

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 2

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

BPA NO.

1. DATE OF ORDER SEP 04 2008		2. CONTRACT NO. (if any) NRC-42-07-482		6. SHIP TO:	
3. ORDER NO. 0023		MODIFICATION NO.		4. REQUISITION/REFERENCE NO. 42-07-482T023 NRO 08 248	
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				a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
				b. STREET ADDRESS Attn: Robert Fretz 301-415-1980 Mail Stop: T6-C34	
		c. CITY Washington		d. STATE DC	e. ZIP CODE 20555
7. TO:				f. SHIP VIA	
a. NAME OF CONTRACTOR ENERGY RESEARCH INC				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.	
d. CITY ROCKVILLE		e. STATE MD	f. ZIP CODE 208523901		
9. ACCOUNTING AND APPROPRIATION DATA 825-15-171-111; Q4013; 252A; 31X0200 \$40,000 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"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. EMERGING SMALL BUSINESS <input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED					
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 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. 23 under Contract No. NRC-42-07-482 Title: "Fermi SCOLA - Review FSAR Sections 8, 9.5.3, 14.2, 14.3.6 and 16 (3.8)" Period of Performance: 09/03/2008-09/02/2010 Estimated Reimbursable Cost: \$83,047.69 Fixed Fee: \$4,152.38 Total Cost Plus Fixed Fee: \$87,200.07 Funding in the amount of \$40,000 is being provided. See attached pages for a description of Task Order 23					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.	
21. MAIL INVOICE TO:					
a. NAME U.S. Nuclear Regulatory Commission Payment Team, Mail Stop T-9-H-4					
b. STREET ADDRESS (of P.O. Box) Attn: NRC-42-07-482, Task Order 23					
c. CITY Washington		d. STATE DC	e. ZIP CODE 20555		

17(h) TOTAL (Cont. pages)

17(i) GRAND TOTAL

22. UNITED STATES OF AMERICA
BY (Signature)

Kala Shankar

23. NAME (Typed)
Kala Shankar
Contracting Officer
TITLE: CONTRACTING/ORDERING OFFICER

TEMPLATE LOCATION
NO. 1000

SUNSI REVIEW COMPLETE

OCT 22 2008

OPTIONAL FORM 347 (REV. 4/2006)
PRESCRIBED BY GSA/FAR 48 CFR 53.213(f)

ADMO02

In accordance with Section G.4, Task Order Procedures, of Contract No. NRC-42-07-482, this definitizes Task Order No. 23. The effort shall be performed in accordance with the attached Statement of Work.

Task Order No. 23 shall be in effect from September 3, 2008 through September 2, 2010, with a cost ceiling of \$87,200.07. The amount of \$83,047.69 represents the estimated reimbursable costs, and the amount of \$4,152.38 represents the fixed fee.

The amount obligated by the Government with respect to this task order is \$40,000, of which \$38,095.24 represents the estimated reimbursable costs, and the amount of \$1,904.76 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
301-415-6310

Acceptance of Task Order No. 23 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

