

**ORDER FOR SUPPLIES OR SERVICES**

PAGE OF PAGES

1 7

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

BPAID-03-06-046

1. DATE OF ORDER <b>MAR 16 2007</b>		2. CONTRACT NO. (if any) GS23F0113L		6. SHIP TO:	
3. ORDER NO. T004		MODIFICATION NO.		a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Kala Shankar 301-415-6310 Mail Stop T-7-I-2 Washington, DC 20555		4. REQUISITION/REFERENCE NO.		b. STREET ADDRESS Bernard L. Grenier	
7. TO:		c. CITY Washington		d. STATE DC	e. ZIP CODE 20555
a. NAME OF CONTRACTOR ARES CORPORATION ARES GOVERNMENT SERVICES		b. COMPANY NAME		f. SHIP VIA	
c. STREET ADDRESS 1440 CHAPIN AVE STE 390		d. CITY BURLINGAME		8. TYPE OF ORDER	
e. STATE CA		f. ZIP CODE 940104058		<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY	
9. ACCOUNTING AND APPROPRIATION DATA see CONTINUATION Page B&R:720-15-111-104, Job Code:J-3304, BOC:252A Apprn No.:31X0200.720, Obligate: \$35,769 FFS NRR06046		10. REQUISITIONING OFFICE NRR		11. BUSINESS CLASSIFICATION (Check appropriate box(es))	
<input checked="" type="checkbox"/> a. SMALL <input type="checkbox"/> d. WOMEN-OWNED		<input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> e. HUBZone		<input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> f. EMERGING SMALL BUSINESS	
13. PLACE OF		14. GOVERNMENT B/L NO.		12. F.O.B. POINT N/A	
a. INSPECTION		b. ACCEPTANCE		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
				16. DISCOUNT TERMS N/A	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	ISSUANCE OF TASK ORDER NO. 004  TITLE: EVALUATION OF THE TECHNICAL ADEQUACY OF NEW PWR SUMP DESIGN OF THE OCONEE RESPONSE TO GENERIC LETTER (GL) 2004-02  TOTAL ESTIMATED COST: \$35,769.00  PERIOD OF PERFORMANCE: 03/14/2007-06/13/2007   CONTRACTOR SIGNATURE REQUIRED ON PAGE 2 OF 2			See CONTINUATION Page		

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		\$35,769.00	17(h) TOTAL (Cont. pages)  17(i) GRAND TOTAL
	21. MAIL INVOICE TO:							
	a. NAME U.S. Nuclear Regulatory Commission Division of Contracts							
	b. STREET ADDRESS (or P.O. Box) Attn: DR-03-06-046 Mail Stop: T-7-I-2							
c. CITY Washington			d. STATE DC	e. ZIP CODE 20555				

22. UNITED STATES OF AMERICA BY (Signature) <i>Kala Shankar</i>	23. NAME (Typed) Kala Shankar Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER
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In accordance with Section A.10, Task Order Procedures, of blanket purchase agreement number DR-03-06-046, this executes Task Order No. 004. The effort shall be performed in accordance with the enclosed Statement of Work (Attachment 1).

Task Order No. 004 shall be in effect from March 14, 2007 through June 13, 2007, with a cost ceiling of \$35,769. See Attachment 2 for a cost breakdown.

The following individual is considered to be essential to the successful performance for work hereunder: Mr. Clinton J. Shaffer. The Contractor agrees that such personnel shall not be removed from the effort under the task order without compliance with Contract Clause A.8, Key Personnel.

The issuance of this task order does not amend any terms or conditions of the subject contract.

Your contacts during the course of this task order are:

Technical Matters:	Bernard Grenier Project Officer (301) 415-2726	Contractual Matters:	Kala Shankar Contracting Officer (301) 415-6310
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Acceptance of Task Order No. 004 should be made by having an official, authorized to bind your organization, execute three copies of this document in the space provided and return two copies to the Contracting Officer. You should retain the third copy for your records.

