

**ALLEN AERODERIVATIVE
COMBUSTION TURBINE PROJECT**

FINAL ENVIRONMENTAL IMPACT STATEMENT

Shelby County, Tennessee

EISX-455-00-000-1730803146

Prepared by:
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COVER SHEET

Allen Aeroderivative Combustion Turbine Project

Proposed action: The Tennessee Valley Authority proposed to construct and operate six aeroderivative combustion turbine (CT) units (GE LM2500s), generating approximately 200 MW of power, and associated support facilities at the Allen CT Plant in Memphis, Tennessee.

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Abstract: TVA prepared this Environmental Impact Statement (EIS) to assess the environmental impacts associated with construction and operation of six new aeroderivative CT units at the Allen Combustion Turbine (ACT) Plant located in Memphis, Tennessee. This action would provide new, dispatchable generation to support the continued system load growth experienced in the TVA power service area and increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. The EIS evaluated information relevant to the assessment of potential impacts associated with the No Action Alternative and Allen Aeroderivative CT Project Alternative.

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SUMMARY

Introduction

The Tennessee Valley Authority (TVA) prepared this Environmental Impact Statement (EIS) to assess the environmental impacts associated with the proposed action to construct and operate six new aeroderivative combustion turbine units (aero CTs) at the Allen Combustion Turbine (ACT) Plant, located in Memphis, Tennessee. The new aero CTs would generate approximately 200 Megawatts (MW) of dispatchable power to help meet growing system demand. The new aero CT units (GE LM2500s) would support fast start dispatching and have synchronous condensing capabilities to improve grid stability.

In June 2019, TVA published the 2019 Integrated Resource Plan (IRP) and associated Environmental Impact Statement (EIS), which were developed with input from stakeholder groups and the public and provide direction on how best to meet future electricity demand over the next 20 years (TVA 2019a, 2019b). The IRP evaluated six scenarios (plausible futures) and five strategies (potential TVA responses to those futures) and identified a range of potential resource additions and retirements throughout the TVA power service area. TVA's asset strategy incorporated the strategic direction from the 2019 IRP and supports affordable, reliable, and cleaner energy for the customers TVA serves. Since the completion of the 2019 IRP, TVA has seen a marked increase in electric demand. The need for the inclusion of natural gas-fired CTs and combined-cycle (CC) turbines as part of a target power supply mix is driven by the demand for reliable electricity, the increased amount of solar generation within the system, dispatchable capacity requirements, commodity prices, costs relative to alternative resource options, and transmission system reliability (TVA 2019a).

TVA operates 101 natural gas- and fuel oil-fired generators at 17 sites, including nine in Tennessee, five in Mississippi, one in Alabama, and two in Kentucky. While similar to TVA's existing simple-cycle CTs, aero CT units operate like a jet engine by which the compressor draws air into the unit, where it is compressed, mixed with fuel, and ignited. As combustion occurs, gas expands through turbine blades connected to a generator to produce electricity. Aero CTs, unlike simple-cycle CTs, provide high cycling capability and fast startup. TVA's generation network is best when integrating resources that enhance system flexibility, including the option for emergency black-start¹ capabilities, which aid in system restoration following a significant event that disrupts the power supply or creates a disturbance to the bulk electric system. Aero CTs with emergency black-start capabilities allow the aero CT units to be manually started and connected to the grid to help start other generating units and rapidly restore electricity to the grid in the event of a widespread power outage.

Purpose and Need for Action

TVA is proposing the addition of six new natural gas-fired aero CT units at the ACT Plant to generate approximately 200 MW of dispatchable power to help meet the growing system demand and load growth experienced in the TVA power service area over the past few years. The proposal would also increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. These improvements

¹ "Black-start capable" units are units to which power can be restored without the need to rely on inputs from the external electric power transmission system.

would also help TVA expand and integrate renewable energy resources onto its transmission grid.

As set forth in TVA's 2019 IRP, TVA needs flexible, dispatchable power to meet year-round generation and maximum capacity system demands and planning reserve margin targets. Dispatchable power is also necessary to successfully integrate increasing amounts of renewable energy sources. Dispatchable synchronous condensing capabilities are known to address vulnerabilities to voltage instability that may result from increased renewable generation in the region. The reliability of the system would also be improved by generation sources with black start capabilities that can support system restoration in the event of a system failure.

Alternatives

Alternative A – The No-Action Alternative

Under the No Action Alternative, TVA would not construct six new aero CT units or the associated support facilities to provide generation of approximately 200 MW at the ACT Plant. TVA would continue to operate two existing units (units 19 and 20) at the ACT Plant on a limited basis, consistent with the 2021 Paradise and Colbert Combustion Turbine EA. While this alternative is environmentally preferable, it does not meet the purpose and need of TVA's proposed action; however, consistent with the requirements of NEPA, it is included in this evaluation as it represents current baseline conditions against which the Action Alternative would be compared.

Alternative B – Allen Aeroderivative Project

Under Alternative B, the preferred alternative, TVA would construct and operate six aero CT units (GE LM2500s) generating approximately 200 MW of power and associated support facilities. At least four of the new aero CT units would have black-start capability, meaning the ability to restore power without needing to rely upon inputs from the external electric power transmission system. The new units would support fast startup dispatching and synchronous condensing for transmission system stability in western Tennessee and would improve TVA's ability to further expand renewable energy. TVA would install control systems to minimize and monitor air emissions of the new aero CT units; reduction of emissions from each aero CT unit would be achieved through a dry-low emissions combustion system and a selective catalytic reduction system. TVA would use potable water obtained from the existing public supply for inlet air evaporative cooling in summer ambient temperatures.

The overall ACT project area (project area) consists of approximately 60 acres of mostly heavily disturbed land located within the retired Allen Fossil Plant (ALF) and existing ACT and Allen Combined Cycle (ACC) Plant footprints. The entirety of this project area would not be affected by project activities; however, final locations for the laydown yard, parking, construction trailers, etc., are dependent upon final design. Construction of the aero CTs and associated support facilities is expected to begin in late 2025 (estimated). Commercial operation would begin in 2027 (estimated).

Equipment used during the construction phase would include trucks, truck-mounted augers and drills, excavators, tracked cranes, and bulldozers. Low ground-pressure-type equipment (for example, tracked vehicles) would be used in specified locations (such as areas with soft ground) to reduce the potential for environmental impacts per TVA best management practices (BMPs). TVA estimates a maximum of 200 workers would be employed on site at the peak of the approximately 15-month construction period.

Air Quality

Affected Environment

The ACT Plant is located in Shelby County, Tennessee. Air quality in Shelby County is designated as unclassifiable/attainment for all National Ambient Air Quality Standards (NAAQS) criteria pollutants (EPA 2024b). The EPA's 2023 and 2024 *Design Value Reports* for Shelby County, however, show exceedance of the 2015 8-hour ozone standard.

Environmental Consequences

There would be temporary minor construction impacts associated with emissions from on-site vehicles and equipment as well as generation of fugitive dust. Operation of the aero CTs would result in projected increases in criteria pollutant emissions as measured against the current baseline but the effect of air emissions would be below the significant impact levels and thus would not cause or contribute to exceedance of air quality standards. These emissions would be monitored and would comply with permit limits. The impact of operational air quality emissions would be moderate but would not result in an exceedance of applicable permit emission limits or air quality standards.

Climate Change and Greenhouse Gas

Affected Environment

The Earth's natural warming process is known as the "greenhouse effect." The Earth's atmosphere consists of a variety of gases that regulate the Earth's temperature by trapping solar energy. These gases—including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride—are cumulatively referred to as greenhouse gases (GHGs) because they trap heat like the glass of a greenhouse. Anthropogenic activities, which include the burning of fossil fuels to produce energy and deforestation, have contributed to elevated concentrations of GHGs in the atmosphere since the Industrial Revolution. The release of GHGs into the atmosphere as a result of human activity has caused an increase in the average global temperature. While the increase in global temperature is known as global warming, the resulting change in a range of global weather patterns is known as "climate change."

In 2024, the U.S. Environmental Protection Agency (EPA) released the Final Rule: New Source Performance Standard (NSPS) for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-fired Electric Generating Stations (40 CFR 60 Subpart TTTT_a), under the Clean Air Act (CAA). The rule regulates GHG new carbon pollution standards for existing coal- and new gas-fired power plants. The construction and operation of the ACT would be consistent with the Final Rule (40 CFR 60 Subpart TTTT_a).

Environmental Consequences

Construction of the Proposed Action would result in approximately 15,153 tons of CO₂e over the 15-month construction period. Even with conservative assumptions, when compared to GHG emissions in Tennessee (112.1 million metric tons CO₂e in 2019 [TDEC 2024a]), and Shelby County (17 million metric tons of CO₂e in 2019 [Memphis and Shelby County Division of Planning and Development 2022]) construction-related GHG emissions would be negligible.

Each aero CT unit would have a generation restriction of 115,000 megawatts per hour per year. TVA estimates that the predicted operational capacity factor of 11.1 percent and maximum

operational capacity factor of 40 percent would result in approximately 107,268 to 401,800 tons of CO₂e per year. Operation of the proposed aero CTs would result in a social cost of greenhouse gases (SC-GHG) estimated to range from approximately \$425,531 to \$2,978,714 annually. The overall increase in GHG emissions, at the maximum capacity factor of 40 percent, is a minor increase (0.82 percent) in the overall system GHG emissions. These contributions are negligible relative to global GHG levels and potential effects on climate change. As such, impacts from Alternative B on climate change and GHG emissions would be minor.

Groundwater

Affected Environment

The Memphis aquifer serves as the primary drinking water aquifer for the area, including the City of Memphis (Carmichael et al. 2018). Water quality sampling results indicate that coal combustion residuals (CCR) constituents such as arsenic (and, to a lesser extent, fluoride and lead) have been detected at elevated levels in groundwater samples collected from the alluvial aquifer underlying the East Ash Pond Complex. Additionally, elevated pH values in groundwater generally greater than 7.5 standard units have also been observed. Groundwater sampling results do not indicate adverse impacts to the Memphis Sand aquifer or the public drinking water supply (Stantec 2019a).

Environmental Consequences

Construction and operation of the Proposed Action would result in negligible alteration of groundwater hydrology from pile driving. The potential effects of accidental spills or releases that may affect groundwater would be minimized through BMPs. As such, impacts on groundwater would be minor.

Surface Water

Affected Environment

The ACT Plant is located adjacent to the Mississippi River, approximately 5 miles southwest of downtown Memphis, within both the Horn Lake-Nonconnah River watershed (Hydrologic Unit Code [HUC] 08010211) and the Lower Mississippi-Memphis watershed (HUC 08010100) (TDEC 2024b). The ACT Plant is a previously developed site located adjacent to McKellar Lake to the north and is entirely within the McKellar Lake surface water system. There are several existing wastewater streams at the Allen Reservation that are permitted for discharge under the jurisdiction of National Pollutant Discharge Elimination System (NPDES) Permit No. TN0005355. These include Outfall 001 (East Ash Pond Complex to McKellar Lake), Outfall 001A (Emergency Overflow to Horn Lake Cutoff), Outfall 002 (West Ash Pond to the Mississippi River), Outfall 003 (Condenser Cooling Water to Mississippi River), Internal Monitoring Point (IMP) 006 (via Outfall 003 to Mississippi River), and Outfall 010 (intake screen backwash to McKellar Lake). Various waste streams are authorized to discharge through Discharge Point 1 and 2 to the publicly owned treatment works through Permit No. S-NO1-266. The Allen Reservation also maintains six permitted stormwater outfalls (F4 through F9) under the jurisdiction of NPDES Multi-Sector General Permit No. TNR053184, of which all but one discharges to McKellar Lake.

There are water quality concerns in many of the stream segments of both the Lower Mississippi-Memphis and Horn Lake-Nonconnah River watersheds. The segments of the Mississippi and Lower Nonconnah, as well as McKellar Lake, are all known to contain chemical pollutants such as chlordane, dioxins, and polychlorinated biphenyls (PCBs), among others (TDEC 2024c).

Environmental Consequences

During construction activities, temporary, minor impacts to surface waters associated with sedimentation from stormwater runoff would occur. Implementing BMPs designed to reduce erosion during construction and operation would minimize impacts. No direct or indirect impacts to surface water would be anticipated from the operations associated with the Proposed Action. Because of TVA's continued compliance with permit requirements and the minor alterations in wastewater and stormwater discharges from construction of the Proposed Action, impacts to water resources during operation are negligible.

Wildlife

Affected Environment

The project area has been heavily impacted and altered by previous construction and operations of ACT Units 1 through 20. The ACT Plant provides limited suitable habitat for common wildlife, although it could provide roosting areas for killdeer (*Charadrius vociferus*), rock dove (*Columba livia*), swallow and swift species. The mowed grass area could provide limited foraging habitat for common birds such as field sparrow (*Spizella pusilla*), indigo bunting (*Passerina cyanea*), northern cardinal (*Cardinalis cardinalis*), rock dove, and Carolina chickadee (*Parus carolinensis*) (National Geographic 2002). Mammals, such as eastern mole (*Scalopus aquaticus*), golden mouse (*Ochrotomys nuttalli*), ground hog (*Marmota monax*), and white-tailed deer (*Odocoileus virginianus*), also may use habitat like this in this region (Whitaker 1996). Reptiles that may use these habitats in this region include black racer (*Coluber constrictor*), eastern kingsnake (*Lampropeltis getula*), gray rat snake (*Pantherophis spiloides*), and red milksnake (*Lampropeltis triangulum*) (Gibbons and Dorcas 2005). Review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool in December 2024 identified 16 migratory bird species of conservation concern that have the potential to occur within the vicinity of the project area: American golden-plover (*Pluvialis dominica*), bald eagle (*Haliaeetus leucocephalus*), cerulean warbler (*Setophaga cerulea*), chimney swift (*Chaetura pelagica*), Kentucky warbler (*Geothlypis formosa*), Le Conte's sparrow (*Ammodramus leconteii*), least tern (*Sterna antillarum antillarum*), lesser yellowlegs (*Tringa flavipes*), little blue heron (*Egretta caerulea*), pectoral sandpiper (*Calidris melanotos*), prairie warbler (*Setophaga discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), semipalmated sandpiper (*Calidris pusilla*), and wood thrush (*Hylocichla mustelina*).

Environmental Consequences

Minor impacts to heavily-disturbed, low-quality habitat would occur.

Threatened and Endangered Species

Affected Environment

Review of the TVA Regional Natural Heritage Database on October 3, 2023, resulted in records of several special status species within 3 miles of the project area: three species of state conservation concern, lark sparrow (*Chondestes grammacus*), osprey (*Pandion haliaetus*), and Mississippi kite (*Ictinia mississippiensis*); one species federally threatened in Tennessee, piping plover (*Charadrius melodus*); and two federally delisted and monitored species, interior least tern (*Sterna antillarum athalassos*) and bald eagle (*Haliaeetus leucocephalus*). A search for federally listed species within Shelby County, Tennessee, identified one proposed threatened species (alligator snapping turtle [*Macrochelys temminckii*]) and one proposed endangered species (tricolored bat [*Perimyotis subflavus*]). Additional review of the USFWS IPaC tool on

December 13, 2024, identified the monarch butterfly (proposed threatened) as a species that has the potential to occur within the project area.

Environmental Consequences

Project activities would occur on heavily disturbed land; therefore, there is no suitable habitat for the lark sparrow, Mississippi kite, and piping plover. Additionally, TVA has made a no-effect determination for the alligator snapping turtle. For selected species (bat species, bald eagle, osprey, and the interior least tern), TVA has committed to conservation measures to avoid and minimize impacts, as such impacts would be minor. Potential habitat for least tern and interior least tern is located within the project area, and coordination with U.S. Fish and Wildlife Services would occur as necessary to ensure compliance under federal law if this species is encountered during construction.

Managed and Natural Areas

Affected Environment

A review of TVA's Natural Heritage Database identified six managed/natural areas within a 3-mile radius of the ACT Plant: the Ensley Bottoms Complex, T.O. Fuller State Park, Chucalissa Tree Trail Arboretum and Village Archaeological Area, Conservation Easement Properties, the Presidents Island Wildlife Management Area, and a Wetlands Reserve.

Environmental Consequences

Because project activities would occur within the boundaries of previously disturbed TVA lands, impacts from disruptive noise, fugitive dust, and heavy machinery to managed natural areas would be minor.

Transportation

Affected Environment

The ACT Plant is located in the Frank C. Pidgeon Industrial Park, which is served by highway, railway, and waterway modes of transportation. Major traffic generators include Nucor Steel, xAI, TVA's ALF and ACC plants, TVA ALF ash pond closure activities, and the CSX intermodal facility. These facilities and activities generate traffic that generally comprises of a mix of cars and light-duty trucks (such as a residential delivery truck), medium-duty trucks (larger delivery trucks), and heavy-duty trucks (semi-tractor trailers).

Principal access to the ACT Plant from Interstate 55 (I-55) is West Mallory Avenue (a single-point urban interchange) to Paul R. Lowry Road (referred to as Riverport Road) to Plant Road. Riverport Road varies from two to four lanes in the vicinity of the ACT.

The ALF was served by a rail line operated by Canadian Railroad. This line ran east from ALF, parallel to the north of Riverport Road for approximately 2 miles, where it crosses the south of the road. The ALF plant has a barge unloading area located on McKellar Lake, which has direct access to the Mississippi River.

Environmental Consequences

There would be temporary, minor impacts associated with increased traffic on area roadways during construction activities. However, there would be no change in Level of Service (LOS) as a result of construction-related traffic and only short delays at intersections within the vicinity of the ACT Plant. Operations-related traffic would be negligible.

Noise

Affected Environment

Ambient noise in the area is characterized by operations at the ACT Plant, the ACC Plant, removal of CCR at the ALF, and other industrial operations in the Frank C. Pidgeon Industrial Park. The existing ACT Plant generates localized noise through operation of CTs, generators, and other ancillary equipment. Sensitive noise receptors would include recreationists using T.O. Fuller State Park, which is located approximately 0.7 miles southeast of the ACT Plant, on the opposite side of Riverport Road. The northwest corner of the park, closest to the project area, is primarily undeveloped woodland separated from the main body of the park by a railroad spur. The next closest receptor is a residential property located approximately 1.5 miles southeast of the ACT Plant, separated from the proposed project area by densely forested areas of T.O. Fuller State Park.

Environmental Consequences

Temporary, minor adverse impact associated with increased noise during construction activities would occur. Noise impacts from operation would be minor.

Solid and Hazardous Waste

Affected Environment

The unique solid waste concerns for gas- and oil-fired plants are the byproducts from emission controls. The solid waste produced from these controls is dependent upon the specific control technology implemented and is not anticipated to be considerable (Brown et al. 2017). Other hazardous wastes currently generated at these sites include waste paint, waste paint solvents, paper insulated lead cable, debris from sandblasting and scraping paint chips, solvent rags used to clean equipment, and liquid-filled fuses (TVA 2019f). TVA has ensured these wastes will be managed with all other hazardous materials generated at the ACT Plant and will be shipped off-site and properly disposed.

Environmental Consequences

There would be a minor impact as solid and hazardous wastes generated during construction and operation of the aero CT units would be managed in accordance with established procedures and applicable federal, state, and local laws and regulations.

Socioeconomics

Affected Environment

For the socioeconomic analysis, the study area was defined as any census block group that falls within a 10-mile radius of the ACT Plant, which includes parts of Shelby County, Tennessee, Crittenden County, Arkansas, and DeSoto County, Mississippi. The population of the study area is 282,264 (USCB 2022a). The block group that contains the project area and the temporary laydown area primarily consists of industrial properties and has no residential population. Since 2010, the population of the study area has declined by 4.6 percent.

Minority populations represent the primary component of the study area population. Specifically, Black or African Americans represent 68.2 percent of the population within the study area. In contrast, whites account for 25.1 percent of the population within the study area. Other minority racial and ethnic groups make up a small proportion of the total population in the study area but are at or below comparative rates for the referenced counties and states.

The study area block groups have a higher percentage of people living below the poverty level compared to all the representative geographies. The unemployment rate is noted to be higher relative to the unemployment rates of all the reference counties and states. Shelby County contains a total employed labor force of 429,064 workers (Table 3-9). Business sectors that provide the greatest employment opportunities include educational services. The unemployment rate within the study area block groups is noted to be higher relative to the unemployment rates of all the reference counties and states.

Community facilities and services available to the communities within the study area include over 500 churches, 173 schools, 25 fire stations, 20 medical centers, 17 police stations, and 7 community centers (USGS 2024). Additionally, no community facilities are located in the immediate vicinity (within 0.5 miles) of the ACT Plant.

Environmental Consequences

Construction activities associated with the aero CTs would entail a temporary increase in employment and associated payrolls, which would result in a minor short-term direct positive impact to employment in the region. Indirect impacts related to the purchases of materials and supplies and the multiplier effect of increased spending in the local economy would be beneficial but minor, given the short construction period. Following construction, permanent staffing associated with the operation of the ACT Plant is expected to require approximately five personnel. Due to the small number of new staff that would be integrated into the existing workforce, long-term impacts to employment would be minimal.

Communities closest to the project area are most likely to experience adverse effects. Additionally, communities that are predominately minority or low-income would be more likely to be affected by the proposed action. However, impacts on communities would be minor overall. Construction-related impacts such as traffic and noise would be minor and short term. Long-term adverse impacts from air emissions would be minimized through adherence to NAAQS standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including populations with higher frequency of preexisting health conditions.

Utilities

Affected Environment

Several utilities and service systems are in place at the ACT Plant, as a result of previous construction and operation of ACT CT units (Units 1 through 20). These utilities and service systems include water and wastewater, electrical, fuel oil, and natural gas.

Environmental Consequences

There would be no impacts to usage of potable water and natural gas. Operational activities would result in a potential for improved system reliability and flexibility to integrate renewable energy sources.

Public Health and Safety

Affected Environment

There is access to many emergency services nearby, including hospitals, urgent care, law enforcement, and fire protection services. The closest urgent care is Baptist Urgent Care-Horn Lake, located 14.4 miles from the ACT Plant. The closest hospital is Methodist South Hospital,

which is 10.8 miles away from the ACT Plant. Police services are managed by the Memphis police department from their Westwood location. They are located 9.2 miles from the site. Fire protection services are run by the Memphis Fire Station #37, which is located 8.9 miles from the ACT Plant (USGS 2024).

Existing health hazards are associated with emissions and discharges from the ACT Plant and accidental spills/releases at the plant or along the pipelines. An emergency response plan developed to address these potential discharges is discussed with local emergency management agencies.

Environmental Consequences

The operation of the ACT Plant would adhere to TVA guidance and be consistent with standards established by OSHA and applicable state requirements. Therefore, worker and public health and safety during project operation would be maintained and impacts would be minimal.

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Symbols, Acronyms, Abbreviations, and Glossary of Terms

AADT	Annual daily traffic
ACC	Allen Combined Cycle plant
ACS	American community survey
ACT	Allen Combustion Turbine plant
ALF	Allen Fossil plant
Aero	Aeroderivative
BACT	Best available control technology
BMP	Best management practices
C	Celsius
CAA	Clean Air Act
CC	Combined cycle
CCR	Coal combustion residuals
CDC	Community development corporation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH₄	Methane
CO	Carbon monoxide
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CT	Combustion turbine
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibel
EA	Environmental assessment
EIS	Environmental impact statement
EO	Executive order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
GAI	Geographic Area of Interest
GE	General Electric
GHG	Greenhouse gas
HAP	Hazardous air pollutant
HUC	Hydrologic unit code

HUD	U.S. Department of Housing and Urban Development
IMP	Internal monitoring point
IPaC	Information for Planning and Consultation
IRA	Inflation Reduction Act
IRP	Integrated resource plan
IWG	Interagency Working Group
LAER	Lowest achievable emission rate
lb	Pound
Ldn	Day-night sound level
LEP	Limited English proficiency
LOS	Level of service
MLGW	Memphis Light, Gas and Water Division
mmBtu	Metric million British thermal units per hour
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO₂	Nitrogen dioxide
NOI	Notice of Intent
NO_x	Oxides of nitrogen
N₂O	Nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSPS	New Source Performance Standards
NSR	New Source Review
Pb	Lead
PCB	Polychlorinated biphenyl
PM	Particulate matter
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFFA	Reasonably foreseeable future action
RI	Remedial investigation
ROD	Record of Decision
SCC	Social cost of carbon
SC-GHG	Social cost of greenhouse gases
SCHD	Shelby County Health Department
SO₂	Sulfur dioxide
SCR	Selective catalytic reduction

SWPPP	Stormwater pollution prevention plan
TDEC	Tennessee Department of Environment and Conservation
TMDL	Total maximum daily limit
tpy	Tons per year
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
USC	U.S. Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compound
WMA	Wildlife Management Area
WWTP	Wastewater Treatment Plant

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

1.1. Introduction

The Tennessee Valley Authority (TVA) proposes to construct and operate six new aeroderivative combustion turbine units (Aero CTs) at the Allen Combustion Turbine site (ACT), located in Memphis, Tennessee. The new Aero CTs would generate approximately 200 Megawatts (MW) of dispatchable power to help meet growing system demand. The new Aero CT units (General Electric [GE] LM2500s) would support fast start dispatching and have synchronous condensing capabilities to improve grid stability. Four of the Aero CT units would have black start capabilities. Under the proposal, TVA would implement the best available control technologies to minimize air emissions of the new units. Construction would occur over a one-year timeframe (approximately) with construction activities taking place within previously disturbed areas at ACT and adjacent properties. Commercial operations for the new units would begin in 2027.

The new Aero CTs would increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee and providing new generation to support the continued system load growth experienced in the TVA power service area over the past few years. The proposal would also facilitate the integration of renewable energy generation onto the TVA bulk transmission system, consistent with TVA's 2019 Integrated Resource Plan (IRP).

TVA has prepared an Environmental Impact Statement (EIS) to analyze the impacts to the human environment, consistent with the requirements of the National Environmental Policy Act (NEPA).

1.2. Background

TVA produces or obtains electricity from a diverse portfolio of energy sources, such as solar, hydroelectric, wind, biomass, fossil fuel, and nuclear. In June 2019, TVA published the 2019 IRP and associated EIS, which were developed with input from stakeholder groups and the public that provides direction on how to best meet future electricity demand (TVA 2019a, 2019b). The IRP is a comprehensive study that provides direction on how to best meet future electricity demand over the next 20 years (TVA 2019a). The IRP evaluated six scenarios (plausible futures) and five strategies (potential TVA responses to those futures) and identified a range of potential resource additions and retirements throughout the TVA power service area. This area encompasses approximately 80,000 square miles covering most of Tennessee and parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina, and Virginia. Through the 2019 IRP, the TVA Board adopted the Target Power Supply Mix, which identifies the addition of up to 5,200 MW of simple-cycle gas capacity by 2028.

TVA's asset strategy incorporated the strategic direction from the 2019 IRP and supports affordable, reliable, and cleaner energy for the customers TVA serves. The proposed action to be studied in this EIS is one part of the overall asset strategy, which also includes:

- Maintaining the existing low-cost, carbon-free nuclear and hydro fleets.
- Retiring aging coal units as they reach the end of their useful life.
- Adding solar to meet customer demand and system needs.

- Using natural gas to enable coal retirements and solar expansion as other technologies develop.
- Leveraging demand-side options, in partnership with local power companies.
- Developing new carbon-free technologies for decarbonization.

Using least-cost planning in the development of asset strategy, TVA provides electricity at the lowest feasible rates for customers. Outlined in the asset strategy and formalized in TVA's Strategic Intent and Guiding Principles document (TVA 2021a), approved by the TVA Board of Directors in May 2021, TVA has a plan for 70 percent carbon reduction by 2030, a path to approximately 80 percent carbon reduction by 2035, and aspires to net-zero carbon emissions by 2050, using a 2005 baseline.

Since the completion of the 2019 IRP, TVA has seen a strong increase in electric demand. Population has increased in the TVA power service area by 1.5 percent since 2019, and TVA expects continued strong growth in annual electric demand through the middle of this decade. Current system modeling shows that with increased residential migration and commercial development, TVA must add capacity to the system to maintain adequate operating reserves. Peaking units, such as natural gas-fired combustion turbines (CTs), are valuable in meeting electricity demand for shorter periods of high demand on summer and winter peak days, and their flexibility also plays a key role in successfully integrating renewable resources, which have variable and unpredictable generation patterns.

TVA's system has been challenged by the integration of greater renewable generation. Solar resources are typically only available on average about 20 to 25 percent of the year, and their availability can vary significantly during daylight hours as cloud cover and precipitation events occur. Given these constraints, solar power must be paired with dispatchable power or battery storage to meet year-round capacity needs. However, battery storage is constrained in that batteries are energy limited (typically providing a 4-hour duration) and are net consumers of electricity. Consequently, while pairing solar resources with the appropriate level of battery storage can compensate for the limited availability of solar power, it adds cost and introduces transmission instability and reliability issues that then must be addressed with transmission system improvements (TVA 2019a).

The need for inclusion of natural gas-fired CTs and combined-cycle (CC) turbines in the Target Power Supply Mix is driven by the demand for reliable electricity, the increased amount of solar generation within the system, dispatchable capacity requirements, commodity prices, costs relative to alternative resource options, and transmission system reliability (TVA 2019a). Natural gas-fired CT or CC units can be operated year-round to meet the fluctuating demand on the power system. The inclusion of dispatchable power generation from natural gas-fired CTs and CCs effectively enables systemwide integration of solar while providing critical transmission-related benefits to ensure reliability and power quality (TVA 2019a).

TVA operates 101 natural gas- and fuel oil-fired generators at 17 sites, including nine in Tennessee, five in Mississippi, one in Alabama, and two in Kentucky. Together, these generators have a generation capacity of over 12,000 MW (TVA 2024a). These include 21 natural gas-fueled CC units at eight sites and 87 natural gas-fueled simple-cycle CT units at nine sites (TVA 2019b). Eighty of the simple-cycle CT units are capable of using fuel oil and 60 are capable of fast start up (TVA 2021b). An additional 10 natural gas-fired aero CT units are being constructed-at the Johnsonville Reservation (TVA 2022a).

Aeroderivative Combustion Turbines:

Aeroderivative (aero) CT units are highly efficient peaking units that can ramp up very quickly to provide capacity and grid support when needed. Peaking units are essential for maintaining system reliability requirements, as they can startup quickly to meet sudden changes in either demand or supply.

The aero CTs would enhance the reliability of TVA's peaking fleet and promote system flexibility to integrate renewable resources which have variable generation patterns.

While similar to TVA's existing simple-cycle CTs, aero CT units operate like a jet engine where the compressor draws air into the unit, where it is compressed, mixed with fuel, and ignited. As combustion occurs, gas expands through turbine blades connected to a generator to produce electricity. Aero CTs, unlike simple-cycle CTs, provide high cycling capability and fast startup. Additionally, as TVA increases the use of intermittent renewable resources, aero CTs provide excellent control response for better grid support.

TVA's generation network is best when integrating resources that enhance system

flexibility, including the option for emergency black-start² capabilities, which aid in system restoration following a significant event or disturbance to the bulk electric system. Aero CTs with emergency black-start capabilities allow the aero CT units to be manually started and connected to the grid to help start other generating units and restore electricity to the grid in the event of a widespread power outage. Aero CTs enhance system flexibility, integrate increasing renewable capacity, and provide dispatchable capacity, as they are highly efficient peaking units with fast startup and little startup penalty. The units can quickly achieve full generating capacity from a cold start and allow for multiple daily starts; because of this capability, they improve the system's ability to effectively integrate generation from variable resources, such as solar and wind. Further, aero CTs provide the ability to run in synchronous condensing³ mode, which can efficiently support local voltage stability near load centers.

In 2019, TVA completed a CT Modernization Study to evaluate the condition of its existing CT units and form recommendations for investments to ensure a reliable and flexible peaking fleet into the future. The results of the study identified the ACT plant's CT units as the "most challenged" based on their age and material condition and recommended that they be replaced. The CT Modernization Study also recommended adding new aero CTs to enhance system flexibility, integrate increasing renewable capacity, and provide dispatchable capacity.

Investments in adding Aero CTs to the peaking fleet aligns with the direction in the IRP, which recommends enhancing system flexibility to integrate renewables and distributed resources, with substantial solar additions over the next two decades. As the amount of solar generation in the TVA generation portfolio continues to increase, flexibility of the remainder of the fleet becomes even more important. For instance, irregular cloud patterns that temporarily block the sun and reduce solar generation require other generating units to respond to continue to reliably

² "Black-start capable" units are units to which power can be restored without the need to rely on the external electric power transmission system.

³ Keeping power flowing steadily across the grid requires inertia, or a resistance to fast changes in the amount of power being generated. TVA needs this inertia during a disturbance like a lightning strike or at other times when fluctuations in generation occur. The inertia is created by large spinning turbines and generators. As TVA retires some of its large spinning assets and replaces them with non-spinning generation sources such as solar, the inertia can be retained by adding synchronous condenser capabilities. Essentially, synchronous condensers spin similarly to an operating generator, but instead of producing actual power, they spin to create the inertia needed for grid stability. After their initial start, there are no emissions during this mode of operation.

supply power to customers. Aero CTs are inherently well-suited to provide flexibility, enabling the remainder of the system to better integrate renewables.

In June 2021, TVA issued an environmental assessment (EA) addressing the retirement of most of the CT units at Allen. TVA's Paradise and Colbert Combustion Turbine EA and an associated finding of no significant impact addressed the retirement of CT units at its Allen and Johnsonville plants and the replacement of capacity lost with new CT units at TVA's Paradise and Colbert plants. TVA concluded that implementing retirement of CT units at Allen and Johnsonville and construction of new CT units at Paradise and Colbert would not be a major federal action significantly affecting the environment. TVA stated in the EA that it would continue to operate a few CT units at Allen for the foreseeable future for limited purposes. In December 2022, during Winter Storm Elliott, 16 of the CT units at Allen failed to start, impacting the TVA system grid availability by 240 MW. Since this event, 16 CT units at Allen have been demolished, and 2 CT units are currently being demolished. Two units (units 19 and 20) remain and will be available on a limited basis.

In September 2023, TVA completed an environmental review of the demolition and removal of 16 existing CT units at the ACT site. The determination that the units should be demolished and removed originated under the development of the Paradise and Colbert Combustion Turbine EA in 2021. TVA has determined that removal of the units had independent utility and was necessary regardless of future actions or use of the site. The demolition and removal of the units are considered as a cumulative action relevant to the environmental review of this proposed action.

1.3. Purpose and Need

TVA is proposing the addition of six new natural gas-fired aero CT units at the ACT Plant to generate approximately 200 MW of dispatchable power to help meet the growing system demand and load growth experienced in the TVA power service area over the past few years. The proposal would also increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. These improvements would also help TVA to expand and integrate renewable energy resources onto its transmission grid.

As set forth in TVA's 2019 Integrated Resource Plan, TVA needs flexible, dispatchable power to meet year-round generation, maximum capacity system demands, and planning reserve margin targets. Dispatchable power is also needed to successfully integrate increasing amounts of renewable energy sources. Dispatchable synchronous condensing capabilities are known to address vulnerabilities to voltage instability that may result from increased renewable generation in the region. Reliability of the system would also be improved by generation sources with black start capabilities that can support system restoration in the event of a system failure.

1.4. Decision to be Made

This EIS has been prepared to inform TVA decision-makers and the public about the environmental consequences of the proposed action. The decision TVA must make is whether to construct and operate aero CTs at the ACT Plant. TVA will use this EIS to support the decision-making process. TVA's decision will consider factors such as potential environmental impacts, economic issues, and TVA's long-term goals.

1.5. Related Environmental Reviews

TVA has been operating at or within the vicinity of the ACT Plant for decades. Currently, TVA operates the Allen Combined Cycle (ACC) Plant on a property south of the ACT Plant and is conducting extensive decontamination and deconstruction activities on the site of the former Allen Fossil Plant (ALF), adjacent to the ACT Plant. Management of the coal combustion residuals (CCR) on nearby lands is ongoing. These activities have been the subject of several environmental reviews over the past decade.

Related environmental documents and material concerning this EIS were reviewed and are listed below. The contents of these documents helped to support the proposed action or describe the affected environment and are incorporated by reference as appropriate.

- TVA Integrated Resource Plan and Environmental Impact Statement (June 2019). As noted above, in June 2019, TVA released its IRP, which evaluated six scenarios (plausible futures) and five strategies (potential TVA responses to those futures) and identified a range of potential resource additions and retirements throughout the TVA power service area. In the final IRP, TVA identified a Target Power Supply Mix that was adopted by the TVA Board in August 2019. The Target Power Supply Mix included the addition of up to 5,200 MW of CTs by 2028, and up to 8,600 MW of CTs by 2038 (TVA 2019a, 2019b).⁴ The proposed actions evaluated in this EIS support TVA's Preferred Alternative and the Target Power Supply Mix, as described in the IRP and accompanying EIS.
- Paradise and Colbert Combustion Turbine Environmental Assessment (EA) (June 2021). TVA issued this EA addressing the retirement of CT units at ACT and Johnsonville Plants and the replacement of the capacity lost with new CT units at its Paradise and Colbert plants (TVA 2021b).
- Allen Fossil Plant Ash Impoundment Closure Final Environmental Impact Statement (EIS) (March 2020). This EIS addressed TVA's closure of the surface impoundments at ALF and how to dispose of CCR removed from the impoundments under the "closure-by-removal" option. This project supports TVA's goals to eliminate all wet CCR storage at its coal plants by closing CCR surface impoundments across the TVA system and to assist TVA in complying with the CCR Rule of the U.S. Environmental Protection Agency (EPA). Under both closure alternatives analyzed in the EIS, TVA would transport CCR to an off-site existing, permitted landfill and would transport borrow materials to ALF from an existing, permitted off-site source for site restoration. A Record of Decision (ROD) was released on April 21, 2020 (TVA 2020).
- Allen Fossil Plant Decontamination and Deconstruction Final Environmental Assessment (EA) (October 2019). This EA evaluates the disposition of the buildings and structures at ALF that are no longer needed for their original purpose of power generation. TVA's proposal addressed in this EA was the full demolition to grade, resulting in a brownfield site. Implementation of this alternative addressed the purpose and need of the project to

⁴ TVA is in the process of developing a new IRP. TVA's past practice has been to evaluate its IRPs every 4 to 5 years. Accordingly, in May 2023, TVA published a Notice of Intent in the Federal Register announcing its plans to prepare an EIS associated with the implementation of the 2025 IRP. The draft 2025 IRP and EIS was published by TVA in September 2024, and a final 2025 IRP and EIS is expected in 2025. TVA has reviewed the 2019 IRP and associated EIS and determined that it remains valid and guides future generation planning consistent with least-cost planning principles.

enhance future economic development in the area and avoids the potential environmental and public safety impacts associated with leaving the ALF in the “as-is” condition (TVA 2019c).

- Final Ash Impoundment Closure Programmatic Environmental Impact Statement (June 2016). The Programmatic EIS was prepared to address the closure of CCR impoundments at all of TVA’s coal-fired power plants. The report consists of two parts: Part I – Programmatic NEPA Review and Part II – Site-Specific NEPA Review. In Part I, TVA programmatically considers environmental effects of closure of ash impoundments using two closure methods: (1) closure-by-removal and (2) closure-in-place (TVA 2016a). Part II includes a site-specific NEPA review of closure of the West Ash Pond at the ALF by closing the ash pond in-place (TVA 2016b).
- Allen Fossil Plant Emission Control Project Environmental Assessment (August 2014). This EA evaluates the impacts of reducing sulfur dioxide emissions at the ALF by retiring the coal units and constructing a natural gas-fired power plant (the ACC). The reduction in sulfur dioxide emissions at the plant helped TVA comply with the EPA Clean Air Agreements consistent with TVA’s mission to provide reliable and affordable power (TVA 2014).
- Categorical Exclusion Checklist #50077 (September 2023). TVA completed a categorical exclusion environmental review of the demolition and removal of 16 CT units at the ACT Plant. The determination that the units should be demolished and removed originated under the development of the Paradise and Colbert Combustion Turbine EA in 2021. TVA has determined that removal of the units had independent utility and was necessary regardless of future actions and use of the area.

1.6. Scoping and Public Involvement

1.6.1. Scope of the Environmental Impact Statement and Summary of the Proposed Action

This EIS evaluates the potential environmental and socioeconomic impacts of the proposed construction and operation of aero CTs at the ACT Plant. A detailed description of the proposed action and alternatives considered are provided in Chapter 2.

The impacts associated with the retirement and decommissioning of CT units at the ACT Plant were analyzed in the 2021 Paradise and Colbert Combustion Turbine Plants Final EA and are incorporated by reference into the current EIS. As long-term actions related to the demolition of those units are under development, the demolition will be addressed as a reasonably foreseeable cumulative action considered during the environmental review of this proposed action.

The scope of this EIS focuses on the impacts related to construction and operation of aero CT units. Consistent with NEPA, TVA has considered the effects of its proposed action and all reasonable alternatives that are technically and economically feasible and meet the purpose and need of the proposed action. TVA determined that potential effects to the environmental resources listed below were relevant to the decision to be made:

- | | | |
|---------------------------------------|-------------------------------------|-----------------------------|
| • Air Quality | • Wildlife | • Solid and Hazardous Waste |
| • Climate Change and Greenhouse Gases | • Threatened and Endangered Species | • Socioeconomics |
| • Groundwater | • Transportation | • Utilities |
| • Surface Water | • Natural Areas | • Public Health and Safety |
| | • Noise | |

TVA’s preliminary analysis identified the following resources as not being affected by the proposed action. These resources are therefore eliminated from further review in this EIS.

