

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

BPA NO.

1. CONTRACT ID CODE

PAGE

OF PAGE

1

2

2. AMENDMENT/MODIFICATION NO. 0002	3. EFFECTIVE DATE 23 2009	4. REQUISITION/PURCHASE REQ. NO. 0748156012	5. PROJECT NO. (If applicable)
---------------------------------------	-------------------------------------	--	--------------------------------

6. ISSUED BY U.S. Nuclear Regulatory Commission Div. of Contracts Attn:Kala Shankar 301-492-3638 Mail Stop TWB 01-B10M Washington, DC 20555	CODE 3100	7. ADMINISTERED BY (If other than Item 6) U.S. Nuclear Regulatory Commission Div. of Contracts Mail Stop TWB 01-B10M Washington, DC 20555	CODE 3100
--	--------------	---	--------------

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) N J NUMARK ASSOCIATES INC NUMARK ASSOCIATES 1220 19TH ST NW STE 500 WASHINGTON DC 200362444	(X)	9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
		10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-42-07-481 0056
	X	10B. DATED (SEE ITEM 13) 01-28-2009
CODE 788247377	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) 925-15-171-111; Q-4012; 252A; 31X0200
OBLIGATE: N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Pursuant to FAR 52.243-2, Changes Cost-Reimbursement ALT 1 Mutual Agreement of Both Parties

E. IMPORTANT: Contractor is not, is required to sign this document and return 2 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
 The purpose of this modification is to 1) incorporate the revised Statement of Work; 2) reflect an increase to the task order ceiling as a result of shift in hours from Task 3 to Task 2; and 3) Extend the task order performance period.

Task Order Ceiling Amount: \$486,563 (changed)
 Total Obligated Amount: \$300,000 (unchanged)
 Period of Performance: 01/29-2009-07/31/2012 (changed)

See continuation page

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) <i>Neil J. Numark President</i>	15B. CONTRACTOR/OFFICER <i>[Signature]</i> (Signature of person authorized to sign)	15C. DATE SIGNED <i>1-23/09</i>	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Kala Shankar Contracting Officer	16B. UNITED STATES OF AMERICA BY <i>Kala Shankar</i> (Signature of Contracting Officer)	16C. DATE SIGNED <i>12/22/09</i>
--	---	------------------------------------	---	---	-------------------------------------

NSN 7540-01-152-8070
PREVIOUS EDITION NOT USABLE
TEMPLATE - ADMOD

SUNSI REVIEW COMPLETE

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA (41 CFR) 53.243

JAN 11 2010

ADMOD

The purpose of this modification is to 1) incorporate the revised statement of work to reflect the deletion of task 3 and the shift in hours from task 3 to task 2; 2) reflect an increase to ceiling as a result of the shift in hours; and 3) extend the task order performance period by an additional six months. Accordingly, the subject task order is hereby modified as follows:

Paragraphs 2, page 2 of 2 under the base task order 56, is hereby deleted in its entirety and replaced with the following:

Task Order No. 56 shall be in effect from 01/29/09 through 07/31/12 with a cost ceiling of \$486,563. The amount of \$455,074 represents the estimated reimbursable costs, and the amount of \$31,489 represents the fixed fee.

A summary of obligations for this task order, from award date through the date of this action is given below:

Total FY09 Obligation Amount:	<u>\$300,000.00</u>
Cumulative Total of NRC Obligations:	\$300,000.00