ACCEPTED: Task Order No. 004

*Kathryn Naassan*

KATHRYN NAASSAN

NAME

SR. VICE PRESIDENT

TITLE

3/14/07

DATE

Statement of Work for  
Task Order 4 under DR-03-06-046

Title: Evaluation of the Technical Adequacy of New PWR Sump Design of the Oconee  
Response to Generic Letter (GL) 2004-02

Technical Monitor: Ralph Architzel, office: 301/415-2804; cell 301-728-2851;  
E-mail: [REA@NRC.GOV](mailto:REA@NRC.GOV)

TAC Number: Unit 1 = MC4698; Unit 2 = MC46699; Unit 3 = MC46700

**BACKGROUND**

In June, 2003, the NRC identified Generic Safety Issue (GSI)-191, involving the potential for clogging of recirculation sump screens in pressurized water reactors (PWRs). Based on the findings of the GSI-191 ("Assessment of Debris Accumulation on PWR Sump Performance") study conducted by the NRC Office of Nuclear Regulatory Research on ECCS suction/containment sump clogging in PWRs, the NRC staff issued a Safety Evaluation (SE) and a Generic Letter (GL) 2004-02 pertaining to the PWR sump design guideline report developed by the Nuclear Energy Institute (NEI) in conjunction with the PWR Owners group. Through this GL and using the guidance approved by the SE, licensees are requested to proceed to resolve the GSI-191 issue for each PWR plant. The NRC staff, through audit of licensees' responses to GL-2004-02, is reviewing implementation of the GL, specifically of the new sump designs in accordance with NRC requirements.

NRC staff has decided to audit the Oconee Nuclear Station to verify and confirm that their new sump strainer performance is in compliance with the 10 CFR 50.46.

**OBJECTIVE**

The objective of this task order is to obtain engineering expertise from ARES Corporation to assist the staff in determining the technical adequacy of the GSI-191 Sump Clogging Issue analysis of the Oconee Nuclear Station.

**TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED**

One senior level mechanical engineer with extensive experience on PWR LOCA analyses and containment analysis. This includes areas such as LOCA break selection, debris generation, debris characteristics, debris transport (including the emerging area of sump and containment pool "near-field effect"), recirculation water hold-up volumes, strainer design and performance, strainer head-loss and vortexing and emergency core cooling system (ECCS) and containment spray pump net-positive suction head (NPSH).

## WORK REQUIREMENTS

### Tasks

1. a. Based on the guidance in the NRC Safety Evaluation for GSI-191 and NRC Regulatory Guide 1.82, Revision 3, review Oconee's proposed design based on the available documents and identify deficiencies and the need for additional or clarifying information to be obtained from the licensee. Discuss the results by telephone with the Technical Monitor. Coordinate the review activity with other members through the Technical Monitor.
- b. Prepare a brief summary for the MBLR.
2. Travel to the Oconee Nuclear Station (currently planned first day onsite is March 26, 2007) to assist the NRC in the conduct of an audit of the new Oconee strainer design in the areas of debris generation, transport, characterization, strainer testing and head loss and associated analyses; identify any open items. Prepare a technical letter report.
  - a. Preliminary draft.
  - b. Incorporate NRC comments and prepare the final report.
3. Based on NRC guidance documents referenced above and any further review guidance provided by the NRC and information gathered during the audit provided by NRC, review and evaluate the licensee's responses to the open items. Participate in telephone conference calls to assist in resolving the open items. Prepare a technical letter report.
  - a. Draft.
  - b. Incorporate NRC comments and prepare the final report.

### Completion Schedule

Two days prior to the audit; the trip scheduled for the week of March 26, 2007.

In the next reporting period.

One week after completion of the on site audit.

One week after receipt of NRC comments.

Three weeks after completion of the audit or after receipt of the last response from the licensee.

One week after receipt of NRC comments.

