

BellBendCOLPEm Resource

From: Sgarro, Rocco R [rrsgarro@pplweb.com]
Sent: Wednesday, May 27, 2009 9:01 AM
To: smcdougal@state.pa.us
Cc: Barbara A Munford; GLUCKLER Peter E (AREVA NP INC); Sullivan, David; Imboden, Stacey; Fields, Jerome S; Perdomo, Federico R; Freels, James; Scopelliti, Karen T
Subject: PPL Bell Bend Phase II evaluations
Attachments: BNP-2009-087.PDF

Mr. McDougal,

Attached for your review, please find the PPL Bell Bend submittal of workscope for Phase II National Register evaluations of archaeological sites. I'd appreciate a confirmation of receipt of this email; hardcopy will be forthcoming in the mail. If you have any questions, please contact me - my information is below.

Thank you!

<<BNP-2009-087.PDF>>

Rocky

R. R. Sgarro
Manager - Nuclear Regulatory Affairs
PPL Bell Bend, LLC
W: 570.802.8102 (Bell Bend)
610.774.7552 (Allentown)
M: 610.657.4667
EM: rrsgarro@pplweb.com

The information contained in this message is intended only for the personal and confidential use of the recipient(s) named above. If the reader of this message is not the intended recipient or an agent responsible for delivering it to the intended recipient, you are hereby notified that you have received this document in error and that any review, dissemination, distribution, or copying of this message is strictly prohibited. If you have received this communication in error, please notify us immediately, and delete the original message.

Hearing Identifier: BellBend_COL_Public
Email Number: 249

Mail Envelope Properties (1E07C505E3D150418D0410B6627DBBCDB863A2)

Subject: PPL Bell Bend Phase II evaluations
Sent Date: 5/27/2009 9:00:41 AM
Received Date: 5/27/2009 9:00:47 AM
From: Sgarro, Rocco R

Created By: rrrsgarro@pplweb.com

Recipients:

"Barbara A Munford" <b.munford@gaiconsultants.com>
Tracking Status: None
"GLUCKLER Peter E (AREVA NP INC)" <Peter.Gluckler@areva.com>
Tracking Status: None
"Sullivan, David" <David.Sullivan@unistarnuclear.com>
Tracking Status: None
"Imboden, Stacey" <Stacey.Imboden@nrc.gov>
Tracking Status: None
"Fields, Jerome S" <jsfields@pplweb.com>
Tracking Status: None
"Perdomo, Federico R" <Federico.Perdomo@unistarnuclear.com>
Tracking Status: None
"Freels, James" <James.Freels@constellation.com>
Tracking Status: None
"Scopelliti, Karen T" <ktscopelliti@pplweb.com>
Tracking Status: None
"smcdougal@state.pa.us" <smcdougal@state.pa.us>
Tracking Status: None

Post Office: LEH-MBX-2.ppl.com

Files	Size	Date & Time
MESSAGE	1134	5/27/2009 9:00:47 AM
BNP-2009-087.PDF	410712	

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

R. R. Sgarro
Manager-Nuclear Regulatory Affairs

PPL Bell Bend, LLC
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8102 FAX 570.802.8119
rrsgarro@pplweb.com



May 26, 2009

Pennsylvania Historic and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093

ATTN: Mr. Douglas C. McClearen, Chief
Division of Archaeology & Protection

**BELL BEND NUCLEAR POWER PLANT
SUBMITTAL OF WORKSCOPE FOR PHASE II
NATIONAL REGISTER EVALUATIONS OF
ARCHAEOLOGICAL SITES
BNP-2009-087**

PPL Bell Bend, LLC is pleased to submit the enclosed Scope of Work for Phase II National Register evaluations of archaeological sites 36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286, and an Assessment of Effects study for historic resources at the proposed Bell Bend Nuclear Power Plant, Luzerne County, Pennsylvania, for your review and comment. The proposed work is based on the results of Phase Ia and Phase Ib cultural resource investigations of the project area conducted by GAI Consultants, Inc. (GAI) (GAI 2007, Munford and Tuk 2008, Munford et al. 2008, and Munford 2008) and review of these studies by your office (letters dated June 5, 2008, October 28, 2008, March 2, 2009, and March 23, 2009). This document provides a summary of proposed archaeological investigations of seven archaeological sites designed to evaluate their eligibility for listing in the National Register of Historic Places (NRHP), and an assessment of the proposed project's effects on ten NRHP-eligible historic resources.

