

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

May 6, 2016

Clinton Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

Re: Chatuge Powerhouse Security Upgrades, Clay County, ER 16-0694

Dear Mr. Jones:

Thank you for your letter of April 13, 2016, regarding the above-referenced undertaking. We have reviewed the *Documentation for Effect under 36 CFR 600 Evaluation for the Proposed Security Project; Chatuge Powerhouse Tennessee Valley Authority, Clay County, North Carolina report* and offer the following comments.

The proposed security upgrades for the National Register-eligible Chatuge Powerhouse (CY0025) will not adversely affect the historic property, as the work appears to be appropriate and will not diminish the characteristics for which the property is considered eligible.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

A handwritten signature in blue ink that reads "Renee Gledhill-Earley".

A small handwritten mark in blue ink that looks like the word "for" written in a cursive style.
Ramona M. Bartos



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

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HISTORIC PRESERVATION OFFICE

HISTORIC PRESERVATION OFFICE

April 13, 2016

Dr. Kevin Cherry
State Historic Preservation Officer
North Carolina State Historic Preservation Office
4610 Mail Service Center
Raleigh, NC 27699-4610

ER 16 - 0694

NAC
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AOT

Dear Dr. Cherry:

TENNESSEE VALLEY AUTHORITY (TVA), CHATUGE POWERHOUSE SECURITY UPGRADES, CLAY COUNTY, NORTH CAROLINA 4/22/16

DC 5/11/16

TVA proposes to perform security upgrades to the Chatuge Powerhouse. The security upgrades include Fixed Cameras, Entry Card Readers, Alarm Contacts, Electric Strike Plates, Passive Infrared Sensors, LED Lights, and a new Security Fence and Gate.

TVA determined the area of potential effects to be Chatuge Powerhouse. TVA considers the Chatuge Hydroelectric Project to be eligible for listing in the National Register of Historic Places and a National Register nomination was prepared in 2015. The Powerhouse is considered to be a contributing resource to the Chatuge Hydroelectric Project.

The specific location and nature of each upgrade was assessed by Thomason and Associates and documented in the enclosed report, titled *Documentation for Effect under 36 CFR 800 Evaluation for the Proposed Security Project, Chatuge Powerhouse, Tennessee Valley Authority, Clay County, North Carolina*. Thomas and Associates recommends a finding of no adverse effect to historic properties.

Pursuant to 36 CFR Part 800.4(d)(1), we are seeking your concurrence with the TVA's finding of no adverse effect to historic properties.

Should you have any questions or comments, please contact Ted Wells in Knoxville at ewwells@tva.gov or (865) 632-2259.

Sincerely,

Clinton E. Jones
Manager, Biological and Cultural Compliance
Safety, River Management and Environment
WT11C-K

EWW:CSD
Enclosures



**DOCUMENTATION FOR EFFECT
UNDER 36 CFR 800 EVALUATION**

**FOR THE PROPOSED SECURITY PROJECT
CHATUGE POWERHOUSE
TENNESSEE VALLEY AUTHORITY
CLAY COUNTY, NORTH CAROLINA**

**THOMASON AND ASSOCIATES
Preservation Planners
Nashville, Tennessee**



MARCH, 2016

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APPENDIX A - RESUME OF PRINCIPAL INVESTIGATOR

I. MANAGEMENT SUMMARY

Project Name: Chatuge Powerhouse Security Project

Project Location: Chatuge Powerhouse, Old Ranger Road, Hayesville, NC 28904

Project Contact:

This report has been prepared for the Tennessee Valley Authority (TVA) for use in completion of applicable Section 106 procedures in compliance with the National Historic Preservation Act (NHPA) of 1966 and subsequent amendments. The Chatuge Hydroelectric Project was nominated to the National Register of Historic Places in 2015 and the Chatuge Powerhouse is considered a contributing building to this property. The Chatuge Hydroelectric Project was completed in 1954 as part of TVA's unified plan for electrical generation and flood control. The powerhouse contains one generator and turbine and supporting equipment for electrical generation.