09 | 03 | 08
DATE

Tasks/Standards	Scheduled Completion	Deliverables
<p>1. REQUIREMENT: Become familiar with NRC regulations (10 CFR 50 and 52) and staff review guidance documents that include Branch Technical Positions (BTPs), Regulatory Guides (RGs), IEEE Standards in electrical areas and SRP Chapters: 8 (Electric Power), 9 (section 9.5.3-lighting), 14 (14.2-Preoperational tests in electrical areas and 14.3.6-ITAAC), 16 (Electrical Power Systems - Technical Specification), design control document (DCD) for ESBWR and, NRC's new reactor licensing program (LPP), and its management tool - Enterprise Project Management (EPM). Get appropriate training in LPP/EPM as necessary.</p> <p>STANDARD: Written confirmation that familiarization is complete</p>	<p>* 2 weeks after authorization of work</p>	<p>Documentation that assigned personnel have reviewed references</p>
<p>2. REQUIREMENT: Participate in an orientation/kick-off meeting with the NRC staff to discuss the scope of the work, expectations and contract management</p> <p>STANDARD: Attendance by individuals designated by NRC.</p>	<p>TBD</p>	<p>N/A</p>
<p>3. REQUIREMENT: Acceptance review. Support staff's acceptance review to determine the completeness and technical sufficiency of a combined license application Sections 8, 9.5.3, 14.2, 14.3.6, and 16. This includes identifying major deficiencies in the application that might impact the review process or affect the planned resources and schedule.</p> <p>STANDARD: Written documentation that review is complete.</p>	<p>* 2 weeks after receipt of application</p>	<p>Acceptance review results documented in Attachment 2</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>4. REQUIREMENT: Review the SCOL application Sections 8, 9.5.3, 14 (14.2 and 14.3.6), and 16 (3.8) in detail to determine the adequacy of applicant's design in these areas. 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). Prepare a Technical Evaluation Report.</p> <ul style="list-style-type: none"> a. Prepare draft questions as input to a formal Request for Additional Information (RAI) b. Perform all interface reviews as identified in review guidance c. Perform reviews of the technical specifications as related to the electrical power system and the proposed initial testing and ITAAC for the electrical system and equipment. d. Prepare a draft Technical Evaluation Report (DTER) to support the staff's preliminary SER with RAIs. The DTER is written in a manner that the conclusion of acceptability is well supported by the basis in accordance with the staff guidance documents. <p>STANDARD: Completed Technical Evaluation Report that follows the NRC provided template without deviation. No deviation from the guidance defined in Section III of RAI Guidance (Attachment 1) of Contract Statement of Work. One round of comment incorporation is acceptable.</p>	<p>*12 weeks after authorization of work</p>	<p>Draft Technical Evaluation Report and RAIs, if applicable</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>5. 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 4.</p> <p>STANDARD: Completed Technical Evaluation Report that follows the NRC provided template without deviation. No deviation from the guidance defined in Section III of RAI Guidance (Attachment 1) of Contract Statement of Work. One round of comment incorporation is acceptable.</p>	<p>* 3 weeks after receipt of the responses.</p>	<p>Revised Technical Evaluation Report</p>
<p>6. REQUIREMENT: <i>(If required)</i> Prepare for and travel to the applicant's office and participate in an NRC review team to:</p> <ul style="list-style-type: none"> a. Audit the design information, including calculations and analysis supporting the design as described in the SCOL for Fermi. b. Evaluate and discuss the applicant's responses to the unresolved issues identified in Task 5 to determine if the outstanding issues are adequately resolved. c. Prepare a trip report (as an input to NRC Audit Report) to summarize the information reviewed, results of the audit, and meeting discussions. <p>STANDARD: Complete evaluation as defined in Task. Submit Trip Report within two weeks of site review.</p>	<p>* 2 Weeks after the trip</p>	<p>Trip Report</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>7. REQUIREMENT: Review the applicant's response to the open items identified as a result of the design audit (Tasks 5 & 6). Identify any unresolved issues and prepare a safety evaluation report w/open items if any, as a Technical Evaluation Report.</p> <p>STANDARD: Complete Technical Evaluation Report that follows the NRC provided template without deviation.</p>	<p>* 6 weeks after receipt of responses</p>	<p>Update TER w/open items</p>
<p>8. REQUIREMENT: As needed and requested by the staff, provide technical support to the staff at meetings with the applicant and phone calls and during related ACRS meetings and hearing proceedings.</p> <p>STANDARD: Ensure presentation materials are reviewed and approved by NRC staff.</p>	<p>TBD</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 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:

- *A strong background in electric power systems theory, principles, and design practices to review the design of electric power systems and components needed for safe nuclear power plant operation and safe shutdown during normal, transient, and accident conditions as described in the SCOL applications and to determine its compliance with relevant NRC requirements.*

- *Extensive knowledge of (1) Class 1E electrical power systems of nuclear power plants, (2) the regulatory requirements for the design of offsite power system and its inter connections to the nuclear unit and other grid connections;(3) the roles of Transmission System Operators and Independent System Operators, (4) the regulatory requirements for the design of onsite power sources, its distribution systems, and auxiliary supporting systems provided to supply power to safety-related systems in the event of a loss of the offsite power (5) the design of dc power systems which includes those power sources (i.e., batteries, battery chargers) and their distribution systems that supply motive or control power to safety-related equipment and (6) the regulatory requirements for station blackout (SBO) that nuclear power plants must be designed to be able to withstand for a specified duration or cope with and recover from SBO.*
- *Knowledge of (1) normal and emergency lighting systems provided for nuclear power plants, (2) initial testing and inspection programs and electrical ITAACs for nuclear power plants to assure that the electrical systems are built as designed and (3) Technical Specification requirements for onsite and offsite power systems.*
- *Experienced in performing (1) short circuit and voltage drop calculations, (2) breaker and relay coordination, (3) degraded voltage and loss of voltage relay setpoints determinations, and (4) sizing of battery and battery chargers. In addition, the individual must be familiar with the design of lightning protection provided for offsite power system components and the design of grounding system provided for nuclear power plants.*

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 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-4013; Technical Assignment Control No. (TAC): RX0477, Task Order No.: 23; the licensee: Detroit Edison; and, the site: Fermi.

