuation-based remedies, as well as demonstrate to regulators and stakeholders that attenuated contaminants will not remobilize as the site evolves. Additionally, there is an important need to expand the toolbox of enhanced attenuation remedies. Addressing these needs will lead to development of approaches and tools that facilitate the use of attenuation-based remedies.

BACKGROUND AND PURPOSE:

Complex groundwater contamination plumes with toxic metals and/or radionuclides are present at the majority of DOE facilities. These plumes have reached up to a mile in length at some sites and discharge to surface water exposure points (e.g., Hanford, Savannah River Site and Oak Ridge). To meet the needs stated above the Attenuation-Based Remedies for the Subsurface Applied Field Research Initiative (ABRS AFRI) was established by EM-12 with the Savannah River National Laboratory as the lead. The F-Area groundwater contaminant plume at the Savannah River Site is the primary field research site of the ABRS AFRI and is a plume that has been remediated to an alternative end-point. A innovative passive remedial system is being monitored and evaluated over the long term prior to traditional regulatory closure. Contaminants being addressed at this site are uranium, strontium-90, iodine-129, and tritium. SRNL and SRS are designated as the lead for the EM-12 funded ABRS AFRI because:

- SRNL and the Savannah River Nuclear Solutions Area Completion Projects have a decades long history of working together to develop and deploy innovative technical approaches to achieving desired end-states at contaminated sites
- SRNL was a key collaborator in development of the in situ remediation at the F-Area plume that

allowed the abandonment of the pump-and-treat system, moving the site closer to end-state goals in a more cost effective and efficient way

- The desired end-state at F-Area will be met in phases that are specified in the SRS RCRA Permit (2009) that also encourages continued development and deployment of innovative technologies to achieve the end-state
- Successful applied research conducted at this AFRI will provide the means of achieving the end-state specified in the RCRA permit, as well as being widely applicable across the DOE complex

The objective of (ABRS AFRI) is to develop and bring to maturity science-based approaches and associated tools that facilitate transition of sites with groundwater and soil contamination from active to more passive attenuation-based remedies including MNA. This includes development of enhanced attenuation remedies, as well as site characterization, site evaluation, monitoring, and decision making approaches and tools necessary for successful use of attenuation-based remedies. These activities facilitate the use of attenuation-based remedies by providing the information necessary to prove their effectiveness, and hence allowing negotiation of appropriate and reasonable end-states with regulatory agencies.

Advancements achieved at the ABRS AFRI work in conjunction with those achievements realized at the Hanford and Oak Ridge AFRI as well as the Advanced Simulation Capability for Environmental Management (ASCEM) initiative to make up the applied science portfolio established within the EM-12 Soil and Groundwater Remediation Program. Specifically, the data-rich and mature nature of the SRS F-Area site provides a great opportunity for testing ASCEM developed concepts.

ABRS AFRI GOALS

As stated in the ABRS AFRI Strategic Plan, the initiatives goals are:

- Develop tools and approaches for attenuation-based remedies and integrate them into the regulatory framework established by the US EPA and ITRC.
- Develop characterization and monitoring tools that focus on the geochemical properties that control contaminant fate and transport, facilitate evaluation on the field-scale, and are inexpensive and easy to use.
- Develop approaches that will optimize the number of locations and the number of samples and measurements required to achieve an acceptable level of uncertainty in decision making.
- Develop remediation technologies that will effectively and efficiently attenuate contaminants and result in their long-term stabilization.
- Through a collaboration of applied and basic research provide the technically defensible underpinnings for approaches, tools and technologies to implement attenuation-based remedies leading to completion of remediation activities for contamination of groundwater by metals and radionuclides.
- Transfer the ABRS AFRI products to site owners, regulators and other members of the communities of practice to foster usage by the DOE community, as well as the national community.

AFRI COLLABORATORS

DOE Office of Science funded Sustainable Systems Scientific Focus Area at LBNL is the main collaborator providing funding independent of this AFRI. Other collaborators include:

Interstate Technology and Regulatory Council
North Carolina State University
GSI Environmental, LLC
Oregon State
University Sandia
National Laboratory
Pacific Northwest National Laboratory
Technical Assistance Collaborators TBD

2013 TECHNICAL APPROACH

The five tasks listed here cover the various focus areas of the AFRI ABRS.

Task 1: Attenuation Remedies In Support of Alternative End-States

One important pathway to alternate endpoints is development of effective long-lived attenuation-based remedies. For such remedies to gain regulatory approval, they must demonstrably reduce contaminant flux to compliance points for long periods of time. One of the primary goals of the AFRI ABRS is to mature promising attenuation-based technologies from concept to field-scale pilot tests. Bench-scale studies done at Lawrence Berkeley National Laboratory showed that humates sorbed on aquifer minerals strongly bind uranium at mildly acidic pH and potentially bind ^{129}I . Their research suggests that humates would be an ideal enhanced attenuation amendment to use for hot-spot treatment at the F-Area Applied Field Research site where both contaminants are present in acidic groundwater. Use of humate could also be applicable for contaminant stabilization at a wide variety of other DOE sites. Pilot field-scale tests and optimization of this technology will be required to move this technical approach from basic science to actual field deployment and regulatory acceptance. This task also involves collaboration with the Deep Vadose Zone AFRI at Pacific Northwest National Laboratory (PNNL). PNNL is interested in exploring microbiological aspects of the redox chemistry of ^{129}I and potential interaction with humates. The task will take two approaches. The first will be a one well test injection test similar to a push-pull test in which humate will be injected into a well that will be subsequently monitored for uranium and ^{129}I . The second approach will use humate loaded sediments in diffusion samplers. These are similar to bio-traps that PNNL will deploy in a Hanford ^{129}I plume. SRNL and PNNL will collaborate on microbial (PNNL) and iodine speciation analyses (SRNL) of these samplers.

Sub-tasks

- 1.1 Field test of humate technology for uranium and ^{129}I remediation at the F-Area Field Research Site using single well push-pull type tests using existing wells
- 1.2 Diffusion sampler study of sorption and microbial interactions of U and ^{129}I on humate treated and untreated F-Area sediments
- 1.3 Send samples from diffusion samplers (sediments) and push-pull test (water) to PNNL for microbial analysis and perform uranium and ^{129}I speciation analysis on diffusion samplers and PNNL bio-traps

Deliverables

Sub-task 1.1 Progress report on field injection test	9/16/2013
Sub-task 1.2 Report on diffusion sampler study	9/08/2013

Task 2: Develop Innovative Characterization and Monitoring Strategies to Support Implementation of Alternative End Points

Implementation of long-lived attenuation-based remedies will require significant levels of monitoring to ensure that the remedies continue to be effective over long periods of time. This will be required to demonstrate to regulators and stakeholders that attenuated contaminants are behaving as predicted by site conceptual model and will not remobilize as the site evolves. Additionally, there is an important need to expand the toolbox of enhanced attenuation remedies. Addressing these needs will lead to development of approaches and tools that facilitate the use of attenuation-based remedies.

Sub-tasks

2.1 SRNL Participation on the SOMERS team

This task supports SRNL participation on the Scientific Opportunities for Monitoring Environmental Remediation Sites (SOMERS) team to develop improved strategies for monitoring subsurface

groundwater contamination that will be used by DOE-EM to develop their three-year Strategic Plan by the end of FY2013. The SOMERS team will be organized by the PNNL and the task will support attendance at team meetings and preparation of a contribution to the technical strategy document. Meeting dates and description of deliverables are TBD.

Subtask 2.2 Implementation of Innovative Paradigm for Long Term Monitoring at Metals and Rad sites

This task will support a pilot field implementation of an alternative paradigm for long term monitoring that should simultaneously improve performance monitoring systems and lower costs. Traditional long-term monitoring relies predominantly on point source measurement of contaminant concentrations at monitoring wells. Concentration measurements for all types of contaminants in groundwater are a lagging indicator plume movement – significant changes indicate that contamination has already migrated. The new paradigm is focused on measurement of the controlling variables that are leading indications for changes in the stability of the plume. This would be supplemented by a substantially reduced number of concentration measurements at wells. The controlling variables include boundary conditions, master variables, and plume/contaminant variables. Boundary conditions are the overall driving forces that control plume movement and therefore provide leading indication to changes in plume stability. Master variables are the key variables that control the chemistry of the groundwater system, and include redox variables (ORP, DO, chemicals), pH, specific conductivity, biological community (breakdown/decay products), and temperature. A robust suite of tools is commercially available to measure these variables.

Currently, at F-area, monitoring/sampling analyses locations (~100 locations) can be divided into the following categories: Background Wells, Point of Compliance wells associated with the F-area basin closure, Plume Definition Wells, Gate Monitoring Wells, Wetland Piezometers, and Stream Surface Water Sampling points. We propose implementation of the pilot monitoring system in two phases. Phase 1 activities will consist of replacing contaminant sampling and analysis at selected Gate Monitoring Wells and Wetland Piezometers with a sensor system that measures master variables and boundary conditions (pH, ORP, water level). Phase 2 activities will consist of reducing the number of Plume Definition wells by fifty percent. The specifics of these activities will be developed and coordinated with the appropriate regulatory agencies and stakeholder groups.

The proposed system should improve the performance of F-area monitoring systems while significantly lowering monitoring costs. In addition, monitoring of leading indicators (boundary conditions and geochemical conditions) will identify deviations from expected plume behavior more effectively than baseline contaminant monitoring systems. This will allow for early identification of changes in physical and chemical controls that will enable remedial response before contamination has migrated in an unacceptable manner. This approach can be used at other waste sites at SRS as well throughout the DOE and federal complex.

Deliverable 2.1 Deployment of sensor system at F-Area (8/5/2013)

Deliverable 2.2 Submit journal article describing innovative paradigm (9/20/2013)

Task 3: Participation in the Development of the End Points Roadmap

This task will support SRNL participation on the DOE-EM Roadmap team that is tasked with defining technically defensible end states, systems-based remediation approaches and systems-based monitoring strategies that include closure solutions that are cost-effective, sustainable, and protective of public health and natural resources at DOE sites. The team will be organized by the PNNL and the task will support attendance at team meetings and assistance in the preparation of a contribution to a technical whitepaper. Meeting dates and description of deliverables are TBD.

Task 4: Management of the Technical Assistance Program

For over two decades, SRNL has managed a dynamic and efficient national program sponsored by DOE Office of Environmental Management that provides teams of technical experts with a broad experience base to

recommend strategies to address DOE's challenging environmental problems when standard approaches haven't worked. The Technical Assistance program organizes and manages small teams of nationally recognized experts in support of both DOE's smaller sites, such as Paducah, Portsmouth, Pinellas, Ashtabula, Fernald, Mound, and Kansas City Plant, and larger sites such as Oak Ridge, Los Alamos, Lawrence Livermore and Savannah River. Typically these teams work with site problem holders to develop efficient and effective solutions to address their complex/difficult technical issues. FY2013 funding will administration of the technical assistance program including helping site problem holders to develop technical needs statements, selection of the technical experts, contracting of non-SRNL participants, management of the team meeting, and preparation of the technical assistance team reports. Task 2 will support identification and implementation of 'Quick Win' Ideas for mercury characterization and remediation at Oak Ridge's Y-12 facility. This funding will to leverage funding provided by the OR DOE office. Potential Task 2 projects include:

- **Innovative Strategies for Characterization of Mercury in Support of D&D activities**
 - Develop strategy/sampling protocols to support D&D slab removal/soil remediation/closure activities similar to Site Excavation Plans developed by TA teams for Fernald and Mound
 - Develop innovative approaches and field detectors to support timely and cost-effective decision-making (Field mercury detectors, Field XRF, Flute liners, optical/neutron probes)
 - Develop final closure verification sampling requirements and strategies
- **Innovative Methods for Remediation/Mitigation of Source Zone Hg**
 - Thermal Remediation and Gas-phase Sequestration
 - Explore blending or injection of sequestration materials (e.g., biochar/carbon, alumina, etc.)
 - Explore beneficial use of current building sumps as long-term passive mercury reduction systems (e.g., fill with amendment and connect to stream)
- Explore and extend the portfolio of low cost field screening methods to "bin" soils (e.g., contaminated, potentially contaminated, clean), constraining the magnitude of source material to be treated/excavated

Deliverables

- 4.1 Identify specific opportunities for Quick Wins at OR and develop work scope (5/1/2013)
- 4.2 Support implementation of Quick project at OR (9/30/2013)

Task 5: Phase II of Understanding Aquifer Heterogeneity with the Reactive Facies Approach

Aquifer heterogeneity is a challenge to acceptance of alternate endpoints because it complicates prediction of contaminant fate and transport and can interfere with effective remediation. Hence, understanding aquifer heterogeneity at a site is important to demonstrating that alternate endpoints can achieve the risk reduction required by regulators and stakeholders. The reactive facies concept developed jointly by SRNL and LBNL relates the complexity of aquifer heterogeneity to the original geologic environment of deposition of the aquifer. It exploits the fact that heterogeneity in aquifers is not random, but occurs in patterns defined by the environment of deposition. Phase I of Understanding Heterogeneity with the Reactive Facies Approach focused on the upper aquifer at the F-Area Applied Field Research Site. Reactive facies proved to be a valuable construct for understanding geochemical heterogeneity in this relatively simple system. The lower aquifer is more complex and the degree of heterogeneity more representative of aquifers across the DOE complex. Phase I was completed in collaboration with the Science Focus Area (SFA) Plume Challenge at LBNL. Phase II began in FY11 but was interrupted by a funding hiatus in FY12. The activities of Phase II will be resumed in collaboration with LBNL to develop the concept of reactive facies into a more general approach to aquifer heterogeneity that can be applied across the DOE complex. The concept of reactive facies will be extended to include the distribution and role of granular iron and phosphate minerals in natural attenuation. The lower aquifer zone at the F-Area Field Research Site contains abundant phosphate minerals that can potentially sequester uranium, as well as iron minerals that can potentially pose redox conditions to be favorable for natural attenuation of some contaminants. The general approach to aquifer heterogeneity, based on reactive facies, will ultimately transfer to ASCM allowing inclusion of a powerful means of accounting for subsurface heterogeneity in modeling.

Sub-tasks:

- 3.1 Sampling and analysis of existing lower aquifer cores by high vertical resolution x-ray fluorescence and acid-base titrations to delineate reactive facies and correlate to depositional environments
- 3.2 Continued analysis of sample textures by optical microscopic image analysis
- 3.3 Analysis of the spatial distribution and reactivity of the "heavy mineral" suite in the lower aquifer zone

SPENDING PLAN:

Monthly Spending Plan for FY13 (\$K)

Oct 2012	Nov 2012	Dec 2012	Jan 2013	Feb 2013	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sep 2013	Total
0	5	20	24	25	66	80	80	90	90	80	60	620

Signatures and Approvals:

HQ Program Manager: Latrincy Bates *[Signature]*

Office Director: Kurt Gerdes *[Signature]*

Principal Investigator: Miles Danham *[Signature]* 8/12/2013

Site Representative: Karen Adams *[Signature]* 08.12.13

BUDGET:

Task	Budget FY13 \$K
Task 1: Attenuation Remedies in Support of Alternative End Points	230 ^a
Task 2: : Develop Innovative Characterization and Monitoring Strategies to Support Implementation of Alternative End Points	140 ^b
Task 3: Participation in the Development of the End Points Roadmap	30 ^b
Task 4: Management of Technical Assistance Program	75 ^b
Task 5: Phase II of Understanding Aquifer Heterogeneity: Reactive Facies Approach	145
Total	\$620

a- \$140K FY13 funding received previously

b- \$120K FY12 Carryover identified in Zero Sum TCR dated 12/2012 distributed across these tasks

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89X0251 - DEFENSE ENVIRONMENTAL CLEANUP
 FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO.

9

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89X0251.91 (01250)									
O EY40	DSAC TECHNOLOGY DEVELOPMENT & DEPLOYMENT								
	EY404911 PROJECTS TO REDUCE TECHNICAL RISK		2013	NEW OA	1,689,000.00		85,000.00		1,774,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,689,000.00		85,000.00		1,774,000.00
O EY40 TOTAL, DSAC TECHNOLOGY DEVELOPMENT & DEPLOYMENT				NEW OA	1,689,000.00		85,000.00		1,774,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,689,000.00		85,000.00		1,774,000.00
O EY80	DEC - PROGRAM SUPPORT								
	EY804910K EML3 FEDERAL DISPOSITION OPTIONS		2013	NEW OA	279,194.85		0.00		279,194.85
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	279,194.85		0.00		279,194.85
O EY80 TOTAL, DEC - PROGRAM SUPPORT				NEW OA	279,194.85		0.00		279,194.85
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	279,194.85		0.00		279,194.85
O EY8648	SAVANNAH RIVER SITE - SITE RISK MANAGEMEN								
			2013	NEW OA	217,430,885.00		17,059,186.00		234,490,071.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	217,430,885.00		17,059,186.00		234,490,071.00
O EY8648 TOTAL, SAVANNAH RIVER SITE - SITE RISK MANAGEMEN				NEW OA	217,430,885.00		17,059,186.00		234,490,071.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	217,430,885.00		17,059,186.00		234,490,071.00
O EY874814	SR-0014C RADIOA LIQ TNK WASTE STAB/DISP								
			2013	NEW OA	423,942,553.00		16,628,897.00		440,571,450.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	423,942,553.00		16,628,897.00		440,571,450.00

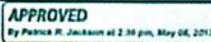
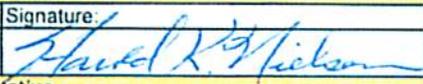
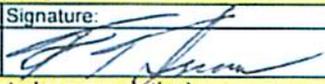
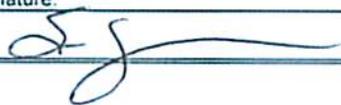
Part of 35,000 -
 ↓ 50,000

Attachment 4

Work Authorization No. 89X0319, Rev 4

Project Title: Fuel Cycle Technologies

7 12, 6 2
Rev. 10

U. S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Project Title Fuel Cycle Technologies		1b. Work Proposal Number 89X0319	
2. Headquarters Program Point of Contact			
Name: Robert Rova		Organization Code: NE-5	Telephone: 301-903-9096
3. Headquarters Budget Point of Contact			
Name: Daphne M. Lugenbeel		Organization Code: NE-34	Telephone: 301-903-2251
4. Responsible Program Office of Nuclear Energy		5. Responsible Secretarial Officer John Herczeg	
6. Responsible Field Organization U.S. Department of Energy, Savannah River Operations			
7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC		7b. Contractor Point of Contact Name: John W. Temple Telephone No. (803) 952- 7210	
8. Work Authorization Number 89X0319		9. Revision Number 4	
10. Funds Authorized (See NOTE below)			
This guidance is based on funding provided under the FY 2013 Continuing Resolution (CR) for Appropriation 89X0319 and reflected in the AF58 Budget and Reporting codes for the April Approved Funding Program (AFP). Per the attached direction, \$300,000 was added to NFST Planning Project - 1.2.09.08 ST Design Concepts managed under BNR/CAM AF586502. Also, per the attached direction, additional appropriations year 2012 funds from B&R Code AF583203, in the amount of \$100,000, are being added to this Work Authorization.			
Budget and Reporting Code:	Previous:	Change:	Current:
AF5805100	\$ 736,470.00	\$ 315,630.00	\$ 1,052,100.00
AF5865010	\$ 631,950.00	\$ 184,800.00	\$ 816,750.00
AF5865020	\$ 325,550.00	\$ 482,700.00	\$ 808,250.00
AF5832030	\$ 36,750.00	\$ 15,750.00	\$ 52,500.00
AF5832020	\$ 124,950.00	\$ 53,550.00	\$ 178,500.00
FY2013 Totals	\$ 1,855,670.00	\$ 1,052,430.00	\$ 2,908,100.00
FY2012 Funding (AF5832030)		\$ 100,000.00	\$ 100,000.00
Grand Total	\$ 1,855,670.00	\$ 1,152,430.00	\$ 3,008,100.00
11. Performance Period Covered by Funds		12. Work Start Date	13. Expected Completion Date
From: Oct. 1, 2012 To: Sept. 30, 2013		From: Oct. 1, 2012	To: Sept. 30, 2013
14. Statement of Work (Includes attachments)			
The FCT work packages defining the authorized work scope are maintained in the Program Information Collection System NE (PICSNE). PICSNE will be used for all monthly performance reporting to Headquarters Management including, but not limited to the status of: Level 2 milestones, deliverables, cost and schedule, Baseline Change Proposals, and carryover projections. The funding allocation by B&R code is shown in the attached table.			
15. DOE-SR Program Point of Contact			
Name (printed): Patrick Jackson	Signature: 	Date: May 8, 2013	
16. DOE Budget Official			
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/3/2013	
17. Contractor's Authorized Representative			
Name (typed): John Temple FDR.	Signature: 	Date: 5/9/2013	
18. DOE Contracting Officer (or delegated representative)			
Name (typed): Scott Langston	Signature: 	Date: 5/10/13	

memorandum

DATE: April 25, 2013
REPLY TO
ATTN OF: NE-5
SUBJECT: Fiscal Year (FY) 2013 Program Guidance—Fuel Cycle Technologies (FCT)
TO: David C. Moody III, Manager
Savannah River Operations Office

This memorandum provides Office of Nuclear Energy (NE) guidance regarding FCT activities to be conducted by the Savannah River Site (SRS) and Savannah River National Laboratory (SRNL) in FY 2013. The funding provided for authorized FCT work scope activities performed by SRS/SRNL is increased \$300,000 to \$3,983,000. This guidance is based on funding provided under the FY 2013 Continuing Resolution (CR) for Appropriation 89X0319 and reflected in the AF58 Budget and Reporting codes for the April Approved Funding Program (AFP).