The Chatuge project is located at mile 121 on the Hiwassee River, three miles southeast of Hayesville (pop. 311 in 2010), the seat of Clay County, and two miles north of the Georgia state line. The Chatuge dam impounds the Chatuge Reservoir (also called Lake Chatuge), which extends thirteen miles south along the Hiwassee River and six miles east along Shooting Creek. The Chatuge Reservoir is a 7,000 acre impoundment of the Hiwassee River with portions lying within the Nantahala National Forest in North Carolina and the Chattahoochee National Forest in Georgia.

Pursuant to 36 CFR 800.4 of the National Historic Preservation Act, the TVA is required to evaluate potential effects to National Register-listed or –eligible properties when such properties are proposed for rehabilitation, alteration, demolition, sale or lease and other actions which may have an impact to their architectural or historical character. The powerhouse was built in 1954 to house the hydroelectric project's generator and turbine. Due to increased security concerns, the TVA proposes to increase monitoring, locking, and surveillance upgrades at various entry points outside and inside the facility. These upgrades consist primarily of new security cameras, card key locks, alarm contacts and fencing. These upgrades will be installed in such a manner as to have minimal visual or physical affects to the architectural and historical character of the powerhouse. In the opinion of the Consultant, the proposed work meets the "Secretary of the Interior's Standards for Rehabilitation" and there will be **No Adverse Effect** to the Chatuge Powerhouse as a result of this project.

II. CURRENT CONDITION AND NATIONAL REGISTER EVALUATION

A. Project Description

This project is located at the Chatuge Powerhouse of the Chatuge Hydroelectric Project located in Clay County, North Carolina (Figure 1). The immediate area surrounding the Chatuge Hydroelectric Project has been associated with the Tennessee Valley Authority (TVA) since 1942. Since that time the area has become a popular tourist destination due to the recreational amenities provided by the Hiwassee River and the Nantahala and Chattahoochee National Forests.

The Chatuge Hydroelectric Project is one of twenty-five TVA hydroelectric projects eligible for listing in the National Register of Historic Places under criterion A for its historical and engineering significance. The project is included within the Multiple Property Documentation Form, "Historical Resources of the Tennessee Valley Authority Hydroelectric Project, 1933-1979," which was prepared for the TVA in 2015. The Chatuge Hydroelectric Project is significant for its overall design and in the improvement of quality of life through transmission of electricity, control of seasonal flooding, and creation of public recreational facilities. The Chatuge Hydroelectric Project was originally established strictly for water storage in support of other TVA projects. Closure of the dam and filling of the reservoir began on February 12, 1942. Construction of power generation facilities was not considered economical at that time. The TVA Board of Directors approved the addition of a single hydroelectric generating unit to the Chatuge project in 1951, and construction of a powerhouse began the following year. Power was first generated at the facility in December of 1954. Since that time, the Chatuge Hydroelectric Project has continued to be an integral part of TVA's overall hydroelectric system. A National Register nomination was prepared for the Chatuge Hydroelectric Project in 2015 and included the powerhouse as contributing to the facility.

The purpose of the current project is to provide additional security upgrades on the exterior and interior of the powerhouse. Due to an increase in threats to federal facilities since the attacks of September 11, 2001, many of TVA's hydroelectric facilities require upgrades for access into the building and within areas such as the control room and generator room. These upgrades consist primarily of the installation of new card reader keypads and alarm contacts on doors, new security cameras, and additional fencing. The installation of these new measures is designed to have minimal impact to the original doors and other features of the facility and to be as reversible as possible. It is the intent of the TVA to retain the historic and architectural character of the Chatuge Powerhouse while providing for the needed security upgrades.