Thank you for your prompt attention to this matter. We will call your office within a few days to ensure receipt of this submittal and to address any questions you may have. In the interim if you need additional information, please contact me at rrsgarro@pplweb.com or at (570) 802-8102.

Respectfully,

Rocco R. Sgarro

Attachment: 1) Scope of Work: Phase II National Register Evaluations of Archaeological Sites and Assessment of Effects for Historic Resources

cc: (w/ Attachment)

Steve McDougal – PHMC-BHP

bcc:

J. Fields
J. Freels
G. Gibson
T. Harpster
R. Janati
D. Lutchenkov
W. Massie
J. McQueeney
B. Munford
F. Perdomo
R. Sgarro
D. Sullivan
K. Thurstin
M. Yox

Attachment 1

Scope of Work: Phase II National Register Evaluations of Archaeological Sites and Assessment
of Effects for Historic Resources

March 12, 2009

GAI Project No. C080204.00

Mr. Peter E. Gluckler, Jr.
Project Manager
AREVA NP Inc.
500 Donald Lynch Boulevard
Marlboro, Massachusetts 017752

Re: Scope of Work
Phase II National Register Evaluations of Archaeological Sites 2, 3, 4, 5, 7, 9, and 10
(36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286) and
Assessment of Effects for Historic Resources
Bell Bend Nuclear Power Plant
Luzerne County, Pennsylvania
ER 81-0658-079

Dear Mr. Gluckler:

GAI Consultants, Inc. (GAI) is pleased to submit this scope of work to AREVA NP Inc. (AREVA) to conduct Phase II National Register Evaluations of archaeological Sites 2, 3, 4, 5, 7, 9, and 10 (36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286) and an Assessment of Effects for historic resources at the Bell Bend Nuclear Power Plant (BBNPP), Luzerne County, Pennsylvania, on behalf of UniStar Nuclear Development, LLC (UniStar). These cultural resources lie within the Area of Potential Effect (APE) of the 893-acre proposed project area located adjacent to the existing PPL Corporation's Susquehanna Steam Electric Station (SSES), west of the North Branch Susquehanna River and northeast of the town of Berwick. GAI identified these resources during Phase Ib survey of the proposed project area in 2008 (Munford et al. 2008, Munford 2008).

The goal of GAI's Phase II archaeological study is to evaluate the eligibility of Sites 2, 3, 4, 5, 7, 9, and 10 (36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286) for listing in the National Register of Historic Places (NRHP). The Assessment of Effects will evaluate the proposed project's effects on ten NRHP-eligible historic resources: Union Reformed and Lutheran Church (Old River Church) and Cemetery (GAI-03, 086572), Woodcrest (GAI-04), Stone Arch Bridge (GAI-06), North Market Street Bridge (GAI-09), North Branch Pennsylvania Canal (GAI-10, 141673), Canadian Pacific/Bloomsburg Division of the Delaware, Lackawanna & Western Railway (GAI-11), Susquehanna and Tioga Turnpike (GAI-12), House (Red Brick Studios) (GAI-26), Pennsylvania Railroad-Sunbury Line/Delaware & Hudson Railroad (GAI-27), and the Wapwallopen Historic District (GAI-36 through GAI-45).

GAI's Phase II investigations will include site-specific archival research, fieldwork, laboratory analysis, and technical report preparation. This work will be conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, guidelines developed by the Advisory Council on Historic Preservation, the amended *Procedures for the Protection of Historic and Cultural Properties* as set forth in 36 CFR 800, the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the *Guidelines for Archeological Investigations in Pennsylvania* (PHMC/BHP 2008). These proposed project tasks are described below.

Workplan

Task 1: Project Management/Section 106 Coordination/Meetings

At various points in the proposed project, GAI will assist AREVA and UniStar in consulting and coordinating with the Pennsylvania Historical and Museum Commission/Bureau for Historic Preservation (PHMC/BHP). This is expected to include phone calls and preparation of memos involving discussions of project methods and results, drafting letters, and attendance at up to one (1) meeting either on-site or in Harrisburg, Pennsylvania.