***ALL OTHER TERMS AND CONDITIONS OF THE SUBJECT TASK ORDER
REMAIN UNCHANGED***

TASK ORDER STATEMENT OF WORK

JCN Q-4012	Contractor Numark	Task Order No. NRC-45-07-481 56 MODIFICATION
Applicant PPL	Design/Site EPR/Bell Bend	Docket No. Project# 00000762
Title/Description Hydrology Safety Review (Section 2.4) of PPL COL Application		
TAC No. RX0523	B&R Number 925-15-171-111	SRP or ESRP Section(s) SRP 2.4.1- 2.4.14
NRC Task Order Project Officer (PO) Sally Adams	301-415-0209	Sally.Adams@nrc.gov
NRC Technical Monitor (TM) Joseph Giacinto	301-415-0714	Joseph.Giacinto@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 objectives of this task order are to obtain technical expertise from Numark (1) to assist the NRC staff in determining whether or not the subject COL application meets appropriate regulatory requirements pertaining to site safety related surface water hydrology, groundwater hydrology and hydraulic structures issues and site characterizations as specified in sections 2.4.1 through 2.4.14 of the Standard Review Plan (SRP) which provides guidance to staff in performing safety reviews of combined construction permit and operating license (COL) applications, (2) to ensure a consistency, in terms of hydrologic data and analysis approaches, between the Environmental Impact Statement (EIS) and the Safety Evaluation Report, and (3) to write a Technical Evaluation Report (TER) after conducting appropriate confirmatory data analyses and modeling for routing surface water flooding and groundwater transport.

The primary deliverable, or output of this regulatory review, shall be a Technical Evaluation Report (TER) based on Section 2.4 of the NRC staff's Safety Evaluation Report (SER). 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 COL application. The TER must provide sufficient information to adequately explain the rationale for why there is *reasonable assurance* that public health and safety is protected. The TER should be written in a manner whereby a person with either non-nuclear technical background or non-technical background could understand the basis for the staff's conclusions.

The TER format is described in Attachment 4 to this Task Order Statement of Work.

3.0 WORK REQUIREMENTS, SCHEDULE AND DELIVERABLES

Tasks/Standards	Scheduled Completion	Deliverables
1. Phase A: Familiarization, Acceptance Review, pTER* and RAI Preparation.		Tasks 1.a thru 1.d
1.a REQUIREMENT: Participate in an orientation/kick-off meeting with the NRC staff to discuss the scope of the work, expectations and contract management. Become familiar with SRP Section 2.4 including all subsections (2.4.1 – 2.4.14), RG-1:206 and RG 4.21. STANDARD: Attendance by individuals as designated by NRC staff. Written confirmation that familiarization is complete.	<i>Kick-off Meeting within 7 calendar days of work authorization</i> <i>Familiarization within 14 calendar days of work authorization</i>	N/A Letter affirming that familiarization is complete
1.b REQUIREMENT: Prepare for the Site Audit by preparing Information Needs spanning all Section 2.4 subsections*. Travel to the site to attend the Hydrology Site Audit. Review applicant's responses to Information Needs. STANDARD: Complete list of Information Needs four weeks after work authorization. Submit a Trip Report within two days following the site audit, which includes a summary that addresses the status of each Information need discussed at the Site Audit.	<i>Within 3 weeks of work authorization</i> <i>Within 4 weeks of work authorization</i> <i>Safety Site Audit-within 60 calendar days of the start of Phase 1.</i>	Draft information needs delivered to the TM Final information needs delivered to TM. Prepare and submit initial Draft trip report within 2 calendar days following the Site Audit. Final trip report due within 3 weeks of site audit.
1.c REQUIREMENT: Identify issues and needs for additional or clarifying information by assisting with development of draft Requests for Additional Information (RAIs). Several rounds of RAIs may be needed throughout the course of the Phase 1 review. STANDARD: RAIs submitted following a template format provided by the TM.	<i>Initial set of RAIs to be submitted within 2 calendar days following site audit.</i> <i>Final set of RAIs to be submitted within 60 calendar days of completing task 1b above.</i>	Several rounds of RAIs may be necessary. Participate in conference calls as needed and requested