- Land use – Proposed activities would occur on previously disturbed land located within the existing ALF, ACT Plant, and ACC Plant. Therefore, no changes in land use are anticipated as a result of implementation of the proposed action, and this resource is not evaluated any further in this EIS.
- Prime Farmland – There are no prime farmland soils mapped within the permanent and temporary use areas within the existing ALF, ACT Plant, and ACC Plant. Therefore, there would be no impacts to prime farmland soils, and this resource is not evaluated any further in this EIS. Accordingly, completion of Form AD 1006 and consultation on prime farmland is not required (Farmland Protection Policy Act, 7 U.S. Code [USC] 4201).
- Geology and Soils – The ACT Plant and surrounding areas are underlain by artificial fill and Quaternary age alluvial deposits (Stantec 2019a). According to the Natural Resources Conservation Service (NRCS) web soil survey (USDA NRCS 2024), most soils within the existing ALF, ACT Plant, and ACC Plant are mapped as filled land. Depth of excavation from construction is approximately 5 feet below ground, with pile driving to not exceed 75 feet below ground. Therefore, there is no impact to geology and soils from the proposed action, and this resource is not evaluated any further in this EIS.
- Vegetation – The plants and surrounding areas comprise the disturbed land located within the existing ALF, ACT Plant, and ACC Plant. Due to the history of infrastructure development and industrial use of the site, any vegetation is anticipated to be low quality and routinely disturbed. Therefore, no impacts or changes to vegetation are anticipated as a result of the proposed action, and this resource is not evaluated any further in this EIS.
- Wetlands – Based on a review of the National Wetlands Inventory mapping and recent aerial photography from April 2023 along with field surveys conducted in February 2024, the proposed project area (defined in Section 2.2.2) within the existing ALF, ACT Plant, and ACC Plant does not contain any wetlands as it has previously been heavily disturbed and developed. Therefore, no changes to wetlands are anticipated as a result of the proposed action, the proposed action is consistent with EO 11990, and this resource is not evaluated any further in this EIS.
- Floodplains – The ACT is located on the southern shore of McKellar Lake between McKellar Lake miles 1.4 and 2.1. According to Profile 75P of the 2013 Shelby County Flood Insurance Study, the 100-year flood elevation on McKellar Lake would be 225.0 feet above mean sea level and the 500-year flood elevation would be 230.5 feet above mean sea level (TVA

2014). Based on Shelby County, Tennessee, FEMA Flood Insurance Rate Map Panel 47157C0385F, effective 9/28/2007, the permanent and temporary use area within the existing ALF and ACT Plant north of Riverport Road are identified as being located outside the 100-year floodplain of McKellar Lake and outside the boundary of the Ensley Levee. The permanent and temporary use areas within the existing ACC Plant are also located outside of the 100-year floodplain but within an area with reduced flood risk due to the Ensley Levee. Therefore, TVA's Proposed Action would result in no direct impact to floodplains and would therefore be consistent with Executive Order (EO) 11988, Floodplain Management, and this resource is not evaluated any further in this EIS.

- Aquatic Ecology – Through planning and siting efforts, TVA has been able to site the proposed temporary and permanent use areas in previously developed and disturbed locations within the existing ALF, ACT Plant, and ACC Plant site areas to avoid impacts to aquatic ecology. Impacts to aquatic biota associated with the proposed action are not anticipated, and therefore this resource is not evaluated any further in this EIS.
- Visual Resources – As detailed in previous NEPA documents (see Section 1.4), there are no sensitive viewing receptors within the foreground (i.e., within 0.5 mile) of the ACT Plant. Additionally, the nearest residence is located over 1.0 mile southeast. Views of the ACT Plant are generally limited to employees, contractors, and visitors to the plant. The forested bluff line and terrain are anticipated to limit the visibility of the proposed action by residents southeast of the ACT Plant. Additionally, existing CT units are located within ACT Plant; therefore, no new permanent visual discord is added as a result of the proposed action, and this resource is not evaluated any further in this EIS.
- Cultural and Historic Resources – Nearly the entirety of the permanent and temporary use areas within the existing ALF, ACT Plant, and ACC Plant are covered with asphalt, concrete, or buildings, making it impossible to investigate using conventional survey techniques. Previous cultural and historic resources investigations have occurred at the ALF, ACT Plant, and ACC Plant, and no archaeological sites have been identified. Additionally, ALF has been deemed ineligible for inclusion on the National Register of Historic Places (NRHP). Therefore, there is no effect to cultural and historic resources, and this resource is not evaluated any further in this EIS. TVA consulted with the Tennessee State Historic Preservation Officer (SHPO) and federally recognized Indian tribes on these findings. In May 2024, the Tennessee SHPO and one Indian tribe provided concurrence with TVA's determination that no historic properties eligible for listing in the NRHP would be affected by the proposal (see Appendix B).
- Recreation – There are no local parks or developed recreation facilities within the permanent and temporary use areas; therefore, there would be no direct impacts from construction or operations of the proposed action. Given the temporary nature of construction activities and the fact that operational activities are contained within the Allen Reservation, indirect impacts from these activities are expected to be negligible. Therefore, there would be no direct impact to parks or developed recreational areas, and this resource is not evaluated any further in this EIS.

1.6.2. Public and Interagency Involvement

Prior to the Allen Aeros CT project, TVA has had extensive community involvement in the areas near the ACT Plant through public outreach associated with the decommissioning and

demolition of the ALF and the associated ash impoundment closure. Over more than 6 years, TVA has held over 300 public engagements in the area that range from public information sessions; open house meetings; meetings with elected leaders, community stakeholders, non-governmental organization (NGO) representatives, and business leaders; hosting tours of the Allen Fossil Plant site under restoration; attending and participating at neighborhood association meetings; hosting booths at community festivals and events; supporting community-led events such as local school drives and various service days for local churches and organizations; and partnering with a neighborhood association's adopt-a-highway program. Through these ongoing outreach efforts, TVA has built relationships with local organizers and community development corporations (CDCs) and gained insight into the concerns of local residents. This ongoing outreach informs the outreach for the Allen Aeros CT project.

1.6.2.1. Scoping

On October 12, 2023, TVA published a Notice of Intent (NOI) announcing plans to conduct an environmental study to assess the potential environmental effects associated with the proposed construction and operation of six new aero CT units at the ACT Plant near Memphis, Tennessee. Publication of the NOI initiated a 30-day public scoping period. TVA solicited public input on the scope of the NEPA review, alternatives that should be considered, and environmental issues that should be reviewed in detail in the study. In addition to public input, TVA invited members of the public as well as federal, state, and local agencies and federally recognized Tribes to comment on the scope of the NEPA review.

TVA sent notification of the NOI via email to federal, state, and local government entities and other stakeholders. TVA published notices regarding the NOI in *The Daily Memphian* and *Tri-State Defender* newspapers. TVA also created a web page with information about this project and opportunity for public input at <https://www.tva.com/allenct>. The website included the NOI, information about two public events planned by TVA, and an online comment form that the public could use to submit input.

On October 24, 2023, TVA held an in-person scoping open house at the Mount Vernon Baptist Church in Memphis. Approximately 35 people attended the open house, including representatives from NGOs (Protect Our Aquifer, Tennessee Interfaith Power and Light, Respect the Haven CDC, and the Westwood-Indian Hills and Neighboring Developments CDC), State Senator London Lamar (Tennessee, District 33), and staff from the offices of both U.S. Senators representing Tennessee (Senators Blackburn and Hagerty). TVA provided information on the proposed action in handouts and displayed on poster boards placed throughout the meeting room, while TVA staff were present to answer questions from the public. Two written comments were provided to TVA at this event.

On November 2, 2023, TVA hosted a virtual public meeting/webinar that included a presentation about the proposed action and a question-and-answer session during which attendees could submit questions to the TVA panel. The webinar was attended by 14 members of the public and representatives of NGOs.

On November 11, 2023, prior to the end of the public scoping period, TVA partnered with the Westwood-Indian Hills and Neighboring Developments CDC (WIND Memphis) to host a community event to raise awareness about the project and public comment period and to answer questions from community members. Approximately 100 people attended the community event.

During the scoping period, TVA received comments from three Federal agencies, one State of Tennessee agency, six NGOs, and almost 200 members of the public. Comments were related to the purpose and need, the no action alternative, renewable energy alternatives, Inflation Reduction Act incentives, and potential adverse effects to air quality, public health, water resources, greenhouse gas emissions, socioeconomics, transportation, and noise. In December 2024, TVA published a Scoping Report that summarizes the input received during the public scoping period; the report, appended to the draft EIS, is available on the project webpage.

In its NOI, TVA described the scope of the environmental review to include the continued operation of existing Allen CT units 19 and 20. During the scoping period and through additional internal project screening, TVA determined that the continued operations of the units are adequately addressed in its previous EA (TVA 2021b). Therefore, the EIS will address the operations of units 19 and 20 as activities relevant to the cumulative impact analysis.

1.6.2.2. Public Review of the Draft EIS

On March 10, 2025, TVA published the draft EIS for public review and comment. The Environmental Protection Agency published a notice of availability in the Federal Register on March 14, 2025. During the 45-day review and comment period, TVA staff gave presentations and attended multiple local meetings to provide information on the proposal and respond to public inquiries.

On April 10, 2025, TVA hosted a public open house meeting at the Mount Pisgah Baptist Church in Memphis. Approximately 112 people attended the open house. TVA provided information on the proposed action and potential environmental effects in handouts. Posters were displayed throughout the meeting room, and TVA staff were present to answer questions from the public. Six written comments were provided to TVA at this event.

On April 17, 2025, TVA held a webinar and gave a presentation about the proposal, the potential environmental effects, and how the public can submit comments to TVA. Fifteen members of the public attended the webinar. After the presentation, TVA took questions from attendees on a variety of issues of concern.

TVA received 210 comment submittals during the period, which ended on April 28, 2025. TVA received comments from the U.S. Environmental Protection Agency, the State of Tennessee Department of Environment and Conservation, the U.S. Department of the Interior, and State Representative Justin Pearson (Memphis, House District 86). TVA received one letter submitted on behalf of four environmental organizations and individual submissions from two other community and environmental organizations. Several representatives of local neighborhood associations also provided input.

TVA considered these comments when completing the final EIS and made appropriate revisions to its analysis. Public comments and TVA's responses are provided in Appendix A of the EIS. As noted in the respective responses, TVA revised the EIS as a result of several comments to improve clarity and provide additional discussion and analysis about relevant issues.

1.7. Necessary Permits, Licenses, and Consultations

TVA will obtain all necessary permits, licenses, and approvals required for the alternative selected. TVA anticipates the following may be required for implementing the proposed alternatives:

- Air Construction Permit via Prevention of Significant Deterioration (PSD) review and Title V Operating Permit under the CAA.
- Permits associated with disposal of sewage and sanitary wastewater into the Memphis Municipal Waste System.
- Aboveground storage tank registrations and permit updates provided the tanks are modified.
- Oil Spill Prevention, Control, and Countermeasure Plan or Integrated Pollution Prevention and Spill Response Plan modifications to reflect new aero CTs at the ACT Plant.
- Stormwater best management practices (BMPs) and Tennessee Department of Environment and Conservation (TDEC) National Pollutant Discharge Elimination System (NPDES) permit application and/or modification for all stormwater discharges associated with construction activity that disturbs more than one acre of land.
- TDEC NPDES permit application or modification of the existing City of Memphis Industrial Wastewater Discharge Permit for discharges from the operation of new proposed aero CTs at the ACT Plant.

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CHAPTER 2 - ALTERNATIVES

This chapter describes the alternatives analyzed in this EIS, summarizes the environmental impacts associated with each alternative, identifies potential mitigation measures, and presents the Proposed Action.

2.1. Description of Alternatives

2.1.1. Generation Type

As described in Chapter 1, the 2019 IRP Target Power Supply Mix includes the addition of new natural gas-fired CTs and CCs to enhance system flexibility and integrate renewables and distributed resources, particularly solar generation. Aero CTs with black-start capabilities and dispatchable synchronous condensing capabilities address vulnerabilities to voltage instability that may result from increased renewable generation on the TVA power system. These recommendations would lessen the burden on the remainder of the system as renewable energy resources, such as solar, are integrated.

Currently, the combination of renewable energy and storage technologies cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables. While solar prices are becoming competitive, solar does not address the daily winter peak demand, which typically occurs just before sunrise. Therefore, solar requires dispatchable resources, such as peaking gas generation, to support the winter peak. Wind resources do contribute to both summer and winter peak capacity (less than one-third of nameplate or maximum rated output), but they are typically more expensive due to low regional wind speeds or high transmission costs. TVA recognizes the value that both short- and long-duration storage technologies will play in the future and is monitoring the technology costs and working to gain operational experience with battery storage technology.

2.1.2. Location

During initial project planning, TVA considered a range of alternatives and specific screening criteria with respect to the proposed action. Candidate sites were identified based on a desktop review of land parcels located in proximity to existing transmission facilities and near existing natural gas supply. Initial site screening results were further evaluated using the criteria summarized in Table 2-1.

Table 2-1. Summary of Criteria Evaluated to Determine the Location of the Aero Combustion Turbines

Transmission	Site Considerations	Operational Considerations
<ul style="list-style-type: none"> • System upgrades needed • Locational value 	<ul style="list-style-type: none"> • TVA-owned vs. non-TVA-owned sites • Site availability (available for purchase) • Land cost • Access to water 	<ul style="list-style-type: none"> • Supply chain considerations • Staffing
Fuel Supply	Environmental Considerations	Financial and Planning Considerations
<ul style="list-style-type: none"> • Cost • Availability • Reliability • Operational considerations 	<ul style="list-style-type: none"> • Environmental regulations • Sensitive environmental/cultural resources present 	<ul style="list-style-type: none"> • Long-range financial planning • Integrated resource plan

Based on evaluation of the screening criteria and the 2019 IRP, TVA proposed to construct new aero CTs at the ACT Plant. This location offers several advantages to alternative locations:

- The construction footprint for the new units would allow the aero CTs to be built on previously disturbed land within existing TVA property, as opposed to requiring the purchase or use of greenfield property to locate the new units.
- The existing natural gas infrastructure on the ACT that support the existing CT units could be used to support the additional proposed aero CT units.
- Regional need for black-start dispatchable generation to support continued system load growth, especially in improving TVA’s system transmission stability in western Tennessee.
- Proximity of the ACT to load centers in Memphis make this site increasingly attractive for aero CTs, which offer synchronous condensing capabilities for area grid support.
- Throughout the operational history of ACT and adjacent ALF, extensive environmental reviews have been conducted, which provide a level of confidence, for initial screening purposes, that there is a low potential for impacting sensitive environmental resources.

2.2. Description of the Alternatives

2.2.1. Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not construct six new aero CT units or the associated support facilities to provide generation of approximately 200 MW at the ACT Plant. TVA would continue to operate two existing units (units 19 and 20) at the ACT Plant on a limited basis, consistent with the 2021 Paradise and Colbert Combustion Turbine EA. This alternative does not meet the purpose and need of TVA’s proposed action. Without the additional generation capacity, TVA would be obligated to meet generation demand by acquiring the power from other generation sources. Consistent with the requirements of NEPA, the No Action

Alternative is included in this evaluation as it represents current baseline conditions against which the Action Alternative would be compared.

2.2.2. Alternative B – Allen Aeroderivative Project

Under Alternative B, TVA's Proposed Action, TVA would construct and operate six aero CT units (GE LM2500s) generating approximately 200 MW of power and associated support facilities. At least four of the new aero CT units would have black-start capability, meaning the ability to restore power without needing to rely on the external electric power transmission system. The new units would support fast startup dispatching and synchronous condensing for transmission system stability in western Tennessee and would improve TVA's ability to further expand renewable energy.

The overall ACT project area (project area) consists of approximately 60 acres of mostly heavily disturbed land located within the retired ALF and existing ACT and ACC Plant footprints (Figure 2-1). The entirety of this project area would not be affected by project activities; however, final locations for laydown yard, parking, construction trailers, etc., are dependent upon final design. Construction of the aero CTs and associated support facilities are expected to begin in 2025 and would take approximately 15 months. Commercial operation would begin in 2027. Actions associated with implementation of this alternative are described below.

Equipment used during the construction phase would include trucks, truck-mounted augers and drills, excavators, tracked cranes, and bulldozers. Low ground-pressure-type equipment (for example, tracked vehicles) would be used in specified locations (such as areas with soft ground) to reduce the potential for environmental impacts per TVA BMPs. TVA estimates a maximum of 200 workers would be employed on site at the peak of the approximately 15-month construction period.

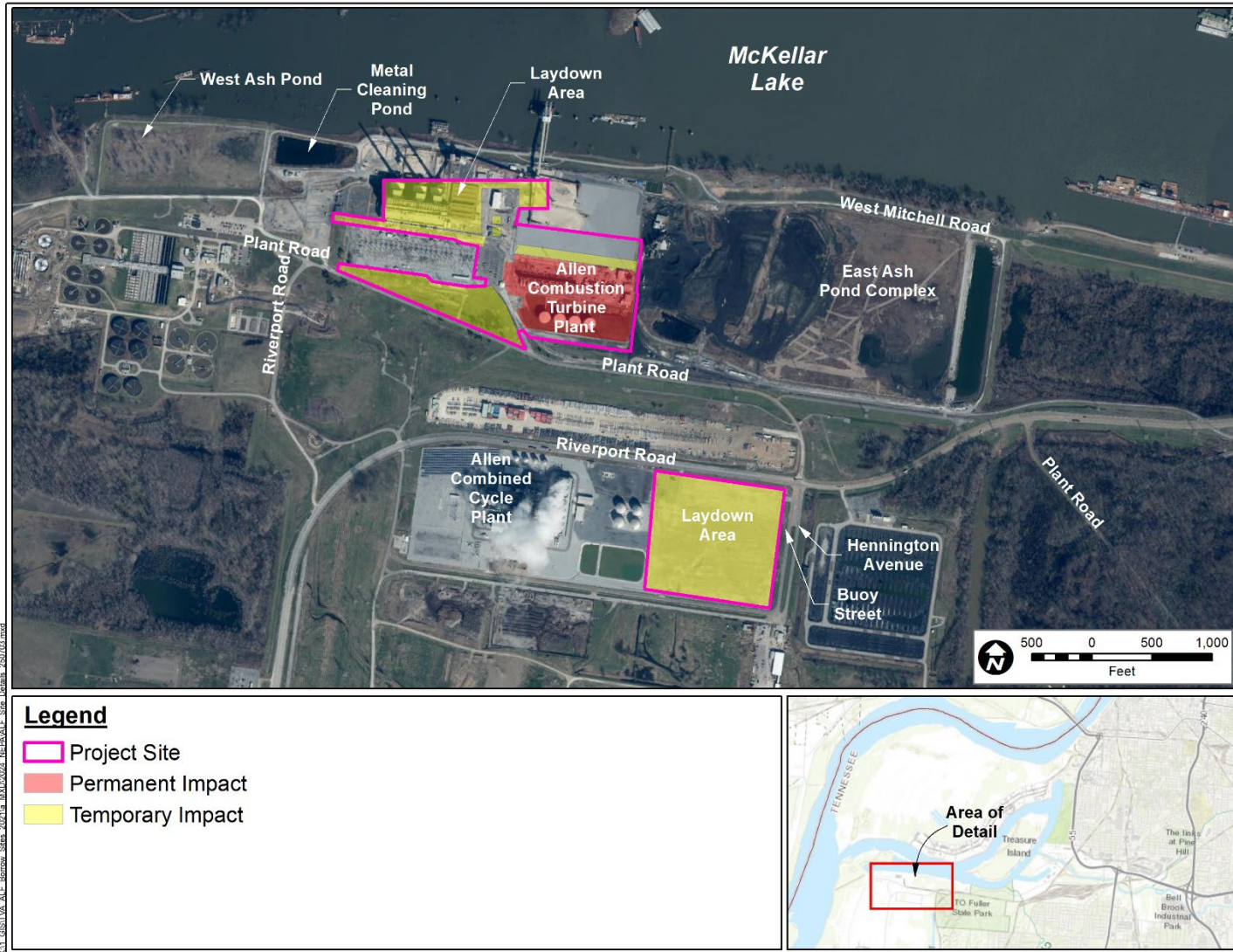


Figure 2-1. Map of Allen Aeroderivative Project

2.2.2.1. Construction of Aero CTs

TVA would construct six new aero CTs (Figure 2-2) with inlet evaporative cooling within the boundaries of the ACT Plant as shown in Figure 2-1. Subsurface piles would be driven to a depth of 75 feet to support foundations for plant components, as required. Shallow excavation up to 5 feet in depth is expected in the form of trenching and excavation. In addition to these major equipment systems, the ACT Plant would include plant equipment and systems, such as natural gas metering and handling systems; instrumentation and control systems; transformers; and administration and warehouse/maintenance buildings. At full buildout, the aero CTs would occupy approximately 14 acres of the 60-acre project area.

2.2.2.2. Construction of Supporting Facilities

Alternative B would also include a number of activities to support the construction and operation of the new aero CT units, including, but not limited to:

- The creation of a laydown area for construction support actions (e.g., storage, parking, material management) adjacent to ACT Plant.
- Estimated need of approximately 8,000 cubic yards of borrow material (to be obtained from existing developed permitted borrow sites within a 30-mile radius of the ACT Plant).
- Installation of two ultra-low sulfur diesel (USLD) generators in support of the four black-start units.
- Upgrades to existing natural gas infrastructure to improve gas regulation and shutoff.
- Installation of new compressed air skid.
- Installation of new ammonia unloading, storage, and delivery system.
- Replacement of station service transformers.
- Improvements to the existing physical security at the site.

In addition to the major equipment systems, the proposed action may include other minor improvements to plant equipment and systems necessary to operate the new units and continue operation of the two existing units.

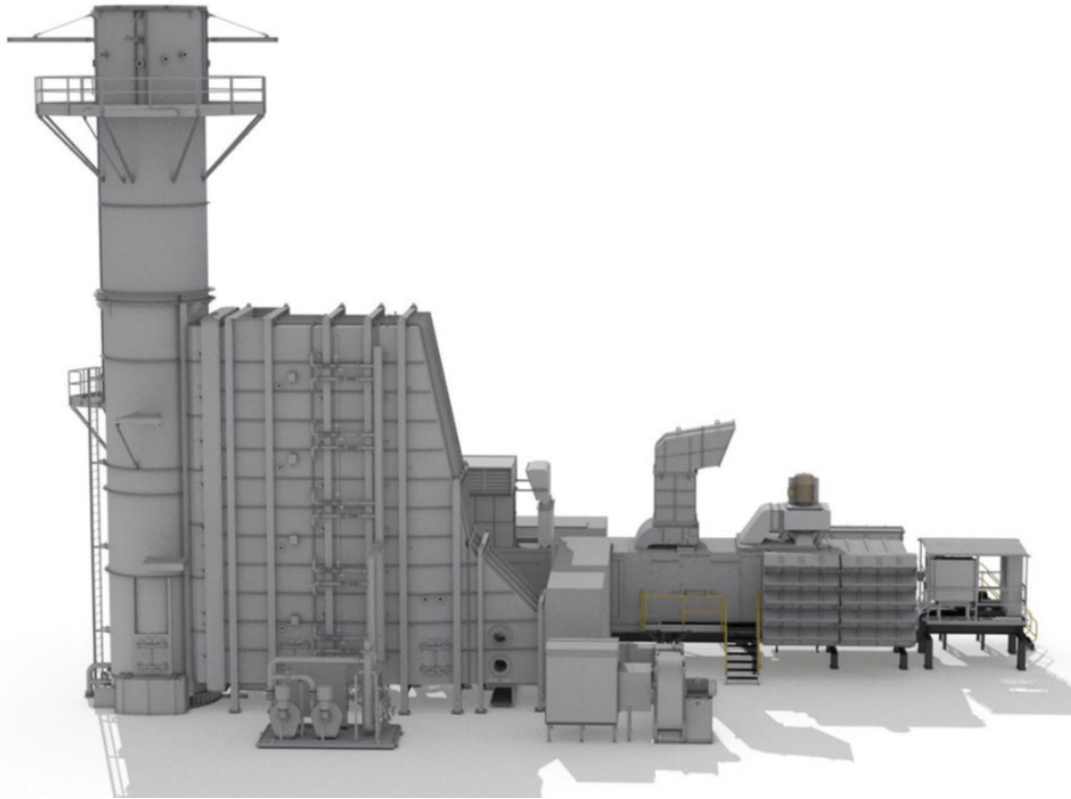


Figure 2-2. Aeroderivative Combustion Turbine

2.2.2.3. Operation of the Aero Combustion Turbines

The following activities are associated with the long-term operations of the CT units:

- **Air Emission Controls and Monitoring:** Alternative B would require installation of control systems to minimize and monitor air emissions of the new aero CT units. Operating the aero CTs would require emission monitoring and controls. Reduction of emissions of oxides of nitrogen (NO_x) from each aero CT would be achieved through a dry-low emissions combustion system and a selective catalytic reduction (SCR) system. SCR uses aqueous ammonia and requires TVA to install an independent storage/receiving system. Reduction of carbon monoxide (CO) and volatile organic compounds (VOCs) would be achieved using a separate catalyst layer. Exhaust stacks would be equipped with continuous emissions monitoring systems. TVA's Title V/PSD permit application, which is required under local and federal regulations and submitted separately, would be completed prior to the beginning of construction.
- **Potable Water:** The operation of the ACT Plant would require approximately 58 gallons per minute of potable water, which would be obtained from the existing public supply, to be used for inlet air evaporative cooling in summer ambient temperatures. Some water treatment may be required to support the ACT Plant. The process water would be pre-treated as required and will discharge to a permitted publicly owned treatment works outfall.
- **Natural Gas Supply:** The ACT Plant would continue to be fueled by the existing supply of natural gas. The proposed aero CTs would use an existing gas line currently located at the ACT Plant.

- *Fuel Oil:* Petroleum fuel would be used to operate the proposed black-start diesel generators during a blackout to provide the necessary power to reactivate the power grid. To reduce air emissions, petroleum fuel would not be used to operate the six proposed aero CT units.
- *Transmission:* TVA completed a system impact study to determine that no new transmission corridors or transmission infrastructure upgrades would be required. Minor telecommunications modifications may be required. The study also confirmed that non-TVA systems would not be affected.

2.2.3. Alternatives Considered but Eliminated from Further Discussion

To meet the purpose and need of the project, generation alternatives must be capable of providing year-round peak capacity as well as serving energy needs and, therefore, must be mature, proven technologies. As described above in Chapter 1, the 2019 IRP recommended that TVA add new aero CTs to the fleet in the near term to enhance system flexibility, integrate increasing renewable capacity, and provide dispatchable capacity, which would lessen the burden on the remainder of the system as renewable energy resources, such as solar, are integrated.

TVA is currently in the process of reviewing numerous solar generation projects in the southwest region of its power service area. Integrating intermittent resources requires a flexible generation fleet that is capable of ramping up and down quickly to cover gaps in renewable generation.

TVA's asset strategy already contemplates the blending of resources system-wide to provide the least-cost, optimal portfolio under a variety of future conditions (TVA 2019a). The decision associated with this EIS is a specific, discrete component of that blend reflected in TVA's asset strategy and 2019 IRP. Table 2-2 discusses the resource options TVA considered to meet the purpose and need of this site-specific project. As seen on Table 2-2, TVA evaluated a number of other alternatives that were ultimately eliminated from further consideration because they did not meet the project's purpose and need. Currently, the combination of renewable energy and storage, available today, cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables. While solar prices are becoming competitive, solar does not contribute to meeting the winter peak, which typically occurs just before sunrise. Therefore, solar requires dispatchable resources, such as peaking gas generation, to support the winter peak. Wind resources do contribute to both summer and winter peak capacity (less than one-third of nameplate or maximum rated output), but they are typically more expensive due to low regional wind speeds or high transmission costs. TVA recognizes the value that both short- and long-duration storage technologies will play in the future and is monitoring the technology costs and working to gain operational experience with battery storage technology. Ultimately, TVA concluded that a blended alternative of renewable resources in combination with a smaller natural gas plant would not meet the purpose and need. Any such blended alternative would still face the same limitations as described in Table 2-2.

Table 2-2. Alternative Generation Resource Evaluations

Resource Option	Meet Purpose and Need for the Proposed Action	Considerations
Utility and/or Distributed Scale PV Solar	No	Not dispatchable, and generation is intermittent; therefore, must be paired with dispatchable resources such as storage or gas. Does not meet the purpose and need of the proposed action; however, TVA is pursuing this option under other TVA programs, including in areas near the project area.
Demand Response	No	Well positioned to play a role in absorbing load growth resulting from increased electrification of the economy and allows TVA to offset physical capacity needs; however, they are limited in the number of calls available and would not meet the purpose and need of this project.
Energy Efficiency	No	Well positioned to play a role in absorbing load growth resulting from increased electrification of the economy; however, energy efficiency programs take time to scale and market, increasing costs at the high penetration levels required to meet the needs of this action. This alternative is currently being studied by TVA for further evaluation and potential future deployment.
In and/or Out of Valley Wind	No	Can provide dependable capacity in both summer and winter, though not dispatchable, and generation is intermittent; therefore, it must be paired with dispatchable resources such as storage or gas. Was not selected due to low wind speeds in Tennessee Valley and higher transmission costs for out-of-valley wind, both of which increase relative costs.
Small Modular Reactors	No	Potential to serve cost-effective baseload or load following needs in the future with low fuel costs, carbon-free generation, advanced passive safety systems, and anticipated cost reductions achieved by assembling components in a factory setting; however, longer deployment timeline and first-of-a-kind deployment risks are incompatible with the purpose and need for this project. This alternative is currently being studied by TVA for further evaluation and potential future deployment.

Resource Option	Meet Purpose and Need for the Proposed Action	Considerations
Hydro Pumped Storage	No	Long-duration storage that is currently being studied by TVA for further evaluation and potential deployment in the 2030s. Longer timelines to meet environmental requirements and for construction are incompatible with purpose and need for this project.
BESS	No	Although battery benefits may be higher in shoulder months (i.e., spring and autumn) where there is potential for excess solar generation during periods of lower loads, batteries are limited in the duration of energy storage (typically 4 hours). Further, batteries are limited in that they do not generate power, but rather store the power generated by other sources and are net consumers of energy. At this time, the combination of renewable energy and storage cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with aero CTs. To meet the purpose and need, the alternatives must be dispatchable generation and capable of meeting year-round peak capacity needs. Although BESS is dispatchable, it is not generation. TVA is considering and planning to add more batteries to the portfolio at other locations.
Distributed Energy Resources	No	Does not meet the need for firm dispatchable generation identified in power supply planning. Considered in the 2019 IRP as part of TVA's overall strategy but would not meet the needs of this project because the cost for distributed generation is generally higher than utility-scale generation for the same type of resource.

Key: BESS = battery energy storage system; PV = photovoltaic

TVA considered these renewable technologies in the 2019 IRP, which recommended enhancing system flexibility to integrate renewables and distributed resources. In the 2019 IRP, TVA identified the natural gas fleet (including CTs) as playing a critical role in providing the flexibility needed to integrate renewable energy generation and promote distributed energy resources.

TVA is balancing the pace of its clean energy transition with the obligation to provide low-cost, reliable, and resilient power. TVA's asset strategy incorporates the strategic direction from the 2019 IRP and continues to support low-cost, reliable, and cleaner energy for the customers TVA serves. The Action Alternative studied as part of this EIS is one piece of the overall asset strategy, which also includes:

- Maintaining the existing low-cost, carbon-free nuclear and hydro fleets.
- Retiring aging coal units as they reach the end of their useful life.
- Adding solar to meet customer demand and system needs.
- Using natural gas to enable needed coal retirements and solar expansion as other technologies develop.
- Leveraging demand-side options, in partnership with local power companies.

- Partnering to develop new carbon-free technologies for deeper decarbonization.

The investments to modernize the natural gas fleet, including the addition of aero CTs at Allen, enables the retirements of older coal-fired units with higher carbon intensity, enables greater levels of renewables on the system, and provides reliability support as TVA integrates intermittent renewable generation to the system. Reduction in carbon emissions is a key beneficial result of TVA’s overall asset strategy.

The IRA of 2022 (Public Law 117–169) may improve the cost and availability of renewable and storage resources in the long term. Short-term effects immediately following the IRA resulted in increased demand, higher prices, and a limited supply of resources needed for renewable technologies. While the IRA incentivizes the transition of the solar supply chain, it may take 3 to 5 years for the domestic supply chain to mature and ease the current constraints on the solar industry. Even with the incentives of the IRA, there remain many challenges with the development of solar facilities in the near term; mainly the availability of labor and high-voltage equipment would continue to limit buildout through 2025 (SEIA 2024). While the provisions of the IRA provide substantial incentives for various forms of clean energy, TVA’s generation decisions are driven by a number of factors and timing constraints. TVA is optimistic that the IRA will enable faster adoption of renewable resources in the long term; however, enactment of the IRA does not alleviate the need for dispatchable power or alleviate the transmission-related time constraints for solar generation and energy storage facilities.

2.3. Comparison of Alternatives

The environmental impacts of each of the alternatives under consideration are summarized in Table 2-3. These summaries are derived from the information and analyses provided in the Affected Environment and Environmental Consequences sections of each resource in Chapter 3.

Table 2-3. Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Air Quality	No air emissions associated with construction and operation of new aero CT units at Allen.	Temporary minor construction impacts associated with emissions from on-site vehicles and equipment as well as generation of fugitive dust. Operation of the aero CTs would result in projected increases in criteria pollutant emissions, as measured against the current baseline but the effect of air emissions would be below the significant impact levels and thus would not cause or contribute to exceedance of air quality standards. Emissions are minimized using state-of-the-art emission control technology. The impact of operational air quality emissions would be moderate but would not result in an exceedance of applicable permit emission limits or air quality standards. These emissions would be monitored and would comply with permit limits and maintain regional air quality.
Climate Change and GHGs	No GHG emissions associated with	Temporary negligible GHG emissions during construction activities. Operation of the ACT

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
	construction and operation of new aero CT units at Allen.	Plant would result in a predicted direct increase of 107,268 metric tons of carbon dioxide equivalents per year and a maximum direct increase of 401,800 metric tons of carbon dioxide equivalents per year. The proposal would result in a social cost of GHGs (SC-GHG) estimated to range from \$425,531 to \$2,978,714 annually. Relative to global GHG levels and potential effects on climate change, these contributions are negligible. As such, impacts from Alternative B on climate change and GHG emissions would be minor. Implementation of the Proposed Action Alternative would allow for future system flexibility which would allow for successful integration of renewables
Groundwater	No impact	Minor impacts to groundwater minimized with the use of BMPs.
Surface Water Resources	No impact	Temporary, minor impacts to surface waters associated with sedimentation from stormwater runoff during construction activities. Impacts would be minimized through implementation of BMPs designed to minimize erosion during construction and operation. Operation of the aero CTs would result in a point source discharge of process water which would be monitored and would comply with permit limits. Impacts during operation would be negligible.
Wildlife	No impact	Minor impact to heavily disturbed low-quality habitat.
Threatened and Endangered Species	No impact	Project activities would occur on heavily disturbed land; therefore, there is no suitable habitat for the lark sparrow, Mississippi kite, and piping plover. Additionally, TVA has made a no-effect determination for the alligator snapping turtle. For selected species (bat species, bald eagle, osprey, and the interior least tern) TVA has committed to conservation measures to avoid and minimize impacts, as such impacts would be minor. Coordination with U.S. Fish and Wildlife Service (USFWS) would occur as necessary to ensure compliance under federal law if species encountered during construction.
Managed Natural Areas	No impact	Project activities would occur within the boundaries of previously disturbed TVA lands, as such impacts to managed natural areas would be minor.
Transportation	No impact	Temporary, minor impacts associated with increased traffic on area roadways during

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Noise	No impact	<p>construction activities. Operations related traffic would be negligible.</p> <p>Temporary, minor adverse impact associated with increased noise during construction activities. Noise impacts from operation would be minor.</p>
Solid and Hazardous Waste	No impact	<p>Minor impact as solid and hazardous wastes generated during construction and operation of the aero CT units would be managed in accordance with established procedures and applicable federal, state, and local laws and regulations.</p>
Socioeconomics	No impact	<p>Beneficial minor short-term economic impacts during construction. Communities close to the project site would more likely be affected by project activities; most of these communities are predominately minority and low-income populations. However, construction-related impacts such as traffic and noise would be minor and short term. Long-term adverse impacts from air emissions would be minimized through adherence to NAAQS standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including communities with higher frequency of preexisting health conditions.</p>
Utilities	<p>TVA would purchase power on the market, of which a portion is likely to be from natural gas generation. Over the long term, TVA would continue to need new peaking generation sources.</p>	<p>A small impact on the availability of potable water and natural gas. Operations (including of units with synchronous condensing and black start capabilities) would result in improved system reliability and flexibility to integrate renewable energy sources.</p>
Public Health and Safety	No impact	<p>The operation of the ACT Plant would adhere to TVA guidance and be consistent with standards established by OSHA and applicable state requirements. Worker and public health and safety during project operation would be maintained and impacts would be minimal.</p>

Key: ACT = Allen Combustion Turbine; Aero = aeroderivative; BMP = best management practice; CT = combustion turbine; dBA = A-weighted decibel; GHG = greenhouse gas; NAAQS = National Ambient Air Quality Standards; OSHA = Occupational Safety and Health Administration

2.4. Identification of Mitigation Measures

2.4.1. Standard Practices and Routine Measures

BMPs, mitigation measures, and commitments identified in Chapters 2 and 3 to avoid, minimize, or reduce adverse impacts to the environment are summarized below. Additional project-specific BMPs may be applied as appropriate on a site-specific basis to enable efficient maintenance of construction projects and further reduce potential impacts on environmental resources including air, surface water, and groundwater and are summarized below.

- Fugitive dust produced from construction activities would be controlled by BMPs (e.g., wet suppression), as provided in the TVA's fugitive dust control plans required under existing CAA Title V operating permits.
- BMPs described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities*, Revision 4 (TVA 2022b) and in specific state regulatory sediment and erosion control handbooks would be outlined in the project-specific Stormwater Pollution Prevention Plan (SWPPP), and BMP plan, as required, that would be implemented to minimize erosion during site preparation. Appropriate BMPs would be followed, and all proposed project activities would be conducted in a manner to ensure that waste materials are contained and the introduction of pollution materials to the receiving waters minimized. Areas where soil disturbance could occur would be stabilized and vegetated with native or non-native, non-invasive grasses and mulched.
- Equipment washing and dust control discharges would be handled in accordance with BMPs described in the SWPPP for water-only cleaning, and/or NPDES Permit TN 100000 to minimize construction impacts to surface waters.

2.4.2. Non-Routine Mitigation Measures

In association with the potential construction of an Action Alternative, TVA would employ standard practices and specific routine measures to avoid and minimize impacts to resources. Other mitigative measures would be considered by TVA for each environmental resource based upon potential adverse impacts as identified in the EIS.

Mitigation measures include:

- Coordination with U.S. Fish and Wildlife Services (USFWS) as necessary to ensure compliance under federal law if least tern is encountered during construction.

2.5. Environmentally Preferable Alternative

The environmentally preferable alternative is Alternative A – No Action. The environmentally preferable alternative is the alternative that will best promote the national environmental policy as expressed in section 101 of NEPA. As summarized in Table 2-3, taking no action would result in fewer direct, indirect, and cumulative effects on the human environment than implementing Alternative B, TVA's Proposed Action. However, Alternative A does not meet the purpose and need for the project.

2.6. TVA's Preferred Alternative

TVA has identified Alternative B as its Preferred Alternative. Under Alternative B, TVA would construct six natural gas-fired aero CTs generating approximately 200 MW and support systems at the ACT Plant. This aligns with the 2019 IRP recommendation to enhance system flexibility.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the baseline environmental conditions (affected environment) of environmental resources in the project area and the anticipated environmental consequences (or impacts) that would occur from implementation of the alternatives described in Chapter 2. Within this chapter, the environmental impacts analyzed may be beneficial or adverse. Impact severity is dependent upon the relative magnitude and intensity and resource sensitivity. In this document, four descriptors are used to characterize the level of impacts as follows:

- No Impact – resource not present or affected by project alternatives under consideration.
- Minor (or Small) – environmental effects are not detectable or are so minor that they would neither destabilize nor noticeably alter any important attribute of the resource.
- Moderate – environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- Large – environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

3.1. Air Quality

3.1.1. Affected Environment

3.1.1.1. Air Quality

The CAA (as amended) is the comprehensive law that protects air quality by regulating emissions of air pollutants from stationary sources (e.g., power plants) and mobile sources (e.g., automobiles). It requires the EPA to establish National Ambient Air Quality Standards (NAAQS) and directs the states to develop state implementation plans to achieve these standards. This is primarily accomplished through permitting programs that establish source-specific limits for emissions of air pollutants. The CAA also requires EPA to set standards for emissions of hazardous air pollutants (HAPs).

NAAQS have been established to protect the public health and welfare with respect to six criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone, particulate matter (PM), sulfur dioxide (SO₂), and lead (Pb). Primary standards protect public health, while secondary standards protect public welfare (e.g., visibility, crops, forests, soils, and materials) (EPA 2024a).

In accordance with the CAA Amendments of 1990, all counties are designated with respect to compliance, or degree of noncompliance, with NAAQS. These designations include:

- Attainment – any area where air quality achieves the NAAQS.
- Nonattainment – any area with air quality worse than the NAAQS.
- Unclassified – not enough data to determine attainment status.

The ACT Plant is located in Shelby County, Tennessee. Shelby County is designated as unclassifiable/attainment for all criteria pollutants (EPA 2024b). The EPA's 2023 *Design Value*

Report for Shelby County shows a 2023 “design value” of 0.072 ppm at a monitoring site in Shelby County, exceeding the 2015 8-hour ozone standard of 0.070 ppm.⁵ The EPA’s 2024 *Design Value Report* for Shelby County also shows exceedance of the 2015 8-hour ozone standard.⁶ The PSD program, under which TVA must obtain a preconstruction permit, addresses air quality concerns by requiring, as a condition of permitting, that the proposed project not cause or contribute to a NAAQS violation. In addition, in its best available control technology (BACT) evaluation in the PSD permit application, TVA selected the most stringent emission rate (i.e., one that is equivalent to EPA’s lowest achievable emission rate [LAER]) for nitrogen oxides (NO_x), which is the main precursor for ozone emitted from the proposed project.

The existing ACT Plant has a Title V/major source permit under the requirements of Title V of the CAA and the federal regulations promulgated in 40 CFR Part 70. The permit was issued in accordance with City of Memphis Code Section 16-77, which adopts by reference Rule 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations. The construction of aero CTs is a major modification under the referenced City of Memphis Code, federal Title V regulations (40 CFR § 70) and the federal PSD regulations (40 CFR § 52.21).

The proposed project would be subject to local, state, and federal regulations that impose permitting requirements and specific standards for expected air emissions.

3.1.1.2. Pollutants and Air Quality Concerns

Nitrogen oxides (NO_x) are a group of highly reactive gases that contain varying amounts of nitrogen and oxygen (e.g., NO, NO₂). NO_x emissions contribute to ground-level ozone, fine particulate matter, regional haze, acid deposition, and nitrogen saturation. Natural sources of NO_x include lightning, forest fires, and microbial activity; major sources of human-produced NO_x emissions include motor vehicles, electric utilities, industrial boilers, nitrogen fertilizers, and agricultural burning (EPA 1999).