Additionally, Appropriations Year (AY) 2012 funds are available as described below:

(AY)	B&R Code	Local Use Code	Description	Amount
2012	AF583203	0301556	DOE NE Pu Disposition Study	\$100,000

The FCT work packages defining the authorized work scope are maintained in the Program Information Collection System NE (PICSNE). A work scope must be provided and approved in PICSNE. PICSNE will be used for all monthly performance reporting to Headquarters Management including, but not limited to the status of: Level 2 milestones, deliverables, cost and schedule, Baseline Change Proposals, and carryover projections. The funding allocation by B&R code is shown in the attached table.

Funds covered by this guidance memorandum are not to be used for Headquarters programmatic support services. In addition, these funds are not to be used to hire support service contractors who are then used by Headquarters Federal personnel to perform specific tasks directed by a Federal employee.

All travel and conference activities funded through this work authorization are to be in compliance with the Office of Management and Budget Memorandum M-12-12 dated May 11, 2012, and SRNL, SRS and Department of Energy conference reporting requirements.

Attached is a Work Authorization System form consistent with this program guidance. Please obtain the appropriate signatures and return a copy of the completed authorization to Daphne Miss-Lugenbeel, NE-22.

I appreciate your cooperation and support to ensure that this program is successfully carried out. The Headquarters point of contact for this work is Bob Rova, who can be contacted at (301)903-9096.



John W. Herczeg
Associate Deputy Assistant Secretary
for Fuel Cycle Technologies
Office of Nuclear Energy

1 Attachment

cc: M. Gonzalez, SR
H. Gunter, SR
William Summers, SRNL
J. Aljayoushi, ID
Brad Couch, INL (TIO)
Sandra Knoll, INL (TIO)
M. Brainard, PRC
M. Venhuizen, ASTC

Fuel Cycle Technologies
Fiscal Year (FY) 2013 Program Guidance
Savannah River Operations Office
Savannah River Site/Savannah River National Laboratory
(\$3,983,000)

Funding for FY 2013 is authorized as follows:

Control Account Title	BNR/CAM	SRNL
Separations Campaign - 1.2.03	AF5805	\$1,503,000
.03 - Sigma Teams - Minor Actinides	Bruce Moyer	\$318,000
.04 - Fundamental S&M / M&S	Leigh Martin	\$140,000
.05 - Advanced Separations Process Alternatives	Bob Jubin	\$200,000
.07 - Waste Form Characterization	William Ebert	\$365,000
.08 - Advanced Waste Form Processing	John Vienna	\$480,000
Used Fuel Disposition - 1.2.08	AF586501	\$1,225,000
.02 - ST Field Demonstration	Ken Sorenson	\$100,000
.04 - DR Thermal Load Management & Design Concepts	Kevin McMahon	\$65,000
.05 - ST Storage and Transportation Experiments	Ken Sorenson	\$400,000
.09 - DR Inventory	Kevin McMahon	\$200,000
.12 - DR Low Level Radioactive Waste Disposition	Kevin McMahon	\$210,000
.13 - ST Transportation	Ken Sorenson	\$150,000
.16 - CX Storage, Transportation and Disposal Interface Analysis	John Wagner	\$100,000
NFST Planning Project - 1.2.09	AF586502	\$925,000
.02 - SX Systems Analysis	John Wagner	\$375,000
.08 - ST Design Concepts	John Wagner	\$400,000
.12 - TR Operational	John Wagner	\$150,000
Technical Integration - 1.2.11	AF583203	\$75,000
.02 - Program Support	Brad Couch	\$75,000
Fuel Cycle Options - 1.2.12	AF583202	\$255,000
.02 - Evaluation and Screening	Roald Wigeland	\$75,000
.03 - Integrated Fuel Cycle Analysis (IFCA)	Temi Taiwo	\$105,000
.04 - Nuclear Energy Systems Analysis	Temi Taiwo	\$75,000
Totals		\$3,983,000

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89X0319 - NUCLEAR ENERGY
 FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 3

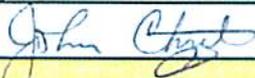
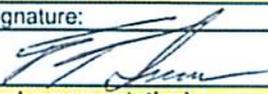
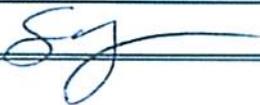
B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89X0319.91 (05350)									
O AF58	FUEL CYCLE RESEARCH AND DEVELOP (FCR&D)								
AF5805	SEPARATIONS AND WASTE FORMS R&D		2013	NEW OA	736,470.00 ✓		315,630.00		1,052,100.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	736,470.00		315,630.00		1,052,100.00
AF583202	SYSTEMS ANALYSIS		2013	NEW OA	124,950.00 ✓		53,550.00		178,500.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	124,950.00		53,550.00		178,500.00
AF583203	TECHNICAL INTEGRATION		2013	NEW OA	36,750.00 ✓		15,750.00		52,500.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	36,750.00		15,750.00		52,500.00
			2012	NEW OA	0.00		0.00		0.00
				UNOB BAL	0.00		100,000.00		100,000.00
				TOTAL OA	0.00		100,000.00		100,000.00
AF5865	USED NUCLEAR FUEL DISPOSITON		2013	NEW OA	957,500.00 ✓		957,500.00-		0.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	957,500.00		957,500.00-		0.00
AF586501	USED FUEL RESEARCH AND DEVELOPMENT		2013	NEW OA	0.00		816,750.00		816,750.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	0.00		816,750.00		816,750.00
AF586502	STORAGE AND TRANSPORTATION OPTIONS		2013	NEW OA	0.00		808,250.00		808,250.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	0.00		808,250.00		808,250.00
O AF58 TOTAL,	FUEL CYCLE RESEARCH AND DEVELOP (FCR&D)			NEW OA	1,855,670.00		1,052,430.00		2,908,100.00
				UNOB BAL	0.00		100,000.00		100,000.00
				TOTAL OA	1,855,670.00		1,152,430.00		3,008,100.00
TOTAL, OPERATING EXPENSES (05350)				NEW OA	1,855,670.00		1,052,430.00		2,908,100.00
				UNOB BAL					

Attachment 5

Work Authorization No. KC/SR1/3, Rev 2

Project Title: Basic Energy Sciences – Energy Frontier Research Centers

2013-71

U. S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Project Title		1b. Work Proposal Number	
Basic Energy Sciences - Energy Frontier Research Centers		Various; Project Code 2005000	
2. Headquarters Program Point of Contact			
Name: Harriet Kung		Organization Code: SC-22	Telephone: 301-903-3081
3. Headquarters Budget Point of Contact			
Name: Kristy Shriver		Organization Code: SC-41.2	Telephone: 301-903-3129
4. Responsible Program		5. Responsible Secretarial Officer	
Office of Science: Basic Energy Sciences		Patricia Dehmer, Deputy Director for Science Programs	
6. Responsible Field Organization			
U.S. Department of Energy, Savannah River Operations			
7a. Site and Facility Management Contractor		7b. Contractor Point of Contact	
Savannah River Nuclear Solutions, LLC		Name: John W. Temple Telephone No. (803) 952- 7210	
8. Work Authorization Number		9. Revision Number	
KC/SR1/3		2	
10. Funds Authorized (See NOTE below)			
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."			
Budget and Reporting Code:	Previous:	Change:	Current:
KC0202050	\$ 280,000.00	\$ 21,000.00	\$ 301,000.00
11. Performance Period Covered by Funds (See NOTE in Block 10)		12. Work Start Date	13. Expected Completion Date
From: 10/1/12	To: Sep 30, 2013	From: 10/1/12	To: 9/30/13
14. Statement of Work (Includes attachments)			
Materials Sciences and Engineering: Funds in the amount of \$76,000, under KC020205, are provided for project #SCW-0090 entitled "Elucidation of Hydride Interaction Mechanisms with Carbon Nanostructures and the Formation of Novel Nanocomposites," Zidan, principal investigator.			
15. DOE-SR Program Point of Contact			
Name (printed):	Signature:	Date:	
John Christian		5/3/2013	
16. DOE Budget Official			
Name (typed):	Signature:	Date:	
Harold K. Nielsen		5/3/13	
17. Contractor's Authorized Representative			
Name (typed):	Signature:	Date:	
John Temple FOX		5/9/13	
18. DOE Contracting Officer (or delegated representative)			
Name (typed):	Signature:	Date:	
Scott Langston		5/10/13	



Department of Energy
Office of Science
Washington, DC 20585

APR 26 2013

MEMORANDUM FOR DOUGLAS J. DEAROLPH
MANAGER
SAVANNAH RIVER SITE OFFICE

FROM: HARRIET KUNG *[Signature]*
ASSOCIATE DIRECTOR OF SCIENCE
FOR BASIC ENERGY SCIENCES

SUBJECT: FY 2013 Office of Science Approved Funding Program -
Savannah River National Laboratory

The attached budget detail and program guidance relate to the funding amounts in the FY 2013 May Approved Funding Program (AFP) recently submitted to the Chief Financial Officer by the Office of Basic Energy Sciences. Also attached, in accordance with DOE Order 412.1A, is the FY 2013 Work Authorization for the M&O contract with Savannah River National Laboratory. This authorization covers funding through the May AFP.

If you have any questions regarding the attached, please call Kristy Shriver on 301-903-3129 or Mike Osinski on 301-903-3590.

Attachment

cc: D. Donati, SR (dennis.donati@srs.gov)
P. Jackson, SR (patrick.jackson@srs.gov)
R. Jump, SR (roxanne.jump@nnsa.srs.gov)
L. Roberson, SR (leza.roberson@srs.gov)



Savannah River National Laboratory

Materials Sciences and Engineering

Funds in the amount of \$21,000, under KC020205, are provided for project #SCW-0090 entitled "Elucidation of Hydride Interaction Mechanisms with Carbon Nanostructures and the Formation of Novel Nanocomposites," Zidan, principal investigator.

Basic Energy Sciences
 FY 2013 May Program Guidance Attachment

		Approved Obligations			Approved Costs		
		Current	Change	Proposed	Current	Change	Proposed
Savannah River Ops Office	SAVANNAH RIVER NATIONAL LABORATORY						
KC02	Materials Sciences and Engineering						
KC020205	Physical Behavior of Materials						
	OPE	280,000	21,000	301,000	280,000	21,000	301,000
	Total KC02	280,000	21,000	301,000	280,000	21,000	301,000
Total	SAVANNAH RIVER NATIONAL LAB	280,000	21,000	301,000	280,000	21,000	301,000

Attachment 6

Work Authorization No. IN13012, Rev 3

Project Title: Energy and Threat

2013-76

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title	Work Proposal Number
Energy and Threat	IN13012

HQ Program Point of Contact	Organization Code	Telephone
Kevin Kremer		202.586.8865

HQ Budget Point of Contact	Organization Code	Telephone
Debra Dayton		202.586.4370

Program Name	Secretarial Office Name
Office of Energy and Threat	Office of Energy and Threat

Responsible Field Organization
U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact
Savannah River Nuclear Solutions, LLC	John Temple 803.952.7210

Work Authorization Number	Revision
IN13012	3

Funds Authorized (See note below)

NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

B/R Code	Previous	Change	Current
GD3003010/3203740	\$1,146,696.00	\$320,000.00	\$1,466,696.00
GD3015000/3203736	\$504,700.00	\$210,300.00	\$715,000.00
GD3006000/1714209	\$20,000.00	\$0.00	\$20,000.00
GD3009000/1714217	\$60,000.00	\$20,000.00	\$80,000.00
Total Funds	\$1,731,396.00	\$550,300.00	\$2,281,696.00

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

Statement of Work: Support of ASD, such as Analytical Transformation WG, Analytic Integrity and Standards Evaluation Program, Analytic Tools Forums, and Intelligence Collection Requirement activities. Reporting requirements: Provide monthly cost status reports to program managers.

POC Name Last	Signature	Date
---------------	-----------	------

JOHN CHRISTIAN

John Christian

5/3/2013

Budget Name Last	Signature	Date
------------------	-----------	------

Harold K. Nielsen

Harold K. Nielsen

5/3/13

Contract POC Name Last	Signature	Date
------------------------	-----------	------

FRANK ILMIC FOR JOHN TERPJE

Frank Ilmic

5/9/13

CO Name Last	Signature	Date
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Lovett James

Lovett James

5/9/13

2013-16

U.S. DEPARTMENT OF ENERGY Work Authorization

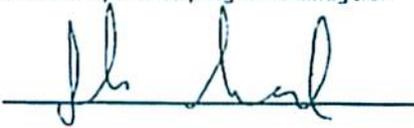
- 1a. Project Title: Energy and Threat 1b. Work Proposal Number:
2. HQ Program Point of Contact:
Name: Sandra Willis Kevin Kremer Terry Creque
Stockton Butler Telephone #
3. HQ Budget Point of Contact:
Name: Debra Dayton  Telephone # 202-586-4370
4. Responsible Program Office: Office of Energy and Threat
5. Responsible Program Secretarial Officer: Office of Energy and Threat
6. Responsible Ops/Site Office: Savannah River Operations Office
- 7a. Major Operating Contractor: Savannah River Nuclear Solutions, LLC (410003)
- 7b. Contractor Point of Contact: Anthony Burris Telephone # 803-725-3471
8. Work Authorization Number: **IN13012** Month: **May** 9. Revision: **3**

10. Funds Hereby Authorized:

Director Initials	B&R Code/STARS Value Code	FY 2013 Initial Amount	Prior Changes to Date	YTD Amount	Current Month Change	FY 2013 Revised Amount
<i>JSW</i>	GD3003010 / 3203740 - Analysis	885,996	260,700.00	1,146,696.00	320,000.00	1,466,696.00
	GD3003020 / 3203741 - Foreign Nucle	-	-	-	-	-
	GD3004010 / 3203745 - Nuclear Terror	-	-	-	-	-
<i>KPV</i>	GD3006000 / 1714209 - Analytic Supp	10,000	10,000.00	20,000.00	-	20,000.00
<i>EW</i>	GD3009000 / 1714217 - M&O Contract	-	60,000	60,000.00	20,000.00	80,000.00
<i>DA</i>	GD3012000 / 1714286 - Science & Tec	-	-	-	-	-
<i>RSP</i>	GD3015000 / 3203736 - NMIP	345,700	159,000.00	504,700.00	210,300.00	715,000.00
<i>M</i>	GD3016000 / 3203748 - Integrated Ex	-	-	-	-	-
	Totals:	1,241,696	489,700	1,731,396.00	550,300.00	2,281,696.00

11. Performance Period: 10/1/2012 to 9/30/2013 12. Work Start Date: 10/1/2012
13. Expected Completion Date: Continuing
14.

Statement of Work: Incremental funding to cover staff costs till full year CR funds are allocated.

15. Reporting Requirements: Provide monthly cost status reports to program managers.
16. Work Authorization Program Official:
Name: John Gerrard  Date: 5/1/13
17. DOE Field Org/Site Office Official:
Name: _____ Date: _____
18. Contractor's Authorized Rep.
Name: _____ Date: _____
19. DOE Contracting Officer (or delegated representative)
Name: _____ Date: _____

Please return signed WORK AUTHORIZATION STATEMENTS (WAS) to the centralized WAS email box at was@doe.gov and penny.lamb@doe.gov within 4 weeks of start time.

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89130243 - OTHER DEFENSE ACTIVITIES
 FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 6

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89130243.91 (01090)									
O GD25	VULNERABILITY & THREAT PROGRAM								
GD254098	OFFICE OF THE SCIO		2013	NEW OA	189,468.00		150,000.00		339,468.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	189,468.00		150,000.00		339,468.00
O GD25 TOTAL, VULNERABILITY & THREAT PROGRAM				NEW OA	189,468.00		150,000.00		339,468.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	189,468.00		150,000.00		339,468.00
O GD30	ENERGY AND PROLIFERATION								
GD300301	ANALYSIS		2013	NEW OA	1,146,696.00		320,000.00		1,466,696.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,146,696.00		320,000.00		1,466,696.00
GD3006	ANALYTIC SUPPORT		2013	NEW OA	20,000.00		0.00		20,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	20,000.00		0.00		20,000.00
GD3009	M&O CONTRACTORS		2013	NEW OA	60,000.00		20,000.00		80,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	60,000.00		20,000.00		80,000.00
GD3015	NMIP		2013	NEW OA	504,700.00		210,300.00		715,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	504,700.00		210,300.00		715,000.00
O GD30 TOTAL, ENERGY AND PROLIFERATION				NEW OA	1,731,396.00		550,300.00		2,281,696.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,731,396.00		550,300.00		2,281,696.00
TOTAL, OPERATING EXPENSES (01090)				NEW OA	1,920,864.00		700,300.00		2,621,164.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,920,864.00		700,300.00		2,621,164.00

Attachment 7

Work Authorization No. IN13021, Rev 1

Project Title: Energy and Threat

2013-74

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title	Work Proposal Number
Energy and Threat	IN13021

HQ Program Point of Contact	Organization Code	Telephone
Sunny Slacum		202.586.8865

HQ Budget Point of Contact	Organization Code	Telephone
Debra Dayton		202.586.4370

Program Name	Secretarial Office Name
Analysis, Investigations & Office of the SCIO	Office of Energy and Threat

Responsible Field Organization
 U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact
Savannah River Nuclear Solutions, LLC	John Temple 803.952.7210

Work Authorization Number	Revision
IN13021	1

Funds Authorized (See note below)
 NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

B/R Code	Previous	Change	Current
GD2540980	\$189,468.00	\$150,000.00	\$339,468.00

Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

Incremental funding to cover staff costs until full year CR funds are allocated.

