

# **Addendum Report Second Supplemental Phase Ib Cultural Resources Investigation Power Block Relocation**

Bell Bend Nuclear Power Plant  
Luzerne County, Pennsylvania  
ER 81-0658-079

Prepared for:  
AREVA NP Inc.  
and  
UniStar Nuclear Energy, LLC

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GAI Project No. C100549.00

October 8, 2010

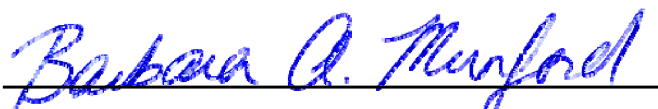


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## Abstract

Between April and May 2010, GAI Consultants, Inc. (GAI) conducted Second Supplemental Phase Ib archaeological investigations of the Power Block Relocation area within the proposed Bell Bend Nuclear Power Plant (BBNPP), Luzerne County, Pennsylvania. This study was performed for AREVA NP Inc. (AREVA) on behalf of UniStar Nuclear Energy (UniStar). The project area represents the Upland Section of the Power Block Relocation area, totaling approximately 215 acres (87 hectares). The Upland Section encompasses the approximately 39-acre (15.8-hectare) previously-surveyed Switchyard 2 Parcel, which was excluded from investigations. The Phase Ib Area of Potential Effect (APE) consists of approximately 176 acres (71 acres) of uplands (excluding the previously-surveyed, 39-acre/71-hectare, Switchyard 2 parcel) adjacent to previously-surveyed portions of the BBNPP project area. Proposed construction activities are anticipated to include both temporary and permanent impacts (e.g., grading, fill, construction lay down, parking, buildings, and roadway construction) within portions of the supplemental project area.

GAI's Second Supplemental Phase Ib study included a background research review, Phase Ib field investigations, and laboratory analysis. Fieldwork consisted of the excavation of 1,358 shovel test pits and pedestrian ground survey of 14.95 acres (6.05 acres) of cultivated fields.

Phase Ib investigations produced 261 artifacts (246 historic artifacts and 15 prehistoric lithic artifacts) and resulted in the identification of two archaeological sites (Sites 36LU301 and 36LU302) and one prehistoric isolated find (IF 28) within the project area. Non-site historic artifact field scatters were also identified.

Based on Phase Ib results, GAI recommends that Site 36LU301, a possible Early Archaic prehistoric occupation, is potentially eligible for listing in the NRHP under Criterion D. GAI recommends site avoidance or Phase II investigations of this locality.

Site 36LU302, a mid-nineteenth through late twentieth century, heavily disturbed domestic site, is recommended as Not Eligible to the NRHP and no further work is recommended at this site. Prehistoric IF 28 (Lot 3) does not meet the minimum requirements to be considered a significant archaeological resource. Accordingly, no further archaeological investigations of this resource are recommended.

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## I. Introduction and Project Overview

### Project Summary

Between April and May 2010, GAI Consultants, Inc. (GAI) conducted Second Supplemental Phase Ib Cultural Resources Investigations of the Power Block Relocation area within the proposed Bell Bend Nuclear Power Plant (BBNPP), in Luzerne County, Pennsylvania, for AREVA NP Inc. (AREVA) on behalf of UniStar Nuclear Energy, LLC (UniStar). The overall BBNPP project area is 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, Pennsylvania (Figure 1). UniStar proposes the potential development of a nuclear power generation unit in this locality. As defined by AREVA, the Second Supplemental Phase Ib study area includes approximately 215 acres (87 hectares) of uplands bordering previously-surveyed portions of the BBNPP project area (Upland Section). UniStar and AREVA requested survey of this area due to a relocation of the proposed BBNPP power block. [An additional 9.8 acres (4.0 hectares) of new project areas in low terrace/floodplain settings (Floodplain Section) were identified by AREVA but were not included in the current study; survey of the Floodplain Section may be conducted, as necessary, once project impacts in this locality are finalized.] The purpose of this study was to determine the presence of unrecorded archaeological sites within new upland portions of the project area and to assess the potential eligibility of identified sites for listing in the National Register of Historic Places (NRHP).

