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ENVIRONMENTAL ASSESSMENT

WATTS BAR FOSSIL PLANT DECONSTRUCTION

Rhea County, Tennessee

PREPARED BY:
TENNESSEE VALLEY AUTHORITY

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-containing material
APE	Area of potential effects
BMPs	Best management practices
CEQ	Council on Environmental Quality
CESQG	Conditionally exempt small quantity generator
CFR	Code of Federal Regulations
CO₂	Carbon dioxide
EA	Environmental assessment
EPRI	Electric Power Research Institute
FONSI	Finding of no significant impact
GHG(s)	Greenhouse gas(es)
I-	Interstate Highway
IPP	Integrated pollution prevention and spill response plan
MOA	Memorandum of agreement
MSDS	Material safety data sheet
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated biphenyls
ppm	Parts per million
REE	Reportable environmental event
ROD	Record of decision
SHPO	State Historic Preservation Officer
SMZ	Streamside management zone
SR	State Route
TDEC	Tennessee Department of Environment and Conservation
TSP	Transportation security plan
TVA	Tennessee Valley Authority
USEPA	United States Environmental Protection Agency
WBF	Watts Bar Fossil Plant
WBH	Watts Bar Hydroelectric Plant
WBN	Watts Bar Nuclear Plant

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CHAPTER 1

1.0 PURPOSE OF AND NEED FOR ACTION

1.1. The Decision

The Tennessee Valley Authority (TVA) proposes to deconstruct the Watts Bar Fossil Plant (WBF) to alleviate hazardous conditions. WBF has not operated since 1982. Because economic analyses indicated no benefit from returning WBF to service, TVA terminated the air permits for the plant in 1997. The plant and some associated structures are deteriorating. Some structures have been dismantled (TVA 2007a). The brick exterior walls of the plant are distressed and are likely to collapse without extensive refurbishment. Environmental hazards including asbestos, lead, mercury, and polychlorinated biphenyls (PCBs) are present in the powerhouse. TVA proposes to properly remove and dispose of asbestos, PCBs, and hazardous materials and deconstruct the WBF Powerhouse and adjacent structures to eliminate safety hazards and environmental risks.

This environmental assessment (EA) addresses the alternatives that have been considered and describes the potential environmental consequences associated with deconstructing WBF.

1.2. Background

WBF, originally named Watts Bar Steam Plant, was the first coal-fired power plant built by TVA. It is located in Rhea County, Tennessee, just downstream of the Watts Bar Dam on the western side of the Tennessee River (Figure 1-1). WBF was constructed in stages between 1940 and 1945. The first two units (A and B) were constructed between 1940 and 1942, and commercial electric power production began in 1942. Unit C construction began in 1941, with commercial power generation in 1943. Unit D began commercial power generation in 1945. WBF supplied power to meet the growing demand for electricity due in part to World War II production effort (Electric Power Research Institute [EPRI] 2004).

The plant operated until 1957, when it was placed in an extended shutdown mode. To meet rapid load growth, WBF was returned to service in 1970. Because of its relatively high cost of power production, WBF was again placed in extended shutdown mode in 1983. In subsequent years, several studies on restarting WBF were performed; none indicated that returning WBF to service would economically benefit TVA (EPRI 2004). As noted above, TVA discontinued the air permits for WBF in 1997.

The WBF Powerhouse is a nine-story structure of structural and reinforcing steel and masonry (Table 1-1). Exterior walls are primarily brick. Two stories are basement levels extending about 23 feet belowground. The powerhouse contains the turbine room, the boiler room, and an office and service wing. The turbine room is approximately 81 feet wide, 234 feet long, and 51 feet high. In the turbine room are four horizontal cylinder turbogenerators and a 75-ton overhead crane. On the east end of the turbine room is a former public lobby and viewing area (20 feet wide, 30 feet long, and 26 feet high) with walls constructed of plate glass panels and marble. The boiler room is a multistory area approximately 99 feet wide, 244 feet long, and 96 feet high aboveground. The office and service wing contain administrative offices, restrooms, employee locker room, laboratory, and machine shop.



Figure 1-1. Location of the Watts Bar Fossil Plant, Rhea County, Tennessee

Table 1-1. Quantities of Materials Used to Construct Watts Bar Fossil Plant

Material	Quantity
Concrete	50,300 cubic yards
Concrete forms	380,800 square feet
Structural steel	5,235 tons
Reinforcing steel	2,775 tons
Masonry	2,655,000 bricks 53,000 tiles

Source: TVA 1949

The adjacent WBF Switchyard contains a main transformer and a station service transformer for each of the four generating units. The switchyard provides power to the plant, utility building via the station service transformers, and the Watts Bar Nuclear Plant (WBN) engineering office complex.

During an assessment of WBF in 2000, several safety hazards were identified, including:

- Leaking roofs on the office building and turbine room resulting in interior damage.
- Significant cracking in the exterior brick on the powerhouse and displacement of brick on a parapet wall on the boiler roof.
- Friable asbestos-containing material (ACM), lead-based paint flakes, mercury-filled items, and hazardous chemicals.
- Oil stains in the switchyard.

In an effort to reduce environmental and safety risks at the plant, access to the powerhouse has been restricted. Currently, activities in the powerhouse consist of periodic inspections and maintenance. For safety reasons, some plant components have been removed. Four precipitators and two stacks were removed from the powerhouse roof, and a new roof has been installed. Approximately 1,400 tons of steel were removed during the precipitator deconstruction. Two conveyor structures and the hopper building were also removed for safety reasons. The exterior parapet wall was repaired to ensure safety and to maintain building integrity to prevent further damage and the release of ACM. Fourteen transformers containing greater than 50 parts per million (ppm) of PCBs were removed from the powerhouse (EPRI 2004). Chemicals and oils used during plant operation were drained and recycled (EPRI 2004). The conveyor system between the barge unloading dock and the coal conveyor building was also removed (TVA 2007a).

The WBF chemical treatment and boiler slag ponds have been closed (TVA 1996).

1.3. Other Pertinent Environmental Reviews or Documentation

The existing environment and region around WBF have been described in a series of National Environmental Policy Act (NEPA) documents (Table 1-2).

Table 1-2. Pertinent Environmental Reviews Related to TVA Watts Bar Fossil Plant

Title	Result	Summary/Relevance for this Review
<i>Final Environmental Statement - Watts Bar Nuclear Plant Units 1 and 2 (TVA 1972)</i>	ROD	Describes the affected environment in the area near the time WBF was last operating
<i>Final Environmental Assessment - Watts Bar Fossil Plant Slag Marketing (TVA 1996)</i>	FONSI	Describes removal of boiler slag from the WBF site
<i>Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Project Environmental Assessment (TVA 1998)</i>	FONSI	Describes the water intake and cooling water systems formerly connected to the WBF
<i>Watts Bar Nuclear Plant Unit 1 Replacement of Steam Generators Environmental Assessment (TVA 2005)</i>	FONSI	Describes the barge loading area at Tennessee River Mile 529.2
<i>Completion and Operation of Watts Bar Nuclear Plant Unit 2, Rhea County, Tennessee, Final Supplemental Environmental Impact Statement (TVA 2007b)</i>	ROD	Updated description of affected environment in the WBF area
<i>Watts Bar Fossil Plant Barge Unloading Crane and Conveyor Belt System Removal Environmental Assessment (TVA 2007a)</i>	FONSI	Describes the affected environment and expected impacts of removing the subject components
<i>Watts Bar Reservoir Land Management Plan Final Environmental Impact Statement (TVA 2009)</i>	ROD	Describes land parcel on which WBF is situated, as well as adjacent parcels

FONSI = Finding of no significant impact

ROD = Record of decision

1.4. Project Scoping

The scope of this assessment includes the WBF Powerhouse and adjacent structures. Other activities at the site, including removal of the barge unloading crane, have been addressed in previous environmental reviews. Structures that are currently in use as warehouses, administrative offices, and training buildings will continue to operate. Except for removal of deenergized components, this project does not involve changes to the switchyard. The deconstruction project does not include actions on grounds surrounding WBF, including the former ponds, coal and slag piles, and site drainage structures.

During internal scoping, TVA determined that the proposed deconstruction of WBF could potentially affect the following resources:

- Demolition debris, hazardous materials, and special waste
- Air quality
- Archaeological resources
- Historic resources
- Aesthetic resources
- Natural resources: surface water and aquatic ecology; wetlands; terrestrial plants and wildlife
- Local transportation resources

Potential effects to prime farmland, natural areas, Wild and Scenic Rivers, and ecologically sensitive areas were also considered. There would be no impacts to navigation or recreation. Inspection of National Flood Insurance Rate Map for Rhea County (Map Number 47143C0260D) indicates none of the proposed WBF Powerhouse deconstruction activities would be conducted within the 100-year floodplain. WBF has not operated as a power plant for more than 20 years. Land on which WBF is located is currently zoned for TVA project operations (TVA 2009). A change in the zone designation is not anticipated. Therefore, deconstruction of the plant is not expected to affect land use. Proposed activities also would not affect public services or socioeconomic conditions. Any socioeconomic impact on the community from the workers needed to deconstruct WBF would be temporary and insignificant. Because minimal to no impacts are anticipated, these resources are not evaluated further.

The potential nuisance effect of noise was considered during scoping. WBF is located within several parcels of land used for TVA operations that total nearly 680 acres (TVA 2009). Across the Tennessee River, approximately 460 acres along the shoreline are also designated for TVA project operations. There are no private residences adjacent to, or across the river from, WBF. Due to the distance between proposed activities and potential sensitive receptors, no nuisance effects of noise are expected.

Based on review of the TVA Natural Heritage database and the project area, TVA biologists determined that federally listed and state-listed terrestrial plants and animals do not occur on WBF. Suitable habitat for federally listed and state-listed terrestrial plants and animals does not occur on WBF. Proposed activities would occur in a previously disturbed area. Therefore, proposed activities would not adversely affect federally listed, state-listed, or common species of wildlife and plants.

1.5. Necessary Federal Permits or Licenses

Although WBF is inactive, TVA has maintained necessary permits to conduct current activities at the site and has continued to monitor the plant area for environmental and safety concerns and to meet regulatory control and reporting requirements.

National Pollutant Discharge Elimination System (NPDES) Permit Number TN0005461 authorizes discharges from one outfall (002) and two wet-weather conveyances (010, 013) at WBF. This permit would be maintained and updated whether WBF is deconstructed or left as is.