POC Name Last	Signature	Date
John Christian	<i>John Christian</i>	5/3/13

Budget Name Last	Signature	Date
Harold K. Nielsen	<i>Harold K. Nielsen</i>	5/3/13

Contract POC Name Last	Signature	Date
FRANK INGLE FOR JOHN TEMPLE	<i>Frank Ingle</i>	5/9/13
CO Name Last	Signature	Date
James Lovett	<i>James Lovett</i>	5/9/13

2013-74

U.S. DEPARTMENT OF ENERGY
Work Authorization

- 1a. Project Title: **Energy and Threat** 1b. Work Proposal Number:
2. HQ Program Point of Contact:
Name: Sunny Slacum Sunny Slacum Telephone # 202-586-8865
3. HQ Budget Point of Contact:
Name: Debra Dayton Debra Dayton Telephone # 202-586-4370
4. Responsible Program Office: **Analysis, Investigations & Office of the SCIO**
5. Responsible Program Secretarial Officer: **Office of Energy and Threat**
6. Responsible Ops/Site Office: Savannah River Operations Office
- 7a. Major Operating Contractor: Savannah River Nuclear Solutions, LLC (410003)
- 7b. Contractor Point of Contact: Greg Hull-Ryde Telephone # 803-725-3471

8. Work Authorization Number: **IN13021** Month: **May** 9. Revision: **1**

10. Funds Hereby Authorized:

B&R Code/STARS Value Code	FY 2013 Initial Amount	Prior Changes to Date	YTD Amount	Current Month Change	FY 2013 Revised Amount
GD2540101 / 3203738 (Analysis)	-	-	-	-	-
GD2540200 / 1001217 (Investigations)	-	-	-	-	-
GD2540250 / 3203755 (CI Training)	-	-	-	-	-
GD2540500 / 1001220 (Insider Threat)	-	-	-	-	-
GD2540700 / 1001222 (Inspections)	-	-	-	-	-
GD2540980 / 3203735 (SCIO)	189,468	-	189,468	150,000.00	339,468.00
GD2540990 / 3203701 (M&O at DOE HQ)	-	-	-	-	-
Totals:	189,468	-	189,468.00	150,000.00	339,468.00

11. Performance Period: 10/1/2012 to 9/30/2013 12. Work Start Date: 10/1/2012
13. Expected Completion Date: Continuing

14. Statement of Work: Incremental funding to cover staff costs till full year CR funds are allocated.

15. Reporting Requirements: Provide monthly cost status reports to program managers.
16. Work Authorization Program Official:
Name: Charles Durant Charles Durant Date: 30-Apr-13
17. DOE Field Org/Site Office Official:
Name: _____ Date: _____
18. Contractor's Authorized Rep.
Name: _____ Date: _____
19. DOE Contracting Officer (or delegated representative)
Name: _____ Date: _____

Please return signed WORK AUTHORIZATION STATEMENTS (WAS) to the centralized WAS email box at was@doe.gov and penny.lamb@doe.gov within 4 weeks of start time.

U.S. DEPARTMENT OF ENERGY
FUNDS DISTRIBUTION SYSTEM
APPROVED FUNDING PROGRAM
89130243 - OTHER DEFENSE ACTIVITIES
FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 6

B&R CODE	B&R TITLE	BRM	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
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OPERATING EXPENSES : 89130243.91 (01090)

O GD25 VULNERABILITY & THREAT PROGRAM

GD254098 OFFICE OF THE SCIO

2013	NEW OA	189,468.00	150,000.00	339,468.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	189,468.00	150,000.00	339,468.00
O GD25 TOTAL, VULNERABILITY & THREAT PROGRAM	NEW OA	189,468.00	150,000.00	339,468.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	189,468.00	150,000.00	339,468.00

O GD30 ENERGY AND PROLIFERATION

GD300301 ANALYSIS

2013	NEW OA	1,146,696.00	320,000.00	1,466,696.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	1,146,696.00	320,000.00	1,466,696.00

GD3006 ANALYTIC SUPPORT

2013	NEW OA	20,000.00	0.00	20,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	20,000.00	0.00	20,000.00

GD3009 M&O CONTRACTORS

2013	NEW OA	60,000.00	20,000.00	80,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	60,000.00	20,000.00	80,000.00

GD3015 NMIP

2013	NEW OA	504,700.00	210,300.00	715,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	504,700.00	210,300.00	715,000.00

O GD30 TOTAL, ENERGY AND PROLIFERATION

	NEW OA	1,731,396.00	550,300.00	2,281,696.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	1,731,396.00	550,300.00	2,281,696.00

TOTAL, OPERATING EXPENSES (01090)

	NEW OA	1,920,864.00	700,300.00	2,621,164.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	1,920,864.00	700,300.00	2,621,164.00

Attachment 8

Work Authorization No. HQ1001-0-SR, Rev 4

**Project Title: Energy Employees Occupational Illness Compensation Program
(EEOICPA)**

2013-77

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title		Work Proposal Number	
Energy Employees Occupational Illness Compensation Program (EEOICPA)		HQ1001-0-SR	
HQ Program Point of Contact	Organization Code	Telephone	
Greg Lewis	HS-14	202.586.2784	
HQ Budget Point of Contact	Organization Code	Telephone	
Debra James	HS-10	301.983.3456	
Program Name		Secretarial Office Name	
Office of Health, Safety and Security		Health, Safety and Security	

Responsible Field Organization

U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact	
Savannah River Nuclear Solutions, LLC	John Temple	803.952.7210
Work Authorization Number	Revision	
HQ1001-0-SR	4	

Funds Authorized (See note below)

NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

B/R Code	Previous	Change	Current
HQ1001000	\$335,000.00	\$100,000.00	\$435,000.00
Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

The funding provided through this financial plan is to be used to conduct the following work tasks to implement EEOICPA, including claims under both Subtitle B and Subtitle E of the EEOICPA. These tasks include:

- 1) Perform the work necessary to complete Employment Verifications requested by DOL for the EEOICPA Subtitle B program.
- 2) Perform the work necessary to provide radiation dose records requested by NIOSH as part of the EEOICPA Subtitle B program.
- 3) Perform the work necessary to complete Document Acquisition Request (DAR) requested by DOL as part of the EEOICPA Subtitle E program.
- 4) Perform other necessary EEOICPA related records work as needed.
- 5) Maintain local records to track the activities conducted under EEOICPA.

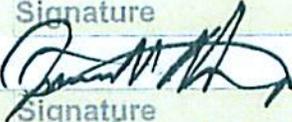
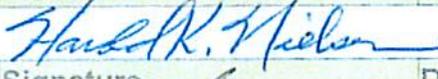
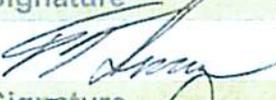
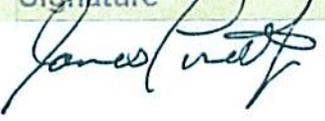
FY 2013 DELIVERABLES:

By the 15th of each month provide monthly reports that include the number of records requests received, number completed and cost per request for each of the three types of requests. This report should be sent to:

- HS-14 (Greg Lewis),
- HS-10 Budget Contact (Jeanette Yarrington)

CONTRACT WORK AUTHORIZATION

• HS-81 Budget Contact (Debra James)

POC Name Last	Signature	Date
Christian <i>For B. Mills</i>		5/3/13
Budget Name Last	Signature	Date
Nielsen		5/3/13
Contract POC Name Last	Signature	Date
Temple <i>FDR</i>		5/9/13
CO Name Last	Signature	Date
Lovett James		5/8/13



Department of Energy
Washington, DC 20585

May 1, 2013

MEMORANDUM FOR DR. DAVE MOODY
MANAGER
SAVANNAH RIVER FIELD OFFICE

FROM: STEPHEN A. KIRCHHOFF *SAK*
DIRECTOR
OFFICE OF RESOURCE MANAGEMENT
OFFICE OF HEALTH, SAFETY AND SECURITY

SUBJECT: May FY 2013 Approved Funding Program

The attached work authorization is consistent with changes made in the May 2013 financial plans. As stated in DOE Order 412.1, work authorizations are to be issued/revised when there is a change in funding or program guidance.

Please return a copy of the signed work authorization to the appropriate Headquarters budget point-of-contact listed on the work authorization. The signed (and returned) work authorization is written documentation that provides the Headquarters program manager with confirmation that transferred funds were received, work accepted, and the effort will proceed as stated.

We appreciate your assistance and support in carrying out the Work Authorization System. Please contact me if you have any questions on 202-586-3373. If your staff has any questions or problems, please contact the appropriate budget point-of-contact listed on the work authorization.

Attachment:
2013-HS-2001036, Rev. 4

cc w/attachment:
Eliberto Seguinot, SR
Rachel Zoss, SR
H. Kriss Nielsen, SR
Patricia Petty, SR



Project Number: 2013-HS-2001036

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY
Management and Operating (M & O) Contract Work Authorization

- 1. INITIATOR(s): Pat Worthington *[Signature]* HS-10 301-903-5926
Name & Signature Organization Code Phone
- 2. PROJECT TITLE: Energy Employees Occupational Illness Compensation Program (EEOICPA) AC:
- 3. RESPONSIBLE PROGRAM SECRETARIAL OFFICE: Office of Health, Safety, and Security
- 4. RESPONSIBLE FIELD OFFICE: Savannah River
- 5. M & O CONTRACTOR NAME: Savannah River / 410225 / 410225 (SR - SRO)
- 6. WORK AUTHORIZATION NO: HQ1001 - 0 - SR

7. FUNDS HEREBY AUTHORIZED (WHOLE DOLLARS) TOTAL BUDGET AUTHORITY: \$436,000.00
TOTAL BUDGET OUTLAY: \$436,000.00

B & R	Program	ORG	Transaction Type	Rev.	Date	Budget Authority	Budget Outlay
HQ1001000	3184701	HS-10	Fund Project from B&R	0	10/1/2012	\$125,000.00	\$125,000.00
HQ1001000	3184701	HS-10	Fund Project from B&R	1	1/1/2013	\$100,000.00	\$100,000.00
HQ1001000	3184701	HS-10	Fund Project from B&R	2	3/1/2013	\$85,000.00	\$85,000.00

Please see next page.

- 8. PERFORMANCE PERIOD COVERED BY FUNDS: FROM: 10/1/2012 TO: 8/30/2013
- 9. WORK START DATE: 10/1/2012
- 10. EXPECTED COMPLETION DATE: IBD
- 11. FUTURE FUNDING PLANNED: To Be Determined
- 12. WORK AUTHORIZED: See attached Statement of Work.

- 13. WORK AUTHORIZATION OFFICIAL: *[Signature]* DATE 5/1/2013
NAME AND SIGNATURE Stephen Kirchhoff
- 14. OPERATIONS OFFICE OFFICIAL: _____
- 15. M & O CONTRACTOR OFFICIAL: _____
- HEADQUARTERS BUDGET POINT OF CONTACT: *[Signature]* 4-25-13
Debra James, 301-903-3456
- FIELD/CONTRACTOR POINT OF CONTACT: _____

WAS Project No.: 2013-HS-2001036

Laboratory/Contractor: The Savannah River Site (CID#: 410225)

Laboratory/Contractor Contact: Regina Price

Phone: 803-952-6288

HS Program Contact: Greg Lewis Org: HS-14 Phone: 202-586-2784

OVERALL PROJECT GOAL/OBJECTIVE:

The Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA) establishes a program to provide compensation to current and former employees of the Department of Energy (DOE), its contractors and subcontractors, companies that provided beryllium to DOE, and atomic weapons employers (AWE's). Under EEOICPA, DOE is required to verify employment histories, provide medical records, and provide radiation dose records and other information pertinent to National Institute for Occupational Safety and Health (NIOSH) radiation dose reconstruction and Department of Labor (DOL) Subtitle B and Subtitle E case preparation for anyone who applies for compensation under EEOICPA.

FUNDING FOR THE FOLLOWING ACTIVITIES:

The funding provided through this financial plan is to be used to conduct the following work tasks to implement EEOICPA, including claims under both Subtitle B and Subtitle E of the EEOICPA. These tasks include:

1) Perform the work necessary to complete Employment Verifications requested by DOL for the EEOICPA Subtitle B program.

- Work with corporate entities or unions to verify employment of former site workers.
- Complete all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.
- Complete declassification, as needed, of records required for the processing of claims forms.

2) Perform the work necessary to provide radiation dose records requested by NIOSH as part of the EEOICPA Subtitle B program.

- Complete and sign off on all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.
- Complete declassification, as needed, of records required for the processing of claims forms.

3) Perform the work necessary to complete Document Acquisition Request (DAR) requested by DOL as part of the EEOICPA Subtitle E program.

- Complete and sign off on all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.

WAS Project No.: 2013-HS-2001036

- Complete declassification, as needed, of records required for the processing of claims forms.
- 4) Perform other necessary EEOICPA related records work as needed.
 - 5) Maintain local records to track the activities conducted under EEOICPA.
 - 6) EEOICPA funding should not be used for any Freedom of Information Act (FOIA) or Privacy Act (PA) requests from the public, even if the individual making the FOIA and/or PA request has also applied to the EEOICPA program.

FY 2013 DELIVERABLES:

DATES:

Provide monthly reports that include the number of records requests received, number completed and cost per request for each of the three types of requests. This report should be sent to:

15th of the following month

- HS-14 (Greg Lewis),
- HS-10 Budget Contact (Jeanette Yarrington)
- HS-81 Budget Contact (Debra James).

**FY 2013 FUNDING FOR MAY FINANCIAL PLAN:
\$100,000**

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89130243 - OTHER DEFENSE ACTIVITIES
 FISCAL YEAR: 2013

410225-SAVANNAH RIVER OPERATIONS OFFICE

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 5

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89130243.91 (01091)									
O HQ	EMPLOYEE COMPENSATION INITIATIVE								
HQ1001	WORKER ADVOCACY		2013	NEW OA	335,000.00		100,000.00		435,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	335,000.00		100,000.00		435,000.00
O HQ TOTAL,	EMPLOYEE COMPENSATION INITIATIVE			NEW OA	335,000.00		100,000.00		435,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	335,000.00		100,000.00		435,000.00
O LM01	LEGACY MANAGEMENT ACTIVITIES - DEFENSE								
LM010510	ENVIRONMENTAL JUSTICE		2013	NEW OA	150,000.00		0.00		150,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	150,000.00		0.00		150,000.00
O LM01 TOTAL,	LEGACY MANAGEMENT ACTIVITIES - DEFENSE			NEW OA	150,000.00		0.00		150,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	150,000.00		0.00		150,000.00
TOTAL,	OPERATING EXPENSES (01091)			NEW OA	485,000.00		100,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	485,000.00		100,000.00		585,000.00
COMBINED TOTAL,	OPERATING EXPENSES			NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00
TOTAL,	DIRECT FUNDING			NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00
TOTAL,	OBLIGATIONAL AUTHORITY			NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00

Attachment 8

Work Authorization No. HQ1001-0-SR, Rev 4

**Project Title: Energy Employees Occupational Illness Compensation Program
(EEOICPA)**

2013-77

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title	Work Proposal Number
Energy Employees Occupational Illness Compensation Program (EEOICPA)	HQ1001-0-SR

HQ Program Point of Contact	Organization Code	Telephone
Greg Lewis	HS-14	202.586.2784

HQ Budget Point of Contact	Organization Code	Telephone
Debra James	HS-10	301.983.3456

Program Name	Secretarial Office Name
Office of Health, Safety and Security	Health, Safety and Security

Responsible Field Organization
 U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact
Savannah River Nuclear Solutions, LLC	John Temple 803.952.7210

Work Authorization Number	Revision
HQ1001-0-SR	4

Funds Authorized (See note below)
 NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

B/R Code	Previous	Change	Current
HQ1001000	\$335,000.00	\$100,000.00	\$435,000.00

Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

The funding provided through this financial plan is to be used to conduct the following work tasks to implement EEOICPA, including claims under both Subtitle B and Subtitle E of the EEOICPA. These tasks include:

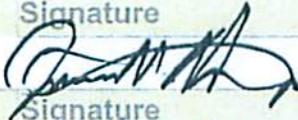
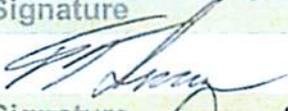
- 1) Perform the work necessary to complete Employment Verifications requested by DOL for the EEOICPA Subtitle B program.
- 2) Perform the work necessary to provide radiation dose records requested by NIOSH as part of the EEOICPA Subtitle B program.
- 3) Perform the work necessary to complete Document Acquisition Request (DAR) requested by DOL as part of the EEOICPA Subtitle E program.
- 4) Perform other necessary EEOICPA related records work as needed.
- 5) Maintain local records to track the activities conducted under EEOICPA.

FY 2013 DELIVERABLES:
 By the 15th of each month provide monthly reports that include the number of records requests received, number completed and cost per request for each of the three types of requests. This report should be sent to:

- HS-14 (Greg Lewis),
- HS-10 Budget Contact (Jeanette Yarrington)

CONTRACT WORK AUTHORIZATION

• HS-81 Budget Contact (Debra James)

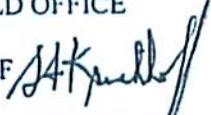
POC Name Last	Signature	Date
Christian <i>for B.M. 1/23</i>		5/3/13
Budget Name Last	Signature	Date
Nielsen	<i>Harold K. Nielsen</i>	5/3/13
Contract POC Name Last	Signature	Date
Temple <i>FOR</i>		5/9/13
CO Name Last	Signature	Date
Lovett James	<i>James Lovett</i>	5/8/13



Department of Energy
Washington, DC 20585

May 1, 2013

MEMORANDUM FOR DR. DAVE MOODY
MANAGER
SAVANNAH RIVER FIELD OFFICE

FROM: STEPHEN A. KIRCHHOFF 
DIRECTOR
OFFICE OF RESOURCE MANAGEMENT
OFFICE OF HEALTH, SAFETY AND SECURITY

SUBJECT: May FY 2013 Approved Funding Program

The attached work authorization is consistent with changes made in the May 2013 financial plans. As stated in DOE Order 412.1, work authorizations are to be issued/revised when there is a change in funding or program guidance.