Tasks/Standards	Scheduled Completion	Deliverables
<p>1.d REQUIREMENT: Prepare a complete preliminary Technical Evaluation Report (pTER) that includes all subsections of Section 2.4*. Participate in conference calls as required. Complete independent analysis as needed. Review for consistency with hydrology sections of the draft EIS.</p> <p>STANDARD: Completed pTER that follows the NRC provided template without deviation.</p>	<p><i>Complete initial draft submitted within 2 calendar days of completing task 1b above.</i></p> <p><i>Revised draft submitted within 14 calendar days after submission of initial draft</i></p>	<p>Initial Draft pTER with RAIs</p> <p>Revised pTER with RAIs</p>
<p>2. Phase B: TER with Open Items Preparation*.</p>		<p>Tasks 2.a and 2.b</p>
<p>2.a REQUIREMENT: Review Applicant's responses to the RAIs to determine if they adequately resolve the outstanding issues. Identify any open items. Update independent analyses discussed in the TER based on the applicant's responses. Incorporate the review results into the TER. Review for technical accuracy and consistency with hydrology sections of the draft EIS.</p> <p>STANDARD: Completed draft TER with Open Items that follows the NRC provided template without deviation.</p>	<p><i>Revised draft TER with open items submitted within 60 calendar days of completing task 1d above.</i></p>	<p>Participate in conference calls as needed and requested.</p> <p>Draft TER with Open Items.</p>
<p>2.b REQUIREMENT: Revise TER and edit the document as necessary. Resolve any outstanding issues. Review for technical accuracy and consistency with hydrology sections of the draft EIS.</p> <p>STANDARD: Completed TER with Open Item that follows the NRC provided template without deviation.</p>	<p><i>Revised TER with open items submitted within 14 calendar days of completing task 2a above.</i></p>	<p>TER with Open Items.</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>3. Phase C: Advanced TER with No Open Items*</p> <p>REQUIREMENT: Review Open Item responses, and resolve Open Item issues in the TER. Update independent analysis based on the applicant's responses. Incorporate the review results into the Advanced TER with No Open Items. Review for technical accuracy and consistency with hydrology sections of the FEIS.</p> <p>STANDARD: Completed Advanced TER with No Open Items that follows the NRC provided template without deviation.</p>	<p><i>Advanced TER with No Open Items submitted within 90 calendar days of completing task 2b above.</i></p>	<p>Advanced TER with No Open Items.</p>
<p>4. Phase D: Subcommittee and Full Committee ACRS Reviews of the Advanced SER with No Open Items*</p>		<p>Tasks 4.a and 4.b</p>
<p>4.a REQUIREMENT: Prepare slides that address the issues to be presented to the Subcommittee Meeting of the ACRS along with a brief for each. Travel to the site to attend the Subcommittee Meeting of the ACRS.</p> <p>STANDARD: Preparation materials to present before the ACRS.</p>	<p>ACRS Subcommittee Meeting; September 23, 2011 (tentative)</p>	<p>Draft slides three weeks before meeting.</p> <p>Revised slides one week before meeting.</p>
<p>4.b REQUIREMENT: Prepare slides that address the issues to be presented to the Full Committee Meeting of the ACRS along with a brief for each. Travel to the site to attend the Full Committee Meeting of the ACRS.</p> <p>STANDARD: Preparation materials to present before the ACRS.</p>	<p>ACRS Full Committee Meeting; October 04, 2011 (tentative)</p>	<p>Revised slides one week before meeting.</p>
<p>5. FTER with No Open Items*</p> <p>REQUIREMENT: Resolve any items identified during the ACRS review. Update independent analysis based on the ACRS Reviews, as appropriate. Prepare sections to incorporate into the FTER with No Open Items. Review for consistency with hydrology sections of the final EIS.</p> <p>STANDARD: Prepare sections, as requested, to insert into the FTER with No Open Items following the NRC provided template without deviation.</p>	<p><i>Revised sections to be submitted by 21 calendar days of completing task 4b above.</i></p>	<p>Revised sections to insert into FTER with No Open Items.</p>