Task 2: Archival Research

Prior to Phase II field investigations, GAI will conduct site specific archival research for each of the six historic period archaeological sites (Sites 2, 3, 4, 7, 9, and 10/36LU279, 36LU280, 36LU281, 36LU283, 36LU285, and 36LU286). This work will include a chain-of-title and census research for each of the properties and a detailed review of pertinent historic maps available at the Luzerne County Historical Society, Luzerne County Courthouse, and Osterhout Free Library (Wyoming Valley Historical and Genealogical Society) in Wilkes-Barre; the Luzerne County Community College Local History Reading Room in Nanticoke; the McBride Memorial Library Local History Reading Room in Berwick; the Columbia County Historical and Genealogical Society in Bloomsburg; and the Pennsylvania State Archives in Harrisburg. Additional sources such as tax records and appropriate published and unpublished histories will also be consulted and will be used to illustrate the historical development of the project area. The collected research will also enhance the existing historical context to support NRHP eligibility recommendations for architectural and historical resources such as the Pennsylvania Railroad-Sunbury Line/Delaware & Hudson Railroad, Lackawanna & Bloomsburg Railroad, the Susquehanna & Tioga Turnpike, two stone arch bridges, the United Reformed & Lutheran Church, the North Branch of the Pennsylvania Canal, and the Wapwallopen Historic District, as requested by the Pennsylvania Historical and Museum Commission Bureau for Historic Preservation (October 28, 2008, project review letter).

Task 3: Archaeological Fieldwork

Prior to the start of Phase II field investigations sites will be prepared either by plowing and disking or by brush clearing, as appropriate. Four of the seven Phase II sites (Sites 2, 3, 4, and 5/36LU279, 36LU280, 36LU281, and 36LU288) are located within previously cultivated fields which will be plowed and disked to produce adequate visibility for subsequent surface collection. The three sites (Sites 7, 9 and 10/36LU283, 36LU285 and 36LU286), situated in wooded or brush/grass-covered settings, will be cleared with a brush hog and/or by hand to expose surface features and structural remains. Mechanical removal of a surface gravel layer will also be required in portions of Site 10 (36LU286) to permit hand excavations.

Following site preparation at each site, GAI surveyors will establish a grid over the site using a total station. The grid will be tied into a permanent datum. Subsequent excavations will be designated by coordinates within this grid. Where possible, Phase Ib shovel tests will be relocated and plotted according to the Phase II grid system.

For sites situated in cultivated fields (Sites 2, 3, 4, and 5/36LU279, 36LU280, 36LU281 and 36LU288), fieldwork will begin with a Phase II surface collection of each recently plowed and disked site area. This task is performed in accordance with state guidelines (PHMC/BHP 2008) that require at least two surface collections of potentially eligible sites (including the Phase I surface collection). Each site will be gridded into 5-meter (15-foot) collection blocks and artifacts observed on the surface will be collected and provenienced by block. Diagnostic artifacts will be point provenienced, as appropriate. Based on the results of surface collection, judgmental STPs will be excavated to sample artifact concentrations or locations of possible cultural features within the site area.

Phase II fieldwork for sites in wooded and/or brush-covered settings (Sites 7, 9 and 10/36LU283, 36LU285 and 36LU286) will begin with a metal detector survey, where appropriate. GAI will conduct a metal detector survey within portions of Sites 7 and 9 (36LU283 and 36LU285) to assist in identifying subsurface remains. Metal detector survey will not be performed within Site 10 (36LU286) due to the remains of surface gravel, which is expected to be present after the mechanical removal of the majority of this deposit. The metal detector survey identifies metal "hits" or "targets" and will be used in areas which may contain former structures. These "targets" will be sampled by excavating a small pit at "target" locations, using a post hole digger. Each sample location will be identified by coordinates within the site grid. The soil from each sample pit will be screened through 0.6-mm (0.25-inch) mesh and recovered artifacts will be retained for laboratory analysis.

Due to low ground surface visibility, close-interval shovel testing will be required within Sites 7, 9 and 10 (36LU283, 36LU285 and 36LU286) to refine site boundaries within the project APE and to delineate within-site artifact concentrations. GAI will excavate shovel test pits at 5-meter (15-foot) intervals within transects spaced 5-meters (15-feet) apart. STPs will measure approximately 50x50 cm (1.5 x 1.5 feet) in diameter and will be hand-excavated by natural strata into the subsoil.