Please return a copy of the signed work authorization to the appropriate Headquarters budget point-of-contact listed on the work authorization. The signed (and returned) work authorization is written documentation that provides the Headquarters program manager with confirmation that transferred funds were received, work accepted, and the effort will proceed as stated.

We appreciate your assistance and support in carrying out the Work Authorization System. Please contact me if you have any questions on 202-586-3373. If your staff has any questions or problems, please contact the appropriate budget point-of-contact listed on the work authorization.

Attachment:
2013-HS-2001036, Rev. 4

cc w/attachment:
Eliberto Seguinot, SR
Rachel Zoss, SR
H. Kriss Nielsen, SR
Patricia Petty, SR



Project Number: 2013-HS-2001036

WORK AUTHORIZATION

U.S. DEPARTMENT OF ENERGY
Management and Operating (M & O) Contract Work Authorization

- 1. INITIATOR(s): Pat Worthington HS-10 301-903-6826
Name & Signature Organization Code Phone
- 2. PROJECT TITLE: Energy Employees Occupational Illness Compensation Program (EEOICPA) AC:
- 3. RESPONSIBLE PROGRAM SECRETARIAL OFFICE: Office of Health, Safety, and Security
- 4. RESPONSIBLE FIELD OFFICE: Savannah River
- 5. M & O CONTRACTOR NAME: Savannah River / 410228 / 410225 (BR - SRC)
- 6. WORK AUTHORIZATION NO: HQ1001 - 0 - BR

7. FUNDS HEREBY AUTHORIZED (WHOLE DOLLARS)

TOTAL BUDGET AUTHORITY: \$436,000.00
TOTAL BUDGET OUTLAY: \$436,000.00

B & R	Program	ORG	Transaction Type	Rev.	Date	Budget Authority	Budget Outlay
HQ1001000	3184701	HS-10	Fund Project from B&R	0	10/1/2012	\$125,000.00	\$125,000.00
HQ1001000	3184701	HS-10	Fund Project from B&R	1	1/1/2013	\$100,000.00	\$100,000.00
HQ1001000	3184701	HS-10	Fund Project from B&R	2	3/1/2013	\$85,000.00	\$85,000.00

Please see next page.

- 8. PERFORMANCE PERIOD COVERED BY FUNDS: FROM: 10/1/2012 TO: 9/30/2013
- 9. WORK START DATE: 10/1/2012
- 10. EXPECTED COMPLETION DATE: IBD
- 11. FUTURE FUNDING PLANNED: To Be Determined

12. WORK AUTHORIZED:
See attached Statement of Work.

13. WORK AUTHORIZATION OFFICIAL: *Stephen Kirchhoff* 5/1/2013
NAME AND SIGNATURE DATE
Stephen Kirchhoff

14. OPERATIONS OFFICE OFFICIAL: _____

15. M & O CONTRACTOR OFFICIAL: _____

HEADQUARTERS BUDGET POINT OF CONTACT: *Debra James* 4-25-13
Debra James, 301-903-3463

FIELD/CONTRACTOR POINT OF CONTACT: _____

WAS Project No.: 2013-HS-2001036

Laboratory/Contractor: The Savannah River Site (CID#: 410225)

Laboratory/Contractor Contact: Regina Price

Phone: 803-952-6288

HS Program Contact: Greg Lewis Org: HS-14 Phone: 202-586-2784

OVERALL PROJECT GOAL/OBJECTIVE:

The Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA) establishes a program to provide compensation to current and former employees of the Department of Energy (DOE), its contractors and subcontractors, companies that provided beryllium to DOE, and atomic weapons employers (AWE's). Under EEOICPA, DOE is required to verify employment histories, provide medical records, and provide radiation dose records and other information pertinent to National Institute for Occupational Safety and Health (NIOSH) radiation dose reconstruction and Department of Labor (DOL) Subtitle B and Subtitle E case preparation for anyone who applies for compensation under EEOICPA.

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The funding provided through this financial plan is to be used to conduct the following work tasks to implement EEOICPA, including claims under both Subtitle B and Subtitle E of the EEOICPA. These tasks include:

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- Work with corporate entities or unions to verify employment of former site workers.
- Complete all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.
- Complete declassification, as needed, of records required for the processing of claims forms.

2) Perform the work necessary to provide radiation dose records requested by NIOSH as part of the EEOICPA Subtitle B program.

- Complete and sign off on all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.
- Complete declassification, as needed, of records required for the processing of claims forms.

3) Perform the work necessary to complete Document Acquisition Request (DAR) requested by DOL as part of the EEOICPA Subtitle B program.

- Complete and sign off on all necessary claims forms associated with the request.
- Research and retrieve records needed to complete claims forms.

WAS Project No.: 2013-HS-2001036

- **Complete declassification, as needed, of records required for the processing of claims forms.**
- 4) Perform other necessary EEOICPA related records work as needed.**
- 5) Maintain local records to track the activities conducted under EEOICPA.**
- 6) EEOICPA funding should not be used for any Freedom of Information Act (FOIA) or Privacy Act (PA) requests from the public, even if the individual making the FOIA and/or PA request has also applied to the EEOICPA program.**

FY 2013 DELIVERABLES:

DATES:

Provide monthly reports that include the number of records requests received, number completed and cost per request for each of the three types of requests. This report should be sent to:

15th of the following month

- **HS-14 (Greg Lewis),**
- **HS-10 Budget Contact (Jeanette Yarrington)**
- **HS-81 Budget Contact (Debra James).**

**FY 2013 FUNDING FOR MAY FINANCIAL PLAN:
\$100,000**

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89130243 - OTHER DEFENSE ACTIVITIES
 FISCAL YEAR: 2013

410225-SAVANNAH RIVER OPERATIONS OFFICE

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 5

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
OPERATING EXPENSES : 89130243.91 (01091)									
O HQ	EMPLOYEE COMPENSATION INITIATIVE								
HQ1001	WORKER ADVOCACY		2013	NEW OA	335,000.00		100,000.00		435,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	335,000.00		100,000.00		435,000.00
O HQ TOTAL,	EMPLOYEE COMPENSATION INITIATIVE			NEW OA	335,000.00		100,000.00		435,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	335,000.00		100,000.00		435,000.00
O LM01	LEGACY MANAGEMENT ACTIVITIES - DEFENSE								
LM010510	ENVIRONMENTAL JUSTICE		2013	NEW OA	150,000.00		0.00		150,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	150,000.00		0.00		150,000.00
O LM01 TOTAL,	LEGACY MANAGEMENT ACTIVITIES - DEFENSE			NEW OA	150,000.00		0.00		150,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	150,000.00		0.00		150,000.00
TOTAL, OPERATING EXPENSES (01091)				NEW OA	485,000.00		100,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	485,000.00		100,000.00		585,000.00
COMBINED TOTAL, OPERATING EXPENSES				NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00
TOTAL, DIRECT FUNDING				NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00
TOTAL, OBLIGATIONAL AUTHORITY				NEW OA	486,000.00		99,000.00		585,000.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	486,000.00		99,000.00		585,000.00

Attachment 9

Work Authorization No. HQ091101, Rev 2

Project Title: Advanced Simulation Capability for Environment Management

2013-07

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

1a. Project Title Advanced Simulation Capability for Environmental Management	1b. Work Proposal Number HQ091101
---	---

2. Headquarters Program Point of Contact		
Kurt Gerdes	EM-12	301.903.7248

3. Headquarters Budget Point of Contact		
Jeffrey McMillan	EM-61	301.903.7701

4. Responsible Program Office of Environmental Management	5. Responsible Secretarial Officer Mark Gilbertson, DAS Site Restoration
---	--

6. Responsible Field Organization
U.S. Department of Energy, Savannah River Operations

7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC	7b. Contractor Point of Contact	
	Name: John W. Temple	Telephone No. (803) 952- 7210

8. Work Authorization Number HQ091101	9. Revision Number 2
---	--------------------------------

10. Funds Authorized (\$ in thousands)(See NOTE below)
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

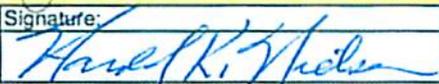
Budget and Reporting Code: EY4049110	Previous: \$ 99,000.00	Change: \$ 50,000.00	Current: \$ 149,000.00
--	----------------------------------	--------------------------------	----------------------------------

11. Performance Period Covered by Funds	12. Work Start Date	13. Expected Completion Date
From: October 1, 2012 To: Sept. 30, 2013	From: Oct. 1, 2012	To: Sept. 30, 2013

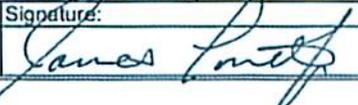
14. Statement of Work (Includes attachments)
Task 5: A S C E M Support
Provide support and funding to ASCEM project including but not limited to F-Area field site data for model validation. The ASCEM Multi-Laboratory program is aimed at addressing critical EM program needs to provide the capability to better understand and quantify subsurface flow and contaminant transport behavior in complex geological systems and the long-term performance of engineered components including cementitious materials in nuclear waste disposal facilities, in order to reduce uncertainties and risks associated with DOE EM's disposal, environmental cleanup and closure programs. The alignment of the AFRI work and the data needs for ASCEM model development and validation ensure an integrated approach to decisions necessary to accomplish the DOE EM clean up mission.
Note: Period of performance for this work scope ends September 30,2013.

15. DOE-SR Program Point of Contact

Name (printed): JOHN CHRISTIAN	Signature: 	Date: 5/3/2013
--	--	--------------------------

16. DOE Budget Official		
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/3/2013

17. Contractor's Authorized Representative		
Name (typed): John Temple FOK	Signature: 	Date: 5/9/2013

18. DOE Contracting Officer (or delegated representative)		
Name (typed): Jim Lovett	Signature: 	Date: 5/8/13

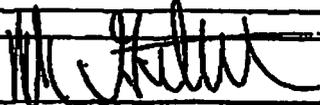
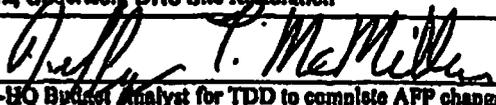
Project Number: H021101		Date: March 11, 2013	AFP Change Month: April 2013					
Project Title: Advanced Stimulation Capability for Environmental Management								
Site/Contractor: LANL/BNL/ANL		Project Area from: B&I & GW	Work Proposal Attached: No					
Contract Number if other than National Laboratory or DOE site contractor: Justin Marble - 301.903.7210								
Name of Principal Investigator: Paul Dixon (LANL)								
Name of Budget Analyst at the site where the contract is held: Valerie Kartz (BNL), Steven Romero (LANL), Dallas Atwater (ORNL-PNNL)								
New BA (\$K)	Prior Funding (\$K) in this FY	Total Unobligated (\$K) as of Beginning of this FY	Total Available Funding (\$K) including this request (add first three columns)					
LANL - 6225.50K	3925	3925	3925					
BNL - 3875.50K	3925	3925	3925					
PNNL - 9775.50K	3925	3925	3925					
ORNL - 30	3925	3925	3925					
ANL - 2125	3925	3925	3925					
Grand Total for Total Available Funding (use actual vested funds for previous quarters)								
1 st Quarter of FY	2 nd Qtr of FY	3 rd Quarter of FY	4 th Quarter of FY					
1125K								
Funding Codes (To be Completed by Budget Office)								
Fund	Year	Alloees	Reporting Entity	BOL	Object Class	Program	Project	Amount
LANL 01250	2013	01	LANL	700396	55400	110676	004017	50,000
BNL 01250	2013	01	BNL	450010	25400	110676	004017	50,000
PNNL 01250	2013	30	PNNL	470006	25400	110676	004017	50,000
ORNL								
ANL 01250	2013	36	ANL	410003	25400	110676	004017	50,000

Short Description of Work Scope: The ASBML program is a multi-year multi-laboratory program developing Advanced Stimulation Capability for Environmental Management. LANL - 525K for High Performance Computing and Field Application (NNS) BNL - 575K for Platform Trust and High Performance Computing PNNL - 775K for Platform Trust ANL - 180K for Field Application (AR tanks) Input in APP: Changed for PNNL - 775K for Platform Trust

Submitted by: Justin Marble, Headquarters Project Manager (Please Print & Sign) Date: 3/11/2013

Field: Russell Patterson, Field DOB Representative (Please Print & Sign) Date: 3/10/2013

Approved by: Kurt Gorder, Office Director (Please Print & Sign) Date: 3/12/13

Approved by:		Date:
Mark, Gilbertson, DAS Site Restoration		
Submitted to:		4/22/2013
EM-HQ Budget Analyst for TDD to complete AFP change		Date:

SCHEDULE / MILESTONES:

WBS	Milestone Title	Date*
Platform and HPC Development		
1.1.1	Release Workshop Version of Code	TBD
1.1.1	Alpha Code Integration Complete	-33d, 3/12/2013
1.1.1	Beta Code Integration Complete	-23d, 7/15/2013
1.1.1	Release Candidate 2 Complete	-30d, 9/27/2013
Platform and HPC Documentation		
1.1.1 & 1.1.2	ASCEM User Guide Documents Complete	9/27/2013
1.1.2	ASCEM Developer Guide Document Complete (Amanal Only)	7/29/2013
Site Applications		
1.1.3	Phase III Demonstration Plan	TBD
1.1.3	Demonstration Workshops	-22d, 3/29/2013
1.1.3	Phase III Demonstration Report	-23d, 9/30/2013
Program Management		
1.1.4.3	User steering committee meeting	Quarterly
1.1.4.4	ASCEM website maintenance	On going
1.1.4.5	Monthly status reports	Submitted by the 15th of each month
1.1.4.5	Integrated schedule	Due yearly in August
1.1.4.6	FY13 Basio Phase QA Plan Rolled-Out	3/1/2013
1.1.4.6	Applied Phase QA Plan Complete	9/30/2013

***NUMBER OF DAYS DELAYED DUE TO FUNDING AS OF MARCH 11, 2013**

SPENDING PLAN

Monthly Spending Plan for FY2013

Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total
365	338	261	436	210	0	342	342	342	342	342	342	3455

*Funded with \$60K carryover at project level

Signature and Approvals

HQ Program Manager: _____

Office Director: _____

Principal Investigator: _____

Site Representative: _____

[Handwritten signatures and date]
 3-12-13

SCHEDULE / MILESTONES:

WBS	Milestone Title	Date*
Platform and HPC Development		
1.1.1	Release Workshop Version of Code	TBD
1.1.1	Alpha Code Integration Complete	-33d, 3/12/2013
1.1.1	Beta Code Integration Complete	-23d, 7/15/2013
1.1.1	Release Candidate 2 Complete	-30d, 9/27/2013
Platform and HPC Documentation		
1.1.1 & 1.1.2	ASCEM User Guide Documents Complete	9/27/2013
1.1.2	ASCEM Developer Guide Document Complete (Amanzi Only)	7/29/2013
Site Applications		
1.1.3	Phase III Demonstration Plan	TBD
1.1.3	Demonstration Workshops	-22d, 3/29/2013
1.1.3	Phase III Demonstration Report	-23d, 9/30/2013
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***NUMBER OF DAYS DELAYED DUE TO FUNDING AS OF MARCH 11, 2013**

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Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total
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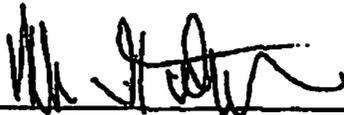
Signature and Approvals

HQ Program Manager: _____

Office Director: _____

Principal Investigator: _____

Site Representative: _____



BUDGET:**Thrust Budgets (\$K)**

Thrust	Budget FY13
1.1.1 - Platform and Integrated Toolsets	\$1,113
1.1.2 - Multi-Process HPC Simulator	\$1,193
1.1.3 - Site Applications	\$698
1.1.4 - Project Management	\$450
Total	\$3,455

Laboratory FY13 Budgets (\$K)

Thrust	LANL	LBNL	PNNL	ANL	LLNL	ORNL	SRNL
1.1.1 - Platform and Integrated Toolsets	211	406	496	0	0	0	0
1.1.2 - Multi-Process HPC Simulator	566	339	288	0	2	0	0
1.1.3 - Site Applications	17	236	262	0	0	1.6	180.8
1.1.4 - ASCEM Program Management	271	21	114	7	0	0	44.5
Total	1,065.3	1,002.9	1,160.0	0	0	1.6	225.3

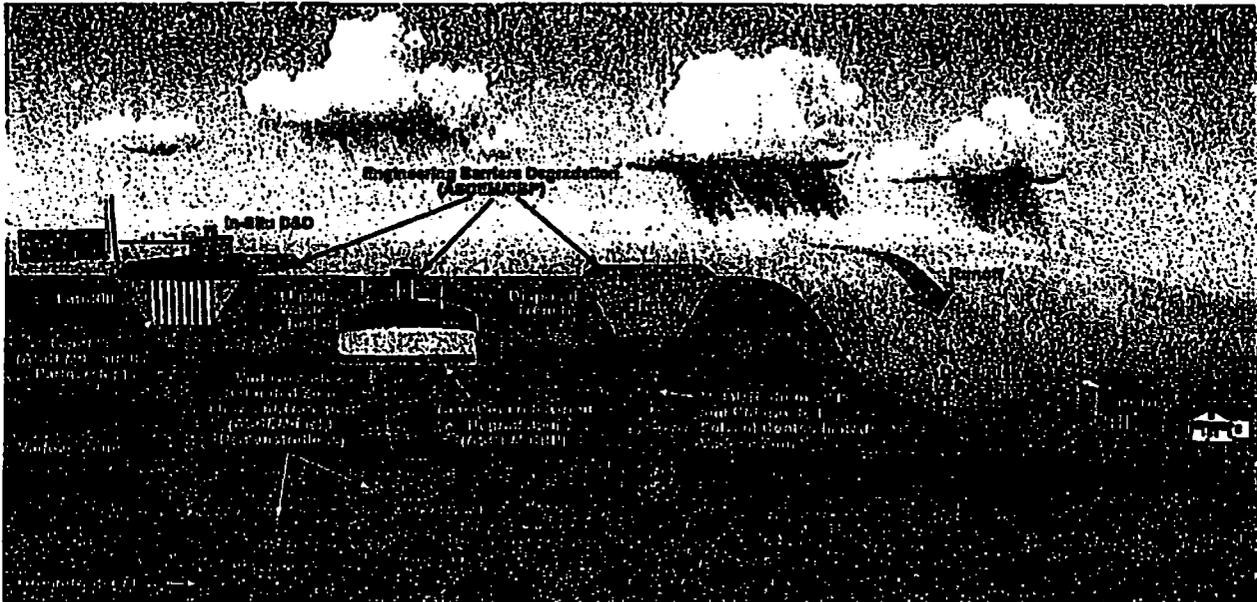
Technical Task Plan ASCEM WBS 1.1

NEEDS STATEMENT:

The United States Department of Energy (DOE), Office of Environmental Management (EM), in collaboration with other DOE offices, is leading a multi-institution, multi-disciplinary team of geoscientists, material scientists, and computational scientists from Los Alamos, Lawrence Berkeley, Pacific Northwest, Oak Ridge, and Savannah River National Laboratories with support from Argonne, Lawrence Livermore, and Idaho National Laboratories to develop a modeling initiative for Advanced Simulation Capability for Environmental Management (ASCEM). ASCEM is a state-of-the-art scientific toolset and approach for understanding and predicting contaminant fate and transport in natural and engineered systems. This modular and open source high performance computing (HPC) tool will facilitate graded and integrated approaches to modeling and site characterization that enable more robust and standardized assessments of performance and risk for EM disposal operations, cleanup and closure activities. The ASCEM Multi-Laboratory program is aimed at addressing critical EM program needs to provide the capability to better understand and quantify subsurface flow and contaminant transport behavior in complex geological systems and the long-term performance of engineered components including cementitious materials in nuclear waste disposal facilities; in order to reduce uncertainties and risks associated with DOE-EM's disposal, environmental cleanup and closure programs.