Tasks/Standards	Scheduled Completion	Deliverables
6. ASLBP Hearing		Tasks 6.a and 6.b
6.a REQUIREMENT: Prepare testimony covering matters under litigation. Matters will be identified at least one month before hearing. Draft testimony to be prepared and sent to NRC. Contractor will incorporate NRC comments and prepare final testimony. STANDARD: Pre-filed testimony following templates supplied by OGC and other NRC staff.	ASLBP hearing projected to occur Date (TBD)	Draft testimony three weeks prior to hearing. Revised testimony one week after receipt of NRC comments.
6.b REQUIREMENT: Prepare slides that address the issues to be presented to the ASLBP. Prepare and attend the ASLBP Hearing. STANDARD: Preparation of materials to present before the ASLBP. Prepare for the hearing.	ASLBP hearing projected to occur Date (TBD)	Slides one week before hearing.

* 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:

***Senior Level Hydrologist / Hydraulic Engineer** with adequate academic background and work experience in performing site characterization and safety analysis of nuclear power plants using advanced surface water hydrology methods.*

***Senior Level Hydrogeologist** with adequate academic background and work experience in characterization and modeling of groundwater flow and transport.*

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-4012; Technical Assignment Control No. (TAC): RX0523; Task Order No.: 056; the licensee: PPL; and the site: Bell-Bend.

1. As specified in Section 3 of this task order, submit a letter affirming that familiarization with the Standard Review Plans and Regulatory Guides is complete.
2. As specified in Section 3 of this task order, submit the DRAFT and Final information needs to the TM (see **Attachment 1** for format and content).
3. As specified in Section 3 of this task order, submit Requests for Additional Information (RAI) (see **Attachment 2** for format and content). See **Attachment 1** in the base contract SOW for the guidelines for developing RAIs.
4. As specified in Section 3 of this task order, 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. (see **Attachment 3** for additional format and content information).
5. As specified in Section 3 of this task order, submit a Technical Evaluation Report (TER) that contains, for each Sub-section of the SER (see **Attachment 4** 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.

6. At the completion of both Task 2a and 2b, submit a TER with open items (**see Attachment 4**) that contains a summary of the review results and the updated report completed under Task 1d incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determination.
7. At the completion of Task 3, submit a Advanced TER with No open items (**see Attachment 4**) that contains a summary of the review results and the updated report completed under Task 2b and 3b, incorporating the findings from the resolution of the RAIs and the basis for their resolution.
8. For Task 4a and 4b, submit DRAFT presentation slides (Power Point format) three weeks prior to ACRS subcommittee hearing, revised presentation slides (Power Point format) 1 week prior to ACRS subcommittee meeting.
9. At the completion of Task 5, submit a Final TER with No open items (**see Attachment 4**) that contains a summary of the review results and the updated report completed under Task 3b and 4b.
10. For Task 6a, submit DRAFT testimony three weeks prior to ASLBP hearing, revised testimony 1 week prior to ASLBP hearing
11. For Task 6b, submit DRAFT presentation slides (Power Point format) three weeks prior to ASLBP hearing, revised presentation slides (Power Point format) 1 week prior to ASLBP hearing.

6.0 MEETINGS AND TRAVEL

One, 2-person, 3-day (including travel) working-meeting* to kickoff project and contractor orientation (**Task 1.a**)

One, 2-person, 4-day (including travel) working meeting to conduct the Safety Site Audit (**Task 1.b**)

Four, 2-person, 3-day meetings, if needed, for Subcommittee and Full Committee ACRS meetings (**Tasks 4.a and 4.b**)

One, 2-person, 3-day meeting, if needed, for the ASLBP Hearing (**Task 6.b**)

*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 Bell Bend COLA Sections and the relevant Appendices from the Bell Bend COL application.
- b. CD-ROM containing the preliminary or 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 FY2009 (hours)	Level of Effort FY2010 (hours)	Level of Effort FY2011 (hours)
1.a (Kickoff)	Hydrologist Hydrogeologist			