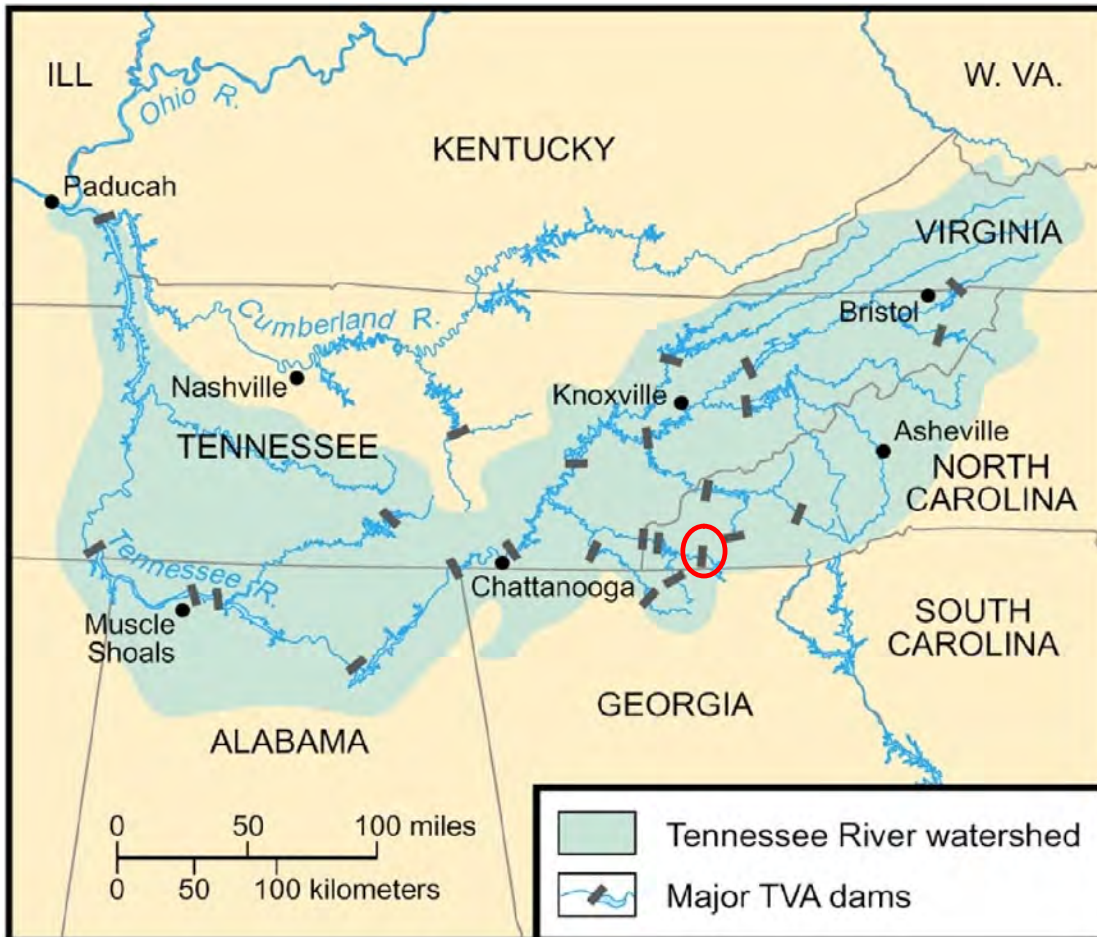


Figure 1: Location of the Chatuge Powerhouse in the TVA Hydroelectric System.