BACKGROUND AND PURPOSE:

The Site Restoration's mission is to develop technologies that advance the safe and timely cleanup of legacy wastes and facilities from defense nuclear applications. This is the largest cleanup program in the world [1]. Although EM has made great progress toward this goal during the past twenty years, the remaining clean-up challenges are far more complex than those previously addressed. The role of the ASCEM initiative is to develop a transformational modeling approach and toolset to help EM better meet these challenges through improving its long-term risk and performance modeling capabilities and by characterizing and reducing the uncertainty associated with the resulting predictions for the types of EM clean-up sites illustrated in the figure below.



In a review of the EM technology roadmap, the National Research Council (NRC) of the National Academies provided advice to DOE-EM for addressing principal science and technology gaps. The NRC identified the principal technology gaps in the groundwater and soil remediation program and the major recommendation was on the development and use of advanced computational models to better understand subsurface flow and contaminant transport behavior in complex geological systems, and the long-term performance of engineered components and barriers, including cementitious materials in nuclear waste disposal facilities.

In response to the NAS and internal DOE review recommendations, and to address key NRC challenge areas DOE-BM has launched the ASCBM initiative along with other complementary and synergistic initiatives with other DOE offices. The DOE Offices of Science, Nuclear Energy, and Fossil Energy have made significant investments in developing advanced, high performance computing models for evaluating groundwater flow and transport, source term degradation and release, and mechanical degradation of structures and barriers. ASCBM leverages these investments. In doing so, ASCBM is improving the timeliness and cost effectiveness of its modeling approach and toolset, which is not only to the benefit of DOE-BM, but the greater DOE community as well (e.g., in the areas of geologic sequestration of carbon and high level waste repository performance).

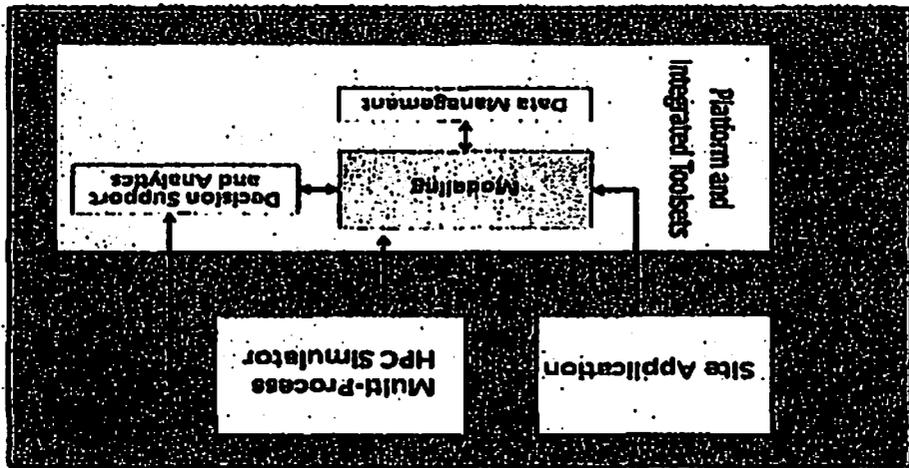
A major ASCBM goal is to provide a community code for DOE-BM and the greater scientific and engineering communities. To that end, the ASCBM HPC modeling tools is being developed using an open source model, with involvement from the DOE-SC community. This method is allowing ASCBM to leverage the considerable scientific investment that has already been made both within and outside of DOE-BM in the areas of subsurface geosciences, modeling and simulation, and environmental remediation.

The ASCBM model will be deployed at the BM sites through a phased deployment of ASCBM will be done in close collaboration with the site end-users who have the ultimate ownership of this process. Initially the ASCBM platform and high performance computing toolsets will be used to provide additional technical underpinning to the existing risk and performance assessments. Eventually ASCBM will become the regulatory assessment tool used for updates and new risk and performance assessments at all BM sites.

TECHNICAL APPROACH:

Summary of the Approach

The ASCBM project is organized into three technical thrust areas: the Multi-Process High Performance Computing Simulator (HPC Simulator), which constitutes the computational engine; the Platform and Integrated Toolsets, which provide the user interfaces; and Site Applications (see Figure below). Detailed descriptions of the three thrust areas are contained in the ASCBM FY10-FY15 Integrated Modeling Implementation Plan.



The ASCBM project will be led by a management and integration team represented by senior representatives from the participating laboratories, Thrust areas leaders, and a Technical Systems Integration lead. A dedicated Project Manager (PM) will provide the single point of contact and overall interface responsibility to the DOE program manager.

This Task Plan describes the overall ASCBM Program with detailed budgets, tasks and milestones descriptions for all the ASCBM Thrust and management areas. Detailed budgets, tasks and milestones descriptions for each of the three thrusts and the ASCBM program management areas are contained in the following task plans:

- 1) ASCBM Task Plan WBS 1.1.1 Platform and Integrated Toolsets
- 2) ASCBM Task Plan WBS 1.1.2 Multi-Process HPC Simulator
- 3) ASCBM Task Plan WBS 1.1.3 Site Applications
- 4) ASCBM Task Plan WBS 1.1.4 ASCBM Program Management

Technical Task Plan ASCEM WBS 1.1.1

NEEDS STATEMENT:

The United States Department of Energy (DOE), Office of Environmental Management (EM), in collaboration with other DOE offices, is leading a multi-institution, multi-disciplinary team of geoscientists, material scientists, and computational scientists from Los Alamos, Lawrence Berkeley, Pacific Northwest, Oak Ridge, and Savannah River National Laboratories with support from Argonne, Lawrence Livermore, and Idaho National Laboratories to develop a modeling initiative for Advanced Simulation Capability for Environmental Management (ASCEM). ASCEM is a state-of-the-art scientific toolset and approach for understanding and predicting contaminant fate and transport in natural and engineered systems. This modular and open source high performance computing (HPC) tool will facilitate graded and integrated approaches to modeling and site characterization that enable more robust and standardized assessments of performance and risk for EM disposal operations, cleanup and closure activities. The ASCEM Multi-Laboratory program is aimed at addressing critical EM program needs to provide the capability to better understand and quantify subsurface flow and contaminant transport behavior in complex geological systems and the long-term performance of engineered components, including cementitious materials in nuclear waste disposal facilities, in order to reduce uncertainties and risks associated with DOE EM's disposal, environmental cleanup and closure programs.

BACKGROUND AND PURPOSE:

The purpose of the Platform and Integrated Toolset is to make available the use of the ASCEM HPC simulation capabilities for the solution of environmental management tasks, and to provide support for the related model development and analysis tasks. Application of high-fidelity computational simulation to EM problems requires not only a well-designed multiphysics simulator, but also a computational environment that facilitates the complex process of code application to a given site and problem. The Platform and Integrated Toolset ("Platform") will build a set of tools incorporated into a powerful user interface to support a modeling workflow that is flexible, maintains quality assurance procedures and data integrity, and significantly enhances user efficiency. Tasks within this thrust area include the core platform development with user interfaces, information and data management tools, model setup tools, parameter estimation approaches, uncertainty quantification, decision support and risk assessment tools, and advanced visualizations.

TECHNICAL APPROACH:

Summary of the Approach

The Platform development effort is structured as a set of tasks, as described below. The activities in these tasks are closely coordinated to ensure commonalities are addressed appropriately and the Platform software architecture and data management support a broad set of capabilities for the toolsets.

This Task Plan describes the overall ASCEM Platform thrust WBS 1.1.1 with detailed budgets, tasks and milestone descriptions for all the Platform activities.

Platform Thrust Management WBS 1.1.1.1:

The Thrust Area Lead (TAL) and the deputy are responsible for the overall technical leadership, planning and execution of the scope within the thrusts. The TAL and the deputy will work closely with the Technical Systems Integration Lead to develop technical and design requirements for the ASCEM HPC Core and Platform Toolsets based on needs identified from the EM site end users. The TAL and the deputy will select key project staff and technical performers from best available resources from the participating National Laboratories to execute the ASCEM work scope. The TAL will report monthly status and progress, and identify and communicate technical or programmatic issues. They will use the ASCEM baseline change control process to recommend changes to the technical program. Finally the TAL will assure the thrust area delivers products that meet project requirements for quality, cost, and schedule. Review thrust areas reports and products and transmit to the core management team for review, as needed prior to submittal to DOE.

Data Management WBS 1.1.1.3:

This task will further enhance the existing Platform data management infrastructure to support modeling and analysis activities, and provide more sophisticated integration with visualization tools. The task will work with identified DOE

sites to ingest site data into the ASCEM database, capturing a consistent set of metadata that is associated with the site data files. This data will then be made available to Platform users for incorporation in modelling activities. A key focus will be the creation of programming interfaces to enable the data in the data management system to be easily queried and extracted, resulting in a seamless integration with the other Platform toolsets. We will also, as identified by Initial Platform users, extend the data management system to incorporate new data types such as bioremediation and treatment histories.

Model Setup and Analysis WBS 1.1.1.4:

This task will enhance the Initial Model Setup Toolset with new capabilities to support conceptual/numerical model creation. The effort will extend the collection of mesh types that a user can create, and incorporate new capabilities to specify geochemical parameters required by specific Amanzi models. Working closely with the Core Platform and HPC Thrust, this task will help specify and refine the Amanzi input file format, and extend existing capabilities available for importing/generating the computational grid. Improvements to usability, robustness and performance will also be made based on testing by the initial user community.

Requirement Document, Design Document, and Reviews WBS 1.1.1.10

This task will work with the task teams, HPC Thrust and Site Applications Thrust, as well as key ASCEM demonstration sites to revise, refine and update the Platform Requirements and Design documents.

Akuna WBS 1.1.1.11

Akuna is the core Platform user environment. We will continue to build upon the initial Akuna release to improve user workflows, model management and incorporate new plotting and visualizations. Working with the Toolsets and Model Setup tasks, we will continue to create and improve capabilities for users to exploit the new algorithms that are available in the toolsets. This requires extensive work to create appropriate user interfaces and extensions to the Akuna internal data model. Attention will also be given to performance and usability of the environment, as well as supporting initial users with documentation, case studies and workshops.

Toolsets SA, PE, DS, UQ WBS 1.1.1.12

We will work to add new capabilities for Parameter Estimation, Uncertainty Quantification and Sensitivity Analysis into the Platform. These will provide users with a broader range of capabilities that can be used in conjunction with Amanzi and Akuna to execute models and analyze results. Working closely with the Akuna task, we will ensure that powerful visualization and data provenance features are built to support each toolset. We will also exploit commonalities in the toolsets to more efficiently implement these features. In addition, we will start to design and implement an initial version of the Decision Support toolset. This will provide users with model-based decision analyses (i.e. based on model predictions), along with support for users to perform these analyses through Akuna.

Agni WBS 1.1.1.13

Agni provides a scalable and extensible coupling between the Akuna user interface and Amanzi by managing model input and output to the simulators. In addition to executing a single simulation run, Agni executes a series of model analysis tools, including parameter estimation, geostatistical simulation, and uncertainty quantification. We will continue to incorporate the new Toolset algorithms into Agni, and improve its robustness and performance. A key focus will be to ensure a seamless integration with Akuna, extending existing features to provide powerful and flexible tools for simulation execution and analysis.

Technical Task Plan ASCEM WBS 1.1.2

NEEDS STATEMENT:

The United States Department of Energy (DOE), Office of Environmental Management (EM), in collaboration with other DOE offices, is leading a multi-institution, multi-disciplinary team of geoscientists, material scientists, and computational scientists from Los Alamos, Lawrence Berkeley, Pacific Northwest, Oak Ridge, and Savannah River National Laboratories with support from Argonne, Lawrence Livermore, and Idaho National Laboratories to develop a modeling initiative for Advanced Simulation Capability for Environmental Management (ASCeM). ASCeM is a state-of-the-art scientific toolset and approach for understanding and predicting contaminant fate and transport in natural and engineered systems. This modular and open source high-performance-computing (HPC) tool will facilitate graded and integrated approaches to modeling and site characterization that enable more robust and standardized assessments of performance and risk for EM disposal operations, cleanup and closure activities. The ASCeM Multi-Laboratory program is aimed at addressing critical EM program needs to provide the capability to better understand and quantify subsurface flow and contaminant transport behavior in complex geological systems and the long-term performance of engineered components including cementitious materials in nuclear waste disposal facilities, in order to reduce uncertainties and risks associated with DOE EM's disposal, environmental cleanup and closure programs.

BACKGROUND AND PURPOSE:

The Multi-Process High Performance Computing (HPC) Simulator, Amanzi, will provide a flexible and extensible computational engine that will simulate the coupled processes and flow scenarios described by the conceptual models developed using the ASCeM Platform. These conceptual models span a range of process complexity, potentially coupling hydrological, bio-geochemical, geo-mechanical, and thermal processes and will be used to quantify the associated uncertainty, sensitivity, and risk. Early in the development of this thrust we focused on documenting the mathematical description of these processes as a means to define the modeling requirements for the Multi-Process HPC Simulator. Building on these established requirements for process models, the HPC thrust has three tasks: the HPC Toolsets, the HPC Core Framework, and Verification and Validation. The HPC Toolsets task provides the essential building blocks (modules) for the process models, including grids, advanced discretizations, multiscale techniques, and nonlinear/linear equation solvers. In addition, this task supports development of the Multi-Process Coordinator (MPC). The HPC Core Framework task provides the underlying low-level services, such as parallel I/O, and data structures. The last task focuses on code and algorithm verification and model validation, and is an important bridge between The Process Models and the HPC Simulator, as well as the Site Applications Thrust (WBS 1.1.3).

TECHNICAL APPROACH:

HPC Thrust Management WBS 1.1.2.1

The Thrust Area Lead (TAL) and the deputy are responsible for the overall technical leadership, planning and execution of the scope within the thrusts. The TAL and the deputy will work closely with the other thrust leads and the HPC Thrust team to continue to evolve the technical and design requirements for the ASCeM HPC Toolsets, HPC Core Framework, and their interface with the Platform (WBS 1.1.1) based on needs identified from the EM site end users. The TAL and the deputy will select key project staff and technical performers from best available resources from the participating National Laboratories, industry and universities to execute the ASCeM work scope. The TAL will report monthly status and progress, and identify and communicate technical or programmatic issues. They will use the ASCeM baseline change control process to recommend changes to the technical program. Finally the TAL will assure the thrust area delivers products that meet project requirements for quality, cost, and schedule. Review thrust areas reports and products and transmit to the core management team for review, as needed prior to submittal to DOE.

HPC Toolsets WBS 1.1.2.2

The HPC Toolsets provide the building blocks that transform the mathematical description of the process models into a discrete form suitable for simulation on a computer. The activities in this task are aligned with the three toolsets:

meshing, discretization, and solvers. In each toolset, we will leverage existing algorithms, techniques, and implementations, where appropriate.

The mesh provides an essential and fundamental data structure that bridges the conceptual site model and the numerical methods, and is ultimately the building block that connects the resulting simulation with the computing hardware. The Meshing Toolset provides mesh data structures and services for both structured meshes, which may be adapted to fit to the stratigraphy or features of the solution, and fully unstructured meshes. The Discretization Toolset is composed of several modules, including spatial and temporal discretization, geochemical reactions, and multiscale techniques. Using these modules as fundamental building blocks we create process kernels to simulate the various process models. The Multi-Process Coordinator (MPC) manages the coupling of these processes and is at the heart of providing a flexible and extensible simulation capability. Activities in this area will significantly enhance the flexibility of the MPC, and provide more robust and accurate discrete models. In addition, features that enhance integration with the Platform thrust (WBS 1.1.1), such as model gradients for optimization, and augmented systems for direct evolution of parameter sensitivities, will be considered.

In the Solvers Toolset we treat the nonlinear systems of equations that arise throughout Environmental Management applications, from the time evolution of discretizations and geochemical reaction networks, to optimization and assimilation. Through the first two ASCEM demonstrations we have established high-level requirements for the Solver Toolset, and established a baseline capability that leveraged existing tools for steady state and time evolution problems. In this activity, we will further enhance the design and implementation of preconditioners to fully support the flexibility, robustness and scalability required by the graded and iterative approach to site assessments.

HPC Core Framework WBS 1.1.2.3

This task focuses on the key infrastructure that facilitates the modular design of the HPC Simulator, as well as its portability and its graded Quality Assurance program. This task has two key activities, the HPC Core Infrastructure, and Portability and Performance Tuning. The HPC Core Infrastructure activity provides a number of low-level services for the HPC Toolsets (WBS 1.1.2.2), which provide the building blocks for the process models. These include data structures, input file specification and utilities, parallel input/output capabilities, application programming interfaces, and HPC related visualization support. Existing HPC Frameworks will be investigated to identify tools, algorithms, and techniques that may be leveraged in each of these activities.

The portability and performance tuning activities will ensure that the HPC Simulator runs well on a wide range of platforms, from laptops to supercomputers. This activity will leverage an automated build process in conjunction with automated testing and reporting to ensure a reliable capability is available on all required platforms. Together with the Verification and Validation task (WBS 1.1.2.4) this provides critical support for the graded QA program planned for ASCEM.

Verification and Validation WBS 1.1.2.4

The Verification and Validation (V&V) task will provide a unified hierarchical approach to testing, verification and validation, and benchmarking in order to ensure the reliability and robustness of the HPC Simulator. At the lowest level of the hierarchy, unit tests of individual models will be used to verify the correctness of specific sub-modules. At higher levels various integrated tests will be designed to span multiple coupled processes and detailed conceptual model descriptions with data requirements will be developed. Finally, at the highest level, benchmarks will be developed or gathered from the community that captures realistic site-application scenarios. These test suites will be developed in collaboration with the Site Applications thrust, particularly the Site Working Groups, and hence, this element provides a critical bridge between these thrusts. In addition, this element enhances communication between the HPC Toolsets and HPC Core Framework tasks (WBS 1.1.2.2 and 1.1.2.3, respectively).

Technical Task Plan ASCEM WBS 1.1.3

NEEDS STATEMENT:

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BACKGROUND AND PURPOSE:

The Site Applications Thrust provides expertise and site data for model development and testing and a linkage between the computational capabilities and specific DOE EM sites where cleaning up legacy wastes and managing disposal activities will require advanced modeling. The thrust will establish and maintain linkages with end users. A key aspect of the Site Applications Thrust Area will be to provide testing and feedback for developing the HPC and Platform components based on user experience, to disseminate information, and provide training.