Task(s)	Labor Category	Level of Effort FY2009 (hours)	Level of Effort FY2010 (hours)	Level of Effort FY2011 (hours)
1.b (Site Audit)	Hydrologist Hydrogeologist			
1.c (RAIs)	Hydrologist Hydrogeologist			
1.d (pTER)	Hydrologist Hydrogeologist			
2.a (RAI rev.)	Hydrologist Hydrogeologist			
2.b (TER w/ OI)	Hydrologist Hydrogeologist			
3 (Adv TER)	Hydrologist Hydrogeologist			
4.a (Sub ACRS)	Hydrologist Hydrogeologist			
4.b (Full ACRS)	Hydrologist Hydrogeologist			
5 (FTER)	Hydrologist Hydrogeologist			
6.a (Pre-testimony)	Hydrologist Hydrogeologist			
6.b (Hearing)	Hydrologist Hydrogeologist			
All	Project Manager			
All	Admin Support			
Total				

9.0 PERIOD OF PERFORMANCE

The projected period of performance is **42 Months**.

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:

The level of effort for Task 1c is based on the assumption that there will be 50 RAIs and it will take, on the average, 2.5 hours to review and address each response.

The level of effort for Task 2a and 2b and 3 is based on the need to resolve approximately 60 open items and it will take, on the average, 4 hours to review and resolve each open item, and prepare a TER.

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 Bell Bend CQL 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 4 to this Task Order Statement of Work.

Attachments:

1. Sample information needs.
2. Sample Requests for Additional information
3. Sample Trip Report.
4. Sample Outline, Format, and Content for the TER Input

Attachment 1. Sample Information Needs

Serial #	FSAR Section	Discipline	Information Needs	Reviewer
1	2.4.12 & 2.4.13	Groundwater Hydrology	Provide for staff review photos or other materials from excavation of Unit 1 to provide understanding of subsurface environment	[REDACTED]
2	2.4.12 & 2.4.13	Groundwater Hydrology	Provide for staff review the following reports: Mactec 2006 "Results of Geotechnical ##### COL Project, ##### Nuclear Station" Mactec 2007 "Kd Distribution Coefficient Test" Report by #####, May 2007.	[REDACTED]
3	2.4.12 & 2.4.13	Groundwater Hydrology	Provide a subject matter expert (SME) to describe aquifer testing and analysis.	[REDACTED]
4	2.4.12	Groundwater Hydrology	Provide an SME to discuss occurrence of springs/seeps in the area and other features that may be indicative of larger-scale, interconnected fractures/joints (e.g. subtle trellis drainage pattern in area as noted in FSAR, occurrence of diabase dikes, bedding planes, geophysical surveys)	[REDACTED]
5	2.4.12	Groundwater Hydrology	Provide a map showing the locations and pumping rates of nearby groundwater supply wells	[REDACTED]
6	2.4.12 & 2.4.13	Groundwater Hydrology	Provide an SME to discuss possible eastward pathways toward Mayo Creek.	[REDACTED]
7	2.4.12	Groundwater Hydrology	Provide an SME to discuss impact of post-construction / operational setting on water table elevations (site grading including infilling on east below cooling towers, removal of saproite/shallow bedrock zone, hydraulic properties and use of common fill and structural fill, changes in surface recharge).	[REDACTED]
8	2.4.12	Groundwater Hydrology	Provide an SME to discuss impact of drought in the area the past few years and earlier in the decade on 2006-2007 water level monitoring from site.	[REDACTED]
9	2.4.13	Groundwater Hydrology	Provide for staff's review all calc packages associated with assessment in 2.4.13 of FSAR.	[REDACTED]
10	2.4.13	Groundwater Hydrology	Provide an SME to discuss why a pathway through the bedrock zone was not fully evaluated.	[REDACTED]
11	2.4.13	Groundwater Hydrology	Provide an SME to discuss possibility of deeper groundwater flow pathways that may not be intercepted by local streams adjacent to Units 2 and 3 (i.e. intercepted by water supply wells).	[REDACTED]

Attachment 2. Sample Requests for Additional Information.