Sulfur oxides are compounds of sulfur and oxygen molecules. The predominant form found in the atmosphere is SO₂. Most SO₂ is produced from the burning of fossil fuels (coal and oil), as well as petroleum refining, cement manufacturing, and metals processing. In addition, geothermic activity, such as volcanoes and hot springs, can be a significant natural source of SO₂ emissions (World Bank Group 1998).

HAPs, commonly referred to as air toxics, are pollutants that are known or suspected to cause cancer or other serious health effects or adverse environmental effects. The CAA identifies 188 pollutants as HAPs (EPA 2023a). Most HAPs are emitted by human activities, including mobile sources (motor vehicles), stationary sources (factories, refineries, and power plants), and indoor sources (building materials and activities such as dry cleaning).

⁵ See EPA, AQS Ozone Design Value Reports, 2023, “Ozone Design Values, 2023”, “Table 2. Other Violations”, available at: <https://www.epa.gov/air-trends/air-quality-design-values#report> (showing “design value” exceeding the 8-hour ozone standard in Shelby County, Tennessee, an area not previously designated nonattainment for the 2015 8-hour ozone NAAQS).

⁶ See EPA, AQS Ozone Design Value Report, 2024, “Ozone Design Values, 2024”, “Table 2. Other Violations”, available at: <https://www.epa.gov/air-trends/air-quality-design-values#report> (showing 2024 “design value” of 0.071 ppm and 0.073 at two monitoring sites respectively, exceeding the 2015 8-hour ozone standard of 0.070 ppm, in Shelby County, an area not previously designated nonattainment for the 2015 8-hours ozone NAAQS).

States are required to establish an air operating program under Title V of the CAA. Regulations to implement this operating program, 40 CFR Part 70, require each major source of air pollutant emissions to obtain an operating permit, typically issued by the state or local environmental agency, that consolidates all of the air pollution control requirements into a single, comprehensive document covering all aspects of air pollution activities at a facility. In attainment/unclassified areas, Title V major source thresholds, the level of potential emissions that require sources to obtain a Title V permit, are 100 tons per year (tpy) for each criteria pollutant, 10 tpy for each individual HAP and 25 tpy for total HAPs.

Sources that emit less than 10 tpy of a single HAP or less than 25 tpy of a combination of HAPs are referred to as area sources (EPA 2024c), as opposed to major sources. Emissions from individual area sources are relatively small. However, if occurring in heavily populated areas that contain a number of area sources, emissions can be of concern.

3.1.1.3. Characterization of Existing Site Operations

As noted above, the current ACT Plant is operating under a Title V/major source permit, which addresses emissions units from both the ACC and ACT Plants. Sources associated with the Allen CT Plant include the following:

- Four 847.2 metric million British thermal units per hour (MMBtu/hr) simple-cycle turbines (CT Units 17-20), of which only Units 19 and 20 would be operated on a limited basis.
- Two diesel storage tanks.

Sources associated with the Allen CC Plant include the following:

- Two combustion turbines.
- Two heat recovery steam generators.
- One reheat, condensing steam turbine generator.
- One natural gas-fired/biogas-fired auxiliary boiler.
- Three natural gas-fired dewpoint gas heaters.
- One diesel engine-driven fire-suppression water pump.
- One diesel storage tank.
- One multiple cell cooling tower.

3.1.2. Environmental Consequences

3.1.2.1. Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not construct six new aero CT units or the associated support facilities to provide generation of approximately 200 MW at the ACT Plant. TVA would continue to operate two existing units at the ACT Plant on a limited basis (consistent

with the 2021 Paradise and Colbert Combustion Turbine EA). As such, there would be no change to air quality under the No Action Alternative. However, the No Action Alternative would not align with IRP recommendations.

Without the additional generation capacity, TVA would be obligated to meet generation demand by acquiring the power from other generation sources. It is anticipated that the other generation sources would be through purchase agreements on the market, a portion of which would likely be derived from natural gas generation outside the TVA power system. The purchase of power, then, would result in an incremental increase of air emissions to some extent. Long-term power needs would require new peaking generation sources.

3.1.2.2. *Alternative B – Allen Aeroderivative Project*

Under Alternative B, TVA would construct and operate six aero CT units (GE LM2500s) generating approximately 200 MW of power and associated support facilities. At least four of the new aero CT units would have black-start capability. To support black-start operations, two USLD black-start generators would be installed to manage ancillary, transient house loads.

3.1.2.2.1. Construction Impacts

On-site construction activities associated with the aero CTs would result in emissions from the operation of construction equipment and workforce commuting, and fugitive dust from clearing, grading, and other activities on unpaved areas. Fugitive dust produced from construction activities would be temporary and controlled by BMPs (e.g., wet suppression) as stated in TVA's fugitive dust control plans required under existing CAA Title V operating permits.

Equipment used during the construction phase would include trucks, truck-mounted augers and drills, excavators, as well as tracked cranes and bulldozers. Low ground-pressure-type equipment (for example, tracked vehicles) would be used in specified locations (such as areas with soft ground) to reduce the potential for environmental impacts per TVA BMPs. Combustion of gasoline and diesel fuels by internal combustion engines (vehicles, generators, construction equipment, etc.) would generate local emissions of CO, carbon dioxide (CO₂), ozone, NO_x, PM, SO₂, and VOCs. However, new emission control technologies and fuel mixtures have significantly reduced vehicle and equipment emissions, and it is expected that all vehicles and equipment would be properly maintained and employ the use of diesel emission controls and cleaner fuel, which also would reduce emissions. Air quality impacts from construction activities would depend on both human-caused factors (intensity of activity, control measures, etc.) and natural factors such as wind speed and direction, soil moisture and other factors. However, even under unusually adverse conditions, these emissions would have at most, a minor transient impact on off-site air quality that is well below the applicable ambient air quality standard.

As proposed construction activities would primarily occur on previously disturbed areas associated with the ALF, ACT Plant, and ACC Plant, dust emissions would be minimized due to existing paved roads and other infrastructure present at the project site. Emissions would only affect the immediate project area and would have limited effects on off-site areas. In addition, dust control actions, including application of wetting agents or soil stabilization products on exposed soils and unpaved roads, and travel areas, would be implemented to reduce fugitive dust and particulate emissions. Overall, effects to air quality from construction-associated activities would be minor, temporary, and localized.

3.1.2.2.2. Operational Impacts

3.1.2.2.2.1 Hazardous Air Pollutants and Non-Hazardous Air Pollutants

The ACT is currently identified as a major source of HAPs under Title V – Major Source Permit 01280-01 TV. However, the permit application submitted for the proposed project will reclassify the ACT site as an area source of HAPs as total HAP emissions for the entire plant will not equal or exceed major source thresholds (i.e., 10 tpy individual HAPs, 25 tpy combined HAPs). Total potential HAPs for the project are documented at 1.85 tpy – i.e., less than 1% of the major threshold. This includes trace element HAPs and organic gas HAPs, which are emitted predominantly as particulate matter and volatile organic compounds, respectively. Formaldehyde is classified as a HAP, and like all other HAPs, expected emissions are significantly lower than federal threshold for major sources of HAPs. Accordingly, no major source National Emissions Standards for HAPs is applicable, including 40 CFR 63 Subpart YYYYY (National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines).

Although ammonia is not a HAP and is not directly regulated under PSD regulations (EPA 2008), public comments on the draft EIS raised questions about its stack release. For the ACT project, ammonia is created in the form of ammonia slip associated with SCR operations for controlling NOx. EPA's Air Pollution Control Technology Fact Sheet for SCR indicates that permitted ammonia slip levels are typically 2 to 10 ppm. Ammonia slip at these levels do not result in plume formation or human health hazards (EPA 2003). Ammonia slip is not expected to exceed five (5) parts per million by volume (ppmv), which is documented in the PSD permit application. Additionally, the ammonia slip would react with and mitigate any sulfuric acid present in the flue gas. The potential sulfuric acid emissions, which are regulated under PSD and considered in the PSD permit application, would fall well below the PSD significant emission rate of seven (7) tpy.

3.1.2.2.2.2 Regulatory Air Permit Requirements New Source Review / Prevention of Significant Deterioration

Construction of aero CTs and supporting facilities is subject to permitting programs that regulate the construction of new stationary sources of air pollution and the modification of existing stationary sources, typically referred to as New Source Review (NSR). Major NSR is applicable to sources under PSD which have 250 tpy of potential emissions of any criteria pollutant or 100 tpy for specifically listed source categories. There are two NSR permitting programs, based on the attainment status of the area in which the proposed project is located. In attainment areas, PSD is the applicable permitting program. In nonattainment areas, the applicable permitting program is nonattainment NSR. As the ACT Plant is located in an area designated as attainment/unclassified, any significant emission increases from the proposed project would be subject to PSD pre-construction review to ensure air quality in the area is protected by requiring the permit applicant to demonstrate that the emission increases from the proposed project will not cause or contribute to nonattainment of any applicable NAAQS or PSD increment and do not cause a significant deterioration in air quality (i.e., the emissions do not increase concentration of pollutants beyond certain PSD increments (which are the amounts of pollution an area is allowed to increase to). 42 U.S.C. § 7475(a)(3).

PSD review is required if the project would be a new major stationary source or if the project would constitute a major modification to an existing major stationary source. The project would constitute a major modification if the project involves a physical change or change in the method of operation of an existing major stationary source that would result in a significant emissions

increase of a regulated pollutant and if there would be a significant net emissions increase of that pollutant from the major stationary source. Significant emission increase levels, for purposes of PSD, were established as allowable increases in air pollutants over a baseline level that need not be evaluated under PSD because they would not have a detrimental impact to air quality.

PSD does not prevent sources from increasing emissions, but instead it “insure[s] that economic growth will occur in a manner consistent with the preservation of existing clean air resources.” 42 U.S.C. § 7470(3). Conducting a PSD review ensures that actions that may increase air emissions of regulated criteria pollutants are carefully evaluated for their effects on air quality and that the public is adequately informed (EPA 2024d). To that end, the PSD applicant must demonstrate that project emissions increases do not significantly deteriorate air quality (i.e., they do not result in deterioration that exceeds the PSD increments) and do not cause or contribute to nonattainment. *Id.* § 7475(a)(3).

PSD review requires application of the best available control technology (BACT), an air quality analysis, additional impact analysis, and public involvement. Further detail on each of these requirements is provided below.

- BACT is an emission limitation based on the maximum achievable degree of control. BACT is determined on a case-by-case basis and considers the energy, environmental, and economic impact of the proposed limitation. BACT can be an add-on pollution control device or a modification of the production process or method or, in some cases, a design, equipment, work practice, or operational standard, if an emission standard is infeasible.
- An air quality analysis is performed to demonstrate that the new emissions from a proposed modification, in conjunction with other applicable emissions increases and decreases from existing sources, would not cause or contribute to a violation of any applicable NAAQS or PSD increment. The analysis includes an assessment of existing air quality, which may include ambient monitoring and air dispersion modeling, as well as dispersion modeling predictions of ambient concentrations resulting from the proposed project and future growth associated with the project.
- Additional impact analyses evaluate the other impacts, such as ground and water pollution impacts on soils and decreases in visibility caused by the proposed emissions increases and associated growth. Associated growth is growth in the area due to the proposed modification, including industrial, commercial, and residential growth.

Public participation allows the public to review and comment on the permit before it is issued.

3.1.2.2.2.3 Title V and Other Regulatory Requirements

As stated in Section 3.1.2.2.2.1, the ACT Plant has an existing Title V permit, which is required for facilities that have emissions exceeding the major source thresholds for criteria pollutants, HAPs, and in certain cases, GHGs. The Title V permit, which covers the ACC and ACT Plants, includes emission limits (as established by local/state/federal regulation) as well as the data tracking, recordkeeping, and reporting measures to verify compliance. However, the permit application submitted for the proposed project will reclassify the ACT site as an area source of HAPs as HAP emissions will not equal or exceed major source thresholds.

Construction of the aero CTs and support facilities would require significant modification of the Title V permit. Permit modifications would incorporate limitations from applicable local, state, and federal regulations, including the following:

- 40 CFR 60, Subpart KKKK, is applicable to all stationary gas CT units with a heat input at peak load equal to or greater than 10 MMBtu/hr for which construction or modification is commenced after February 18, 2005. This subpart regulates NO_x and SO₂ emissions. There are options for compliance with the SO₂ limit, one of which is a sulfur content in fuel limit of 0.06 pounds (lbs) SO₂/MMBtu heat input. Based on the adoption of a very stringent NO_x limit for the proposed aero CTs, the NO_x standard of this subpart would be met.
- 40 CFR 60, Subpart TTTTa, is applicable to CT electrical generating units commencing construction after May 23, 2023. Pursuant to Subpart TTTTa, each unit would satisfy the requirements of an “intermediate load” CT of 1,170 lbs. CO₂ per megawatt hour (MWh) and an annual capacity factor of ≤40%.
- 40 CFR 60, Subpart IIII is applicable to the black-start generators with requirements, including the use of ULSD as well as certification of engines to appropriate standards and recordkeeping requirements.

Emissions from Alternative B would meet these applicable standards, as well as any additional requirements established by state and local regulations.

3.1.2.2.3. Operational Emissions – PSD Regulated Pollutants

The new Aero CT units would incorporate state-of-the-art emission control technology. Table 3-1 provides a summary of the maximum preliminary annual emission estimates for the proposed action, at the permitted capacity factor of 40 percent, for determination of PSD applicability. Potential emissions from the modification would exceed PSD significance thresholds, as shown in Table 3-1. As such, the proposed action is subject to PSD review.

Table 3-1. Maximum Project Annual Emission (40% Capacity Factor) Estimates and Prevention of Significant Deterioration Significant Emission Rates

Pollutant	Emissions (tons/year)		PSD Triggered
	Project Emission Increases	Significant Emission Rates	
CO	56	100	No
NOx	47	40	Yes
SO ₂	2	40	No
Filterable PM	24.5	25	No
PM10	34	15	Yes
PM2.5	34	10	Yes
VOC	11	40	No
Pb	<0.01	0.6	No
Sulfuric Acid Mist	<0.05	7	No
CO _{2e}	401,800	75,000	Yes

Key: CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NOx = nitrogen dioxide; Pb = lead; PM = particulate matter; PM2.5 = particulate matter less than 10 microns in diameter; PM10 = particulate matter less than 10 microns in diameter; PSD = Prevention of Significant Deterioration; SO₂ = sulfur dioxide; VOC = volatile organic compound

The estimates in Table 3-1 are noted to reflect the six GE LM2500 units operating 3,260 hours per CT-year with 350 startup/shutdown events per CT-year and two black-start generators operating 100 hours/unit year. No creditable increases or decreases of emissions in the contemporaneous period were noted (e.g., other new sources or shut down of other permitted sources).

While TVA has requested that ACT be permitted up to 40 percent, TVA estimates that the actual capacity factor of the new units would be similar to those of other gas turbines operated nationally. TVA therefore is also analyzing a capacity factor of 11.1 percent, which is the value that corresponds to the U.S. Energy Information Administration (EIA) 10-year average (2014-2023) capacity factor for natural gas turbines across the U.S (EIA, 2024). The project emission increases at the 11.1-percent predicted actual operational capacity factor are presented in Table 3-2. These values only reflect reduction in capacity factor associated with the baseload of the six GE LM2500 units; the values do not account for reduction adjustments for startup/shutdown events or the two black-start generators.

Table 3-2. Predicted Project Annual Emission (11.1 % Capacity Factor) Estimates and Prevention of Significant Deterioration Significant Emission Rates

Pollutant	Emissions (tons/year)		PSD Triggered
	Project Emission	Significant Emission	
	Increases	Rates	
CO	28	100	No
NOx	24	40	No
SO ₂	1	40	No
Filterable PM	7	25	No
PM10	11	15	No
PM2.5	11	10	Yes
VOC	3	40	No
Pb	<0.01	0.6	No
Sulfuric Acid Mist	<0.05	7	No
CO _{2e}	107,268	75,000	Yes

Key: CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NOx = nitrogen dioxide; Pb = lead; PM = particulate matter; PM2.5 = particulate matter less than 10 microns in diameter; PM10 = particulate matter less than 10 microns in diameter; PSD = Prevention of Significant Deterioration; SO₂ = sulfur dioxide; VOC = volatile organic compound

Based on the 40% capacity factor analysis summarized in Table 3-1, BACT would be applicable to NOx, particulates (i.e., PM10 and PM2.5), and carbon dioxide equivalents (CO_{2e}); in consultation with the SCHD, however, TVA has selected a proposed NOx emission limitation equivalent to the more stringent LAER standard. The BACT for particulate matter is the use of clean fuels (i.e., natural gas) and good combustion design practices. The BACT for GHG is using low carbon fuels (e.g., natural gas) and implementing energy efficiency measures. In contrast, the 11.1% capacity factor analysis summarized in Table 3-2 (baseload only) would yield application of BACT to particulates (i.e., PM2.5 only) and CO_{2e}; NOx emissions would not exceed the corresponding significant emission rate.

BACT/LAER for NOx is achieved through combustion zone mitigation and post-combustion SCR. Peak flame-zone temperatures in the proposed units would be reduced via dry combustion controls— low-NOx emission combustors, which enhance air-fuel mixing. An SCR system would be used in each turbine exhaust. By installing these technologies, noted to be used by other sources that have achieved LAER, the NOx emission rate would be 2.5 parts per million volume dry NOx at 15 percent O₂ during steady-state operations.

TVA has begun the process of complying with PSD requirements with the submission of modeling protocols and a PSD permit application to Shelby County in December 2024. The PSD permit application addresses and demonstrates compliance with permit requirements, including (1) application of BACT (as discussed above); (2) modeling to demonstrate that the proposed project does not cause or contribute to a NAAQS violation or exceed the applicable

increments; and (3) additional impact analyses.⁷ The PSD program provides extra protection for large pristine areas of the United States, such as national parks, forests, and wildlife refuges, referred to as Class I areas. Class II areas are those that are in attainment or noted to be unclassifiable. Based on the location of the ACT Plant, both Class I and Class II areas are potentially impacted; therefore, the modeling protocol and PSD permit application addresses both areas.

Section 5.0 (Air Quality Dispersion Modeling Analysis) within ACT's PSD Permit Application contains TVA's evaluation of the potential impact of the proposed project on air quality. In these evaluations, TVA followed EPA-approved models and methodologies, in accordance with modeling protocols submitted to and approved by SCHD. EPA has issued guidance for evaluating and demonstrating when emissions from a proposed project causes or contributes to a NAAQS or PDS increment violation.⁸ This EPA SILs Guidance establishes Significant Impact Levels ("SILs") for certain pollutants, which generally represent a

degree of change in concentration [that] is ... indistinguishable from the inherent variability in the measured atmosphere and may be observed even in the absence of the increased emissions from a new or modified source. Therefore, a permitting authority can reasonably conclude that emissions of a proposed source that have a projected impact below the SIL[s] are not the reason for, responsible for, or the "but for" cause of a NAAQS violation. Likewise, this indicates that changes in air quality within this range are not meaningful, and, thus, do not contribute to a violation of the NAAQS (EPA 2018).

The way SCHD applies these concepts—and the way TVA applied them in its modeling—is to first conduct single-source modeling, i.e., modeling that conservatively evaluates the potential impact on air quality of the proposed project by itself, to determine whether the impact of the project's emissions result in concentrations that exceed the SILs. If the proposed project by itself does not exceed the SILs, the proposed project would not cause or contribute to a violation of NAAQS. If, however, the estimated impact of the proposed project exceeds the SILs, then more refined, cumulative modeling is undertaken to assess the impact of the source as well as nearby sources.

The Air Quality Dispersion Modeling Analysis in ACT's PSD Permit Application supports the following relative to Shelby County's and EPA's PSD program, pending Shelby County and EPA full technical review.

⁷ See TVA, Allen Combustion Turbine Project (ACT): Prevention of Significant Deterioration (PSD) Permit Application (Dec. 2024), available at https://www.shelbytnhealth.com/DocumentCenter/View/7130/20241210_ACT-to-SCHD_-PSD-Application?bidId=. Other information relating to SCHD's review and processing of the application, including opportunity for public comment, are available at: <https://www.shelbytnhealth.com/310/Air-Pollution-Control-Public-Notices>.

⁸ See EPA, Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program (April 17, 2018) (hereinafter "SILs Guidance"). Under this guidance, permitting authorities retain discretion whether to use SILs, use the SILs proposed by EPA, or even develop their own SILs. SCHD has adopted EPA's proposed SILs. EPA issued a supplement to the SILS Guidance on April 30, 2024.

- 1) Class II Modeling – modeling results show that single source (i.e., ACT project) concentrations of 1-hr and Annual NO₂, 24-hr and Annual PM₁₀, and 24-hr and Annual PM_{2.5} (primary) do not cause or contribute to a violation of the corresponding NAAQS and PSD increments.
- 2) Secondary Pollutant Impacts – a Modeled Emission Rates for Precursors (MERPS) assessment of secondary O₃ and PM_{2.5} impacts has demonstrated that the ACT project does not cause or contribute to a violation of the respective NAAQS and PSD increments.
- 3) Class I Modeling (Class I PSD Increment Analysis) – two Class I areas are located within 300 kilometers (km) of the ACT Plant: Mingo National Wildlife Refuge and Sipsey Wilderness Area. The results of the Class I PSD increment analysis demonstrate that annual NO₂, 24-hr and annual PM₁₀, and 24-hr and annual primary PM_{2.5} maximum concentrations fall below the applicable Class I increments at a conservative distance of 50 km from the ACT Plant.
- 4) Class I Modeling [Air Quality Related Value (AQRV) Analysis] – this analysis evaluates regional haze as well as sulfur and nitrogen deposition at all nearby Class I areas. The initial AQRV screening analysis demonstrates no adverse impacts.

The impacts of Alternative B on regional air quality would be moderate but would not result in an exceedance of applicable permit emission limits or air quality standards. Compliance with PSD permit requirements (both during the application process and eventually reflected as conditions in the PSD/Title V permit) would be protective of ambient air quality and would ensure the proposed project does not cause or contribute to NAAQS or PSD increment violations.

3.2. Climate Change and Greenhouse Gas

3.2.1. Affected Environment

The Earth's natural warming process is known as the greenhouse effect. The Earth's atmosphere consists of a variety of gases that regulate the Earth's temperature by trapping solar energy. These gases—including CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride—are cumulatively referred to as GHGs because they trap heat like the glass of a greenhouse. Anthropogenic activities, which include the burning of fossil fuels to produce energy and deforestation, have contributed to elevated concentration of GHGs in the atmosphere since the Industrial Revolution. The release of GHGs to the atmosphere as a result of human activity has caused an increase in the average global temperature. While the increase in global temperature is known as global warming, the resulting change in a range of global weather patterns is known as climate change. The EPA defines climate change as “significant changes in average conditions—such as temperature, precipitation, wind patterns, and other aspects of climate—that occur over years, decades, centuries, or longer” (EPA 2024e). In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer. These changes are influenced by a number of factors including oceanic processes, variations in solar radiation, plate tectonics, volcanic eruptions, and anthropogenic activities.

Different GHGs can have different effects on the Earth's warming. Two key ways in which GHGs differ from each other are their ability to absorb energy (i.e., their radiative efficiency),

and how long they remain in the atmosphere (i.e., their lifetime). Global Warming Potential is a measure of how effectively a specific GHG traps heat in the atmosphere compared to CO₂ and was developed to allow comparisons of the global warming impacts of different gases. The larger the global warming potential, the more that a given gas has the potential to contribute to increasing atmospheric temperatures relative to CO₂ over the same time period. Because the global warming potential that each GHG has varies, the common metric of CO₂e (carbon dioxide equivalent) is used to report a combined impact from all of the GHGs. This metric scales the global warming potential of each GHG to that of CO₂ with applicable global warming potentials applied pursuant to 40 CFR Part 98.

As described in TVA's 2019 IRP, TVA has one of the largest, most diverse, and cleanest energy-generating systems in the nation. In fiscal year 2023, 55 percent of TVA's electricity was generated from carbon-free sources, such as nuclear power and renewable resources including hydropower (TVA 2024b). TVA continues to invest in assets to reduce reliance on coal, modernize the transmission system, and add new renewable energy resources to ensure safe, reliable, and cleaner energy consistent with the implementation of the 2019 IRP recommendations. As of the end of calendar year 2023, TVA has achieved a 53 percent reduction in its mass carbon emissions as compared to 2005 baseline standards (TVA 2024b). This decrease is mainly due to the retirement of coal plants, which emit larger quantities of CO₂ relative to other types of electrical generation and the replacement of these plants with nuclear and natural gas-fueled generation. Nuclear generation does not result in emissions of CO₂, and the CO₂ output rate from natural gas-fueled electricity generation is approximately half that of coal (TVA 2021a). As a power generation fleet, TVA has demonstrated a commitment to continued reduction and management of GHG emissions while also maintaining a balanced generation portfolio.

3.2.1.1. Regulatory Requirements

Although there have been a series of recent administrative changes, no clear GHG emission reduction requirements have been established to date at the federal level for fossil-fired power plants. The national emissions reduction requirements established in the EPA's Clean Power Plan Rule were repealed on July 8, 2019 (84 FR 32250), and the targets in the Paris Climate Accord were withdrawn in November of 2020. The emission reduction requirements established by EPA in the Affordable Clean Energy Rule, which replaced the Clean Power Plan Rule, were ultimately repealed through the final 2024 GHG Rule.

In 2024, the Council on Environmental Quality updated its NEPA implementing regulations and required that agencies analyze, where applicable, climate change-related effects, including quantification of greenhouse gas emissions from the proposed action and alternatives. On January 20, 2025, President Trump issued a series of Presidential Actions related to climate change and greenhouse gas. Executive Order 14148, *Initial Recension of Harmful Executive Orders*, revoked EOs 13990 and 14008. Additionally, EO 14154, *Unleashing American Energy*, directed CEQ to propose rescinding its NEPA implementing regulations. On February 25, 2025, CEQ published an Interim Final Rule to remove its NEPA regulations from the Code of Federal Regulations; the rule became effective on April 11, 2025.

EO 14154 also disbanded the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG), which was established pursuant to EO 13990, as well as any guidance, instruction, recommendation, and documents issued by the IWG. EO 14154 directs the Administrator of the EPA to issue guidance to address the Social Cost of Carbon, including consideration of eliminating the calculation from any Federal permitting or regulatory decision.

Prior to further guidance issued by the EPA, EO 14154 directs agencies to “...ensure estimates to assess the value of changes in greenhouse gas emissions resulting from agency actions, including with respect to the consideration of domestic versus international effects and evaluating appropriate discount rates, are, to the extent permitted by law, consistent with the guidance contained in OMB Circular A-4 of September 17, 2003 (Regulatory Analysis).”

On May 9, 2024, the EPA released the Final Rule: NSPS for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-fired Electric Generating Stations. The rule establishes new carbon pollution standards for coal- and new gas-fired power plants. The construction and operation of the ACT would be subject to 40 CFR 60 Subpart TTTT_a, which comprises the May 2024 Final Rule.

40 CFR 60 Subpart TTTT_a created three subcategories defined by an annual capacity factor. Each subcategory has a distinct best system of emission reduction (BSER) and standard of performance:

- Low load combustion turbine (annual capacity factor less than or equal to 20%) BSER is the use of lower emitting fuels with standard of performance ranging from 120 lbs. CO₂/MMBtu to 160 lbs. CO₂/MMBtu.
- Intermediate load combustion turbine (annual capacity factor greater than 20% and less than or equal to 40%) BSER is the use of highly efficient simple cycle generation that can achieve a standard of performance ranging from 1,170 to 1,560 lbs. CO₂/MWh (gross).
- Base load combustion turbine (annual capacity factor greater than 40%) BSER would be applied in phases. Phase 1 requires highly efficient combined cycle generation achieving a standard of 800 to 1,250 lbs. CO₂/MWh (gross) and beginning by the date the rule was effective. Phase 2 requires CCS installation by January 1, 2032, and a standard of performance ranging from 100 to 150 lbs. CO₂/MWh (gross).

Of the three, only the intermediate load and the low load subcategories are relevant here.

3.2.1.2. TVA Carbon Strategic Intent

At its May 6, 2021, meeting, the TVA Board adopted the TVA Strategic Intent and Guiding Principles, which focus on energy supply and decarbonization initiatives (TVA 2021a). These guiding principles commit TVA to delivering safe, low-cost, reliable power while providing responsible stewardship by caring for the region’s natural resources, consistent with recommendations of the 2019 IRP.

To implement the TVA Strategic Intent and Guiding Principles and TVA’s asset strategy, additional peaking units are needed to operate infrequently during short-duration, high-demand periods. These peaking units are essential for maintaining system reliability requirements, as they can start up as well as ramp down quickly to meet sudden changes in either demand or supply resulting from short-term changes in weather that can significantly increase power demand when intermittent renewable resources may not be available.

3.2.1.3. Social Cost of Greenhouse Gases

The social cost of greenhouse gases (SC-GHG) is an estimate of monetized damages (or benefits) associated with incremental increases (or decreases) in CO₂ emissions, such as

human health effects, property damage from increased flood risk, and the value of ecosystem services. While governmental and nongovernmental stakeholders have an interest in the costs and impacts of carbon emissions resulting from decisions, there is much uncertainty and controversy surrounding the use of any specific SC-GHG price and associated escalation. The most significant points of controversy include the discount rate that should be used when accounting for future impacts and if global impacts, as opposed to only domestic, should be included. TVA has included a discussion of GHG emissions and their significance for the Proposed Action and the No Action Alternative in Section 3.2.2, Environmental Consequences, consistent with the guidance contained in OMB Circular A-4 of September 17, 2003 (Regulatory Analysis), per Executive Order 14154, *Unleashing American Energy*.⁹

This EIS calculates GHG emissions directly attributable to the proposed project's construction and operation, evaluates the net change in GHG emission brought about by the proposed project, and discusses the SC-GHG as it applies to the proposed project.

3.2.2. Environmental Consequences

The analysis of GHG emissions and climate change is fundamentally different in approach to the analysis of air quality (refer to Section 3.1, Air Quality). While air quality is linked to the geographical location and physical features within a particular airshed, GHG emissions have potential effects on a global scale. Within the global context of climate change, it is important to consider whether GHG emissions represent new emissions or are replacing or relocating existing GHG emissions from one location to another.

GHG emissions can include the release of stored GHGs from existing carbon stocks, such as consumption of oil reserves or removal of forests. Because the Proposed Action would not release GHGs from carbon stocks, the release of these types of emissions are not included in the analysis. There would be no natural sources of emissions and no measurable amount of carbon sequestration. This analysis focuses on the reasonable measurable emissions from fossil fuel consumption that could occur under each alternative.

To provide meaningful context, consistent with the EO 14154, *Unleashing American Energy*, as well as OMB Circular A-4, TVA is considering the social costs associated with GHGs in this analysis. OMB Circular A-4 states that analysis “*should focus on benefits and costs that accrue to citizens and residents of the United States.*” Therefore, the analysis of SC-GHG is evaluated from a domestic perspective rather than a global perspective. Regarding discount rates, OMB Circular A-4 states that analysis “*should provide estimates of net benefits using both 3 percent and 7 percent.*” (These discount rates have been previously calculated and used by the EPA in its regulatory impact analyses for the 2019 rulemaking that repealed the Clean Power Plan and replaced it with the Affordable Clean Energy Rule; see Table 3-3.)

⁹ Prior to issuance of EO 14154, *Unleashing American Energy*, TVA had calculated the SC-GHG using guidance published by the IWG (“*Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under EO 13990*”) and by the EPA (“*Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, ‘Standards of Performance for New, Reconstruction, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*”). The results of these calculations are provided in Appendix C.

Table 3-3. SC-GHG 2015-2050 (per metric ton)

Year	Discount Rate	
	3% Average	7% Average
2020	\$7	\$1
2025	\$7	\$1
2030	\$8	\$1
2035	\$9	\$2
2040	\$9	\$2
2045	\$10	\$2
2050	\$11	\$2

Notes: These SC-GHG values are stated in \$/metric ton CO2 and rounded to the nearest dollar.
Sources: U.S. Government Accountability Office 2020; EPA 2019a.

3.2.2.1. Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not install new aero CT units at the ACT, and there would be no short-term, temporary construction-related GHG emissions or GHG emissions associated with the operation of the new units. TVA would continue to operate two existing units at ACT on a limited basis. System benefits associated with the operations of the new aero CT units would not be realized (e.g., black start and synchronous condensing capabilities, improved capabilities to integrate renewable energy resources). The impact of Alternative A on global climate change is minor.

Without the additional generation capacity, TVA would continue to need power, particularly during periods of peak demand and would acquire the power from other generation sources. In the short-term, TVA anticipates that the power would likely be obtained through power purchase agreements on the market, a portion of which would likely be derived from natural gas power plants outside the TVA power system. When such power originates from natural gas resources, there would generally be similar—if not greater—GHG emissions as Alternative B, as the existing power technology is likely not as efficient as the proposed aero CTs. In the long-term, TVA would continue to need new peaking generation sources.

3.2.2.2. Alternative B – Allen Aeroderivative Project

3.2.2.2.1. Construction

Similar to criteria air pollutant emissions described in Section 3.1, construction activities would result in temporary GHG emissions.

GHG emissions would result from mobilization, staging, and construction support activities. Construction traffic, including transport of borrow materials, delivery of materials, and construction worker commutes, would increase the number of vehicles transiting on local and regional roadways, and temporarily result in additional GHG emissions. The use of heavy construction equipment for construction activities would also generate short-term increases in

GHG emissions. It is estimated that construction activities would result in approximately 14,283 tons of CO₂e over the 15-month construction period. The GHG emissions of construction is captured in the upstream emissions analysis (Table 3-4), as upstream emissions are primarily associated with activities required for construction and commissioning of a new power generating asset (TVA 2024e). GHG emissions associated with heavy construction equipment would be similar to those found in most common construction activities.

Heavy construction equipment currently operating within the airshed may be redistributed from other projects to support the proposed construction activities. As such, these GHG emissions may not necessarily constitute new sources of emissions. Even with conservative assumptions (e.g., all heavy equipment in operation for 8 hour per day, 5 days per week, 12 months per year), when compared to GHG emissions in Tennessee (112.1 million metric tons CO₂e in 2019 [TDEC 2024a]), and Shelby County (17 million metric tons of CO₂e in 2019 [Memphis and Shelby County Division of Planning and Development 2022]) construction-related GHG emissions would be negligible.

3.2.2.2.2. Operations

TVA would operate six GE LM2500 units operating up to 3,260 hours per CT-year with 350 startup/shutdown events per CT-year and two black-start generators operating 100 hours/unit year. LM2500 operations are regulated by 40 CFR Part 60, Subpart TTTTa. Each LM2500 would have a generation restriction of 115,000 megawatts per hour per year. TVA estimates that the maximum operational capacity factor of 40 percent would result in approximately 401,800 tons of CO₂e per year (Table 3-4). In 2023, TVA recorded 49 million tons of GHG emissions from its systems; the proposed aero CTs, at the maximum 40 percent operational capacity factor, would result in an increase of GHG emissions of approximately 0.82 percent.

Because TVA expects to operate each CT less than the maximum capacity factor allowed in Subpart TTTTa for the intermediate subcategory, annual CO₂e emissions would be less than the maximum operational capacity amounts presented. TVA estimates that the predicted operation of the aero CT units would be comparable to the national average of capacity factors (between 2014 and 2023) for natural gas combusting gas turbines, which is 11.1 percent (EIA 2024). Thus, TVA estimates that the Proposed Action would result in a predicted actual direct increase of 107,268 metric tons of CO₂e per year (Table 3-4). As stated above in 2023 TVA recorded 49 million tons of GHG emissions from its systems; the proposed aero CTs, at the predicted 11.1 percent operational capacity factor, would result in an increase of GHG emissions of approximately 0.22 percent.

In addition to the forecasted direct combustion CO₂ emissions described above, all power generating resources include additional life cycle GHG emissions associated with their construction, ongoing operations, and their decommissioning at the end of their useful life. TVA has worked with the National Renewable Energy Laboratory (NREL) to develop life cycle GHG emissions forecasts, which also include upstream, ongoing non-combustion, and downstream GHG emissions, for the portfolio of power generated resources evaluated in the draft EIS for the 2025 IRP (TVA 2024e).

This GHG analysis incorporates a GHG life cycle analysis in its evaluation to help quantify a full accounting of cradle-to-grave environmental impacts. Table 3-4 identifies emission factors that were used by the NREL and the associated calculations to estimate GHG emissions associated with upstream, ongoing non-combustion, and downstream activities associated with the proposed aero CTs. In the NREL's analysis, upstream GHG emissions include resource extractions supply chain, manufacturing, ongoing non-combustion emissions (including plant

maintenance and upstream methane leakage), and downstream GHG emissions (including dismantling, disposal, and returning the site to a brownfield state.)

Table 3-4. GHG Life Cycle Analysis Emissions

	Emission Factors (g/kW)¹	Emission Factors (tons/MW)	Resource - Proposed Aero CTs	Total MT CO₂e Proposed Aero CTs
One-Time Upstream GHG (CO ₂ equivalent)	64,790 g/kW	110.23 tons/MW	200 MW	14,283.75 MT CO ₂ e
Ongoing Annual Non-Combustion GHG (CO ₂ equivalent)	70.00 g/kW-hr	0.077 tons/MW-hr	115,000 MW-hr	8,873.60 MT CO ₂ e
One-Time Downstream GHG (CO ₂ equivalent)	2,600 g/kW	110.23 tons/MW	200 MW	573.20 MT CO ₂ e

Note: On-going combustion emissions – approximately 401,800 tons of CO₂e per year (maximum) and 107,268 metric tons of CO₂e per year (predicted) – have been calculated individually for the Proposed Action and are summarized in Table 3-4.

Source: 1. TVA 2024e.

The SC-GHG associated with the Proposed Action would range from approximately \$425,531 to \$2.98 million annually under the maximum operational capacity factory (40 percent) and \$130,999 to \$916,990 annually under the predicted actual operational capacity factor (11.1 percent) (Table 3-5).

Table 3-5. Estimated Annualized Social Cost of Carbon Associated with the Proposed Action

	Emissions (CO₂e) (tons/ year)	SC-GHG 7%	SC-GHG 3%
Maximum Operations (Capacity Factor of 40 Percent)	401,800	\$401,800	\$2,812,600
Predicted Operations (Capacity Factor of 11.1 Percent)	107,268	\$107,268	\$750,876
GHG Life Cycle Analysis Emissions	23,730.551	\$23,731	\$166,114
Total (Maximum)	425,530.551	\$425,531	\$2,978,714
Total (Predicted)	130,998.551	\$130,999	\$916,990

Key: CH₄ = methane; CO₂ = carbon dioxide; GHG = greenhouse gas; SC-GHG = social cost of greenhouse gases

The overall increase in GHG emissions, at the maximum capacity factor of 40 percent, is a minor increase (0.82 percent) in the overall TVA system GHG emissions. Additionally, as previously described, TVA is expecting for an operational capacity factor to be closer to 11.1

percent, which would lower the overall contribution (0.22 percent) to system GHG emission and the total SC-GHG. Relative to global GHG levels and potential effects on climate change, these contributions are negligible. As such, impacts from Alternative B on climate change and GHG emissions would be minor. Operation of the proposed aero CTs, as a reliable and flexible peaking fleet, would contribute to TVA's overall ability to achieve the regional emissions goals of the 2019 IRP (see Section 3.2.1.2, TVA Carbon Strategic Intent).

3.3. Groundwater

3.3.1. Affected Environment

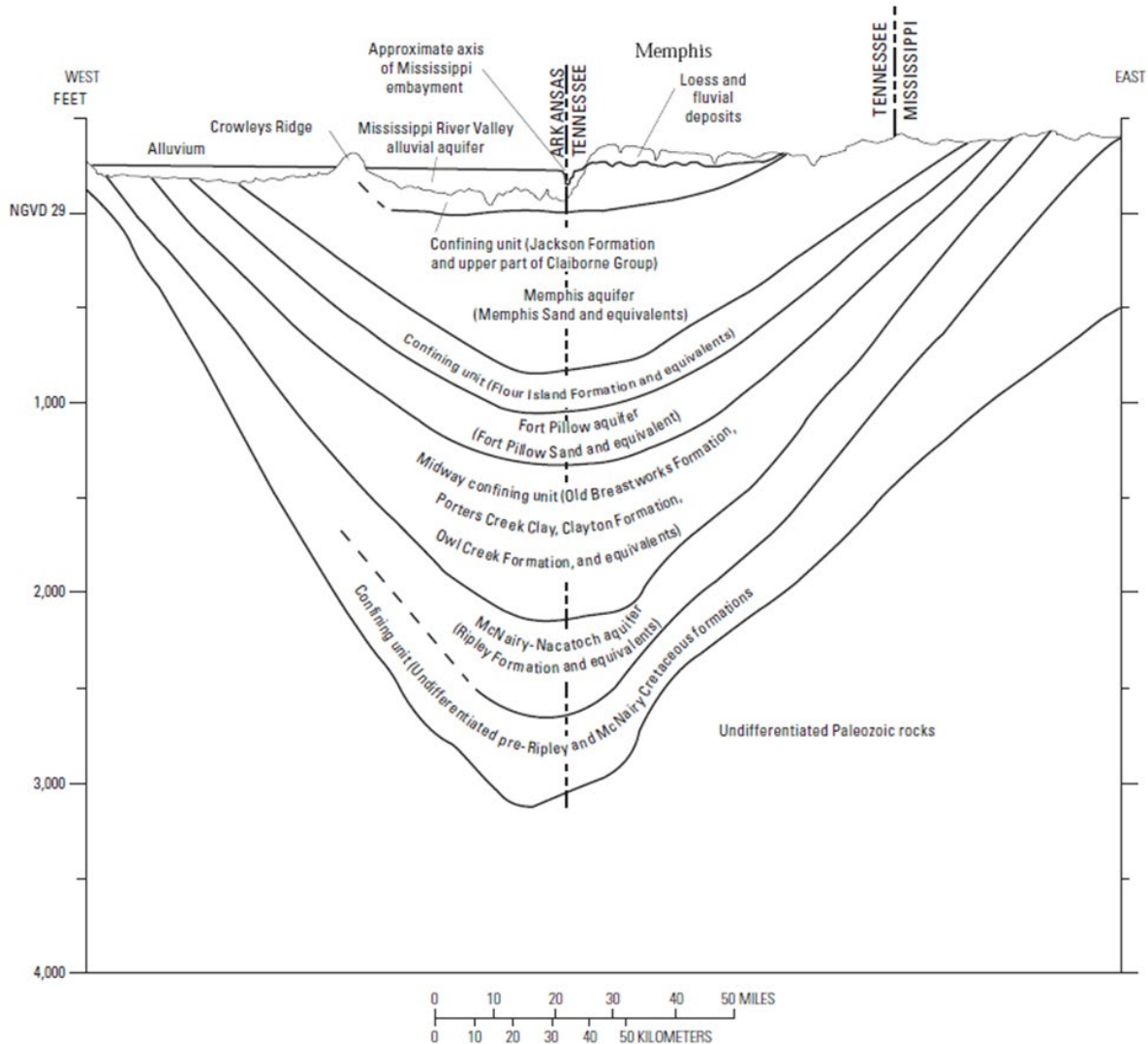
3.3.1.1. Regional Aquifers

The ACT Plant is situated in southwestern Tennessee approximately 1.5 miles east of the Mississippi River. It lies atop the Mississippi embayment, within the Mississippi Alluvial Plain section of the Gulf Coast Coastal Plain (TVA 2020). The Mississippi embayment is a geologic basin comprised of Cretaceous to recent age sediments deposited primarily in a Coastal Plain setting and dominated by unconsolidated sand, silt, and clay. The principal aquifers of the region are (in descending order) the Mississippi River Valley alluvial aquifer, the Memphis Sand, and the Fort Pillow Sand (Figure 3-1) (Carmichael et al. 2018).