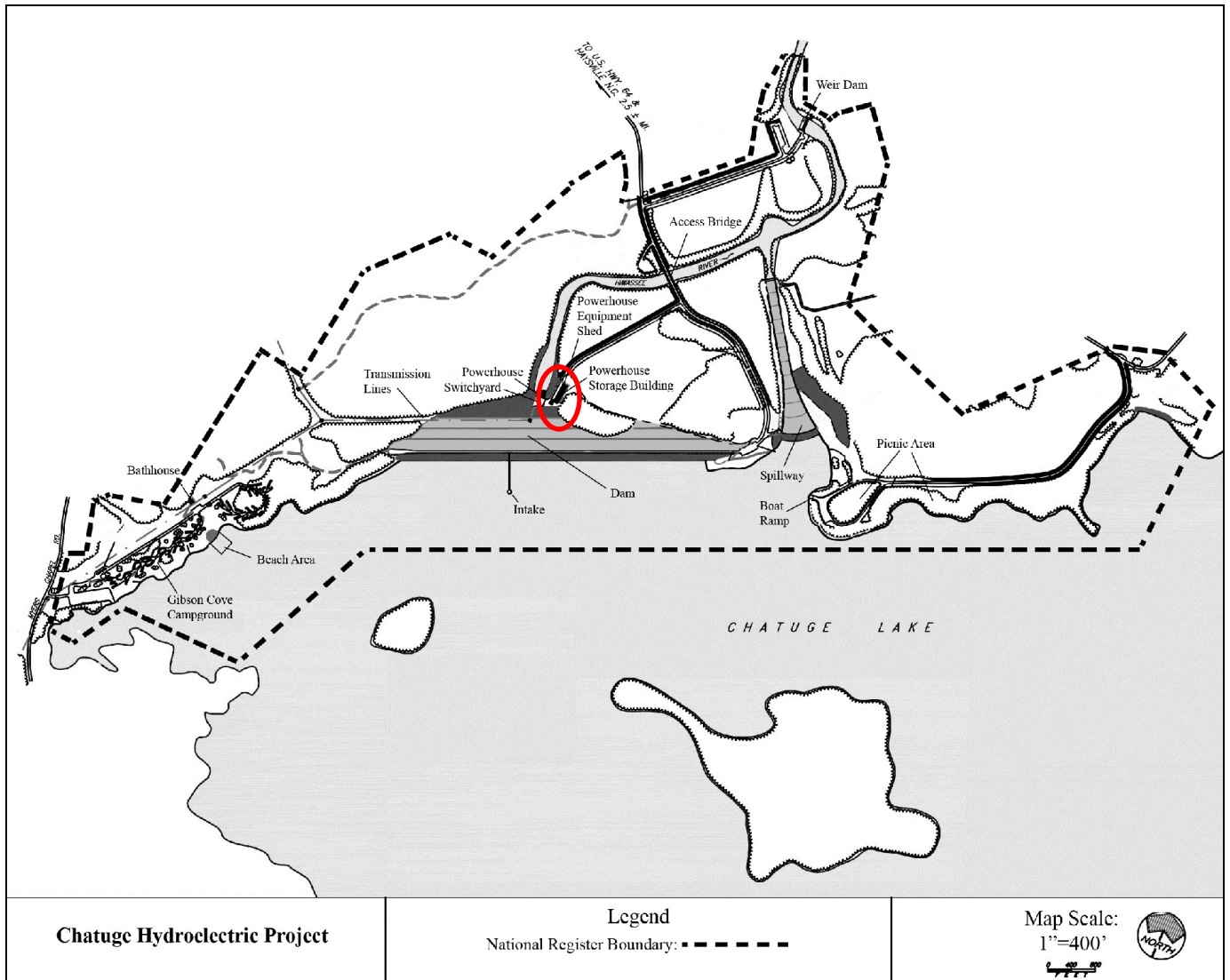


Figure 2: This map shows the boundary for the National Register-eligible Chatuge Hydroelectric Project and the location of the Chatuge Powerhouse within the facility.



Figure 3: Aerial view of the Chatuge Hydroelectric Project. The red circle shows the location of the powerhouse.



Figure 4: Chatuge Hydroelectric Project, overview, looking northeast.



Figure 5: Chatuge Powerhouse, east elevation.



Figure 6: Chatuge Powerhouse, north and west elevations and adjacent switchyard.



Figure 7: Chatuge Powerhouse, west elevation.

