

NRC FORM 30 (6-94) U.S. NUCLE. REGULATORY COMMISSION

**REQUEST FOR ADMINISTRATIVE SERVICES**

FOR HEADQUARTERS:  
MAIL TO THE APPROPRIATE MAIL STOP ON BACK

1. DATE OF REQUEST: 11/4/99  
2. DATE DUE (if applicable): 12/15/99

3. REQUEST NUMBER (LEAVE BLANK): 60-080004

4. TYPE OF SERVICE

<input type="checkbox"/> BUILDING ALTERATIONS AND SERVICES	<input type="checkbox"/> PUBLISHING NUREGS
<input type="checkbox"/> COMPOSITION	<input checked="" type="checkbox"/> SMALL PURCHASES, PROPERTY AND LABOR SERVICES
<input type="checkbox"/> COPYING	<input type="checkbox"/> SUPPLIES
<input type="checkbox"/> EDITING	<input type="checkbox"/> WORD PROCESSING
<input type="checkbox"/> PHOTOGRAPHY/AUDIOVISUAL	<input type="checkbox"/> OTHER (Specify)
<input type="checkbox"/> PRINTING AND DISTRIBUTION	

5. PERSONAL PROPERTY APPROVAL

I certify that personal property assets within the Office/Division have been carefully screened for excess, are currently fully utilized, and the additional requested items are absolutely essential to work performance and will be used only for official purposes.

5a. PROPERTY CUSTODIAN -- SIGNATURE  
N/A - Services

5b. DIVISION DIRECTOR/DESIGNEE -- SIGNATURE  
C. E. Rossi, Director DSARE/RES

7. REQUESTER: Sudhamay Basu  
8. OFFICE: RES

9. TELEPHONE NUMBER: 301-415-6774  
10. FAX NUMBER:  
11. MAIL STOP: T-10 K8  
12. E-MAIL I.D.: sxb2

6. SENSITIVITY

CLASSIFIED  
 SENSITIVE  
 UNCLASSIFIED  
 COPYRIGHT MATERIAL

For copyrighted material, sign below to indicate that you have received permission from the copyright owner to use the material.  
SIGNATURE -- ADMINISTRATIVE OFFICER

13. SPECIAL INSTRUCTIONS (INCLUDE TITLE, DISTRIBUTION, PRINTING SPECIFICATIONS, INSTRUCTIONS, STOCK NUMBERS, JUSTIFICATION, QUANTITIES, AND UNITS WHEN APPLICABLE.)

DCPM is requested to place a purchase order with the University of Wisconsin per the attached SOW, IGCE, and sole source justification. Marianne Riggs, 415-5822, is the RES administrative contact.

Atts: 1. SOW 2. IGCE 3. Justification

PLEASE SEND A FULLY EXECUTED COPY OF THE PURCHASE ORDER TO NORMA PRICE, T-10 D5.

THE RES I.D. NO., RES-C00-325, MUST BE PLACED ON THE OBLIGATING DOCUMENT.

14. FUNDING INFORMATION

JOB CODE	B & R NUMBER	BOC	FUND SOURCE	AMOUNT
Y6232	06015110125	252A	31X0200.060	30,000.00

14a. FUNDS CERTIFIED AVAILABLE BY: SIGNATURE -- CERTIFYING OFFICIAL: *Norma M. Price*  
Norma M. Price, FMG/PMPDAS/RES

14b. DATE: 10/31/99

FOR PROCESSING USE ONLY (LEAVE THIS SECTION BLANK)

15a. REQUIREMENT APPROVED -- SIGNATURE  
15b. DATE  
16a. REQUISITIONING OFFICER -- SIGNATURE  
16b. DATE

17. OFFICE OF ADMINISTRATION PROCESSING

NATURE	DATE	ACTION	SIGNATURE	DATE
		C. DELIVERED		
		D. COMPLETED		

18a. SIGNATURE -- RECIPIENT  
18b. DATE

3 above have been received in the quantity noted.

**STATEMENT OF WORK FOR UNIVERSITY OF WISCONSIN  
PURCHASE ORDER NO. 60-080004**

**TITLE: Technical Support for Molten Fuel Coolant Interactions Research**

**I. BACKGROUND**

The University of Wisconsin (UW) is completing an Office of Research (RES) funded contract on fuel-coolant interaction (FCI) research, which has provided experimental data to determine the enveloping conditions for occurrence of an energetic FCI and to estimate the energetics. The data has been used to develop and assess analytical models in the FCI codes. The codes are generally considered "fit-for-purpose" for some applications; however, for other applications (e.g., estimate of shock loading of the lower head, localized damage of cavity structures, etc.), better code accuracy and predictability are demanded. To meet the demand, it is necessary to have better measurements of spatial and temporal distributions of coarse breakup and fine fragmentation. Once developed, the successful measurement technique can be applied to other experimental programs on FCI and debris coolability.

**II. OBJECTIVE**

The objective of this work is to provide technical support in the development of instrumentation for measuring fuel-coolant mixing in order to better quantify coarse breakup and fine fragmentation. This type of quantification is necessary to achieve better predictability of analytical tools for fuel-coolant interactions calculations.

**III. TECHNICAL AND OTHER QUALIFICATIONS REQUIRED**

For successful performance of the work, the Principal Investigator should be an individual with qualifications and experience in FCI and related research areas. This individual should also have experience in directing experimental research and should have access to a team of research professionals and students.

**IV. SCOPE OF WORK**

Perform experiments with simulants at the WFCI facility to verify the capability of X-ray imaging technique to map the fuel-coolant mixing regions, to extract quantitative data from the maps, and to correlate the data for characterizing coarse breakup and fine fragmentation. Once the imaging capability is verified with simulants, provide necessary technical assistance to other organizations involved in FCI experimental research in the application of the technology to prototypic materials. When called upon, provide expert assistance on other FCI-related issues to the NRC staff.