The Site Applications Thrust includes tasks to maintain an interface with end users; establish demonstrations; develop, expand, and coordinate working groups formed to perform demonstrations; and disseminate working group progress to the environmental community and, DOE management. Tasks focused on development of application protocols for the ASCeM toolset and training as well as a plan for long-term maintenance of the capability are also part of the Site Applications Thrust.

TECHNICAL APPROACH:

Site Applications Thrust Area Management WBS 1.1.3.1

This task encompasses three key items: (1) coordination and oversight of the Site Applications Thrust activities, ultimately leading to effective completion of deliverables within allotted budget and timeframe; (2) participation with other ASCeM leads in guiding the evolution, cross-thrust linkages, and implementation of ASCeM; and (3) representation of the Site Application Thrust activities to the environmental community and, where appropriate, DOE management. The task is staffed by the Thrust Area Lead and a Deputy Thrust Lead

User Interface WBS 1.1.3.2

This task focuses on outreach to DOE EM performance assessment and risk assessment users and to scientists involved in other modeling and research activities at DOE Sites. Efforts will continue with on-going interactions with the LFRG, PA Community of Practice, and the Cementitious Barriers Partnership. This task will provide a means for continuous feedback regarding ASCeM as the project moves forward. Key tasks in FY13 will be developing a report on end user interactions and leading a demonstration workshop with the User Steering Committee.

Site Working Groups WBS 1.1.3.6:

Working groups have been formed around each of the identified demonstration problems. The working groups are responsible for (a) refining the working group scope; (b) assembling the necessary input (conceptual models, data, process models, and other expert input) and (c) working closely with the developers to advance and test ASCeM using

realistic and relevant datasets; and (d) engage end-users in the development and use of ASCEM. The current working groups are formed around the SRS F Area Attenuation of Metals and Radionuclides Applied Field Research Initiative (AFRI), the Hanford Deep Vadose Zone AFRI, Waste Tank Performance Assessment, and the Oak Ridge Mercury problem. During FY13, efforts will be focused on demonstration workshops using the Phase II results, interactions with the developers on testing advancements and refinements in the capabilities, and completing a Phase III demonstration.

SRS F-Area Seepage Basin Working Group WBS 1.1.3.6.1:

The goal of the Attenuation-Based Remedies for the Subsurface Demonstration is to demonstrate how ASCEM capabilities can be used to evaluate and guide remediation strategies in heterogeneous subsurface environments at the Savannah F-Area. Building on previous demonstrations as well as AFRI and LBNL SPA advances, we will extend and implement ASCEM capabilities to simulate the effect of the pH manipulation barrier and recirculation on plume mobility in 3D. The developed capabilities will then be used to evaluate: 1) the duration required for the base injection (treatment to meet clean-up goals); 2) the possibility of replacing active groundwater remediation by attenuation-based remedies, including natural and enhanced attenuation. The demonstration will take advantage of multi-scale reactive facies characterization approach used to develop model parameterization input for the F-Area (Sassen et al., WRR in press; Wainwright et al., in development and will engage end users (site personnel and others) in capability testing. Many ASCEM components will be refined and utilized in this demonstration: Data Management will be extended to archive and serve up datasets associated with the engineering treatments; HPC toolsets will be used to develop reaction networks associated with the base injection treatments; Model setup will be used to define the coupled physicochemical heterogeneity (or reactive facies); Amanzi will be used to simulate 3D plume responses to various remediation strategies over a minimum 100 year timeframe; visualization will be used to simulate model output, and UQ will be used to assess key controls on plume remediation. The F Area Seepage Basin working group efforts will be the focus of the Phase III demonstration report and this will be the final year of significant effort for this working group. The working group members will participate in the demonstration workshops.

Hanford Deep Vadose Zone Working Group WBS 1.1.3.6.2:

The Hanford Deep Vadose Zone (DVZ) Applied Field Research Initiative has provided an opportunity to demonstrate ASCEM capabilities needed to help DOE EM evaluate innovative treatment technologies for recalcitrant contaminants in the deep vadose zone. The current technology under evaluation at the BC Cribs site is soil desiccation, an approach that minimizes ⁹⁹Tc movement in the vadose zone by removing pore water via the injection of dry air and extraction of vapor. During the Phase II Demonstration, the working groups illustrated integration of Platform and HPC components. During FY 2013, efforts will focus on making the Phase II demonstration more robust in preparation for the demonstration workshops. The working group members will participate in the demonstration workshops and continue interacting with the development teams to test and debug refined ASCEM components. Future demonstration phases will include explicit representation of soil desiccation as well as other remediation approaches, such as foam delivery or NH₃ gas treatment of uranium as well as exploring the concepts of end states for remediation. The remediation technologies will be developed as part of the Deep Vadose Zone AFRI or by CH2M Hill Plateau Remediation Contract and evaluated with ASCEM.

Waste Tank PA Working Group WBS 1.1.3.6.3:

Waste tank closures and comparable disposals of residual waste in engineered containment systems are a prominent component of the DOE EM complex. Engineered barriers also present unique process and requirements in comparison to purely geologic systems in the form of geometries, materials and associated properties, and physical and chemical processes. The Waste Tank PA Working Group will continue to develop ASCEM demonstrations that are representative of tank closures at Hanford and Savannah River and similar engineered barrier scenarios, using data from existing Performance Assessment (PA) studies for efficiency and relevance. Increased emphasis will be placed on working with real site data relevant to tank closure rather than representative sites. Working group activities in FY12 focused on ASCEM advancements in the areas of Adaptive Mesh Refinement (AMR) on structured grids, radioactive decay and progeny ingrowth, and collaboration with the Cementitious Barriers Partnership (CBP) on a joint demonstration. FY13 activity will be focus on making the Phase II demonstration more robust and participating in the demonstration workshops. In addition, the working group will complete the ASCEM-CBP joint demonstration, and expand the waste tank demonstration using site data from Savannah River and Hanford (as appropriate) commensurate with ongoing Amanzi code development. Interactions with the development teams on testing the Amanzi code will continue. The working group will begin to engage end users in the PA community related to modeling of cementitious waste forms (e.g., Saltstone) and other waste tank closure issues.

Management Task Plan ASCEM WBS 1.1.4

NEEDS STATEMENT:

The United States Department of Energy (DOE), Office of Environmental Management (EM), in collaboration with other DOE offices, is leading a multi-institution, multi-disciplinary team of geoscientists, material scientists, and computational scientists from Los Alamos, Lawrence Berkeley, Pacific Northwest, Oak Ridge, and Savannah River National Laboratories with support from Argonne, Lawrence Livermore, and Idaho National Laboratories to develop a modeling initiative for Advanced Simulation Capability for Environmental Management (ASCEM). ASCEM is a state-of-the-art scientific toolset and approach for understanding and predicting contaminant fate and transport in natural and engineered systems. This modular and open source high performance computing (HPC) tool will facilitate graded and integrated approaches to modeling and site characterization that enable more robust and standardized assessments of performance and risk for EM disposal operations, cleanup and closure activities. The ASCEM Multi-Laboratory program is aimed at addressing critical EM program needs to provide the capability to better understand and quantify subsurface flow and contaminant transport behavior in complex geological systems and the long-term performance of engineered components including cementitious materials in nuclear waste disposal facilities, in order to reduce uncertainties and risks associated with DOE EM's disposal, environmental cleanup and closure programs.

BACKGROUND AND PURPOSE:

The ASCEM project will be led by a management and integration team represented by senior representatives from the participating laboratories, Thrust areas leaders, and a Technical Systems Integration lead. A dedicated Project Manager (PM), selected from one of the core laboratories, provides the single point of contact and overall interface responsibility to the DOE program manager. This Task Plan describes the ASCEM Project Management WBS 1.1.4 detailed budgets, tasks and milestone descriptions.

TECHNICAL APPROACH:

Program Management WBS 1.1.4.1

ASCEM Multi-Lab Program Manager:

The ASCEM Program Manager (PM) serves as primary programmatic point of contact for the project and with DOE Program Manager. The ASCEM Multi-Lab PM leads the preparation, maintenance, and execution a life-cycle Program Plan, which includes quality assurance plan, schedule and milestone management, budgeting and financial control, and records maintenance. Through weekly management and integration meetings the PM will oversee project execution activities, ensure the project fulfills the clients' requirements, and assure that the ASCEM project products meet customers' requirements based on approved scope, schedule and budget. On a yearly basis, the PM will work with the ASCEM Management and Integration Team to prepare and approve the annual technical scope, staffing, and budget plans for the DOE annual budgeting process. The ASCEM multi-lab PM will oversee execution activities, including drafting and submitting to DOE program execution guidance for project performers and establish and implement a reporting and communication mechanism among ASCEM project staff. The ASCEM Multi-Lab PM will chair the project baseline change control board composed of the Management and Integration Team and submit requests to DOE for change approvals. This position is also supported by a part time admin.

Laboratory Representatives:

Each of the core laboratories supporting the ASCEM Program will be represented by a "Lab Lead". The Lab Lead will provide non-parochial senior-level technical and programmatic expertise to assure project planning and execution is defensible, achievable, and has the full commitment of the participating laboratory. The Lab Leads will assure the ASCEM Program has the needed laboratory resources for program execution by providing technical expertise to address technical gaps and emerging issues. The Lab Leads will assist the ASCEM Multi-Lab PM in assuring the program meets quality, cost, and schedule performance, and address performance issues within their represented laboratory.

User Steering Committee WBS 1.1.4.3:

This member of the ASCEM management team serves as the primary project interface with the PA User Community (e.g., EM Office of Regulatory Compliance, Low-Level Waste Disposal Facility Federal Review Group (LFRG) Members, site contractors, US NRC, and others as applicable). In addition, the user steering committee lead will communicate EM user needs and requirements to the ASCEM Management and Integration Team. This member of the ASCEM management team will serve as coordinator for the User Steering Committee, including development of its Charter, organizing the Steering Committee meetings, and reporting to the Management and Integration Team on the User Steering Committee Meeting results. This person will also serve as the primary interface with EM Office of Compliance to coordinate ASCEM with future updates of DOE Order 435.1.

Communications and Website Team WBS 1.1.4.4:

The Communication and Website management team has three roles: 1) oversight and maintenance of the ASCEM internal communication tool for sharing of project information, 2) oversight and maintenance of the external ASCEM website, and 3) preparation of presentations and document production oversight for internal and external ASCEM project reports. This team is experienced in marketing, technical editing, website design, and communications. The communications function will support regular communication products, including input to EM weekly reports, EM highlights, and annual reports. The lead for this area will provide direct support to the Thrust Area Teams as well as the Core Management Team. Web-based communication resources will be established to maximize ease of access by all team members including DOE-EM management and advisory group members, and site user collaborators. These tools will provide for real-time sharing of project information through tools such as a share point sites or other internet-based networking products to support multi-lab, university, and industry collaboration.

Project Controls & Business Mgmt WBS 1.1.4.5:

The project controls function will provide the overall business, finance, and schedule tracking and reporting support to the PM and management core team, including Thrust Area leaders and task managers. This function will work with individual laboratory finance and project controls staff to assure the overall project is tracking and managing deliverables at an appropriate level. The project is employing an Earned Value Management System (EVMS) process and provide DOE monthly reporting on project performance. Internally, the project will track critical path activities on a more frequent basis.

Quality Assurance WBS 1.1.4.6:

The ASCEM platform and HPC framework will ultimately be deployed to support EM regulatory decisions (e.g., PA, risk assessments, composite analyses). Therefore, NQA-1 software quality requirements will be met for the final products of the project. To assure NQA-1 compliance, a graded approach will be employed to allow for early development and testing of prototype components and systems without unnecessary burden on the research and development effort. Other software quality standards such as the 1996/1997 EPA Guidance on "Ground-Water Model Testing: Systematic Evaluation and Testing of Code Functionality and Performance" and ASTM D 6025 (reapproved 2008) "Standard guide for developing and evaluating Ground-water modeling codes" will be considered for application, depending on regulatory requirements. As components and systems mature to deployment status, enhanced QA requirements and corresponding procedures will be applied. The QA function is responsible for developing and instituting an overall QA project plan and QA requirements that will flow down to project participants. The QA function will work across the Thrust Areas and laboratories to assure task level QA requirements are appropriately and consistently applied, and minimize the QA burden on individual task leaders.

U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM
 89X0251 - DEFENSE ENVIRONMENTAL CLEANUP
 FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 9

OPERATING EXPENSES : 89X0251.91 (01250)

O EY40 DSAC TECHNOLOGY DEVELOPMENT & DEPLOYMENT
 EY404911 PROJECTS TO REDUCE TECHNICAL RISK

2013	NEW OA	1,689,000.00	85,000.00	1,774,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	1,689,000.00	85,000.00	1,774,000.00
O EY40 TOTAL, DSAC TECHNOLOGY DEVELOPMENT & DEPLOYMENT	NEW OA	1,689,000.00	85,000.00	1,774,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	1,689,000.00	85,000.00	1,774,000.00

part of
 35,000
 50,000

O EY80 DEC - PROGRAM SUPPORT

EY804910K EM13 FEDERAL DISPOSITION OPTIONS

2013	NEW OA	279,194.85	0.00	279,194.85
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	279,194.85	0.00	279,194.85
O EY80 TOTAL, DEC - PROGRAM SUPPORT	NEW OA	279,194.85	0.00	279,194.85
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	279,194.85	0.00	279,194.85

O EY8648 SAVANNAH RIVER SITE - SITE RISK MANAGEMENT

2013	NEW OA	217,430,885.00	17,059,186.00	234,490,071.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	217,430,885.00	17,059,186.00	234,490,071.00
O EY8648 TOTAL, SAVANNAH RIVER SITE - SITE RISK MANAGEMENT	NEW OA	217,430,885.00	17,059,186.00	234,490,071.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	217,430,885.00	17,059,186.00	234,490,071.00

O EY874814 SR-0014C RADICAL LIQ TRK WASTE STAB/DISP

2013	NEW OA	423,942,553.00	16,628,897.00	440,571,450.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	423,942,553.00	16,628,897.00	440,571,450.00

Attachment 10

Work Authorization No. 410003, Rev 3

**Project Title: Funding for the Packaging and
Certification Program and Packaging
Transportation Operations Support**

2013 65

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

1a. Project Title Funding for the Packaging and Certification Program and Packaging and Transportation Operations Support	1b. Work Proposal Number DE-AC09-08SR22470 - 410003
---	---

2. Headquarters Program Point of Contact		
Name: Stephen O'Connor	EM-33	Phone: 301-903-7854

3. Headquarters Budget Point of Contact		
Name: Angela Maddox	Organization Code: EM-61, Office of Budget	Telephone No: 301-903-4888

4. Responsible Program Office of Environmental Management; Office of Packaging and Transportation	5. Responsible Secretarial Officer F. Marciniowski
---	--

6. Responsible Field Organization U.S. Department of Energy, Savannah River Operations
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7a. Site and Facility Management Contractor Savannah River Nuclear Solutions, LLC	7b. Contractor Point of Contact Name: John W. Temple Telephone No. (803) 952- 7210
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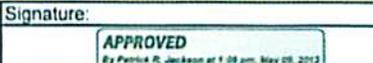
8. Work Authorization Number DE-AC09-08SR22470 - 410003	9. Revision Number 3
---	--------------------------------

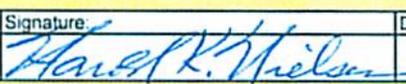
10. Funds Authorized (\$ in thousands)(See NOTE below)
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

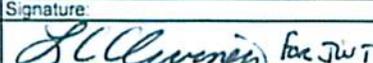
Budget and Reporting Code:	Previous:	Change:	Current:
EY5202410	\$ 1,000,000.00	\$ -	\$ 1,000,000.00
EY8648300	\$ -	\$ 100,000.00	\$ 100,000.00
EY8648130	\$ -	\$ 86,000.00	\$ 86,000.00
EY8648111	\$ -	\$ 399,000.00	\$ 399,000.00
EY8648121	\$ -	\$ 55,000.00	\$ 55,000.00
Total	\$ 1,000,000.00	\$ 640,000.00	\$ 1,640,000.00

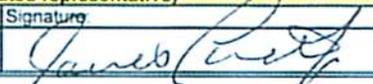
11. Performance Period Covered by Funds From: 10/1/12 To: 9/30/2013	12. Work Start Date 10/1/2012	13. Expected Completion Date 9/30/2013
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14. Statement of Work (Includes attachments)
Within the funding set aside at the Savannah River Site for FY 2013 Management Initiatives, please direct \$640,000 to the Savannah River National Laboratory to support Packaging and Certification.
These funds support packaging certification review for the Safety Analysis Report for Packaging and/or facilities in addition to providing oversight, assistance, and training in these and other technical areas. This also includes analysis and field implementation of the Department of Energy (DOE) Packaging Certification Program Radiofrequency Identification Program for the SGTs and other areas; facilities, packages, and packaging.
~~Also within the funding set aside at the Savannah River Site for FY 2013 Management Initiatives, please direct \$20,000 to the Savannah River Remediation to support Packaging and Transportation Operations Support. These funds are to provide SME support for TCAP assessments of packaging and transportation activities at DOE sites as directed by EM-33 Program Manager.~~ prj (May 9, 2013)

15. DOE-SR Program Point of Contact		
Name (printed): Patrick R. Jackson	Signature: 	Date: May 9, 2013

16. DOE Budget Official		
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/13/13

17. Contractor's Authorized Representative		
Name (typed): John Temple	Signature: 	Date: 5/14/13

18. DOE Contracting Officer (or delegated representative)		
Name (typed): Scott Langston	Signature: 	Date: 5/15/13



Department of Energy
Washington, DC 20585

April 22, 2013

MEMORANDUM FOR KRISS NIELSEN
DIRECTOR, OFFICE OF BUDGET
SAVANNAH RIVER OPERATIONS OFFICE

FROM: THOMAS FEKETE *Thomas Li Fekete*
DEPUTY DIRECTOR, OFFICE OF BUDGET
OFFICE OF ENVIRONMENTAL MANAGEMENT

SUBJECT: Funding for Packaging and Certification and Packaging and
Transportation Operations Support

Within the funding set aside at the Savannah River Site for FY 2013 Management Initiatives, please direct \$640,000 to the Savannah River National Laboratory to support Packaging and Certification.

These funds support packaging certification review for the Safety Analysis Report for Packaging and/or facilities in addition to providing oversight, assistance, and training in these and other technical areas. This also includes analysis and field implementation of the Department of Energy (DOE) Packaging Certification Program Radiofrequency Identification Program for the SGTs and other areas; facilities, packages, and packaging.

Also within the funding set aside at the Savannah River Site for FY 2013 Management Initiatives, please direct \$20,000 to the Savannah River Remediation to support Packaging and Transportation Operations Support.

These funds are to provide SME support for TCAP assessments of packaging and transportation activities at DOE sites as directed by EM-33 Program Manager.

