

Final Study Plan for the Yadkin Hydroelectric Project – FERC No. 2197
Archaeological Surveys of Four Areas along the Uwharrie National Forest on Narrows Reservoir

Prepared for
Alcoa Power Generating Inc.
Yadkin Division
PO Box 576
Badin, NC 28009-0576

Submitted by
Legacy Research Associates, Inc.
600 Foster Street
Durham, NC 27701



January 2005

I. Introduction

Alcoa Power Generating Inc. (APGI) is the licensee for the Yadkin Hydroelectric Project. The Yadkin Project is currently licensed by the Federal Energy Regulatory Commission (FERC) as Project No. 2197. This license expires in 2008 and APGI must file a new license application with FERC on or before April 30, 2006.

The Yadkin Project consists of four reservoirs, dams, and powerhouses (High Rock, Tuckertown, Narrows, and Falls) located on a 38-mile stretch of the Yadkin River in central North Carolina. The Project generates electricity to support the power needs of Alcoa's Badin Works, to support its other aluminum operations, or is sold on the open market.

As part of the relicensing process, APGI prepared and distributed, in September 2002, an Initial Consultation Document (ICD), which provides a general overview of the Project. Agencies, municipalities, non-governmental organizations and members of the public were given an opportunity to review the ICD and identify information and studies that are needed to address relicensing issues. To further assist in the identification of issues and data/study needs, APGI has formed several Issue Advisory Groups (IAGs) to advise APGI on resource issues throughout the relicensing process. This Final Study Plan has been developed in response to comments on the ICD and through discussions with members of the Cultural Resources IAG, to provide additional necessary information for consideration in the relicensing process.

II. Section 106 Consultation Background

The review letter from the North Carolina State Historic Preservation Office (NC SHPO) dated December 17, 2002, regarding the Yadkin Initial Consultation Document (ICD), recommended no additional archaeological work at the Yadkin Project. However, the US Forest Service (USFS) asked Yadkin to "complete heritage resource surveys and determinations of NRHP eligibility of sites along the shorelines and adjacent areas being used/impacted by recreationists/fishers. Complete surveys and Determination of Eligibility (DOE) for areas that become exposed during times of lower water levels."

Yadkin responded to the USFS study requests in a letter dated July 8, 2003. In this letter, Yadkin described the predictive model that was developed in consultation with North Carolina Department of Cultural Resources (NCDRC), discussed the protection offered by the Yadkin Shoreline Management Plan (SMP), outlined other archaeological work at the Project, and concurred with the NC SHPO recommendation that additional surveys along the Project shorelines and lands are not necessary. Additionally, this letter explained that APGI owns a buffer (non-Project land) between the FERC Project boundary and the Uwharrie National Forest (UNF) and therefore the likelihood that Project operations have any impact on historic properties on UNF lands is not significant.

In response, the USFS continued to express concerns about recreational impacts to cultural resources along the shorelines. APGI met with the USFS at the Project in November 2003 to visit specific areas of concern along the Narrows Reservoir shoreline. The areas of concern identified by the USFS are areas where there is evidence of recreational use on the Yadkin-owned buffer that may extend onto UNF lands. Some of these areas are associated with established public access recreation areas while others are "dispersed" recreation areas, which are not within the boundaries of an established recreation area and are accessible primarily by boat. While specific dispersed areas where recreation is known to occur were inventoried, it should be noted that dispersed recreation generally occurs along the entire shoreline. The sites documented during the November 2003 field investigation are considered to be sites with the heaviest use.

Areas of concern were selected based on the following criteria: 1) whether recreational access extends beyond the Yadkin buffer and onto USFS lands, 2) the degree to which recreational access occurs via the reservoir and/or USFS roads or trails, 3) evidence of recent and high level recreational activity, and 4) the probability for cultural resources.

Based on the results of the field visit, on December 16, 2003, Yadkin agreed to develop a study plan in consultation with the USFS and the Cultural Resources Issue Advisory Group that would propose archaeological surveys at selected areas along the Narrows Reservoir shoreline where the UNF abuts the Yadkin-owned buffer and where the potential for impacts to cultural resources from heavy recreation use appears greatest.