[Location, Project] Information Needs

Section 2.4.#

On page 2.4-#, the statement that flood records after 1952 be considered representative of the current regulated conditions of the [Named] River indicates that no changes to the watershed have occurred that would alter the hydrology of the watershed. In general, the NRC staff would like to see verification of computer model results against field data collected during the largest discharge events at the site, with preference to more recent events that capture potential urbanization of the watershed and the latest condition of the river/floodplain.

On page 2.4-#, the statement that flood records after [Year] are considered representative of the current regulated conditions of the [Named] River appears to be in conflict with another statement on page # that a [Year] peak flood elevation would be significantly reduced by present day regulation. Please clarify these statements.

In Figure 2.4.2-#, the delineated drainage basins do not indicate the direction and movement of water under the design conditions of local intense precipitation. Please indicate the intended flow directions.

On page 2.4-#, the reader is referred to Table # regarding local intense precipitation. The figure number appears to in error. Should the figure number be 2.4.2-206?

Page 2.4-14

The text discusses a multi-variable relationship to estimate precipitation losses. Please provide additional details and references concerning this method used to estimate precipitation losses.

Also, the text states that precipitation excess increases as the storm progresses and is equal to the rainfall when from # to # inches of rainfall have fallen. These values of # to # inches seem high. Please explain. It should be noted that, according to the statement found on page 2.4-#, the PMP depth is # inches.

Unit hydrographs developed from observed data are obviously based on runoff from storms much smaller than that expected from the PMP/PMF. As such, adjustments are made to the unit hydrograph to better represent the response of the watershed under PMP/PMF conditions. There is no discussion of adjusting the unit hydrographs for the PMF conditions as is recommended by the US Army Corps of Engineers, FERC, and the Bureau of Reclamation.

Attachment 3. Sample Trip Report

MEMORANDUM: _____, Chief
_____, Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: _____, Senior Project Manager

Division of New Reactor Licensing
Office of New Reactors

SUBJECT: TRIP REPORT – Date, HYDROLOGY-RELATED SITE VISIT IN SUPPORT
OF THE _____ COMBINED LICENSE APPLICATION

This report summarizes NRC travel to [City, State] during the period of [Dates], to review surface water hydrology-related components of the [Applicant] safety report associated with the combined license application (COLA) for [Site]. The attendance list for the meeting is provided in Enclosure 1. Enclosure 2 contains the list of action items from the meeting. The meeting handouts are available in ADAMS under accession number MLxxxxxx. The meeting handouts include an agenda for the meeting and the presentations that were provided to the staff during the week.

The main purpose of the meeting was for the staff to...
What follows are highlights from the meeting.

Highlights from the Meeting

1) Final calculation packages related to the model and its related 8 sub-models will not be complete and ready for review until late Spring 200X. Considering the complexity of the system and the nature of the model and its sub-models, the NRC staff indicated it will need a considerable amount of review time following completion of these documents.

Based on [applicant] work the staff expects to review some of the detailed analysis work. A partial list of items the staff are expecting to review include: (a) the calculation packages for the development and update of unit hydrographs including those from the new HEC-HMS models for each of the sub-areas that make up the [Named] watershed above the site, (b) the calculation package(s) related to the unsteady-flow model including the final bathymetry, rating curves, etc. processed and included in the model, and (c) users guides and calculation packages associated with each of the related sub-models.

2)

Attachment 3. Sample Trip Report

[Dates] Site Visit to [City, State]
[Purpose of Trip]
Attendance List

Name	Organization
[REDACTED]	[REDACTED]

* denotes an individual that was present at all portions of the site visit

Attachment 4
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