If you have any questions or require additional information please contact Angie Maddox of my office on (301) 903-4888.

cc: P. Petty, SR
L. Roberson, SR
E. Seguinot, SR
E. Huang, EM-45
A. Maddox, EM-61



Department of Energy
Washington, DC 20585

NOV 14 2012

MEMORANDUM FOR K. NIELSEN
DIRECTOR, OFFICE OF BUDGET
SAVANNAH RIVER OPERATIONS OFFICE

FROM: THOMAS FEKETE *Thomas A. Fekete*
DEPUTY DIRECTOR, OFFICE OF BUDGET
OFFICE OF ENVIRONMENTAL MANAGEMENT

SUBJECT: Funding for Packaging and Certification

Funding in the amount of \$1,000,000 is provided in the November 2013 AFP to support Packaging and Certification.

These funds supports packaging certification review for the Safety Analysis Report for Packaging and/or facilities in addition to providing oversight, assistance, and training in these and other technical areas. This also includes analysis and field implementation of the DOE Packaging Certification Program Radiofrequency Identification Program for the SGTs and other areas, facilities, packages, and packaging.

The funding codes are as follows:

Fund	Year	Reporting Entity	Program Value	B&R	Project Value	PBS	Amount
01250	2013	410225	1111557	EY520241	0001526	RL-0041.01	1,000,000
							1,000,000

If you have any questions or require additional information please contact Angie Maddox of my office on (301) 903-4888.

- cc: P. Petty, SR
- L. Roberson, SR
- E. Seguinot, SR
- B. Huang, EM-45
- A. Maddox, EM-61

** Draft Finplan **

Contract Modification Number ** No MOD **

Rpt Entity: SR Savannah River Nuclear Solutions, LLC

Financial Plan Report - Detail

Site: SR

*** DRAFT ***

#15

Report RFP0001

SR22470 - Savannah River Nuclear Solutions (SRNS)

Rpt Entity	Fund Code	Leg FT	Legacy Program	Legacy B&R	Obj. Class	Local Use	Project	WFO	Legacy Order Number	Beginning Uncosted Obs	BA			Total Available
											Previous	Change	Revised	
410003	01250	TP	1110676	EY4049110	25400	0000000	0001772	0000000		7,172.70	0.00	-7,172.70	-7,172.70	0.00
<i>AY 2009 - Transfer to Project 0094261 per HQ SH 5/8/13</i>														
410003	01250	TP	1110676	EY4049110	25400	0000000	0003925	0000000		15,138.97	335,061.61	35,000.00	370,061.61	385,200.58
410003	01250	TP	1110676	EY4049110	25400	0000000	0004017	0000000		26,037.10	99,000.00	50,000.00	149,000.00	175,037.10
410003	01250	TP	1110676	EY4049110	25400	0000000	0004261	0000000		112,756.20	595,852.16	7,172.70	603,024.86	715,781.06
<i>AY 2009 - Transfer from project # 0001772 SH 5/8/13</i>														
Total for Program Parent/Control Point: EY4000000										161,104.97	1,029,913.77	85,000.00	1,114,913.77	1,276,018.74
410003	01250	TP	1111525	EY864B111	25400	0411160	0001761	0000000		0.00	0.00	399,000.00	399,000.00	399,000.00
<i>AY 2013 - Transfer \$399,000 from Other DOE managed to support HQ directed funds be provided to SRNL for the Package & Certification workscope per Pat Petty's email dated 05/08/13 MG0508013</i>														
410003	01250	TP	1111497	EY864B11D	25400	0000000	0004364	0000000		2,676,304.39	76,522,548.92	6,500,000.00	83,022,548.92	85,698,853.31
<i>AY 2013 - Transfer \$6,500,000 to support EY864B11D per Lynn Horney's email dated 05/02/13 MG050813</i>														
410003	01250	TP	1111526	EY864B121	25400	0000000	0001762	0000000		344,221.52	24,039,146.00	1,500,000.00	25,539,146.00	25,883,367.52
<i>AY 2013 - Transfer \$1,500,000 to support SRNS May Finplan per Lynn Horney's email dated 05/02/13 MG050813</i>														
410003	01250	TP	1111526	EY864B121	25400	0411160	0001762	0000000		0.00	0.00	55,000.00	55,000.00	55,000.00
<i>AY 2013 - Transfer \$55,000 from Other DOE managed to support HQ directed funds be provided to SRNL for the Package & Certification workscope per Pat Petty's email dated 05/08/13 MG0508013</i>														
410003	01250	TP	1110949	EY864B130	25400	0000000	0001763	0000000		11,288,054.07	11,171,344.00	2,000,000.00	13,171,344.00	24,459,398.07
<i>AY 2013 - 5.8.2013 - Increased per Pat's email RMO - mat</i>														
410003	01250	TP	1110949	EY864B130	25400	0411160	0001763	0000000		0.00	0.00	86,000.00	86,000.00	86,000.00
<i>AY 2013 - 5.8.2013 - Increased by \$86K per Pat's email - RMO - mat</i>														
410003	01250	TP	1110950	EY864B300	25400	0000000	0001766	0000000		868,926.39	30,465,946.00	5,000,000.00	35,465,946.00	36,334,872.39
<i>AY 2013 - Additional funding for PBS30 per 5.7.13 email from DOE-SR CFO Management. Adjustment will be made in future fin plan to align funding with expected funds letter.</i>														
410003	01250	TP	1110950	EY864B300	25400	0411160	0001766	0000000		0.00	0.00	100,000.00	100,000.00	100,000.00
<i>AY 2013 - HQ directed funds be provided to SRNL for the Package & Certification workscope</i>														
Total for Program Parent/Control Point: EY8648020										15,177,506.37	142,198,984.92	15,640,000.00	157,838,984.92	173,016,491.29
410003	01250	TP	1111528	EY8748141	25400	0000000	0001764	0000000		1,358,284.88	48,016,000.00	6,274,000.00	54,290,000.00	55,648,284.88
410003	01250	TP	1111528	EY8748141	25400	0411107	0001764	0000000		0.00	22,062,500.00	1,157,900.00	23,220,400.00	23,220,400.00
410003	01250	TP	1111528	EY8748141	25400	0411108	0001764	0000000		121,214.20	9,741,000.00	771,933.00	10,512,933.00	10,634,147.20
410003	01250	TP	1111528	EY8748141	25400	0411130	0001764	0000000		0.00	9,606,000.00	383,333.00	9,989,333.00	9,989,333.00
Total for Program Parent/Control Point: EY8748140										1,479,499.08	89,425,500.00	8,587,166.00	98,012,666.00	99,492,165.08
410003	01250	TP	1111167	FS5048020	25400	0000000	0001765	0000000		191,501.97	7,407,000.00	1,150,000.00	8,557,000.00	8,748,501.97
Total for Program Parent/Control Point: FS5010010										191,501.97	7,407,000.00	1,150,000.00	8,557,000.00	8,748,501.97
Total for Fund: 01250										17,009,612.39	240,061,398.69	25,462,166.00	265,523,564.69	282,533,177.08

Cost and Obligation Report YTD Values

Funding Source: All

Appr Year	Fund Code	Legacy FT	Legacy Program	Legacy B&R	Project	WFO	Object Class	Local Use	Purchase Order	BEARS		STARS		Ending Uncosted	
										BA Committed	BA Obligated	Curr Yr Obligated	Curr Yr Costs		
Legacy Program Parent: EY5202400															
2013	01250	TP	1111557	EY5202410	0001526	0000000	25400	0000000	SR22470	0.00	1,000,000.00	1,000,000.00	1,000,000.00	143,473.23	856,526.77
Total for Legacy Program Parent: EY5202400										0.00	1,000,000.00	1,000,000.00	1,000,000.00	143,473.23	856,526.77
Report Total										0.00	1,000,000.00	1,000,000.00	1,000,000.00	143,473.23	856,526.77

Attachment 11

Work Authorization No. HI-410003-13-5-13, Rev 1

Project Title: Fuel Cell Technologies Program

2013-66

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

1a. Project Title	1b. Work Proposal Number
Fuel Cell Technologies Program	HI-410003-13

2. Headquarters Program Point of Contact		
Name: Sunita Satyapal	Organization Code: EE-2H	Phone: 202-586-2336

3. Headquarters Budget Point of Contact		
Name: Richard Farmer	Organization Code: EE-2H	Telephone No. 202-586-1623

4. Responsible Program	5. Responsible Secretarial Officer
Office of Energy Efficiency and Renewable Energy	David Danielson

6. Responsible Field Organization
U.S. Department of Energy, Savannah River Operations

7a. Site and Facility Management Contractor	7b. Contractor Point of Contact
Savannah River Nuclear Solutions, LLC	Name: John W. Temple Telephone No. (803) 952- 7210

8. Work Authorization Number	9. Revision Number
HI-410003-13-5-13	1

10. Funds Authorized (\$ in thousands)(See NOTE below)
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

Budget and Reporting Code:	Previous:	Change:	Current:
Congressional Control Point: HT0000000	\$ 1,695,000.00	\$ -	
HT0201000-05450-1009191 - Agreement # 13443	\$ -	\$ 70,054.22	
HT0201000-05450-1 0091 91 - Agreement# 26126	\$ -	\$ 210,162.64	
HT0202000-05450-1009192- Agreement 22272	\$ -	\$ 87,567.77	
HT0202000-05450-1009192 - Agreement 24099	\$ -	\$ 255,697.88	
HT0202000-05450-1 009192 - Agreement 22275	\$ -	\$ 112,086.74	
HT0500000-05450-1009195	\$ -	\$ 122,594.88	
Total	\$ 1,695,000.00	\$ 858,164.13	\$ 2,553,164.13

11. Performance Period Covered by Funds	12. Work Start Date	13. Expected Completion Date
From: October 1, 2012 To: September 30, 2013	From: Oct. 1, 2012	To: Sept. 30, 2013

14. Statement of Work (Includes attachments)
 In accordance with the approved Energy Efficiency and Renewable Energy Fuel Cell Technologies Office FY 2013 spend plan, funding has been planned for obligation and expenditure in accordance with program guidance as indicated in the attached program memorandum. Required changes can be completed via an Agreement Funds Transfer coordinated in the Corporate Planning System (CPS). The laboratory receiving the funds detailed in this letter will be responsible for reporting all funding obligations and cost 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.

15. DOE-SR Program Point of Contact		
Name (printed):	Signature:	Date:
Patrick R. Jackson		April 29, 2013

APPROVED
 By Patrick R. Jackson at 4:44 pm, Apr 23, 2013

16. DOE Budget Official		
Name (typed): Harold K. Nielsen	Signature: 	Date: 5/14/13
17. Contractor's Authorized Representative		
Name (typed): John Temple	Signature: 	Date: 5/15/13
18. DOE Contracting Officer (or delegated representative)		
Name (typed): Jim Lovett	Signature: 	Date: 5/15/13

89X0321 - ENERGY EFFICIENCY AND RENEWABLE ENERGY
FISCAL YEAR: 2013

410003-SR SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

36-MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 4

2013-669

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
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OPERATING EXPENSES : 89X0321.91 (05450)

0 HT	HYDROGEN AND FUEL CELLS TECHNOLOGIES		2013	NEW OA	1,695,000.00		858,164.00		2,553,164.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,695,000.00		858,164.00		2,553,164.00
0 HT TOTAL, HYDROGEN AND FUEL CELLS TECHNOLOGIES				NEW OA	1,695,000.00		858,164.00		2,553,164.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	1,695,000.00		858,164.00		2,553,164.00
0 SL	SOLAR ENERGY		2013	NEW OA	900,225.00		0.00		900,225.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	900,225.00		0.00		900,225.00
0 SL TOTAL, SOLAR ENERGY				NEW OA	900,225.00		0.00		900,225.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	900,225.00		0.00		900,225.00
TOTAL, OPERATING EXPENSES (05450)				NEW OA	2,595,225.00		858,164.00		3,453,389.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	2,595,225.00		858,164.00		3,453,389.00
TOTAL, DIRECT FUNDING				NEW OA	2,595,225.00		858,164.00		3,453,389.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	2,595,225.00		858,164.00		3,453,389.00
TOTAL, OBLIGATIONAL AUTHORITY				NEW OA	2,595,225.00		858,164.00		3,453,389.00
				UNOB BAL	0.00		0.00		0.00
				TOTAL OA	2,595,225.00		858,164.00		3,453,389.00

Electronically signed by Richard Farmer
 8e082c66-30a7-4e79-b532-0c871d71a50c
 Program Manager: Satyapal, Sunita
 Site Officer:
 Laboratory/Contractor:
 Contracting Officer:

MEMORANDUM FOR: Terry Michalske, Savannah River Nuclear Solutions
 Savannah River National Laboratory (SRNL)

SUBJECT: FY 2013 Fuel Cell Technologies Office Funding for Savannah River National Laboratory (SRNL)

In accordance with the approved Energy Efficiency and Renewable Energy Fuel Cell Technologies Office FY 2013 spend plan, funding has been planned for obligation and expenditure in accordance with program guidance as indicated below. Required changes can be completed via an Agreement Funds Transfer coordinated in the Corporate Planning System (CPS). The laboratory receiving the funds detailed in this letter will be responsible for reporting all funding obligations and cost 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.

PROGRAM GUIDANCE:

Funding Summary

B&R code	BA (\$)
HT0201000-05450-1009191	\$280,216.86
HT0202000-05450-1009192	\$455,352.39
HT0500000-05450-1009195	\$122,594.88

Funding Action # 41427 (Regular, Operating), HQ POC: Sutherland, Erika, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount
✓ Agreement #13443 - Pipelines - 13443 SRNL (FRP)	HT0201000-05450-1009191	\$70,054.22

Description of Work: Agreement Id: 13443 - Title: Material Testing for FRP Pipelines - SRNL

This project is focused on understanding potential environmental and operational degradation effects in fiber reinforced polymer (FRP) pipe, a potentially low-cost H2 pipeline material. FY2013 funds will be used to support the development of a code case for FRP pipe use in transporting hydrogen. Activities will focus on degradation testing of unflawed commercial FRP pipe, including accelerated environmental testing in order to achieve acceptance of a 50 year life under typical use conditions. A key outcome of the project in FY13 will be the completion of FRP performance test identification and submission of this recommendation to the ASME B31.12 Hydrogen Piping and Pipeline Committee Chair.

Funding Action # 42272 (Regular, Operating), HQ POC: Dillich, Sara, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount

✓ Agreement #26126 - STCH - 26126 SRNL	HT0201000-05450-1009191	\$210,162.64
--	-------------------------	--------------

Description of Work: FY2013 funds are provided to address obstacles to the further development of the hybrid sulfur thermochemical cycle; specifically the identification and characterization of catalysts with low over-potential and high stability and high temperature membranes which can minimize sulfur species transport and support high catalyst kinetics. Funds will be used to complete fabrication of a pressurized button cell test station, perform anode catalyst screening in model solutions and establish the performance baseline MEA at sulfur depolarized electrolysis conditions.

Funding Action # 42629 (Regular, Operating), HQ POC: Stetson, Ned, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount
Agreement #22272 - SRNL - Alane - 22272	HT0202000-05450-1009192	\$87,567.77

Description of Work: Hydrogen storage R&D (Independent Project)
SRNL will continue to develop regeneration methods for AlH₃, including identifying potential commercialization partners, establishing an agreement with them, such as a CRADA, and initiating activities to transfer of the technology. In 2013 SRNL will demonstrate the use of spent aluminum from aluminum hydride to regenerate starting material with yield of more than 70 % based on reactants of Al and alkaline hydride (e.g. LiH).

Funding Action # 42639 (Regular, Operating), HQ POC: Stetson, Ned, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount
Agreement #24099 - SRNL - HSECoE - 24099	HT0202000-05450-1009192	\$255,697.88

Description of Work: Agreement: 24099; SRNL - Engineering Center of Excellence
In FY2013 SRNL will continue overall management of the HSECoE, including organizing face-to-face, system architect, and coordinating council meetings; coordinate with the DOE for the partner presentations to the Hydrogen Storage Technical Team and at the Annual Merit Review; and carry out functions as requested by the DOE. SRNL will also play active roles in the metal hydride and sorbent systems design, modeling and validation, including demonstrating flow-through cooling of an adsorbent bed and performing as the "System Architect" for the metal hydride system design.

Funding Action # 42659 (Regular, Operating), HQ POC: Stetson, Ned, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount
Agreement #22275 - SRNL - H ₂ Storage Tech Support - 22275	HT0202000-05450-1009192	\$112,086.74

Description of Work: Agreement Id: 22275 Technical Support/Independent evaluation of storage concepts
Technical support will be provided as requested, including carrying out evaluations of proposed concepts and reported results. At least on peer review journal publication will be prepared.

Funding Action # 42679 (Regular, Operating), HQ POC: Farmer, Richard, Field POC: Motyka, Ted

Agreement/solicitation ID & Title	B&R Code	Funding Amount
Agreement #24132 - SRNL - Technical Support	HT0500000-05450-1009195	\$122,594.88

Description of Work: FY 13 funds are to be used by SRNL to provide technical assistance to DOE technology development managers specifically in the hydrogen Safety, Codes and Standards program including planning and coordinating activities such as the monthly lab manager's call and in responding to inquiries addressed to the SCS program.

Electronically signed by Richard Farmer
8c082c66-30a7-4e79-b532-0c871d71a50c

**Richard Farmer, Acting Director
Fuel Cell Technologies Office
Energy Efficiency and Renewable Energy**

**CC: Patrick R. Jackson (SRS)
Sylvia Green-Ellis (SRNL)**

Attachment 12

Work Authorization No. HI-410003-13-5-13, Rev 2

Project Title: Fuel Cell Technologies Program

2013-73

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

1a. Project Title	1b. Work Proposal Number
Fuel Cell Technologies Program	AOP #FY13 SRNL PD, AOP #FY12 SRNL ST, AOP#FY12 SRNL ST, AOP #FY12 SRNL ST, AOP #FY12SRNL PD, AOP #SRNL FY12 SCS.

2. Headquarters Program Point of Contact		
Name: Sunita Satyapal	Organization Code: EE-2H	Phone: 202-586-2336

3. Headquarters Budget Point of Contact		
Name: Richard Farmer	Organization Code: EE-2H	Telephone No. 202-586-1623

4. Responsible Program	5. Responsible Secretarial Officer
Office of Energy Efficiency and Renewable Energy	David Danielson

6. Responsible Field Organization
U.S. Department of Energy, Savannah River Operations

7a. Site and Facility Management Contractor	7b. Contractor Point of Contact
Savannah River Nuclear Solutions, LLC	Name: John W. Temple Telephone No. (803) 952- 7210

8. Work Authorization Number	9. Revision Number
HI-410003-13-5-13	2

10. Funds Authorized (\$ in thousands)(See NOTE below)
NOTE: Work subject to funds availability and an approved "Full Year FY 2013 Continuing Resolution Act."