An integrated pollution prevention and spill response plan (IPP) is implemented at WBF to minimize the potential for the release of pollutants to the waters of the state of Tennessee in compliance with the Clean Water Act and the site NPDES Permit. The plan incorporates an oil spill prevention control and countermeasure plan in compliance with 40 Code of Federal Regulations (CFR) Part 112 and a storm water best management practices (BMPs) plan for process water and wastewater in compliance with the NPDES Permit. The IPP is designed to ensure that oil, hazardous materials, and other pollutants are managed to prevent spills or discharges and to ensure that spills that do occur are contained and cleaned up and corrective actions initiated. The IPP would be implemented during and after the proposed deconstruction activities and would be updated as appropriate following changes to the site.

Other permits that would be obtained prior to conducting proposed activities include:

- State of Tennessee Construction Storm Water Permit for storm water discharges from proposed activities.
- The types and quantities of hazardous and universal waste generated by proposed activities would be tracked under United States Environmental Protection Agency (USEPA) Identification Number TN1640006689.
- Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management, approval to dispose of special waste in a permitted landfill, as necessary.
- State Operation Permit from the TDEC, Division of Water Pollution Control, to operate a pump and haul system to dispose of sewage from temporary sanitary facilities used on site, as necessary.

CHAPTER 2

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. Alternatives

TVA has determined that there are two alternatives available: deconstructing WBF or taking no action. On several occasions, TVA has evaluated the feasibility of refurbishing the WBF Powerhouse. However, due to the widespread presence of asbestos, lead, PCBs, and other potentially hazardous materials, extensive remediation would be necessary. Reconstruction of the building exterior would likely also be necessary to restore the deteriorating brick walls. Except for the use of nonhazardous demolition debris as fill for the former powerhouse site (see Section 2.1.2 below), the effects of work needed to refurbish the powerhouse to a reusable condition would not be substantially different from the effects of deconstruction. Because there is no feasible use for the deteriorating building, refurbishment and reuse of the powerhouse was not evaluated further as an alternative.

2.1.1. *Alternative A – The No Action Alternative*

Under Alternative A, TVA would take no action. Consequently, the WBF Powerhouse would be left in place in the current condition. The building is not heated, cooled, or supplied with electricity. TVA would continue to restrict access to the powerhouse. Periodic inspections and critical maintenance would be performed as needed. The switchyard would remain in place and energized. TVA would maintain the NPDES Permit, implement the IPP, and perform environmental monitoring and reporting as required. TVA would continue current operations and maintenance practices to remove hazardous materials from the powerhouse.

2.1.2. *Alternative B – Deconstruction of Watts Bar Fossil Plant*

Under Alternative B, the WBF Powerhouse would be dismantled, materials would be removed, and the site would be filled to grade level and reseeded. An associated concrete block building would also be demolished. Machinery would be removed from the belowground coal-crusher facility adjacent to the powerhouse.

TVA would hire a licensed contractor experienced with deconstruction of industrial facilities. All work would be performed in accordance with the current federal Occupational Safety and Health Administration (OSHA), USEPA, Tennessee OSHA, and TDEC rules and regulations. Environmental practices required of the contractor are described in Appendix A. TVA would retain oversight authority for the project including oversight for the proper handling and disposal of any hazardous, special, or universal waste generated during the project.

Items to be dismantled include four turbines and associated equipment, condensers, tanks, compressors, concrete foundations, brick and metal building materials, steel structures/cladding, piping, cables, and wiring. De-energized transformers and associated equipment no longer needed in the adjacent switchyard would also be removed. Underground piping that cannot be removed would be emptied and capped. Materials that are reusable or have scrap value would be removed by TVA's contractor and marketed for sale. Structural steel would be transported off site by truck or would be loaded on trucks, transported over existing haul roads to the Watts Bar barge landing (see Section 3.7 below), and loaded on barges for removal.

The deconstruction activities planned and performed by TVA's contractor would be described in project work plans. These plans would be submitted to TVA for approval before work is conducted. Project work plans would provide detailed descriptions of planned work scope, documentation that required training has been completed, methods to identify and characterize potential waste sources, spill planning, and the process for handling and disposing of all types of waste. Components and surfaces having potential to contain asbestos or hazardous materials would be sampled; such materials would be segregated and handled in accordance with federal and state regulations.

Prior to demolition, TVA's contractor would complete asbestos abatement in the powerhouse in accordance with OSHA, USEPA, and TDEC asbestos regulations (Standards-29 CFR 1926.1101, 40 CFR Part 763, 40 CFR Part 61 Subpart M, TDEC 1200-03-1-.02, and 1200-01-20-.01). Water used during the abatement process would be collected, tested, and properly disposed of. Loose or flaking paint would be manually removed from metal and structure and disposed of according to state and federal laws. Solid and liquid (i.e., wastewater) materials containing PCBs, mercury, and any other hazardous material would be removed, segregated, and properly disposed of by trained personnel.

Construction and demolition debris consisting of natural rock, dirt, stumps, pavement, concrete and rebar, and/or brick rubble would be segregated, temporarily stored on site on existing paved or gravel surfaces adjacent to the powerhouse, and used as fill material consistent with Rule 1200-1-7-.02(1)(b)3.(xiii) (TDEC 2006). The belowground coal-crusher facility would be filled with gravel due to groundwater infiltration. In the switchyard, stained gravel would be removed and replaced with clean gravel. Gravel fill would be obtained from an off-site commercial facility approved by TVA. In accordance with the WBF IPP, temporary storage would be on flat areas with ingress of storm water diverted as much as possible. Materials would be covered with a temporary covering when practicable.

Remaining demolition debris, special waste, and hazardous materials would be disposed of in accordance with applicable regulations. Any demolition debris not used as fill on site would be placed in roll-off containers or dump trucks and taken to a solid waste facility permitted by TDEC. Upon completion of demolition activities, the site would be backfilled with suitable materials. The site would be leveled to the existing grade and covered with about 12 inches of soil obtained from an off-site, permitted commercial source. The disturbed area would be reseeded with native or noninvasive, nonnative species.

Deconstruction would be completed using standard heavy equipment, which would include (but may not be limited to) generators, compressors, excavators, track hoes, bulldozers, cranes, cutting torches, and jackhammers. Deconstruction activities are expected to last up to nine months. Work may occur up to 24 hours per day, seven days per week. Portable toilets would be provided to support the workforce, as appropriate. Sanitary waste would be removed in accordance with state regulations.

2.2. Comparison of Alternatives

Under the No Action Alternative, TVA would not deconstruct WBF. Continued deterioration of the powerhouse would result in safety hazards and environmental risks. Under the No Action Alternative, TVA would not implement the 2011 amendment to the memorandum of agreement (MOA) with the Tennessee State Historic Preservation Officer (SHPO), and the deterioration could eventually adversely affect an historic resource. Additionally, the gradual deterioration would result in negative aesthetic consequences.

Under the Action Alternative, proper handling and disposal of scrap materials, demolition debris, and hazardous materials would result in minimal environmental impacts. Potential effects to local transportation services would be temporary and minor. With implementation of the MOA as amended in 2011, adverse impacts to historic resources would be mitigated. Adopting the Action Alternative would have the beneficial effect of ultimately resolving safety hazards and environmental risks associated with the powerhouse.

Under either alternative, there would be no or negligible impacts to archaeological or natural resources.

2.3. The Preferred Alternative

TVA's Preferred Alternative is Alternative B – Deconstruction of WBF. Implementing Alternative B would alleviate safety hazards and would resolve potential environmental risks associated with the deteriorating building.

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CHAPTER 3

3.0 AFFECTED ENVIRONMENT

WBF occupies 82 acres of the 1,067-acre Watts Bar Reservation. Also located on this reservation are the WBN and the Watts Bar Hydroelectric Plant (WBH). WBN and WBH would not be affected by this project. Land use immediately surrounding WBF is designated for project operations and has an industrial character (TVA 2009). In addition to the powerhouse, the site contains auxiliary facilities, parking lots and roads, the switchyard and a storage yard, and open land.

Some of the auxiliary buildings are currently used as a training center and storage warehouses. The switchyard is energized and provides power to the WBF auxiliary buildings and the WBN engineering complex south of WBF. Switchyard components include a main transformer and four banks of station service transformers (one for each of the four WBF generating units). Banks A, B, and C are out of service. Only the main transformers in Bank D are in service.

3.1. Demolition Debris, Hazardous Materials, and Special Waste

A small amount of nonhazardous daily trash currently is collected at WBF. No demolition debris or special waste currently is generated. WBF currently is a conditionally exempt small quantity generator (CESQG). Less than 100 kilograms (approximately 220 pounds) of hazardous waste are generated per month. Hazardous materials and fuels on WBF are labeled, tracked, inspected, and otherwise managed according to the WBF IPP. Hazardous materials and fuels known to be present at WBF are described below:

Asbestos

Historically, asbestos was incorporated into numerous materials to improve the strength, sound absorption, insulation, and resistance to heat. ACM is present both inside and outside the powerhouse, including but not limited to ceiling panels, paint, coatings, insulation, and exterior building panels. The WBF Powerhouse has been closed off to unauthorized personnel to avoid transporting asbestos outside the powerhouse.

Polychlorinated Biphenyls

PCBs were in oil used to cool electrical transformers, capacitors, and ballasts in the WBF Powerhouse and Switchyard. PCB transformers (containing PCBs greater than 50 ppm) have been removed from inside the powerhouse. Transformers currently in the WBF Switchyard are considered non-PCB transformers for regulatory purposes under the Toxic Substances Control Act because they contain less than 50 ppm PCB. Seven areas inside the powerhouse were contaminated with PCBs from past equipment storage and subsequently were encapsulated (i.e., covered with paint) in accordance with federal regulations (40 CFR Part 761).

Lead

Historically, lead was a common ingredient of paint. Lead-based paint was used extensively in the WBF Powerhouse. Currently, much of the paint inside the powerhouse is flaking.

Oil

Oil has been drained and recycled from the WBF Powerhouse lube oil tanks, and drains have been plugged. Except for small amounts of residual oil in equipment lines, all oil has been removed from WBF.

Mercury

More than 330 items of equipment containing mercury including manometers, switches, and thermometers are present in the WBF Powerhouse. Many mercury-containing items have been identified and tagged to facilitate proper removal.