The Second Supplemental project area consists of 13 lots, predominantly representing new project localities. It includes a series of nine lots north of the initial BBNPP project area (the Northern Section—Lots 54, 6, 6A, 6B, 7, 8, 31, 23, and 0), two lots to the west (the Western Section—Lots 3 and 41), and one lot to the south (Lot 93D), as well as the previously-surveyed Rail Spur Corridor, which was reevaluated due to a redefinition of proposed project impacts (Photographs 1 and 2). The project area identified by AREVA also encompasses the 39-acre (15.7 hectare) previously-surveyed Switchyard 2 parcel (located within portions of Lots 7, 8, 31, 23 and 0 in the Northern Section) which was excluded from further investigation. Accordingly, GAI conducted Second Supplemental Phase Ib investigations of an approximately 176-acre (71-hectares) area for the proposed BBNPP Power Block Relocation. Proposed construction activities will result in both temporary and permanent impacts (e.g., grading, fill, construction lay down, parking, buildings, and roadway construction) within portions of the supplemental project area.



**Photograph 1. Western Section:  
Overview of Cultivated Field (Lot 41)  
West of North Market Street, Facing  
North**

***Photograph 2. Northern Section: Shovel  
Testing in Woodlands (Lot 6A), Facing  
East***

This Second Supplemental Phase Ib survey represents the sixth cultural resources study of the proposed BBNPP project. GAI conducted Phase Ia cultural resources investigations (archaeological/geomorphological reconnaissance and architectural survey) of 1,271 acres (514 hectares) of potential project alternatives in two episodes—June 2007 and January 2008 (GAI 2007, Munford and Tuk 2008). A Phase Ib survey of the initial 639-acre (259-hectare) project area



(West Alternative, Areas 6, 7, and 8, and Confers Lane Parcel) was performed between May and August 2008 (Munford et al. 2008). Supplemental Phase Ib survey of approximately 263 acres (106 hectares) of new project localities (Lots 4, 64, 93F, 95, 96, 97/97C, and 100) bordering the initial project area was conducted between August and November 2008 (Munford 2008). Phase Ib studies identified eleven archaeological sites, seven of which were determined to be potentially eligible for listing in the NRHP. GAI conducted Phase II National Register Evaluations of these seven sites between July and November 2009. Based on the results of this study, all seven sites are recommended as Not Eligible to the NRHP, under Criterion D. Architectural survey of the project area documented 52 architectural and historical resources within the project viewshed and recommended that seven resources are eligible or potentially-eligible for listing on the NRHP. The results of Phase I and II investigations have been presented in individual documents noted above and in a combined Draft Phase I/Phase II Technical Report (Munford et al. 2010), submitted to UniStar in June 2010.

Second Supplemental Phase Ib investigations (Power Block Relocation) were conducted in accordance with GAI's Scope of Work dated March 30, 2010. The scope of work was based on project mapping (Overall Re-Zoning Plan A-1, PPL, Salem Township, Luzerne County, Pennoni Associates, Inc., 6/2/09; and Conceptual Grading & Drainage Plan, Sheet 12, Bell Bend Nuclear Power Plant, UniStar Nuclear, Pennsylvania, Sargent & Lundy, 2/26/10) provided by Peter Gluckler (AREVA) on March 23 and 26, 2010. This addendum report presents the methods and results of Supplemental Phase Ib survey, provides recommendations on the potential National Register eligibility of identified sites, and recommendations on the need for further work. A BHP Report Summary Form for the project is presented in Appendix A.

**Area of Potential Effect**

The Area of Potential Effect (APE) for the current Phase Ib study consists of approximately 176-acres (71-hectares) of new or reevaluated project localities within the approximately 215-acre (87-hectare) Upland Section of the Second Supplemental Project Area. The project APE is defined as the footprints of Lots 54, 6, 6A, 6B, 7, 8, 31, 23, 0, 4, 31, 93D, and the Rail Spur Corridor, excluding the previously surveyed 39-acre (15.8-hectare) Switchyard 2 parcel.