III. PROJECT DESCRIPTION

The purpose of this project is to provide necessary security upgrades to the Chatuge Powerhouse. The new security equipment will be added to both exterior and interior doors and a new chain link fence will replace an existing fence on the perimeter. The TVA recognizes the historic and architectural importance of the original design and features of the powerhouse and seeks to complete these improvements in a manner that retains its design and character. The building is constructed of steel and reinforced concrete. The primary entrance on the east elevation has original steel double doors. This level is the main deck that accesses the top of the generator on the north elevation and contains the control room.

The proposed project will accomplish the following;

Exterior Doors

1. The main entrance to the powerhouse is located on the east elevation and consists of original, steel doors with a curved aluminum awning. On the exterior wall adjacent to the main entrance an entry reader will be installed. On the interior of the door a passive infrared (PIR) sensor and alarm contacts will be added. The addition of the alarm contacts will include new wiring running along the bottom of the door and the top of the tile floor to connect with small alarm contact switches. These will not be visible from the exterior and only have limited visibility at the base of the door from the interior. A fixed camera will be installed on the interior of the building above the entrance. The card readers will be attached using two small screws to the face of the concrete wall or metal walls adjacent to the doors. The PIR sensors will be attached to the doors and door casings using an adhesive. The cameras will be mounted using screws and the wiring will follow existing wiring lines or conduits as much as possible.
2. On the south elevation of the powerhouse is an entrance that connects to the adjacent switchyard. This entrance has an original solid steel door. This entrance will undergo the same installations as at the main (east) entrance, including an entry card reader on the exterior adjacent wall. On the interior, new additions include a PIR sensor, two alarm contacts with new wiring, and a fixed camera above the entrance.

Interior Doors

Within the powerhouse, the control room west door will be upgraded with new security features with as minimal impact to the doors and walls as possible. Installation will include an entry card reader, a PIR sensor, and two alarm contacts. A fixed camera will be mounted above the door. This door is of steel and glass and added ca. 1990.

Penstock Envelope Access Ladder Hatch Upgrade

At the southwest corner of the powerhouse is a ladder hatch on the west elevation of the powerhouse. This hatch and ladder to the penstock is currently outside the security fence and the existing fencing will be enlarged to encompass this area. The new security features will include a seven-foot chain-link fence with 45-degree outriggers and three strands of barbed wire. There will be a pedestrian gate installed at this location along with an electronic pad lock. A fixed camera will also be installed at the northwest corner of the powerhouse to monitor this elevation of the powerhouse.

Transformer Yard Cable Hatch

Within the switchyard is a steel cable hatch which leads to cables within the building. This hatch will be retrofitted with an alarm contact and a fixed security camera will be added on the south elevation of the powerhouse to monitor this hatch.

Powerhouse Exterior

In addition to the camera to be added at the northwest corner, a fixed camera at the building's northeast corner and two LED lights will also be added to monitor this elevation of the powerhouse.



Figure 8: The new passive infrared (PIR) sensors and entry readers to be installed in the powerhouse will be similar to these at the Wheeler Powerhouse in Alabama. The red circle shows the reader with a push button shunt and the yellow circle shows the PIR sensor.



Figure 9: A close-up view of the card reader similar to those to be added at the Chatuge Powerhouse.



Figure 10: On the exterior of the door the PIR sensor will not be visible. The new exterior security card readers to be installed in the powerhouse will be similar to this one in use at the Wheeler Powerhouse in Alabama. The red circle shows the card reader location.



Figure 11: Close-up view of the passive infrared (PIR) sensor on the interior of the door. Similar sensors will be added to the interiors of the control room doors at the Chatuge Powerhouse.



Figure 12: The new security cameras to be installed will be similar to this one wall-mounted camera at the Wilson Powerhouse in Alabama.



Figure 13: The new security cameras to be installed in the powerhouse will be similar to this one in use at the Wheeler Powerhouse in Alabama. This is a ceiling-mounted example.



Figure 14: The main entrance to the control room on the east elevation of the powerhouse has steel double doors.



Figure 15: The location of the proposed card reader is shown as the red circle on the concrete wall adjacent to the main entrance to the control room on the east elevation of the powerhouse.