3.2. Air Quality and Climate Change

Through its passage of the Clean Air Act, Congress has mandated the protection and enhancement of our nation's air quality resources. National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants have been set to protect the public health and welfare:

- Sulfur dioxide
- Ozone
- Nitrogen dioxide
- Particulate matter whose particles are ≤ 10 micrometers
- Particulate matter whose particles are ≤ 2.5 micrometers
- Carbon monoxide
- Lead

The primary NAAQS were promulgated to protect the public health, and the secondary NAAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas in violation of the NAAQS are designated as nonattainment areas, and new sources to be located in or near these areas may be subject to more stringent air permitting requirements. A listing of the NAAQS is available on the USEPA Web site (<http://www.epa.gov/air/criteria.html>). The air quality around WBF is generally good. Rhea County is in attainment (i.e., meets the NAAQS standards) for all NAAQS criteria.

The release of some combustion products, such as carbon dioxide (CO₂), are believed to affect the global climate when released into the atmosphere. These gases are called greenhouse gases (GHGs) due to their role in the trend of increasing global temperatures. The Council on Environmental Quality (CEQ) recently issued draft guidance on how agencies should consider the effects of climate change and GHGs when they describe the environmental impacts of proposed actions in NEPA documents. The guidance provides that if a proposed action would be reasonably anticipated to cause direct emission of 25,000 metric tons or more of CO₂-equivalent GHG emissions on an annual basis, an assessment of the emissions and their potential effects on climate would be meaningful to decision makers and the public.

3.3. Archaeological Resources

East Tennessee has been an area of human occupation for the last approximately 12,000 years. In East Tennessee, prehistoric habitation occurred over five broad time periods: Paleo-Indian (12000-8000 B.C.), Archaic (8000-1000 B.C.), Woodland (600 B.C.-A.D. 1000), Mississippian (A.D. 1000-1600), and Historic (A.D. 1600- to present). Prehistoric land use and settlement patterns vary during each period, but short- and long-term

habitation sites are generally located on floodplains and alluvial terraces along rivers and tributaries. Specialized campsites tend to be located on older alluvial terraces and in the uplands.

In East Tennessee, during the 17th and 18th centuries, Europeans and Native Americans began interacting through the fur trading industry. European-American expansion into eastern Tennessee began after the Revolutionary War, with settlement concentrated along the fertile valleys of the Tennessee River. The area that encompasses what is now Rhea County was Cherokee Territory throughout the 18th century until it was ceded to the United States in 1805. Formed by the general assembly on December 3, 1807, Rhea County was created out of a portion of Roane County. Agriculture was the biggest contributor to Rhea County's economy. During the Civil War, no large-scale battles took place in Rhea County; however, the area was constantly under pressure, and minor skirmishes were common. The completion of the Cincinnati Southern Railway contributed to the growth of the western side of the Tennessee River and improved access to coal, iron, and limestone deposits in Rhea County (Broyles 2002; Karpyneec and Holland 2011).

In the 1930s, the federal government made its presence known in Rhea County by the development of TVA. In 1939, construction began on Watts Bar Dam, part of a system of dams and locks on the Tennessee River intended to improve navigation and control flooding.

Between February 14 and 17, 2011, TVA surveyed the WBF Reservation for archaeological resources. TVA determined the archaeological area of potential effects (APE) to be approximately 181.5 acres around WBF. Archival research identified three recorded sites within the APE (40RH1, 40RH5, and 40RH6). During the survey, no previously unrecorded archaeological sites were identified, and no cultural resources were identified within the previously recorded boundaries of Sites 40RH1 and 40RH5. No cultural resources were identified during shovel testing within Site 40RH6. The presence of artifacts discovered along the shoreline was inferred to be associated with Site 40RH6 (Laird and Holland 2011). Although no intact deposits were identified in the cutbank, these artifacts are likely associated with alluvial (deeply buried) deposits of the first terrace ; however, the nature of proposed deconstruction activities is such that there would be no potential to affect buried deposits potentially present.

In accordance with federal regulations (36 CFR Parts 800.2 (c)(2)(ii), 800.3 (f)(2), and 800.4 (a)(4)(b)), TVA consulted with the federally recognized Indian tribes listed below. No properties of religious and cultural significance to the tribes were identified within the APE.

- Cherokee Nation, Eastern Band of Cherokee Indians
- United Keetoowah Band of Cherokee Indians in Oklahoma
- The Chickasaw Nation
- Muscogee (Creek) Nation of Oklahoma
- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Kialegee Tribal Town
- Thlopthlocco Tribal Town
- Seminole Tribe of Florida

- Absentee Shawnee Tribe of Oklahoma
- Eastern Shawnee Tribe of Oklahoma
- Shawnee Tribe

3.4. Historic Resources

WBF was the first steam-generating facility designed and constructed by TVA. In 1939 to 1940, increasing demand for electricity, drought conditions threatening hydrogeneration capacity, and wartime demand for aluminum production led TVA to propose construction of a single-unit Watts Bar Steam Plant to help meet those needs. Construction began in 1941, and revised predictions for future defense-related power demand resulted in additional appropriations for four units at Watts Bar Steam Plant. By the end of World War II, most of the power produced annually in TVA steam plants came from the Watts Bar Steam Plant. WBF operated from 1942 to 1957 and again from 1970 to 1982.

In 2007, TVA, in consultation with the Tennessee SHPO, determined that the WBF site was eligible for listing in the National Register of Historic Places (NRHP) under Criterion C for its architectural significance. In June 2007, TVA and the Tennessee SHPO executed an MOA for the removal of the WBF barge unloading crane and associated conveyor system (Appendix B). Although WBF was determined eligible for listing in the NRHP, TVA did not conduct an architectural and historic evaluation of the WBF site in 2007.

Pursuant to 36 CFR Part 800.4 to 800.6, TVA conducted studies in 2011 to identify, evaluate, and assess adverse effects of the proposed undertaking. Results of that survey demonstrate that although the WBF contains infrastructure that dates to the original construction of the plant, the overall integrity of the reservation has been compromised. Demolition of some significant resources (such as the hopper building, coal conveyors, hoist house, street lamps, and railroads), modern alterations or deterioration of extant structures, and the introduction of modern office and storage buildings have compromised the integrity of the reservation. Despite interior damage to the WBF Powerhouse, the structure retains sufficient integrity to be eligible for the NRHP under Criterion C for its architectural significance as a representative example of International Style architecture (Karpynec and Holland 2011). TVA determined that the WBF Powerhouse is the only contributing resource to the NRHP eligibility of the WBF.

3.5. Aesthetic Resources

The physical, biological, and cultural features of an area combine to make the visual landscape character both identifiable and unique. Scenic integrity indicates the degree of unity or wholeness of the visual character. Scenic attractiveness is the evaluation of outstanding or unique natural features, scenic variety, seasonal change, and strategic location. Where and how the landscape is viewed affect the more subjective perceptions of its aesthetic quality and sense of place. Views of a landscape are described in terms of what is seen in foreground, middleground, and background distances. In the foreground, an area within 0.5 mile of the observer, details of objects are easily distinguished in the landscape. In the middleground, normally between 1 and 4 miles from the observer, objects may be distinguishable, but their details are weak and they tend to merge into larger patterns. Details and colors of objects in the background, the distant part of the landscape, are not normally discernible unless they are especially large and standing alone. The impressions of an area's visual character can have a significant influence on how it is appreciated, protected, and used. The general landscape character of the study area is described in this section with additional details in Section 4.5.

WBF and associated structures are located along the Tennessee River near River Mile 530 within the Watts Bar Reservation. The existing plant site is south of Watts Bar Dam in the middleground distance and is seen briefly by motorists along State Route (SR) 68. Primary views of the plant site are within the industrial setting of the reservation and are seen mainly by employees and visitors along plant site roads. Scenic attractiveness is minimal; scenic integrity is very low.

3.6. Natural Resources

3.6.1. Surface Water and Aquatic Ecology

In March 2011, TVA inspected the grounds surrounding the WBF Powerhouse. Surface water resources identified included one intermittent/perennial stream, one perennial stream, and one wet-weather conveyance. The two streams are first-order tributaries to the Tennessee River in the Watts Bar tailwater. Both streams are potential habitat for the flame chub, a species listed by the State of Tennessee as “in need of management.” The flame chub typically occurs in springs and spring runs with lush aquatic vegetation and spawns from late January through May (Etnier and Starnes 1993). No habitat suitable for other state-listed or federally listed species is present in the project area.

3.6.2. Wetlands

Two wetlands were identified along the intermittent/perennial stream north of the powerhouse. Both wetlands are palustrine scrub-shrub, broadleaf deciduous, seasonally flooded. Dominant vegetation includes soft rush, fescue, black willow, and sycamore. Total area of both wetlands is approximately 0.1 acre. Both wetlands are considered limited quality waters, which are degraded aquatic resources having limited potential for restoration with such low functionality that lower standards for avoidance, minimization, and mitigation can be applied.

3.6.3. Terrestrial Plants and Wildlife

Much of the of grounds around the WBF Powerhouse is vegetated with herbaceous species found in old fields, gravel parking areas, roadside rights-of-way and various other disturbed sites. Some deciduous and evergreen-deciduous forest is present on the WBF Reservation. No designated critical habitat for threatened or endangered plant species is recorded within 5 miles of WBF or in Rhea County.

Common invasive plant species occurring within the area include bush honeysuckle, Chinese privet, Japanese honeysuckle, Japanese stilt grass, Johnson grass, mimosa, multiflora rose, Russian olive, and sericea lespedeza. All of these species have the potential to adversely impact the native plant communities because of their potential to spread rapidly and displace native vegetation. All of these invasive species are Rank 1 (severe threat) and are of high priority to TVA (James 2002).

Habitat around WBF provides habitat for common wildlife species that are tolerant of disturbance. Bird species found in these habitats include northern cardinal, American robin, song sparrow, and red-tailed hawk. Mammals such as white-footed mouse and prairie vole and larger mammals such as eastern cottontail, common raccoon, and white-tailed deer can be abundant in these disturbed habitats. Reptiles often found in these habitats include yellow-bellied slider, black rat snake, and common garter snake. Low-quality streams found near WBF provide habitat for disturbance-tolerant amphibians including American toad, green frog, upland chorus frog, and red-backed salamander. The adjacent

Tennessee River provides riparian habitat for raptors such as bald eagle and osprey, as well as other birds including great egret, great blue heron, and belted kingfisher.

3.7. Transportation

Road access to WBF is via SR 68. Interstate Highway (I-) 75 is approximately 10 miles east of WBF along SR 68. Between WBF and I-75, SR 68 is a two-lane highway except for approximately 1 mile from I-75, where SR 68 is three lanes .

A barge loading area is located at about Tennessee River Mile 529.2. The land in this area was cleared and graded in 2005 to accommodate delivery of WBN replacement steam generators (TVA 2005). Depth at the barge loading area is approximately 16 feet (TVA 2005).