Based on the results of shovel testing or surface collection, GAI will excavate test units in areas of higher artifact density, unusual stratigraphy or potential cultural features within each of the seven Phase II sites. Test unit excavations will serve to define site stratigraphy, sample artifact concentrations and/or activity areas, determine the potential for subsurface features, and assess the integrity of archaeological remains. At each historic period site (Sites 2, 3, 4, 7, 9, and 10/36LU279, 36LU280, 36LU281, 36LU283, 36LU285, and 36LU286) test units will consist of a combination of 1.5-meter (5 x 5-foot) and 1.5 x 0.75 meter (5 x 2.5-foot) units. Test units at prehistoric Site 5 (36LU288) will measure 1x1-meter (3x3-feet). Test units will be hand-excavated in 10-cm (0.3-foot) levels according to natural stratigraphy and will extend into subsoil. At the completion of each test unit, measured profiles will be drawn and photographs taken of at least one wall of each unit.

Due to the upland setting of Sites 2, 3, 4, 7, 9, and 10 (36LU279, 36LU280, 36LU281, 36LU283, 36LU285, and 36LU286), cultural resources in these localities will be near-surface in nature and excavations are anticipated to extend to a maximum depth of 50 cm (1.6 feet). Site 5 (36LU288), located on a low terrace/floodplain, has a potential for deeply buried cultural resources, however, due to the proposed shallow (15-18 cm) project impacts anticipated from use of this locality as a temporary laydown area, excavations will extend to a maximum depth of 80 cm (2.6 feet). Phone consultation with Steve McDougal (PHMC/BHP) on April 8, 2008, resulted in PHMC/BHP's concurrence on this excavation depth.

For both STPs and test units, excavated soils will be screened through 6-mm (0.25-inch) hardware cloth for systematic artifact recovery. Recovered artifacts will be bagged and labeled with appropriate provenience information. GAI archaeologists will record results of individual STPs and test units on standardized field forms, including depths of soil horizons, soil texture and Munsell color, and artifact recovery. Testing locations will be plotted on project maps and documented with photographs. Following excavation and recording, STPs and test units will be backfilled.

Following test unit excavations at the four sites in cultivated fields (Sites 2, 3, 4, and 5/36LU279, 36LU280, 36LU281, and 36LU288), mechanical removal of plowzone strips will be conducted in portions of these sites to expose cultural features at the plowzone/subsoil interface. A backhoe with a flat blade will be used to remove the plowzone in approximately 2-meter (6.5-foot)-wide strips to the top of the B horizon. This activity will be monitored by GAI personnel. Plowzone strips will be plotted on project maps and documented with photographs. Hand shovel-scraping of these strips will be conducted to define and delineate features.

Potential cultural features identified during testing will be troweled clean, cross-sectioned and documented in plan view and profile with measured drawings and photographs. As appropriate, a portion of the feature fill will be collected as a flotation sample and the remaining feature fill will be screened through 6-mm (0.25-inch) hardware cloth. Artifacts and samples collected from the feature fill will be bagged and labeled with appropriate provenience information. The feature will be recorded on a

standardized GAI Feature Form and plotted on project maps. Features are assumed to have a maximum dimension of 60 cm (2 feet) and a maximum depth of 50 cm (2.5 feet); if deep features (e.g. wells, privies) are encountered, GAI will sample only the upper few feet of feature fill.

Excavations (e.g. STPs, TUs, plowzone strips) will be backfilled upon completion. GAI will coordinate plans for plowing/disking and mechanical clearing activities with AREVA and UniStar.

For purposes of this proposal GAI estimates the excavation of a total of up to 965 STPs and 76 test units (approximately 63 m³); identification of up to 45 features; surface collection of approximately 11 acres (four sites); plowzone stripping/hand shovel scraping of approximately 4,350 m² (four sites); and metal detector survey at two sites. As noted above, due to the upland setting of six of the seven sites, GAI assumes that cultural resources at these sites will be near-surface in nature and test excavations will extend no more than 50 cm (1.6 feet) in depth. Although Site 5 is situated in a low terrace/floodplain setting with a potential for deeply buried cultural resources, due to the anticipated shallow depth of proposed project impacts (15 to 18 cm) in this locality, excavations will extend to a maximum depth of 80 cm (2.6 feet).