Several geotechnical and site investigations were previously conducted at the ALF ash pond complexes. The site characteristics and results identified in those studies are considered representative of the ACT Plant. The materials constituting the Mississippi River Valley aquifer range in size from coarse gravel to clay. They commonly grade downward from fine sand, silt, and clay at the top to coarse sand or gravel at the base. Alluvium is approximately 110 to 245 feet thick at the ACT Plant (Stantec 2019a).

The Mississippi River Valley alluvial aquifer sediments are underlain by a low permeability confining unit composed of the Jackson Formation and upper Claiborne Group (Brahana and Broshears 2001) (Figure 3-1). Overall thickness varies from 0 to 370 feet regionally within the Jackson Formation and upper Claiborne Group (Brahana and Broshears 2001). Both the Jackson Formation and upper Claiborne Group act as a confining layer referred to as the upper Claiborne confining unit (Carmichael et al. 2018). The upper Claiborne confining unit is a low permeability, clayey layer that defines the bottom of the alluvial aquifer and has a thickness of approximately 30 to 70 feet near the ACT Plant (Stantec 2019a). Where present, the upper Claiborne confining unit can limit vertical movement of groundwater. Additionally, where present, the upper Claiborne confining unit separates the Memphis Sand aquifer from the Mississippi River Valley alluvial aquifer sediments. The Memphis Sand is characterized by predominantly very fine to very coarse-grained sand with lenses of fine-grained material and is referred to as the Memphis aquifer (Brahana and Broshears 2001; Stantec 2019a). The top of the Memphis Sand aquifer is approximately 190 to 255 feet below ground surface near the ACT Plant.

Monitoring wells installed around the East Ash Pond Complex and near the West Ash Pond indicate groundwater movement in the alluvial aquifer immediately beneath the site is generally northward toward McKellar Lake adjacent to the site. Depth to groundwater is generally 15 to 40 feet below ground surface and seasonally fluctuates with lake levels (Stantec 2019a). McKellar Lake can rise and fall by almost 40 feet, which can affect the groundwater flow direction in the alluvial aquifer. Groundwater can temporarily flow to the south, away from the lake, when the lake level is high (Stantec 2019a).



Source: Carmichael et al. 2018

Figure 3-1. Schematic Cross Section Showing the Hydrostratigraphy of the Northern Mississippi Embayment East and West of Memphis, Tennessee

3.3.1.2. Groundwater Use

The Memphis and Fort Pillow aquifers are the primary drinking water sources for the surrounding area, including portions of eastern Arkansas and northern Mississippi (Carmichael et al. 2018). The Memphis aquifer serves as the primary drinking water aquifer for the area, including the City of Memphis (Carmichael et al. 2018). The Memphis aquifer is the most productive aquifer in the region, providing approximately 98 percent of the total water pumped to the City of Memphis in 1980, and it remains the primary supply of drinking water in the area (Brahana and Broshears 2001). The Fort Pillow aquifer is not widely used in the Memphis region because of the availability of shallower groundwater resources (Brahana and Broshears 2001).

The Davis Well Field is the closest wellfield near the ACT Plant and is approximately 2 miles south of the ACT Plant. Other well fields are more than 5 miles east of ACT. Additionally, based on the water well search (Stantec 2019a), there are no known public water supply wells completed in the alluvial aquifer within at least 1 mile of the ACT Plant.

3.3.1.3. Groundwater Quality

Groundwater has been monitored at the Allen Reservation since 1988. Groundwater monitoring data for ALF was collected from the East Ash Pond Complex monitoring well network and former West Ash Pond Area (TVA 2016c). Closure by removal activities were completed in November 2023 at the West Ash Pond Area. Water quality sampling results indicate that CCR constituents such as arsenic (and to a lesser extent fluoride and lead) have been detected at elevated levels in groundwater samples collected from the alluvial aquifer underlying the East Ash Pond Complex. Additionally, elevated pH values in groundwater generally greater than 7.5 standard units have also been observed. The area of impact from these primary constituents of concern is localized and generally limited to the shallow portion of the alluvial aquifer.

Groundwater sampling results do not indicate adverse impacts to the Memphis Sand aquifer or the public drinking water supply (Stantec 2019a). Under the CCR Rule and TDEC Commissioner's Order, TVA would continue to work with TDEC to evaluate groundwater monitoring trends and develop and implement appropriate long-term corrective measures to address groundwater quality.

TVA, in cooperation with TDEC, implemented an Interim Response Action that is designed to control and address groundwater contamination. The Interim Response Action is a groundwater extraction system to control and treat groundwater with elevated concentrations of arsenic that began in 2020 (Stantec 2018a). Groundwater monitoring reports for 2023 identify arsenic and molybdenum as in exceedance of groundwater protection standards. TVA would continue to monitor and assess groundwater testing results and take the steps necessary to preserve and protect the quality of the environment and surrounding community (TVA 2024c).

3.3.2. Environmental Consequences

3.3.2.1. Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. Subsequently, there would be no change to groundwater conditions at the ACT Plant. TVA would continue to monitor the groundwater at the Allen Reservation and the East Ash Pond Complex and West Ash Pond Area in accordance with federal and state requirements. As such, the impact of Alternative A on groundwater is minor.

3.3.2.2. Alternative B – Allen Aeroderivative Project

Construction of the aero CTs and associated support systems would require below ground construction activities that may encounter groundwater. Shallow excavation up to 5 feet in depth is expected in the form of trenching and excavation for foundations, roadways, site drainage, and upgrades. Construction of aero CTs at the ACT Plant would require the installation of new foundational piles with maximum depths of 75 feet. Piles have the potential to influence the groundwater flow in the zone disturbed by pile-driving through conduit formation along the interface between the pile and surrounding soil as well as from groundwater flow through the pile material itself (Satyamurthy 2005). Impacts to groundwater due to the construction of foundational piles would be negligible due to minimal groundwater displacement within the

alluvial aquifer. Additionally, impermeable materials, such as steel or concrete, would be used for pile construction, further decreasing any impacts to groundwater flow throughout the aquifer. If groundwater is encountered during any construction activities, dewatering processes would be used to control groundwater infiltration into the excavation site and all state and federal requirements relating to groundwater protection would be followed. Because such activities and their impacts to groundwater flow patterns and availability are localized and generally limited to the construction phase, impacts to groundwater from construction are expected to be minor.

During construction and operation, accidental spills or releases of fluids (gasoline, diesel fuel, hydraulic lubricants, etc.) have the potential to contaminate groundwater. BMPs, such as those described in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (TVA 2022b) and a spill prevention, control, and countermeasure plan would be used to avoid contamination of groundwater from project activities. The use of such BMPs would reduce the possibility of any on-site spills or hazardous materials from reaching groundwater during construction and operation.

The ACT Plant currently uses potable-grade water supplied by the Memphis Light, Gas and Water Division (MLGW) for operations and would continue to use potable water from the existing public supply during operations of the proposed aero CT units. The ACT Plant would not require any use of groundwater.

Because Alternative B would result in negligible alteration of groundwater hydrology from pile driving and would minimize potential effects of accidental spills or releases that may affect groundwater, impacts to groundwater would be minor.

3.4. Surface Water Resources

3.4.1. Affected Environment

The ACT Plant is located adjacent to the Mississippi River, approximately 5 miles southwest of downtown Memphis, Tennessee, within both the Horn Lake-Nonconnah River watershed (Hydrologic Unit Code [HUC] 08010211) and the Lower Mississippi-Memphis watershed (HUC 08010100) (TDEC 2024b). The Lower Mississippi-Memphis watershed covers approximately 590 square miles on the western edge of Tennessee and includes parts of Lake, Dyer, Lauderdale, Tipton, and Shelby Counties. The Horn Lake-Nonconnah River watershed covers approximately 184 square miles in the southwestern corner of Tennessee and includes parts of Shelby and Fayette Counties. Approximately 99 percent of the watershed is contained within Shelby County (TDEC 2002, 2008a). Both watersheds ultimately drain to the Mississippi River.

3.4.1.1. Surface Water Features

The ACT Plant is a previously developed site that is located adjacent to McKellar Lake to the north (Figure 3-2) and is located entirely within the McKellar Lake surface water system. McKellar Lake is an artificial cutoff meander of the Mississippi River and is the only major surface water feature in the vicinity of the site. The Mississippi River is approximately 1.5 miles west of the ACT Plant. No surface water features occur within the project area.

McKellar Lake was formed in 1948 by the U.S. Army Corps of Engineers to support flood control and navigation on the Mississippi River, and industrial development on Presidents Island, after Congress passed a Flood Control Appropriation Bill in 1946 (Memphis Business 1947; Congress 1952). McKellar Lake was created by the construction of an earthen dam adjacent to

Presidents Island on the north side of the Tennessee Chute (the Mississippi River side channel flowing around the eastern side of Presidents Island). A deep-water harbor was then dredged on the downstream side of the dam. The dam supports Jack Carley Causeway, which provides access to the industrial development on the island. A small island, Treasure Island, is located within McKellar Lake and is used as an upland disposal site for dredged sediment from the McKellar Lake Harbor (USACE 2018). McKellar Lake is a 6.6-mile-long, 1,550-acre water body (excluding Treasure Island) and has designated uses that include industrial water supply, fish and aquatic life, recreation, and navigation (TVA 2020; TDEC 2024c).

3.4.1.2. Existing Wastewater Streams

As shown on Figure 3-2, there are several existing wastewater streams at the Allen Reservation that are permitted for discharge under the jurisdiction of NPDES Permit No. TN0005355. These include Outfall 001 (East Ash Pond Complex to McKellar Lake), Outfall 001A (Emergency Overflow to Horn Lake Cutoff), Outfall 002 (West Ash Pond to the Mississippi River), Outfall 003 (Condenser Cooling Water to Mississippi River), Internal Monitoring Point (IMP) 006 (via Outfall 003 to Mississippi River), and Outfall 010 (intake screen backwash to McKellar Lake). The Allen Reservation also maintains six permitted stormwater outfalls (F4 through F9) under the jurisdiction of NPDES Multi-Sector General Permit (TMSP) No. TNR053184, of which all but one discharges to McKellar Lake.

In 2020, TVA began the closure of both the East and West Ash Pond Complexes. While still required to meet the rules set forth in wastewater Permit No. TN0005355 and stormwater Permit No. TNR053184, TVA obtained an individual construction stormwater permit, No. TN0082228, for the work associated with closure of the ash ponds. This permit became effective in 2020 and allows stormwater runoff associated with construction activities from Outfalls 3 through 7, as shown on Figure 3-2. Construction stormwater outfalls SW6 and SW7 correspond to the TMSP outfalls F07 and F08 respectively. CCR construction-related stormwater is routed through an on-site water treatment system prior to discharge to wastewater Outfall 002. Wastewater Outfalls 001 and 001A were plugged during initial stages of construction and closed; Outfall 8 was also removed during construction. IMP 006 and Outfall 003 have not had discharges since the cessation of coal-fired power generation and the intake at Outfall 010 is no longer in use.

ALF is permitted to discharge treated groundwater and various low volume wastes to T.E. Maxson Treatment Plant under the jurisdiction of the Industrial Wastewater Discharge Permit No. S-NO1-266, administered through the City of Memphis's Industrial Monitoring and Pretreatment Program. Discharge Point 1 consists of low volume wastes and groundwater extraction discharges encountered during the demolition of the powerhouse. Discharge 2 consists of treated groundwater from the closure of the ash pond.

Water used in operation of existing units at ACT Plant is obtained from MLGW for evaporative cooling purposes. Surface water runoff from the CT tank area, yard, and equipment drainage is treated as a potential oily waste and is routed to the oil-water separator that is discharged to stormwater Outfall F6 or routed to the on-site water treatment system prior to discharge at Outfall 002 (Stantec 2019b).

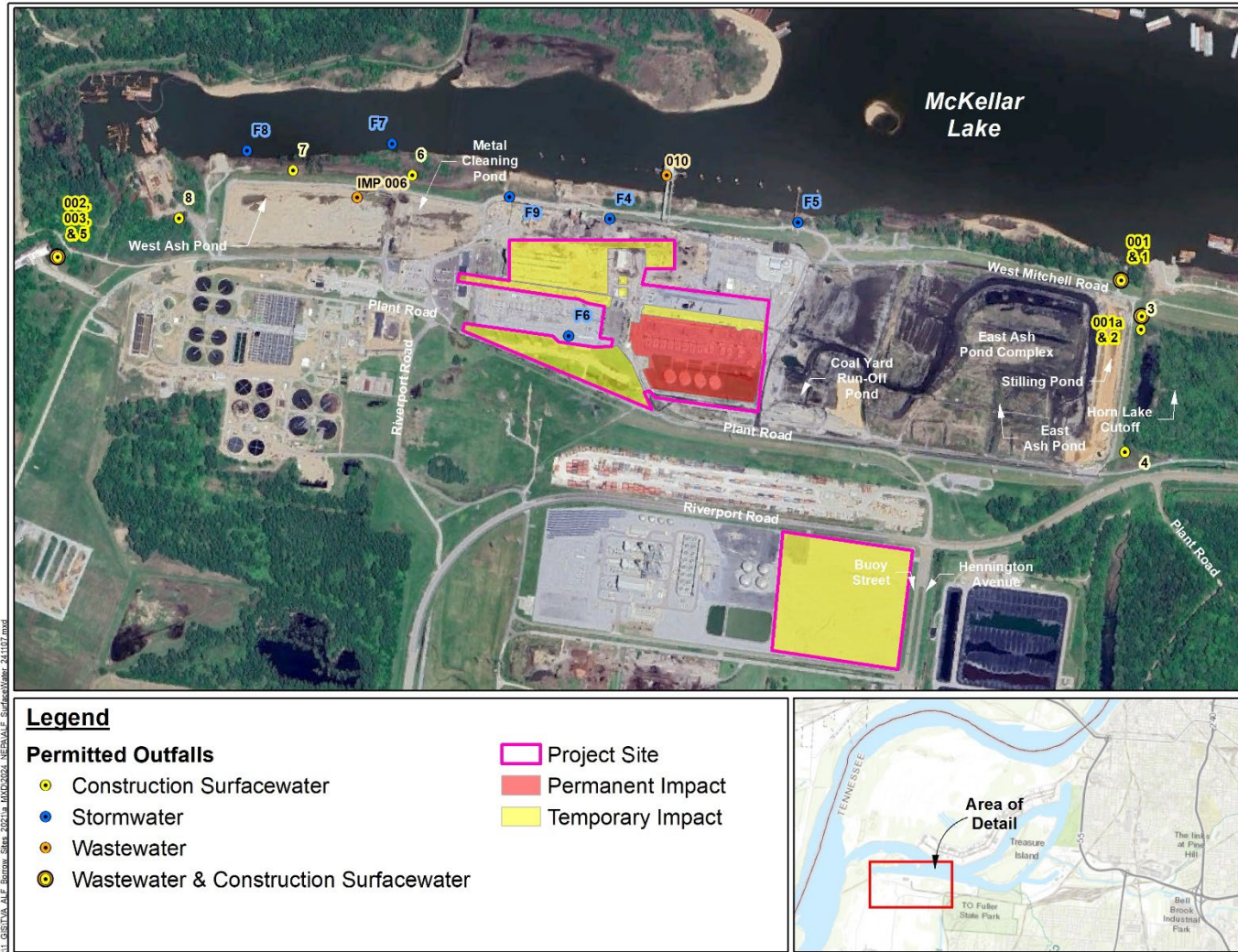


Figure 3-2. Surface Water Resources and Outfalls Near the Allen Combustion Turbine Plant

3.4.1.3. Surface Water Quality

There are water quality concerns in many of the stream segments of both the Lower Mississippi-Memphis and Horn Lake-Nonconnah River watersheds. The segments of the Mississippi and Lower Nonconnah, as well as McKellar Lake, are all known to contain chemical pollutants such as chlordane, dioxins, and polychlorinated biphenyls (PCBs), among others (TDEC 2024c). Water quality conditions within McKellar Lake are influenced by its hydrodynamics, which can control mixing and flushing. The hydrodynamic conditions within the lake are complex and are influenced by watershed runoff inflow and river stage changes.

The CWA requires states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports containing this information to the EPA. Section 303(d) of the CWA require states to evaluate all available water quality-related data and information to develop a list of waters that do not meet established water quality standards (impaired) and those that currently meet water quality standards but may exceed it in the next reporting cycle (threatened). The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state which is to be submitted to the EPA for approval every 2 years. States must develop a total maximum daily limit (TMDL) for every pollutant/waterbody combination on the 303(d) list which includes the calculation of the maximum amount of the pollutant that can occur in a waterbody and still meet water quality standards. States allocate loading capacity of pollutants between point and non-point sources. Permits for point sources are issued through the EPA’s NPDES, which is managed under TDEC’s Division of Water Resources in Tennessee (EPA 2024f).

McKellar Lake has been negatively impacted by the surrounding industrial and urbanized land uses. McKellar Lake is listed on the TDEC 303(d) list for chlordane, dioxin, and PCBs due to contaminated sediments; dissolved oxygen, E. coli, nutrients, and sediment from high-density urbanization; mercury from atmospheric deposition; and sediment from dredging (TDEC 2024d). The nearby Mississippi River and the lower Nonconnah Creek are generally listed for similar pollutants from similar sources. All pollutants on the 303(d) list for McKellar Lake are listed as having a low priority for TMDL determination (TDEC 2024d). Low priority TMDLs are developed over 5 or more years (TDEC 2015b). The EPA has approved TMDLs for arsenic, chlordane, dioxins, PCBs, and E. coli in the Horn Lake-Nonconnah Creek Watershed (HUC 08010211) and TMDLs for chlordane, dioxins, and PCBs in the Lower Mississippi-Memphis Watershed (HUC 08010100) (TDEC 2008b, 2009, 2011, 2014).

Water quality management for the ash pond closure and demolition and deconstruction of the ALF are maintained through various NPDES permits and management systems. Wastewater limits and regulatory requirements for Outfalls 001, 001A, 002, and 003 are detailed in TDEC NPDES Permit No. TN0005355, which was issued in 2007 and administratively continued after its original expiration in 2010. In addition to wastewater limits and monitoring, TVA is required to inspect ash pond dikes and toe areas at least quarterly for seepage and take appropriate remedial actions if seeps are present (TDEC 2007).

In 2019, TVA developed a Drawdown and Dewatering Plan with Addendum (Stantec 2019b) that established calculated effluent concentrations, proposed effluent limitations, and proposed monitoring requirements for Outfall 002 during the drawdown and dewatering activities associated with the East Ash Pond closure. Except for radium, the identified constituents are a

combination of those regulated in permit No. TN0005355 for Outfall 002, CCR Appendix III and IV, and metals from TN Rule 0400-11-01-.04 Appendix 1 (Stantec 2018b).

Treated groundwater and low volume waste that occur through Discharge Points 1 and 2 are authorized by the City of Memphis Industrial Wastewater Discharge Permit. Though these discharges do not directly discharge to Waters of the United States, they are subject to pretreatment effluent limitations and monitoring requirements (City of Memphis 2023).

Stormwater discharges that occur at Outfalls F4 through F9 are authorized by the Tennessee Multi-Sector General Permit No. TNR053184 (TVA 2019e) for applicable Sector O: Stormwater Discharges Associated with Industrial Activity from Steam Electric Power Generating Facilities, Including Coal Handling Areas and Section L: Stormwater Discharges Associated with Industrial Activity from Landfills and Land Application Sites. (TDEC 2015a). Each of these sectors maintains effluent limitations that permittees must report annually to TDEC.

Construction stormwater discharges that occur at Outfalls 3 through 7 under the authorization of NPDES Construction Stormwater Permit TN0082228 are also subject to effluent limitations and monitoring requirements (TDEC 2020).

3.4.2. Environmental Consequences

3.4.2.1. *Alternative A – No Action Alternative*

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. As such, no project-related impacts to surface water resources would occur. Site runoff would continue to drain to the oil-water separator and all current permit requirements would continue to be met. Therefore, impacts to water resources associated with Alternative A would be minor.

3.4.2.2. *Alternative B – Allen Aeroderivative Project*

3.4.2.2.1. Construction

Construction activities associated with Alternative B that may impact surface water quality include:

- Soil disturbances related to the installation of new equipment, the replacement of existing equipment, and utilization of a laydown area for construction support activities (e.g., storage, parking, material management).
- The handling and storage of construction-related materials and wastes.
- The operation and maintenance of construction-related equipment.

Activities such as soil disturbances, equipment washing, construction vehicle operation, and construction material storage often involve soil erosion and the direct or indirect transport of sediments, which can negatively affect receiving water bodies. Increases in turbidity from sediment may interfere with life functions of aquatic life, and sediments may contain pollutants such as metals, pesticides, or nutrients. An NPDES Construction Stormwater Permit would be required as the proposed action would disturb more than 1 acre of land. The issuance of an NPDES Construction Stormwater permit requires the implementation of a SWPPP and stormwater BMPs prior to the start of construction. The *Tennessee Erosion and Sediment Control Handbook* would be referenced to ensure that the appropriate BMPs are used (TDEC

2012). TVA would ensure a SWPPP is complete and BMPs installed prior to construction, and the SWPPP and all BMPs would be maintained in accordance with permit requirements. Areas where soil disturbances could occur would be stabilized per the requirements of the permit and TVA's standard construction BMPs (TVA 2022b).

The handling and storage of construction-related materials and wastes involves potential surface water impacts from accidental spills and potential runoff. Contaminants may include sediment, sanitary wastes, debris, or construction-related chemicals. The operation and maintenance of construction equipment may potentially impact surface water from sediment transport, vehicle washdown areas, equipment maintenance, and the storage and handling of chemicals related to the operation and maintenance of construction equipment. Contaminants may include sediment and equipment related chemicals such as fuel, oil, coolants, or hydraulic fluid. TVA would comply with all local, state, and federal requirements regarding waste and chemical handling, storage, and disposal during construction activities. BMPs, such as those described in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (TVA 2022b) and a spill prevention, control, and countermeasure plan would be used to avoid contamination of surface waters from the handling and storage of construction-related materials and wastes. Due to increased on-site workforce, temporary toilet facilities would be provided by a licensed vendor, and sanitary wastewater would be disposed of at an approved facility.

All proposed construction activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollutants to receiving waters through accidental spills or releases would be minimized. As there are no surface water features within the project area, no surface water resources would be directly impacted by construction associated with Alternative B. With the proper implementation and maintenance of BMPs, only minor, temporary impacts to local surface waters would be expected during the construction of Alternative B.

3.4.2.2.2. Operation

The operation of the proposed aero CT units associated with Alternative B would include the use of potable water obtained from MLGW. Up to 58.3 gallons per minute would be required for inlet air evaporative cooling in summer ambient temperatures. The existing water system would be modified to serve the new aero CT combustion inlet air evaporative coolers. The existing wastewater and stormwater systems would be modified to include new area drains. Oil-contaminated drains would be directed to the existing oil-water separator, whereas stormwater would be directed to the existing stormwater collection system. Wastewater from offline water wash would be collected in totes and disposed per TVA procedures. Operations under Alternative B would continue to comply with regulations set forth in all wastewater and stormwater NPDES permits. No direct or indirect impacts to surface water would be anticipated from the operations associated with Alternative B. Due to continued compliance with permit requirements and minor alterations in wastewater and stormwater discharges, impacts to water resources during operation would be negligible.

3.5. Wildlife

3.5.1. Affected Environment

As detailed in Chapter 1, the project area has been heavily impacted and altered due to the previous construction and operation of Units 1 through 18 and continued operation of Units 19 and 20. Small areas of herbaceous vegetation currently exist in the project area. Most of this vegetation occurs in areas identified for temporary impacts. The ACT Plant provides limited

suitable habitat for common wildlife, although it could provide roosting areas for killdeer (*Charadrius vociferus*), rock dove (*Columba livia*), swallow species, and swifts. The mowed grass area could provide limited foraging habitat for common birds such as field sparrow (*Spizella pusilla*), indigo bunting (*Passerina cyanea*), northern cardinal (*Cardinalis cardinalis*), rock dove, and Carolina chickadee (*Poecile carolinensis*) (National Geographic 2002). Mammals, such as eastern mole (*Scalopus aquaticus*), golden mouse (*Ochrotomys nuttalli*), ground hog (*Marmota monax*), and white-tailed deer (*Odocoileus virginianus*), also may use habitat like this in this region (Whitaker 1996). Reptiles that may use these habitats in this region include black racer (*Coluber constrictor*), eastern kingsnake (*Lampropeltis getula*), gray rat snake (*Pantherophis spiloides*), and red milksnake (*Lampropeltis Triangulum*) (Gibbons and Dorcas 2005).

Review of the TVA Regional Natural Heritage database resulted in no records of caves or any other unique terrestrial habitat within 3 miles of the project area.

Review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool in December 2024, identified 16 migratory bird species of conservation concern that have the potential to occur within vicinity of the project area: American golden-plover (*Pluvialis dominica*), bald eagle (*Haliaeetus leucocephalus*), cerulean warbler (*Setophaga cerulea*), chimney swift (*Chaetura pelagica*), Kentucky warbler (*Geothlypis formosa*), Le Conte's sparrow (*Ammodramus leconteii*), least tern (*Sternula antillarum antillarum*), lesser yellowlegs (*Tringa flavipes*), little blue heron (*Egretta caerulea*), pectoral sandpiper (*Calidris melanotos*), prairie warbler (*Setophaga discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), semipalmated sandpiper (*Calidris pusilla*), and wood thrush (*Hylocichla mustelina*).

American golden-plover are a migrant species through the state on their annual journey between breeding grounds in the arctic and winter habitat in South America (National Geographic 2002). The migratory habitat for this species is prairie, pastures, farmland, and shorelines (Johnson, Connors, and Pyle 2021). Cerulean warbler are vibrant blue warblers usually found in mature hardwood forests. This bird is a summer resident of Tennessee, arriving in mid-April and departing by early September (Nicholson 1997). Chimney swift are summer residents in Tennessee and use chimneys in more urban areas as nesting sites and communal roosts (Nicholson 1997). Kentucky warbler are a small warbler that breeds in dense forest understories (Nicholson 1997). Le Conte's sparrow inhabit damp meadows and shallow marshes and winter in the southeastern U.S. (Audubon 2024a). Least tern in the interior U.S. nest along rivers with broad exposed sandbars (Audubon 2024b). Lesser yellowlegs are a migrant shorebird in Tennessee. This species uses brackish and fresh wetlands, marshes, and ponds (Tibbitts and Moskoff 2020). Little blue heron is a migrant in Tennessee that nests occasionally in the state. This species prefers to nest within thickets of hardwoods (Nicholson 1997). Pectoral sandpiper breed in the arctic and migrate through Tennessee, foraging in marshy edges and wet meadows (Cornell Lab of Ornithology 2024a). Prairie warbler are summer residents in Tennessee. This species can be found in shrubby second growth forests with dense ground cover (Nicholson 1997). The prothonotary warbler is a small yellow warbler that nests in cavities in bottomland forests and wetlands (Nicholson 1997). Red-headed woodpeckers use a variety of treed habitats but show preference for forested areas exhibiting more openness and a high number of tree snags available. Rusty blackbirds are a winter migrant that is not currently known to nest within Tennessee. This species uses flooded, or bottomland hardwood forests (National Geographic 2002). Semipalmated sandpipers breed in the arctic and migrate through Tennessee, foraging in mudflats, wet and plowed agricultural fields, river margins and sewage ponds (Cornell Lab of Ornithology 2024b). Wood thrush are

summer residents in Tennessee that are associated with larger tracts of mature mixed-deciduous forests with open forest floors (Evans et al. 2020).

No suitable woodlots, large cavity nesting trees, mud flats, bottomland hardwood forests, or early successional areas exist that would provide habitat for these species. Some marginal migration stopover habitat is present for American golden plover in the mowed grass areas of the project footprint. Least terns have nested in ash ponds and graveled areas on site. See Section 3.6, Threatened and Endangered Species, for discussion on least terns and bald eagles.

3.5.2. Environmental Consequences

3.5.2.1. *Alternative A – No Action Alternative*

Under Alternative A, the No Action Alternative, TVA would not install new aero CT units at the ACT Plant. TVA would continue to operate two existing units at the ACT Plant on a limited basis. As such, there would be no impact to terrestrial wildlife or their habitats.

3.5.2.2. *Alternative B – Allen Aeroderivative Project*

Alternative B would evaluate the installation and operation of six new aero CT units (GE LM2500s) generating approximately 200 MW of power.

Much of the project area is heavily disturbed, with several areas already paved or graveled or covered with maintained vegetation. Herbaceous areas located within the ACT Plant and associated project areas are typically mowed vegetation that do not offer suitable habitat for rare wildlife species but can be used by common species.

During construction, displacement of primarily common, habituated wildlife species would be minimal because the project area is a heavily developed and disturbed area. Direct effects to some individuals could occur if those individuals are immobile during the time of construction activities (e.g., during breeding/nesting or hibernation seasons). However, mobile wildlife would disperse into surrounding areas in attempts to find new food resources, shelter, and to reestablish territories. Due to the lack of suitable undeveloped habitat within the project area, populations of common wildlife species likely would not be impacted by the proposed action.

Review of the USFWS IPaC tool in December 2024, identified 16 migratory bird species of conservation concern that have the potential to occur within the project area. No suitable habitat for cerulean warbler, chimney swift, Kentucky warbler, Le Conte's sparrow, prairie warbler, prothonotary warbler, red-headed woodpecker, or wood thrush is present. Additionally, no mud flats or low wetland areas are present that would provide habitat for little blue heron, lesser yellowlegs, pectoral sandpiper, rusty blackbird, and semipalmated sandpiper. While American golden-plover could use the mowed grass areas as stopover sites during migration, this species does not breed within Tennessee and would be expected to flush if disturbed. Therefore, impacts to wildlife resources associated with Alternative B would be minor. See Section 3.6, Threatened and Endangered Species, for discussion on least terns and bald eagles.

3.6. Threatened and Endangered Species

3.6.1. Affected Environment

Review of the TVA Regional Natural Heritage Database on October 3, 2023, resulted in records of several special status species within 3 miles of the project area as summarized in Table 3-6: three species of state conservation concern, lark sparrow, osprey, and Mississippi kite; one

species federally threatened in Tennessee, piping plover; and two federally delisted and monitored species, interior least tern and bald eagle. A search for federally listed species within Shelby County, Tennessee, identified one proposed threatened species (alligator snapping turtle) and one proposed endangered species (tricolored bat). Additional review of the USFWS IPaC tool on November 3, 2023, identified one proposed threatened species (monarch butterfly) as species that have the potential to occur within the project area. No federal or state listed plant species or designated critical habitats for plant species have been documented within a 5-mile vicinity of the project area. Table 3-6 contains a list of species of conservation concern (state-listed or state ranked S1-S3) within 3 miles of the project area, federally listed species within Shelby County, and USFWS IPaC species results for the project area. Species-specific information and habitat suitability within the project area for each of these species are discussed below.

Table 3-6. Federally Listed Terrestrial Animal Species Reported from Shelby County, Tennessee and Other Species of Conservation Concern Documented Within 3 Miles of the ACT Plant

Common Name	Scientific Name	Status ^(a)	
		Federal	State (Rank) ^(b)
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	DL	D(S3)
Interior least tern	<i>Sterna antillarum athalassos</i>	DL	E(S2S3B)
Lark sparrow	<i>Chondestes grammacus</i>	-	-(S1B)
Osprey	<i>Pandion haliaetus</i>	-	-(S3)
Mississippi kite	<i>Ictinia mississippiensis</i>	-	-(S2S3)
Piping plover	<i>Charadrius melodus</i>	E, T	-
Invertebrates			
Monarch butterfly ^{(c),(d)}	<i>Danaus plexippus</i>	PT	-(S4)
Mammals			
Tricolored bat ^(e)	<i>Perimyotis subflavus</i>	PE	T(S2S3)
Reptiles			
Alligator snapping turtle ^(e)	<i>Macrochelys temminckii</i>	PT	T(S2S3)

Source: TVA Regional Natural Heritage Database, extracted 11/3/2023 and USFWS Information for Planning and Consultation (IPaC) resource list (<https://ecos.fws.gov/ipac/>), accessed 12/13/2024.

Notes:

- (a) Status Codes: C = Candidate species; D = Deemed in Need of Management; DL = Delisted; E = Endangered; PE = Proposed Endangered; PT = Proposed Threatened; T = Threatened
- (b) State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure
- (c) Historically this species has not been tracked by state or federal heritage programs.
- (d) USFWS has determined that this species could occur within the project area.
- (e) Species known from Shelby County, Tennessee but not from within 3 miles of the project area.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 USC 668-668d). This species is associated with large, mature trees capable of supporting their nests that can weigh several hundred pounds and are typically built near larger waterways where eagles forage primarily for fish (USFWS 2007). Bald eagles are most reproductively successful in areas where human disturbance is minimized (Wilson et al. 2018). Three bald eagle nests have been recorded within Shelby County, Tennessee. The nearest known bald eagle nest record is approximately 1.38 miles from the project area. Foraging habitat is not present within the project area but is available approximately 300 feet away over McKellar Lake.

Interior least terns use areas near rivers and reservoirs with open, sparsely vegetated sand and gravel beaches, sandbars, islands, and salt flats as loafing and colony nesting areas. This species is highly adapted to nesting in disturbed areas, using ash disposal areas, gravel pits, and reservoir shorelines. They forage in the shallow waters of lakes, ponds, and rivers near nest sites (Thompson et al. 2020). Interior least terns have been observed in previous years

immediately east of the ACT Plant where an ash settling pond used to occur and south of the ACT Plant in a gravel lot associated with the ACC Plant. The ash pond east of the ACT Plant has been dewatered and no longer provides large areas of standing water attractive for nesting/foraging. The gravel lot will be used as a laydown area for this project. No interior least terns have been observed nesting in the gravel lot since 2019 based on weekly surveys by ACT Plant staff.

The project commits to the following conservation measures to avoid impacts to interior least terns:

- Weekly observations of potential nesting sites within the project area would begin in mid-May and end in mid-August of any given year (for the duration of the project) to identify any terns that return to the area.
- If terns return to project area and are seen nesting, no activities would be permitted within 300 feet of the nests.

These commitments were implemented with USFWS concurrence during the Allen Fossil Plant Demolition and Deconstruction Project of 2019 and have continued until present. With continuance of these commitments during proposed actions, no impacts are anticipated. If any of these measures cannot be met, TVA would coordinate actions with USFWS.

Lark sparrows are found in open habitats such as roadsides, farmlands, pastures, and grasslands (Martin and Parrish 2020). The closest record of this species is 30 years old, from President's Island approximately 2.9 miles away. No suitable habitat for this species exists in the action area given the heavy anthropogenic disturbance at this site.

Ospreys use similar nesting and foraging criteria to bald eagles; however, ospreys nest more readily on man-made structures (Bierregaard et al. 2020). The closest nests were recorded approximately 400 and 800 feet from the northern laydown area from 2019 through 2021, but the infrastructure in McKellar Lake supporting these nests has been removed. ACT Plant staff perform weekly osprey inspections during the active nesting season (March 1 to July 31) and will continue through the completion of this project. If an active osprey nest (with eggs or fledglings) is observed within 300 feet (600-foot-diameter circle) of project actions, TVA will stop work and coordinate further actions with U.S. Department of Agriculture (USDA) Wildlife Services.

In the Southeast, Mississippi kite nests are most commonly found in mature, undisturbed stands of lowland and floodplain forests and along major rivers. Most nests are placed in non-conifers near woodland edge (Parker 2020). These raptors prefer to forage over open and edge habitats and require open areas near nesting sites for foraging. The nearest known record for this species is approximately 0.92 mile from the ACT Plant. No nesting or foraging habitats for Mississippi kite are present in the project area.

The piping plover is a rare migrant species typically found in the region from mid-July through early September. There is no documentation of them nesting in the state. Outside of breeding season, they are most abundant on heterogeneous expansive sandflats, sandy mudflats, and sandy beaches in proximity to the Mississippi River (Elliott-Smith and Haig 2020). The nearest record of piping plover is approximately 0.43 mile from the ACT Plant in a coal pond that has since been dewatered, as part of the Ash Pond Closure project, and no longer provides large

areas of standing water for foraging. No suitable habitat for piping plover exists in the project area.

The monarch butterfly is a highly migratory species, with eastern U.S. populations overwintering in Mexico. Monarch populations typically return to the eastern United States in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults drink nectar from other blooming wildflowers when milkweeds are not in bloom (NatureServe 2022). Suitable habitat or flowering plants used by this species are not present in the project area. Though this species has not been historically tracked by state or federal heritage programs, the USFWS IPaC tool determined that this species could occur within the vicinity of the project area. However, given the highly disturbed nature of the ACT and associated laydown areas, no suitable habitat is present within the project site.

Tricolored bats hibernate in caves or man-made structures such as culverts or bridges (Fujita and Kunz 1984; Newman et al. 2021). During the summer, tricolored bats roost in clumps of tree foliage, often in oak and hickory trees (Veilleux et al. 2003; O’Keefe et al. 2009; Schaefer 2017; Thames 2020). Foraging studies of tricolored bats are lacking, but it is believed they typically forage near their roost trees in forested areas and riparian corridors. The closest known record in Shelby County is approximately 33.08 miles from the project area.

No caves are known within 3 miles of the project area. There are no trees or structures proposed for removal that would provide roosting habitat for tricolored bats. Aquatic foraging habitat is not present within the project area but is available over the Mississippi River and McKellar Lake, approximately 300 feet from the project area.

Alligator snapping turtle is a proposed threatened, highly aquatic reptile that emerges from water only for nesting, rarely for basking (USFWS 2021). This species is restricted to river and stream drainages which flow into the Gulf of Mexico. These turtles are found in floodplain swamps and oxbow lakes associated with large rivers but do not occur in isolated wetlands and ponds. Most nesting occurs May through July. There are no large wetlands or bodies of water present in the project area. The closest known record is approximately 11.79 miles from the action area. The northern laydown area is approximately 300 feet from McKellar Lake, but the site is highly disturbed and suitable habitat for this species does not exist within the action area.

3.6.2. Environmental Consequences

3.6.2.1. *Alternative A – No Action Alternative*

Under the No Action Alternative, TVA would not install new aero CT units at the ACT Plant. TVA would continue to operate two existing units at the ACT Plant on a limited basis. As such, there would be no impact to threatened and endangered species.

3.6.2.2. *Alternative B – Allen Aeroderivative Project*

The Action Alternative would evaluate the installation and operation of six new aero CT units (GE LM2500s) generating approximately 200 MW of power.

Construction would occur over a 15-month time frame (approximately) beginning in 2025, with construction activities (including laydown actions) taking place within the project area which encompasses previously disturbed areas associated with the retired ALF and existing ACT and ACC Plants.

Because of the distance between known nests and the project area (approximately 1.36 miles for bald eagle and 900 feet for osprey nest), and because of the ongoing monitoring within the project area, no bald eagle or osprey nests would be impacted by the proposed action. Construction and operation of aero CTs would follow the National Bald Eagle Management Guidelines. Bald eagle and osprey would not be impacted by Alternative B.

Interior least tern has been documented within the project area. Based on TVA's commitment to conservation measures to avoid impacts to interior least terns, no adverse effects to the interior least tern are anticipated as a result of Alternative B.

Due to the lack of habitat in the project area and distance from known records TVA has made a no-effect determination for lark sparrow, Mississippi kite, and piping plover.

Suitable habitat and flowering plants used by monarch butterflies are not present in the project area. Therefore, impacts to the monarch butterfly are not anticipated as a result of Alternative B.

The tricolored bat has the potential to occur within the project area. No caves or other hibernacula for tricolored bats are known within the project area or within 3 miles of the project area. No suitable summer roosting or foraging habitat exist within the project area for tricolored bats. No demolition is proposed that could impact roosting areas for these species.

A number of activities associated with Alternative B were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018 and updated in May 2023 and November 2024. For those activities with the potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified on in Table 4 of the TVA Bat Strategy Project Screening Form (Appendix D) and would be reviewed and implemented prior to project construction and operation. Considering the scope of the proposed actions, distance to known bat records, and implementation of conservation measures, TVA has determined that Alternative B would not jeopardize the continued existence of the tricolored bat as it is currently listed as a proposed endangered species. In anticipation of the expected listing of the tricolored bat as endangered under the ESA, TVA has also evaluated the potential to impact the species at the individual level. Due to the absence of suitable habitat, TVA has determined that the proposed actions would not affect the tricolored bat.

No habitat exists in the project area for alligator snapping turtle. TVA has made a no-effect determination for alligator snapping turtle.

In summary, habitat for most sensitive species is lacking within the project area. Additionally, for selected species (bat species, bald eagle, osprey, and the interior least tern) TVA has committed to conservation measures to avoid and minimize impacts. Therefore, overall impacts on threatened and endangered species would be minor.

