

ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 10 PAGES

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

BFA NO.

1. DATE OF ORDER FEB 26 2013		2. CONTRACT NO. (If any) NRC-HQ-12-C-42-0094		6. SHIP TO:	
3. ORDER NO. NRC-T004		MODIFICATION NO.		5. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
4. REQUISITION/REFERENCE NO. NRO-13-065				b. STREET ADDRESS	
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Aracelis Perez-Ortiz Mail Stop: TWB-01-B10M Washington, DC 20555				c. CITY Washington	d. STATE DC
7. TO:				e. ZIP CODE 20555	
9. NAME OF CONTRACTOR ENERGY RESEARCH, INC.		DUNS: 621211259 DUNS+4:		1. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER	
c. STREET ADDRESS 6189 EXECUTIVE BLVD				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY	
d. CITY ROCKVILLE		e. STATE MD	f. ZIP CODE 208523901	REFERENCE YOUR Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
9. ACCOUNTING AND APPROPRIATION DATA B&R:2012-25-17-4-107 JC:Q4015 BOC:252A AppNo:31X0200 OB:\$5,000.00 FAIMIS:131225 NAICS:541690 PSC:R425 Transfer \$5k from base contract (Q4015) to Task Order NRC-T004. Refer to M001 of base.				10. REQUISITIONING OFFICE NRO	
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input checked="" type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB				12. F.O.B. POINT N/A	
13. PLACE OF		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
a. INSPECTION		b. ACCEPTANCE		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)
	<p>The contractor shall provide services in accordance with the attached Statement of Work (SOW) entitled "Westinghouse Transients and Accidents Analyses Codes and Methods for ABWR (GOBLIN, Fast Transient Methodology and BISON)"</p> <p>COR: Christine Briggs, 301-415-2713, christine.briggs@nrc.gov PM: Mohsen Khatib-Rahbar, 301-881-0866</p> <p>Total Order Ceiling: \$111,618.82 Total Obligated Amount: \$5,000.00 Estimated Reimbursable Cost: \$106,304.64 Fixed-Fee: \$5,315.18 Period of Performance: 03/01/2013 - 09/30/2015</p> <p><i>[Signature]</i> 2/26/13 ERT Authorized Official Date</p>					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME Department of Interior / NBC NRCPayments NBCDenver@NBC.gov						
	b. STREET ADDRESS (or P.O. Box) Attn: Fiscal Services Branch - D2770 7301 W. Mansfield Avenue c. CITY Denver						
		d. STATE CO	e. ZIP CODE 80235-2230		\$111,618.82		17(i) GRAND TOTAL
22. UNITED STATES OF AMERICA By (Signature) <i>[Signature]</i>						23. NAME (Typed) Pearlette Merriweather Contracting Officer TITLE: CONTRACTING OFFICER	

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (REV. 3/2012)
PRESCRIBED BY GSA/FAR 48 CFR 53.213(f)

TEMPLATE - ADMIN

SUNSI REVIEW COMPLETE

MAR 08 2013

ADMCO2

In accordance with section G.4, Task Order Procedures, of Contract No. NRC-HQ-12-C-42-0094, this definitizes Task Order No. NRC-T004. The effort shall be performed in accordance with the attached Statement of Work.

Task Order No. NRC-T004 shall be in effect from March 1, 2013, through September 30, 2015, with a cost ceiling of **\$111,618.82**. The amount of _____ represents the estimated reimbursable costs, and the amount of _____ represents the fixed-fee.

The amount obligated by the Government with respect to this contract is **\$5,000.00**, of which approximately _____ represents the estimated reimbursable costs, and the amount of _____ represents the fixed-fee.

A.1 PRICE/COST SCHEDULE

BASE PERIOD – March 1, 2013, through September 30, 2015				
CLIN NO.	DESCRIPTION OF SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL CPFF
001	Services described in the attached Statement of Work (SOW)			
Total				\$111,618.82

STATEMENT OF WORK**TASK ORDER STATEMENT OF WORK**

JCN Q-4015	Contractor ERI	Task Order No. 4
Applicant NINA	Design/Site ABWR/STP-3/4	Docket No. PROJ0772
Title/Description: Westinghouse Transients and Accidents analyses codes and methods for ABWR (GOBLIN, Fast Transient Methodology and BISON)		
TAC RX0711, RX0730, RX0731	B&R Number 2013-25-17-4-107	SRP Section(s) SRP-15
NRC Contracting Officer Representative (Administrative)		
Christine Briggs	301-415-2713	Christine.briggs@nrc.gov
NRC Contracting Officer Representative (Technical)		
George Thomas	301-415-1814	George.thomas@nrc.gov

1.0 BACKGROUND

Combined Operating License (COL) Applications are submitted pursuant to Part 52 of Title 10 of the *Code of Federal Regulations* (10 CFR 52), "Licenses, Certifications, and Approvals for Nuclear Power Plants." The U.S. Nuclear Regulatory Commission (NRC) reviews COL Applications based on information furnished by electric utility companies pursuant to 10 CFR 52.79, "Contents of Applications; Technical Information in Final Safety Analysis Report."