**V. LEVEL OF EFFORT**

The estimated level of effort is approximately six person-months total.

PO 60-080004 (cont'd)

**VI. PERIOD OF PERFORMANCE**

This purchase order is for a period of twelve months.

**VII. MEETINGS AND TRAVEL**

At present, no travel (domestic or foreign) is anticipated. If it is found that travel is required to perform a specific assignment, it shall be coordinated with and approved in advance by the NRC Project Officer.

**VIII. NRC FURNISHED MATERIAL**

None required.

**IX. DELIVERABLES AND SCHEDULE**

The contractor shall submit a topical report at the conclusion of work, summarizing the results. Additionally, the contractor shall submit periodic progress reports accompanying each invoice. The progress reports will summarize technical progress made to date and provide a detailed explanation of expenses incurred.

**X. NRC PROJECT OFFICER**

The NRC Project Officer is Sudhamay Basu, (301)415-6774, mail stop T-10 K8.

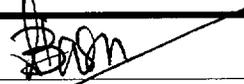
**INDEPENDENT GOVERNMENT COST ESTIMATE (IGCE)  
FOR CONTRACTS**

1. PROJECT TITLE  
  
**Technical Support for Molten Fuel Coolant Interactions Research (JCN Y6232)**

2. PROJECT MANAGER  <b>Sudhamay Basu</b>	3. PERIOD OF PERFORMANCE	
	A. FROM	B. TO
	12/15/1999	11/30/2000

**DESCRIPTION OF COST ELEMENTS**

1. DIRECT LABOR (List Labor Categories)	ESTIMATED HOURS	RATE PER HOUR (\$)	ESTIMATED COST (\$)	TOTAL ESTIMATED COST (\$)
<b>Principal Investigator</b>	80.00	53.00	4,240.00	
<b>Research Associate</b>	300.00	25.00	7,500.00	
<b>Graduate Student</b>	700.00	15.00	10,500.00	
<b>TOTAL DIRECT LABOR</b>	<b>1,080.00</b>	<b>93.00</b>	<b>22,240.00</b>	<b>22,240.00</b>
2. LABOR OVERHEAD INCLUDING FRINGE BENEFITS	RATE	TOTAL LABOR (\$)	ESTIMATED COSTS (\$)	TOTAL ESTIMATED COST (\$)
	0.07	22,240.00	1,557.00	1,557.00
3. MATERIALS/SERVICES (Excluding Information Technology (IT))			ESTIMATED COSTS (\$)	TOTAL ESTIMATED COST (\$)
			0.00	
<b>TOTAL MATERIALS/SERVICES</b>			<b>0.00</b>	<b>0.00</b>
4. INFORMATION TECHNOLOGY SUPPORT			ESTIMATED COSTS (\$)	TOTAL ESTIMATED COST (\$)
			0.00	
<b>TOTAL IT SUPPORT</b>			<b>0.00</b>	<b>0.00</b>
5. TRAVEL			ESTIMATED COSTS (\$)	TOTAL ESTIMATED COST (\$)
			0.00	0.00
6. SUBCONTRACTOR(S)/CONSULTANT(S)			ESTIMATED COSTS (\$)	TOTAL ESTIMATED COST (\$)
			0.00	
<b>TOTAL SUBCONTRACTOR(S)/CONSULTANT(S)</b>			<b>0.00</b>	<b>0.00</b>
7. OTHER DIRECT COSTS				0.00
<b>8. TOTAL DIRECT COST AND OVERHEAD</b>				<b>23,797.00</b>
9. GENERAL AND ADMINISTRATIVE EXPENSE (RATE: 26.5 % OF LINE 8)				6,306.21
<b>10. TOTAL ESTIMATED COST</b>				<b>30,103.21</b>
11. FEE OR PROFIT ( 0.0 % OF LINE 10)				0.00
<b>12. TOTAL ESTIMATED COST AND FEE OR PROFIT</b>				<b>30,103.21</b>

TYPED NAME AND TITLE <b>Sudhamay Basu, Research Engineer</b>	SIGNATURE 
OFFICE/DIVISION/BRANCH <b>RES/DSARE/SMSAB</b>	DATE <b>10/15/1999</b>

## Justification For Other Than Full and Open Competition

The U.S. Nuclear Regulatory Commission (NRC) proposes to enter into a Sole Source contract entitled "Technical Support for Molten Fuel Coolant Interactions Research," with the University of Wisconsin for the services of Professor Michael Corradini and his research team. The period of performance for this project is 12 months at an estimated cost of \$30,000.

The authority permitting non-competitive procurement is FAR Subpart 13.106-1(2)(b), which provides for limiting competition in situations where the Contracting Officer determines that only one source is reasonably available.

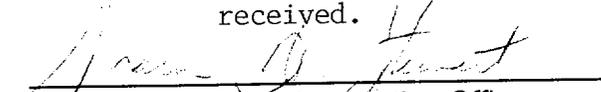
The University of Wisconsin (UW) is completing an Office of Research (RES) funded contract on fuel-coolant interaction (FCI) research, NRC-04-94-036, which has provided experimental data to determine the enveloping conditions for occurrence of an energetic FCI and to estimate the energetics. The data has been used to develop and assess analytical models in the FCI codes. The codes are generally considered "fit-for-purpose" for some applications; however, for other applications (e.g., estimate of shock loading of the lower head, localized damage of cavity structures, etc.), better code accuracy and predictability are demanded. To meet the demand, it is necessary to have better measurements of spatial and temporal distributions of coarse breakup and fine fragmentation. Once developed, the successful measurement technique can be applied to other experimental programs on FCI and debris coolability. This work, estimated to cost approximately \$30K is best placed with the University of Wisconsin.