Budget and Reporting Code:	Previous:	Change:	Current:
HT0201000-05450-1009191 - Agreement # 13443	\$ -	\$ 23,767.78	
HT0201000-05450-1 0091 91 - Agreement# 26126	\$ -	\$ 71,303.61	
HT0202000-05450-1009192- Agreement 22272	\$ -	\$ 29,709.23	
HT0202000-05450-1009192 - Agreement 24099	\$ -	\$ 86,753.12	
HT0202000-05450-1 009192 - Agreement 22275	\$ -	\$ 38,028.26	
HT0500000-05450-1009195 - Agreement 24132	\$ -	\$ 41,592.87	
Total	\$ 2,553,164.13	\$ 291,154.87	\$ 2,844,319.00

11. Performance Period Covered by Funds		12. Work Start Date	13. Expected Completion Date
From: October 1, 2012	To: September 30, 2013	From: Oct. 1, 2012	To: Sept. 30, 2013

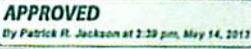
2013-12

14. Statement of Work (Includes attachments)

Funding in the amount of \$291,154.87 is authorized by the Fuel Cell Technologies Office to perform work in the areas of :

- Production & Delivery: Production of hydrogen from domestic resources with a focus on renewables and low carbon pathways, as well as delivery of hydrogen to meet costs of \$2 to \$4 per gallon gasoline equivalent
- Hydrogen Storage: Storage of hydrogen on vehicles with secondary emphasis on early market applications.
- Fuel Cells: Conversion of hydrogen and other fuels to electricity with a focus on transportation applications and secondary emphasis on stationary and portable power applications.
- Technology Validation: Technical validation of systems in real-world environments.
- Safety, Codes & Standards: Safety-related research and facilitation of the development of model codes and standards for widespread domestic and international commercialization of hydrogen and fuel cell technologies.
- Systems Analysis: Understanding the complex interactions among components, system costs, energy efficiency, environmental impacts, societal impacts, and system trade-offs.
- Manufacturing: Research and development of manufacturing technologies and processes to lower the cost and improve the quality of hydrogen and fuel cell systems and components.
- Market Transformation: Accelerates the commercialization and early adoption of hydrogen and fuel cell technologies.

15. DOE-SR Program Point of Contact

Name (printed): Patrick R. Jackson	Signature: 	Date: May 14, 2013
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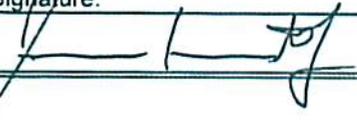
16. DOE Budget Official

Name (typed): Harold K. Nielsen	Signature: 	Date: 5/14/13
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17. Contractor's Authorized Representative

Name (typed): John Temple	Signature: 	Date: 5/15/13
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18. DOE Contracting Officer (or delegated representative)

Name (typed): Jim Lovett	Signature: 	Date: 5/15/13
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U.S. DEPARTMENT OF ENERGY
 FUNDS DISTRIBUTION SYSTEM
 APPROVED FUNDING PROGRAM

89X0321 - ENERGY EFFICIENCY AND RENEWABLE ENERGY
 FISCAL YEAR: 2013

36 - MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

APPROVED FUNDING PROGRAM NO. 5

2013-79

B&R CODE	B&R TITLE	BRN	APPROPRIATION YEAR	TYPE	CURRENT APPROVED AMOUNT	FN	CHANGE	FN	REVISED AMOUNT
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OPERATING EXPENSES : 89X0321.91 (05450)

O BM01 BIOMASS/BIOFUELS ENERGY SYSTEMS

2013	NEW OA	450,000.00	0.00	450,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	450,000.00	0.00	450,000.00
O BM01 TOTAL, BIOMASS/BIOFUELS ENERGY SYSTEMS	NEW OA	450,000.00	0.00	450,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	450,000.00	0.00	450,000.00

O EL17 FEDERAL ENERGY MANAGEMENT PROGRAM

2013	NEW OA	12,000.00	0.00	12,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	12,000.00	0.00	12,000.00
O EL17 TOTAL, FEDERAL ENERGY MANAGEMENT PROGRAM	NEW OA	12,000.00	0.00	12,000.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	12,000.00	0.00	12,000.00

O HT HYDROGEN AND FUEL CELLS TECHNOLOGIES

2013	NEW OA	2,553,164.00	291,155.00	2,844,319.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	2,553,164.00	291,155.00	2,844,319.00
O HT TOTAL, HYDROGEN AND FUEL CELLS TECHNOLOGIES	NEW OA	2,553,164.00	291,155.00	2,844,319.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	2,553,164.00	291,155.00	2,844,319.00

O SL SOLAR ENERGY

2013	NEW OA	900,225.00	384,804.00	1,285,029.00
	UNOB BAL	0.00	0.00	0.00
	TOTAL OA	900,225.00	384,804.00	1,285,029.00

2013-73

U.S. DEPARTMENT OF ENERGY CONTRACT WORK AUTHORIZATION			
1a. Program Title: Fuel Cell Technologies Office		1b. Work Proposal Number (if applicable): AOP #FY13 SRNL PD, AOP #FY12 SRNL ST, AOP #FY12 SRNL ST, AOP #FY12 SRNL ST, AOP #FY12 SRNL PD, AOP #SRNL FY12 SCS	
2. Headquarters Program Point of Contact:			
Name: Sunita Satyapal		Organization Code: EE-2H	Telephone No: (202) 586-2336
3. Headquarters Budget Point of Contact:			
Name: Cathy Short		Organization Code: EE-3B	Telephone No: (202) 586-9302
4. Responsible Program:		5. Responsible Secretarial Officer:	
Office of Energy Efficiency and Renewable Energy		David Danielson	
6. Responsible Field Element:			
Savannah River Site Office			
7a. Site and Facility Management Contractor:		7b. Contractor Point of Contact:	
Savannah River Nuclear Solutions, LLC		Name: Ted Motyka	Telephone No: (803) 725-3665
8. Work Authorization Number:*			
HI-410003-13		2	
10. Funds Authorized:			
<u>Congressional Control Point</u>	<u>Previous</u>	<u>Change</u>	<u>Current</u>
HT0000000	\$2,553,164.13	\$291,154.87	\$2,844,319.00
11. Performance period covered by funds:		12. Work Start Date:	13. Expected Completion Date:
From:10/01/2012 To:09/30/2013		10/01/2012	09/30/2013
14. Statement of Work:			
<p>Funding in the amount of \$291,154.87 is authorized by the Fuel Cell Technologies Office to perform work in the areas of :</p> <ul style="list-style-type: none"> • Production & Delivery: Production of hydrogen from domestic resources with a focus on renewables and low carbon pathways, as well as delivery of hydrogen to meet costs of \$2 to \$4 per gallon gasoline equivalent • Hydrogen Storage: Storage of hydrogen on vehicles with secondary emphasis on early market applications. • Fuel Cells: Conversion of hydrogen and other fuels to electricity with a focus on transportation applications and secondary emphasis on stationary and portable power applications. • Technology Validation: Technical validation of systems in real-world environments. • Safety, Codes & Standards: Safety-related research and facilitation of the development of model codes and standards for widespread domestic and international commercialization of hydrogen and fuel cell technologies. • Systems Analysis: Understanding the complex interactions among components, system costs, energy efficiency, environmental impacts, societal impacts, and system trade-offs. • Manufacturing: Research and development of manufacturing technologies and processes to lower the cost and improve the quality of hydrogen and fuel cell systems and components. • Market Transformation: Accelerates the commercialization and early adoption of hydrogen and fuel cell technologies. 			
15. Reporting Requirements (Status reports, scientific and technical information or similar):			
16. Work Authorization Program Official:			

Name (typed): Sunita Satyapal, Director	Signature: afa0ef19-cef4-411a-9915- 9267d8c20c8f	Date: 4/24/2013
17. DOE Field Organization Official:		
Name (typed):	Signature:	Date:
18. Contractor's Authorized Representative:		
Name (typed):	Signature:	Date:
19. DOE Contracting Officer (or delegated representative):		
Name (typed):	Signature:	Date:
* The work authorization number will consist of the program code, AFP code, and the fiscal year		

FED 13-8097 - May

Attachment 13

Work Authorization No. HQTD1000, Rev 5

Project Title: Technical Planning, Integration and Risk Management

2013-19

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title		Work Proposal Number	
Technical Planning, Integration and Risk Management		HQTD1000	
HQ Program Point of Contact	Organization Code	Telephone	
Steven P. Schneider	EM-21	301.903.4307	
HQ Budget Point of Contact	Organization Code	Telephone	
Connie Flohr	EM-61	301.903.0393	
Program Name		Secretarial Office Name	
Office of Environmental Management		Mustin	

Responsible Field Organization
 U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact	
Savannah River Nuclear Solutions, LLC	John Temple	803.952.7210

Work Authorization Number	Revision
HQTD1000	5

Funds Authorized (See note below)
 This is a Net \$0 distribution by the Program Office of prior year uncosted funds to continue funding Statement of Work.

B/R Code	Previous	Change	Current
EY4049110 SR031601	\$7,172.70	(\$7,172.70)	\$0.00
EY4049110 HQTD1000	\$595,852.16	\$7,172.70	\$603,024.86

U.S. Department of Energy

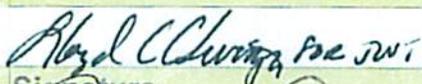
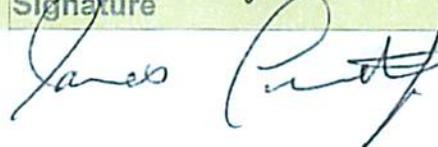
CONTRACT WORK AUTHORIZATION

Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

SRNL will assist EM-30 in FY2013 with development and deployment of technological solutions to EM cleanup problems to include:

1. Support five Technical Project areas:
 - a. WP-1 Waste Retrieval and Closure Technologies
 - b. WP-2 Alternative Waste Pretreatment
 - c. WP- 3 Advanced Unit Operations and Scaling
 - d. WP-4 Improved Vitrification Capacity
 - e. WP-5 Increased Waste Loadings
2. Technical Integration - Provide rapid response to emergent HQ requests.
3. HQ Requested Studies and Reports - Issuance of reports and technical reviews as needed.
4. Systems Engineering - Provide systems engineering solutions to complicated issues, to include assisting EM in the risk management of its technical portfolio; develop and maintain program execution documents, and facilitate implementation of complex-wide clean-up strategies.

POC Name Last	Signature	Date
Patrick Jackson		May 9, 2013
Budget Name Last	Signature	Date
Harold K Nielsen		5/13/13
Contract POC Name Last	Signature	Date
John Temple		5/15/13
CO Name Last	Signature	Date
Scott Langston James Lovett		5/15/13

**OFFICE OF TANK WASTE & NUCLEAR MATERIALS (EM-20)
WORK AUTHORIZATION /TASK CHANGE REQUEST (TCR)**

Project Number :	HQTD1000	Date:	May 2013	APP Change Month:	June 2013
Project Title:	Technical Planning, Integration and Risk Management				
Site /Contractor:	SRNL	Waste Processing Area:WP-0			

Contract Number if other than National Laboratory or DOE site contractor:

Name of Principal Investigator: Jeff Griffin, Savannah River National Laboratory, (803) 725-1343, jeff.griffin@srnl.doe.gov
 Bill Wilmarth, Savannah River National Lab, 803-725-1727, bill.wilmarth@srnl.doe.gov

Name of Budget Analyst at site: Leza Roberson, SRS, (803)952-9196 , leza.roberson@srs.gov

New BA (\$K) Requested	Prior Funding (\$K) in this FY	Total Uncosted (\$K) as of Beginning of this FY	Total Available Funding (\$K) including this request (add first three columns)
Net \$ 0 K distributed as follows: a. (\$7,173 K) from SRNL project SR031601 (FY09) to b. \$7,173K to SRNL project HQTD1000	561.732	149	\$717.905 K

Spend Plan for Total Annual Funding (use actual costed funds for previous quarters)

1 st Quarter of FY	2 nd Qtr of FY	3 rd Quarter of FY	4 th Quarter of FY	Projected uncosted at the end of this FY
\$177 K	\$ 177 K	\$177 K	\$186 K	\$ 0.905 K

Funding Codes (To be Completed by Budget Office)

Fund	Year	Allottee	Reporting Entity	SGL	Object Class	Program	Project	Amount
0155 See attached								

Short Description of Work Scope Authorized /Changed for input in AFP:

To accomplish its mission, DOE-EM Office of Tank Waste Management (EM-21) relies on support from the various national laboratories such as INL and ORNL. These labs assist EM-30 in the development and deployment of technological solutions to EM cleanup problems to include:

- Support of the five Technical Project areas:
 - WP-1 Waste Retrieval and Closure Technologies
 - WP-2 Alternative Waste Pretreatment
 - WP3 Advanced Unit Operations and Scaling
 - WP-4 Improved Vitrification Capacity
 - WP-5 Increased Waste Loadings
- Technical Integration – Provides a rapid response to emergent HQ requests.
- HQ Requested Studies and Reports – Issuance of reports and technical reviews as needed.
- Systems Engineering – Provide systems engineering solutions to complicated issues, to include assisting EM in the risk management of its technical portfolio; develop and maintain program execution documents, and facilitate implementation of complex-wide clean-up strategies.

Net 0 sum TCR. Transfer \$ 0 K as follows: (\$7.173K) from SRNL project SR031601 (FY09) to \$7.173K SRNL project HQTD1000.

Submitted by:	<i>Gay R. Petersen</i>	Date: 17 April
Headquarters Project Manager (Please Print & Sign)		
Approved by:	<i>David B. Schulz</i>	Date: 4/25/13
Office Director (Please Print & Sign)		
Approved by:	<i>W. P. ...</i>	Date: 5/6/13
Deputy Assistant Secretary, EM-20		
Submitted to:	<i>R. J. McMillen</i>	Date: 5/6/2013
EM-16 Budget Analyst for TDD to complete AFP change		

Funding Codes

Site	Fund	Year	Allottee	Reporting Entity	SGL	Object Class	Program	Project	Amount
SRNL	01250	2009	36	410003	61000000	25400	1110676	0001772	-7,173
SRNL	01250	2009	36	410003	61000000	25400	1110676	0004261	7,173

EY4049100 - SR031601 7173.00 (7173.00) 0
 " " HQT01000 595,852.16 ~~7173.00~~

Technical Task Plan - Technical Planning, Integration and Risk Management (WP-0)

NEEDS STATEMENT:

The EM Office of Tank Waste Management manages the EM Tank Waste Technology Development and Deployment (TDD) Program that conducts applied research and technology development, demonstration and deployment. This office is chartered to remediate the radioactive tank waste that is stored at the three major EM sites (Hanford, SRS, and Idaho). The objective of the program is to reduce the technical risk and uncertainty in the Department's tank waste disposition projects. To reduce those risks and uncertainties, the program will provide technical solutions where none exist, improved solutions that enhance safety and operating efficiency, or technical alternatives that reduce programmatic risks (cost, schedule, or effectiveness).

BACKGROUND AND PURPOSE:

DOE-EM will be assisted in carrying out these activities by the Savannah River National Laboratory (SRNL), which will provide programmatic support to DOE-EM and assist in mitigating technical and programmatic risks.

TECHNICAL APPROACH:

Summary of the Approach

Programmatic tasks in support of the Office of Waste Processing include support of the Tank Waste Technical Development and Deployment (TDD) Program. This support includes coordinating teams of National Lab, DOE staff and staff of selected directed institutions to assist the development of the technical scope to be accomplished in each research area, recommending the performing organizations and recommending appropriate funding levels. Assess progress of the performing organizations and make recommendations to EM-21 for project direction. This also includes assuring that the international program is aligned with each Technical Project Area. Furthermore this supports reporting on project costs and schedules, as well as the annual reports and highlights, technical reviews and other reports as needed, e.g. the Report to Congress.

SCHEDULE / MILESTONES:

Activity	Date
TBD	TBD

SPENDING PLAN

Monthly Spending Plan for FY2013 (\$K)

Prior Year \$4.732K

Carry Over: \$149K

Oct 12	Nov 12	Dec 12	Jan 13	Feb 13	Mar 13	Apr 13	May 13	Jun 13	Jul 13	Aug 13	Sept 13	Carryover	Total
59	59	59	59	59	59	59	59	59	62	62	62	0.905	717.905

Signature and Approvals

HQ Program Manager:

Carry R. Peters

Office Director:

[Signature]

BUDGET:

Task	Budget FY13 (\$K)
Support the EM-21 Tank Waste TDD Program	\$ 717.905 K

Attachment 14

Work Authorization No. 89X0319, Rev 5

Project Title: Fuel Cycle Technologies

2013-78

U.S. Department of Energy

CONTRACT WORK AUTHORIZATION

Project Title		Work Proposal Number
Fuel Cycle Technologies		89X0319
HQ Program Point of Contact	Organization Code	Telephone
Robert Rova	NE-5	301.903.9096
HQ Budget Point of Contact	Organization Code	Telephone
Daphne M. Lugenbeel	NE-34	301.903.2251
Program Name		Secretarial Office Name
Office of Nuclear Energy		John Herczeg

Responsible Field Organization

U.S. Department of Energy (DOE), Savannah River Operations (SR)

Site Facility Management Contractor	Contractor Point of Contact	
Savannah River Nuclear Solutions, LLC	John Temple	803.952.7210
Work Authorization Number	Revision	
89X0319	5	

Funds Authorized (See note below)

This guidance is based on funding provided under the FY 2013 Continuing Resolution (CR) for Appropriation 89X0319 and reflected in the AF58 Budget and Reporting codes for the April Approved Funding Program (AFP). Per the attached direction, \$300,000 was added to NFST Planning Project - 1.2.09.08 ST Design Concepts managed under BNR/CAM AF586502. Also, per the attached direction, additional appropriations year 2012 funds from B&R Code AF583203, in the amount of \$100,000, are being added to this Work Authorization.

B/R Code	Previous	Change	Current
AF5805100	\$1,052,100.00	\$105,210.00	\$1,157,310.00
AF5865010	\$816,750.00	\$110,000.00	\$926,750.00
AF5865020	\$808,250.00	\$0.00	\$808,250.00
AF5832030	\$52,500.00	\$5,250.00	\$57,750.00
AF5832020	\$178,500.00	\$17,850.00	\$196,350.00
Total FY 2013	\$2,908,100.00	\$238,310.00	\$3,146,410.00

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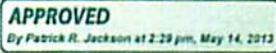
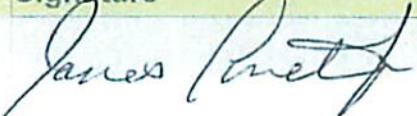
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FY2012 Funding	\$100,000.00	\$0.00	\$100,000.00
Grand Total	\$3,008,100.00	\$238,310.00	\$3,246,410.00
Perf Start	Perf Stop	Work Start	Work Stop
10/1/2012	9/30/2013	10/1/2012	9/30/2013

Statement of Work

The FCT work packages defining the authorized work scope are maintained in the Program Information Collection System NE (PICSNE). PICSNE will be used for all monthly performance reporting to Headquarters Management including, but not limited to the status of: Level 2 milestones, deliverables, cost and schedule, Baseline Change Proposals, and carryover projections. The funding allocation by B&R code is shown in the attached table.

POC Name Last	Signature	Date
Patrick Jackson		May 14, 2013
Budget Name Last	Signature	Date
Harold K Nielsen		5/14/13
Contract POC Name Last	Signature	Date
John Temple		5/15/13
CO Name Last	Signature	Date
Scott Langston James Lovett		5/15/13