

NOTE TO: Jennifer Golder, OCFO/DPBA/PAB  
Karen Fitch, OCFO/DPBA/PAB  
Glenda Jackson, OCFO/DAF  
Brian Kildee, OGC

DATE: April 10, 2001

FROM: Joel Dorfman, OCFO/DPBA/FCB *JD*

SUBJECT: MOD 1 TO REIMBURSABLE AGREEMENT WITH DOE RELATED TO THE  
PEBBLE BED MODULAR REACTOR

Attached for your comments is Modification 1 to the reimbursable agreement with DOE related to the PBMR, now titled, "Advanced Reactor Technology, Regulation and Fuel Evaluation." In accordance with NRC Management Directive 4.2, Rick Rough has to concur before NRC signs this agreement. In order to concur, we need to be comfortable with the following issues:

1. Did the Commission approve proceeding with the work described in the SECY paper?
2. Is the Statement of Work consistent with the SECY paper?
3. Is the Statement of Work within the scope of what NRC can do under the Economy Act?

In addition, I have already requested that, consistent with other NRC/DOE reimbursable agreements, the following language be added:

*Costs will be billed in accordance with NRC policy for charging full costs for reimbursable work. NRC policy requires charging for direct staff time based upon the hourly rate as established in 10 CFR Part 170, in addition to any contractor or foreign travel costs incurred in order to perform services specified in the Statement of Work.*

Please provide me with any comments by **Thursday, April 12**, if possible.

c:\wp\sp01\pebblebednotemod1.wpd

*B/7*

**ROUTING AND CONCURRENCE SHEET**

**DATE: 4/10/2001**

**INITIALS**

1. MAITCHESON - CONCUR *MA* DATE: 4/10/2001  
2. RROUGH - CONCUR \_\_\_\_\_ DATE: 4/ /2001

**PLEASE RETURN TO M. AITCHESON, T-10 D11**

3. MFARR - CONCUR \_\_\_\_\_ DATE: 4/ /2001  
4. TKING - CONCUR, SIGN \_\_\_\_\_ DATE: 4/ /2001

**RETURN TO M. AITCHESON**

**SUBJECT: DOE/NRC REIMBURSABLE AGREEMENT RE: ADVANCED GAS REACTOR TECHNOLOGY, REGULATION AND FUEL EVALUATION (FORMERLY KNOWN AS PEBBLE BED MODULAR REACTOR (PBMR) TECHNOLOGY AND FUEL EVALUATION**

**THE ORIGINAL IS IN THE MAIL AND WILL BE PLACED IN THIS PACKAGE AS SOON AS IT IS RECEIVED.**

**THE \$480K OF FUNDS PROVIDED UNDER THIS MODIFICATION NO. 1 WILL PAY FOR: \$25K TRAVEL, \$355K FTE, \$100K CONTRACT ASSISTANCE**

**ANY QUESTIONS, PLEASE CONTACT MARIANNE AITCHESON**

**FROM: M. AITCHESON 415-5822 EMAIL MMR**

**DISTR**

**Subj: <sup>AGRT</sup>~~PBMR~~ PROJECT**

**J. Dorfman, OCFO/DPBA**

**T. King, DRAA**

**M. Farr, DRAA**

**M. Aitcheson, PMG/PMPDAS**

**N. Price, FMG/PMPDAS**

**T. Stevenson, OCFO/DAF**

**S. Rubin, DSARE/RES**

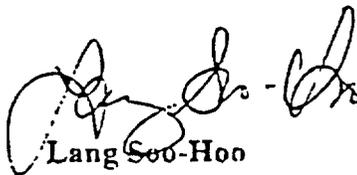
**J. Golder, OCFO**

March 22, 2001

NOTE TO: 1. Diane Williams, CR-53  
2. Ruby Reeves, MA-542

I am attaching a PR (01NE23069.001) for your funds certification, PADs control, and procurement award of the enclosed Interagency Agreement modification for \$480,000,000.00 with the NRC.

Thank you.

A handwritten signature in black ink, appearing to read 'Lang Seo-Hoo', is written over a faint dotted line.