## Summary of Results

Supplemental Phase Ib fieldwork, conducted between April 27 and May 23, 2010, included pedestrian ground survey and the excavation of 1,358 shovel test pits (STPs) in portions of the project area considered to have a moderate to high archaeological potential to contain archaeological resources (Figure 2). Table 1 presents a summary of Second Supplemental Phase Ib survey results by testing area.

The Second Supplemental Phase Ib survey identified two archaeological sites (36LU301 and 36LU302) and one prehistoric Isolated Find (IF 28). No NRHP-eligible architectural resources are located within the study area. GAI's previous architectural survey documented one architectural resource (the Michaels Farm—155063/GAI-25) with the project footprint (Lot 41); this resource has been determined Not Eligible for listing in the NRHP (PHMC/BHP review letter dated March 17, 2010) (Appendix B) and requires no further work.

Based on the results of Phase Ib survey prehistoric Site 36LU301 (Lot 41) is recommended as potentially eligible for listing in the NRHP. Site avoidance or Phase II testing is recommended for this site. Historic-period Site 36LU302 (Lot 6B) is recommended as Not Eligible to the NRHP and no further work is recommended for this site. IF 28 (Lot 3) does not represent a significant archaeological resource and no further work was recommended at this locality. Pennsylvania Site Survey Forms for Sites 36LU301 and 36LU302 are provided in Appendix C. Artifact catalogs are presented in Appendix D.

Table 1. Summary of Second Supplemental Phase Ib Archaeological Survey Results

Lot	Acres	# STPs	Sites	Isolated Finds	Previously-Surveyed Architectural Resources in Project Footprint
<b>WESTERN SECTION</b>					
Lot 3	9.05	109	--	IF 28	--
Lot 41	18.99	33	36LU301	0	1**
<b>Subtotal</b>	<b>27.24</b>	<b>142</b>	<b>1</b>		
<b>NORTHERN SECTION</b>					
Lot 54	20.76	80	--	0	--
Lot 6	15.01	110	36LU302	0	--
Lot 6A	5.91	23	--		--
Lot 6B	0.45	29	36LU302		--
Lot 7	6.24*	4	--		--
Lot 8	6.99*	0	--	0	--
Lot 31	40.69*	274	--	0	--
Lot 23	20.75*	0	--	0	--
Lot 0	15.98*	0	--	0	--
<b>Subtotal</b>	<b>133.12*</b>	<b>520</b>	<b>1</b>		--
<b>Lot 93D</b>	47.31	696	--	0	--
<b>Rail Spur Corridor</b>	6.98	0	--		--
<b>TOTAL</b>	<b>214.65*</b>	<b>1,358</b>	<b>2</b>	<b>1</b>	<b>1**</b>

\* Encompasses portion of 39-acre Switchyard #2 (previously surveyed) which was excluded from further investigation;

\*\*determined Not NRHP-eligible

## Regulatory Guidelines

GAI's Cultural Resources Survey was 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 *Cultural Resource Management in Pennsylvania: Guidelines for Archaeological Investigations* (PHMC-BHP 1991).

## Project Staff and Acknowledgements

Benjamin Resnick, M.A., RPA (Group Manager, Cultural Resources) was project manager for GAI's study. Barbara A. Munford, M.A. (Lead Archaeologist) served as project Principal Investigator and author of this management summary. Terry J. Newell (Archaeologist) supervised the archaeological fieldwork. Colleen Dugan (Archaeologist) performed historic artifact analysis and Doug Jeffries conducted analysis of prehistoric artifacts. Amanda Wasielewski prepared figures for this document.

Peter Gluckler was AREVA's technical manager for the project.

Larry Peterson (AREVA) and Terry Solazzo (Constellation) served as on-site field coordinators for supplemental Phase Ib fieldwork and facilitated the field crew's daily access within the project area.