Figure 16: Interior of the powerhouse's control room with the yellow circle showing the location of the proposed passive infrared (PIR) sensor.



Figure 17: Interior of the powerhouse showing the location of the fixed camera at the ceiling which will monitor the main double doors leading into the control room.



Figure 18: Interior of the powerhouse control room, showing the location of the PIR sensor to be installed above the control room's west interior door (yellow circle).



Figure 19: Interior of the powerhouse control room, viewing the location of the entry card reader to be installed (red circle).



Figure 20: Proposed ceiling location of the security camera for the control room's west door. The wiring for the camera will follow the existing conduits as much as possible.



Figure 21: Exterior of existing entrance on the south elevation of the powerhouse which opens onto the switchyard. An entry card reader will be installed on the exterior wall beside the door (location circled in red).



Figure 22: This view shows the interior of the door with the location of the floor-mounted alarm contacts circled in yellow.



Figure 23: This view shows the interior of the south powerhouse door with the location of the PIR at the top of the door casing circled in yellow.



Figure 24: View of the penstock ladder hatch location on the west elevation of the powerhouse. A new chain link fence will be extended to enclose this area.



Figure 25: View of the penstock ladder hatch location on the west elevation of the powerhouse. A new chain link fence will be extended to enclose this area. The new fence will be beyond the metal hatch shown and will abut, but not be connected to, the exterior wall of the powerhouse.



Figure 26: In order to monitor the west and north elevations of the powerhouse and the penstock ladder hatch location, a new security camera will be added at the northwest corner of the powerhouse. This location is shown as the red circle.



Figure 27: The transformer yard cable hatch will be retrofitted with a new alarm contact and this location is shown as the yellow circle.



Figure 28: A new security camera will be added to the south elevation of the powerhouse at this location to monitor the transformer yard cable hatch and switchyard area.



Figure 29: View of the powerhouse's east elevation showing the proposed location of a fixed camera at the building's northeast corner (red circle). This camera would monitor the control room double doors and the north and east elevations.



Figure 29: View of the Chatuge powerhouse from the primary public viewing area along the walking/biking trail on the top of the dam. This photo is to the northeast.

IV. EFFECTS TO NATIONAL REGISTER LISTED- OR -ELIGIBLE PROPERTIES

A. Overview

In 2015, a National Register nomination was prepared for the Chatuge Hydroelectric Project and the powerhouse was included as a contributing building to this facility. Pursuant to 36 CFR 800.4 which requires the TVA to assess the effects of their projects to historic properties, Thomason and Associates (Consultant) met with representatives of the TVA to review the current condition of the structures and the proposed plans for the security upgrades, and evaluate the effects of the proposed project.

B. What Are Effects to Historic Properties?

Regulations codified at 36 CFR 800 require Federal agencies to assess their impacts to historic resources. The regulations provide specific criteria for determining whether an action will have an effect, and whether that effect will be adverse. These criteria are given below.

36 CFR 800.5 Assessment of Adverse Effects

(a) *Apply Criteria of Adverse Effect.* In consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified historic properties, the Agency Official shall apply the criteria of adverse effect to historic properties within the area of potential effects. The Agency Official shall consider any views concerning such effects which have been provided by consulting parties and the public.

(1) *Criteria of adverse effect.* An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

(2) *Examples of adverse effects.* Adverse effects on historic properties include, but are not limited to:

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access that is not consistent with the Secretary's Standards for the Treatment of Historic Properties and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

C. Effects to the National Register-Listed and –Eligible Properties

In the opinion of the Consultant, the proposed work meets the "Secretary of the Interior's Standards for Rehabilitation" and there will be **No Adverse Effect** to the Chatuge Powerhouse as a result of this project.