Lang Seo-Hoo  
Office of Nuclear Energy,  
Science and Technology

Funds Out Interagency Agreement (IA)

United States Department of Energy Washington, D.C. 20585 DOE Interagency Agreement/Amendment Part 1-General Information	1. DOE IA Identification (ID) No.: DE-AI01-01-NE-23069	4. TA No.:
	2. Servicing Agency IA ID No. (If known):	5. Modification No: A-001
	3. DOE Procurement Request No.: 01-NE23069.001	

6. Name and Address of DOE Technical Office:  U.S. Department of Energy Office of Nuclear Energy, Science and Technology NE-20 19901 Germantown Road Germantown, MD 20874-1290	7. Name and Address of Servicing Agency:  U.S. Nuclear Regulatory Commission (NRC) One White Flint North 11555 Rockville Pike Rockville, Maryland 20852-2738
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8. Project Title: Advanced Gas Reactor Technology, Regulation and Fuel Evaluation

9. DOE Project Officer (Name, Address, Phone No.):  Tom Miller Office of Nuclear Energy, Science and Technology NE-20 19901 Germantown Road Germantown, MD 20874-1290 301-903-7731	10. Servicing Agency Project Officer (Name, Address, Phone No.):  Thomas L. King Office of Nuclear Regulatory Research U.S. Nuclear Regulatory Commission Washington, D.C. 20555 Mail Stop: T-10 E50
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11. Project Period: 2/23/01 -12/15/02	12. Budget Period: 2/23/01 -12/15/02
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13. Scope of Work: See Exhibit 1A

14. Deliverables/Reporting Requirements: See Exhibit 2A

15. (a) This IA is issued pursuant to the Economy Act of 1932, as amended (31 U.S.C. 1535)  Yes |  No  
 (b) This IA is issued to provide Financial Assistance support for Project Activities  Yes |  No  
 If yes, provide Statutory Authority

Funds/Obligations	Previous Amount	Amount This	Amended Total
16. DOE Amount	20,000	480,000.00	500,000.00
17. DOE In-Kind Amount	0	0	0
18. Servicing Agency Amount	0	0	0
19. Servicing Agency In-Kind Amount	0	0	0
20. Total Project Cost	\$20,000.00	\$480,000.00	\$500,000.00

21. DOE FUNDS COMMITTED

22. App Symbol	23. B&R No.	24. Dollar Amt	25. Allot.	26. Object	27. AFP	28. CFA
89X0224	AF-37-40	200,000.00	CR1491	253	NE/YA	
89X0224	AF-37-30	300,000.00	CR1491	253	NE/YA	

PROJECT MANAGER/INITIATOR

Tom Miller 29. Name	<i>Thomas P. Miller</i> 30. Signature	3/19/01 31. Date	32. Office Code: NE-20 33. Telephone No.: 3-4517
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PROGRAMS OFFICIALS, We hereby certify that the funds cited in items 22/2b are being appropriately used.

Shane Johnson 34. Reviewing Official's Name	<i>[Signature]</i> 35. Signature	3/22/01 36. Date
Wade Carroll 37. Budget Official's Name	<i>[Signature]</i> 38. Signature	3/22/01 39. Date

40. Type of Procurement Action (TPA) Code X1	41. Negotiator Code C103
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42. Security. Will employees require security clearances for performance of this procurement?  Yes |  No

43. Energy Policy Act. Is this procurement subject to the Energy Policy Act of 1992 (EPACT); i.e., will it directly satisfy an EPACT requirement or objective? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, does it involve either a research and development program or a demonstration of a commercial application? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, see the Notice related to this item. Amount of EPACT funding: _____			
CERTIFYING OFFICIAL, I hereby certify that the funds cited in item 24 are available.			
44. Name		45. Signature	
46. Date			
47. Initiating Official/Local Office Use			
Part II - Approved Budget - DOE Contribution Plus Servicing Agency Contribution		Doe IA ID No.: DE-A101-01-NE-23069	
48 Budget Categories	Itemization of This Action	Itemization of Previous Actions	Itemization of All Actions to Date
(a) Personnel	\$355,000.00	0	\$355,000.00
(b) Fringe Benefits			
(c) Travel	\$25,000.00	\$20,000.00	\$45,000.00
(d) Equipment			
(e) Supplies			
(f) Procurement/Assistance	\$100,000	0	\$100,000
(g) Construction			
(h) Other			
(i) Total Direct Charges			
(j) Indirect Costs: Rate % Base \$			
(k) Total (DOE Share 100%) (Servicing Agency Share %)	\$480,000.00	\$20,000.00	\$500,000.00
49 Is equipment authorized to be furnished by DOE or leased, purchased, or rented with DOE funds? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Identify all equipment costing \$1,000 or more)			
50. Are any of these funds being used on contracts and/or financial assistance <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (See item 48f)			
Type of Contract and/or Financial Assistance <input type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input checked="" type="checkbox"/> Procurement (includes small purchase order)			
Contractor/Recipient Name  TBD	Total Extramural Amount Under This Project  N/A	Percent Funded by DOE (if known)  TBD	
Part III - Funding Methods and Billing Instructions			

**51. Funds-Out Agreement/Disbursement Agreement**

Reimbursement, or Request for repayment of actual costs must be itemized on OPAC or other Form previously approved by DOE's Contracting Officer and submitted to the U.S. Department of Energy, Accounts Payable Division, PO Box 500, Germantown, MD 20875-0500. Quarterly cost reports will be forwarded to the U.S. Department of Energy, Accounts Payable Division, P.O. Box 500, Germantown, MD 20875-0500.

