

ORDER FOR SUPPLIES OR SERVICES

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

BPA NO.

1. DATE OF ORDER MAR 06 2009		2. CONTRACT NO. (If any) NRC-42-07-483		6. SHIP TO:	
3. ORDER NO. 0016		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 301-492-3638 Mail Stop TWB 01-B10M Washington, DC 20555		4. REQUISITION/REFERENCE NO. 42-07-483T016 NRO09748316015		b. STREET ADDRESS Karen Chapman 301-415-3653	
7. TO:		c. CITY Washington		d. STATE DC	e. ZIP CODE 20555
a. NAME OF CONTRACTOR ENERGY RESEARCH INC		f. SHIP VIA		8. TYPE OF ORDER	
b. COMPANY NAME		<input type="checkbox"/> a. PURCHASE		<input checked="" type="checkbox"/> b. DELIVERY	
c. STREET ADDRESS 6167 EXECUTIVE BLVD		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.		Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY ROCKVILLE		e. STATE MD	f. ZIP CODE 208523901		
9. ACCOUNTING AND APPROPRIATION DATA 925-15-171-111; JC:Q-4015; BOC: 252A; 31X0200 Obligate: \$70,000 Contractor DUNS: 621211259		10. REQUISITIONING OFFICE NRO			
11. BUSINESS CLASSIFICATION (Check appropriate box(es))				12. F.O.B. POINT Destination	
<input checked="" type="checkbox"/> a. SMALL		<input type="checkbox"/> b. OTHER THAN SMALL		<input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED	
<input type="checkbox"/> d. WOMEN-OWNED		<input type="checkbox"/> e. HUBZone		<input type="checkbox"/> f. EMERGING SMALL BUSINESS	
13. PLACE OF		14. GOVERNMENT BAL. NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
a. INSPECTION		b. ACCEPTANCE		16. DISCOUNT TERMS NET 30	

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. 16 under Contract No. NRC-42-07-483 Title: "South Texas project R-COL Chapter 19 Technical Review Support" Period of Performance: 03/09/09 - 03/08/10 Estimated Reimbursable Cost: \$75,620.04 Fixed Fee: \$3,781 Total Cost Plus Fixed Fee: \$79,401.04 Funding in the amount of \$70,000 is being provided. See attached pages for a description of Task Order 16 and Statement of Work.					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages) 17(i) GRAND TOTAL
	21. MAIL INVOICE TO:						
	a. NAME U.S. Nuclear Regulatory Commission Payment Team, Mail Stop TWB 01-B10M						
	b. STREET ADDRESS (or P.O. Box) Attn: NRC-42-07-483, Task Order 16						
c. CITY Washington		d. STATE DC		e. ZIP CODE 20555		\$70,000.00	

22. UNITED STATES OF AMERICA BY (Signature) <i>Kala Shankar</i>	23. NAME (Typed) Kala Shankar Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER
-----------------------------------------------------------------------	------------------------------------------------------------------------------------------------

Task Order No. 16 shall be in effect twelve months from date of award, with a cost ceiling of \$79,401.04. The amount of \$75,620.04 represents the estimated reimbursable costs, and the amount of \$3,781 represents the fixed fee.

The amount obligated by the Government with respect to this task order is \$70,000, of which \$66,667 represents the estimated reimbursable costs, and the amount of \$3,333 represents the fixed fee.

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

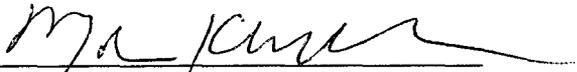
Your contacts during the course of this task order are:

Technical Matter: Karen Chapman
Project Officer
301-415-3653

Contractual Matters: Kala Shankar
Contract Specialist
301-492-3638

Acceptance of Task Order No. 16 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 Contract Specialist at the address identified in Block No. 5 of the OF 347. You should retain the third copy for your records.

ACCEPTANCE:



NAME
President

TITLE
3/6/09

DATE

TASK ORDER STATEMENT OF WORK

JCN Q-4015	Contractor Energy Research, Inc.	Task Order No. 16 NRC-42-07-483 - 16
Applicant NRG Energy	Design/Site ABWR/South Texas Project	Docket No. 5200012
Title/Description South Texas Project R-COL Chapter 19 Technical Review Support		
TAC No. RX0598	B&R Number 925-15-171-111	SRP or ESRP Section(s) 19
NRC Task Order Project Officer (PO)		
Karen Chapman	301-415-3653	Karen.Chapman@nrc.gov
NRC Technical Monitor (TM)		
Edward L. Fuller	301-415-1975	Edward.Fuller@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), "Early Site Permits; Standard Design Certifications; and Combined Licenses 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."

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 (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).