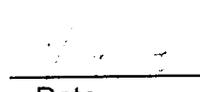
The Principal Investigator, Professor Michael Corradini, is an internationally recognized authority on FCI, and has provided his expertise in the resolution of the alpha-mode failure issue, and continues to work toward resolution of other FCI issues. In recent times, he has been providing technical expertise to the FARO/KROTOS international cooperative program on FCI. In particular, his research team has been developing new techniques for measuring fuel-coolant mixing behavior that is essential in the development of improved analytical tools.

Continued technical support of Professor Corradini and his research team will be necessary to resolve residual technical issues in FCI and to maintain core capabilities in this area. The research team is well qualified to do this work by virtue of their vast experience. If NRC were to have the work performed elsewhere, it would take many months and thousands of dollars to get another contractor to the same place where Dr. Corradini and his research team are now. Therefore, it would be most advantageous to the government to use the University of Wisconsin for this work.

Based upon the above justification, only one source is reasonably available to provide NRC with the technical assistance required. The cost is considered fair and reasonable because the same rate is charged to their most favored customer.

Approved: In accordance with FAR 5.201, a notice of intent was published in the Commerce Business Daily on December 10, 1999, and no responses were received.

  
Sharon D. Stewart, Contracting Officer

  
Date

SOLE SOURCE JUSTIFICATION FOR PO 60-080004  
UNIVERSITY OF WISCONSIN

The University of Wisconsin (UW) is completing an Office of Research (RES) funded contract on fuel-coolant interaction (FCI) research, NRC-04-94-036, which has provided experimental data to determine the enveloping conditions for occurrence of an energetic FCI and to estimate the energetics. The data has been used to develop and assess analytical models in the FCI codes. The codes are generally considered "fit-for-purpose" for some applications; however, for other applications (e.g., estimate of shock loading of the lower head, localized damage of cavity structures, etc.), better code accuracy and predictability are demanded. To meet the demand, it is necessary to have better measurements of spatial and temporal distributions of coarse breakup and fine fragmentation. Once developed, the successful measurement technique can be applied to other experimental programs on FCI and debris coolability. This work, estimated to cost approximately \$30K is best placed with the University of Wisconsin.

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TO: Professor Michael Corradini  
Telephone: 608-265-2001  
Fax: 608-262-6400

This fax consists of 3 pages including this cover.

REQUEST FOR QUOTATION

DATE ISSUED: January 3, 2000

ISSUED BY: U.S. Nuclear Regulatory Commission  
ATTN: Yvette Brown - Mail Stop T-7 I2  
Division of Contracts and Property Management  
Washington, DC 20555  
Voice: 301-415-6507 Facsimile: 301-415-5761 e-mail: yrb@nrc.gov

CLOSING DATE: January 7, 2000 - 2:00 p.m.

Please provide a firm fixed price quote and proposal for the service described in the attached Statement of Work.

Please provide a cost breakdown and supporting documentation of rates being charged to other government agencies for similar service.

Business size/type:  
Payment Terms:  
Tax identification number:  
DUNS number:

**STATEMENT OF WORK FOR UNIVERSITY OF WISCONSIN  
PURCHASE ORDER NO. 60-080004**

**TITLE: Technical Support for Molten Fuel Coolant Interactions Research**

**I. BACKGROUND**

The University of Wisconsin (UW) is completing an Office of Research (RES) funded contract on fuel-coolant interaction (FCI) research, which has provided experimental data to determine the enveloping conditions for occurrence of an energetic FCI and to estimate the energetics. The data has been used to develop and assess analytical models in the FCI codes. The codes are generally considered "fit-for-purpose" for some applications; however, for other applications (e.g., estimate of shock loading of the lower head, localized damage of cavity structures, etc.), better code accuracy and predictability are demanded. To meet the demand, it is necessary to have better measurements of spatial and temporal distributions of coarse breakup and fine fragmentation. Once developed, the successful measurement technique can be applied to other experimental programs on FCI and debris coolability.

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**IV. SCOPE OF WORK**

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**V. LEVEL OF EFFORT**

The estimated level of effort is approximately six person-months total.

PO 60-080004 (cont'd)

**VI. PERIOD OF PERFORMANCE**

This purchase order is for a period of twelve months.

**VII. MEETINGS AND TRAVEL**

At present, no travel (domestic or foreign) is anticipated. If it is found that travel is required to perform a specific assignment, it shall be coordinated with and approved in advance by the NRC Project Officer.

**VIII. NRC FURNISHED MATERIAL**

None required.

**IX. DELIVERABLES AND SCHEDULE**

The contractor shall submit a topical report at the conclusion of work, summarizing the results. Additionally, the contractor shall submit periodic progress reports accompanying each invoice. The progress reports will summarize technical progress made to date and provide a detailed explanation of expenses incurred.

**X. NRC PROJECT OFFICER**

The NRC Project Officer is Sudhamay Basu, (301)415-6774, mail stop T-10 K8.

**CBDNet**

## Notice Accepted

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**Submission No. 407556****December 10, 1999 9:53**

[Commerce Business Daily: Posted in CBDNet on December 10, 1999]  
From the Commerce Business Daily Online via GPO Access  
[cbdnnet.access.gpo.gov]

PART: U.S. GOVERNMENT PROCUREMENTS

SUBPART: SERVICES

CLASSCOD: L--Technical Representation Services

OFFADD: U.S. Nuclear Regulatory Commission, Division of Contracts  
and Property Management, Mail Stop T-7-I-2, Washington, D.C.  
20555

SUBJECT: L--TECHNICAL REPRESENTATIVE SERVICES

SOL REQ.60080004

POC Contact: Yvette Brown, Contract Specialist, 301/415-6507

DESC: The U.S. Nuclear Regulatory Commission intends to enter into a sole source purchase order with the University of Wisconsin for technical assistance in the continued development of instrumentation for measuring fuel-coolant mixing in order to better quantify coarse breakup and fine fragmentation. This type of quantification is necessary to achieve better predictability of analytical tools for fuel-coolant interactions calculations. The University of Wisconsin has provided research in this area under NRC-04-94-036 for the past five years. The primary reason for selecting the University of Wisconsin is for continuity of technical support to resolve residual technical issues in fuel-coolant interaction and to maintain core capabilities in this area. The period of performance will be for twelve months from purchase order award. A request for quotation does not exist. Interested respondents must submit a written capability statement, to the address listed above, including technical information sufficient to demonstrating their ability to provide this technical assistance. Telephonic responses will not be considered. Responses providing insufficient information for evaluation will also not be considered.