Progress

Monthly     Quarterly     Upon Completion of Work

Advance    Only available for use by Federal agencies on working capital funds or with appropriate justification of need for this type of payment method. Unexpended funds at completion of work will be returned to DOE. Quarterly cost reports will be forwarded to the U.S. Department of Energy, Accounts Payable Division, P.O. Box 500, Germantown, MD 20875-0500.

Part IV - Acceptance Conditions	DOE IA ID No. DE-AI01-NE-23069
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**52. General Conditions**

The Servicing Agency covenants and agrees that it will expeditiously initiate and complete the project for which funds have been awarded under this agreement.

**Special Conditions:**

A. Patents and Technical Data. Disposition of rights to inventions made in any contract, grant, or cooperative agreement under this Agreement with any small business firm or domestic nonprofit organization will be in accordance with 35 U.S.C. 200-212. In all other contracts, grants, or cooperative agreements under this agreement, the Servicing Agency shall coordinate the disposition of rights to inventions with the DOE Patent Counsel.

B. Issue Resolution. Unless otherwise indicated below, it is expected that programmatic guidance will be handled through discussions between the staff of the Servicing Agency's Project Officer listed on the Face Page, item 10 and the DOE Project Officer, Face Page, item 9. Any administrative issues including billing questions, unresolved items or issues requiring a formal change to this Agreement shall be addressed to the DOE Contracting Officer, page 3 of 3, item 54.

C. Termination. DOE may terminate this Agreement upon 30 calendar days written notice of such termination addressed to the Servicing Agency. In the event of such termination the Servicing Agency shall be reimbursed, to the extent permitted, for obligations actually incurred to the effective date of the termination and for commitments extending beyond the effective date of termination to a date not later than the date upon which the Agreement would have expired if not terminated under this paragraph, which the Servicing Agency, in the exercise of due diligence, is unable to cancel. Payments under this Agreement, including payments under this article shall not exceed the amount(s) committed under this Agreement.

D. Other Government estimate for the Project Period shown in Block 11 is \$ 500,000.00

**PART V - OFFER AND ACCEPTANCE**

Note: The agreement/modification must be accepted by the Servicing Agency official in duplicate and one original returned to the party named in item 54. The agreement/modification must be forwarded to the address cited in Item 54 after acceptance signature.

Receipt of a written refusal or failure to return the properly executed document will result in rejection of all payment requests to the DOE's Controller's Office.

DOE IA Awarding and Administrative Office (for Administrative Assistance)	DOE Program Office (for Technical Assistance)
54 Organization Address U.S. Department of Energy Office of Program Services Attn: DE-AI01-01-NE-23069 1000 Independence Avenue, S.W. Washington, DC 20585	55. Organization/Address Tom Miller, NE-20 U.S. Department of Energy 19901 Germantown Road Germantown, MD 20874

<b>CERTIFICATION</b>		
All signers certify that the statements made on this form and all attachments thereto are true, accurate, and complete.		
Department of Energy Contracting Officer		
<b>56. Signature</b>	Richard G. Lewis Contracting Officer Typed Name and Title	<b>Date</b>
Acceptance by the Authorizing Official on Behalf of the Servicing Agency		
<b>57. Signature</b>	Typed Name and Title	<b>Date</b>

Advanced Gas Reactor Technology, Regulation and Fuel Evaluation

As the U.S. Government agency responsible for the development and execution of civilian nuclear energy research and development programs, the Department of Energy (DOE) seeks the assistance of the U.S. Nuclear Regulatory Commission (NRC) to help develop a technical and regulatory framework for advanced gas reactor technology to support potential future deployment of these advanced nuclear energy systems in the United States.

Phase II Activities:

1. Gas Reactor Regulatory Framework (\$300k) - Conduct work in coordination with industry leading to the development of policy and regulatory framework for the licensing of high temperature gas reactors (HTGR). The existing regulations have evolved over time for application to light water reactor technology. New advanced gas reactor concepts such as the Pebble Bed Modular Reactor (PBMR), and the Gas Turbine Modular Helium Reactor (GT-MHR) have been identified by DOE as reactor technologies for possible near-term deployment in the United States. A regulatory framework needs to be developed that addresses the unique features of gas reactor technology and the associated licensing requirements. The Gas Reactor Regulatory Framework tasks include:
  - Identification of key policy and technical issues affecting HTGRs;
  - Identification of current licensing criteria that are applicable to HTGR designs;
  - Identification of additional licensing criteria unique to HTGR design applications.