Applying the criteria of CFR 800.9 (b)

The proposed improvements to the Chatuge Powerhouse would have NO ADVERSE EFFECT under the following criteria of CFR 800.9 (b):

(i) *Physical destruction of or damage to all or part of the property;*

The installation of the proposed security upgrades will have minimal impact to the historic fabric of the Chatuge Powerhouse. The card readers to be installed on the concrete walls adjacent to the doors will be attached using two small screws. The passive infrared sensors will be attached to the top of the doors and casings using an adhesive material. The security cameras will be attached to the walls and ceilings using small screws and adhesives. The wiring for these devices will follow along existing conduits and wiring where possible. Where new wiring is added to the walls and ceilings the wiring will be colored or painted to blend with the concrete surface.

The added fencing will be a continuation of existing fencing on the west elevation of the powerhouse and will not be attached to any of the powerhouse elevations.

This fencing will be of chain link and will not impede any views from any of the public viewing areas.

- (ii) *Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access that is not consistent with the Secretary's Standards for the Treatment of Historic Properties and applicable guidelines;*

The proposed security upgrades will be sited on the interior and exterior of the powerhouse and not be readily visible to the public. The alterations are designed to have a minimal visual impact and be as reversible as possible. The installation of these devices will require the insertion of new screws into walls and ceilings or the application of adhesives. If these security devices are no longer needed or are replaced in the future the holes will be filled with gray caulk to blend with the concrete color and the adhesive materials will be removed.

The majority of the work for this project will not be readily visible to the public. Currently the public has vantage points for viewing the facility from a distance due to the perimeter fencing around the facility. The primary public view toward the powerhouse is from the walking/biking trail which is located on top of the dam. Due to the change in elevation and distance from this vantage point, the added security measures would not be readily visible. This project will not impede or change the exterior qualities that render the property National Register-eligible.

- (iii) *Removal of the property from its historic location;*

This criterion does not apply because the location of the property would not be changed.

- (iv) *Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;*

Use: Project implementation would not result in a change in the character of the property's use. The powerhouse will continue to be used as part of the Chatuge Hydroelectric Project.

Physical Features:

- (v) *Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;*

Visual: The proposed project would not result in the introduction of visual elements that diminish the integrity of the property's significant historic characteristics or features.

Atmospheric: The proposed project would have no impact to the property relating to the introduction of atmospheric effects that are out of character with the property's current setting.

Noise: The proposed project would have no impact to the property relating to the introduction of audible effects that are out of character with the property's current setting.

- (vi) *Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization;*

This criterion does not apply.

- (vii) *Transfer, lease or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.*

This criterion does not apply since the property will stay in federal ownership.

V. SUMMARY

This report has been prepared for the Tennessee Valley Authority (TVA) for use in completion of applicable Section 106 procedures in compliance with the National Historic Preservation Act (NHPA) of 1966 and subsequent amendments. The Chatuge Hydroelectric Project was nominated to the National Register of Historic Places in 2015 and the Chatuge Powerhouse is considered a contributing building to this property. The Chatuge Hydroelectric Project was completed in 1954 as part of TVA's unified plan for electrical generation and flood control. The powerhouse contains one generator and turbine and supporting equipment for electrical generation.

Pursuant to 36 CFR 800.4 of the National Historic Preservation Act, the TVA is required to evaluate potential effects to National Register-listed or –eligible properties when such properties are proposed for rehabilitation, alteration, demolition, sale or lease and other actions which may have an impact to their architectural or historical character. The powerhouse was built in 1954 to house the hydroelectric project's generator and turbine.

Due to increased security concerns, the TVA proposes to increase monitoring, locking and surveillance upgrades at various entry points outside and inside the facility. These upgrades consist primarily of new security cameras, card entry readers, alarm contacts, and fencing. These upgrades will be installed in such a manner as to have minimal visual or physical affects to the architectural and historical character of the powerhouse. In the opinion of the Consultant, the proposed work meets the "Secretary of the Interior's Standards for Rehabilitation" and there will be **No Adverse Effect** to the Chatuge Powerhouse as a result of this project.