See NOTE 22

CITE: (W-344 SN407556)

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ding this service? Contact the GPO Access User Support Team by Internet  
[cbd-support@gpo.gov](mailto:cbd-support@gpo.gov) or toll-free at 1-888-293-6498.



URL: <http://cbdnnet.gpo.gov/ACCEPT.template>  
LAST MODIFIED: February 18, 1997 by JER



# CBDNet

## Numbered Notes

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<a href="#">CBDNet</a>	<a href="#">Simple-Search</a>	<a href="#">Fielded-Search</a>	<a href="#">Extract</a>	<a href="#">Browse</a>	<a href="#">Search-Help</a>
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Numbered Notes are Footnotes. The purpose of the Numbered Notes is to eliminate the unnecessary duplication of information that appears in various announcements. If a Numbered Note is included in the description of a notice, the note referred to must be read as part of the item.

When the note(s) applies to a synopsis, the contracting official should reference the note at the end of item 17 in the synopsis e.g., "See Note(s) 22 and 23".

1. The proposed contract is 100% set aside for small business concerns.
2. A portion of the acquisition is set aside for small business concerns.
3. The proposed contract is a labor surplus area set-aside. (This note is deleted as of 7/21/99.)
4. The proposed contract is 100 percent set aside for small disadvantaged business concerns (SDB). Offers from concerns other than SDBs will not be considered. (This note is deleted as of 11/24/99.)
5. The proposed contract is 100% set aside for Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs). Offers from other than HBCUs and MIs will not be considered.
6. The proposed contract is a total small disadvantaged business set aside or is being considered as a total small disadvantaged business set aside. (This note is deleted as of 11/24/99.)
7. The proposed contract is 100% set aside for Historically Black Colleges, Universities and Minority Institutions or is partially set aside for Historically Black Colleges, Universities and Minority Institutions.
8. The solicitation document contains information that has been designated as "Militarily Critical Technical Data." Only businesses that have been certified by the Department of Defense, United States/Canada Joint Certification Office, and have a valid requirement may have a copy of the solicitation document. All requests for copies of the solicitation document must include a certified copy of DD Form 2345, Militarily Critical Technical Data Agreement. To obtain certification, contact: Commander, Defense Logistics Information Service (DLIS), ATTN: U.S./Canada Joint Certification Office, 74 Washington Avenue North, Battle Creek, MI 49017-3084 or call the DLIS at (800)-352-3572. The DLIS Unites States/Canada Joint Certification Lookup service is available via the Internet at: <http://www.dlis.dla.mil/ccal/>.
9. Interested parties may obtain copies of Military and Federal Specifications and Standards, Qualified

Product Lists, Military Handbooks, and other standardization documents from the DoD Single Stock Point (DODSSP), in Philadelphia, PA. Most documents are available in Adobe PDF format from the ASSIST database via the Internet at <http://assist.daps.mil>.

Users may search for documents using the ASSIST-Quick Search and, in most cases, download the documents directly via the Internet using standard browser software.

Documents not available for downloading from ASSIST can be ordered from the DODSSP using the ASSIST Shopping Wizard, after establishing a DODSSP Customer Account by following the registration procedures or by phoning the DoDSSP Special Assistance Desk at (215) 697-2179 (DSN: 442-2179).

Users not having access to the Internet may contact the DODSSP Special Assistance Desk at (215) 697-2179 (DSN: 442-2179) or mail requests to the DODSSP, Bldg. 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094. Patterns, Drawings, Deviations Lists, Purchase Descriptions, etc., are not stocked at the DODSSP.

**10-11.** Reserved.

**12.** One or more of the items under this acquisition may be subject to an Agreement on Government Procurement approved and implemented in the United States by the Trade Agreements Act of 1979. All offers shall be in the English language and in U.S. dollars. All interested suppliers may submit an offer.

**13.** The proposed contract is restricted to domestic sources under the authority of FAR 6.302-3. Accordingly, foreign sources, except Canadian sources, are not eligible for award.

**14-21.** Reserved

**22.** The proposed contract action is for supplies or services for which the Government intends to solicit and negotiate with only one source under the authority of FAR 6.302. Interested persons may identify their interest and capability to respond to the requirement or submit proposals. This notice of intent is not a request for competitive proposals. However, all proposals received within forty-five days (thirty days if award is issued under an existing basic ordering agreement) after date of publication of this synopsis will be considered by the Government. A determination by the Government not to compete with this proposed contract based upon responses to this notice is solely within the discretion of the Government. Information received will normally be considered solely for the purpose of determining whether to conduct a competitive procurement.

**23.** Award will be made only if the offeror, the product/service or the manufacturer meets qualification requirement at time of award, in accordance with FAR clause 52.209-1 or 52.209-2. The solicitation identifies the office where additional information can be obtained concerning qualification requirements and is cited in each individual solicitation.