APGI revisited these dispersed recreation areas on Narrows Reservoir (Badin Lake) in March 2004 to collect location data (using GPS), types of activities (predominantly bank fishing and camping) and method of access (either from land or boat). The four dispersed recreation areas that are of particular interest to the USFS are:

- Site A (onshore and adjacent to Turkey Island in the UNF). This site is primarily used for bank fishing and camping and can be accessed by boat and by foot from the Holt's Cabin Picnic Area.
- Site B (directly south of Site A, across Buffalo Creek or Skiers Cove and along the Badin Lake Hiking Trail). This dispersed site is used for both camping and bank fishing. It is accessible via boat but is primarily accessed by foot on the hiking trail.
- Site C (inlet adjacent to Pear Tree Island). This site is used for dispersed camping and bank fishing and is predominantly accessed by boat.
- Site D (adjacent to the Badin Lake Campground). This site is used for both camping and bank fishing. It should be noted that the Badin Lake Hiking Trail follows the shoreline on the eastern shore of Narrows Reservoir. From Cove Boat Landing the trail follows the shoreline north around the point and then moves inland at the Skiers Cove inlet after 3.5 miles. The trail is heavily used with hiking, bank fishing, and dispersed camping being the predominant activities.

These four sites are depicted on Figure 1.

In addition to these four sites, a developed recreation area known as the Cove Boat Access Area (identified in a previous field visit with the USFS) was considered for its potential to contain historic properties. Because this is an established public access recreation area, it was not included in the inventory of dispersed recreation areas. Recent improvements by the USFS to this developed recreational area would have been addressed under Section 110 of the National Historic Preservation Act.

III. Study Objectives

Legacy will conduct an archaeological survey of selected areas (described above) along the Narrows Reservoir shoreline where the UNF abuts the Yadkin-owned buffer. Within these areas, Legacy will identify sites that are eligible for the National Register of Historic Places (NRHP) as defined in 36 CFR 60.3.1 and evaluate potential impacts to these cultural resources resulting from recreational use or its indirect effects. Legacy will determine if cultural resources will be impacted by the direct or indirect effects of the operation of the Project (including recreational use), and evaluate possible alternative resource protection and management measures to avoid, minimize, or mitigate any adverse effects.

IV. Basis

FERC requires applicants to address cultural resources as part of the Project relicensing process and requires the Applicant to report on these resources in Exhibit E of the Application for New License (18 CFR 4.51.f.4). FERC must take into account the effects of its relicensing decision on historic properties and provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the relicensing decision. Requirements for

consideration of cultural resources are further outlined in the implementing regulations of Section 106 of the National Historic Preservation Act (36 CFR Part 800).

As part of the Section 106 consultation process, Yadkin has agreed to identify archaeological sites located within selected areas along Narrows Reservoir (Badin Lake) where heavy recreational use of the adjoining Yadkin-owned buffer and UNF could potentially impact those sites and where there is a probability for cultural resources, and to evaluate what, if any, effects (direct and indirect) continued recreational use of those areas (as well as other effects of Project operations) would have on those historic properties.

V. Archaeological Background

Three of the four selected survey areas have previously recorded archaeological sites.

Dispersed Recreation Site A is located in the vicinity of archaeological site 31Mg501. This site was recorded by Catawba College (Salisbury, NC) in 1979. It is described as a Late Archaic (Savannah River) archaeological site of undetermined size. There was no determination of eligibility for the NRHP made at that time.

Dispersed Recreation Site B is located in the vicinity of archaeological site 31Mg106. H.M. Doerschuk (n.d.) recorded this site. It is also referred to as Doerschuk's Mg-1. It is described on the archaeological site form as an "extensive factory and village site ... with quite a few artifacts ... on a hill near Machine Branch." Artifacts recovered from the site by Doerschuk include five atlatl fragments, four drilled pebbles, three gorget fragments, one hammerstone, one worked stone, 15 flakes, one drill, one sherd, and one thumbnail scraper (University of North Carolina Research Laboratories in Archaeology accession numbers 2101a73-a81). Part of the site was noted as being "underwater." There was no determination of eligibility for the NRHP made at that time.

Dispersed Recreation Site C is located in the vicinity of archaeological site 31Mg521. Like 31Mg501, this site was recorded by Catawba College (Salisbury, NC) in 1979. It is described as an unknown Middle Archaic archaeological site. There was no determination of eligibility for the NRHP made at that time.