CHAPTER 4

4.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the Action and No Action Alternatives are described below.

4.1. Demolition Debris, Hazardous Materials, and Special Waste

4.1.1. *Alternative A*

Under the No Action Alternative, TVA would not deconstruct the WBF Powerhouse, and demolition debris would not be generated. If no action is taken, continued deterioration of the exterior brick may result in debris that would be transported off site to an approved construction and demolition landfill.

TVA would perform operations and maintenance practices necessary to remove hazardous materials. Inspections for ACM would be performed, and fallen or damaged ACM would be removed. Flaking paint potentially containing lead or PCBs would be removed. WBF would strive to maintain CESQG status. Hazardous materials would be removed in the same manner as described below for Alternative B. Because all materials would be handled in accordance with regulations governing removal and disposal, potential environmental impacts would not be significant. However, further postponing the cleanup of hazardous materials in the WBF would not meet TVA's objectives to resolve environmental risks.

4.1.2. *Alternative B*

Demolition Debris

Under the Action Alternative, deconstruction of the WBF Powerhouse would result in the generation of demolition debris in the approximate quantities listed in Table 1-1. TVA estimates that nearly all structural steel would be removed from the site and recycled. Concrete, masonry, and reinforcing steel would be temporarily stored and used to fill the powerhouse basement. Large pieces of debris may be crushed to provide more suitable fill material. TVA estimates that 90 percent or more of the concrete, masonry, and reinforcing steel would ultimately be deposited on site as fill. Therefore, no more than 10 percent of those materials would need to be transported off site to an approved construction and demolition landfill.

Hazardous Wastes

WBF would strive to maintain CESQG status, meaning no more than 100 kilograms of hazardous waste would be generated at WBF per month. Proposed activities would be conducted in compliance with all applicable laws and regulations concerning the handling, transportation, and disposal of hazardous waste. A hazardous waste minimization plan would be developed prior to beginning proposed activities. All materials would be disposed of off-site in state-approved facilities.

For any materials generated that qualify as special waste (e.g., sludges, metal finishing particles, process filters), TVA would obtain approval from the Tennessee Division of Solid Waste Management prior to disposal in a state-approved facility.

No substances listed as hazardous under any federal, state, or local law or regulation would be brought to WBF or used without prior approval from the TVA environmental manager. The types and quantities of hazardous materials would be controlled and tracked. The

handling of all such materials, as well as countermeasures and cleanup practices to be used in the event of a release, would be described in the IPP prior to use on site.

Oil and Chemicals

Small amounts of oil and fuels would be used in generators, vehicles, and equipment used for deconstruction activities. In accordance with the WBF IPP, tanks, drums, or containers, including generators, with capacity of 55 gallons or greater would be located within secondary containment to prevent spills. Storm drains would be plugged around mobile equipment that is stationary (i.e., cranes) to prevent incidental discharge to surface water.

Asbestos

ACM would be removed and properly disposed of prior to deconstruction of WBF. All removal of ACM would be conducted only by an experienced contractor certified as an asbestos abatement contractor by the State of Tennessee, and abatement would be completed in accordance with OSHA asbestos regulations (Standards-29 CFR 1926.1101), and the State regulations (Rule 1200-03-11-.02) promulgated under the Tennessee Air Quality Act (T.C.A. §§ 68-201-101 et seq.). All parts of the National Emission Standard for Hazardous Air Pollutants, 40 CFR Part 61 Subpart M – National Emission Standard for Asbestos, would be followed during any abatement activities. Procedures for mitigating the release of asbestos fiber include the use of curtains, shrouds, wet suppression, high-efficiency particulate air filters, and transport of asbestos in sealed containers. The transfer of asbestos for ultimate disposal would be done in accordance with United States Department of Transportation regulation 49 CFR Parts 171-173 and 40 CFR Part 61 Subpart M.

PCBs

PCBs and PCB-contaminated materials would be removed by trained personnel and in accordance with federal, state, and local regulations (40 CFR Part 761).

Lead

Materials containing lead would be removed by trained personnel and in accordance with federal, state, and local regulations, including any federal regulations promulgated under TSCA § 2682 and OSHA exposure requirements.

Mercury

Mercury-containing equipment would be removed by trained personnel and in accordance with federal, state, and local regulations, including 40 CFR Part 273 and Tennessee Rules 1200-01-11-.01 through 1200-01-11-.10.

With the measures and controls described above, there would be no or negligible release of these materials to the environment. Potential spills or discharges would be contained and cleaned up immediately. No measureable adverse impacts to the environment are anticipated.

4.2. Air Quality and Climate Change

4.2.1. Alternative A

Under the No Action Alternative, TVA would not deconstruct the WBF Powerhouse. No actions resulting in emissions of dust or pollutants would occur. However, continued degradation of materials containing asbestos or lead could result in release of hazardous

materials to the air inside the powerhouse. No actions would emit CO₂ or other GHGs or would otherwise contribute to climate change.

4.2.2. Alternative B

Demolition of WBF would result in temporary emissions, primarily of fugitive dust emissions from the demolition of structures and heavy equipment driven over paved and unpaved surfaces. In addition, there would be pollutant emissions from the exhaust of internal combustion engines powering the machinery used for demolition and hauling of debris.

Prior to deconstructing the powerhouse, ACM would be removed and properly disposed of, as described above. By adhering to asbestos removal regulations, there would be no visible emissions from asbestos removal activities.

Deconstruction of the powerhouse would result in a small amount of fugitive dust emissions. Concrete and masonry may be crushed in preparation for use as fill. Particles from demolition activities would deposit primarily on the property around the demolition activities. Measures would be taken to ensure visible dust emissions beyond the Watts Bar Reservation boundary would not occur for greater than five minutes per hour or 20 minutes per day, as required by the regulations of the TDEC Division of Air Pollution Control (Rule 1200-3-8-.01). If necessary, fugitive dust emissions would be mitigated using wet suppression. Wet suppression can reduce fugitive dust emissions by as much as 95 percent from roadways and unpaved areas.

Combustion of gasoline and diesel fuels by internal combustion engines (haul trucks and off-road vehicles) would generate local emissions of particulate matter, nitrogen oxides, carbon monoxide, volatile organic compounds, and sulfur dioxide. The total amount of these emissions would be small and temporary, and would result in negligible off-site impacts.

Air quality impacts from demolitions and debris-hauling activities would be temporary and dependent on both man-made factors (e.g., intensity of activity, control measures, etc.) and natural factors (e.g., wind speed, wind direction, soil moisture, etc.). However, even under unusually adverse conditions, these emissions would have, at most, a minor, transient impact on off-site air quality and would be well below the applicable ambient air quality standard. Overall, the air quality impact of deconstruction-related activities for the project would not be significant.

Combustion engines in heavy equipment, vehicles, and generators would emit CO₂ and other GHGs during deconstruction activities. However, emissions would not approach the 25,000 metric ton per year threshold identified in the CEQ draft guidance, which is roughly equivalent to the annual GHG emissions from approximately 4,600 passenger vehicles (USEPA 2011). The amount of CO₂ and other GHGs released as a result of proposed activities is minor, and releases would be temporary; therefore, contribution to climate change would be negligible.

4.3. Archaeological Resources

4.3.1. No Action Alternative

Adoption of the No Action Alternative would result in no impacts to archaeological resources.

4.3.2. Action Alternative

Based upon results of the archaeological survey conducted in 2011, implementation of the Action Alternative would not directly or indirectly affect archeological resources. Pursuant to regulations (36 CFR Part 800) implementing Section 106 of the *National Historic Preservation Act*, TVA consulted with the Tennessee SHPO for concurrence of no effect to archaeological resources. In a letter dated April 11, 2011, the Tennessee SHPO concurred with TVA's findings and recommendations (Appendix B).

4.4. Historic Resources

4.4.1. Alternative A

Under the No Action Alternative, TVA would not deconstruct the WBF Powerhouse. Minimal maintenance would be conducted to reduce safety hazards. However, the powerhouse would continue to deteriorate, potentially leading to an adverse effect to this historic resource.

4.4.2. Alternative B

Adoption of the Action Alternative would adversely affect the WBF Powerhouse, which is an historic property eligible for the NRHP. In a letter dated April 15, 2011, the Tennessee SHPO concurred with TVA's findings and recommendations regarding the architectural assessment of WBF (Appendix B). Pursuant to 36 CFR Part 800.6(c)(7), TVA, in consultation with the Tennessee SHPO, has amended the 2007 MOA for resolution of this adverse effect (Appendix B). TVA will implement the treatment plan specified in the MOA, which includes preparing documentation of the WBF Powerhouse that meets the standards of the Historic Architecture Buildings Survey Level Two and written history and description of the WBF Powerhouse submitted for archiving in the Tennessee State Library. The implementation of the MOA minimizes and mitigates adverse effects to the WBF Powerhouse.

4.5. Aesthetic Resources

4.5.1. Alternative A

Under the No Action Alternative, the WBF Powerhouse would be left in its current condition, and there would be no change to visual resources. Over time, if further deterioration occurs, there could be adverse aesthetic consequences. However, because the WBF Powerhouse generally is not visible to the public from land or the Tennessee River, the visual impacts of gradual degradation would be minor.

4.5.2. Alternative B

Adoption of the Action Alternative and removal of the WBF Powerhouse would be visually beneficial. Removal of the fossil plant building and associated structures would restore the existing landscape to a measureable degree of intactness. Visual clutter would be reduced, and scenic attractiveness and integrity would increase from viewing positions within the plant site.

There may be some minor visual discord during the construction period due to an increase in personnel, equipment, land disturbance, and the use of laydown and materials storage areas. These minor visual obtrusions would be temporary until the deconstruction and laydown areas have been restored. Therefore, no negative visual impacts would occur as a result of this project.

4.6. Natural Resources

4.6.1. Alternative A

Under the No Action Alternative, no changes to existing on-site natural resources would occur. There would be no impacts to surface water, aquatic ecology, or terrestrial wildlife. Exotic invasive plants would continue to spread in disturbed areas of the grounds around the WBF Powerhouse. Because terrestrial vegetation is mostly common species typical of disturbed areas, impacts to the plant community would be negligible.

Adopting the No Action Alternative would not result in significant adverse impacts to wetlands, aquatic ecology or aquatic species, or terrestrial plants and wildlife.

4.6.2. Alternative B

Under the Action Alternative, very little change to existing natural resources would occur. While deconstruction activities would temporarily disturb the grounds around the WBF Powerhouse, the grounds ultimately would be restored to a condition similar to the current condition. Deconstruction activities would occur primarily in previously disturbed areas and therefore would avoid most impacts to natural resources.