The field effort at each of the seven sites is anticipated to consist of the following:

- Site 2 (36LU279)—plow/disc 0.7 acres, surface collection, 20 judgmental STPs, 8 units [4 1.5x1.5-meter (5x5-foot) and 4 1.5x0.75-meter (5x2.5-foot) units], 5 features, plowzone stripping/hand shovel scraping of 300 m², mapping, backfill;
- Site 3 (36LU280)—plow/disc 0.2 acres, surface collection, 10 judgmental STPs, 4 units [2 1.5x1.5-meter (5x5-foot) and 2 1.5x0.75-meter (5x2.5-foot) units], 5 features, plowzone stripping/hand shovel scraping of 100 m², mapping, backfill;
- Site 4 (36LU281)—plow/disc 0.3 acres, surface collection, 20 judgmental STPs, 8 units [4 1.5x1.5-meter (5x5-foot) and 4 1.5x0.75-meter (5x2.5-foot) units], 5 features, plowzone stripping/hand shovel scraping of 150 m², mapping, backfill;
- Site 5 (36LU288)—plow/disc 9.4 acres, surface collection, 50 judgmental STPs, 20 1x1-meter (3x3-foot) units, 5 features, plowzone stripping/hand shovel scraping of 3,800 m², mapping, backfill;
- Site 7 (36LU283)—brush hog/hand clearing, metal detector survey, 300 5-meter (15-foot) interval STPs, 12 units [6 1.5x1.5-meter (5x5-foot) and 6 1.5x0.75-meter (5x2.5-foot) units], 10 features, mapping, backfill;
- Site 9 (36LU285)—brush hog/hand clearing, metal detector survey, 65 5-meter (15-foot) interval STPs, 8 units [4 1.5x1.5-meter (5x5-foot) and 4 1.5x0.75-meter (5x2.5-foot) units], 5 features, mapping, backfill;
- Site 10 (36LU286)—brush hog/hand clearing, mechanical removal of gravel, 500 5-meter (15-foot) interval STPs, 16 units [8 1.5x1.5-meter (5x5-foot) and 8 1.5x0.75-meter (5x2.5-foot) units], 10 features, mapping, backfill.

Task 4: Laboratory Analysis

Subsequent to Phase II fieldwork, GAI will conduct laboratory analysis of recovered artifacts to characterize age, type, and function of recovered archaeological remains. Artifacts recovered during Phase II testing will be transported to GAI's archaeological laboratory in Homestead, Pennsylvania, and will be processed according to the *Revised Curation Guidelines* (PHMC/BHP 2006). These materials will be washed, sorted, and labeled with the site number, if appropriate. Historic artifacts will be separated into various material groups, including ceramics, glass, metal, faunal, etc. These artifacts will be cataloged according to established typologies using the class-type-variety method. If possible, historic proveniences will be assigned date ranges, based on the presence of diagnostic artifacts (e.g., bottle technological attributes, ceramic types). Soil flotation samples collected from feature fill will be processed to recover small specimens such as seeds, nuts or small bones. Select samples will be analyzed to identify archaeobotanical materials. The final artifact repository for these materials will be determined in consultation with AREVA, UniStar and the PHMC/BHP.

For the purpose of this proposal, GAI assumes the recovery of a total of up to 9,000 artifacts and the processing of up to 45 flotation samples. These totals are based on the following assumptions for each site:

- Site 2 (36LU279)—1,000 artifacts, 5 flotation samples
- Site 3 (36LU280)—800 artifacts, 5 flotation samples
- Site 4 (36LU281)—2,000 artifacts, 5 flotation samples
- Site 5 (36LU288)—500 artifacts, 5 flotation samples
- Site 7 (36LU283)—2,200 artifacts, 10 flotation samples
- Site 9 (36LU285)—500 artifacts, 5 flotation samples
- Site 10 (36LU286)—2,000 artifacts, 10 flotation samples

Task 5: Combined Phase I/II Technical Report Preparation

GAI will prepare a combined Phase I/II Technical Report on the previous Phase Ib survey of the project area and the Phase II National Register Evaluations of Sites 2, 3, 4, 5, 7, 9, and 10 (36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286). The report will include methods and results of background research, historic context, archaeological fieldwork, and laboratory analysis. It will present recommendations regarding the NRHP eligibility of these archaeological sites and, if necessary, the need for additional work (i.e. Phase III Data Recovery Investigations). The report will also contain a summary of architectural and historical investigations, including the results of supplemental work to provide additional context for resource evaluation. Final recommendations of NRHP eligibility for the identified architectural and historical resources will be presented, as will recommendations for the need to conduct additional work to evaluate project effects on NRHP-listed and/or -eligible resources. Report appendices will include updated Pennsylvania Archaeological Site Forms and catalogs of recovered artifacts, as well as revised Pennsylvania Historic Resource Survey (PHRS) forms.