Site 31Mg521 has been revisited twice by amateur archaeologists. The archaeological site form notes that the site was revisited by Arthur B. Caveness of Pleasant Garden, NC, on July 15, 1989. Mr. Caveness reported large amounts of local flint suggesting a possible quarry site. Noted artifact types include preliminary and reject forms, broken points, some water-worn quartz, other water-worn material, and a large amount of quarried mass (rhyolite). Most of all surface material was noted as being very degraded. The smaller pieces of flint (probably rhyolite) are degraded to the point that visible edge flaking is very hard to see. The site form also reports that the site was revisited by Susan Rodgers of Greensboro, NC, in 1990. She collected flint fragments, scraper pieces, points, and ceramics. All were found at the water's edge.

VI. Technical Approach and Methodology

The field investigations and technical reports for this study will meet the qualifications specified in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716). All cultural materials collected and curated, along with all records of this project, shall be cared for in accordance with the requirements set forth in 36 CFR Part 79. The Project Director performing the investigations will meet or exceed the qualifications described in the Secretary of the Interior's Professional Qualifications Standards (48 FR 22716).

The tasks described below address the cultural resource issues for the Yadkin Project:

Task 1 Conduct background research for the Project study area.

Task 2 Conduct field surveys at selected areas on the Narrows Reservoir (Badin Lake) in order to locate (or relocate) and evaluate previously recorded and unrecorded archaeological sites within the study area that may be subject to direct and indirect effects from Project operations. Prepare an interim report on the study results, incorporating the results of Tasks 1 and 2, to be reviewed by Yadkin, the Cultural Resources IAG, the North Carolina SHPO, and FERC.

A description of each cultural resource task for each phase of the project follows.

Task 1 Conduct background research studies for the Project study area.

Objective: The purpose is twofold: the first is to compile sufficient and appropriate information to understand the historic context of any properties identified during the survey, and the second is to compile and assess existing cultural resource data pertinent to the survey area.

Study Area: For purposes of this study, the study area includes areas of dispersed recreational use where access extends beyond the Yadkin-owned buffer and onto USFS land, where there is evidence of recent and high-level recreational activity, and where there is a probability for cultural resources. The USFS and APGI have jointly identified four dispersed recreation areas that meet these criteria and are the focus of this study.

Approach: Data sources for developing the known site inventory include the files maintained for the North Carolina SHPO, the USFS, and local universities that maintain collections and files from the Project area.

Analysis: The study will result in an historic and prehistoric overview of the Project study area.

Task 2 Conduct field surveys to locate and evaluate previously recorded and unrecorded archaeological sites within the study area. The work associated with this task will be conducted as follows.

Conduct an archaeological survey of selected areas at the Narrows Development in order to locate and evaluate previously recorded and unrecorded archaeological sites within the study area. Prepare an interim report on the study results to be reviewed by Yadkin, the Cultural Resources IAG, the North Carolina SHPO, and FERC.

Objective: The purpose of this task is to examine areas within the study area to see if cultural resources are evident, and evaluate them for NRHP eligibility.

Study Area: The study area will include the four selected dispersed recreation areas jointly identified by the USFS and APGI.

Approach:

Field Survey Methods

The field investigations at the Narrows will include visual reconnaissance of exposed below full-pool surfaces (within the normal fluctuation zone of Narrows Reservoir of 1 - 3 feet) and subsurface testing of above -pool surfaces with vegetation cover during site delineation and NRHP assessment.

During the survey, exposed reservoir shoreline and other profiles will be inspected in order to document alluvial stratigraphy and buried archaeological contexts (e.g. occupational surfaces, middens, pit features) exposed by recreational use, erosion, or bank collapse. Stratigraphic profiles will be troweled, drawn to scale, and photographed in order to demonstrate the presence of buried deposits within the project area.

The field investigation will consist of an extensive systematic pedestrian survey of exposed surfaces and shovel testing in areas that lack surface visibility. Both systematic 10- to 20-meter interval and judgmentally placed shovel tests will be excavated. Previously recorded archaeological sites at these recreational sites will be relocated and evaluated for NRHP eligibility.

Site Assessment Methods

When sites are discovered, the survey interval will be reduced to establish site boundaries, to increase artifact samples and establish artifact density, and to assess the contextual integrity of discovered sites. The preliminary assessment of archaeological sites will consist of the delineation of site boundaries that will be marked with pin flags before artifacts are recovered. The maximum length and width of each site will be measured and recorded. Site dimensions and elevations will be recorded on standardized field forms along with sketch maps of site settings and notations regarding landform setting, site aspect, temporal affiliations and density of observed materials, site condition, and nature of site deposits. Representative soil profiles exposed in the shovel tests at each site will be recorded by measured field sketches with notations of soil color, texture, and content.