3.7. Managed and Natural Areas

3.7.1. Affected Environment

Natural areas refer to ecologically significant sites, national or state forests, wilderness areas, scenic areas, Wildlife Management Areas (WMAs), recreational areas, greenways, trails, Nationwide Rivers Inventory streams, and wild and scenic rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, USDA, United States Forest

Service, State of Tennessee) to protect and maintain certain ecological and/or recreational features. Ecologically significant sites are either tracts of privately owned land that are recognized by resource biologists as having significant environmental resources or identified tracts on TVA lands that are ecologically significant but not specifically managed by TVA’s Natural Areas program. Nationwide Rivers Inventory streams are free-flowing segments of rivers recognized by the National Park Service as possessing remarkable natural or cultural values.

A review of TVA’s Natural Heritage Database identified six managed/natural areas within a 3-mile radius of the ACT Plant, totaling 8,623 acres (Table 3-7). All areas identified in the Natural Heritage Database review are more than 0.5 mile from ACT Plant.

There are no managed or natural areas present within the project area, with the exception of the Ensley Bottoms Complex, an ecologically significant site. The Ensley Complex, which is part of the Mississippi Alluvial Valley Important Bird Area, encompasses the entirety of the project area and adjacent properties. The Tennessee Wildlife Resources Agency (TWRA), partnered with the National Audubon Society’s Audubon Important Bird Area program, designates Important Bird Areas in Tennessee. These areas are identified as important for the conservation of bird populations.

Table 3-7. Managed and Natural Areas within 3 Miles of the Project Area

Natural Areas, Parks, or Recreational Facilities	Acres	Approximate Distance from the Project Area at its Closest Location
Chucalissa Village Archaeological Area	867	0.7 mile east
Ensley Bottoms Complex	1,059	0.0 mile
Wetlands Reserve Program	939	2.2 miles southwest
T.O. Fuller State Park & Chucalissa Tree Trail Arboretum	1,004	0.7 mile east
Presidents Island Wildlife Management Area	5,669	0.9 mile north
Land Trust for Tennessee – Conservation Easement	144	1.1 miles southeast
Total	9,682	

Source: TVA’s Regional Natural Heritage Database 2024

3.7.1.1. Managed Natural Areas

Managed and natural areas within 3 miles of the project area are described below.

- **The Ensley Bottoms Complex.** The Ensley Bottoms Complex includes the ALF ash impoundments, McKellar Lake, Presidents Island north of McKellar Lake, T. O. Fuller State Park, the Maxson Wastewater Treatment Plant (WWTP), and other public and private lands in the vicinity of ALF. According to the Tennessee Important Bird Area program website, the Ensley Bottoms Complex is the most important shorebird site in Tennessee and one of the most important inland shorebird sites in the southeast (TN IBA 2018).

- **T.O. Fuller State Park, Chucalissa Tree Trail Arboretum, and Village Archaeological Area.** T.O. Fuller State Park, which contains the Chucalissa Archaeological Site and Chucalissa Tree Trail Arboretum, is located approximately 0.7 miles east of the ACT Plant. Established in 1938, the 1,138-acre park was the first state park east of the Mississippi River that was open for use by African Americans and is the only state park located within the city limits of Memphis (Tennessee State Parks 2019). The park features hiking, camping, an arboretum trail, and a nature center. Recreation facilities at the park include a picnic area, campground, swimming pool, and tennis courts. The Chucalissa Village State Archaeological Area is comprised of 866.5 acres within T.O. Fuller State Park. This site was initially discovered in 1939 and set aside in 1994 to preserve one of the major prehistoric settlements in the southeast (Tennessee State Parks 2019).
- **Land Trust for Tennessee - Conservation Easement.** The Wetlands Reserve Program is a voluntary program that offers landowners the opportunity to protect, restore, and enhance wetlands on their property with technical and financial support from NRCS, in exchange for retiring eligible land from agriculture (USDA NRCS 2019). One of these properties comprises 939 acres and is located approximately 2 miles southwest of the ACT Plant. The other Conservation Easement Property is located approximately 1 mile southeast of the ACT Plant. This 144-acre site falls under a conservation easement by the Land Trust for Tennessee. Both areas are privately owned.
- **Presidents Island WMA.** Presidents Island WMA is located approximately 0.7 mile from the ACT Plant, on the opposite side of McKeller Lake. This 5,669-acre WMA is managed by the TWRA in cooperation with TVA and is a notable birding area. This WMA allows deer hunting with archery equipment during authorized times of the year (TWRA 2024).

3.7.2. Environmental Consequences

3.7.2.1. *Alternative A – No Action*

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. There would be no change to the project area; therefore, there are no impacts to managed natural areas resulting from Alternative A.

3.7.2.2. *Alternative B – Allen Aeroderivative Project*

The ACT Plant is located within the boundaries of the Ensley Bottoms Complex. Project activities would likely result in a temporary displacement of birds in the immediate vicinity of the ACT Plant due to the disruptive noise, fugitive dust, and heavy machinery operation associated with construction. However, the project area is heavily developed, provides little to no suitable habitat for bird species, and is not an area where significant numbers of birds have been known to flock. The temporary laydown areas are also previously developed, and none contain ponds or wetland habitat where shorebird species are typically found. The Ensley Bottoms Complex Important Bird Area covers a large area, most of which would remain unaffected by proposed project activities. As the birds, and those who bird watch recreationally, would be able to relocate to other areas of the complex during construction activities and as the area impacted by construction and operation of the ACT Plant does not provide optimal habitat for shorebirds, direct impacts to the Ensley Bottoms Complex under Alternative B would be minor.

TVA's Natural Heritage Database identified six managed and natural areas within a 3-mile radius of the project area. Because of their distances from the site (0.7 to 2.0 miles), no direct

impacts are anticipated. Furthermore, because the existing character of the project area would not change under this alternative, and because managed natural areas are greater than 0.5 mile from the project area, there would be no direct impacts from construction or operation. Therefore, no direct impacts to natural areas would be anticipated under this alternative.

Some areas of T.O. Fuller State Park, Chucalissa Village Archaeological Area, and Arboretum may experience temporary indirect impacts related to disruption of traffic patterns, potential delays in accessing the park, and an increase in noise and dust emissions during construction. However, as noted in Section 3.8, Transportation, the increase in traffic associated with construction activities is relatively small compared to existing traffic volumes. These impacts would be minor and would not impact the use or enjoyment of the park because construction activities are contained within the project area and because of the relatively short-term nature of this action. Potential impacts to natural and managed areas under this alternative would be minor, indirect, and temporary.

Effects to managed natural areas during base load operation of the proposed aero CT units would remain unchanged.

The Presidents Island WMA, Wetlands Reserve Program area, and the Land Trust for Tennessee properties are a sufficient distance from the project area that no direct impacts from construction or operation would be expected.

In summary, overall impacts to managed and natural areas as a result of construction and operation of Alternative B would be minor.

3.8. Transportation

3.8.1. Affected Environment

The ACT Plant is located in the Frank C. Pidgeon Industrial Park, which is served by highway, railway, and waterway modes of transportation. Figure 2-1 identifies the primary roadway network in the immediate project area. Major traffic generators include Nucor Steel, xAI, TVA's ALF and ACC plants, TVA ALF ash pond closure activities, and the CSX intermodal facility. These facilities and activities generate traffic that generally comprises of a mix of cars and light-duty trucks (such as a residential delivery truck), medium-duty trucks (larger delivery trucks), and heavy-duty trucks (semi-tractor trailers).

Principal access to the ACT Plant from Interstate 55 (I-55) is West Mallory Avenue (a single-point urban interchange) to Paul R. Lowry Road (hereinafter referred to as Riverport Road) to Plant Road. Riverport Road is a four-lane road within the vicinity of the ACT. Table 3-8 presents the 2023 Average Annual Daily Traffic (AADT) measured in vehicles per day counts for roadways in the vicinity of the ACT Plant and that serve the Frank C. Pidgeon Industrial Park. Primary routes to ALF are shown on Figure 2-1.

Table 3-8. Average Annual Daily Traffic Counts of Affected Roadways

Roadway Segment	2023 Average Daily Vehicle Use (veh/day) ¹
Plant Road	Not available
Riverport Road at West Mallory Avenue	6,040
West Mallory Avenue	5,974
Interstate 55	69,618

Source: TDOT 2023
Key: veh/day = vehicles per day

The traffic-carrying ability of a roadway is described by level of service (LOS). LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures like speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. LOS is described accordingly:

- LOS A: free flow traffic conditions
- LOS B: free flow conditions although presence of other vehicles begins to be noticeable
- LOS C: increases in traffic density become noticeable but remain tolerable to the motorist
- LOS D: borders on unstable traffic flow; the ability to maneuver becomes restricted; delays are experienced
- LOS E: traffic operations are at capacity; travel speeds are reduced, ability to maneuver is not possible; travel delays are expected
- LOS F designates traffic flow breakdown where the traffic demand exceeds the capacity of the roadway; traffic can be at a standstill

Table 3-9 details the existing LOS on select intersections with the potential to be impacted by traffic from the proposed action. LOS at these intersections ranges from A to C. As described above LOS of A, B, or C denote that traffic conditions may become noticeable but remain tolerable.

3.8.1.1.1. Railroads

The ALF was served by a rail line operated by Canadian Railroad. This line ran east from ALF, parallel to the north of Riverport Road for approximately 2 miles, where it crosses the south of the road.

3.8.1.1.2. Barge

The ALF plant has a barge unloading area located on McKellar Lake, which has direct access to the Mississippi River.

3.8.2. Environmental Consequences

3.8.2.1. Alternative A – No Action Alternative

Under Alternative A, TVA would not install and operate six new aero CTs at the ACT Plant. TVA would continue to operate two existing CT units at the ACT Plant on a limited basis. Therefore, there would be no project-related impact to transportation, as there would be no changes at the ACT that would impact traffic or roadway conditions.

3.8.2.2. *Alternative B – Allen Aeroderivative Project*

Under Alternative B, vehicular traffic on public roads near the ACT Plant would increase during construction because of the commuting of construction workers, delivery of materials and equipment, and transportation of borrow material. Construction activities would last approximately 15 months, with work primarily occurring during daytime hours, typically on weekdays, but potentially up to 7 days a week and limited nighttime hours if warranted to meet construction schedules.

The daily workforce during the construction phase is expected to be 200 workers per day. Traffic is expected to be distributed during a peak morning period (to the project area) and a peak evening period (away from the project area). Assuming one person per commuting vehicle, there would be a daily morning inbound traffic volume of 200 vehicles per day and a daily outbound traffic volume of 200 vehicles per day for a total of 400 trips per day. Construction traffic would access the site via River Road to Plant Road. Table 3-9 illustrates the impact from increased worker commutes on select intersections within the vicinity of the ACT Plant. As shown in Table 3-9, the increase of 400 trips per day on these roads would be minor and would not destabilize or impede existing traffic conditions.

Construction-related traffic on I-55 is expected to be minor. Traffic from commuters and transport of equipment and materials is anticipated to disperse throughout the larger transportation network via I-55. During the construction period, the increase of 400 trips from daily commuters represents approximately 0.6 percent of the 2023 AADT. Transportation of equipment, materials, and borrow materials are intermittent throughout the approximately 15-month construction period and are not anticipated to disrupt the transportation network.

Additional truck traffic would also occur in the area during the construction phase due to material and equipment deliveries. However, because this increase would primarily occur during the mobilization and demobilization phases, long-term impacts to the surrounding transportation network during the construction phase are not anticipated.

Table 3-9 details the impact from construction-related traffic and the associated LOS. As detailed in Table 3-9, there would be no change in LOS as a result of construction-related traffic and only short delays at intersections within the vicinity of the ACT Plant.

The transportation of borrow material would be obtained from a previously permitted borrow site located within a 30-mile radius of the ACT Plant. Material obtained for borrow needs would likely be transported to the project area via I-55 to West Malloy Road, Riverport Road, and Plant Road. Approximately 8,000 cubic yards of borrow material would be needed to support the project. Conservatively, borrow trucks are estimated to hold 10 cubic yards of borrow material, resulting in 800 truckloads (1,600 truck trips) over the course of the 15-month construction period. Table 3-9 illustrates the impact from increased borrow material transport on select intersections within the vicinity of the ACT Plant. As shown in Table 3-9, the increase of 1,600 truck trips over the course of 15 months on these roads would be minor and would not destabilize or impede existing traffic conditions. Based on the intermittent nature of borrow transportation, impacts to traffic operations are expected to be minor and short term.

Increased traffic associated with construction of the proposed aero CTs would overlap with increased traffic associated with the CCR removal at ALF as part of the ALF Ash Impoundment Closure project. The maximum traffic associated with that project is 120 truckloads (240 truck trips) of CCR from ALF to an off-site landfill and 116 truckloads (132 truck trips) of borrow material per day. Overlap of the CCR removal and construction of the aero CTs, including

construction workforce and borrow trucking, would not decrease existing LOS on any of the used roadways. This overlap results in a delay ranging from approximately 0 to 2 second on select intersections (Table 3-9). Therefore, the impact of construction of the aero CTs and overlapping CCR removal activities would have a minor impact on existing traffic conditions.

Table 3-9. Peak Hour Traffic Scenario Model Results

Intersection	Movement	Existing LOS	PM Peak			Impact
			LOS	Delay (S)	Delay Difference from Existing (S)	
Riverport Road at West Mallory Avenue	Eastbound Right	A	A	3	1	Minor
	Northbound Left	C	C	26	0	Minor
West Mallory Avenue at Interstate 55 Ramps	Westbound Left	B	B	20	2	Minor
	Northbound Right	A	A	2	0	Minor
Riverport Road at North Rivergate Road	Southbound Left/Right	B	B	14	1	Minor
Riverport Road at Rivergate Road	Northbound Left	C	C	17	1	Minor
Riverport Road at Plant Road/Buoy Street	Southbound Left	B	B	12	1	Minor
Riverport Road at Plant Road East	Northbound Left	B	B	12	1	Minor

Key: LOS = level of service; S = seconds

Due to the high volume of I-55 traffic, ACT-related traffic is anticipated to be absorbed by the existing condition and would not noticeably impact the existing transportation network. On roads within the vicinity of the ACT Plant, construction-related traffic is anticipated to be minor and not destabilizing as the increase of 400 commuter trips per day and 1,600 borrow truck trips over the course of 15 months results in minor impacts to delays and no impact to LOS. Due to the small size of the operational workforce (5 permanent employees) long-term operation of the proposed project would not result in changes to the existing conditions on the surrounding roadways.

Overall, traffic-related impacts from construction and operation of the aero CTs including daily worker commutes, equipment delivery, and transport of borrow material would have a minor impact on roadways within the vicinity of the ACT Plant.

3.9. Noise

3.9.1. Affected Environment

Noise is unwanted or unwelcome sound usually caused by human activity and added to the natural acoustic setting of a locale. It is further defined as sound that disrupts normal activities or diminishes the quality of the environment. Community response to noise is dependent on the

intensity of the sound source, its duration, the proximity of noise-sensitive land uses, and the time of day the noise occurs. For instance, higher sensitivities to noise would be expected during the quieter overnight periods at noise-sensitive receptors such as residences. Other receptors include developed sites where frequent human use occurs, such as churches and schools.

Sound is measured in logarithmic units called decibels (dB). Given that the human ear cannot perceive all pitches or frequencies of sound, noise measurements are typically weighted to correspond to the limits of human hearing. This adjusted unit of measure is known as the A-weighted decibel (dBA), which filters out sound in frequencies above and below human hearing. A noise level change of 3 dBA or less is barely perceptible to average human hearing. However, a 5-dBA change in noise level is clearly noticeable. The noise level associated with a 10-dBA change is perceived as being twice as loud; whereas the noise level associated with a 20-dBA change is considered to be four times as loud and would therefore represent a “dramatic change” in loudness.

To account for sound fluctuations, environmental noise is commonly described in terms of the equivalent sound level. The equivalent sound level is the constant noise level that conveys the same noise energy as the actual varying instantaneous sounds over a given period. Fluctuating levels of continuous, background, and/or intermittent noise heard over a specific period are averaged as if they had been a steady sound. The day-night sound level (Ldn), expressed in dBA, is the 24-hour average noise level with a 10-dBA correction penalty for the hours between 10 p.m. and 7 a.m. to account for the increased sensitivity of people to noises that occur at night. Typical background day-night noise levels for rural areas are anticipated to range between an Ldn of 35 and 50 dB, whereas higher-density residential and urban areas background noise levels range from Ldn 43 dB to 72 dB (EPA 1974). Common indoor and outdoor noise levels are listed in Table 3-10.

There are no federal, state, or locally established quantitative noise level regulations specifying environmental noise limits in Shelby County, Tennessee. However, the EPA noise guideline recommends outdoor noise levels do not exceed Ldn of 55 dBA, which is sufficient to protect the public from the effect of broadband environmental noise in typical outdoor and residential areas. These levels are not regulatory goals but are “intentionally conservative to protect the most sensitive portion of the American population” with “an additional margin of safety” (EPA 1974). The U.S. Department of Housing and Urban Development (HUD) considers an Ldn of 65 dBA or less to be compatible with residential areas (HUD 1985).

Table 3-10. Common Indoor and Outdoor Noise Levels

Common Outdoor Noises	Sound Pressure Levels (dB)	Common Indoor Noises
	110	Rock Band at 5 meters (16.4 feet)
Jet Flyover at 300 m (984.3 ft)		
	100	Inside Subway Train (New York)
Gas Lawn Mower at 1 m (3.3 ft)		
	90	Food Blender at 1 m (3.3 ft) Garbage Disposal at 1 m (3.3 ft)
Diesel Truck at 15 m (49.2 ft)		
	80	Shouting at 1 m (3.3 ft)
Gas Lawn Mower at 30 m (98.4 ft)		
	70	Vacuum Cleaner at 3 m (9.8 ft)
Commercial Area		
	60	Normal Speech at 1 m (3.3 ft) Large Business Office
	50	Dishwasher Next Room
Quiet Urban Daytime		
	40	Small Theater, Large Conference Room Library
Quiet Urban Nighttime		
Quiet Suburban Nighttime		
	30	Bedroom at Night Concert Hall (Background)
Quiet Rural Nighttime		
	20	Broadcast and Recording Studio
	10	
	0	Threshold of Hearing

Source: FHWA 2018

Key: dB = decibels; ft. = feet; m = meters

3.9.1.1. Sources of Noise

Ambient noise in the area is characterized by operations at the ACT Plant, the ACC Plant, removal of CCR at the ALF, and other industrial operations in the Frank C. Pidgeon Industrial Park. The existing ACT Plant generates localized noise through operation of CTs, generators, and other ancillary equipment.

Noise sources common to activities evaluated in this EIS include noise from construction activities, transportation noise, and operational noise. The level of construction noise depends on the nature and duration of the project. Construction activities for most large-scale projects would be expected to result in increased noise levels due to operation of construction equipment on site and the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the surrounding roadways. Noise levels associated with construction activities would increase ambient noise levels adjacent to the construction site and along roadways used by construction-related vehicles. Construction noise is generally temporary and intermittent in nature because it primarily occurs during daytime hours, typically on weekdays, minimizing the impact to receptors. However, construction could potentially occur up to 7 days a week and limited nighttime hours if warranted to meet construction schedules.

Transportation noise would primarily comprise noise associated with workers commutes and intermittent transport of equipment, materials, and borrow material. Three primary factors influence highway noise generation: traffic volume, traffic speed, and vehicle type. Generally, heavier traffic volumes, higher speeds, and greater numbers of trucks increase the sound level of highway traffic noise. Other factors that affect the sound level of traffic noise include a change in engine speed and power, such as at traffic lights, hills, and intersecting roads, as well as pavement type. Highway traffic noise is not usually a serious problem for people who live more than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads (FHWA 2011). Due to the nature of the decibel scale and the attenuating effects of noise with distance, a doubling of traffic volume would result in an approximately 3-dBA increase in noise level, which would normally not be a perceptible noise increase (FHWA 2011).

3.9.1.2. Noise Receptors

Sensitive noise receptors include residences or other developed sites where frequent human use occurs, such as churches, parks, and schools. Sensitive noise receptors would include recreationists using T.O. Fuller State Park, which is located approximately 0.7 miles southeast of the ACT Plant, on the opposite side of Riverport Road. The northwest corner of the park, closest to the project area, is primarily undeveloped woodland separated from the main body of the park by a railroad spur. This isolated portion of the park contains Plant Road, which provides access into to the park, but does not provide any park amenities. The next closest receptor is a residential property located approximately 1.5 miles southeast of the ACT Plant, separated from the proposed project area by densely forested areas of T.O. Fuller State Park.

3.9.2. Environmental Consequences

3.9.2.1. Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. Therefore, there would be no new impacts to noise receptors under this alternative, and ambient noise levels would remain similar to current conditions.

3.9.2.2. **Alternative B – Allen Aeroderivative Project**

Under Alternative B, on-site construction activities would result in increased noise levels on and adjacent to the construction site, from operation of construction equipment on site, and along roadways used by construction-related vehicles. Construction activities would last approximately 15 months, with work primarily occurring on weekdays during daytime hours. Weekend and night shift construction may occur should the schedule necessitate. During the construction phase, noise would be generated by a variety of construction equipment including trucks, truck-mounted augers and drills, excavators, tracked cranes, and bulldozers. Typical noise levels from this construction equipment are expected to be 85 dBA or less at a distance of 50 feet from the construction site (FHWA 2016).

Based on straight line noise attenuation, noise levels from construction-related activities, measured at the boundary of the ACT Plant, would likely attenuate to 47.52 dBA at the northwest corner of T.O. Fuller State Park. As previously noted, however, there are no amenities in this isolated portion of the park, and park users would only be in this area when entering or exiting the park via Plant Road. The closest park amenity, a hiking trail, is located approximately 4,604 feet from the ACT Plant and is also on a bluff, at a significantly higher elevation than the project area. Construction noise would be expected to attenuate to 45.72 dBA at the trail, lower than the EPA's Ldn guideline of 55, and the HUD's Ldn guideline of 65 dBA. The nearest residence is located approximately 1.5 miles southeast of the project area, where construction noise would attenuate to 16.65 dBA, below both the EPA and HUD recommended guidelines. Furthermore, the actual noise level would likely be lower in the field, where vegetation and topography would cause further noise attenuation. While construction would mainly occur on the ACT Plant, the project includes a temporary laydown area east of the ACC Plant. Construction noise would be expected to attenuate to 54.16 dBA at T.O. Fuller State Park, 52.93 dBA at the trail, and 46.76 dBA at the nearest residence. The noise attenuation from the laydown area is below both the EPA and HUD recommended guidelines. While the attenuation of construction noise is slightly higher at the laydown area near the ACC Plant than from the ACT Plant, both locations are below recommended guidelines. It is anticipated that most construction would be located on the ACT Plant. Given the temporary and intermittent nature of construction noise, and that noise levels at noise receptors would attenuate to levels near or below the EPA's Ldn guideline, the impact of noise generated from construction activities at the ACT Plant is expected to be minor.

There is also a potential for indirect noise impacts associated with an increase in traffic related to workforce vehicle traffic and borrow transport on surrounding roadways. Roadway traffic noise is not usually a serious problem for people who live more than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads (FHWA 2011). Due to the nature of the decibel scale and the attenuating effects of noise with distance, a doubling of traffic volume would result in an approximately 3 dBA increase in noise level, which would not normally be a perceptible noise increase (FHWA 2011). TVA estimates that the peak workforce needed during the estimated 15-month construction period would consist of approximately 200 personnel per day. Assuming one person per commuting vehicle, there would be a maximum daily morning inbound traffic volume of approximately 200 vehicles and a daily outbound traffic volume of approximately 200 vehicles each working day. Off-site borrow material would be obtained within a 30-mile radius from an existing borrow site. Borrow transport would be intermittent over the construction period, with approximately 800 trucks (1,600 truck trips) over the course of the construction period. As noted in Section 3.8, Transportation, the increase in traffic associated with construction activities is relatively small compared to existing traffic

volumes. Therefore, the increase in current noise levels is estimated to be less than 3 dBA, and as such, traffic noise is not anticipated to increase perceptibly.

During base load operation of the proposed aero CTs, noise levels for each piece of equipment would not exceed 85 dBA at a distance of 3 feet. Operation of all six aero CTs would result in a compounded noise level of approximately 92.8 dBA. Based on straight line noise attenuation, it is estimated that noise levels from the aero CTs equipment would attenuate to 30.88 dBA at T.O. Fuller State Park and 24.45 dBA at the nearest residence, well under the recommended EPA noise guideline of 55 dBA. Based on straight line noise attenuation, noise from the ACT Plant would have to be considerable (i.e., greater than 117 dBA at a distance of 3 feet from the equipment) in order to produce noise levels of 55 dBA or higher at the closest sensitive receptors. Because TVA has determined that typical operational noise emissions would not result in noise levels that exceed 55 dBA at off-site noise receptors, noise impacts from operation of the ACT Plant would be minor.

3.10. Solid and Hazardous Waste

3.10.1. Affected Environment

Hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous materials are regulated by several federal laws. This includes Occupational Safety and Health Administration (OSHA) standards, Emergency Planning and Community Right to Know Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, and the Toxic Substances Control Act.

The EPA has instituted a “cradle to grave” system in which RCRA has created regulations on hazardous waste from its creation, where it travels to, how it is used or stored, and how it is disposed. RCRA also defines what constitutes waste as being hazardous and explains key differences in types of waste (EPA 2023b). Universal wastes include batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans (EPA 2024g). These wastes have less stringent regulations but are still managed in accordance with RCRA requirements for hazardous wastes or by special, less-stringent provisions.

Solid waste encompasses a large variety of waste products. The EPA defines solid waste as, waste materials such as garbage or refuse. This is not limited to wastes that are in solid form but also includes liquids and contained gaseous substances. Solid wastes are also non-hazardous sludge from any wastewater facility, nonhazardous air pollution control wastes, and other materials such as sanitary wastes, contaminated environmental media, and scrap metals (EPA 2024h). Solid wastes are regulated in accordance with the RCRA Subtitle D and EPA requirements. States are responsible for enforcing federal regulations and may choose to create more strict requirements to ensure that these laws are followed.

Special waste is a solid waste that requires special handling and management to protect public health and the environment. The EPA defines special wastes as wastes that are either too large or dangerous to dispose of, including sludges, bulky wastes, waste from pesticides, medical waste, industrial waste, liquid waste, friable asbestos waste, and waste associated with combustion (EPA 2024h). There are also some special and hazardous wastes that are exempt from special waste requirements. The RCRA Subtitle C explains that these wastes must be logged in a registry and that special attention should be made for these hazardous materials. All

special waste, if generated, must be disposed as required by state and federal laws and regulations.

The unique solid waste concerns for gas- and oil-fired plants are the byproducts from emission controls. The solid waste produced from these controls is dependent upon the specific control technology implemented and is not anticipated to be considerable (Brown et al. 2017). Other hazardous wastes currently generated at these sites include waste paint, waste paint solvents, paper insulated lead cable, debris from sandblasting and scraping paint chips, solvent rags used to clean equipment, and liquid-filled fuses (TVA 2019f). TVA has ensured that these wastes will be managed with all other hazardous materials generated at the ACT Plant and will be shipped off-site and properly disposed.

3.10.2. Environmental Consequences

3.10.2.1. *Alternative A – No Action Alternative*

Under the No Action Alternative, TVA would not install six new aero CT units at the ACT Plant. TVA would continue to operate two existing units at the ACT Plant on a limited basis. TVA would continue to generate solid and hazardous wastes as a part of its continued operations. These wastes would continue to be managed in accordance with current TVA procedures and federal and state laws and regulation. Thus, there would be no additional impacts to solid and hazardous waste generation under this alternative.

3.10.2.2. *Alternative B – Allen Aeroderivative Project*

Under Alternative B, TVA would install six new aero CTs and support facilities at the ACT Plant. Construction of the aero CTs and supporting infrastructure would generate both solid and hazardous wastes. Types of solid wastes include concrete, vegetative debris, metals, plastic, wood, packing materials, scrap metals, and nonhazardous used oils and lubricants. All nonhazardous wastes from construction activities would be disposed of in accordance with applicable federal, state, and local laws and regulation and TVA procedure, which includes recycling where possible.

Hazardous wastes such as waste paintings, coating and adhesive wastes, and spent solvents could be produced during construction. These wastes would be temporarily stored in properly managed hazardous waste storage areas on site. Appropriate spill prevention, containment, and disposal requirements for hazardous wastes would be implemented to protect construction and plant workers, the public and the environment. A permitted hazardous waste disposal facility would be used for ultimate disposal of the wastes.

Construction of aero CTs and supporting infrastructure including the compressed air skid, fuel oil loading/unloading facility, and repairs to existing fuel oil tanks would all occur in previously developed paved or gravel sites within the ACT Plant. Minor quantities of solid and hazardous waste associated with the construction and repairs to these structures would be handled in accordance with established federal and state laws and regulations. As noted above, appropriate spill prevention, containment, and disposal requirements for hazardous wastes would be implemented to prevent and contain accidental spills of any material and to ensure that inadvertent spills of fuels, lubricants, coolants, or solvents are contained, cleaned up, and disposed of in an appropriate manner.

Aero CTs produce very small quantities of solid waste during normal operation. Operation of new supporting facilities, including diesel generators, compressed air skid, and an ammonia unloading, storage, and delivery system would be in compliance with measures identified in

TVA's spill prevention and response procedures to prevent and contain accidental spills of any material and to ensure that inadvertent spills are contained, cleaned up, and disposed of in an appropriate manner.

Solid and hazardous wastes generated during construction and operation of the aero CTs would be properly contained, transported, and disposed of in accordance with established procedures and applicable federal, state, and local laws and regulations. Therefore, impacts associated with the generation of wastes from the proposed action would be minor.

3.11. Socioeconomics

3.11.1. Affected Environment

For the socioeconomic analysis, TVA defines the study area as any census block group that falls within a 10-mile radius of the ACT Plant. Most project-related impacts (e.g., changes in noise level, dust, and traffic) are likely to be greater in proximity to ACT Plant and are expected to dissipate relatively quickly. However, a 10-mile radius was selected to conservatively bound the area where resources could be affected and to be consistent with previous environmental reviews at the Allen Reservation.

The study area includes parts of the city of Memphis, one of the region's largest cities, as well as areas within Shelby County, Tennessee, Crittenden County, Arkansas, and DeSoto County, Mississippi. Included as secondary geographic areas of reference are Shelby County, Crittenden County, DeSoto County, and Tennessee, Arkansas, and Mississippi. Comparisons at multiple spatial scales provide a more detailed picture of populations that may be affected by the proposed actions. Demographic and economic characteristics of populations within the study area were assessed using the 2018-2022 American Community Survey (ACS) 5-year estimates provided by the U.S. Census Bureau (USCB) (USCB 2022a).

3.11.1.1. Demographics

Demographic and economic characteristics of the study area and of the secondary reference geographies are summarized in Table 3-11. The population of the study area is 282,264 (USCB 2022a). The block group that contains the project area and the temporary laydown area primarily consists of industrial properties and has no residential population. Since 2010, the study area population has declined by 4.6 percent.

Minority populations represent the primary component of the population of the study area. Specifically, Black or African Americans represent 68.2 percent of the population within the study area (Table 3-11). In contrast, whites account for 25.1 percent of the population within the study area. Other minority racial and ethnic groups make up a small proportion of the total population in the study area but are at or below comparative rates for the referenced counties and states.

Table 3-11. Demographic Characteristics of the ACT Study Area and Secondary Reference Geographies

	10-mile Radius	Crittenden County, Arkansas	DeSoto County, Mississippi	Shelby County, Tennessee	Arkansas	Mississippi	Tennessee
Population^{1,2}							
Population, 2022 estimate	282,264	47,945	186,214	926,440	3,018,669	2,958,846	6,923,772
Population, 2010	295,966	50,902	161,252	927,644	2,915,918	2,967,297	6,346,105
Percent Change 2010-2022	-4.6%	-5.8%	15.5%	-0.1%	3.5%	-0.3%	9.1%
Persons under 18 years, 2022	22.6%	27.1%	25.2%	25.0%	23.1%	23.4%	22.0%
Persons 65 years and over, 2022	15.2%	14.6%	13.1%	14.2%	17.2%	16.5%	16.7%
Racial Characteristics¹							
Not Hispanic or Latino							
White alone, 2022 ^(a)	25.1%	40.2%	59.8%	34.5%	69.7%	55.9%	72.6%
Black or African American, 2022 ^(a)	68.2%	50.1%	30.8%	53.6%	15.1%	37.1%	16.1%
American Indian and Alaska Native, 2022 ^(a)	0.1%	0.1%	0.1%	0.1%	0.4%	0.4%	0.1%
Asian, 2022 ^(a)	1.0%	0.8%	1.3%	2.9%	1.5%	1.0%	1.8%
Native Hawaiian and Other Pacific Islander, 2022 ^(a)	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%
Some Other Race alone, 2022 ^(a)	0.1%	0.0%	0.2%	0.3%	0.2%	0.3%	0.3%
Two or More Races, 2022	2.2%	5.8%	2.7%	1.9%	4.6%	2.1%	3.0%
Hispanic or Latino, 2022	3.3%	3.0%	5.2%	6.8%	8.1%	3.3%	6.0%
Housing and Income¹							
Housing units, 2022	136,247	21,335	72,572	401,041	1,371,709	1,324,992	3,050,850
Median household income, 2018-2022	48,625	51,860	79,666	59,621	56,335	52,985	64,035
Persons below poverty level, 2018-2022	25.5%	19.7%	9.8%	18.1%	16.2%	19.2%	14.0%
Persons below low-income threshold, 2018-2022 ^(b)	50.1%	45.2%	25.8%	38.0%	38.2%	40.7%	32.6%

Source: 1.USCB 2022a, 2. USCB2011

Notes:

(a) Includes persons reporting only one race.

(b) Low-income threshold is defined as two times the poverty level

Within the socioeconomics study area, there are 255 census block groups. Among the 255 census block groups, in 199 block groups minority populations make up more than half of the population. In three additional block groups, minority populations are meaningfully greater (greater than or equal to 20 percentage points) than the minority population percentage of the general population. Thus, 202 of 255 census blocks (79.2%) within the study area have minority populations that make up more than half of the entire population or have a meaningfully greater proportion of minorities than the general population. See Figure 3-3 below.

The nearest census block with a minority population that exceeds 50% of the population is within close proximity to the Allen CT site: Block Group 2, Census Tract 222.10 (Shelby County, TN), is located about 0.8 miles southeast of the site. Note that both census block groups encompassing and directly north of the TVA Allen Reservation have no resident population (Block Group 1; Census Tract 9803 and Block Group 1; Census Tract 9802, respectively).

The nationwide poverty level is determined annually by the USCB and varies by the size of family and number of related children under 18 years of age. The 2022 USCB Poverty Threshold for an individual under the age of 65 is an annual income of \$15,225, and for a family of four with two children, it is an annual income of \$26,678 (USCB 2022b). The average median household income of the block groups that comprise the study area is \$48,625, which is less than the median household incomes in the reference counties and states (Table 3-11). Approximately 25.5 percent of the population within the study area has an annual household income below the nationwide poverty level, compared to 18.1 percent for Shelby County, 19.7 percent for Crittenden County, 9.8 percent for DeSoto County, 14 percent for Tennessee, 16.2 percent for Arkansas, and 19.2 percent for Mississippi. Thus, the study area block groups have a higher percentage of people living below the poverty level compared to all the representative geographies.

Among the 255 census blocks that make up the socioeconomic study area, there are 160 census blocks (62.7% of blocks in the study area) with “low-income” populations that exceed 50 percent of the total population.¹⁰ For the purpose of this assessment, low-income individuals are generally defined by TVA as those whose annual household income is less than two times the poverty level; a census block would be considered to be low-income if either the low-income population exceeds 50 percent of the total population or the ratio of low-income population significantly exceeds (i.e., by greater than or equal to 20 percentage points) that of the general population or other appropriate geographic areas of analysis.

In the study area, 152 of the 255 census block groups (or 59.6% of block groups) are indicative of both minority and low-income communities. Figure 3-3 identifies the census block groups within the study area that have minority and low-income populations that make up a majority of the population. The census block with a majority low-income population that is nearest the project area (about 0.8 miles) is the same census block noted above as having a sizeable minority population (Block Group 2; Census Tract 222.10, in Shelby County, TN).

Appendix E provides the percentage of each race and ethnicity classification and the percentage of low-income residents for each census block group, as well as those of the reference geographies.

¹⁰ More encompassing than the base poverty level, this low-income threshold is a reasonable measure for consideration because current poverty thresholds are often too low to adequately capture the populations adversely affected by low levels of income, especially in high-cost areas (EPA 2019b).

According to the EPA, the effects of income on baseline health and other aspects of susceptibility are not limited to those below the poverty thresholds. For example, populations that have an income level from one to two times the poverty level also have worse health overall than those with higher incomes (U.S. Centers for Disease Control and Prevention 2011). Appendix F provides a characterization of the communities within the 10-mile study area and identifies communities as disadvantaged based on the following eight categories of potential burdens: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.

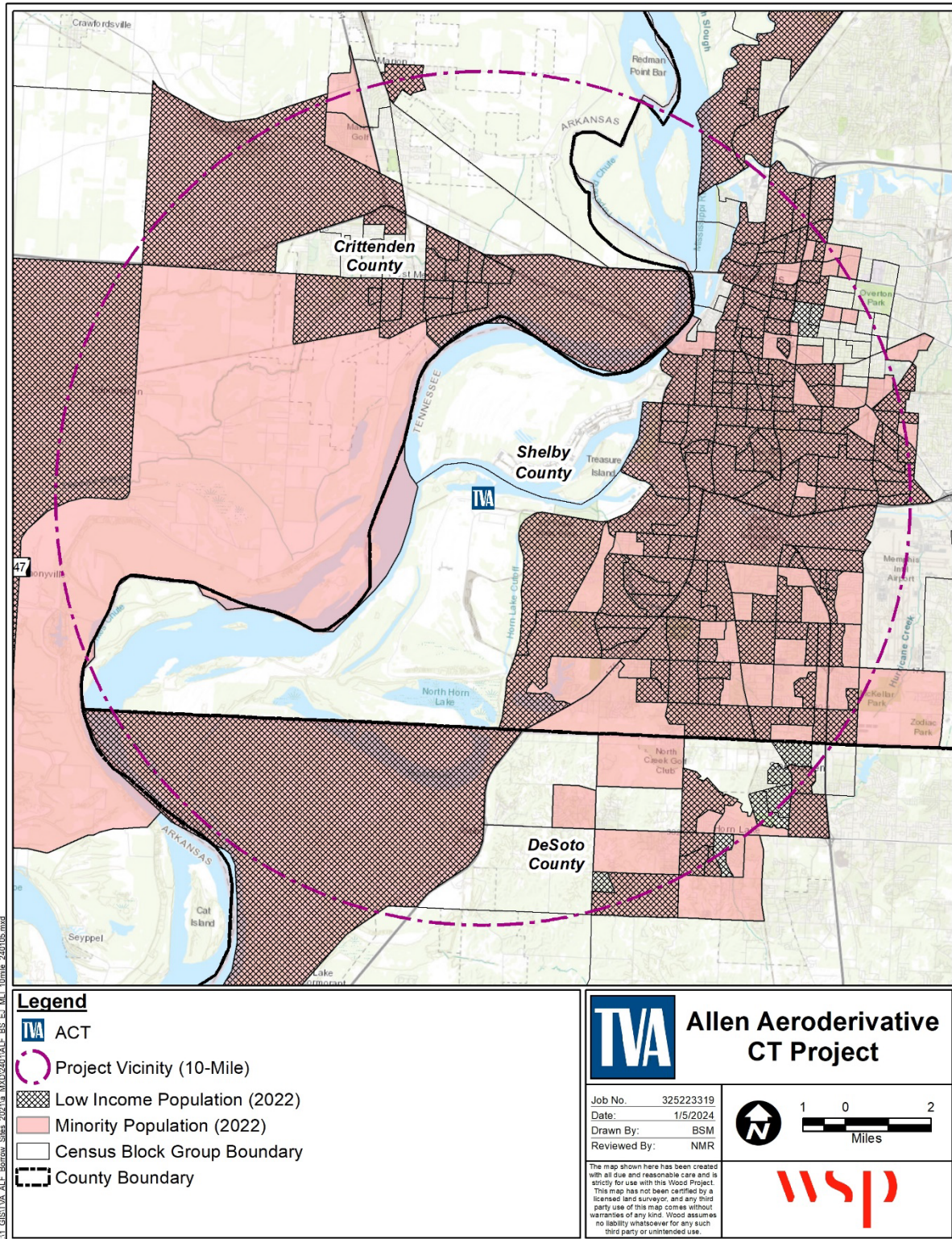
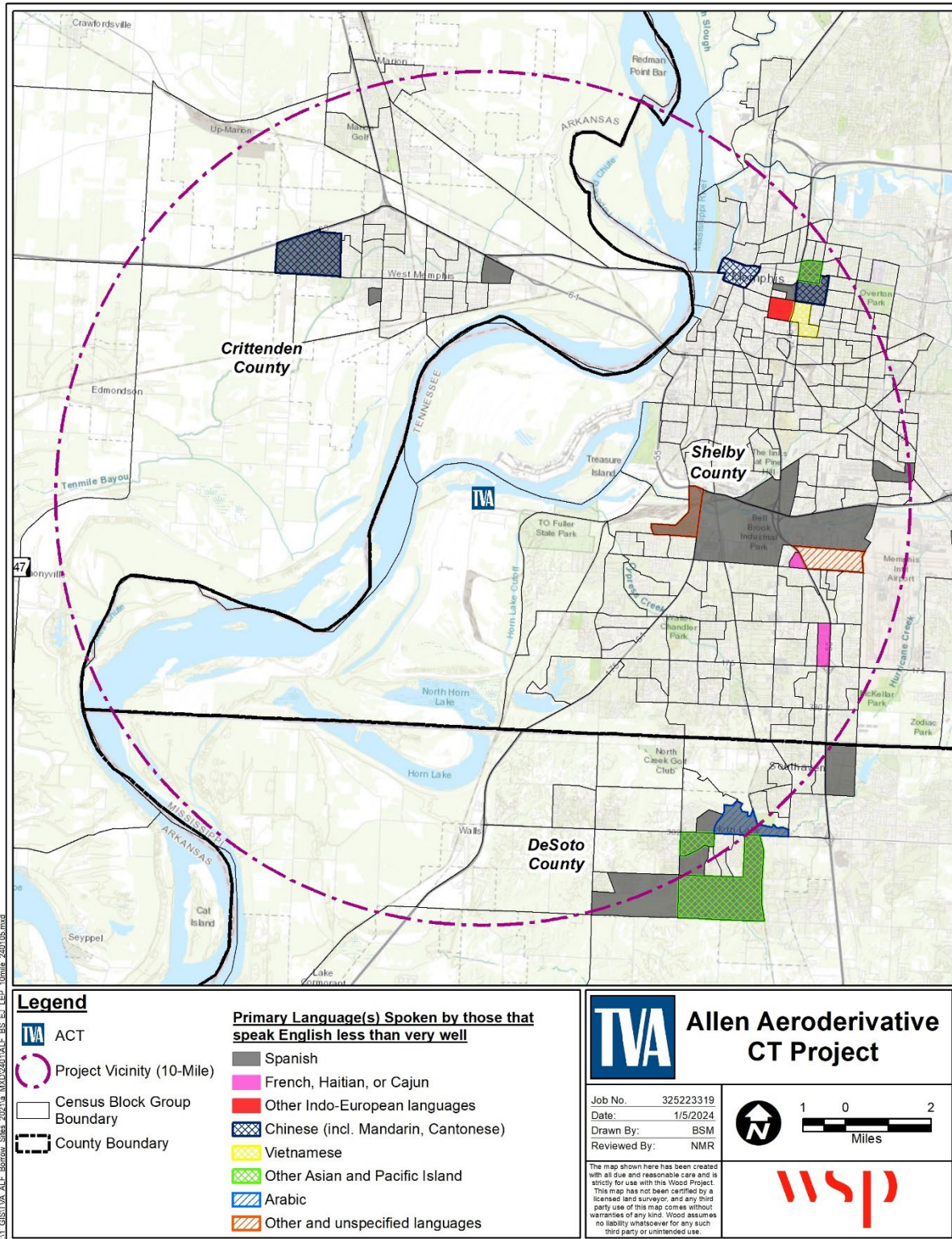


Figure 3-3. Minority and Low-Income Communities within a 10-mile Study Area

Twenty-three of the census block groups within the socioeconomic study area have populations with limited English proficiency. The proportion of persons in each block group who have limited English proficiency (LEP) is also relevant to a socioeconomic analysis because it can be used to inform public outreach efforts and engagement opportunities. For this analysis, a person with limited English proficiency is defined as a person aged 5 or older who self-identifies as speaking English “less than very well” based on USCB 2018-2022 ACS estimates. LEP census block groups are defined as those in which the percentage of the block group’s population (aged 5 or older) that speak English “less than very well” exceeds 5 percent, or the number of persons (aged 5 or older) that speak English “less than very well” exceeds 1,000.