## Key Deliverables:

- Identification of necessary HTGR policy & regulation changes - December 2001
- Establish HTGR regulatory framework and policy - September 2002

2. Gas Reactor Analysis Code V&V (\$100k) - initiate development of NRC capability, expertise and confidence with HTGR safety, transient and neutronics codes.

## Key Deliverable:

- Plan for conducting independent activities to verify and validate analysis codes to be used on HTGR designs.

3. Participation in International Gas Reactor Safety Activities (\$60k) - support NRC participation in conferences and meetings to establish international safety standards for HTGRs.

## Key Deliverables:

- Conference and meeting reports.

4. HTGR Fuel Test Program Development (\$20k) - Assist DOE in the development and implementation of a HTGR Fuel Qualification Program. Activities will include program planning and development, fuel irradiation experiments, tests and analysis specification, identification of performance requirements for advanced gas reactor fuels. Initial tasks involve one technical expert in the planning of the fuel qualification program.

## Reporting Requirements Checklist

All other editions obsolete

1. Program/Project Title Advanced Gas Reactor Technology, Regulation and Fuel Evaluation		2. Identification number DE-AI01-01-NE-23069	
3. Participant Name and Address Thomas L. King Office of Nuclear Regulatory Research U.S. Nuclear Regulatory Commission Washington, D.C. 20555 Mail Stop: T-10 E50			
4. Planning and Reporting Requirements			
A. General Managements		E. Financial Incentives	
<input type="checkbox"/> Management Plan <input type="checkbox"/> Status Report <input checked="" type="checkbox"/> Summary Report		<input type="checkbox"/> Statement of Income and Expense <input type="checkbox"/> Balance Sheet <input type="checkbox"/> Cash Flow Statement <input type="checkbox"/> Statement of Changes in Financial Position <input type="checkbox"/> Loan Drawdown Report <input type="checkbox"/> Operating Budget <input type="checkbox"/> Supplementary Information	
B. Schedule/Labor/Cost		F. Technical	
<input type="checkbox"/> Milestone Schedule/Plan <input type="checkbox"/> Labor Plan <input type="checkbox"/> Facilities Capital Cost of Money Factors Computation <input type="checkbox"/> Contract Facilities Capital and Cost of Money <input type="checkbox"/> Cost Plan <input type="checkbox"/> Milestone Schedule/Status <input type="checkbox"/> Labor Management Report <input type="checkbox"/> Cost Management Report		<input type="checkbox"/> Notice of Energy RD&D Project (Required with any of the following)  <input type="checkbox"/> Technical Progress Report  <input type="checkbox"/> Draft for Review <input type="checkbox"/> Final for Approval	
C. Exception Reports		<input type="checkbox"/> Topical Report <input type="checkbox"/> Final Technical Report  <input type="checkbox"/> Draft for Review <input type="checkbox"/> Final for Approval	
D. Performance Measurement		<input type="checkbox"/> Software <input type="checkbox"/> Other (Specify) _____	
<input type="checkbox"/> Management Control System Description <input type="checkbox"/> WBS Dictionary  <input type="checkbox"/> Index <input type="checkbox"/> Element Definition  <input type="checkbox"/> Cost Performance Reports  <input type="checkbox"/> Format 1 - WBS <input type="checkbox"/> Format 2 - Function <input type="checkbox"/> Format 3 - Baseline			
5. Frequency Codes			
A - As Required		M - Monthly	S - Semi-annually
C - Change to Contractual Agreement Changes		O - Once After Award	X - With Proposal/Bid/Application or
F - Final (end of effort)		Q - Quarterly	Y - Yearly or Upon Renewal of Agreement
6. Special Instructions (Attachments)			
<input checked="" type="checkbox"/> Report Distribution List/Addressees <input type="checkbox"/> Reporting Elements <input type="checkbox"/> Due Dates		<input type="checkbox"/> Analysis Thresholds <input type="checkbox"/> Work Breakdown Structure <input type="checkbox"/> Other	



## INSTRUCTIONS

### PART I - PROCUREMENT REQUEST & GENERAL INFORMATION

The DOE Form 1270.1 (Rev.) (4-96) form is to be used for all Funds-Out Interagency Agreements (IA's). This document is in itself a Procurement Request, too, and a separate PR is not required. A computer diskette of the completed 3 page form, with Exhibits 1 and 2, (or more) in WP 5.1 or 6.1 must accompany the form. The Contract Specialist will make all corrections necessary before the IA is sent to the Servicing Agency or signed by the DOE Contracting Officer.