A Standard Review Plan (NUREG-0800) is prepared for the guidance of staff reviewers in the Office of New Reactors in performing safety reviews of applications to construct or operate nuclear power plants and the review of applications to approve standard designs and sites for nuclear power plants. The principal purpose of the SRP is to assure the quality and uniformity of staff safety reviews.

An Environmental Safety Review Plan (ESRP) (NUREG-1555) is prepared for the guidance of staff reviewers in performing environmental reviews of applications related to nuclear power plants. The ESRPs are companions to regulatory guides that address siting and environmental issues. As with NUREG-0800 the purpose of the ESRP is to assure the quality and uniformity of environmental reviews.

The staff publishes the results of these reviews in a Safety Evaluation Report (SER).

As part of Task Orders 22, 26 and 27 under JCN Q-4015, the contractor provided technical assistance in determining whether WCAP-17116-P (TO22), WCAP-17203-P (TO26) and WCAP-17202-P (TO27) meet the appropriate regulatory requirements.

2.0 OBJECTIVE

The U.S. Advanced Boiling Water Reactor (ABWR) is a certified standard design which is described in Title 10 of the Code of Federal Regulations, Part 52, Appendix A (10CFR52, App. A). The applicant for certification of the U.S. ABWR design was GE Nuclear Energy. The ABWR has been certified to the requirements of Subpart B of 10CFR52. All design analyses were based on approved GE Nuclear Energy (now GE Hitachi Nuclear Energy) methods. It is expected that the applicant will submit a license amendment to change the fuel design after the issuance of COL from GEH fuel to Westinghouse (W) fuel. South Texas Units 3 & 4 initial core design will be based on W transient and accident analysis methods.

In support of the fuel amendment, Nuclear Innovation North America (NINA), the Applicant for South Texas Projects (STP) Units 3 and 4 submitted the licensing topical reports (LTRs) listed in the following table for staff review. ERI was contracted to perform the review of these LTRs and the current review status of these LTRs are shown in the table below. The purpose of this Task order is to complete the work which was started under Q-4015, Tasks 22, 26, and 27.

Status of the work under each Task is listed below:

TASKS #	LTR Title	Remaining scope of work	Remarks
22 TAC: RX0711	WCAP-17116-P , Westinghouse BWR ECCS Evaluation Model: Supplement 5-Application to the ABWR, September 2009(GOBLIN)	Support for ACRS meetings	TER was issued.
26 TAC: RX0730	WCAP-17203-P , Fast Transient and ATWS Methodology, June 2010	Support for issuing the SER And support for ACRS meetings	Draft TER is available . NRR RAI responses to be reviewed for technical consistency
27 TAC: RX0731	WCAP-17202-P , Supplement-4 to BISON topical report ,June 2010	Resolution of remaining RAIs, completion of TER and support for issuing the SER. support for ACRS meetings. Review NRR RAI responses for technical consistency	Draft TER is available

3.0 WORK REQUIREMENTS, SCHEDULE AND DELIVERABLES

Tasks/Standards	Scheduled Completion	Deliverables
<p>3. REQUIREMENT: Continue to support the remaining work identified in the Table above to determine the adequacy of the analyses. _____ Determine if the methods and approach proposed by the applicant meet the review guidance. Identify issues and the need for any additional or clarifying information (requests for additional information, RAIs). Identify those aspects of the application that need additional or clarifying information (RAIs).</p>	<p>200 hours, 30 weeks after authorization of work</p>	<p>2 Technical Evaluation Reports and RAIs, if applicable</p>
<p>4. REQUIREMENT: Review response to the RAIs to determine if they adequately resolve the outstanding issues. Identify any other open items. Incorporate the review results in the evaluation report completed under Task 3.</p> <p>STANDARD: Completed Technical Evaluation Report that follows the NRC provided template without deviation. No deviation from the guidance defined in Section III, RAI Guidance of Attachment 1. One round of comment incorporation is acceptable.</p>	<p>200 hours, 2 weeks after receipt of the responses.</p>	<p>Revised Technical Evaluation Reports</p>
<p>7. REQUIREMENT: As needed and requested by the staff, provide technical support to the staff during related ACRS meetings and hearing proceedings.</p> <p>STANDARD: Ensure presentation materials are reviewed and approved by NRC staff.</p>	<p>300 hours</p>	<p>Prepare Presentation Materials. Attend Meetings, if required</p>

* These Work Schedules are subject to change by the NRC Contracting Officer (CO) to support the needs of the NRC Licensing Program Plan.