Surface Water, Aquatic Ecology, and Wetlands

Direct impacts to streams and wetlands would be avoided during proposed deconstruction activities. Heavy equipment, temporary storage areas, and other activities would be kept out of 50-foot-wide streamside management zones (SMZ) on both sides of the two streams identified in Section 3.6.1 above. The SMZ along the stream to the north would encompass both wetlands.

BMPs described in the WBF IPP would be implemented for any areas where ground is disturbed to minimize indirect impacts to streams and wetlands from erosion and runoff. As a result of these measures, proposed activities would not adversely affect the flame chub or other aquatic species present in the streams. Proposed activities would not contribute to any cumulative adverse impacts to surface water, wetlands, or aquatic life near WBF.

Terrestrial Plants and Wildlife

Terrestrial vegetation may be disturbed or removed during deconstruction activities. Because no uncommon terrestrial communities or otherwise unusual vegetation occurs on the lands to be disturbed under the proposed Action Alternative, no impacts to the terrestrial ecology of the region are anticipated. Soil disturbance associated with the proposed action could be a vector for the introduction of invasive species. In accordance with Executive Order 13112, TVA would avoid introducing or spreading invasive plant species by replanting disturbed areas with native or nonnative, noninvasive species.

The demolition of WBF structures would result in a minimal and temporary change in the composition of wildlife habitats in the project area. No trees would be cleared. Wildlife species in the project area are typical of edge habitats and tend to be tolerant of human disturbance. Proposed activities likely would temporarily displace larger animals, such as deer and turkey, into surrounding areas. Some smaller, less mobile animals occupying the project area (e.g., mice, shrews, frogs, salamanders) would be impacted by the demolition activities. Those species are common locally and regionally, and impacts would not result in substantial changes to the wildlife community. Eventual revegetation of the disturbed area would provide early successional habitat for a variety of wildlife species.

4.7. Transportation

4.7.1. No Action Alternative

No change to the transportation network would result from adoption of the No Action Alternative.

4.7.2. Action Alternative

Adoption of the Action Alternative would result in a greater number of trucks and heavy equipment traveling to and from WBF during the approximately nine-month period of deconstruction. Approximately 5,200 tons of structural steel would be transported by truck or barge to off-site locations for recycling. ACM and hazardous materials would be transported in containers by truck to approved disposal facilities. Hazardous materials would be transported in accordance with all applicable federal transportation laws and regulations, including all United States Department of Transportation requirements.

Except for the structural steel, nearly all of the demolition debris would remain on site to be used as fill. Topsoil would be transported to the site on trucks.

While the exact number of trucks needed to transport materials to and from WBF on a given day is not known, any impacts to normal traffic patterns on SR 68 due to slowed speeds would be temporary and infrequent and, therefore, minor.

Transporting structural steel by barge would result in temporary increase in barge traffic on the Tennessee River but would have no observable adverse impacts on other boats using the river.

4.8. Summary of TVA Commitments and Mitigation Measures for the Proposed Action Alternative

Routine compliance requirements that would be implemented as part of the proposed action are described in this EA. The contractor would follow the required environmental practices listed in Appendix A. Additionally, TVA would ensure that the following nonroutine measures were implemented in undertaking the proposed action:

1. Commitments in the 2007 MOA between TVA and the Tennessee SHPO, and the 2011 amendment to that MOA, shall be implemented (Appendix B).
2. The existing WBF IPP shall be updated to include deconstruction activities and deconstruction project contact personnel. The updated plan shall be implemented during deconstruction.
3. Disturbed ground shall be revegetated with native or noninvasive, nonnative plant species.
4. Heavy equipment, temporary storage areas, and other activities shall be kept out of SMZ 50 feet on either side of the two streams identified in Section 3.6.1 above.

CHAPTER 5

5.0 LIST OF PREPARERS

5.1. NEPA Project Management

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CHAPTER 6

6.0 LITERATURE CITED

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Appendix A – Environmental Practices

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ENVIRONMENTAL CONSIDERATIONS

All Watts Bar Fossil Demolition activities shall include the environmental compliance standards and meet all expectations of Tennessee Valley Authority as a federal agency. Contractors and all Subcontractors shall be responsible for complying with all Federal and State laws, including, but not limited to, any statute, rule, regulation, judgment, decree, order or permit applicable to local government requirements.

Below is a preliminary list of know environmental concerns noted from historic WBF site assessments. Prior to any actions generating or affecting these environmental issues coordination with TVA Environmental Support Staff during the pre-decommissioning and demolition planning process through meetings, workplans or waste minimization plans will be required.

Asbestos - Contractors as well as all subcontractors must be trained and follow federal, state and local regulations. Including but not limited to: 40 CFR Part 763, 29 CFR 1910, 29 CFR 1915, TN Code 68 Chapter 201 TN 1200-03

Mercury Containing Equipment- Contractors as well as all subcontractors must be trained to safely remove these articles without releases and follow federal, state and local regulations. Including but not limited to: 40 CFR 273, TN Rules 1200-01-11-.01 through .10.

PCB and PCB contaminated Materials- Contractors as well as all subcontractors must be trained and follow federal, state and local regulations. Including but not limited to: 40 CFR 761

Solid/Hazardous/Universal Waste Generation- WBF is currently CESQG (Conditionally Exempt Small Quantity Generator) and this status should be tracked and maintained. All wastes and disposal must be coordinated through TVA Site Environmental Support. Contractors as well as all subcontractors must be trained and follow federal, state and local regulations. Including but not limited to: 40 CFR 260 - 273, TN Rules 1200-01-11-.01 through .12.

Lead Paint - Contractors as well as all subcontractors must be trained and follow federal, state and local regulations. Including but not limited to: 40 CFR Parts 700-799 as well as OSHA exposure requirements

Chemicals of Concern and Oil - Contractors as well as all subcontractors must be trained and follow federal, state and local regulations. Including but not limited to: 40 CFR Parts 700-799, 40 CFR Part 279 and TN 1200-1-11-.11

All Contractor and Subcontractor training, certifications, and all project recordkeeping must be current and able to be accessed from site files by TVA Environmental Site Personnel.

Environmental Events or non compliances which require notification to, or lead to enforcement action by; Federal, State, or local regulatory agencies shall be brought to TVA Site Environmental Contact as soon as possible. Contractor agrees to immediately notify TVA Site Environmental Personnel of any environmental issues which occur at any time of deconstruction activities during the term of a Project Authorization, and to provide TVA Site Environmental Personnel with reasonable additional information about such issues as requested. TVA Site/Corporate Environmental Personnel will determine if issue constitutes an REE.

1. ENVIRONMENTAL CONSIDERATIONS

As a condition precedent to award of a Project Authorization, Contractor and any subcontractors known and designated at the time of site vacancy shall have submitted to the TVA Technical Contract Manager an Environmentally Acceptable Deconstruction Certification. Contractor agrees that submittal of said certification by potential subcontractors shall be a condition precedent to award of any subcontracts issued for performance of Work as required by a Project Authorization. If during the life of a Project Authorization, Contractor or any of its subcontractors should receive any communication from the Director, Office of Federal Activities, Environmental Protection Agency (hereinafter "EPA"), or and State or Local Environmental Agency Contractor shall immediately transmit a copy of such communication to the TVA Technical Contract Manager. All additional costs incurred by Contractor in performance of the Work required by a Project Authorization as a result of this requirement to cease use shall be at its expense and shall not be considered as reimbursable under any Contract terms of payment. Throughout performance of its Work, Contractor shall conduct all operations in such a way as to minimize impact upon the natural environment and comply with environmental laws, regulations, and rules applicable to the jobsite.

- 1.1. No substances listed as hazardous under any Federal, State, or local law or regulation shall be brought onto or used on or within TVA facilities until TVA Site Environmental Personnel receives from Contractor a written statement setting forth (1) the exact name and quantity of the hazardous materials to be brought onto the TVA facilities, (2) the reason for bringing the hazardous materials onto TVA facilities, (3) the protective practices to be instituted, and (4) the countermeasures and cleanup practices to be used in the event of a release. If a release occurs, Contractor will notify TVA Site Environmental Personnel immediately and in any event within twenty-four (24) hours.
- 1.2. Contractor shall conduct its activities in connection with the performance of this Contract in such a way as to minimize, in so far as is reasonably possible, the impact on the environment and shall assist TVA in carrying out commitments contained in the Environmental Assessment Document, if such documents are applicable to a Project Authorization as well as such other environmental commitments as TVA may have made in relation to the Work to be undertaken by Contractor under a Project Authorization, and provided to Contractor in writing. In considering the impact of its activities upon the environment, Contractor shall take into account such factors as, among other things, air pollution, erosion control, noise control, solid waste disposal, and waste water disposal. TVA Site Environmental Personnel will monitor all Contractor's or Subcontractor's activities and initiate requests for corrective actions as required.
- 1.3. Additionally, TVA seeks to make environmental quality an integral part of the way TVA and its suppliers do business. Specifically, TVA seeks to reduce "Reportable Environmental Events" (REEs) (occurrences which violate environmental regulatory requirements, and which require notification to, or lead to enforcement action by; Federal, State, or local regulatory agencies). Contractor agrees to immediately

notify TVA Site Environmental Personnel of any environmental issues which occur at any of Contractor's facilities or work sites at any location related to the Work under a Project Authorization during the term of a Project Authorization, and to provide TVA Site Environmental Personnel with reasonable additional information about such issues as requested. TVA Site/Corporate Environmental Personnel will determine if issue constitutes an REE.

1.4. Handling and Disposal of Hazardous Waste and Used Oils

- 1.4.1. Throughout the performance of Work covered by this Contract, Contractor shall comply with all applicable laws and regulations, including training requirements, and TVA specific requirements pertaining to the management of hazardous waste and used oils. TVA Site Environmental Personnel will provide assistance and direction regarding the TVA site specific requirements. TVA Site Environmental Personnel must be notified immediately upon the generation of any hazardous waste or used oil, and the handling and disposal of all hazardous wastes or used oils shall be coordinated with TVA Site Environmental Personnel.
- 1.4.2. The Contractor shall provide a project-specific hazardous waste minimization plan to the TVA Site Environmental Personnel within thirty (30) days of the establishment of the Target Cost Estimate. This plan shall include a complete listing of all such materials expected to be used, an estimate of the waste types and amounts expected to be generated and a description of the methods used to minimize waste. TVA Site Environmental Personnel shall have input into this plan.
- 1.4.3. TVA will be considered the generator of the hazardous waste and will coordinate with the contractor for its disposal, including the costs for disposal, at a facility approved by TVA. Notwithstanding the previous statement regarding who is considered to be the "generator" of the waste/oil from purchased equipment as in scope of demolition, the Contractor will only be held responsible for the costs of arranging for and performing the clean up, disposal and the reasonable restoration directly related to used oil or hazardous waste which may be created on or brought on to, the project site by Contractor, its subcontractors, or their agents or representatives. Contractor shall be liable or responsible handling for any hazardous waste or under the site (other than that which may be created on or brought on to, the site by Contractor, its subcontractors, or their agents or representatives) or created or brought to the site by any party or entity other than Contractor, its subcontractor or their agents or representatives.