#### Note to Program Personnel:

Complete one original and process through the system. The original will be maintained in the official contract file.

1. The original agreement identification number will be assigned by the Program Office. All HQ numbers will begin with DE-AIO1- (fiscal year) (Program Code) and a five digit number. The IA number or year awarded will never change after award.
2. Enter the Servicing Agency's IA identification number (if known).
3. Enter the Procurement Request Number assigned by the Program Budget Official. All HQ PR's begin with 01-(fiscal year) (Program Code) (five digit number) and (.000, .001, .002, etc.)
4. Enter Task Assignment Number only if there is a Master Interagency involved, otherwise leave it blank.
5. Enter the Modification Number. An "A" designation such as "A001" indicates that the PR contains money and a "M" or "M001" designation indicates there is no money, but is an administrative modification.
6. Enter "Department of Energy" followed by the name and mailing address of the DOE organization responsible for technical management of the project. The DOE office should be identified at the Office Director or comparable level for Headquarters or Germantown.
7. Enter the name and mailing address of the "Servicing" or other agency. Identify the Department and the appropriate organizational components with the Department (e.g., DHHS, NASA, etc.)
8. Enter project title. Be concise and use only the space provided. If Superfund site specific, include site location (e.g., city and State).
9. Enter the DOE Project Officer's name, DOE mailing address, and telephone number.
10. Enter the Servicing or other agency's Project Officer's name, other agency mailing address, and telephone number.
11. Enter beginning and ending dates of entire period expected to be needed to complete the project. This period of time should not be longer than 5 years. For projects requiring more than 5 years, appropriate justification must be submitted to the Contracting Officer.
12. Enter the period of time this transaction will fund project activities. (Note: budget period cannot exceed the period of appropriation.)
13. Provide a complete description of the project work (scope of work - SOW) to be performed under the IA. Annual Operating Plans can be considered as SOW's. Attach one or the other to the DOE Form 1270.1 (Rev.). In jointly funded projects, the SOW should describe specific responsibilities of the participating agencies, not just the portion of funds provided by DOE.
14. Provide as Exhibit 2, a DOE Form 1332.1 (04-89) Reporting Requirements Checklist and attach a second page showing the names and addresses of where the reports are to go.
15.
  - (a) The Economy Act would apply if the Servicing Agency uses DOE funds for work being done by that particular agency or any contract effort supporting that agency.
  - (b) If the Servicing Agency uses any DOE funds to support Financial Assistance Activities (Grants or Cooperative Agreements) the initiator must provide Procurement Operations with the Statutory Authority. It is recommended that the initiator attach the Statutory Authority as a separate Exhibit to

the IA Form.

16. through 20. shall be completed by the Project Manager/Initiator. Program personnel must keep accurate records in order to complete this section.

21. through 28. shall be completed by the Program Budget Official as the Reviewing Officials (Blocks 35 and 38 have to attest to the accuracy of the funds information.)

29. through 39. must be completed before sending to FUNTS control for certification.

40 and 41. Contract Specialist will complete these two blocks.

42. The Program Official who is the initiator is to check the appropriate box.

43. The Budget Official in the Program Office who signs in Block 37 is to complete this block.

44. through 46. These blocks are to be completed by FUNTS Control.

47. This block is to be completed by PADS processing personnel.

PART II - APPROVED BUDGET

48. A Budget by the DOE Program Manager is mandatory, and must be broken down by categories (a) through (k). The initiator may have to consult with the Servicing Agency to ensure accuracy.

49. The initiator may have to consult with the Servicing Agency to ensure accuracy. Any property management/disposition instruction should appear here. Use a separate Exhibit if necessary.

50. The amount entered here must agree with the amount entered in item 48(f), above. All blocks must be completed if this is an affirmative response.

PART III - FUNDING METHODS AND BILLING INSTRUCTIONS

51. The Program Manager shall check the appropriate block(s) recommended and the Contract Specialist will verify the recommended method of disbursement with the Servicing Agency.

PART IV - ACCEPTANCE CONDITIONS

52 and 53. Self explanatory. Additional items may be added by attaching a separate Exhibit (beginning with the number 3) and using the letter "E" to describe the Exhibit.

PART V - OFFER AND ACCEPTANCE

54. through 57. Self explanatory.