The COR may issue technical instruction from time to time throughout the duration of this task order. Technical instructions must be within the general statement of work delineated in the task order and shall not constitute new assignments of work or changes of such a nature as to justify an adjustment in cost or period of performance. The contractor shall refer to Section G.1 of the base contract for further information and guidance on any technical directions issued under this task order.

Any modifications to the scope of work, cost, or period of performance of this task order must be issued by the Contracting Officer (CO) and will be coordinated with the NRO COR.

4.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

As specified in the base contract, the contractor shall provide individuals who have the required educational background and work experience to meet the objectives of the work specified in this task order. Specific qualifications for this effort include:

(A minimum of a Bachelor's Degree in Engineering/Science or equivalent experience and at least seven years direct nuclear power related experience in each of the disciplines is required.)

Thermal Hydraulics and Fluid Dynamics
New Reactor Designs
Plant (Systems) Engineering
Reactor Systems
Reactor Core Analysis
Reactor Physics
Reactor Fuel
Instrumentation & Control Systems

The contractor shall provide a contractor project manager (PM) to oversee the effort and ensure the timely submittal of quality deliverables so that all information is accurate and complete as defined in the base contract.

The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this task order, including assurance that all information contained in the technical and cost proposals, including resumes, is accurate and truthful. The resume for each professional proposed to work under this task order (contractor, subcontractor, or consultant) shall describe the individual's experience in applying his or her area of engineering specialization to work in the proposed area. The use of particular personnel on this contract is subject to the NRC COR's approval. This includes any proposed changes to key personnel during the life of the task order.

5.0 REPORTING REQUIREMENTS

Task Order Progress Report

The contractor shall provide a monthly progress report summarizing accomplishments, expenditures, contractor staff hours expended, percent completed for each task under this task order, and any problems encountered by the contractor. The report shall be sent via e-mail to the NRC CORs, Task Order Project Officer (PO) and CO.

Please refer to Section F of the basic contract award document for contract reporting requirements.

Technical reporting requirements

Unless otherwise specified above, the contractor shall provide all deliverables as draft products.

The NRC COR will review all draft deliverables (and coordinate any internal NRC staff review, if needed) and provide comments back to the contractor. The contractor shall revise the draft deliverable based on the comments provided by the COR, and then deliver the final version of the deliverable. When mutually agreed upon between the contractor and the COR, the contractor may submit preliminary or partial drafts to help gauge the contractor's understanding of the particular work requirement.

The contractor shall provide the following deliverables in hard copy and electronic formats. The electronic format shall be provided in MS Word or other word processing software approved by the COR. For each deliverable, the contractor shall provide one hard copy and electronic copy to both CORs. The schedule for deliverables shall be contained in the approved project plan for the task order effort.

In all correspondence, include identifying information: JCN No.: Q-4015; Technical Assignment Control No. (TAC), if applicable, various (see section 2.0) Task Order No.: 4; the licensee: NINA; and, the site: STP 3 & 4.

1. At the completion of Task 3, submit a Technical Evaluation Report (TER) that contains, for each Sub-section of the SER (see **Attachment 1** for the outline, format and content of the report): a description of the information proposed by the applicant including the assumptions for the analysis, design, and references to consensus standards: review findings (including the basis for the findings), as a result of comparison with the review guidelines: and a list of "Requests for Additional Information (RAIs). See **Attachment 1** in the base contract SOW for the guidelines for developing RAIs.
2. At the completion of Task 4, submit a TER (see **Attachment 1**) that contains a summary of the review results and the updated report completed under Task 3 incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determinate
3. At the completion of Tasks 3 and 4, submit a TER (see **Attachment 1**) that contains a safety evaluation report with no open items resulting from the work performed in Task 1 & 2, and update of the Technical Evaluation Report.

6.0 MEETINGS AND TRAVEL

Two (2), Three (3) person, one day two meetings, if needed, for hearing or ACRS meeting.

*At the discretion of the NRC COR, meeting may be conducted via telephone or video conference.

7.0 NRC FURNISHED MATERIAL

The following NRC furnished materials will be provided to the contractor together with SOW:

- a. CD-ROM containing LTRs WCAP-17116-P, WCAP-17202-P and WCAP-17203-P.
- b. CD-ROM containing the Final Safety Evaluation Report of the ABWR DCD.