Figure 3-4 illustrates the primary languages¹¹ spoken in LEP census block groups within the study area. The most common language spoken among individuals in this area who report LEP is Spanish, but there are small pockets of a variety of language categories throughout the study area. Appendix E provides the percentage of residents reporting LEP for each census block group and reference geography, as well as the primary languages spoken in each of the identified LEP census block groups.

¹¹ Primary languages are languages spoken by 20 or more people within a census block group who speak English “less than very well.”



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Figure 3-4. Communities with Limited English Proficiency within a 10-mile Study Area

3.11.1.2. Economic Conditions

Shelby County contains a total employed labor force of 429,064 workers (Table 3-12). Business sectors providing the greatest employment include educational services, health care and social assistance (22.7 percent); transportation, warehousing, and utilities (14 percent); professional, scientific, management, and administrative and waste management services (10.9 percent); retail trade (10.4 percent); manufacturing (9.3 percent); arts, entertainment, and recreation, and accommodation and food services (8.7 percent).

Table 3-12. Employers by Sector Within the Reference Counties

Sector	Number of Employees Crittenden County	Percent	Number of Employees DeSoto County	Percent	Number of Employees Shelby County	Percent
Agriculture, forestry, fishing and hunting, and mining	532	2.6%	889	1.0%	1,053	0.2%
Construction	1,055	5.2%	5,219	5.6%	20,645	4.8%
Manufacturing	2,071	5.1%	3,605	3.9%	39,784	9.3%
Wholesale trade	1,041	12.8%	10,349	11.1%	11,684	2.7%
Retail trade	2,606	10.7%	13,814	14.8%	44,636	10.4%
Transportation and warehousing, and utilities	2,175	1.6%	715	0.8%	60,412	14.0%
Information	335	3.6%	4,132	4.4%	4,811	1.1%
Finance and insurance, and real estate and rental and leasing	735	6.7%	7,788	8.3%	23,415	5.5%
Professional, scientific, and management, and administrative and waste management services	1,372	23.1%	19,852	21.2%	46,709	10.9%
Educational services, and health care and social assistance	4,704	9.5%	8,088	8.7%	97,434	22.7%
Arts, entertainment, and recreation, and accommodation and food services	1,941	4.6%	4,270	4.6%	37,207	8.7%
Other services, except public administration	933	4.2%	3,795	4.1%	21,415	5.0%
Public administration	855	2.6%	889	1.0%	19,859	4.6%
Total	20,355	100%	93,433	100%	429,064	100%

Source: USCB 2022a

The total employed civilian population within the block groups that make up the study area is 121,971, with the unemployment rate at 14,962 people, or 10.9 percent of the civilian labor

force. This unemployment rate is noted to be higher relative to the unemployment rates of all the reference counties and states (Table 3-13).

Table 3-13. Employment Characteristics of the Resident Labor Force

Employment Status	Population						
	10-mile Radius (Shelby County)	Crittenden County, AR	DeSoto County, MI	Shelby County, TN	AR	MI	TN
Population >16 years	225,556	36,397	145,064	721,643	2,402,462	2,349,512	5,576,402
Civilian Labor Force	136,933	22,727	97,753	463,039	1,391,084	1,331,419	3,430,845
Employed	121,971	20,355	93,433	429,064	1,319,483	1,245,900	3,258,016
Unemployed	14,962	2,372	4,320	33,975	71,601	85,519	172,829
Unemployment							
% of Total Population > 16 years	6.6%	6.5%	3.0%	4.7%	3.0%	3.6%	3.1%
% of Civilian Labor Force	10.9%	10.4%	4.4%	7.3%	5.1%	6.4%	5.0%

Source: USCB 2022a

Key: AR = Arkansas; MI = Mississippi; TN = Tennessee

Economic baseline conditions, particularly regarding energy development, can include energy burden. Energy burden is defined as the percentage of gross household income spent on energy costs (DOE 2024). According to the National Conference of State Legislatures, studies have shown that minority and low-income families pay a significantly higher share of their income in energy costs (NCSL 2023). However, a 2020 Report from the Tennessee State Energy Policy Council shows that between 2012 and 2018, residential energy prices in Tennessee were below the national average (TSEPC 2020). The U.S. DOE National Renewable Energy Laboratory State and Local Planning for Energy data on energy affordability shows that in 2020, Shelby County’s household energy burden, as a percent of income, is considered low (2.73 percent). However, individual census tracts within Shelby County have energy burdens that are above 6 percent. According to the 2020 American Council for an Energy-Efficient Economy Report, households spending more than 6 percent of their income on energy bills have a high energy burden (DOE NREL 2025). As such, Shelby County is not considered to have a high energy burden as percent of income spent on energy bills is below the national average; however, some census tracts within Shelby County are considered to have a high energy burden.

3.11.1.3. Community Facilities and Services

Community facilities and services are public or publicly funded facilities such as police protection, fire protection, schools, hospitals and other health care facilities, libraries, daycare centers, churches, and community centers. When applicable, the study area for the evaluation of impacts to community services is the service area of various providers; otherwise, a secondary study area defined for the purposes of a socioeconomic analysis may be defined. In this case, the study area for community impacts is identified as the service area within a 10-mile radius of the ACT Plant.

Community facilities and services available to the communities within the study area include over 500 churches, 173 schools, 25 fire stations, 20 medical centers, 17 police stations, and 7 community centers (USGS 2024). Additionally, there are no community facilities located in the immediate vicinity (within 0.5 mile) of the ACT Plant. The closest facilities are the Macedonia

Missionary Baptist Church and the Apple and Cookies Enrichment Center daycare facility, both located near the intersection of Boxtown Road and Fields Road, approximately 1.7 miles southeast of the ACT Plant.

3.11.2. Environmental Consequences

3.11.2.1. *Alternative A – No Action Alternative*

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. Therefore, there would be no change in local demographics, economic conditions, or community services or new effects to nearby communities.

3.11.2.2. *Alternative B – Allen Aeroderivative Project*

3.11.2.2.1. Demographic Impacts

Although most census block groups that comprise the study area are considered low-income and/or minority communities, the nearest residential and commercial areas to the project site are located more than a mile to the southeast of the ACT Plant. The project site is located in an area reserved for heavy industry, in a block group that has no residential population. For the closest block group with a residential population, just east of the TVA Allen Reservation, T.O. Fuller State Park serves as a buffer between the residential neighborhoods and the project site. The communities closest to the project area, which have predominately low-income and minority populations, would be minimally impacted by noise, fugitive dust, and visual impacts associated with on-site project activities.

As discussed in Section 3.8.2, construction-related vehicles, including the commuting construction workforce, delivery of materials and equipment, and transport of borrow material, would increase traffic on local roads, resulting in noise, exposure to fugitive dust, and exhaust emissions located along the transportation routes. However, traffic would be most concentrated on the roadways providing access to Allen via I-55 (Riverport Road and West Mallory Avenue), which are located in industrial, rather than residential areas. Once on I-55, traffic would disperse throughout the city's large transportation network and would not result in notable effects. Borrow material would be obtained from an existing, permitted borrow site within a 30-mile radius of the ACT Plant. Specific locations have not been determined; therefore, it is possible that borrow transport may require use of residential roadways through communities, including those with predominately low-income and minority populations. Based on the intermittent nature of borrow transportation and the relatively low volume (800 truckloads over a 15-month period) of trucks, however, traffic-related impacts to affected communities are expected to be minor and short term.

As a general matter, changes to the environment such as decreased air quality would be more likely to affect members of communities who may be more sensitive to changes due to a higher frequency of preexisting health conditions and/or a decreased ability to take actions to limit exposure. Appendix F provides a characterization of the communities within the 10-mile study area that have historically been burdened by climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Many of the communities within the study area are identified as meeting the threshold for health burdens, indicating that the population is at or above the 90th percentile for asthma, diabetes, heart disease, and/or low life expectancy. The population in these communities is also at or above the 65th percentile for low-income. Note, this community characterization is analyzed at the census

tract level, a geographical unit one step larger than the census block group used in the rest of this analysis.

Low-income and minority communities within the study area may be more sensitive to operation-related emissions due to a higher frequency of preexisting health conditions, such as asthma and/or a decreased ability to take mitigating actions. However, as detailed in Section 3.1, the increase in emission of criteria air pollutants is below the significant impact levels and thus would not cause or contribute to any NAAQS violation or exceed any PSD increments. As required by the CAA (40 CFR part 50), the NAAQS primary standards are developed to protect human health with an adequate margin of safety for sensitive subgroups of the population. These sensitive subgroups are children, older adults, people with heart or lung conditions, communities of color, and low economic status populations. NAAQS primary standards are based on reference concentrations that represent continuous inhalation that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure for these sensitive subgroups. Reference concentrations also include a 10-fold safety factor to address uncertainty. The NAAQS standards specifically protect the sensitive subgroups of the surrounding minority and low-income overburdened communities during lifetime exposures. Therefore, operation of the new Aero CT units would not harm sensitive individuals in the surrounding communities because emissions would not be expected to contribute to an exceedance of the primary NAAQS standards, which were developed specifically to protect those individuals.

Those communities nearest to the project area are most likely to be affected. Low-income and minority communities would be more likely than other populations to be affected by environmental impacts associated with the proposed action due to the prevalence of these populations in the study area. However, construction-related impacts, such as traffic and noise, would be minor and short term. Long-term adverse impacts from air emissions would be minimized through adherence to NAAQS standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including communities of concern that have a higher frequency of preexisting health conditions. As such, there would be minor impacts to these low-income and minority communities under Alternative B.

TVA has conducted public outreach designed to keep the public informed and encourage public input regarding the proposed activities at its Allen Reservation. TVA would continue to reach out to the public to address community and neighborhood concerns throughout implementation of the proposed project. TVA did not identify notable concentrations of residents with LEP in the communities closest to the Allen Reservation or via previous outreach with community partners but would consider requests for materials to be provided in alternate languages, as appropriate.

3.11.2.2.2. Economic Impacts

Construction of the aero CTs would require a workforce of approximately 200 personnel over the approximate 15-month construction period. The workforce necessary for the project is expected to be a combination of TVA workforce supplemented with local laborers. Specialized workforce laborers may be required to relocate temporarily to the affected or nearby areas while general laborers are anticipated to come from the local workforce. Given that the maximum number of workers needed for construction (200) would equate to less than one percent of the unemployed civilian workforce in Shelby County (33,975), it is likely that most of the workers could be drawn from the existing labor force. This, in combination with the short construction time frame, indicates that construction activities would not result in any permanent population increase in the region.

Construction activities associated with the aero CTs would entail a temporary increase in employment and associated payrolls, which would result in a minor short-term direct positive impact to employment in the region. Indirect impacts related to the purchases of materials and supplies and the multiplier effect of increased spending in the local economy would be beneficial, but minor, given the short construction period.

Following construction, permanent staffing associated with the operation of the ACT Plant is expected to require approximately five personnel. Due to the small number of new staff that would be integrated into the existing workforce, long-term impacts to employment would be minimal.

TVA utilizes least-cost planning principles, in the development of asset strategy, to provide electricity at the lowest feasible rate for customers. Additionally, as stated in Section 1.3, this project is needed to meet generation capacity needs. Without the additional generation capacity from the proposed aero CTs, the system would be at risk of reliability issues. As such, impacts to energy burden are anticipated to be minor as the proposed aero CTs provide the additional generation needed to address generation demand while providing system reliability.

3.11.2.2.3. Community Facilities and Services

Direct impacts to community facilities occur when a community facility is displaced or access to the facility is altered. Construction of the proposed aero CTs would be limited to the retired ALF, existing ACT Plant, and ACC Plant and would not result in the displacement of any community facilities nor impede access to any facilities. Therefore, there would be no direct impacts to community facilities or services under Alternative B.

Indirect impacts occur when a proposed action or project results in a population increase that would generate greater demands for services or affect the delivery of such services. In the event of an emergency at the ACT Plant, local law enforcement, fire, and emergency medical service response would likely be required. However, given TVA's adherence to stringent workplace health and safety regulations, implementation of Alternative B would not result in appreciable increases in emergency incidents and thus would not have a notable impact on the demand for emergency services in the area. Additionally, as construction and operation of the plant would not result in notable impacts to local demographics, increased demands for services such as schools, churches, and healthcare facilities are not anticipated.

3.12. Utilities

3.12.1. Affected Environment

Several utilities and service systems are in place at the ACT Plant as a result of construction and operation of the existing CT units (Units 1 through 20). These utilities and service systems include water and wastewater, electrical, fuel oil, and natural gas.

3.12.1.1. *Fuel Oil Storage and Delivery System*

The existing fuel oil storage and delivery system at the ACT Plant includes the following:

- Two operational fuel oil tanks, which hold a combined 3.47 million gallons
- Fuel oil piping from tanks to the skids
- Forwarding skids to units 19 and 20

- Fuel oil transferring system
- Fire protection system, which is provided by a common foam system housed in a block building on site.

3.12.1.2. Natural Gas Supply

Natural gas is distributed by MLGW via underground piping. TVA has installed an emergency shutdown valve at the MLGW/TVA custody transfer point to ensure safety when using the MLGW natural gas supply.

3.12.1.3. Water and Sewer Systems

Water is supplied to the ACT Plant by MLGW and is used for fire protection, service water, and building plumbing. There are no wastewater process facilities at the ACT Plant. Surface water runoff is routed via site runoff drains to the wastewater collection system to remove waste oils from the wastewater. Wastewater is discharged to stormwater Outfall F6 or routed to the on-site water treatment system prior to discharge at Outfall 002.

3.12.1.4. Transformers

The existing transformer network consists of two main transformers, three station service transformers, and one standby station service transformer. The station service transformers and standby transformer are not reusable due to incompatibility with the voltage needs of the current project. The main transformers are over 50 years old and, despite not showing any major signs of abnormality, are past the end of life.

3.12.2. Environmental Consequences

3.12.2.1. Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing units at ACT on a limited basis. The existing utilities and services would be maintained and replaced as needed and as necessary for safety purposes. Thus, there would be no additional impacts to utilities under this alternative.

However, there would be no added dispatchable generation capacity to ensure that TVA can reliably meet required year-round generation. Without the additional generation capacity, TVA would continue to need power to meet energy demands and would acquire the power from other generation sources. In the short term, TVA anticipates that the power would likely be obtained through power purchase agreements on the market, a portion of which is likely to derive from natural gas generation outside of TVA's system. In the long term, TVA would continue to need new peaking generation sources.

3.12.2.2. Alternative B – Allen Aeroderivative Project

Under Alternative B, TVA would install and operate six new aero CT units and supporting facilities. Construction of the new aero CT units requires upgrades and installation of new support systems and utility infrastructure. Proposed upgrades and new supporting facilities are described in Section 2.2.2.2, Construction of Supporting Facilities, and include:

- Installation of two ULSD generators (in support of the black-start units)
- Upgrades to existing natural gas infrastructure to improve gas regulation and shutoff

- Installation of new compressed air skid
- Installation of new ammonia unloading, storage, and delivery system
- Replacement of station service transformers

Construction would occur over an approximately 15-month time frame, with construction activities (including laydown areas) taking place within previously disturbed areas at the retired ALF, existing ACT Plant, and ACC Plant. TVA would coordinate with existing electricity, natural gas, and water and wastewater utilities prior to starting plant construction to minimize or avoid impacts and disruptions to utilities. Prior to construction, existing utility lines would be located and marked to prevent accidental damage during upgrade and installation activities. Therefore, impacts to existing utilities are anticipated to be minor; there would be no impact to the greater utility systems in the surrounding area.

The ACT Plant would continue to be fueled by natural gas. The new proposed diesel generators would operate using fuel oil reserves that would be stored in existing tanks; the proposed action does not call for the construction of new storage tanks or fuel oil tanks. Appropriate safety measures and guidelines would be developed and followed to reduce exposure or potential releases of hazardous materials and chemicals. Additionally, fire protection systems and safety measures would be developed in response to a potential emergency event. Therefore, there would be minimal impact to potential human health hazards from upgrades to utilities and service systems.

Operation of the aero CT units would require approximately 58 gallons per minute of potable water for inlet air evaporative cooling during summer temperatures, which represents the maximum value of water needed during peak demand during high temperatures. Typical operations of the aero CT units would require approximately 25 gallons per minute of potable water. Additionally, during winter months potable water for inlet air evaporative cooling is not needed, reducing potable water consumption. Potable water would also be required for fire protection, potable use, and plumbing. All potable water would be obtained from MLGW.

TVA completed a system impact study which determined that no new transmission corridors or transmission infrastructure upgrades would be required. Transformers on the existing station would be replaced when they are at end of life.

The addition of the proposed six new aero CT units would increase reliability and provide a cost-effective energy system. Additionally, at least four of the six proposed aero CT units would have black-start capability, which would increase system flexibility by allowing the grid to restore power without needing to rely on external electric power transmission systems. The new aero CT units support fast startup dispatching and synchronous condensing to support transmission system stability in western Tennessee and support TVA's goals to further expand renewable energy. Because the units can quickly achieve full generating capacity from a cold start and allow for multiple daily starts, Alternative B would improve TVA's ability to effectively integrate generation from variable resources, such as solar and wind. The availability of additional resources with synchronous condensing capabilities would efficiently support local voltage stability as well.

The increased flexibility and reliability of the TVA power system resulting from implementing Alternative B would beneficially affect western Tennessee. Potable water and natural gas are

supplied by MLGW and would have a small impact on the availability of these natural resources. The ACT Plant would be improved through upgrades and replacement of the existing utilities and service systems to support the proposed aero CT units which would support the continued functionality of the plant. Overall, impacts to utilities and service systems associated with Alternative B are small and beneficial to the largest western Tennessee power system.

3.13. Public Health and Safety

3.13.1. Affected Environment

The ACT Plant is located on the Mississippi River, 5 miles southwest of downtown Memphis, Tennessee (TVA 2024d). The ACT Plant is located in an area that supports industrial land use, with the closest residence located approximately 1.5 miles southeast of the ACT Plant. The closest public entities to the site are the T.O. Fuller State Park. There is direct truck and automobile access to the ACT Plant through Plant Road via Riverport Road.

There is access to many emergency services nearby, including hospitals, urgent care, law enforcement, and fire protection services. The closest urgent care is Baptist Urgent Care-Horn Lake, located 14.4 miles from the ACT Plant. The closest hospital is Methodist South Hospital, which is 10.8 miles away from the ACT Plant. Police services are managed by the Memphis police department from their Westwood location. They are located 9.2 miles from the site. Fire protection services are run by the Memphis Fire Station #37, which is located 8.9 miles from the ACT Plant (USGS 2024).

Workplace health and safety regulations and laws are designed to eliminate personal injuries and illnesses from occurring in the workplace. These laws may comprise both federal and state statutes. The Tennessee Emergency Management Agency is responsible for maintaining protection of the public, through their regulations on hazardous wastes and materials. The Occupational Safety and Health (OSH) Act of 1970 is the main statute protecting the health and safety of workers in the workplace by protecting workers from hazardous work environments, including risk of injury or illness. TVA has a robust, safety-conscious culture that focuses on awareness and understanding of workplace hazards, prevention, intervention, and integration of BMPs to avoid or minimize hazards. Activities performed at TVA facilities or TVA-owned land are consistent with OSHA regulations, state standards and requirements, and specific TVA guidance. TVA personnel (including TVA authorized contractors) are conscientious about health and safety, having addressed and managed operations to reduce or eliminate occupational hazards through implementation of safety practices, training, and control measures.

Health hazards are also associated with emissions and discharges from the ACT Plant and accidental spills/releases at the plant or along the pipelines. An emergency response plan developed to address these potential discharges is discussed with local emergency management agencies. The implementation of proper engineering and equipment design and administrative controls, including employee training and compliance with regulatory requirements related to health and safety, help ensure that the risks associated with work at TVA facilities remain low. These mitigative measures are used to ensure protection of human health which includes the workplace, public, and the environment.

Transmission lines generate both electric and magnetic fields. The voltage on the conductors of a transmission line generates an electric field that encompasses spaces between conductors and other conducting objects. The magnetic field generated by the current in the conductors and most of the energy dissipates on the transmission line. TVA has taken measures to minimize the potential for shocks by maintaining clearance between the lines and objects on the ground.

TVA would ground other objects that have the potential to be conductors, such as metal fences, guardrails, and pipelines, to avoid any electrical shocks to workers or others.

3.13.2. Environmental Consequences

3.13.2.1. *Alternative A – No Action Alternative*

Under the No Action Alternative, TVA would not install new aero CT units at the ACT. TVA would continue to operate two existing CT units at ACT on a limited basis. TVA would continue to apply a safety-conscious culture, and any activities performed at the site would be in accordance with applicable standard and specific TVA guidance. Public health and occupational hazards will continue to be monitored and directed through the execution of safety practices, control measures and training. Through adherence to these safety programs and TVA's culture of safety-minded employees, impacts to public health and safety under Alternative A would be minor.

3.13.2.2. *Alternative B – Allen Aeroderivative Project*

Under Alternative B, TVA would install six new aero CTs and support facilities at the ACT Plant. Although construction work has known hazards, it is TVA's policy that contractors establish and maintain site-specific health and safety plans in compliance with OSHA regulations, which minimize risks to health and safety. The contractor site-specific health and safety plans address hazards and controls, as well as coordination for various construction tasks. TVA would emphasize BMPs for site safety management to minimize potential risks to workers. These BMPs could include employee safety orientations, work procedures and programs for on-site activities, personal protective equipment, emergency shut down procedures, lockout procedures, protective equipment guards, site housekeeping, regular safety inspections, and preventative plans and procedures to mitigate hazards.

Public health and safety hazards could result from increased traffic on roadways during construction. Residential and public use areas along roadways used by the construction traffic to access the project area may experience delays due to increased traffic. However, as noted in Section 3.8, Transportation, intersections near the ACT Plant will experience minimal delays during the construction phase. To minimize the adverse impact of traffic, establishment of traffic procedures to minimize potential safety concerns would be addressed in the health and safety plans followed by construction contractor(s).

As stated above, the ACT Plant is located in an existing industrial complex, adjacent to other industrial and manufacturing facilities. Additionally, the closest residence is located approximately 1.5 miles southeast of the ACT Plant. As such, the potential for public safety concerns is reduced due to the project setting and distance from residential areas.

Potential sources of waste generation include solid wastes, hazardous wastes, liquid wastes, discharges, and air emissions. Debris and wastes streams associated with construction activities would be managed in accordance with federal, state, and local laws and regulations. An emergency response plan would be developed to address potential accidental spills on site and discussed with local emergency management agencies. Emergency response for the project area would be provided by the local, regional, and state law enforcement, fire, and emergency responders, as described above.

Through TVA guidance and regulations, operation of the aero CTs would adhere to standards established by OSHA and applicable state requirements. TVA's commitment to the implementation of health and safety practices would reduce occupational and public health

hazards. TVA fosters a culture of safety-mindedness that ensures that safety measures and programs are adhered to and limits the impacts of public health and safety concerns.

Existing transmission lines create an electromagnetic field and are a potential hazard to occupational and public health and safety. Exposure to such electromagnetic fields by the public would be minimal because the proposed transmission lines would be within the ACT Plant and restricted from public use. Thus, worker exposure would not deviate from existing conditions. TVA's Standardized Programs and Processes related to maintaining safety would be strictly adhered to during operation of the proposed action. The overall impacts of Alternative B on public health and safety would be minor.

3.14. Cumulative Effects

3.14.1. Geographic Area of Analysis

The cumulative effects analysis is based on an assessment of potential aggregate effects for each resource within the geographic area in which potential adverse effects from site-specific activities have the potential to alter (degrade) the quality of the regional environmental resources. The appropriate geographic area over which past, present, and reasonably foreseeable future actions could contribute to cumulative effects is variable and dependent on the resource evaluated. The cumulative effects analysis is based on the resources of potential concern and the geographic area in which potential adverse effects from site-specific activities have the potential to alter (or degrade) the quality of the regional environmental resources. The geographic area of analysis is defined as the area where other actions occur that could potentially have impacts within the resource impact area. Therefore, the geographic area of interest (GAI) may be different for each resource.

The proposed action would occur mostly on land that was previously disturbed and is currently used for industrial purposes. The surrounding landscape is already subject to environmental stressors associated with continuing industrial operations. Consequently, as described in prior subsections of this EIS, the existing quality of environmental resources with the potential to be directly or indirectly affected by the project activities is generally low. Additionally, borrow material would be obtained from a previously permitted site. The analysis of cumulative effects for the appropriate geographic area is generally limited to the project area and surrounding areas; however, for groundwater, the GAI was determined to be the Memphis aquifer, and for socioeconomics, the GAI is the 10-mile radius around the project area, as identified above in Section 3.11, Socioeconomics. Additionally, for air quality and greenhouse gas emissions, the geographic area is Shelby County.

3.14.2. Identification of Other Actions

Past, present, and reasonably foreseeable future actions (RFFA) that are appropriate for consideration for cumulative effects are listed in Table 3-14. These actions were identified within the geographic area of analysis as having the potential to, in aggregate, result in larger and potentially adverse impacts to the resources of concern. Projects planned elsewhere in the region are not likely to have a cumulative effect on the Proposed Action as they would be a considerable distance from the project area. As noted below, many of these RFFAs are not TVA actions or within TVA's control.

Table 3-14. Summary of Present, and Reasonably Foreseeable Future Actions in the Vicinity of the ACT Project Area

Action	Description	Timing and Reasonable Foreseeability
Retirement of ALF	In March 2018, the three ALF coal units were retired.	Past
ALF Decontamination and Deconstruction	Demolition and deconstruction of the ALF fossil plant and restoration of the site to support future economic development. Decontamination, deconstruction and site restoration actions are to be completed in 2025.	Present
ALF Ash Impoundment Closure	TVA released a Record of Decision (ROD) on April 14, 2020, describing that TVA would be closing the ash impoundments at the ALF. The closure includes the closure of the metal cleaning pond, closure-by-removal of the East Ash Pond Complex and the West Ash Pond through disposal of coal combustion residuals in an off-site landfill location. Closure activities are anticipated to continue for the foreseeable future.	Past, Present, Reasonably Foreseeable Future
ALF Groundwater Remediation	TVA is currently engaged in a Remedial Investigation for the ALF East Ash Pond Complex under the direction of TDEC. Groundwater monitoring and remediation is anticipated to continue for an additional 10 to 15 years.	Past, Present, Reasonably Foreseeable Future
Operations of TVA ACC Plant and nearby industrial facilities	Continued operations of the ACC Plant and other industrial facilities near or within the Frank C. Pidgeon Industrial Park and Port of Memphis, including the xAI and Valero Refinery facilities.	Past, Present, Reasonably Foreseeable Future
Continued Operation of ACT Units 19 and 20	Continued operation of ACT Units 19 and 20 on a limited basis.	Past, Present, Reasonably Foreseeable Future
Allen Combustion Turbine Plant Decommission and Deconstruction of Units 1-16	In September 2023, TVA completed an environmental review of the demolition and removal of 16 existing units at the ACT Plant. TVA determined that removal of the units had independent utility and was necessary regardless of future actions and/or use of the area.	Reasonably Foreseeable Future

Action	Description	Timing and Reasonable Foreseeability
Solar Farm for Greywater Facility	The EDGE for Memphis and Shelby County board approved plans for a solar panel system adjacent to T.E. Maxson WWTP, which is expected to open in 2026.	Reasonably Foreseeable Future
New Development in the Pidgeon Industrial Park	Future development at the Pidgeon Industrial Park.	Reasonably Foreseeable Future
Greywater Facility	xAI is working with MLGW and the City of Memphis to plan and develop a new greywater facility to supply cooling water for the xAI facility and for further industrial and commercial users.	Reasonably Foreseeable Future
South Cypress Creek Watershed and West Junction Neighborhood Redevelopment	Restoration within the South Cypress Creek watershed and redevelopment in the West Junction neighborhood.	Reasonably Foreseeable Future
Future Development of ALF site	Industrial development of the existing ALF Site.	Reasonably Foreseeable Future

Key: ACC = Allen Combined Cycle; ALF = Allen Fossil Plant; EDGE = Economic Development Growth Engine; MLGW = Memphis Light, Gas and Water Division; ROD = Record of Decision; TDEC = Tennessee Department of Environment and Conservation; TVA = Tennessee Valley Authority; WWTP = Wastewater Treatment Plant

3.14.2.1. Retirement of the Allen Fossil Plant

The three ALF coal units were retired in June 2018. Primary operational measures that were discontinued include daily coal barge operations, coal pile management, pumping and use of water from McKellar Lake for condenser cooling, and thermal discharges to the Mississippi River. The plant has discontinued the discharge of fly ash and bottom ash to designated wet impoundment areas. Routine plant deliveries have also been discontinued. The existing switchyard is being maintained for use in operations associated with the ACC facility. The coal plant is currently subject to basic care and maintenance measures (TVA 2019c).

3.14.2.2. Allen Fossil Plant Decontamination and Deconstruction

After the retirement of ALF, TVA evaluated in an EA (October 2019) the deconstruction and demolition of ALF and the restoration of the site to support future economic development. Demolition and deconstruction of the site included decontamination of all buildings, sumps, and structures associated with plant operations to remove hazardous materials and the demolition of the powerhouse and all associated structures to 3 feet below final grade resulting in a brownfield site (TVA 2019c). Decontamination, deconstruction, and site restoration will be complete in 2025.

3.14.2.3. Allen Fossil Plant Ash Impoundment Closure

TVA released a ROD on April 14, 2020, in which it stated that the ALF ash impoundments would be closed. The closure includes the closure of the metal cleaning pond, closure-by-removal of the East Ash Pond Complex and the West Ash Pond through disposal of CCR in an off-site landfill location (TVA 2020). Activities to close the ALF ash impoundment are ongoing and anticipated to continue for the foreseeable future.

3.14.2.4. Allen Fossil Plant Groundwater Remediation

TVA is currently engaged in a remedial investigation for the ALF East Ash Pond Complex under the direction of TDEC.

During routine groundwater monitoring around the East Ash Disposal Area in 2017, TVA detected arsenic, lead, and fluoride (constituents of concern) in groundwater at elevated concentrations above EPA maximum contaminant levels. Elevated pH values in groundwater were also observed. In May 2017, TVA voluntarily initiated an investigation to evaluate groundwater conditions on the north and south sides of the East Ash Disposal Area where contaminants of concern had been detected. TVA subsequently received a letter in July 2017 from TDEC initiating a remedial investigation (RI). TVA prepared an RI report to present the results of the investigation conducted from 2017 to 2018 (TVA 2019d).

After publishing the RI report in March 2018, TVA developed a supplemental scope of work. Concurrently with the supplemental RI work plan, TVA submitted two additional documents to TDEC: the Pre-Design Services Work Plan (July 20, 2018) and the Initial Remedial Design – Interim Response Action (July 20, 2018). Both documents focus on controlling and beginning to treat arsenic-impacted groundwater north and south of the East Ash Disposal Area (TVA 2019d).

The most recent groundwater monitoring data is identified in Section 3.3, Groundwater. Groundwater monitoring and remediation is anticipated to continue for an additional 10 to 15 years.

3.14.2.5. Operations of TVA Allen Combined Cycle Plant and Nearby Industrial Facilities

The ACC Plant will continue operations at this site. The ACC Plant became operational in April 2018 and comprises three individual combustion turbine units, two of which operate on natural gas with a generating capacity of 330 MW each. The remaining unit is a combustion steam turbine with a capacity to produce 420 MW (TVA 2019c).

The TVA Allen Reservation is located within the Frank C. Pidgeon Industrial Park. This area is a zoned industrial park bounded on the north by McKellar Lake, on the west by the Mississippi River, and on the east by the Canadian National Railroad, and the Mississippi State line on the south. The industrial park contains a number of developed uses including the ALF, the Maxson WWTP, the ACC, Nucor Steel, the City of Memphis Earth Complex, the CN/CSX intermodal facility, and other zoned industrial sites (Moon Inc. 2008).

The City of Memphis owns and operates the T.E. Maxson WWTP, located on lands immediately west of ALF. The WWTP currently treats an average of 70 million gallons per day of wastewater, serving the city since its commissioning in 1975. Treated wastewater is discharged into the Mississippi River, while the primary and waste activated sludge is sent to a covered lagoon system for anaerobic digestion (TVA 2020). The City of Memphis is current developing a Wastewater Treatment Facilities Process and Biosolid Upgrades Program. This program would upgrade the existing facilities to comply with new NPDES permit requirements for effluent disinfection and overall reduction in treated total suspended solids and biological oxygen demand in the effluent. Additionally, the program includes several projects to upgrade the wastewater treatment plant including renovation to lagoons and replacement of other existing infrastructure to improve effluent water quality and loading to the Mississippi River (EPA 2024i).

The commercial Port of Memphis is located across McKellar Lake immediately north of ALF. Past and present port operations impose a variety of continuing stressors on the ecosystem of McKellar Lake and the adjoining Mississippi River ecosystem associated with barge movement and activities. These stressors typically include physical forces (i.e., shear, pressure), wave induced shoreline erosion, drawdowns, entrainment mortality of planktonic life forms, and sediment resuspension (TVA 2016c).

The former Electrolux manufacturing facility, located in the Pidgeon Industrial Park, is now home to operations of xAI. The xAI facility is a supercomputer site that aids in powering artificial intelligence technology. MLGW provides water, natural gas, and electricity to xAI facilities. Up to 1 million gallons per day of water will be provided by MLGW from an existing water main serving the area. Natural gas will be provided via contracts from third parties for operation that will flow from MLGW gas main to the xAI facility. The xAI facility is currently served by an adjacent substation, which after improvements provides 50 MW of power. Additionally, xAI and MLGW are anticipating installation and operation of more than 50 MW of utility-scale battery storage in the MLGW system starting in 2024 (MLGW 2024). In early July 2025, the facility received an air pollution permit from SCHD for the operation of natural gas turbines (SCHD 2025).

Located almost 4 miles to the east of Allen CT is the Valero Memphis Refinery, which is an oil refinery that produces gasoline, diesel, and jet fuels. The facility holds an air pollution control permit from SCHD under Title V as a major source of air emissions. With about 300 employees and frequent truck travel, the facility contributes to transportation demands on Riverport Road and Interstate 55.

3.14.2.6. Allen Combustion Turbine Plant Decommission and Deconstruction of Units 1 through 16

In September 2023, TVA completed an environmental review of the demolition and removal of 16 existing units at the ACT. TVA determined that removal of the units had independent utility and was necessary regardless of future actions and/or use of the area.

3.14.2.7. Greywater Facility

xAI, MLGW, and the City of Memphis are partnering to develop a new greywater facility to supply cooling water for the xAI facility and for future industrial and commercial users. The greywater treatment facility would be connected to MLGW's T.E. Maxson WWTP. Construction of the greywater facility has the potential to reduce daily draw from the aquifer up to 10 million gallons per day (Commercial Appeal 2024). As of January 2025, construction and operational schedules are not available.

3.14.2.8. Solar Farm for Greywater Facility

In July 2024, the Economic Development Growth Engine for Memphis and Shelby County board approved plans for a 21-acre solar panel system adjacent to T.E. Maxson WWTP. The solar panel farm will generate approximately 7.5 to 9 MW and supply power to the T.E. Maxson WWTP and is expected to open in 2026 (Commercial Appeal 2024).

3.14.2.9. South Cypress Creek Stream Restoration and Landscape Improvements

In 2019 Shelby County submitted for funds under a HUD National Disaster Resiliency Grant for the South Cypress Creek Watershed and West Junction Neighborhood Redevelopment. Cypress Creek and the West Junction Neighborhood are located approximately 3 miles east of the ACT Plant. This project includes watershed restoration within the South Cypress Creek Basin and Redevelopment in the West Junction Neighborhood. Project restoration and redevelopment efforts include creek restoration, wetland creation and restoration, construction of raingardens, and other stormwater BMPs, creation of park areas, construction of trails, voluntary buyout of properties at risk within the floodplain, identification of properties for infill development and/or side lot acquisition, and creation of open fields (Resilient Shelby 2024).

3.14.2.10. Future Development and Redevelopment of Allen Fossil Plant Site

A new master plan for the Port of Memphis has been completed that identifies short-, middle- and long-range goals for future development on Presidents Island and within the Frank C. Pidgeon Industrial Park. Ninety-five percent of the industrial land on Presidents Island is occupied and supports approximately 200 companies with 4,000 employees, while the Frank C. Pidgeon Industrial Park supports 2,300 acres of under-developed industrial land, including the ALF site. The plan identifies constraints and opportunities for growth and offers recommendations for facility expansions and property redevelopment that include the ALF site. In addition, the plan identifies potential target industries for both Presidents Island and the Frank C. Pidgeon Industrial Park (International Port of Memphis 2018, 2019).

Redevelopment of the land formerly used for the ALF site has become of interest to stakeholders who want to use the land for the expansion of Pidgeon Industrial Park. While the Strategic Plan for the Port of Memphis is conceptual, and no particular development has been presented. The decontamination and demolition of the ALF will make the closure area land available for future economic development projects in the greater Memphis area. Redevelopment is of particular interest at this site due to its location within the Frank C. Pidgeon Industrial Park as well as its access to the Port of Memphis via McKellar Lake. Therefore, it is

reasonably foreseeable that this site would be developed for another use that conforms to the current surrounding land uses and zoning.

3.14.3. Analysis of Cumulative Effects

To address cumulative impacts, the existing affected environment surrounding the proposed project area was considered in conjunction with the environmental impacts presented in Chapter 3. Accordingly, the potential cumulative effects of past, present, and reasonably foreseeable future actions associated with existing facilities or uses are also integrated in the affected environment described for each resource.

Although TVA evaluated a full range of environmental resource issues for inclusion in the cumulative effects analysis, it is noted that the proposed action would occur mostly within lands that have been previously disturbed and are used for industrial purposes. Additionally, the surrounding landscape outside of the project area is already subject to environmental stressors associated with continuing industrial operations. Consequently, as described in prior subsections of this EIS, the existing quality of environmental resources with the potential to be directly or indirectly affected by the project activities is generally low.

This cumulative impact analysis is limited to those resource issues potentially adversely affected by the proposed action. Accordingly, surface water, wildlife, threatened and endangered species, managed natural areas, transportation, noise, solid and hazardous waste, utilities, and public health and safety are not included in this analysis as these resources are either not adversely affected, or the effects are considered to be temporary or negligible. Therefore, impacts from the proposed project would not result in greater cumulative effects to these resources, in combination with the past, present, and reasonably foreseeable future actions described above.

Analysis of potential cumulative effects for air quality, GHG emissions, groundwater, and socioeconomics is provided below.

3.14.3.1. Air Quality

The GAI for air quality is defined as Shelby County as this is the location of the ACT Plant and proposed action. It is expected that emissions would continue from local vehicles in Shelby County, and from air emissions associated with other present and reasonably foreseeable future actions in Shelby County, such as the demolition and deconstruction of the ACT Plant CT Units 1 through 16, continued operation of units 19 and 20, construction of the greywater facility, the solar farm construction, South Cypress and West Junction project, and redevelopment of the ALF. The construction of the aero CTs together with construction of the reasonably foreseeable future actions identified above would result in a potential temporary increase in local emissions and fugitive dust. However, construction periods are anticipated to be temporary, and emissions are not anticipated to appreciably change levels of criteria pollutants. Further, construction-related emissions and fugitive dust can be mitigated through the use of BMPs. Construction of the proposed project is not expected to cause or contribute to exceedances, if any, of applicable ambient air quality standards in Shelby County.