1. At the completion of Task 3, submit acceptance review results. See **Attachment 2**.
2. At the completion of Task 4, 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.
3. At the completion of Task 5, submit a TER (see **Attachment 1**) that contains a summary of the review results and the updated report completed under Task 4 incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determination.
4. At the completion of Task 6, submit a trip report, as an input to NRC audit report, that contains a summary of documents audited, a summary of meeting discussion conducted with the applicant, list of outstanding issues, significance of these issues, and the basis for the conclusion. Incorporate the findings in the report developed under Task 4.
5. At the completion of Task 7, submit a TER (see **Attachment 1**) that contains a safety evaluation report with open items resulting from the work performed in Task 5 & 6, and update of the Technical Evaluation Report developed under Task 6.

6.0 MEETINGS AND TRAVEL

One 1__-person, 1__-day working meeting to kickoff project and contractor orientation.*

(If required) __,1__ person, 4__-day trip to the applicant's facility (Task 6).

One 1__-person, 1__-day working meetings at NRC headquarters to review deliverables*

_, 1 -person, 2 -day meetings, if needed, for hearing or ACRS meeting.

(any additional trips that may be required)

*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 SCOL Sections and the relevant Appendices from the SCOL 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 hours 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-09 (hours)	Level of Effort FY-10 (hours)
1	Senior Staff Engineers		40	
2	Senior Staff Engineers		10	
3	Senior Staff Engineers		40	
4	Senior Staff Engineers		100	
5	Senior Staff Engineers		20	
6	Senior Staff Engineers		80	
7	Senior Staff Engineers		50	
8	Senior Staff Engineers			40
Task 1 - 8	Project Manager	5	30	5
Total		5	370	45

Admin
Total

20
390

5
50 MKW

9.0 PERIOD OF PERFORMANCE

The projected period of performance is 24 months from date of task order award.

10.0. OTHER APPLICABLE INFORMATION

a. License Fee Recovery

All work under this task order is/is not fee recoverable and must be charged to the appropriate TAC number(s).

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: 8, 9, 14, and 16.

The level of effort for Task 5 is based on the assumption that there will be 20 RAIs and it will take, on the average, 1 hour to review and address each response.

The level of effort for Task 6 is based on one, one-person, four-day trip (including travel time) plus four days to prepare for the trips and to write the trip reports.

The level of effort for Task 7 is based on the need to resolve 5 open items and it will take, on the average, 1 hour to review and resolve each open item, and prepare an SER.

The level of effort in Task 8 is based on requiring one trip to the site and one trip 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 SCOL application. 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
2. Safety Analysis Report Acceptance Review Results (Table 1)

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.

Contractors 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

Table 1: Safety Analysis Report Acceptance Review Results for [Applicant Name] [Design Center Name] [Application Type]

SER Section: _____ Technical Branch: _____ (Primary/Secondary) Technical Reviewer: _____

Branch Chief: _____ SRP Section: _____ Date: _____

Does the section address the applicable regulations: Yes/No

Are there any technical deficiencies, changes in planning assumptions, or dependencies on concurrent reviews? Yes/No, Identify specific review area/topic in table below.

1. Review Area/Topic*	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews		
	2. Does this regulation (refer to RG 1.206, Section C.IV.1)? (Yes/No)	3. Is sCOL section technically sufficient for this review area/ topic? (yes/no)**	4. Can the technical deficiency be resolved through the RAI process? (yes/no)***	5. If no, for either completeness or technical sufficiency, identify deficiency(ies). This information will be needed for technical review.	6. Is the identified technical deficiency related to a risk-significant SSC)? (yes/no)****	7. Are the pre-baseline review schedule and estimated staff-hours appropriate? (yes/no)	8. For each no, identify the change (or basis for change).	9. Identify the total review time in staff-hours*****	10. Can the review of the area/topic be completed without the completion of a concurrent review? (yes/no)	11. For each no, identify which application (DCD or COLA) and section.

*Review Area/Topic: Item identified in RG 1.206 or the regulations for a COLA referencing a DC, including COL information items and departures from the design certification.

**Technical Sufficiency: The application is compared against the SRP acceptance criteria. Note: New safety features, alternate regulatory compliance approaches, and/or deviations from DCs, should not be treated as deficiencies and factored into the basis for rejecting the application, unless staff determines that there is insufficient technical information associated with the respective item. These items are factored into confirmation of planning assumptions.

***Significant deficiencies are those review area/topic which impact the staff's ability to begin the detailed technical review or complete its review within a predictable timeframe.

****DSRA will provide risk significance information at time of review, if available.