8.0 LEVEL OF EFFORT

The estimated level of effort in professional staff days apportioned among the tasks and by labor category is as follows:

Task(s)	Labor Category	Level of Effort FY-13 (hours)	Level of Effort FY-14 (hours)	Level of Effort FY-15 (hours)
3	Subject Matter Expert	200	0	0
4	Subject Matter Expert	200	0	0
7	Subject Matter Expert	100	100	100
Task All	Project Manager	20	20	20
Task All	Admin Support	20	20	20
Total		540	140	140

9.0 PERIOD OF PERFORMANCE

The projected period of performance is from 3/1/2013 and 9/30/2015

10.0 OTHER APPLICABLE INFORMATION**a. License Fee Recovery**

All work under this task order is fee recoverable and must be charged to the appropriate TAC number(s).

WCAP-17116-P (TO22) – RX0711

WCAP-17203-P (TO26) – RX0730

WCAP-17202-P (TO27) – RX0731

b. Assumptions and Understandings:

The level of effort for Tasks 3 and 4 is based on the assumption that the contractor is familiar with the review procedures of SRP) Sections in 15. .

The level of effort in Task 7 is based on requiring two trips to NRC headquarters.

It is assumed that the contractor has access to the NRC furnished material available on the Internet.

It is understood that the scope of the review consists of conference calls with the NRC staff, and with the NRC staff and the applicant, to discuss open items in an attempt to obtain additional information or reach resolution.

The primary deliverable, or output of this regulatory review, shall be the Technical Evaluation Report (TER). The TER will serve as input to the NRC staff's Safety Evaluation Report (SER) which will document the NRC's technical, safety, and legal basis for approving the LTRs. The TER must provide sufficient information to adequately explain the NRC staff's rationale for why there is *reasonable assurance* that public health and safety is protected. The TER, and ultimately the SER, should be written in a manner whereby a person with a technical (non-nuclear) background and unfamiliar with the applicant's request could understand the basis for the staff's conclusions. The TER format is described in Attachment 1 to this Task Order Statement of Work.

Attachments:

1. Outline, Format, and Content for the TER Input

Attachment 1
Outline, format, and sample for the TER (draft SER input)

X.Y.Z Title of Section

X.Y.Z.1 Regulatory Criteria

Develop an outline that follows the format and topics presented in the AREAS OF REVIEW section of the appropriate SRP section. This information will correspond to the SRP sections that are the subject of this Task Order. For each unique SRP review area contained in the TER, the contractor should specify the acceptance criteria that were used for its review. Summarize the applicable regulations and other regulatory references, including regulatory guides, generic letters, or NRC staff positions, that are relevant to this topic.

Technical reviewers are encouraged to use the descriptions of acceptance criteria from previously issued Safety Evaluation Reports for completed design certifications (e.g., NUREG-1793 for the AP1000 Final Safety Evaluation Report) when applicable.

X.Y.Z.2 Summary of Technical Information

Describe the key technical points that were made in the application. It is not necessary to restate the application verbatim or to address all the details in the application.

X.Y.Z.3 Technical Evaluation

Document the contractor's evaluation of the application against the relevant regulatory criteria. The evaluation should support the contractor's conclusions as to whether the regulations are met. State what the contractor did to evaluate the applicant's submittal. The contractor's evaluation may include verification that the applicant followed applicable regulatory guidance, performance of independent calculations, and validation that the appropriate assumptions were made. The contractor may state that certain information provided by the applicant was not considered essential to the contractor's review and was not reviewed by the contractor. While the contractor may summarize the information offered by the applicant in support of its application, the contractor should clearly articulate the bases for its conclusions.

Contractor should provide a clear and concise description of any request for additional information (RAIs). The description should include a justification of the requested information that the requested information is not provided in the application and is absolutely needed to determine or confirm whether the relevant regulatory requirements (articulate specific requirements) have been met. The contractor should discuss its technical evaluation of the licensee's response to the RAIs and determine whether it is acceptable. The contractor should clearly articulate the bases for its acceptance or rejection. If the RAI response is not acceptable, it will be classified as an 'open item'. All open items will be resolved in Phase 3.

X.Y.Z.4 Conclusions

Summarize the contractor's conclusions regarding the application, including words such as the following. As set forth above in Sections X.Y.Z.2 and X.Y.Z.3 of this report, [provide specific bases for conclusions that follow]. Accordingly, the staff concludes that the application meets [or, if applicable, does not meet] the relevant requirements of 10 CFR Part XX and is [or, if applicable, is not] acceptable.

X.Y.Z.5 References