Operation of the Proposed Action would result in increases in local emissions; however, they would not exceed permit limits and their impact on air quality would be below the significant impact levels and thus would not cause or contribute to any NAAQS violation. Existing operations, including operation of the ACC Plant, are accounted for in the affected environment discussion of Air Quality (Section 3.1.1). As such, the cumulative impact of

continued operations of the ACC are considered baseline conditions reflecting the present environment. In addition to the Proposed Action, the operation of past, present, and reasonably foreseeable future actions listed in Table 3-14, including the Valero Oil Refinery and the xAI facility, which contains temporary diesel fuel generators and proposed natural gas turbines, have the potential to result in increases in emissions within Shelby County. However, air quality in Shelby County is managed by the Shelby County Air Pollution Control Branch, which is also responsible for permitting, performing facility inspections and air pollution testing, and enforcement (SCHD 2024). As discussed in Subsection 3.1.1, Air Quality, the impact of Alternative B on air quality would result in increases in local emissions; however, they would not exceed permit limits and their impact on air quality would be below the significant impact levels and thus would not cause or contribute to any NAAQS violation. Accordingly, emissions from Alternative B do not contribute meaningfully to any cumulative impacts of the present actions and reasonably foreseeable future actions.

3.14.3.2. Greenhouse Gases

As described in Section 3.2, Climate Change and Greenhouse Gas, overall concerns about GHG emissions are driven by associated worldwide increases in GHG concentrations within the atmosphere, associated increases in global temperature, and potential changes in a range of global weather patterns. Therefore, the GAI for GHG emissions and associated climate change effects is the globe. Given that climate change is the result of the increased global accumulation of GHGs climate effects analysis is inherently cumulative in nature.

GHG emissions associated with the construction and operation of aero CTs at the ACT Plant are identified in Section 3.2 Climate Change and Greenhouse Gas. While the past, present, and reasonably foreseeable future actions presented in Table 3-14 are expected to produce GHG emissions, the impacts of GHGs are experienced on a global scale and are typically not considered to result in regional impacts. As such, cumulative impacts to GHG emissions would be primarily driven by global changes in GHG emission rates within a global geography, rather than at an individual project level. TVA has quantified the potential GHG emissions of its proposal and provided a SC-GHG analysis to provide important context. The analysis in Section 3.2 represents TVA's analysis and disclosure of cumulative GHG effects.

The 2019 IRP programmatically evaluated future decisions related to the IRP and determined that the implementation of the target portfolio adopted by TVA through the 2019 IRP would result in an overall reduction in annual GHG emissions over time. The IRP also noted that the reduction in CO₂ emissions would have small but beneficial impacts on the potential for associated climate change. The installation of the new aero CTs is part of the implementation of the 2019 IRP and has the potential to enable renewable energy generation within the TVA power system as identified in the IRP. As noted in Section 3.2, during operation of the proposed aero CTs GHG emissions at the maximum capacity factor account for 0.82 percent of GHG emissions of TVA's overall system. The relative contributions at the predicted capacity factor are even less (0.22 percent). Relative to global GHG levels and potential effects on climate change, these contributions are negligible. As such, the cumulative impacts from Alternative B on climate change and GHG emissions would be minor.

3.14.3.3. Groundwater

The GAI for groundwater is the Memphis Sands aquifer, as it is the most productive aquifer in the region and underlies the ACT Plant. Construction activities associated with the proposed aero CTs include shallow excavation to a depth of 5 feet and pile-driving to a depth of 75 feet. These activities are expected to be negligible due to lack of groundwater displacement, and

adherence to all state and federal requirements related to groundwater protection. In the long term, all potential environmental contamination sources would be monitored in accordance with federal and state laws and regulations and would institute corrective actions if needed.

Construction activities associated with most other reasonably foreseeable future actions in Table 3-14 have the potential to release constituents that may impact groundwater. However, these activities would be conducted in accordance with any applicable environmental and safety regulations, minimizing the potential for a release of contaminants.

Notably, the proposed Greywater Facility, could reduce groundwater withdrawals by 10 million gallons per day by diverting and processing 10 million gallons of greywater per day for industrial uses. Development of this facility has potential to provide an alternate source of industrial water for users in the vicinity of the project area and reduce overall demand on the Memphis Sands aquifer. Therefore, the cumulative effects of the ACT Plant in combination with all other actions identified in Table 3-14 would be minor would not result in incrementally greater cumulative effects to groundwater quality or quantity and may result in a net benefit to groundwater by reducing withdrawals.

3.14.3.4. Socioeconomics

As noted in Section 3.11, most of the census block groups that comprise the socioeconomics study area of the TVA Allen Reservation are considered low-income and/or minority communities. Given the proximity of these communities to the project site, there is a potential that these communities would be indirectly impacted due to an increase in noise, exposure to fugitive dust, and exhaust emissions from construction-related traffic (commuting of construction workers, delivery of materials and equipment, and transport of borrow material). Some of these communities are likely to be along routes used for the transport of wastes and debris associated with the deconstruction and demolition of ALF, transport of CCR or borrow material associated with the ALF Impoundment Closure, or other planned construction projects within the study area. Because these short-term actions are potentially concurrent, potential cumulative effects may be expected to occur on a local basis, particularly in communities located along the routes between ALF and the landfill and borrow areas. Most of these roads are suitable for the truck traffic from ALF; however, the portions of the route nearer to residences could experience more impacts. Therefore, the cumulative effects of the present and reasonably foreseeable actions identified in Table 3-14 may result in moderate to large but short-term impacts in communities where a large number of truck trips are used on a daily basis. This may be particularly evident on low volume residential roadways if these activities occur concurrently with other construction activities in the geographic area. However, based on the intermittent nature of borrow transportation and the relatively low volume (800 truckloads over a 15-month period) of trucks associated with construction of the ACT Plant, the effects of the proposed action on traffic-related impacts to these communities are expected to be minor and short term.

TVA has conducted public outreach designed to keep the public informed and encourage public input regarding proposed activities at Allen. TVA will continue to reach out to the public to understand and address neighborhood concerns throughout implementation of proposed activities.

Additionally, operation of the aero CTs, in combination with operation of reasonably foreseeable future actions in Table 3-14, such as future development in the Pidgeon Industrial Park, have the potential to result in increases in air emissions within Shelby County; however, as described in Subsection 3.14.3.1, Air Quality, it is anticipated that these actions would be conducted in compliance with applicable regulations and permits. One such set of regulations includes

NAAQS primary standards, which have been developed to protect human health with an adequate margin of safety for sensitive subgroups of the population, including children, older adults, people with heart or lung conditions, communities of color, and low economic status populations. Thus, the cumulative impacts on air quality from ACT and other emission sources within Shelby County on communities within the study area would be minor.

During construction activities short-term, temporary, localized GHG emissions are anticipated to occur. However, as noted in Section 3.2, these emissions are similar to other typical construction activities and are not anticipated to adversely impact communities within the study area. During operation of the proposed aero CTs GHG emissions at the maximum capacity factor account for 0.82 percent of GHG emissions of TVA's overall system. The relative contributions at the predicted capacity factor are even less (0.22 percent). As GHG emissions incrementally contribute to global CO₂e levels, the contributory effects on impacts related to climate change on communities within the study area, including vulnerable areas, is considered to be negligible.

3.15. Unavoidable Adverse Environmental Impacts

Unavoidable adverse impacts are the effects of the proposed action on natural and human resources that would remain after mitigation measures or BMPs have been applied. Mitigation measures and BMPs are typically implemented to reduce a potential impact to a level below significance. Impacts associated with the construction and operation of the proposed action have the potential to cause unavoidable adverse effects to natural and human environmental resources. TVA has reduced the potential for adverse effects during the planning process. In addition, TVA would implement mitigation measures (see Section 2.4) to further reduce potential adverse effects to certain environmental resources.

Temporary impacts to surface water quality from runoff during construction could impact nearby receiving water bodies. The construction of the aero CTs also has the potential for minor impacts to groundwater flow patterns and groundwater quality. Impacts to water quality would be reduced with application of appropriate BMPs.

The ACT Plant currently operates under a Title V operating permit. TVA has begun the process of complying with PSD requirements with the submission of Class I and Class II modeling protocols and a PSD permit application to Shelby County in December 2024. Because the ACT would operate within the parameters of the PSD/Title V permit requirements, the overall unavoidable adverse impacts to air quality would be moderate but would not result in an exceedance of applicable permit emissions limits.

Unavoidable localized increases in air and noise emissions could also occur during construction activities. Activities associated with the use of construction equipment may result in varying amounts of fugitive dust, air emissions, and noise that could impact nearby sensitive receptors. Emissions from construction activities and equipment are minimized through implementation of BMPs including proper maintenance of construction equipment and vehicles.

Minority and/or low income communities would be exposed to environmental impacts associated with the proposed action due to the prevalence of these communities in the study area. However, construction-related impacts would be minor and short term. Long-term adverse impacts from air emissions would be minimized through adherence to NAAQS standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population with higher frequency of preexisting health conditions.

In the context of the availability of regional resources that are similar to those unavoidably adversely affected by the proposed project, coupled with the application of appropriate BMPs and adherence to permit requirements, unavoidable adverse effects would be moderate as they are noticeable but not destabilizing.

3.16. Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. This EIS focuses on the analyses of environmental impacts associated with the construction and operation of the proposed action and associated support systems. These activities are considered short-term uses of the environment for the purposes of this section. In contrast, the long-term productivity is considered to be that which occurs beyond the conclusion of decommissioning the ACT Plant.

Construction of the aero CTs would occur on previously disturbed areas, resulting in minor, temporary, and localized effects to existing air quality during construction. These impacts would be mitigated through implementation of BMPs to reduce emissions from construction phase equipment and to minimize emissions of fugitive dust. Operational impacts to air quality would be noticeable but not destabilizing and therefore, moderate. These impacts would be minimized by implementing appropriate emission controls included within the aero CT plant infrastructure to allow the plant to operate under Title V permit conditions. As such, regional air quality and attainment status within Shelby County would be unchanged by the proposed project. Furthermore, operational impacts to climate change would not be noticeable on a regional, national, or global scale. Therefore, there would be no effect on the enhancement of long-term productivity related to air quality or climate change following decommissioning.

While the acreage disturbed during construction of the aero CTs is larger than that required for the actual permanent structures and associated features once the site is operational, due to the need for vehicle and equipment parking, materials storage, laydown, and other temporary use areas, most of the disturbance areas are located on previously developed lands associated with the ALF, ACT Plant, and ACC Plant. Noise from construction activities may displace some wildlife. Once the new facilities are completed, the areas not needed for operations would be returned to preexisting conditions.

Construction of the six new aero CT units at the ACT Plant would reduce the long-term productivity of the land for other purposes while these facilities are in operation. However, after decommissioning, the lands could be reused and made available for other uses.

3.17. Irreversible and Irrecoverable Commitments of Resources

The term “irreversible and irretrievable commitments of resources” describes environmental resources that are potentially changed by the construction or operation of the proposed project that could not be restored to their prior state by practical means at some later time. Irreversible commitments occur to nonrenewable resources such as minerals or cultural resources and to those resources that are renewable only over long timespans, such as soil productivity. A resource commitment is considered irretrievable when the use or consumption is neither renewable nor recoverable for use until reclamation is successfully applied. Irretrievable commitments apply to the loss of production, harvest, or other natural resources and are not necessarily irreversible.

The land used for the proposed aero CT plant is not irreversibly committed because once the plant ceases operations and the facility is decommissioned, the land supporting the facility could be returned to other industrial or nonindustrial uses.

The need for borrow material to support the project could be both an irreversible and irretrievable commitment of resources. Although borrow material would be obtained from a previously permitted borrow site, the loss of soil (which requires a very long time to generate) would constitute an irreversible and irretrievable resource commitment.

The resources required by construction activities, including fossil fuels and construction materials, would be irretrievably lost. Nonrenewable fossil fuels would be irretrievably lost through the use of gasoline and diesel-powered equipment during construction. In addition, the materials used for the proposed site's construction would be committed for the life of the facilities. Additionally, the operation of the aero CTs would result in the irretrievable loss of natural gas, which would be used to fuel the aero CTs. However, these fossil fuels and building materials are not in short supply and their use would not have an adverse effect upon continued availability of these resources.

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CHAPTER 4 – LITERATURE CITED

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**APPENDIX A – PUBLIC AND AGENCY COMMENTS ON THE DRAFT
EIS AND TVA’S RESPONSES**

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The Draft Environmental Impact Statement (DEIS) was posted on TVA's website (<https://www.tva.com/allenct>) on March 10, 2025. EPA's Notice of Availability of the DEIS was published in the *Federal Register* on March 14, 2025, initiating a 45-day public comment period that ended on April 28, 2025. In addition, TVA sent notification of the NOI via email to local and state government entities and federal agencies, as well as published notices in the Commercial Appeal, TriState Defender, Daily Memphian.

TVA held an open house public meeting on the DEIS on April 10, 2025, at the Mount Pisgah Baptist Church Family Life Center in Memphis, TN. Over 110 individuals attended the meeting. Prior to this meeting, TVA sent postcards by mail to every listed resident and business within 5 miles of the project area (about 9,500 postcards) and used social media to advertise the open house event. TVA also distributed pamphlets to residents in the Boxtown, Mitchell, and Walker communities through canvassing. Additionally, TVA hosted a public webinar on April 17, 2025. TVA accepted comments submitted through mail, email, via comment form on the public website, and in person at the public and virtual meetings.

TVA received comments from the Boxtown Neighborhood Association, Center for Biological Diversity (CBD), Clean Energy for Memphis, U.S. Department of the Interior (DOI), Memphis Community Against Pollution (MCAP), Southern Alliance for Clean Energy (SACE), Southern Environmental Law Center (SELC), Sierra Club, State Representative Justin Pearson (Memphis, House District 86), Tennessee Department of Environmental and Conservation (TDEC), the U.S. Environmental Protection Agency, and individual members of the public for a total of 210 comment submittals. Thirty-three individuals submitted a form letter entitled "Clean Energy for Memphis, Not More Pollution." Of the comments received, the most frequently mentioned topics related to project alternatives, air quality, neighboring facilities, and health and safety.

All comments received from the public, agencies, and other interested parties were carefully reviewed. Appendix A includes TVA's responses to those comments. Summarized comments and TVA's responses are included in Table A-1. Original comment submissions will be published on TVA's website and retained as part of the project's administrative Record. Comments from government agencies are included in Appendix B.

Table A-1. PUBLIC AND AGENCY COMMENTS ON THE DRAFT EIS AND TVA’S RESPONSES

Comment Number	Commenter	Topic	Comment	TVA Response
1	Tina Sizer	Air Quality	<p>Have these results [emissions] been investigated by an independent consulting agency? Is the FDA currently ensuring regulations are being followed for this plant? How and when will we be able to see the results of this finding? How often does the FDA check for compliance at this particular plant?</p>	<p>As explained in detail in Section 3.1.2.2 of the EIS, the proposed action would be subject to regulatory requirements to address air quality.</p> <p>Shelby County Health Department's Air Planning Branch is responsible for the adoption and establishment of local air pollution rules and regulations, the development of emissions inventories of all sources of air pollution in the county, and development of State Implementation Plans (SIPs) under the federal Clean Air Act. Shelby County Health Department's Air Pollution Control Branch is tasked with protecting air resources of Shelby County by administering a construction and operating permits program, performing facility inspections, air pollution testing and collection and dissemination of that information, and enforcing violations of the air regulations. All applicants are required to submit a permit application to Shelby County prior to beginning construction of a regulated air contaminant source. Permit applications and findings are available on the Shelby County Health Department's website and Shelby County Air Pollution Control Board hearings are open to the public.</p>
2	Southern Environmental Law Center	Air Quality	<p>TVA must take a hard look at the Allen CT Gas Plant's air pollution.</p> <p>TVA unreasonably assumes that the</p>	<p>As required by the Clean Air Act (40 CFR part 50), the NAAQS primary standards are developed to protect human health with an adequate margin</p>

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>Allen CT Gas Plant’s operations will have no impact on air quality or the area’s attainment status.</p>	<p>of safety (40 CFR 50.2(b)) for sensitive subgroups of the population. These sensitive subgroups include children, older adults, people with heart or lung conditions, communities of color, and low economic status populations. NAAQS primary standards are based on reference concentrations that represent continuous inhalation that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure (40 CFR part 50 Appendix C) for these sensitive subgroups. Reference concentrations also include a 10-fold safety factor to address uncertainty. The NAAQS standards specifically protect the sensitive subgroups of the surrounding communities during lifetime exposures.</p> <p>TVA has taken a hard look at the proposed project’s air emissions and their potential impact on air quality, as required under the PSD permitting program (among others). Section 3.1 of the EIS has been revised for clarity. TVA has prepared a permit application for Shelby County Health Department. As discussed in section 3.1, detailed modeling and assessments in the permit application demonstrate that the impacts on air quality of the increased emissions from the proposed project are below the significant impact levels and thus would have no significant impact on air quality and would not cause or contribute to any exceedances of the NAAQS or of the applicable increments.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
				<p>PSD Permit does not prevent sources from increasing emissions, but instead it preserves and protects air quality. Additionally, several BACTs are implemented to reduce air emissions including LAER, use of clean fuels and good combustion practices, use of low carbon fuels, and the implementation of energy efficiency measures.</p>
3	Avin Wolfe, Hanna Celaya, Kiara R. Earley, Mianna Anderson	Air Quality	<p>The DEIS fails to provide a sufficiently detailed analysis of the potential health impacts on surrounding communities, particularly as some of the surrounding areas are already overburdened with pollution.</p> <p>The DEIS must rigorously demonstrate that the proposed project will not cause or contribute to a violation of these standards.</p> <p>Particulate Matter (PM2.5): The DEIS should thoroughly analyze the potential for increased PM2.5 emissions. These emissions can penetrate deeply into the lungs and bloodstream, exacerbating respiratory illnesses, particularly in communities with high asthma rates. The DEIS should reference the American Lung Association's State of the Air Report and other relevant data to assess the vulnerability of the local population.</p> <p>Nitrogen Oxides (NOx): The DEIS must analyze the potential for NOx emissions</p>	Please see the response to Comment #2.

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			to contribute to ground-level ozone formation. Ozone is a potent respiratory irritant, especially harmful to children, the elderly, and individuals with pre-existing respiratory conditions. The DEIS should cite EPA's information on NOx and its role in ozone formation.	
4	Amy Benson	Air Quality	Our air quality is already poor, and the aquifer is being polluted.	Please see the responses to Comments #2 and #100.
5	L. Howell	Air Quality	With the addition of Aeroderivative Combustion Turbine in our community, what do you propose to offset the impact of additional toxins in our atmosphere such as industrial or residential filtration systems?	Please see the response to Comment #2.
6	Cynthia Klein	Air Quality	I deeply urge the TVA to NOT add any additional turbines to the Allen plant as there is already too much air pollution in our community and their need to be lower pollution options utilized that protect our air quality.	Please see the response to Comment #2.
7	Corey Miller	Air Quality	Burning methane for power is creating smog and Shelby County is already exceeding national limits on smog from the American Lung Association.	Please see the response to Comment #2.
8	Mary Ogle	Air Quality	I and other Memphis residents will be harmed by the adverse effects on air quality. The pollutants produced by the turbines will be carried by southerly and southwesterly winds across a large area of Memphis, including the area where I live	Please see the response to Comment #2.

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9	Sheryl Smith	Air Quality	I live in Westwood and after the rain there is a smell that smells like a slaughter pigs smell so bad the a person say that he wanted to move, I want to breath clean air, it's for my health,	Please see the response to Comment #2.
10	Judith Haas	Air Quality	This will add more pollution to an already over polluted area where people are suffering from the effects. There have been no satisfactory answers to how this pollution will be mitigated.	Please see the response to Comment #2.
11	Sherry Compton	Air Quality	The lives of many of Shelby Countians are at stake in a democracy, we all have the right to fresh air and clean water.	Please see the response to Comment #2.
12	Cynthia Lomack	Air Quality	Please consider the people and how it will impact the air that we breathe before more turbines are installed.	Please see the response to Comment #2.
13	Teresa	Air Quality	I am very concerned about the Air Quality in my South Memphis Neighborhood which is very near the site of the XAI. I worry about the Air quality. Now I have to worry about this new concern on top off all the other ones. Common people need to be considered in these blanket decisions that are made by our so-called local officials!	Please see the response to Comment #2. TVA addresses the cumulative impacts on air quality in section 3.14.3.1 of the EIS.
14	Albert Kirk	Air Quality	I am concerned about air pollution with the additional turbines. Please respect the concerns of the neighborhoods that surround this project. We have got to stop mortgaging our future for immediate profits!	Please see the response to Comment #2.
15	Teneka Grayer	Air Quality	No new air pollution in 38109. We deserve clean air to breathe as other communities.	Please see the response to Comment #2.

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16	Dr. Kimberly Ownes-Pearson	Air Quality	There is nothing NATURAL about Methane Gas and we are being killed with these pollutants 24/7...NO MORE!	Please see the response to Comment #2.
17	Southern Environmental Law Center	Community Impacts	<p>TVA failed to analyze the potential for the Allen CT Gas Plant’s air pollution to worsen the health of surrounding populations.</p> <p>TVA fails to accurately identify health costs associated with continued fossil fuel reliance in Memphis. These additional costs demonstrate significant, long-term harm to local communities. TVA must incorporate health costs into their assessment of the socioeconomic impact of this project.</p>	Please see the response to Comment #2.
18	Barbara Elliott	Opposes Project	I oppose granting this permit due to violations of the Clean Air Act and environmental justice, as well as the fact that this community has suffered from the effects of industrial pollution for many decades.	Please see the response to Comment #2.
19	Dr. Kimberly Ownes-Pearson	Opposes Project	Our community has been polluted by TVA for years and we DO NOT want any more “natural gas” or “combustion powered machines/engines” or anything else that is not SOLAR POWERED or WIND TURBINES! They are now removed (previous 16 CT units) so keep it that way! The 16 are gone and we want you all to stay gone!	Please see the response to Comment #2.
20	Public Meeting Attendee	Health and Safety	What carcinogens are emitted when you CT are operated? What instruments are applied to clean the air?	Please see the response to Comment #2.

Comment Number	Commenter	Topic	Comment	TVA Response
21	Joe Calhoun	Air Quality	The concern is the number of turbines that they are planning to use and the amount of regular inspections/ testing the air quality within a 5-mile radius of the plant.	Shelby County Health Department conducts various ambient air monitoring within Shelby County. Air emissions are measured for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, total reactive oxides of nitrogen, speciated volatile organic compounds, and carbonyls; this data is stored and reported to the EPA and other agencies.
22	Avin Wolfe, Hanna Celaya, Kiara R. Earley, Mianna Anderson	Air Quality	<p>Recommendations: Implement continuous, real-time air quality monitoring at multiple locations surrounding the ACT Plant. This monitoring should include PM2.5, NOx, ozone, and other relevant pollutants.</p> <p>Make all monitoring data publicly available in an accessible and timely manner (e.g., a website with real-time data displays).</p> <p>Establish clear thresholds for exceeding NAAQS standards. If these thresholds are exceeded, the DEIS should outline specific procedures for immediately halting project operations and implementing corrective actions to bring emissions back into compliance.</p>	<p>Please see the response to Comment #21.</p> <p>Section 3.1 outlines potential impacts to air quality, and detailed analysis and regulatory requirements. Consistent with permit requirements, TVA would monitor its emission to meet the permit conditions. In the event an exceedance is identified, TVA would work with regulators and implement corrective actions to address the exceedance.</p>
23	Perry Pidgeon Hooks	Air Quality	Am very concerned about the air quality.	Comment noted. Please see Section 3.1 of the EIS for information about the potential impacts to air quality.
24	Southern Environmental Law Center	Air Quality	TVA has not analyzed the baseline of air pollution in southwest Memphis. This analysis is critical, as TVA has recognized that people nearby already suffer disproportionate burdens.	Existing air conditions are addressed in the affected environment of the EIS, as this is the baseline condition of the determination of environmental consequences. The EIS discusses

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				potential impacts to Air Quality (Section 3.1) and Demographics (Section 3.11).
25	Public Meeting Attendee	Air Quality	There is a lot of traffic, including large trucks, in the area that are also polluting the air. Will those be considered by TVA?	Existing traffic conditions are addressed in the affected environment of the EIS, as this is the baseline condition of the determination of environmental consequences. The EIS discusses potential impacts on transportation (Section 3.8) and Air Quality (3.1). Construction and operation traffic as a result of the proposed project is minor in context of the transportation network. Additionally, construction equipment and vehicles would be properly maintained and employ the use of diesel emission controls and cleaner fuel, which also would reduce emissions.
26	Tennessee Department of Environment and Conservation	Air Quality	TDEC recommends that the final EIS state whether the Allen site is a major source of hazardous air pollutants, and that TVA address the potential applicability of 40 CFR 63 Subpart YYYY.	Section 3.1 of the EIS has been revised to include additional information regarding HAPs and the applicability of 40 CFR 63 Subpart YYYY (National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines).
27	Southern Environmental Law Center	Air Quality	Ammonia is not directly regulated as a PSD pollutant or as a HAP, but it is still harmful. As such, TVA was not required to consider ammonia emissions in its PSD air modeling, but TVA still needs to quantify ammonia emissions in the NEPA EIS and assess environmental and health risks associated with these emissions.	Section 3.1 of the EIS has been updated to incorporate information about ammonia. Estimates for ammonia and HAPs are included.

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28	Southern Alliance for Clean Energy	Air Quality	<p>The proposed NOx emissions alone are enough to raise alarm, but the most insidious pollutant that will be added to the surrounding community is the small particulate matter called PM2.5. The DEIS reveals that this pollution will be significant whether the peakers are fired a little or a lot.</p> <p>The emissions control systems that TVA states that it will install do not control all emissions, even at the lower capacity factor. It is during these almost daily events (350 startup/shutdown events per year) that control of NOx, PM2.5 and other pollutants is impossible because the control systems are not designed to capture emissions under these conditions.</p>	<p>The proposed aeroderivative units at ACT have short start up times. Emissions from startups and shutdowns have been included in the PSD air dispersion modeling conducted for the NOx and PM2.5 short-term and annual standards.</p>
29	Public Meeting Attendee	Air Quality	<p>We would like to see a "bullseye" chart showing how the pollution within a certain radius (e.g., 5 to 15 miles).</p>	<p>The analysis in Section 3.1 of the EIS is sufficient to support TVA's conclusions regarding the potential air emissions associated with its proposal. TVA did not include a graphic in the EIS because modeled pollutant concentrations from the proposed action would fall below significant levels, as discussed in Section 3.1 of the EIS.</p>
30	Tina Sizer	Air Quality	<p>What kind of emissions are these 6 aeroderivative combustion turbines releasing? What long term effect may these emissions have on people in the community</p>	<p>The EIS addresses potential impacts to Air Quality (Section 3.1) and Tables 3-1 and 3-2 quantify the PSD pollutant emissions.</p> <p>Please see the response to Comment #136.</p>

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31	Southern Environmental Law Center	Air Quality	TVA must consider how the project’s ozone precursor emissions—NOx and VOCs—would likely worsen the already unhealthy ozone levels and further impede Shelby County’s efforts to bring itself back into attainment. TVA’s failure to even acknowledge the ongoing ozone exceedances renders the Draft EIS deficient.	The EIS discusses potential air quality impacts including nitrous oxides (Section 3.1). TVA has revised Section 3.1 of the EIS to provide more information regarding Shelby County’s attainment status. Additional information regarding TVA’s PSD permit application is also included which covers secondary pollutants including VOCs.
32	Jeff McAdory	Air Quality	Burning methane for power worsens ozone pollution and releases dangerous air toxics like formaldehyde. Shelby County is already exceeding national limits on smog. Southwest Memphis deserves to breathe clean air.	The EIS has been revised to include additional information regarding formaldehyde emissions (see Section 3.1.2). Those emissions are significantly lower than federal thresholds for major sources of HAPS.
33	Sarah Gladney, Boxtown Neighborhood Association	Air Quality	The Methane Gas Turbines are emitting Formaldehyde and gas into the air. We wake up with horrible smells in our homes and in the air we breathe. We are the People for the People, and we deserve to breathe clean air like other communities.	Please see the response to Comments #2 and #32.
34	Southern Environmental Law Center	Air Quality	Although gas turbines emit significant amounts of HAPs, the Draft EIS is all but silent on these emissions. TVA states only that the facility will not be a major source of HAPs, which, even if true, does not mean environmental impacts from the facility’s HAP emissions will not be significant.	The EIS has been revised to include additional information regarding HAPs (see Section 3.1.2).

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35	Elizabeth Savell	Air Quality	<p>I want them to test the air and the soil and the water around these turbines and be transparent with the people about what is entering our systems and how they plan to regulate this and make them comply with the clean air act.</p>	<p>The operations of the new units would be subject to permit requirements established in the Clean Air Act.</p> <p>As discussed in Section 3.3.2.2 of the EIS, TVA's proposal would result in negligible alteration of groundwater hydrology from pile driving and would minimize potential effects of accidental spills or releases that may affect groundwater. Impacts to groundwater would be minor.</p>
36	Southern Environmental Law Center	Air Quality	<p>TVA's EIS does not acknowledge that Shelby County has been failing to meet EPA's ozone NAAQS for the past four years.</p> <p>In addition, the other three monitoring sites within the Memphis area recorded 2021–2023 design values that are equal to or just below 70 ppb.</p> <p>Although these design values are not in violation of the 2015 Ozone NAAQS, they are well above the range of 55–60 ppb that EPA's independent scientific advisors recommended adopting as a revised standard to protect public health. The same data shows that four out of five sites in the Memphis Metro area are projected to measure non-attainment.</p> <p>The Shelby County Health Department has stated, "Shelby County is currently in violation of the 8-hour ozone standard and is awaiting designation as nonattainment." Memphis was again</p>	<p>TVA has revised Section 3.1 of the EIS to provide more information.</p>

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			<p>rated an F for ozone pollution by the American Lung Association.</p>	
37	Southern Environmental Law Center	Air Quality	<p>TVA’s EIS fails to even list and quantify the HAPs emitted by these turbines, let alone assess their potential health risks. TVA should have conducted a risk assessment along with ambient air dispersion modeling in order to assess toxic and carcinogenic risks to the surrounding areas. Moreover, given the industrial nature of the area, with many other nearby HAP emitters, TVA’s risk assessment and modeling should include a cumulative impact assessment.</p> <p>In short, TVA should accurately list the facility’s HAP emissions, conduct air dispersion modeling based on these emission rates that quantifies expected concentrations of HAPs, along with background concentrations from other emitters, and compare this total concentration to EPA’s health-based air toxics standards to assess whether TVA’s emissions—alone or in conjunction with other emitters—represent an unacceptable risk of toxics and/or carcinogenic impacts.</p>	<p>TVA has updated Section 3.1.2.2.3 of the EIS with additional information about HAP emissions associated with the proposed action. A complete, regulator-approved air dispersion modeling analysis and HAP analysis is presented in the PSD permit application.</p>
38	Southern Environmental Law Center	Air Quality	<p>TVA should have conducted ambient air dispersion modeling to analyze how TVA’s increased emissions would further degrade existing air quality. And while TVA’s PSD permit application does include limited air modeling, the application did not include ozone</p>	<p>Results of TVA’s PSD Permit application modeling and result have been further incorporated into the EIS in Section 3.1. TVA utilized the SILs consistently with EPA guidance and SCHD practice. EPA’s guidance provides a through technical and legal basis for the SILs.</p>

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			<p>impacts modeling, relying instead on a legally dubious loophole known as “significant impact levels,” or SILs. Even if SILs were legal for PSD modeling purposes—which we do not concede—the SILs do not alter TVA’s NEPA obligation to analyze the reasonably foreseeable air pollution impacts of the proposed gas plant.</p> <p>The only assessment of ambient air quality impacts that TVA has conducted was the PSD modeling, which is not incorporated into the EIS or discussed therein. This PSD modeling—even if it could be considered part of the EIS record—was not adequate to assess the full impacts from TVA’s new turbines. In particular, TVA utilized SILs to avoid assessing cumulative air quality impacts from the increased emissions and other nearby sources. As discussed in the previous section, this was especially deficient in the case of ozone, but the deficiency also applies to other pollutants like fine particulate matter.</p>	<p>Moreover, the use of the SILs has been upheld by the courts. See <i>Sierra Club v. La. Dep’t of Env’t. Quality</i>, 100 F.4th 555, 565-68 (5th Cir. 2024). Additionally, TVA followed TDEC’s published guidance on the use of EPA’s Modeled Emission Rates for Precursors (MERPs) Tier 1 demonstration tool for ozone.</p>
39	Sarah Hadskey	Air Quality	TVA did not come with the basic facts about pollutants. Please up your game.	Comment noted.
40	Southern Environmental Law Center	Climate Change	<p>TVA has failed to address Memphis-area climate impacts.</p> <p>The Draft EIS addresses climate impacts generally, but TVA fails to analyze how those impacts will affect local communities in particular.</p>	<p>The EIS addresses impacts to Climate Change (Section 3.2), Socioeconomics (Section 3.11), and Cumulative Impacts (Section 3.14.3). As noted in Section 3.14.3 GHG emissions, the impacts of GHGs are experienced on a global scale and do not result in identifiable regional impacts.</p>

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41	Southern Environmental Law Center	Climate Change	<p>TVA continues to ignore its role in accelerating climate change.</p> <p>TVA’s proposal to build new fossil fuel plants conflicts with TVA’s own climate policy, and TVA fails to disclose the full climate impacts of building new methane gas plants.</p> <p>TVA must analyze the greenhouse gas emissions of new gas plants in the context of its own climate goals to achieve net-zero carbon emissions by 2050, as well as the climate goals reflected in the Memphis 3.0 Climate Action Plan.</p>	<p>The potential impacts to climate change, including the social cost of greenhouse gases, are discussed in Section 3.2 of the EIS. TVA’s 2019 IRP demonstrates that TVA’s system-wide approach to transmission and generation has already brought about a decrease in GHG emission intensity and will continue to bring about an overall reduction in GHG emissions while maintaining grid reliability. One component of this plan is the construction of high efficiency “peaking capacity” such as the proposed project. The addition of these assets enables the integration of renewable generation while maintaining grid stability and putting downward pressure on the demand for other, more carbon intensive, peaking facilities. By providing flexible, dispatchable generation the proposed project would be expected to help facilitate a long-term reduction in GHG emissions that would enable the integration of renewable generation into the system, in alignment with the 2019 IRP.</p>
42	Center for Biological Diversity	Climate Change	<p>As a result of TVA’s delinquent transition away from fossil fuels, communities throughout the Valley are facing lasting and devastating consequences, including record-breaking heat waves, tornadoes, floods, winter storms, and hurricanes. These catastrophic fossil fuel-driven disasters put lives, and even TVA’s grid, at risk.</p> <p>Given the climate emergency, and the</p>	<p>TVA’s core statutory objectives under the TVA Act are to provide the people of the Tennessee Valley with low-cost and reliable electricity, environmental stewardship, and a prosperous economy (16 United States Code [U.S.C.] §§ 831 et seq.). Consistent with, and as mandated by the Energy Policy Act of 1992, TVA engages in a long-range, “least-cost planning” process that “evaluates the full range of</p>

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			<p>present and threatened impacts of climate change on TVA customers, the agency’s plan to encourage further fossil gas generation at the Allen Plant — and refusal to consider distributed renewable energy alternatives, like rooftop and community solar with battery storage, energy efficiency, and demand response — is in flat violation of the TVA Act and will leave communities with higher energy costs, worse air and water quality, and more vulnerable to intensifying storms.</p>	<p>existing and incremental resources (including new power supplies, energy conservation and efficiency, and renewable energy resources) in order to provide adequate and reliable service to electric customers of [TVA] at the lowest system cost” (16 U.S.C. § 831m1(b)(1)). The necessity for CT power generation is addressed in these long-range plans, as well as identified by TVA in its Purpose and Need statement in the EIS.</p>
43	Adriana Gaines	Community Impacts	<p>How will TVA accommodate rising prices that will be a product of these new turbines</p>	<p>Please see the response to Comment #42</p>
44	Center for Biological Diversity	Community Impacts	<p>TVA’s proposed Allen Plant project, and every fossil gas plant that follows, will leave TVA customers to foot the bill for an unnecessary gas buildout when the agency could be exploring what it could do today to maximize renewable energy.</p>	<p>Please see the response to Comment #42</p>
45	Center for Biological Diversity	Community Impacts	<p>TVA’s planned energy investment, as exemplified by the full swath of proposed gas projects including Cumberland, Cheatham County, Kingston, New Caledonia, Lagoon Creek, and now at the Allen Plant, contradicts the agency’s mission to improve the quality of life of its customers.</p> <p>Rather, as TVA invests billions of dollars in new fossil gas and slow-walks the transition away from existing fossil fuel resources to resilient renewable energy, the agency is fueling the climate crisis</p>	<p>Please see the responses to Comment #41 and #42</p>

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			<p>and energy injustice which threaten people’s quality of life.</p>	
46	Center for Biological Diversity	Decarbonization Goal	<p>And, although TVA is currently working on the 2025 IRP, under the most recent 2019 IRP the agency will not achieve full decarbonization until sometime after 2080. Moreover, with increased reliance on gas, TVA currently forecasts that it will generate more than 34 million tons of CO2 each year in 2038.</p> <p>To comply with the TVA Act and achieve the urgently needed reductions in emissions we need, TVA must instead choose fossil-free alternatives to address any legitimate new energy demand.</p>	Please see the responses to Comments #42 and #197.
47	Southern Environmental Law Center	Project Alternatives	<p>The Draft EIS is remarkably silent on a fundamental question: How much would the gas plant cost? In evaluating alternatives, agencies must consider a “reasonable range of alternatives . . . that are technically and economically feasible.</p> <p>Yet in the Draft EIS, TVA has ignored its statutory obligation to “provide adequate and reliable service to electric customers of the Tennessee Valley Authority at the lowest system cost.” As discussed above, neither the 2019 IRP nor TVA’s CT Modernization Study provide a reasonable basis for TVA to find that the Allen CT Gas Plant meets this statutory obligation.</p>	<p>Please see the response to Comment #42. Agencies exercise substantial discretion in identifying feasible alternatives. <i>Seven County Infrastructure Coalition v. Eagle County, CO.</i>, 605 U.S. ---, Slip Op. at 10 (2025).</p> <p>The addition of Allen CT Gas Plant aligns with the 2019 IRP recommendation to add up to 5,200 MW of CTs by 2028 to accommodate load growth and facilitate the integration of renewables onto the electric grid, thereby advancing TVA’s environmental aspirations.</p> <p>TVA’s planning process, in the IRP and analyses that tier from it, like in this EIS, is grounded in least-cost planning principles, in accordance with Section</p>

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				<p>113 of the Energy Policy Act of 1992. These least-cost principles include balancing the following goals: low cost, risk informed, environmentally responsible, reliable and resilient, diverse, and flexible (TVA 2019a). TVA looks for cost-effective and reliable ways to reduce environmental impacts and regulatory risks and to make progress towards TVA's environmental aspirations. Natural gas plants, like Allen, play an important role in a diverse portfolio that provides affordable, reliable, and increasingly cleaner energy. As load grows, its ability to ramp up and down increases system flexibility and maintains reliability as other clean technologies develop.</p>
48	Adriana Martin	Community Impacts	<p>TVA authority should allow South Memphis Residents of 38109 and 38116 to receive discounted rate and prices to accommodate for the compromised health of residents breathing in the polluted air.</p>	<p>Comment noted. TVA does not directly serve residential customers. TVA's system is comprised of a variety of generating sources across its service territory that collectively serve the people of the Valley.</p> <p>As noted in the EIS, TVA's proposed action would be regulated through a permitting process to adhere to air quality standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including communities with higher frequency of preexisting health conditions.</p>

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49	Joe Calhoun	Community Impacts	And the amount of taxes that will be generated and allocation part of the tax money raised to be reinvested into the neighborhood and a fund set up to help to pay medical expenses of people in the area impacted by the air quality	Comment noted. See response to Comment #48.
50	Wayne Jones	Community Impacts	Do we not have enough brownfields that haven't been cleaned up? Maybe you know where the hidden records of the previous land use before Walker Homes was built and know that it was a chemical dump prior to becoming Dr. J. E. Walker homes. There's too much cancer in Walker Homes. I haven't heard anything about anyone conducting a ratio study of the cancer cases in Walker Homes or Southwest Memphis. You need to produce the land use records from the conception of Walker Homes and development southwest Memphis that seems to be nonexistent. Stop dumping your chemicals in our community	Comment noted. The specific concerns expressed are outside of the scope of this environmental review.
51	Tina Sizer	Community Impacts	How is the TVA contributing directly to this community, since you are using its resources?	In addition to providing power to MLGW to serve the region with electricity, TVA conducts numerous economic development programs throughout the Memphis area. In fiscal year 2024, TVA returned over \$126 million in ratepayer funds to the Memphis community through various programs, contributions, credits, purchases, and economic development initiatives. These funds include over \$23 million in community contributions, projects and incentives.

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52	Cynthia Lomack	Community Impacts	While I understand that the comments should be solution oriented, I'm not clear why the additional turbines are needed. I encourage TVA to consider the environmental impact to nearby neighborhoods.	The EIS addresses the purpose and need of the project in Section 1.3. The EIS also provides a summary and comparison of environmental impacts in Section 2.3.
53	Rise Up America	Community Impacts	The Allen Aeroderivative Combustion Turbine Project appears to benefit corporate interests, potentially enriching those who are already financially secure, while neglecting the voices of the people who have historically called Memphis home. We demand clarity in how these decisions are made, who benefits from them, and why our voices have not been prioritized in this process.	The power that would be generated by the six aeroderivative units would be transmitted to the TVA power system, providing electricity to the benefit of all served by TVA. TVA provides wholesale power to 153 local power companies and directly sells power to 61 industrial and federal customers. TVA's power system serves approximately 10 million people in a seven-state, 80,000-square-mile region.
54	Adriana Gaines	Community Impacts	How will TVA accommodate the Memphis residents who will suffer from heat pollution as the turbines operate?	Operations of the aero CTs would not impact ambient air temperatures.
55	Judith Haas	Community Impacts	The economic benefits for a few will be far outweighed by the damage to Memphis as a whole.	Comment noted.
56	Sarah Hadskey	Community Impacts	I want TVA to LISTEN to the actual community input from the residents that live around the proposed site.	Comment noted. TVA has reviewed and considered comments submitted by the public in preparation of both the draft and final EIS. As noted in other responses to comments, TVA has revised the EIS based on this input.
57	Representative Justin J. Pearson, (TN District 86)	Cumulative Impact Analysis	First, how is it possible that you did not include the Valero Oil Refinery in your assessment of the pollution our community experiences? It's beyond my understanding how such a gross	TVA's EIS considers the reasonably foreseeable effects of its proposal and addresses the extent to which the action would affect the community. All present or on-going actions within Shelby County

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			oversight could be made. In addition, you do not address the impacts of the 35 gas turbines that are in our community with at least 33 being used 24 hours per day.	<p>(including industrial activities) are inherent in the baseline determination of the affected environment and current Shelby County NAAQS designations. Additionally, Shelby County Health Department manages air quality and regulates the aggregate of air emissions within the county.</p> <p>As part of a cumulative effects analysis (Section 3.14), the EIS addresses present and reasonably foreseeable actions near the ACT Project Area. This discussion has been updated to include the Valero Oil Refinery and additional information about the xAI facility.</p>
58	Southern Environmental Law Center	Cumulative Impact Analysis	<p>TVA’s discussion of environmental effects, including cumulative effects, cannot be so general that the agency overlooks the cumulative significance of an action’s effects on the human environment.</p> <p>The Allen CT Gas Plant will contribute to cumulatively significant air pollution impacts in southwest Memphis in combination with TVA’s own past, ongoing, and reasonably foreseeable future activities. When added to the community’s “baseline burden,” including other non-TVA sources of air pollution, there is no question that a new methane gas plant’s emissions will be cumulatively significant.</p> <p>In the Draft EIS, TVA has failed to analyze how the Allen CT Gas Plant will</p>	Please see the response to Comment #57. See also the response to Comment #41, addressing consideration of climate effects in TVA’s IRP. The cumulative impacts of TVA generation additions is addressed in section 3.14.3.2 of the EIS, wherein TVA notes that the 2019 IRP programmatically evaluated future decisions related to the IRP, including additional natural gas generation development, and determined that the implementation of the target portfolio adopted by TVA through the 2019 IRP would result in an overall reduction in annual GHG emissions over time.