1.5. Handling and Disposal of Other Wastes (Solid and Special Waste)

Solid and Special Waste will be handled on a case-by-case basis, depending on factors such as amount and type of solid or special waste generated. Typically, small amounts of daily trash may be placed in the facility's trash dumpster. Since States and local landfills have their own definition of special waste, the TVA Site Environmental Personnel should be contacted for guidance regarding the need and acquisition of a Special Waste Permit. Permits are typically required for special waste.

1.6. Solid Waste Disposed-of by Contractor

Contractor is responsible for arranging the disposal of this non-hazardous material. Contractor will provide amounts (weights) disposed-of to the TVA Site Environmental Personnel contact as required for incorporation into Agency reporting.

1.7. Hazardous Chemicals

At the time materials contracted for hereunder are delivered, Contractor shall furnish to TVA a Material Safety Data Sheet (MSDS), marked with the TVA Contract number and Project Authorization number, for each hazardous chemical, as that term is defined in the Occupational Safety and Health Administration's (OSHA) hazard communication regulations published at 29 C.F.R. § 1910.1200. Contractor shall also send a copy of the MSDS to the TVA Employee Service Center, 400 West Summit Hill Drive, WT CP-K, Knoxville, Tennessee 37902. Contractor shall also label each container of a hazardous chemical in accordance with the labeling requirements of the OSHA hazard communication regulations. TVA shall be entitled to use the MSDS and the container labels for its internal safety and health purposes and for any other purpose (including, without limitation, hazard communication on resale) contemplated by the OSHA hazard communication regulations.

1.8. Hazardous Materials Transportation, Other Transportation Laws and Rules

It is Contractor's responsibility to abide by all applicable Federal transportation laws and regulations including, without limitation, laws and regulations related to the licensing of commercial motor vehicle drivers, and laws and regulations related to transportation security. Evidence that drivers have one (and only one) commercial motor vehicle driver's license with all required endorsements for the load may be requested by TVA, and shall be provided to TVA by Contractor upon request. If Contractor will be transporting hazardous materials of a quantity or type requiring it to have in place a Transportation Security Plan (TSP) in accordance with Federal transportation laws and regulations, Contractor shall provide TVA certification via letter or other method as specified by the TVA Contracting Officer that it has a TSP that meets all applicable requirements. Contractor agrees to supply to TVA upon request of the TVA Contract Manager a copy of its TSP. Additionally, Contractor shall be responsible for securing compliance by its employees and subcontractors with all applicable Federal transportation laws and regulations and with this clause, and shall include this clause in its contracts with its subcontractors.

1.9. Recovered/Recycled Materials

Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), imposes certain requirements on Federal agency procurements involving items containing materials recovered from solid waste. Guidelines issued by the Environmental Protection Agency (EPA) under Section 6002 have designated certain products as products for which affirmative procurement actions are required. Accordingly, if in connection with contracts for the above products, two or more otherwise identical low offers are received which offer different levels of recovered materials, a preference will be given to the offer with the highest level of recovered materials.

1.10. Certification

1.10.1. Contractor, by entering into a Project Authorization, certifies:

- A) The percentage of recovered material and total quantity of recovered material to be supplied by Contractor will be approximately that amount set forth in the corresponding Project Authorization;
- B) The Contractor's records and facilities will be made available to TVA upon request, for inspection or audit, to assure that any of products and materials diverted as salvaged materials do not have any additional environmental hazards associated with them.
- C) Upon completion of a Project Authorization, the amount of recovered material that was actually repurposed.

Chemicals or Products

Contractor shall bring onsite only the amount of a chemical or product anticipated to be used during a Project Authorization. All chemicals to be used on a TVA site must have prior approval (before being brought onsite) by the assigned TVA Site Environmental Personnel. Any excess chemicals not used during a Project Authorization shall remain the property of Contractor, and, unless the TVA Site Environmental Personnel authorizes retention of the material onsite, shall be removed from the site by Contractor. Contractor shall comply with any applicable DOT regulations for transporting the chemicals offsite. This may include providing a DOT-trained person to sign the shipping papers.

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**Appendix B – Memorandum of Agreement
Between TVA and the
Tennessee State Historic Preservation Officer
and Related Correspondence**

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Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

June 15, 2007

Mr. Richard Tune
Deputy State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37214

Dear Mr. Tune:

MEMORANDUM OF AGREEMENT BETWEEN THE TENNESSEE VALLEY
AUTHORITY AND THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE
FOR THE REMOVAL OF THE BARGE UNLOADING CRANE AND ASSOCIATED
CONVEYOR SYSTEM AT THE WATTS BAR FOSSIL PLANT IN RHEA COUNTY,
TENNESSEE

I have enclosed the subject Memorandum of Agreement (MOA) for the signature of the Tennessee State Historic Preservation Officer (SHPO). A draft of the MOA was reviewed and approved by your office.

Please execute the SHPO's signature on the signature page and return the signed MOA to me. TVA will furnish each signatory and the Advisory Council a fully executed copy of the MOA.

TVA wishes to thank you for your assistance in executing this agreement document and we look forward to working with you in the implementation of its terms.

Sincerely,

A handwritten signature in black ink that reads "Thomas O. Maher". The signature is fluid and cursive, with a long horizontal flourish at the end.

Thomas O. Maher, Ph.D.
Manager
Cultural Resources

Enclosure

MEMORANDUM OF AGREEMENT
BETWEEN THE TENNESSEE VALLEY AUTHORITY AND
THE TENNESSEE STATE HISTORIC PRESERVATION OFFICE
FOR THE REMOVAL OF THE BARGE UNLOADING CRANE AND
ASSOCIATED CONVEYOR SYSTEM AT THE WATTS BAR FOSSIL PLANT IN
RHEA COUNTY, TENNESSEE
PURSUANT TO 36 CFR PART 800

WHEREAS, the Tennessee Valley Authority (TVA) proposes to remove the barge unloading crane and associated conveyor system at the Watts Bar Fossil Plant in Rhea County, Tennessee (Undertaking); and

WHEREAS, the Watts Bar Fossil Plant is a historic property eligible for listing in the National Register of Historic Places (NRHP); and

WHEREAS, TVA, in consultation with the Tennessee State Historic Preservation Officer (SHPO), has determined that the area of potential effects (APE) for this Undertaking is the boundary of the Watts Bar Fossil Plant; and

WHEREAS, TVA, in consultation with the SHPO, has determined that the Undertaking will adversely affect the Watts Bar Fossil Plant; and

WHEREAS, TVA has determined that there are no feasible alternatives to the Undertaking that would not have an adverse effect on the Watts Bar Fossil Plant;

NOW THEREFORE, TVA and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations to satisfy TVA's obligations under Section 106 of the National Historic Preservation Act (NHPA). The TVA Federal Preservation Officer, or the designee thereof, shall act for TVA in all matters concerning the administration of this Agreement.

STIPULATIONS

TVA, in consultation with the SHPO, shall ensure that the following stipulations are implemented before the commencement of the Undertaking.

1. TREATMENT PLAN AND IMPLEMENTATION

TVA shall ensure that a plan for the treatment of historic properties adversely affected by the proposed Undertaking ("Treatment Plan") is developed and executed in consultation with the SHPO. The Treatment Plan will be developed and executed before the commencement of any physical activities associated with this Undertaking. The

Treatment Plan will delineate a procedure for determining the most appropriate methods of avoiding, minimizing, or resolving adverse effects on historic properties. Development and implementation of Treatment Measures will be conducted as follows:

a. AVOIDANCE:

TVA shall ensure, to the fullest extent practicable, that all contributing elements to the Watts Bar Fossil Plant that make it eligible for listing in the NRHP are avoided by any activities associated with the Undertaking that could affect the characteristics of a contributing element that qualify it for listing in the NRHP. Every consideration to avoid adversely affecting historic properties will be assessed and acted upon if practicable.

b. DOCUMENTATION:

In consultation with the SHPO, the barge unloading crane and associated conveyor system will be documented before it is removed.

TVA shall submit a written report of the documentation to the SHPO for review and comments. The documentation shall include, at a minimum:

1. the site plan of the Watts Bar Fossil Plant;
2. digital photographs in 5" X 7" format printed on acid free paper documenting properties that will be destroyed including the barge unloading crane, the hopper and the conveyor system delivering the coal to the powerhouse;
3. a CD of these digital photographs;
4. historic photographs of the plant including the crane and the conveyor system;
5. a proposed schedule for the submission of progress reports to TVA and the SHPO.

4. REPORTS

TVA shall ensure that all investigations undertaken for compliance with this agreement are recorded in formal written reports that meet the Secretary of Interior's Standards and Guidelines for Identification (48 FR 44720-23) and the Tennessee SHPO Standards and Guidelines for Architectural and Archaeological Resources Management Studies. The SHPO shall be afforded thirty (30) days to review and comment on any reports submitted as compliance with this agreement.

TIMETABLE FOR COMPLIANCE

- a. TVA shall ensure that Stipulations 1-3 of this agreement are met before commencement of any activities associated with the Undertaking. If the Undertaking is to be completed in phases, the stipulations of this agreement may be satisfied independently for each phase.
- b. Throughout this agreement, unless otherwise stated, the SHPO shall have thirty (30) days to review and comment on all reports concerning investigations of historic properties and proposed documentation plans provided by TVA. TVA will supply copies of the final reports and documentation plans to the signatories.