Site boundaries will be located on Project maps and USGS topographic maps. UTM site coordinates will be established with a *Trimble GeoExplorer* GPS CE Series with differential sub-meter accuracy. Sites larger than 30 m x 30 m (98 ft x 98 ft) will be recorded as polygons with readings taken at the site boundaries.

Subsequently, artifacts will be collected from the surface to establish site function and chronology. Surface collection strategies will be context specific and will vary between prehistoric and historic components. For prehistoric contexts, an effort will be made to recover all temporally or functionally diagnostic artifacts (e.g. projectile points and other lithic tools; ceramic sherds) visible on site surfaces, as well as a sample of lithic debitage representative of the full range of raw materials and debris types. Locations exhibiting unusually high frequencies of lithic debitage will be sampled by complete collection of two-meter square units in order to provide a measure of artifact density. Fire-cracked rock will be noted in terms of presence and relative density, but will not be recovered. For historic aboriginal contexts, all diagnostic materials (e.g. aboriginal ceramics, commercially manufactured items) will be recovered. For historic Anglo-American contexts, which may be characterized by high densities of diagnostic materials, a sample of artifacts representative of the full temporal and functional range will be collected.

Site surfaces will also be examined for evidence of exposed middens, pit features, architectural elements, and any other man-made facilities. Potential midden deposits, pit features, and post molds observed on sites in the Project area will be tested with a small (1-inch) diameter soil tube sampler in order to confirm the identification of the contexts and to determine the depth and stratigraphic profiles of such deposits. These discrete contexts will be measured and their positions recorded on the site sketch maps. In most instances, a photographic record will also be made to document discrete contexts.

Historic Anglo-American sites (mines, caves, cemeteries, historic structures, etc.) will be frequently indicated by the presence of architectural ruins or associated structural elements (chimney piles, structural foundations, bridge emplacements, roads, etc.). Photography, mapping, and measurement will document these ruins and facilities.

Petroglyphs, if found, will be documented with photography. Potential rock shelters will be inspected with subsurface testing, limited by the size of the shelter. Excavation will be conducted solely to document the presence or absence of cultural materials and then terminated.

If Native American graves and/or associated cultural items inadvertently discovered on Project lands (Yadkin-owned), Yadkin will immediately notify the North Carolina State Archaeologist. Graves found on Yadkin land during the archaeological fieldwork will be dealt with in accordance with North Carolina General Statute 70, Article 3.

If Native American graves and/or associated cultural items are inadvertently found on USFS lands, including the Yadkin-buffer, then Yadkin will immediately notify the USFS archaeologist. Graves on federal land during the archaeological fieldwork will be dealt with in accordance with the 1990 Native American Graves Protection and Repatriation Act (NAGPRA - Public Law 101-601) guidelines.

All site information, other than the trinomial site number and NRHP eligibility, will be confidential as stipulated in Section 304 of the NHPA, as amended (16 USC 470w -3).

Lab Methods

All recovered artifacts will be cleaned and conserved in a manner appropriate to assure their stability. All diagnostic artifacts will be fully provenienced and labeled. The cultural and temporal affiliation, material of manufacture, style, function, and form of recovered artifacts will be identified to the fullest extent possible. Field records and artifacts recovered during the investigations will be curated at the North Carolina Office of State Archaeology Research Center facility in Raleigh, North Carolina, subject to a formal agreement between APGI and OSA.

All field investigations and study reports will meet state and federal standards and guidelines. All archaeological sites located during the survey will be given a permanent state site number obtained from the Office of State Archaeology.

Analysis: Any new sites discovered during this task will be recorded on state site inventory forms. Recommendations will be made to the SHPO as to the NRHP eligibility of the sites as well as the types of appropriate erosion control, if any. In consultation with the SHPO, recommendations will be made, if necessary, as to the appropriate mitigation and erosion protection plan. If sites are located on National Forest land, the consultation will include the USFS.

VII. Schedules

February – March 2005

Task 1 Conduct historical and archaeological background research of the Project study area. Incorporate the study results into the interim report for Task 2 to be reviewed by Yadkin, the Cultural Resources IAG, the North Carolina SHPO, and FERC.