**24.** Architect-Engineer firms which meet the requirements described in this announcement are invited to submit: (1) a Standard Form 254, Architect-Engineer and Related Services Questionnaire, (2) a Standard Form 255, Architect-Engineer and Related Services Questionnaire for Specific Project, when requested, and (3) any requested supplemental data to the procurement office shown. Firms having a current Standard Form 254 on file with the procurement office shown are not required to register this form. Firms desiring to register for consideration for future projects administered by the procurement office (subject to specific requirements for individual projects) are encouraged to submit annually, a statement of qualifications and performance data, utilizing Standard Form 254, Architect-Engineer and Related Services Questionnaire. Firms responding to this announcement before the closing date will be considered for selection, subject to any limitations indicated with respect to size and geographic location of firm, specialized technical expertise or other requirements listed. Following an initial evaluation of the qualification and performance data submitted, three or more firms that are considered to be the most highly qualified to provide the type of services required, will be chosen for negotiation. Selection of firms for negotiation shall be made through an order of preference based on demonstrated competence

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1. P!!
2. 1210!!
3. 99!!
4. GPO759001!!
5. 20555!!
6. L!!
7. U.S. Nuclear Regulatory Commission, Division of Contracts and Property Management, Mail Stop T-7-I2, Washington, DC 20555!!
8. L - Technical Representative Services!!
9. N/A!!
10. N/A!!
11. Contact: Yvette Brown, Procurement Specialist, 301/415-6507; Sharon D. Stewart, Contracting Officer, 301/415-7315!!
12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. The U.S. Nuclear Regulatory Commission intends to enter into a sole source purchase order with the University of Wisconsin for technical assistance in the continued development of instrumentation for measuring fuel-coolant mixing in order to better quantify coarse breakup and fine fragmentation. This type of quantification is necessary to achieve better predictability of analytical tools for fuel-coolant interactions calculations. The University of Wisconsin has provided research in this area under NRC-04-94-036 for the past five years. The primary reason for selecting the University of Wisconsin is for continuity of technical support to resolve residual technical issues in fuel-coolant interaction and to maintain core capabilities in this area. The period

of performance will be for twelve months from purchase order award. A request for quotation does not exist. Interested respondents must submit a written capability statement, to the address listed above, including technical information sufficient to demonstrating their ability to provide this technical assistance. Telephonic responses will not be considered. Responses providing insufficient information for evaluation will also not be considered.

**From:** Yvette Brown  
**To:** Sharon Mearse  
**Date:** Tue, Nov 16, 1999 11:33 AM  
**Subject:** Sole Source Approval and CBD Notice of Intent

Attached for your review and approval is the stament of work, sole source justification, and CBD notice of intent to award a sole source purchase order for requisition 60080004 with the University of Wisconsin.

**From:** Sudhamay Basu  
**To:** Yvette Brown  
**Date:** Wed, Dec 8, 1999 1:55 PM  
**Subject:** Re: Requisition 60080004 for Technical Assistance from Univ. of Wisconsin

I left you a voice mail message earlier today in response to your e-mail. Not sure if you retrieved that voice message. In answer to your question, the work could not have been completed under 04-94-036 because the latter ran its full course. I was told that DCPM guidelines do not allow a commercial contract of this nature to run beyond a 5-year limit. You should contact Marianne Riggs if you have additional questions of contractual nature on this procurement.

>>> Yvette Brown 12/08 8:18 AM >>>

I will be processing the subject requisition. However, I need to know why this work could not have been completed under the contract 04-94-036?

*[Faint handwritten notes and signatures are visible in this section, including the name "Marianne Riggs" and other illegible text.]*

**From:** Yvette Brown  
**To:** Sudhamay Basu  
**Subject:** Re: Req. 60080004 for University of Wisconsin

I will see how fast he can get his proposal and quote back to me. Since this is a sole source and he has been performing the work it should not take long.

>>> Sudhamay Basu 01/03 1:26 PM >>>

The telephone number is 608 265 2001. Are you planning to get a quote on the phone? Doesn't the contractor need to submit a proposal for evaluation? In this case, does the contractor have time to do so and will the NRC have time to evaluate the proposal for award by 1/10/2000?

>>> Yvette Brown 01/03 1:19 PM >>>

The subject requisition is due for award 1/10/2000, can you please give me a telephone number for Professor Corradini so that I can send him a request for quote for the subject requirement.

Thanks,

Yvette

**From:** Sudhamay Basu  
**To:** Yvette Brown  
**Date:** Fri, Jan 7, 2000 4:28 PM  
**Subject:** Re: Req. 60080004 for University of Wisconsin

Yvette,

Per your e-mail suggestion, I have performed a quick review and evaluation of the proposal. I am satisfied with the proposal, its scope, work description, deliverables, schedule and estimated level of effort. Please proceed with necessary contractual work for an award.

Sud

>>> Yvette Brown 01/07 10:09 AM >>>

I have a proposal in for the subject requirement. I will walk it up this morning for your review and evaluation via e-mail by 10:00 a.m. Monday, January 10, 2000.

Thanks,  
Yvette

**CC:** Marianne Riggs

**QUOTATION FOR SIMPLIFIED ACQUISITIONS**

REQUISITION NUMBER

60080004

PURCHASE ORDER NUMBER

DR-00-0079X

QUOTE TYPE

WRITTEN

ORAL

DATE QUOTE POSTED (PCN 87-01)

DATE QUOTE REQUESTED 1/6/00

1. SYNOPSIS IN COMMERCE BUSINESS DAILY (CBD)

2. APPROVAL OTHER THAN FULL AND OPEN COMPETITION

3. AVAILABILITY

OTHER THAN FULL AND OPEN COMPETITION \$100,000 AND ABOVE APPROVED BY COMPETITION ADVOCATE  
 NO REASONABLE EXPECTATION OF RECEIVING AT LEAST TWO RESPONSIBLE AND RESPONSIBLE OFFERS  
 NOT REQUIRED