APPENDIX A
RESUME OF PRINCIPAL INVESTIGATOR



PHILIP J.M. THOMASON
PRINCIPAL/THOMASON AND ASSOCIATES

EXPERIENCE

1982 - 2016 Historic Preservation Consultant - Thomason and Associates, Nashville, Tennessee

Historic Preservation Plans, Ordinances and Design Review Guidelines

Authored plans, ordinances and design review guidelines for fifty communities throughout the country including Pittsburgh, Cary, North Carolina, Little Rock, Arkansas, New Britain, Connecticut and Salt Lake City.

Tax Certification Consultant

Provided assistance, research and consultation necessary for projects utilizing the 20% Investment Tax Credit. This included involvement in the certification of fifty historic projects throughout the country.

Military Installation Cultural Resource Consultant

Responsible for the analysis and evaluation of cultural resources at fifteen military bases. Evaluation includes the preparation of preservation plans, National Register nominations, and Programmatic Agreements. Consulting services provided to the US Navy at Memphis NAS and Corpus Christi NAS; US Air Force at Randolph AFB, Scott AFB, and Warner Robins AFB; and US Army at Fort Benning and Fort McPherson.

National Register Nominations

Author of National Register Nominations in 26 states across the country. Nominations have included individual properties, historic districts and Multiple Property Documentation Forms for Route 66 and the Trail of Tears. Nominations prepared have resulted in over 12,000 structures placed on the National Register.

Cultural Resource Surveys

Directed surveys of historic buildings in cities such as Centralia, Washington; Oak Park, Illinois and; Miami, Florida. Inventoried Properties total over 30,000 structures.

Historic Structure Reports

Authored or co-authored historic structure reports recommending proper restoration techniques. Properties include the Benham Theatre, Benham, Kentucky; Christian County Courthouse, Hopkinsville, Kentucky, and; Sapphire Inn, Sapphire Valley, North Carolina.

Historic Survey Publications

Responsible for writing, research and layout for historic survey publications. These include survey publications for Hardin and Pulaski Counties, Kentucky; McCormick, Greenville and Spartanburg, South Carolina.

Section 106 Review and Mitigation

Conducted research and report writing for Section 106 mitigation including the Burkville Plantation Historic District, Lowdes County, Alabama, for the U.S. Army Corps of Engineers; Kentucky River Survey and Analysis for the Tennessee Valley Authority; Memphis I-40/240 Interchange and Route 840 for the Tennessee Department of Transportation.

1980-1982, Preservation Planner - Building Conservation Technology, Inc., Nashville, Tennessee.

Projects included:

Historian, Columbia Reservoir Historic Resources Survey
Author, Murfreesboro, Tennessee--Plan for Revitalization
Historian/Principle Author, Rugby Master Plan for the U.S. Army Corps of Engineers.

MEMBERSHIP

Board of Directors, Preservation Action, 1991-2008
Board of Directors, Tennessee Heritage Alliance, 1983-1993. Tennessee Preservation Trust, 2008-2015
Board of Directors, Historic Nashville, Inc. 1982-1987/1992-1993.
National Trust for Historic Preservation

EDUCATION

Bachelor of Arts - Knox College, Galesburg, Illinois, 1975
Master of Arts - History, Emphasis on Historic Preservation, Middle Tennessee State University, 1981

AWARDS

First Award for Urban Planning and Design for contributions to the Rugby Master Plan. Awarded by Progressive Architecture, 1986
Certificate of Merit - Historic Nashville Inc., 1986
Certificates of Merit - Tennessee Historical Commission, 1988, 1990
“Achievement in Comprehensive Planning Award” – Fort Smith, Arkansas Citywide Historic Preservation Plan. Awarded by the Arkansas Chapter, American Planning Association, 2009
“Special Citation for Achievement in Public Policy” - Little Rock Citywide Preservation Plan. Awarded by the Historic Preservation Alliance of Arkansas, 2011
“Honorable Mention, Comprehensive Planning” – Cary, North Carolina Historic Preservation Master Plan. Awarded by the North Carolina Chapter of the American Planning Association, 2011