6. ADMINISTRATIVE CONDITIONS

- a. If Stipulations 1 to 5 have not been implemented within five (5) years from the date of this agreement's execution, this agreement shall be considered null and void, unless the signatories have agreed in writing, as provided in Paragraph 6.b. below, to an extension for carrying out its terms. Upon the agreement's becoming null and void, TVA and SHPO will resume consultation pursuant to 36 CFR Part 800.
- b. If the implementation of Stipulations 1 to 5 has not commenced within 4 (four) years from the date of this agreement's execution, TVA and SHPO shall review the agreement to determine whether the agreement should be extended. If an extension is deemed necessary, TVA and SHPO will consult in accordance with 36 CFR Part 800.6(c) to make appropriate revisions to the agreement.
- c. The signatories to this agreement may agree to amend the terms of the agreement. Such amendment shall be effective upon the signatures of all signatories to this agreement, and the amendment shall be appended to the agreement as an attachment.
- d. Should any signatory object within thirty (30) days after receipt of any plans, specifications, contracts, or other documents provided for review pursuant to this agreement, TVA shall consult with the objecting party to resolve the objection.
- e. If any signatory to this agreement determines that the terms of the agreement cannot be or are not being carried out, the signatories shall consult to seek an amendment to the agreement. If the agreement is not amended, then any signatory may terminate the agreement. If the agreement is so terminated, TVA shall ensure that historic properties within the area of potential effects for the undertaking are protected in accordance with Section 106 of the NHPA until such time that TVA may enter into a new agreement document with the signatories or request the comments of the Council pursuant to 36 CFR Part 800.7(a).

Execution of this Agreement by TVA and the SHPO, and implementation of its terms evidence that TVA has taken into account the effects of the Undertaking on historic properties, and that TVA has complied with its obligations under Section 106 of the National Historic Preservation Act.

SIGNATORIES

TENNESSEE VALLEY AUTHORITY

By: Bridgette Ellis
[Bridgette Ellis, Senior Vice President, OE&R]

Date: 6-15-07

THE TENNESSEE STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: _____
[Richard G. Tune, Deputy State Historic Preservation Officer]



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

March 30, 2011

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), WATTS BAR FOSSIL (WBF) PLANT
DECONSTRUCTION, ARCHAEOLOGICAL SURVEY, RHEA COUNTY, TENNESSEE

TVA proposes to deconstruct the WBF plant (including the powerhouse, switchyard, barge uploading crane, and basement of the coal dumper facility), in Rhea County, Tennessee. Structural deterioration and the presence of hazardous materials at WBF create safety and environmental risks. The proposed deconstruction has the potential to cause ground disturbing activities from the excavation of the WBF powerhouse foundation and removal of associated infrastructure. TVA determined the archaeological area of potential effects (APE) to be the approximately 181.5-acre footprint of the Watts Bar reservation where ground disturbance may take place. The architectural assessment of the WBF will be provided in a separate report.

TVA contracted with TRC to conduct the archaeological survey of the APE. Enclosed is the draft report *Phase I Archaeological Survey of Approximately 181.5 Acres for the Watts Bar Deconstruction Project in Rhea County, Tennessee*.

Archival research identified three recorded sites within the APE (40RH1, 40RH5, and 40RH6). The archaeological survey conducted on February 14–17, 2011, identified no previously unrecorded archaeological sites. TRC also revisited sites 40RH1, 40RH5, and 40RH6. No cultural resources were identified within the site boundaries of sites 40RH1 and 40RH5. No cultural resources were identified during shovel testing within the boundary of 40RH6. However, artifacts were encountered along the shoreline fronting 40RH6. Although no intact deposits were identified in the cutbank, these artifacts are likely associated with alluvial deposits of the first terrace (T1); however, the nature of this undertaking is such that it would have no potential to affect these potential deeply-buried deposits.

It is TVA's finding that no archaeological sites would be affected by the proposed undertaking and no further archaeological investigations are recommended. Pursuant to 36 CFR Part 800.4(d)(1), TVA is seeking your concurrence with our findings and recommendations.

Mr. E. Patrick McIntyre, Jr.
Page 2
March 30, 2011

If you have any questions or comments, please contact Richard Yarnell in Knoxville at (865) 632-3463 or by e-mail at wryarnell@tva.gov.

Sincerely,

(Original signed by)

A. Eric Howard
Manager
Cultural Compliance

MSH:IKS:PLS
Enclosures

cc: Ms. Jennifer Barnett (Enclosures)
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Building #3
Nashville, Tennessee 37210

Cynthia M. Anderson, LP 5D-C
Brenda E. Brickhouse, LP 5U-C
Donald W. Crabtree, LP 2T-C
Amy B. Henry, WT 11D-K
Susan J. Kelly, LP 5U-C
Khurshid K. Mehta, WT 6A-K
R. Lesley Rogers, WT 3B-K
EDMS, WT 11D-K



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

March 30, 2011

Those listed on page 3

TENNESSEE VALLEY AUTHORITY (TVA), WATTS BAR FOSSIL (WBF) PLANT
DECONSTRUCTION, ARCHAEOLOGICAL SURVEY, RHEA COUNTY, TENNESSEE

TVA proposes to deconstruct the WBF plant (including the powerhouse, switchyard, barge unloading crane, and basement of the coal dumper facility), in Rhea County, Tennessee. Structural deterioration and the presence of hazardous materials at WBF create safety and environmental risks. The proposed deconstruction has the potential to cause ground disturbing activities from the excavation of WBF powerhouse foundation and removal of associated infrastructure. TVA determined the archaeological area of potential effects (APE) to be the approximately 181.5-acre footprint of the Watts Bar reservation where ground disturbance may take place.

TVA contracted with TRC to conduct the archaeological survey of the APE. The draft report *Phase I Archaeological Survey of Approximately 181.5 Acres for the Watts Bar Deconstruction Project in Rhea County, Tennessee* is available for review on-line at this website: <https://portal.trcsolutions.com/portal/server.pt>.

Archival research identified three recorded sites within the APE (40RH1, 40RH5, and 40RH6). The archaeological survey conducted on February 14–17, 2011 identified no previously unrecorded archaeological sites. TRC also revisited sites 40RH1, 40RH5, and 40RH6. No cultural resources were identified within the site boundaries of sites 40RH1 and 40RH5. No cultural resources were identified during shovel testing within the boundary of 40RH6. However, artifacts were encountered along the shoreline fronting 40RH6. Although no intact deposits were identified in the cutbank, these artifacts are likely associated with alluvial deposits of the first terrace (T1); however, the nature of undertaking is such that it would have no potential to affect these potential deeply buried deposits.

It is TVA's finding that no archaeological sites would be affected by the proposed undertaking and no further archaeological investigations are recommended.

Pursuant to 36 CFR Part 800.3(f)(2), TVA is consulting with the following federally recognized Indian tribes regarding properties within the proposed project's APE that may have religious and cultural significance to them and eligible for listing in the National Register of Historic Places (NRHP): Cherokee Nation, Eastern Band of Cherokee Indians, United Keetoowah Band of Cherokee Indians in Oklahoma, Muscogee (Creek) Nation of Oklahoma, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Kialegee Tribal Town, Thlopthlocco Tribal Town, Seminole Tribe of Florida, Absentee Shawnee Tribe of Oklahoma, Eastern Shawnee Tribe of Oklahoma, and Shawnee Tribe of Oklahoma.

Those listed
Page 2
March 30, 2011

By this letter, TVA is providing notification of these findings and is seeking your comments regarding this undertaking and any properties that may be of religious and cultural significance and may be eligible for the NRHP pursuant to 36CFR § 800.2 (c)(2)(ii), 800.3 (f)(2), and 800.4(a)(4)(b).

If you have any questions, please contact me in Knoxville at (865) 632-6461 or by email at pbezzell@tva.gov. If you have any comments on the proposed undertaking, please respond by May 1, 2011.

Sincerely,

(Original signed by)

Pat Bernard Ezzell
Tribal Liaison and Corporate Historian
Federal Determinations
WT 11D-K

PBE:IKS:PLS

Enclosure

cc: Cynthia M. Anderson, LP 5D-C
Brenda E. Brickhouse, LP 5U-C
Donald W. Crabtree, LP 2T-C
Amy B. Henry, WT 11D-K
Susan J. Kelly, LP 5U-C
Khurshid K. Mehta, WT 6A-K
R. Lesley Rogers, WT 3B-K
EDMS, WT 11D-K

THOSE LISTED:

Dr. Richard Allen
Policy Analyst
Cherokee Nation
Post Office Box 948
Tahlequah, Oklahoma 74465

Ms. Augustine Asbury
Cultural Preservation Coordinator
Alabama Quassarte Tribal Town
Post Office Box 187
Wetumka, Oklahoma 74883

Second Chief Alfred Berryhill
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Mr. Bryant Celestine
Tribal Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas 77351

Mr. Charles Coleman
NAGPRA Representative
Thlopthlocco Tribal Town
Route 1, Box 190-A
Weleetka, Oklahoma 74880

Ms. Robin DuShane
Cultural Preservation Director
Eastern Shawnee Tribe of Oklahoma
127 West Oneida
Seneca, Missouri 64865

Mr. Henry Harjo
Environmental Director
Kialegee Tribal Town
Post Office Box 332
Wetumka, Oklahoma 74883

Mr. Tyler Howe
Historic Preservation Specialist
Eastern Band of the Cherokee Indians
Post Office Box 455
Cherokee, North Carolina 28719

cc: Mr. Russ Townsend
Tribal Historic Preservation Officer
Eastern Band of the Cherokee Indians
Post Office Box 455
Cherokee, North Carolina 28719

Mr. Ted Isham
Manager
Cultural Preservation Department
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Ms. Karen Kaniatobe
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Oklahoma
2025 S. Gordon Cooper
Shawnee, Oklahoma 74801

Ms. Lisa C. LaRue
Director, Language, History and Culture &
Acting Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74464

Ms. Jennifer Pietarila
Archaeological Data Analyst
Seminole Tribe of Florida
Ah-Tah-Thi-Ki Museum
HC-61 Box 21-A
Clewiston, Florida 33440

cc: Ms. Anne Mullins
Project Coordinator
Seminole Tribe of Florida
Ah-Tah-Thi-Ki Museum
HC-61, Box 21-A
Clewiston, Florida 33440

cc: Mr. Willard Steele
Tribal Historic Preservation Officer
Seminole Tribe of Florida
Ah-Tah-Thi-Ki Museum
HC-61, Box 21-A
Clewiston, Florida 33440

Mr. Emman Spain
Cultural Preservation Department
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Mr. Ron Sparkman
Chairman
Shawnee Tribe
Post Office Box 189
Miami, Oklahoma 74355

cc: Ms. Kim Jumper
Tribal Historic Preservation Officer
Shawnee Tribe
Post Office Box 189
Miami, Oklahoma 74355

Chief Glenna J. Wallace
Eastern Shawnee Tribe of Oklahoma
127 West Oneida
Seneca, Missouri 64865

Mr. Elliot York
Archaeological Data Analyst
Seminole Tribe of Florida
Ah-Tah-Thi-Ki Museum
HC-61, Box 21-A
Clewiston, Florida 33440



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

March 31, 2011

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), WATTS BAR FOSSIL (WBF) PLANT
DECONSTRUCTION, RHEA COUNTY, TENNESSEE

TVA proposes to deconstruct the WBF (including the powerhouse, barge uploading crane, and basement of the coal dumper facility) in Rhea County, Tennessee. Structural deterioration and the presence of hazardous materials at WBF create safety and environmental risks. Materials will be reclaimed or recycled to the maximum extent practicable, including operable equipment and scrap metal. The results of the archaeological survey associated with the undertaking will be provided in a separate letter.