The Phase II field investigation, artifact analysis, and Phase I/II report preparation will be conducted in accordance with National Register Criteria and guidelines contained in *National Register Bulletin 15—How to Apply the National Register Criteria for Evaluation* (National Park Service 1998) and *National Register Bulletin 21—Defining Boundaries for National Register Properties* (National Park Service 1997).

GAI assumes the completion of the following project deliverables:

- Five (5) hardcopies and electronic copy of Draft Report for client review;
- Five (5) hardcopies of Final Report, as well as disc with PDF and MS Word files, within two (2) weeks of receipt of comments on Draft Report;
- Project records (photographic negatives, maps, notes, etc.) submitted to the Client or PHMC/BHP as requested by Client upon submittal of Final Report.

Task 6: Assessment of Effects—Historic Resources

Based on the results of GAI's Phase Ia and Ib surveys and recommendations outlined in the Phase Ib Management Summary (Munford et al. 2008), GAI assumes that ten historic resources within the project APE will be considered eligible for NRHP listing: Union Reformed and Lutheran Church (Old River Church) and Cemetery (GAI-03, 086572), Woodcrest (GAI-04), Stone Arch Bridge (GAI-06), North Market Street Bridge (GAI-09), North Branch Pennsylvania Canal (GAI-10, 141673), Canadian Pacific/Bloomsburg Division of the Delaware, Lackawanna & Western Railway (GAI-11), Susquehanna and Tioga Turnpike (GAI-12), House (Red Brick Studios) (GAI-26), Pennsylvania Railroad-Sunbury Line/Delaware & Hudson Railroad (GAI-27), and the Wapwallopen Historic District (GAI-36 through

GAI-45). GAI will conduct a formal assessment of the project's effects to these historic resources under 36CFR800.5.

The assessment of effects study will include archival research, fieldwork, and report preparation. Archival research will include detailed site-specific historical research to firmly establish the historic context for assessing project effects to each specific historic resource, according to methods outlined in *National Register Criteria and guidelines contained in National Register Bulletin 15—How to Apply the National Register Criteria for Evaluation (National Park Service 1998)*, *National Register Bulletin 21—Defining Boundaries for National Register Properties (National Park Service 1997)*, and any other applicable state guidelines.

Fieldwork will involve visits to each of the ten NRHP-eligible historic resources to assess the project's effects, based on the contextual and site-specific background information. GAI will consider proposed construction activities in relation to each historic resource. GAI will conduct a visual impact assessment by photographing the location of proposed nuclear power plant buildings and transmission lines from each of the ten aforementioned historic resources. Computer modeling and rendering techniques will be employed to produce visual simulation images illustrating "before" and "after" visual conditions in the project area. The nature and extent of possible adverse effects to each resource will be carefully considered by applying the Criteria of Adverse Effect (36 CFR 800.5(a)(1)) to determine if any direct or indirect effects to the historic resource will result from the proposed project (National Park Service 1992a and 1992b).

GAI will prepare a Criteria of Effects report to be submitted under separate cover following submittal of and comments on the Combined Phase I/II Technical Report. The report will include results of archival research, fieldwork, and the application of the Criteria of Adverse Effect, as well as recommendations for avoidance, mitigation, or further consultation.

Cost Proposal and Schedule

GAI can conduct Phase II National Register Evaluations of Sites 2, 3, 4, 5, 7, 9, and 10 (36LU279, 36LU280, 36LU281, 36LU288, 36LU283, 36LU285, and 36LU286) and an assessment of effects for historic resources, as delineated above, for a cost of \$XXXXXXXXXX. This cost includes the preparation of a combined Phase I/II Technical Report and a separate Criteria of Effects report. Based on the assumptions stated in the workplan, it is anticipated that fieldwork will extend for a period of approximately twelve (12) calendar weeks. Laboratory work and report preparation will take approximately twenty-five (25) calendar weeks and will, in part, run concurrently with fieldwork. GAI will submit a Preliminary Draft Phase I/II Technical Report within twenty-two (22) calendar weeks following the end of fieldwork. The Criteria of Effects report will be submitted under separate cover following receipt of comments from the PHMC/BHP.