2.0 OBJECTIVE

The objective of this task order is to obtain technical expertise from the contractor to assist the NRC staff in determining whether or not the subject COL application meets appropriate regulatory requirements. Specifically, technical assistance is required to support the technical review of Chapter 19 of the STP FSAR.

3.0 WORK REQUIREMENTS, SCHEDULE AND DELIVERABLES

Tasks/Standards	Scheduled Completion	Deliverables
<p>1. REQUIREMENT: Support the NRC Staff's review of the description of the STP Level 2 PRA and its results.</p> <p>STANDARD:</p> <ul style="list-style-type: none"> • Support the audit of the STP Level 2 PRA to see how it differs from the existing ABWR PRA. • Prepare drafts of RAIs and submit them to the NRC; • Prepare a final technical evaluation report and submit to the NRC. 	<p>*Draft RAIs will be prepared 2.5 months after start. A draft technical evaluation report will be submitted 2.5 months after start. A final technical evaluation report will be submitted 8 months after start.</p>	<p>Draft RAIs and Technical Evaluation Report.</p>
<p>2. REQUIREMENT: Support the NRC Staff's review of the description of the STP Severe Accident Evaluation and the analysis of severe accident mitigation in the STP ABWR.</p> <p>STANDARD:</p> <ul style="list-style-type: none"> • Support the audit of the STP Severe Accident Evaluation to see how its evaluation of severe accident mitigation differs from the existing ABWR Severe Accident Evaluation. • Prepare drafts of RAIs and submit them to the NRC; • Prepare a final technical evaluation report and submit to the NRC. 	<p>*Draft RAIs will be prepared 2.5 months after start. A draft technical evaluation report will be submitted 2.5 months after start. A final technical evaluation report will be submitted 8 months after start.</p>	<p>Draft RAIs and Technical Evaluation Report.</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>3. REQUIREMENT: Support the NRC Staff's review of the SAMA evaluation in the STP Environmental Report.</p> <p>STANDARD:</p> <ul style="list-style-type: none"> • Prepare drafts of RAIs and submit them to the NRC; • Prepare a final technical evaluation report and submit to the NRC. 	<p>*Draft RAIs will be prepared 2.5 months after start. A draft technical evaluation report will be submitted 2.5 months after start. A final technical evaluation report will be submitted 8 months after start.</p>	<p>Draft RAIs and Technical Evaluation Report.</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 Technical Monitor 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 CO and will be coordinated with the NRO Project Officer.

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:

1. Development and peer review of Level 2 and 3 PRAs and deterministic severe accident evaluations, including treatment of internal and external events during at-power and shutdown conditions;
2. BWR plant systems, including the design and functional performance of passive systems, containment systems, and severe accident features;
3. Thermal-hydraulic, severe accident progression, and offsite consequence analyses, including familiarity with the MAAP, MELCOR, CONTAIN, and MACCS2 computer codes;
4. Specialized techniques for treatment and quantification of severe accident phenomena

- (e.g., ROAAM);
5. PRA quality standards and the use of PRA methodologies and results in commercial nuclear reactor applications; and
 6. NRC regulations, technical specifications, and inspections related to commercial nuclear power plant operations.

The contractor shall provide a 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 technical monitor's (TM'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 bi-weekly 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 TM, 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 TM 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 TM, and then deliver the final version of the deliverable. When mutually agreed upon between the contractor and the TM, 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 TM. For each deliverable, the contractor shall provide one hard copy and electronic copy to both the PM and the TM. 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), RX0598, Task Order No.: 16; the licensee: NRG Energy; and, the site: STP.

1. Two and one-half months after the start of Tasks 1-3, submit a draft TER (see **Attachment 1**) that contains a summary of the review results.
2. Eight months after the project start, submit a TER incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determination.
3. At the completion of Tasks 1-3, 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.

6.0 MEETINGS AND TRAVEL

One two-person, three-day trip to the applicant's offices to support the audit of the STP PRA.

One two-person, one-day working meeting at NRC headquarters to review deliverables.*

*At the discretion of the NRC TM, 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 R-COL Sections and the relevant Appendices from the R-COL application.
- b. CD-ROM containing the Final Safety Evaluation Report of the 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-09 (hours)	Level of Effort FY-10 (hours)
1	Senior Technical Reviewer and Technical Reviewer	120	60
2	Subject Matter Expert and Technical Reviewer	120	60
3	Senior Technical Reviewer and Technical Reviewer	80	60

Task(s)	Labor Category	Level of Effort FY-09 (hours)	Level of Effort FY-10 (hours)
1-3	Administrative Support	40	20
1-3	Project Manager	24	16
Total		384	216

9.0 PERIOD OF PERFORMANCE

The projected period of performance is 12 months from date of task order award.

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).

b. Assumptions and Understandings:

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.

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