Over \$2,500 by Branch Chief  
 \$100,000 AND ABOVE BY COMPETITION ADVOCATE  
 NOT REQUIRED

AGENCY INVENTORIES  
EXCESS-OTHER AGENCIES  
FEDERAL PRISON IND.  
BLIND/HANDICAPPED

GSA  
FSS  
Groups Checked

Expiration Date

MANDATORY  
NON-MANDATORY

OPEN MARKET  
BLANKET PURCHASE AGREEMENT (BPA)

4. JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION FAR 13

See Sole Source

6. BASIS OF "FAIR AND REASONABLE" PRICE IF ONLY QUOTE RECEIVED

Rates are in line with the IGCE & previous contract comparable 04-94-036

7. OFFERORS 1

The Board of Regents of the Univ of Wisconsin

5. JUSTIFICATION FOR OTHER THAN SMALL BUSINESS PURCHASE

See Sole Source

ARTICLE(S) OR SERVICE(S)

QUANTITY

UNIT OF ISSUE

UNIT PRICE

TOTAL

UNIT PRICE

TOTAL

UNIT PRICE

TOTAL

The Contractor shall provide the services described in the attached SOW. Principal Investigator Michael Corradini

FFP

\$30,000

APPROVAL OF OTHER THAN FULL AND OPEN COMPETITION

TOTAL PRICE

TERMS

DELIVERY F.O.B.

DELIVERY TIME

BUSINESS SIZE/TYPE

OM/CONTRACT NO.

Contracting Officer

DATE

\$30,000

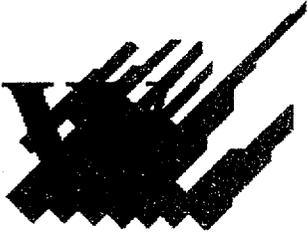
Net 30

Dest.

1 yr.

Educational

OM



**University of Wisconsin-Madison**  
**Graduate School, Research and Sponsored Programs**

**UW Proposal #** 8903

The attached application has been administratively approved on behalf of the Board of Regents of the University of Wisconsin System and is submitted for your consideration. Please keep our office advised as developments occur with regard to this application.

We ask that you use the University's above-referenced proposal number in any future correspondence. Questions regarding administrative or contractual matters should be directed to Cheryl Gest (608) 262-4880. Questions regarding the technical nature of this application, should be directed to the Principal Investigator.

**APPROVED:**

Cheryl E. Gest

**Cheryl E. Gest**  
**Administrative Officer**

1/5/00  
**Date**

UW REF. 89,03

A Proposal Submitted to  
Nuclear Regulatory Commission  
For a Research Program on  
Technical Support for Molten Fuel Coolant Interactions Research

by

Michael L. Corradini  
Professor  
Engineering Physics  
1500 Engineering Drive  
Madison, WI 53706  
Phone: 608-265-2001  
corradini@engr.wisc.edu

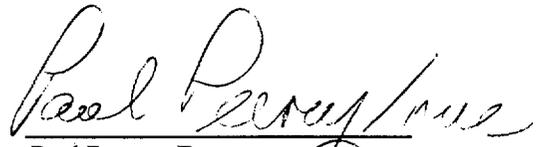
through the  
College of Engineering  
and

The Board of Regents of the University of Wisconsin System  
750 University Avenue  
Madison, WI 53706

requesting \$30,000 for the period January 1, 2000 through December 31, 2000

Business size/Type: Educational Institution  
Payment Terms: Fixed Price  
Tax Identification Number: 39-6006492  
DUNS Number: 161 202 122

Approved:

  
\_\_\_\_\_  
Paul Percy, Dean  
College of Engineering

  
\_\_\_\_\_  
C. E. Gest, Administrative Officer  
Research & Sponsored Programs

## **Proposal from University of Wisconsin**

### **TECHNICAL SUPPORT FOR MOLTEN FUEL COOLANT INTERACTIONS RESEARCH**

#### **BACKGROUND**

The University of Wisconsin (UW) is completing an NRC Office of Research (RES) funded contract on fuel-coolant interaction (FCI) research, which has provided experimental data to determine the enveloping conditions for occurrence of an energetic FCI and to estimate the energetics. The data has been used to develop and assess analytical models in the FCI codes. The codes are generally considered "fit-for-purpose" for some applications; however, for other applications (e.g., estimate of shock loading of the lower head, localized damage of cavity structures, etc.), better code accuracy and predictability are demanded. To meet the demand, it is necessary to have better measurements of spatial and temporal distributions of coarse breakup and fine fragmentation. Once developed, the successful measurement technique can be applied to other experimental programs on FCI and debris coolability. The measurement technique can also be used to investigate the effects of fuel composition changes; i.e., effects of high burn-up fuel compositions.

#### **TECHNICAL OBJECTIVE**

The objective of this work is to provide technical support in the development of instrumentation for measuring fuel-coolant mixing in order to better quantify coarse breakup and fine fragmentation. This type of quantification is necessary to achieve better predictability of analytical tools for fuel-coolant interactions calculations.

#### **SCOPE OF WORK**

We propose to perform experiments with simulants at the WFCI facility to verify the capability of X-ray imaging technique to map the fuel-coolant mixing regions, to extract quantitative data from the maps, and to correlate the data for characterizing coarse breakup and fine fragmentation. Once the imaging capability is verified with simulants, provide necessary technical assistance to other organizations involved in FCI experimental research in the application of the technology to prototypic materials. When called upon, provide expert assistance on other FCI-related issues to the NRC staff. This technical assistance may be of particular importance to consider the effects of high burn-up fuels.

#### **LEVEL OF EFFORT AND PERIOD OF PERFORMANCE**

The estimated level of effort is approximately six person-months total. This purchase order is for a period of twelve months.

#### **MEETINGS AND TRAVEL**

At present, no travel (domestic or foreign) is anticipated. If it is found that travel is required to perform a specific assignment, it shall be coordinated with and approved in advance by the NRC Project Officer.