Costs are based on the workplan described above as well as the following assumptions:

- One mobilization/demobilization for all fieldwork;
- Field crew consisting of Senior Archaeologist (field director), 2 Senior Technicians (crew chiefs), and 12 technicians;
- 8-hour work day;
- 10-day work sessions with lodging provided for crew over 4-day break, when necessary;
- Fieldwork includes clearing, mapping, metal detector survey, surface collection, plowzone stripping/hand shovel scraping, excavation (STPs, test units and features) and travel;
- Excavation of up to 965 STPs and up to 76 test units (approximately 63 m³);
- STP and test unit excavations will extend to a maximum depth of 50 cm (1.6 feet) in uplands and to a maximum depth of 80 cm (2.6 feet) in low terrace/floodplain settings (Site 5/36LU288);
- Identification of up to 45 features; features are assumed to have maximum dimensions of 60 cm (2 feet) and a maximum depth of 50 cm (1.6 feet); if deep features (e.g. wells, privies) are encountered, GAI will sample only the upper few feet of feature fill;

Scope of Work: BBNPP Phase II National Register Evaluations and Assessment of Effects
Mr. Peter E. Gluckler, Jr.
March 12, 2009

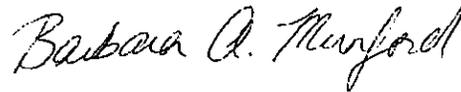
- Sites in cultivated fields (Sites 2, 3, 4, and 5/36LU279, 26LU280, 36LU281 and 36LU288) will be plowed and disked prior to start of Phase II fieldwork;
- Cost assumes no crop damages will be incurred and no crop removal will be required;
- Mechanical removal of surface gravel deposit in portions of one site (Site 10/36LU286);
- Costs for writing and implementation of Erosion and Sedimentation (E&S) Control plan (stabilization, reseeding, inspection, etc.) associated with mechanical soil removal are not included in this cost;
- Curation rates of \$350 per box (as per PHMC/BHP requirements);
- No extreme weather conditions or winter fieldwork (e.g., frozen ground or flooding);
- No more than two (2) days of down time due to inclement weather;
- Submittal of a Combined Phase I/II Technical Report (no management summary or interim report) including one round of report revisions;
- Submittal of a separate Assessment of Effects report.

If you have any questions, please do not hesitate to contact me at (412) 476-2000 x1200 (b.resnick@gaiconsultants.com) or Barbara Munford at (412) 476-2000 x1203 (b.munford@gaiconsultants.com). We look forward to working with you and continuing to provide AREVA and UniStar with cultural resources services for the Bell Bend project.

Sincerely,
GAI Consultants, Inc.



Ben Resnick, M.A., RPA
Group Manager
Cultural Resources Group
/bam



Barbara A. Munford, M.A.
Lead Archaeologist
Cultural Resources Group

References

Munford, Barbara

2008 *Management Summary, Supplemental Phase Ib Cultural Resources Investigation, Bell Bend Nuclear Power Plant, Luzerne County, Pennsylvania*. Prepared by GAI Consultants, Inc. for AREVA NP Inc. and UniStar Nuclear Development, LLC.

Munford, Barbara A., Lori A. Frye, M.A., Jared N. Tuk, and Matthew G. Hyland, Ph.D

2008 *Management Summary, Phase Ib Cultural Resources Investigation, Bell Bend Nuclear Power Plant, Luzerne County, Pennsylvania*. Prepared by GAI Consultants, Inc. for AREVA NP Inc. and UniStar Nuclear Development, LLC.

National Park Service

1992a *National Register Bulletin 15 – How to Apply the National Register Criteria for Evaluation*. Department of the Interior, National Park Service, Washington, D.C.

1992b *National Register Bulletin 21 – Defining Boundaries for National Register Properties*. Department of the Interior, National Park Service, Washington, D.C.

Pennsylvania Historical and Museum Commission/Bureau for Historic Preservation

2006 *Revised Curation Guidelines*. Harrisburg, Pennsylvania.

Pennsylvania Historical and Museum Commission/Bureau for Historic Preservation

2008 *Guidelines for Archaeological Investigations in Pennsylvania*. Harrisburg, Pennsylvania.