January - May 2005

Task 2 Locate and evaluate the NRHP eligibility of previously recorded and unrecorded sites at selected survey areas along Narrows Reservoir (Badin Lake). Incorporate the study results into the interim report to be reviewed by Yadkin, the Cultural Resources IAG, the North Carolina SHPO, and FERC.

VIII. Results

The results of the study will determine what types of additional archaeological work needs to take place, if any, and will directly affect any cultural resource management plans developed for the Project or for the UNF by USFS.

Yadkin Project - Narrows Reservoir

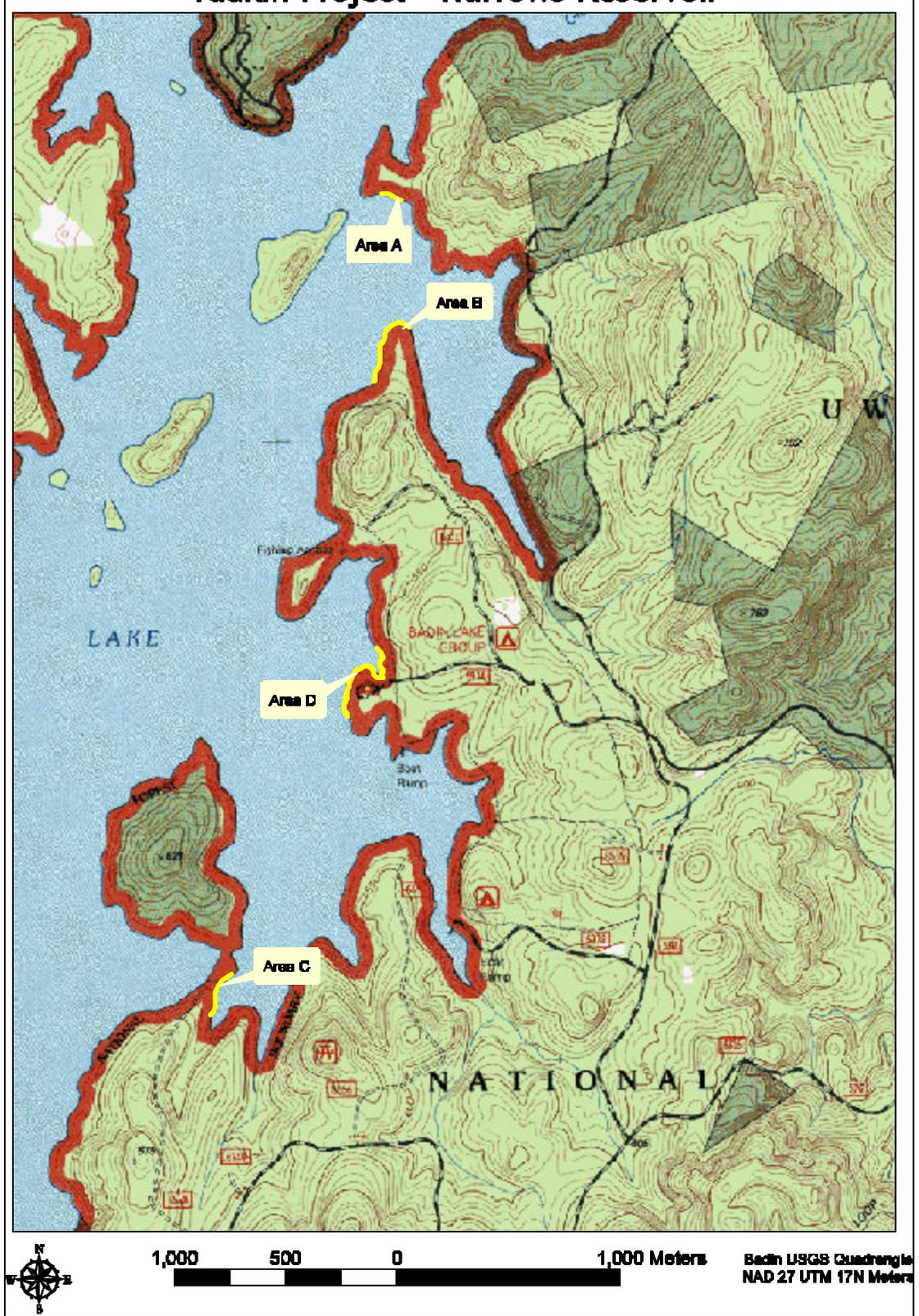


Figure 1. Four Archaeological Survey Areas on Narrows Reservoir.