Periods of operation at WBF occurred from 1942-1957 and from 1970-1982. In June 2007, TVA, in consultation with the Tennessee State Historic Preservation Officer (TN SHPO), determined WBF eligible for listing on the National Register of Historic Places (NRHP). At that time, TVA and the TN SHPO executed a Memorandum of Agreement (MOA) for the removal of the WBF barge uploading crane and associated conveyor system (2007 MOA enclosed).

TVA has conducted studies to identify, evaluate, assess adverse effects, and resolve adverse effects, and by this letter is consulting with your office regarding these measures. In this regard, TVA is submitting documentation detailing the eligibility of WBF. Enclosed is TRC's architectural assessment titled *Phase I Architectural Assessment for the Proposed Deconstruction of the Watts Bar Fossil Plant, Rhea County, Tennessee*.

TVA finds the WBF powerhouse is the only contributing resource to the NRHP eligibility of the WBF, based on the powerhouse's architectural significance as a representative example of International Style architecture. The integrity of the remaining WBF reservation and associated infrastructure has been compromised through removal, modern alterations or deterioration of extant structures, and the introduction of modern office and storage buildings.

Mr. E. Patrick McIntyre, Jr.
Page 2
March 31, 2011

TVA is providing notification that a historic property would be adversely affected by the proposed undertaking and pursuant to 36 CFR § 800.5(d)(2) is consulting to resolve adverse effects. Pursuant to 36 CFR § 800.6(c)(7), TVA proposes to amend the 2007 MOA for resolution of adverse effect. TVA respectfully seeks your comments on the draft amended MOA (enclosed hard copy and digital copy).

TVA is seeking your concurrence on the following:

- the WBF powerhouse is NRHP eligible and the only contributing resource to the NRHP eligibility of the WBF
- the proposed undertaking would have an adverse effect to the WBF
- the 2007 MOA would be amended to address this adverse effects finding.

If you have any questions or comments, please contact Richard Yarnell in Knoxville at (865) 632-3463 or by e-mail at wryarnell@tva.gov.

Sincerely,

(Original signed by)

A. Eric Howard
Manager
Cultural Resources

MSH:IKS:PLS

Enclosures

cc: Cynthia M. Anderson, LP 5D-C
Brenda E. Brickhouse, LP 5U-C
Donald W. Crabtree, LP 2T-C
Amy B. Henry, WT 11D-K
Susan J. Kelly, LP 5U-C
Khurshid K. Mehta, WT 6A-K
R. Lesley Rogers, WT 3B-K
EDMS, WT 11D-K



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

April 11, 2011

Mr. A. Eric Howard
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: TVA, ARCHAEOLOGICAL ASSESSMENT, WATTS BAR FOSSIL PLANT
DECONSTRUCT, UNINCORPORATED, RHEA COUNTY, TN

Dear Mr. Howard:

At your request, our office has reviewed the above-referenced archaeological survey report in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). Based on the information provided, we concur that the project area contains no archaeological resources eligible for listing in the National Register of Historic Places.

If project plans are changed or archaeological remains are discovered during construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb



April 15, 2011

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

Mr. A. Eric Howard
Tennessee Valley Authority
400 West Summit Hill Dr.
Knoxville, Tennessee, 37902-1499

RE: TVA, WATTS BAR DECONSTRUCTION, UNINCORPORATED, RHEA COUNTY

Dear Mr. Howard:

In response to your request, received on Friday, April 1, 2011, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings.

Considering available information, we find, after applying the Criteria of Adverse Effect codified at 36 CFR Part 800, that the project as currently proposed will ADVERSELY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. TVA consultation with our office has drafted a Memorandum of Agreement that adequately mitigates project-related effects to historic properties. Please have the TVA agency official sign the agreement document and submit it to our office for signature and execution. We appreciate your cooperation.

Sincerely,

A handwritten signature in black ink that reads "E. Patrick McIntyre, Jr.".

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg

**AMENDMENT TO THE MEMORANDUM OF AGREEMENT
PURSUANT TO 36 CFR PART 800 BETWEEN THE TENNESSEE VALLEY AUTHORITY
AND THE TENNESSEE STATE HISTORIC PRESERVATION OFFICER
FOR THE DECONSTRUCTION OF THE WATTS BAR FOSSIL PLANT
IN RHEA COUNTY, TENNESSEE**

WHEREAS, the Watts Bar Fossil (WBF) Plant, the first coal-fired power plant built by the Tennessee Valley Authority (TVA), was constructed in stages between 1940 and 1945; and,

WHEREAS, commercial electric power generation at the WBF commenced in 1942, the plant operating from 1942 to 1957, and then again from 1970 to 1982; and,

WHEREAS, the WBF has been in extended shutdown mode after 1982; and,

WHEREAS, TVA and the Tennessee State Historic Preservation Officer (TN SHPO) entered into a Memorandum of Agreement (MOA) in June 2007 (June 2007 MOA) for the removal of the WBF barge unloading crane and associated conveyor system; and,

WHEREAS, structural deterioration of WBF and the presence of hazardous materials at the plant creates safety and environmental risks, which TVA seeks to abate; and,

WHEREAS, TVA now proposes to deconstruct the WBF (including the powerhouse, barge unloading crane, and basement of the coal dumper facility) in Rhea County, Tennessee, (Undertaking) to eliminate the aforementioned risks; and,

WHEREAS, the powerhouse is the only resource at WBF that contributes to the plant's eligibility for the National Register of Historic Places (NRHP), based on the powerhouse's architectural significance as a representative example of International style architecture; and,

WHEREAS, TVA has determined, in consultation with the TN SHPO, that the Undertaking would have an adverse effect on WBF, a historic property eligible for listing on the NRHP; and,

WHEREAS, pursuant to 36 CFR § 800.6(a)(1), TVA has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding by providing documentation specified in 36 CFR § 800.11(e); and,

NOW THEREFORE, TVA and the TN SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties.

1. TREATMENT PLAN AND IMPLEMENTATION:

The following measure shall be taken to minimize or mitigate adverse effects to WBF:

- a. TVA will fulfill its commitments under Stipulation 1b (1 through 4) of the June 2007 MOA, pertaining to the documentation of the barge unloading crane and associated conveyor system.

- b. Documentation for the WBF powerhouse will be prepared to meet the standards of The Historic American Buildings Survey (HABS), Level Two, as the original construction drawings exist in paper and digital forms. Submittal of this documentation to the Library of Congress shall be coordinated with the regional HABS Office. TVA will notify the TN SHPO of the acceptance of the documentation by HABS. This documentation would include:
 - 1. Drawings: select existing architectural drawings to be photographed with large-format negatives or photographically reproduced on Mylar.
 - 2. Photographs: photographs with large-format negatives of exterior and interior views; photocopies with large format negatives of select historic photographs where available.
 - 3. Written data: history and description of the WBF Powerhouse.
- c. The following items will be submitted by TVA to the Tennessee State Library and Archives:
 - 1. A formal written report that meets the Secretary of Interior's Standards and Guidelines for Identification (48 FR 44720-23).
 - 2. A copy of the HABS documentation.
 - 3. Copies of historic photographs and documents.

5. TIME TABLE FOR COMPLIANCE

- a. TVA shall ensure that all documentation specified under Stipulation 1 is collected prior to the commencement of any activities associated with the Undertaking that would preclude such documentation.
- b. The TN SHPO shall have thirty (30) days upon receipt to review and comment on all investigation reports and treatment plans required to be prepared under this Agreement.

6. ADMINISTRATIVE CONDITIONS

- a. If Stipulation 1 of the amended MOA has not been implemented within four (4) years from the date of this Agreement's execution, this Agreement shall be terminated, unless the parties have agreed in writing to an extension for carrying out its terms. Upon this Agreement becoming terminated, TVA, and the TN SHPO will resume consultation pursuant to 36 CFR § 800.6.
- b. If Stipulation 1 of the amended MOA has not been implemented within three (3) years from the date of this Agreement's execution, TVA and the TN SHPO shall review the Agreement to determine whether the Agreement should be extended. If an extension is deemed necessary, TVA and the TN SHPO will consult in accordance with 36 CFR § 800.6(c)(7) to make appropriate revisions to the Agreement.
- c. The signatories to this Agreement may agree to amend the terms of the Agreement. Such amendment shall be effective upon the signatures of both signatories to this Agreement, and the amendment shall be appended to the Agreement as an attachment.

- d. If either signatory to this Agreement determines that the terms of the Agreement cannot be carried out, the signatories shall consult to seek an amendment to the Agreement. If the Agreement is not amended, either signatory may terminate the Agreement. If the Agreement is so terminated, TVA shall either execute a new Agreement pursuant to 36 CFR § 800.6(c) or request the comments of the ACHP pursuant to 36 CFR § 800.7(a).

7. POST REVIEW DISCOVERIES

Should any unanticipated discoveries occur, TVA shall notify the TN SHPO and other consulting parties within 48 hours of discovery. The notification shall describe TVA's assessment of eligibility of newly discovered properties for listing on the NRHP, and proposed actions to minimize or mitigate adverse effects to such properties.

Pursuant to 36CFR § 800.6(c), execution and implementation of this amended MOA evidences TVA's compliance with section 106 of the National Historic Preservation Act and shall govern the Undertaking and all of its parts.

SIGNATORIES:

TENNESSEE VALLEY AUTHORITY

By: Anda A. Ray Date: 05-05-11
Anda A. Ray, Senior Vice President and Senior Policy Official, Environment and Technology

THE TENNESSEE STATE HISTORIC PRESERVATION OFFICER

By: E. Patrick McIntyre, Jr. Date: 5-13-11
E. Patrick McIntyre, Jr., Tennessee State Historic Preservation Officer