## LEVEL OF EFFORT

The estimated level of effort in professional staff days apportioned among the tasks are as follows:

<u>Tasks</u>	<u>Level of Effort (days)</u>
1.	7.0
2.	9.5
3.	<u>8.5</u>
Total	25.0

## PERIOD OF PERFORMANCE

The projected period of performance is three months from authorization of work.

## DELIVERABLES

### Technical Reporting Requirements

**NOTE:** All reports are to be submitted electronically using WordPerfect XP (Font Arial regular 11 point) or compatible software program to the Technical Monitor with a copy provided to the Project Officer. In all correspondence, include the following information: JCN No., Task No., the applicant, the facility, TAC No., and NRC/NRR Branch: Safety Issue Resolution Branch (SSIB)

1. At the completion of Task 1, inform the Technical Monitor via telephone of specific technical areas to be targeted during the audit and provide any team coordination issues within the assigned scope of review. Provide a summary containing the work performed and results attained in the Monthly Business Letter Report under the Work Performed during the Period section.
2. At the completion of Task 2, submit a technical letter report, draft and final as appropriate, that contains a list of any outstanding issues ("open items") with the basis or bases clearly articulated, including the significance of these outstanding issues relative to a conclusion of licensee GL 2004-02 corrective action adequacy identified during the audit. Include a short description of the issue and associated basis.
3. At the completion of Task 3, submit a technical letter report, draft and final, that contains a detailed technical adequacy evaluation of the licensee's new ECCS, containment spray, sump and strainer design (Generic Letter 2004-02 corrective actions), including the bases for the conclusions. Include a list of any outstanding issues ("open items") with the basis or bases clearly articulated, including the significance of these outstanding issues relative to a conclusion of licensee GL 2004-02 corrective action adequacy.

## MEETINGS AND TRAVEL

One one-person, five and a half day trip to the Oconee reactor site located near Clemson, SC.

## NRC-FURNISHED MATERIALS

A CD of the licensee's documents related to the GSI-191 modifications and analyses and the Oconee audit plan will be provided to the Principal Investigator at the meeting with licensee during the week of March 12, 2007.

The NRC Safety Evaluation Report, "GSI-191 SE, Revision 0, "Pressurized Water Reactor Containment Sump Evaluation Methodology" dated December 6, 2004, and GL-2004-02, "Potential Impact of Debris Blockage on

Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004, can be found at the following web site:

<http://www.nrc.gov/reactors/operating/ops-experience/pwr-sump-performance.html>

**NOTE: These documents contain licensee information which is provided for audit purposes, may be proprietary, and they must be safeguarded against unauthorized disclosure. After completion of work, the document(s) should either be destroyed or returned to NRC. If they are destroyed, please confirm this in an E-mail to the Technical Monitor with a copy to the Project Officer and include the date and manner in which the document(s) was destroyed.**

### OTHER APPLICABLE INFORMATION

#### License Fee Recovery

The work to be performed under this task order is not licensee fee recoverable.

#### Assumptions and Understandings

The level of effort assumption for Task 1 is based on NRC's judgment of what it should take to perform a thorough review of the available documentation, at the time, prior to the audit.

The level of effort assumption for Task 2 is based on one-half day for travel to the site, five days for the audit and return trip from the site and four days for documentation.

The level of effort assumption for Task 3 is based on NRC's judgment of what it should take to complete the evaluation, participate in telephone conference calls to assist in resolving open items, writing the report and addressing NRC comments.

**SCHEDULE OF COSTS**

<b>COST ELEMENT</b>	<b>HOURLY COST</b>	<b>HOURS</b>	<b>TOTAL</b>
Labor:			
a) Program Manager/Senior Consultant	\$165.49	200	\$33,098.00
b) Technician	\$50.34	10	503.40
c) Administrative	\$43.57	6	\$261.42
Travel			\$1,736.50
Other Direct Costs			\$169.31
<b>TOTAL</b>			<b>\$35,768.63</b>