#### **DELIVERABLES AND SCHEDULE**

The contractor shall submit a topical report at the conclusion of work, summarizing the results. Additionally, the contractor shall submit periodic progress reports accompanying each invoice. The progress reports will summarize technical progress made to date and provide a detailed explanation of expenses incurred.

Proposed Budget  
Nuclear Regulatory Commission

A. Senior Personnel		
1. M. Corradini, PI	\$	-
B. Other Personnel		
1. Graduate Student @ 50%	\$	15,340
Total Salaries	\$	15,340
C. Fringe Benefits	\$	1,530
31.5% of A; 10% of B1		
Total S&W + FB	\$	16,870
D. Equipment	\$	-
E. Travel	\$	-
F. Other Direct Costs		
1. Materials & Supplies	\$	3,960
G. Total Direct Costs	\$	20,830
H. Indirect Costs	\$	9,170
44% of G-D		
I. Total Costs	\$	30,000

11/8/99

TO BE FILLED IN BY DATA ENTRY:

Requisition Number: 60080004 Region/Office RES Requestor Basu, A

Date Initiated: 11/4/99 Date Received: 11/5/99 Date Assigned: 11/8/99

Agent: Brown Amount of funds certified: 30,000.00

Complexity (Please circle one) 1 2 3

Buy Type -- Please check one:

- Services/Technical Assistance (with Statement of Work)
Services/IT
Services/Other
Supply/IT
Supply/Other

Description: Technical Support for Moller fuel coolant interactions R. research

TO BE FILLED IN BY PROCUREMENT SPECIALIST/AGENT:

Date Quotes Requested 1/17/00 Number Quotes Requested: 1 Date Awarded 1/19/00

Date Canceled: 1/1/00

PO or BPA Number: 00-0079 Mod Number:

1/19/00

Award Amount \$ 30,000 SIC 8999

Vendor Name: Board of Regents of the Univ. of Wisconsin

Vendor Telephone Number: ( ) 608-262-4880

Solicitation Procedures -- Please check one:

- Multiple Award Schedule
Noncompetitive
Competitive
Federal Supply Service
GWAC

Type of Contractor -- Please check one:

- Large Business
Other Nonprofit Organization
Other Small Business
Small Disadvantaged Business
Javits Wagner O'Day nonprofit agency
Government

Bankcard Used - Check if applicable

Reason for not using Bankcard - check one if applicable

- Over 30 day delivery
Vendor does not accept VISA
SOW or evaluation criteria required
Yearly order with monthly payments
Over single purchase limit
Other

Kind of Contract Action - Please check one:

- BPA calls
Mod to PO
Order under multiple award schedule contract
Order/mod under federal schedule
New PO
Order under another Federal Agency's contract

Preference Program - Please check all that apply:

- Woman-Owned
8(a) Contractor
Directed to JWOD Nonprofit Agency
Small Business Set-Aside
Small Disadvantaged Business Set-Aside

Other Reporting - Please check all that apply:

- IRS Reporting (Indiv/Partner)
Tariff or Regulated
Advisory Services
Security Classification
Government Owned Property (Must be completed if purchased property/equipment is "sensitive" or value at \$300 or more)

did done award 1/19/00

# FEDERAL PROCUREMENT DATA SYSTEM (FPDS) INDIVIDUAL CONTRACT ACTION REPORT

AGENCY REPORT CONTROL NUMBER  
0206-GSA-QU

1. REPORTING AGENCY CODE <b>3100</b>		2. CONTRACT NUMBER		3. MODIFICATION NUMBER		4. CONTRACTING OFFICE ORDER NUMBER <b>DR-00-0079</b>	
5. CONTRACTING OFFICE CODE <b>NRCHQ</b>		6. ACTION DATE <b>200001</b>		7. TYPE OF DATA ENTRY <b>A</b> A. Original B. Deleting C. Correcting		8. REPORT PERIOD <b>20002</b>	
9. KIND OF CONTRACT ACTION <b>D</b>				10. DOLLARS OBLIGATED OR DEOBLIGATED THIS ACTION <b>0000000030</b>			
A. Initial Letter Contract B. Definitive Contract Superseding Letter Contract C. New Definitive Contract D. Purchases Orders/BPA Calls Using Simplified Acquisition Procedures E. Order Under Single Award Indefinited Delivery Contract F. Order Under BOA G. Order/Modification Under Federal Schedule H. Modification J. Termination for Default K. Termination for Convenience L. Order Under Multiple Award Contract Z. Initial Load of Federal Schedule Contract				11. TYPE OF OBLIGATION <b>A</b> A. Obligated B. Deobligated		12. PRINCIPAL PRODUCT OR SERVICE <b>AG51</b>	
13. PRINCIPAL STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE <b>8999</b>		14. COMMERCIAL ITEM ACQUISITION <b>N</b> Y - Yes N - No		15. CONTRACTOR NAME <b>BOARD OF REGENTS OF UNIVERSITY OF WISCON</b>			
16. CONTRACTOR IDENTIFICATION NUMBER <b>161202122</b>		17a. PRINCIPAL PLACE OF PERFORMANCE CITY <b>48000</b> STATE <b>55</b>		17b. FOREIGN COUNTRY <b>N</b>		18. CONTRACT FOR FOREIGN GOVT. OR INTERNATIONAL ORGANIZATION Y - Yes N - No	
19. TARIFF OR REGULATED <b>N</b>		Y - Yes N - No		20. RESERVED			
21. BUNDLING OF CONTRACT REQUIREMENTS <b>-</b> Y - Yes N - No		22. COUNTRY OF MANUFACTURE <b>US</b>		23. SYNOPSIS OF PROCUREMENT PRIOR TO AWARD <b>A</b> A. Synopsized prior to award B. Not synopsized due to urgency C. Not synopsized for other reason		24. TYPE OF CONTRACT OR MODIFICATION <b>J</b> A. Fixed-Price Redetermination J. Fixed-Price K. Fixed-Price with Economic Price Adjustment L. Fixed-Price Incentive R. Cost-Plus-Award-Fee S. Cost - No Fee T. Cost-Sharing U. Cost-Plus-Fixed-Fee V. Cost-Plus-Incentive Y. Time and Materials Z. Labor Hour	
25. CICA APPLICABILITY <b>B</b> A. CICA Applicable B. Purchases Orders/BPA Calls Using Simplified Acquisition Procedures C. Subject to Statute Other Than CICA D. Pre-CICA E. Commercial Items Acquisition Under Test Program				26. SOLICITATION PROCEDURES (Complete only if item 25 = A) <b>B</b> A. Full and Open Competition - Sealed Bid B. Full and Open Competition - Competitive Proposal C. Full and Open Competition - Combination D. Architect - Engineer E. Basic Research F. Multiple Award Schedule G. Alternative Sources H. Reserved J. Reserved K. Set-Aside L. Other Than Full and Open Competition			
27. AUTHORITY FOR OTHER THAN FULL AND OPEN COMPETITION (Complete only if item 26 = L) <b>-</b>				28. NUMBER OF OFFERS RECEIVED (Complete only if item 25 = A) <b>-</b>		29. EXTENT COMPLETED <b>D</b> A. Competed Action B. Not Available for Competition C. Follow-on to Competed Action D. Not Completed	
A. Unique Source B. Follow-on Contract C. Unsolicited Research Proposal D. Patent/Data Rights		E. Utilities F. Standardization G. Only One Source - Other H. Urgency		J. Mobilization, Essential R&D Capability, or Export Services K. Reserved L. International Agreement		M. Authorized by Statute N. Authorized for Resale P. National Security Q. Public Interest A. 1 B. 2-5 C. 6-10 D. 11-15 E. 16-20 F. 21-50 G. Over 50	
30. TYPE OF CONTRACTOR <b>E</b> A. Small Disadvantaged Business B. Other Small Business C. Large business D. JWOD Nonprofit Agency E. Educational Institution F. Hospital G. Nonprofit Organization H. Reserved J. Reserved K. State/Local Government L. Foreign Contractor M. Domestic Contractor Performing Outside U.S. U. Historically Black College/University Or Minority Institution (HBCU/MI)				31. WOMEN-OWNED BUSINESS <b>N</b> Y - Yes N - No		32. HUBZONE SMALL BUSINESS CONCERN <b>N</b> Y - Yes N - No	
33A. HUBZONE PROGRAM <b>E</b> A. HUBZone Sole Source B. HUBZone Set-Aside C. HUBZone Price Evaluation/Preference D. Combined HUBZone Preference/Small Disadvantaged Business Price Adjustment E. Not Applicable		33B. SMALL DISADVANTGED BUSINESS PROGRAMS <b>F</b> A. 8(a) Contract Award B. 8(a) with HUBZone Priority C. SDB Set-Aside D. SDB Price Evaluation Adjustment E. SDB Participation Program F. Not Applicable		33C. OTHER PREFERENCE PROGRAMS <b>D</b> A. Directed to JWOD Nonprofit Agency B. Small Business Set-Aside C. Buy Indian/Self Determination D. No Preference/Not Listed E. Very Small Business Set-Aside		33D. HUBZONE PRICE EVALUATION PREFERENCE PERCENT DIFFERENCE	
34. SUBCONTRACTING PLAN (Small, Small Disadvantaged, and Women-Owned Small Business) <b>B</b> A. Required B. Not Required		35. SUBJECT TO LABOR STATUTES <b>E</b> A. Walsh-Healey Act B. Reserved C. Service Contract Act D. Davis-Bacon Act E. Not Subject to Walsh-Healey, Service Contract, or Davis-Bacon		36. ESTIMATED CONTRACT COMPLETION DATE <b>200101</b>		37. CONTRACTOR'S TIN <b>396006492</b>	
38. COMMON PARENT'S NAME				39. COMMON PARENT'S TIN			
39. COMMON PARENT'S TIN				40. RESERVED		41. RESERVED	
SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (Applicable to AGR, DOD, DOE, DOI, DOT, EPA, GSA, HHS, NASA, and VA)							
42. DEMONSTRATION PROGRAM <b>-</b>		43. EMERGING SMALL BUSINESS <b>-</b>		44. EMERGING SMALL BUSINESS RESERVE AWARD <b>-</b>		45. SIZE OF SMALL BUSINESS <b>-</b>	
Y - Yes N - No		Y - Yes N - No		Y - Yes N - No		NUMBER OF EMPLOYEES OR AVERAGE ANNUAL GROSS REVENUE A. 50 or Less B. 51 - 100 C. 101 - 250 D. 251 - 500 E. 501 - 750 F. 751 - 1,000 G. Over 1,000 M. 1,000,000 or Less N. 1,000,001 - 2,000,000 P. 2,000,001 - 3,500,000 R. 3,500,001 - 5,000,000 S. 5,000,001 - 10,000,000 T. 10,000,001 - 17,000,000 Z. Over 17,000,000	
46. RESERVED FOR FPDS				47. OPTIONAL REPORTED DATA ELEMENTS			
48. FOR AGENCY INTERNAL USE							
49. CONTRACTING OFFICER OR REPRESENTATIVE							
a. TYPED NAME <b>YVETTE BROWN ICAROK</b>		b. SIGNATURE 		c. TELEPHONE AREA CODE <b>301</b> NUMBER <b>415-6507</b>		d. DATE SUBMITTED (YYMMDD) <b>2000/01/10</b>	