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			<p>exacerbate the dangerously polluted air in southwest Memphis, and how its contributions can be avoided through non-gas alternatives or otherwise mitigated.</p> <p>TVA has not analyzed the cumulative climate effects of its methane gas buildout. In its EIS, TVA must disclose and analyze the cumulative impacts of its 6,900 MW gas buildout.</p>	
59	Public Meeting Attendee	Cumulative Impact Analysis	TVA needs to consider the cumulative pollution given that xAI is currently using 35 or more turbines nearby.	Please see the response to Comment #57.
60	Center for Biological Diversity	Environmental Justice	South Memphis is notoriously overburdened by fossil fuel pollution, from the former Allen coal plant, the existing Allen Plant gas operations and now xAI's 35 un-permitted gas turbines. The agency cannot risk burdening these communities with more pollution in the name of achieving increased reliability, when repeat climate disasters have shown fossil gas plants is increasingly unreliable.	Please see the responses to Comments #2 and #57.
61	Representative Justin J. Pearson (TN District 86)	Cumulative Impact Analysis	Third, this current draft NEPA analysis is not taking into consideration cumulative air pollution, Ozone pollution, ambient air quality impacts, hazardous air pollution, ammonia pollution. This analysis is completely flawed and the entire process nothing but a farce.	The EIS discusses potential cumulative impacts to air quality in Section 3.14.3.1. All present or on-going actions are inherent in the baseline determination of the effected environment and current Shelby County NAAQS designations. It is noted that several reasonably foreseeable actions have the potential to result in increases in emissions within Shelby County. Shelby County Health Department manages air quality and

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				regulates the aggregate of air emissions within the county.
62	Southern Environmental Law Center	Cumulative Impact Analysis	<p>TVA has not comprehensively and accurately quantified the Allen CT Gas Project’s emissions.</p> <p>TVA failed to analyze the Allen CT Gas Plant’s individual and cumulative greenhouse impacts in meaningful context.</p>	Please see the responses to Comments #2 and #61.
63	Southern Environmental Law Center	Cumulative Impact Analysis	<p>TVA’s analysis of cumulative impacts must identify actions in addition to the Allen CT Gas Plant “that have had or are expected to have impacts in the same area” as well as “the overall impact that can be expected if the individual impacts are allowed to accumulate.” TVA’s cumulative impacts analysis cannot “treat the identified environmental concern in a vacuum.” TVA’s analysis does not consider well known similar impacts to the same community and surrounding areas.</p> <p>TVA fails to identify the many contributing sources in southwest Memphis. A study from 2013 found southwest Memphis to be an air toxics pollution hot spot.</p> <p>In contrast, TVA does not include any existing non-TVA pollution sources in Table 3-14, which summarizes present and reasonably foreseeable future</p>	Please see the responses to Comment #57 and #61.

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			<p>actions in the vicinity of the project area.</p> <p>Moreover, “simply listing all relevant actions” for a cumulative effects analysis is not sufficient under NEPA. TVA must more thoroughly examine the cumulative impacts from air pollution impacts.</p> <p>Some notably missing sources from TVA’s cumulative impact analysis include: the neighboring xAI facility, the Valero Refinery, among others.</p> <p>TVA must include this information (xAI) in any cumulative impacts analysis in order to accurately represent the total pollution burden to the surrounding community.</p>	
64	Center for Biological Diversity	Decarbonization Goal	More specifically, making demand reduction a goal would open up new alternatives TVA must consider, and at the same time, avoid exposing TVA customers to unnecessary financial and climate risk associated with the construction of new and expensive centralized fossil fuel resources.	TVA considered expanded demand response options but eliminated this alternative from detailed analysis, as explained in Table 2-2. Although demand response programs are well positioned to play a role in absorbing load growth resulting from increased electrification of the economy and allows TVA to offset physical capacity needs, demand response as an alternative is limited in the number of calls currently available.
65	Joseph Pasilis, Evan Dial, Emilio Reyes, & Gabriella Cartier	Decarbonization Goal	<p>Fossil Gas Expansion Contradicts TVA’s Climate Goals.</p> <p>This proposed expansion conflicts drastically from TVA’s public commitments to reduce greenhouse gas emissions by an 80% carbon reduction</p>	TVA’s 2019 IRP demonstrates that TVA’s system-wide approach to transmission and generation has already brought about a decrease in GHG emission intensity and will continue to bring about an overall reduction in GHG emissions while maintaining grid

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			<p>by 2035, net-zero by 2050, and support a transition to clean, sustainable energy sources.</p> <p>A thorough evaluation of project goals to be made to determine if they align with TVA’s overall sustainability goals.</p>	<p>reliability. One component of this plan is the construction of high efficiency “peaking capacity” such as the proposed project. The addition of these assets enables the integration of renewable generation while maintaining grid stability and lowering the demand for other, more carbon intensive, peaking facilities.</p> <p>TVA’s energy portfolio is expected to change over time, given increasing numbers of renewable energy sources. TVA has existing solar capacity commitments of nearly 3,200 MW. TVA is continuing to expand its solar and carbon-free commitments through procurement methods such as requests for proposals and opportunities at existing TVA sites. In July 2022, TVA issued a request for proposals for up to 5,000 MW for additional carbon free energy. Another request for proposals was issued by TVA in March 2025 that included up to 500 MW for standalone battery storage, 500 MW for solar and battery, or 500 MW for solar. The 2019 IRP indicated that the near-term actions required TVA to enhance system flexibility to integrate renewable resources. TVA also continues to work with long-term LPC customers to deploy additional renewable resources through a flexibility option under TVA’s long-term agreement with each individual LPC customer.</p>

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				<p>The addition of aeroderivative CT units to the fleet aligns with the direction in the 2019 IRP, which recommended enhancing system flexibility to integrate renewables and distributed resources, with substantial solar additions expected over the next two decades. As the amount of solar generation in the TVA generation portfolio continues to increase, the flexibility of the remainder of the fleet becomes even more important. Cloud patterns that temporarily block the sun and reduce solar generation require other generating units to respond to continue to reliably supply power to customers. Aeroderivative CTs provide flexible, dispatchable generation, enabling the remainder of the system to better integrate renewables.</p>
66	Southern Environmental Law Center	Decarbonization Goal	<p>Because “system cost” includes environmental harms, TVA cannot reasonably conclude that the Allen CT Gas Plant meets the utility’s needs at the lowest system cost.</p> <p>Critically, to meet TVA’s own target of net-zero carbon emissions by 2050, it would have to replace the Allen CT Gas Plant, convert it to green hydrogen, or install carbon capture technology. Each of those options requires TVA to spend millions of ratepayer dollars well before the 30 years of useful life TVA has assumed for other gas plants. TVA must analyze the costs on a 23-year useful life and acknowledge the need for additional</p>	<p>The addition of Allen CT Gas Plant aligns with the 2019 IRP recommendation to add up to 5,200 MW of CTs by 2028 to accommodate load growth and facilitate the integration of renewables onto the electric grid, thereby advancing TVA’s environmental aspirations.</p> <p>TVA’s planning process, in the IRP and analyses that tier from it, like in this EIS, is grounded in least-cost planning principles, in alignment with Section 113 of the Energy Policy Act of 1992. Least-cost planning involves balancing the following principles at a system-level: low cost, risk informed, environmentally</p>

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			<p>expenditures to replace or decarbonize the Allen CT Gas Plant.</p>	<p>responsible, and diverse, reliable, and flexible. TVA looks for cost-effective and reliable ways to reduce environmental impacts and regulatory risks and to make progress towards TVA's environmental aspirations.</p> <p>In addition, natural gas plants play an important role in a diverse portfolio that provides affordable, reliable, and increasingly cleaner energy. As load grows, its ability to ramp up and down increases system flexibility and maintains reliability as other clean technologies develop.</p>
67	Dennis Lynch	Energy Demand	8. Develop publicly visible forecasts for every month, showing base load, daily peaks, and maximum peaks	Comment noted. This comment is outside of the scope of this environmental review.
68	Center for Biological Diversity	Energy Demand	<p>Rising energy demand is not a legitimate purpose of the proposed action because TVA's own business practices are responsible for that increasing demand.</p> <p>Moreover, the Draft EIS fails to critically evaluate the role that TVA itself plays in creating the load growth this proposed fossil gas plant expansion seeks to address.</p> <p>Given all this affirmative effort by TVA to increase electricity demand in its service territory, it is entirely disingenuous — and violates NEPA — for TVA to make increasing demand a premise for building new gas generation at the Allen Plant, rather than interrogating the role</p>	<p>TVA provides wholesale power to 153 local power companies and directly sells power to 61 industrial and federal customers. TVA's power system serves approximately 10 million people in a seven-state, 80,000-square-mile region. Over the past decade, the rate of population growth within TVA's power service area was greater than in the region or the nation. When power demand rises, TVA must act to address the additional demand. The need for additional power is central to TVA's proposed action.</p> <p>The purpose of the proposed action is reasonable, given TVA's obligations under the TVA Act to provide power to the region. As stated in the EIS, TVA's</p>

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			<p>TVA plays, and can play in the future, in addressing that demand.</p>	<p>purpose is also increasing the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. These improvements would help TVA to expand and integrate renewable energy resources into its transmission grid.</p>
69	Southern Environmental Law Center	Environmental Justice	<p>The Allen CT Gas Plant is likely to cause significant socioeconomic impacts in southwest Memphis by exacerbating energy burden.</p> <p>In the Draft EIS, TVA ignores the likelihood that the Allen CT Gas Plant will worsen energy burden in Memphis, which already bears some of the highest energy burden in the state and the nation.</p> <p>Further reliance on gas puts residential ratepayers at great risk.</p>	<p>Please see the response to Comment #68. Section 3.11 of the EIS has been updated to address minor socioeconomic impacts related to energy burden.</p>
70	Southern Alliance for Clean Energy	Environmental Justice	<p>TVA states in the DEIS that "Communities closest to the project area are most likely to experience adverse effects. Additionally, communities that are predominately (sic) minority or low-income would be more likely to be affected by the proposed action. However, impacts on communities would be minor overall." (p. x) This last statement is hubris, and we have demonstrated here that it is patently untrue. The impact is significant and reason enough for TVA to withdraw this peaker project and replace it with emissions-free alternatives that improve the lives of Southwest Memphians rather</p>	<p>The quotation provided is taken from the EIS's Executive Summary and is supported by more detailed analysis in the EIS. Please see Section 3.11.2.2 for TVA's analysis of potential impacts on communities for the necessary context.</p>

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			<p>than adding another layer of pollution burden.</p>	
71	Morgan McDowell, Rylee Reginald, Charlotte Farnall, Victoria Infante	Environmental Justice	<p>[The EIS] concludes that the impacts on human health and well-being will be “minor” without conducting cumulative impact modeling or detailed health risk assessments. This oversight is significant, particularly given that Memphis-area communities have long experienced disproportionate exposure to industrial air pollutants and associated environmental health risks. Under Executive Order 12898, the TVA is required to consider historical and cumulative burdens when evaluating project impacts. To address these concerns, we urge TVA to take the following actions:</p> <ul style="list-style-type: none"> ● Model local air quality impacts from pollutants such as PM_{2.5} and ozone. ● Analyze cumulative exposure from existing nearby facilities. ● Engage with local health professionals and community stakeholders to assess public health implications. ● And reassess the environmental justice implications of new fossil fuel infrastructure in the area. 	<p>In January 2025, Executive Orders addressing the consideration of environmental justice in federal agency decision making were revoked (including EO 12898). In addition, EO 14154 (Unleashing American Energy) directed the Council on Environmental Quality to remove their NEPA implementing regulations, including provisions addressing environmental justice communities. The EIS evaluates the reasonably foreseeable effects of the project on the environment and communities as required by NEPA,.</p> <p>The EIS discusses potential impacts to air quality (Section 3.1) and local residents (Section 3.11), including potential impacts to minority and low-income communities. The project would comply with air quality permit limits and would not lead to exceedance or violation of applicable NAAQS. NAAQS standards have been developed to protect human health with an adequate margin of safety for sensitive subgroups of the population, including children, older adults, people with heart or lung</p>

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				<p>conditions, communities of color, and low economic status populations. In its analysis, TVA determined that there would be a minor impact to communities nearest the project including minority and low-income communities.</p>
72	Joseph Pasilis, Evan Dial, Emilio Reyes, and Gabriella Cartier	Cumulative Impact Analysis	<p>Environmental Justice Communities Face Disproportionate Impacts.</p> <p>While TVA states that pollution will stay within legal limits (Section 3.1 – Air Quality), their calculations did not account for cumulative impacts on people already surrounded by pollution sources (Section 3.15 – Cumulative Effects) which raises serious environmental justice concerns.</p> <p>However, on an already vulnerable population, this increased pollution (traffic, noise, and dust) could have a severe impact.</p>	<p>The EIS addresses cumulative impacts to Air Quality (Section 3.14.3.1) and Socioeconomics (3.14.3.4).</p> <p>Please see the response to Comment #71.</p>
73	Joseph Pasilis, Evan Dial, Emilio Reyes, and Gabriella Cartier	Cumulative Impact Analysis	<p>While TVA notes this as a “minor increase” (Section 3.2.2 Climate Change and Greenhouse Gas Emissions), they fail to meet the CEQ’s requirement to fully assess cumulative climate effects (40 C.F.R. § 1508.1(g)).</p> <p>However, they (TVA) did not perform a cumulative impact assessment under EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations).</p> <p>Additionally, TVA should address the</p>	<p>The EIS addresses cumulative impacts to Air Quality (Section 3.14.3.1) and Socioeconomics (3.14.3.4).</p> <p>Please see the response to Comment #71. EO 12898 has been rescinded.</p>

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74	Southern Environmental Law Center	Cumulative Impact Analysis	<p>cumulative impacts of their various forms of pollution as well as how it has disproportionately affected minority communities.</p> <p>TVA must use science from generally accepted sources in the analysis of the environmental effects of the proposed Allen CT Gas Plant. Instead, TVA has failed to analyze the cumulative and disproportionate harms to an overburdened community.</p> <p>Without a complete analysis of the cumulative impact of past, present, and reasonably foreseeable future actions, TVA is putting these already disadvantaged communities at risk of further harm without any analysis. TVA must do a comprehensive cumulative impacts analysis.</p> <p>TVA must address the significant cumulative climate justice impacts that the Allen CT Gas Plant, together with the rest of TVA’s gas buildout, will have on southwest Memphis, a community ranked in the 99th percentile for climate vulnerability.</p> <p>TVA has failed to consider the cumulatively significant energy burden impacts of its gas buildout, including the Allen CT Gas Plant and MLGW’s rate hike, on predominantly Black, low-income communities in southwest Memphis.</p>	<p>The EIS addresses cumulative impacts to Air Quality (Section 3.14.3.1) and Socioeconomics (3.14.3.4).</p> <p>Please see the response to Comment #71.</p>

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75	Joseph Pasilis, Evan Dial, Emilio Reyes, and Gabriella Cartier	Environmental Justice	TVA fails to provide necessary information regarding these issues (Environmental Justice concerns) under the Clean Air Act's Prevention of Significant Deterioration (PSD) provisions (42 U.S.C. § 7470 et seq.).	Please see the response to Comment #71.
76	Suzanne Martin	Environmental Justice	<p>For far too long communities of color and low-income communities disproportionately bear the burden of environmental hazards and lack access to environmental benefits.</p> <p>How many minor effects can one community take?</p> <p>Negative impacts on communities, especially communities of color, must stop.</p>	Please see the response to Comment #71.
77	People Power	Environmental Justice	I find it quite disappointing that TVA has shown no humanity in ignoring the large amounts of pollutants to accumulate on predominately black communities.	Please see the response to Comment #71.
78	Erma Taylor	Environmental Justice	Another concern is that they're always placed in predominantly black communities. We care about our quality of life, health, and well-being too.	Please see the responses to Comments #71 and #86.
79	Barbara Elliott	Environmental Justice	<p>It is well known that the neighborhoods of the poorest populations in the US are the sites most often chosen for the most polluting operations to locate. This needs to stop.</p> <p>The residents who live near this installation already have a proportionately higher rate of cancer due to pollution than other Memphis residents. Natural gas emissions from this plant will only make that worse.</p>	Please see the response to Comment #71.

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80	Marcela Pinilla	Environmental Justice	It’s irresponsible and shameful to ignore local community opposition, environmental racism is when underrepresented groups do not get their voice heard. I don’t wish for any city including my own to experience unwanted pollution, this impacts everyone in priceless ways.	Please see the response to Comment #71.
81	Southern Alliance for Clean Energy	Environmental Justice	<p>Most concerning is that the proposed project will unnecessarily add pollution burden to a community that has unjustly shouldered this burden - inflicted by both TVA and others - for decades.</p> <p>TVA’s Proposal Will Needlessly Exacerbate Community Harm. Most importantly, TVA’s willfully uninformed choice to deploy more dirty peaker plants at the Allen site is a cruel insult to the surrounding community.</p>	Please see the response to Comment #71.
82	Southern Environmental Law Center	Environmental Justice	<p>As highlighted in our scoping comments, and hereby incorporated, southwest Memphis is an environmental justice community that has borne a disproportionate burden of pollution from TVA and other polluters for decades.</p> <p>During the construction of this project, TVA will run even more trucks through southwest Memphis. TVA must account for these disproportionate baseline air pollution conditions to adequately disclose its proposed action’s effects, as NEPA requires.</p>	Please see the response to Comment #71. Transportation impacts are addressed in section 3.8 of the EIS.
83	Rise Up America	Environmental Justice	The introduction of turbine engines into our community raises substantial concerns regarding environmental	Please see the response to comments #2, #71, and #136.

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			<p>degradation, public health, and the overall well-being of our residents. This project is not only unnecessary but also detrimental to a community that is already facing significant stress and adversity.</p> <p>For years, residents of Memphis have endured challenges related to air and water quality, socioeconomic disparities, and the impacts of industrialization. The thought of introducing yet another industrial operation that emits pollutants into our air and threatens our water sources is nothing short of distressing. Many residents are already grappling with health issues linked to environmental factors, and adding the burden of turbine engine operations will only exacerbate these problems.</p>	
84	Center for Biological Diversity	Environmental Justice	<p>TVA’s proposal to build new gas generation — and refusal to even consider renewable energy alternatives — at the Allen Plant will also only further harm communities of color and low wealth who continue to bear the brunt of the agency’s reliance on fossil fuels.</p> <p>TVA must address the disproportionate harm experienced by environmental justice communities from the fossil fuel economy by exploring non-fossil fuel alternatives in the EIS, and fully examining the social, economic, and health impacts of all potential pathways for energy generation in Memphis.</p>	<p>The potential impacts of the proposed action to communities are addressed in Section 3.11 of the EIS. TVA acknowledges that communities closest to the project site are more likely to experience adverse effects. In Section 2.2.3 of the EIS, TVA addresses other alternatives considered but eliminated from further discussion, including non-fossil fuel generation alternatives and did not carry these options forward in the EIS’s analysis because they did not meet the purpose and need of the project. Agencies exercise substantial discretion in identifying feasible alternatives. <i>Seven County Infrastructure</i></p>

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				<p><i>Coalition v. Eagle County, CO.</i>, 605 U.S. ---, Slip Op. at 10 (2025).</p>
85	Gladys Burch	Environmental Justice	<p>Here we are again. In 38109, we have a pipeline distribution plant and xAI. Prior to these we had Sterilization of Tennessee that wrecked havoc from 1976 to 2024. Some people that live in the area are not poor, but we are black. It is not where you live, but how you live where you live. We want to live and breath easier like the rest of Memphis: so this colorless odorless killer is not colorless, it is Black. The quote "if you stand for nothing, you will fall for anything". My stand is NO. Let us STOP and do this right.</p>	Comment noted.
86	Public Meeting Attendee	General	<p>This community is always affected. Why aren't other communities, including east of the city? Nothing has changed.</p>	<p>Power generation operations have been occurring in the project area since the 1950s, when Memphis, Light, Gas, and Water constructed a coal plant. TVA obtained the facility in 1984, before retiring the coal plant in 2018. Proposed activities would occur on previously disturbed lands located within TVA's existing Allen Fossil, Allen Combined Cycle and Allen CT facility locations. TVA considers a number of factors when considering sites for generation expansion. In determining the location of proposed generation sites, TVA often identifies existing TVA sites for new</p>

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				<p>generation to utilize critical infrastructure that is already in place (e.g., transmission, pipelines). Construction and operation of generation at previously disturbed sites typically reduces impacts to the environment. Regional transmission system needs are also considered. These factors were considered by TVA when identifying the Allen CT site for potential new generation.</p>
87	Zakarya Benregreg	General	<p>Dear Memphis Community Against Pollution, I am an inventor from Algeria with a patented scientific project designed to permanently eliminate carbon emissions and toxic pollutants from factory and vehicle exhausts. I believe my solution can significantly support your efforts to combat pollution in Memphis, especially given the concerns around xAI's gas turbines in the area. I would like to discuss how my project can contribute to a cleaner environment for your community. Can we connect to explore this further?</p>	<p>Comment noted.</p>
88	Southern Environmental Law Center	Greenhouse Gas Emissions	<p>TVA has also failed to consider the impact of locking in additional decades of methane gas emissions. Upstream methane leakage is an important, foreseeable, indirect impact of building and operating a new gas plant.</p> <p>TVA must disclose the expected methane leakage associated with the Allen CT Gas Plant and take a hard look at the growing body of scientific evidence that shows that methane</p>	<p>Under NEPA, TVA must consider effects that are both legally caused by TVA's action and are reasonably foreseeable. There must be a reasonably close causal relationship between TVA's action and natural gas drilling in the supply region before NEPA requires that TVA analyze the effects of that regional development. Upstream natural gas production is caused by a number of factors including the price of natural gas and the cost of</p>

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			<p>leakage is so high and so harmful that methane gas plants may be worse for the climate than coal plants.</p> <p>TVA has not accurately disclosed the Allen CT Gas Plant’s potential climate costs. First, TVA appears to base its cost estimates on inaccurately low estimates of greenhouse gas emissions. TVA does not disclose its GHG calculations, but TVA excludes upstream methane leakage—which are reasonably foreseeable and significant—from its climate analysis. Doing so here would render its Social Cost of Greenhouse Gas analysis inaccurate.</p>	<p>production, and not TVA’s potential selection of the proposed action. Because upstream production is neither caused by TVA’s action nor reasonably foreseeable, TVA is not required to include upstream impacts of natural gas production in its NEPA analysis. See <i>Seven County Infrastructure Coalition v. Eagle County, CO</i>, 605 U.S. --- (2025).</p> <p>Nevertheless, TVA notes that indirect upstream (material extraction, supply chain, manufacturing, and assembly), operational (plant maintenance and upstream methane leakage) and downstream (dismantling, disposal, and returning the site to a brownfield state) GHG emissions are addressed in the EIS’s life-cycle analysis of impacts (section 3.2.2.2.2). Life-cycle GHG emission estimates are presented in Table 3-4 and are based on methodologies from NREL (2024). TVA has updated Section 3.2.2.2.2 to identify the types of upstream and downstream emissions included in the life-cycle analysis.</p>
89	Southern Environmental Law Center	Greenhouse Gas Emissions	TVA must also accurately evaluate the climate impacts of the Allen CT Gas Plant’s emissions. The International Panel on Climate Change estimates methane’s 20-year global warming potential to be between 84 and 87 CO ₂ e. Yet, TVA exclusively applied a much lower 100-year global warming potential for methane. TVA must account for methane’s much higher short-term	In its GHG emissions analysis, TVA relied upon global warming potential (GWP) for certain greenhouse gas emissions to estimate CO ₂ equivalents, which allows for the comparison of the impacts of different gases. GWP measures the amount of energy the emissions of 1 ton of a gas will absorb over a given period, relative to the emissions of 1 ton of carbon dioxide.

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			<p>potency, including by applying the 20-year global warming potential.</p>	<p>TVA used a GWP for methane of 28 based on a 100-year timeframe, which is based on the International Panel on Climate Change’s 6th Assessment Report. The use of the 100-year GWP timeframe is a reasonable timeframe for the TVA analysis because it is a standard for reporting established in the EPA’s 40 CFR 98 greenhouse gas reporting requirements.</p>
<p>90</p>	<p>Southern Environmental Law Center</p>	<p>Greenhouse Gas Emissions</p>	<p>TVA must follow that guidance (CEQ’s March 2023 guidance) including, for example, by assessing “changes relating to the production or consumption” of gas that are indirect effects of projects using gas; by clearly identifying “the alternative with the lowest net GHG emissions or the greatest net climate benefits”; by explaining how the alternatives will “help meet climate change goals and commitments, or alternately, detract from them”; and by going beyond “a statement that emissions from a proposed Federal action or its alternatives represent only a small fraction of global or domestic emissions.”</p>	<p>In January 2025, Executive Orders (Unleashing American Energy) addressing estimates to assess the value of changes in greenhouse gas emissions direct agencies to be consistent with guidance contained in OMB Circular A-4 of September 17, 2003. This EO also disbanded the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) and states any guidance is withdrawn and no longer representative of governmental policy. As such, the analysis of greenhouse gases in Section 3.2 is consistent with OMB Circular A-4 of September 17, 2003.</p> <p>Additionally, on February 25, 2025, the CEQ issued an interim final Rule that removed the CEQ regulations implementing NEPA from the Code of Federal Regulations, and on May 28, 2025, CEQ withdrew its 2023 guidance on addressing climate change in NEPA reviews.</p>

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				As these policy changes occurred as TVA completed its EIS, the methodology using the previous IWG and EPA guidance is included in Appendix C of the Final EIS.
91	Morgan McDowell, Rylee Reginald, Charlotte Farnall, Victoria Infante	Climate Change	<p>Inadequate Analysis of Climate Change and Greenhouse Gas Emissions.</p> <p>This (the EIS) downplays the significance of these emissions and falls short of NEPA's requirement under 40 C.F.R. § 1502.16 to evaluate both context and intensity. The TVA does not:</p> <ul style="list-style-type: none"> ● Provide a life cycle emissions comparison to cleaner alternatives; ● Explain how this project aligns with its net-zero by 2050 goals; ● Reference current climate science urging the phaseout of fossil fuel infrastructure <p>expanding fossil fuel infrastructure during a climate emergency, while asserting that it supports decarbonization, requires clear evidence that has not been provided in the EIS.</p> <p>A more transparent and science-based climate analysis is needed.</p>	Please see the responses to Comments #65 and #90.
92	Southern Environmental Law Center	Greenhouse Gas Emissions	<p>Second, TVA ignores the recommendations of the Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases.</p> <p>Rather than follow that expert guidance, TVA applied only two discount rates: 3% and 7%. A 7% discount rate is based on</p>	Please see the responses to Comments #65 and #90.

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			<p>the expected return on capital and, as the Interagency Working Group found, is wholly inappropriate for climate costs.</p>	
93	Center for Biological Diversity	Greenhouse Gas Emissions	<p>TVA tries to dwarf its already unacceptable emissions rate to give itself a free pass for building more fossil gas and to slow walk the transition away from fossil fuels. To the contrary — any emissions are unacceptable, and as the country’s largest federal utility and a top polluter, TVA should be doing all that it can to cut emissions.</p> <p>TVA must also fully consider the likely environmental outcomes under the different alternatives, including relative GHG emissions. Under the currently preferred alternative, which proposes building 6 new Aero CT gas units, TVA will continue to be one of the largest contributors to the GHGs that are fueling the climate crisis, and thus will continue to be responsible for the devastating impacts that are certain to come in the country and around the world as we continue to increase the concentrations of GHGs in the atmosphere.</p>	Please see the responses to Comments #65 and #90.
94	Southern Environmental Law Center	Greenhouse Gas Emissions	<p>TVA has failed to include a GHG analysis for the Allen CT Gas Plant that is complete, accurate, and that acknowledges the climate goals of Memphis and TVA itself.</p> <p>TVA should analyze climate impacts for the project’s lifetime, which includes the lifetime of the project’s associated</p>	Please see the responses to Comments #65 and #90. The EIS (Sections 1.2 and 3.2.1.2) discusses the TVA Strategic Intent and Guiding principles adopted by the TVA Board in 2021 and TVA’s implementation through the asset strategy. These guiding principles commit TVA to delivering safe, low-cost, reliable power while providing

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			<p>emissions. To achieve the agency’s and city’s climate goals, TVA’s natural-gas equipment would need to be offline, converted to green hydrogen, or modified with carbon capture by 2050. However, the climate-warming pollutants from these aeroderivative CTs would certainly outlast the equipment’s lifetime. CEQ has accounted for this in its guidance, recommending that projections reach as far out as “the expected life of the proposed action and its effects.”</p>	<p>responsible stewardship by caring for the region’s natural resources, consistent with recommendations of the 2019 IRP. As explained in the EIS, additional peaking units are needed to implement those guiding principles and TVA’s asset strategy.</p>
95	Center for Biological Diversity	Greenhouse Gas Emissions	<p>TVA must meaningfully assess the impacts of greenhouse gas emissions by comparing impacts between the existing alternative and one or more alternatives that chart a path to zero emissions.</p>	<p>In the EIS, TVA assessed impacts of reasonable alternatives carried forward for analysis; TVA is not required to compare impacts of an EIS alternative to alternatives that are not considered in the EIS. Alternatives dismissed from detailed analysis are discussed in section 2.2.3 of the EIS.</p> <p>The EIS discusses potential impacts to Climate Change and Greenhouse Gases (Section 3.2). The EIS determines that compared to the overall TVA system GHG emissions, the proposed project would represent a minor increase (0.22 to 0.82 percent dependent on capacity factor) to GHG emissions.</p>
96	Southern Environmental Law Center	Greenhouse Gas Emissions	<p>Second, by increasing greenhouse gas pollution, the Allen CT Gas Plant will exacerbate extreme weather, driving heating and cooling costs higher.</p>	<p>Please see the response to Comment #95.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
97	Southern Environmental Law Center	Greenhouse Gas Emissions	To demonstrate the true climate impacts of its proposal, TVA must acknowledge and analyze the harmful effects of displacing emission-free alternatives.	TVA has adequately analyzed the alternatives considered in detail in the EIS, including the no action alternative.
98	Tennessee Department of Environment and Conservation	Groundwater	<p>TDEC is also concerned about impacts from the proposed project’s water withdrawal from the Memphis Sand aquifer via water supplied by MLGW; however, it appears that the proposed Greywater Facility could offset the impact.</p> <p>“The proposed Greywater Facility could reduce groundwater withdrawals by 10 million gallons per day by diverting and processing 10 million gallons of greywater per day for industrial uses. Development of this facility has potential to provide an alternate source of industrial water for users in the vicinity of the project area and reduce overall demand on the Memphis Sands aquifer. Therefore, the cumulative effects of the ACT Plant in combination with all other actions identified in Table 3-14 would be minor would not result in incrementally greater cumulative effects to groundwater quality or quantity and may result in a net benefit to groundwater by reducing withdrawals.”</p>	Comment noted. TVA discusses potential cumulative impacts to groundwater resources in Section 3.14.3.3 of the EIS.
99	Southern Environmental Law Center	Groundwater	To mitigate the impacts to groundwater from the proposed Allen CT Gas Plant, TVA should pursue use of recycled wastewater from a wastewater recycling facility, such as the xAI Colossus wastewater recycling facility if it is constructed.	Comment noted. TVA plans to use potable water from MLGW to support proposed operations of the six CT units.

Comment Number	Commenter	Topic	Comment	TVA Response
100	Whitney Noel, Madison Ford, Kiyoko Shivers, Troy Norman	Groundwater	<p>One of our key concerns is the proposed use of water obtained from Memphis Light, Gas, and Water, which sources its water from the Memphis Sand Aquifer.</p> <p>Given the current state of the aquifer, we believe it is important to explore alternative water sources to help reduce the pressure on this vital resource.</p> <p>The EIS for the Allen Aeroderivative Combustion Turbine Project fails to adequately explore alternative water sources, specifically alternatives that may reduce stress on the Memphis Sand Aquifer, which has already been overexploited.</p> <p>However, the EIS does not consider the long-term effects on the aquifer’s sustainability and availability for others. This oversight represents a misassessment of the environmental consequences of using an overexploited water source.</p>	<p>The EIS discusses potential impacts on groundwater (Section 3.3). Operation of the proposed project would utilize water supplied by the MLGW. In Section 3.12.2.2 of the EIS, TVA concludes that the small amount of potable water used would result in a small impact on the availability of water and would not significantly increase demand on the aquifer.</p> <p>TVA would minimize accidental spills or releases of fluids through implementation of best management practices, outlined in TVA’s <i>A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities</i>, and through preparation and implementation of a spill prevention, control, and countermeasure plan.</p>
101	Public Meeting Attendee	Health and Safety	<p>We want to know the impacts to human health of the proposed units, when compared to the impacts of the sixteen units that had been operating there.</p>	<p>As noted in response to Comment #233, the new units would have state-of-the-art technologies that dramatically reduces the level of air emissions compared to the retired units. The EIS does not address the environmental impacts associated with past operations of the retired CT units; the operations of those units are outside the scope of this review.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
102	Amy Rawe (Form Letter)	Health and Safety	TVA has a responsibility to safeguard the health and well-being of the people it serves.	Comment noted. TVA's proposed action would be regulated through a permitting process, with long-term adverse impacts from air emissions would be minimized through adherence to air quality standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including communities with higher frequency of preexisting health conditions.
103	Hunter Oppenheimer (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
104	Marylin Ingram (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
105	Zoe Donndelinger (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
106	William Stephens (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
107	Michael Gardner (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
108	Eric Robinson (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
109	Floyd Mitchell (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
110	B.A. Burton (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
111	Jill Howe (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
112	Charlene Pollard (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
113	Sara Oaks (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.

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114	Deborah Brawner (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
115	Angela Schulz (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
116	Will Richardson (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
117	Phyllis Golden (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
118	Ralph Plumlee (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
119	Amy Lutterloh (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
120	Kathleen Panarisi (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
121	Catherine Pipe (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
122	Rita Sweeney (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
123	Nina Staples (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
124	Cathi Moore (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
125	Cynthia Martin (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
126	Michelle Flake (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
127	Amy Malaki (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
128	Carnita Atwater (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
129	Boyd Felecia (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.

Comment Number	Commenter	Topic	Comment	TVA Response
130	Ken Wilson (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
131	Karen Stuart (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
132	Madeleine Edwards (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
133	Cliff Bahlinger (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
134	Ginger Nelson (Form Letter)		Same comment as #102, #203, and #263.	Please see the responses to Comments #102, #203, and #263.
135	Southern Alliance for Clean Energy	Health and Safety	Simply put, TVA cannot choose to ignore the health impacts that it will be inflicting on the neighbors of this proposed plant. There are clean alternatives, some of which could also benefit the surrounding community through bill savings in addition to cleaner air.	Comment noted. TVA's proposed action would be regulated through a permitting process, with long-term adverse impacts from air emissions would be minimized through adherence to air quality standards, which protect human health with an adequate margin of safety for sensitive subgroups of the population, including communities with higher frequency of preexisting health conditions.
136	Lisa	Health and Safety	<p>This project would add to the already dangerous levels of pollution we face daily—from TVA's existing gas plant, a steel mill, an oil refinery, and the new xAI facility. Shelby County already exceeds national smog limits. Adding more fossil fuel infrastructure here is irresponsible and unjust.</p> <p>This project will only worsen that reality (health impacts of industrial pollution).</p>	<p>The EIS discusses potential impacts to air quality (Section 3.1) and cumulative impacts to air quality (Section 3.14.3.1). Potential impacts to communities are addressed in Section 3.11.2.2 of the EIS.</p> <p>The proposed project would comply with air quality permit limits and would not lead to exceedance or violation of applicable NAAQS. NAAQS were established to protect human health with an adequate margin of safety for sensitive subgroups of the population,</p>

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				including children, older adults, people with heart or lung conditions, communities of color, and low economic status populations. Additionally, construction and operation of the proposed project would comply with all applicable federal, including OSHA, and state requirements. As stated in Section 3.11.2.2, TVA’s proposal would not be harmful to individuals in the surrounding communities because air emissions would not be expected to contribute to an exceedance of the primary NAAQS.
137	Olivia Wilmot	Community Impacts	Please protect our neighbors. Please follow environmental standards and protocols that do not treat our city as disposable.	Please see the response to Comment #136.
138	C. Jim	Community Impacts	<p>TVA your work is to make sure that our water. the land and valley we live in is safe.</p> <p>Just as other facilities are polluting the land and water in South Memphis so are you. Stop running your Dirty Gas plant and dumping coal ash In our neighborhood.</p>	Please see the response to Comment #136.
139	Andrew, Ernest C Withers Historical Photographic Foundation	Community Impacts	<p>We operate a historical that is on the National Register of Historical Places. We are within 3 miles of AI operations. This pollution of verified would decrease tourism and create severe health problems in the our neighborhoods. Friends of T O Fuller park whereby I am the lead historian for the group has major concern that could affect the participation of visitors to the park. A meeting of the minds to show respect of</p>	Please see the response to Comment #136.

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>this organization could prove valuable for all. We have many other concerns that need to be addressed as we move closer to a community solution. Feel free to contact us as we move to resolve.</p>	
140	<p>Representative Justin J. Pearson (TN District 86)</p>	Community Impacts	<p>My neighbors and residents of the community where the Tennessee Valley Authority has operated for over 60 years are exhausted by the pain pollution costs and has caused us. Your analysis fails in very consequential ways to address the pain and the harm the TVA has historically caused, as well as, fails to address the pain and the harm this project of the TVA would exacerbate on our lungs and lives.</p>	<p>Please see the response to Comment #136.</p>
141	Elizabeth Savell	Health and Safety	<p>Our communities cannot withstand the environmental and health and safety impact that this partnership has on our people, our families, our friends and our children.</p>	<p>Please see the response to Comment #136.</p>
142	Erma Taylor	Health and Safety	<p>We're already surrounded by plants with carcinogenic chemicals causing health issues in our community due to toxic air pollutants.</p>	<p>Please see the response to Comment #136.</p>
143	Sherry Compton	Health and Safety	<p>More than ever, we need responsible leadership to lead the charge for clean air, clean water, less pollution, and a higher standard of living for all.</p> <p>Stand up and do your part. Do what you were elected to do-- to protect the interests of the people, not corporations.</p>	<p>Please see the response to Comment #136.</p>
144	Dominique Banks-Terry	Health and Safety	<p>Gas turbines and fossil fuel-based energy sources pose significant environmental and health risks, particularly in urban areas like Memphis</p>	<p>Please see the response to Comment #136.</p>

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Comment Number	Commenter	Topic	Comment	TVA Response
145	William Murray	Health and Safety	The pollution and negative health effects that these turbines would cause to nearby communities is abundantly clear from scientific evidence. The hardworking families of Southwest Memphis deserve to be treated with respect and dignity; the proposed turbines would make their neighborhoods a dumping ground for pollutants	Please see the response to Comment #136.
146	Natoria Carpenter	Health and Safety	save our air and health please	Please see the response to Comment #136.
147	Wallace Cunningham	Health and Safety	We are concerned about the health and safety of those in our community.	Please see the response to Comment #136.
148	Memphis Community Against Pollution	Health and Safety	There is a great number of alternative options to invest in that are not harmful to communities, particularly Black communities that have already been historically affected.	Please see the response to Comment #136.
149	Corey Miller	Health and Safety	The proposed gas turbine and aeroderivative technology in southwest Memphis is an extreme hazard to health and costly. I fear and worry about the containments that my family are subject to consuming.	Please see the response to Comment #136.
150	Denise Corsa	Health and Safety	Pollution can increase cancer, asthma, and more.	Please see the response to Comment #136.
151	Foyice Clark	Health and Safety	I am concerned for the well being for the entire city of Memphis.	Please see the response to Comment #136.
152	Sandy Furrig	Health and Safety	I am writing to ask you to consider the health of the people who live in Southwest Memphis.	Please see the response to Comment #136.

Comment Number	Commenter	Topic	Comment	TVA Response
153	Angela Gordon	Health and Safety	Stop killing us	Please see the response to Comment #136.
154	Sarah Ledbetter	Health and Safety	These turbines impact our quality of life and the future of our health in this community.	Please see the response to Comment #136.)
155	Dr. Kimberly Ownes-Pearson	Health and Safety	We deserve clean air to breathe and we are sick and tired of suffering from these pollutants! Too many of us are suffering from asthma, eczema, allergies, COPD, emphysema, and all sorts of CANCER... leave us and our communities alone.	Please see the response to Comment #136.
156	Representative Justin J. Pearson (TN District 86)	Health and Safety	There are health, social, and economic impacts on our community which the Southern Environmental Law Center and the non-profit I founded Memphis Community Against Pollution also shared with you in a letter. Millions of dollars of healthcare costs are going to be borne by the people of Southwest Memphis who will benefit this least from this project.	Please see the response to Comment #136.
157	Public Meeting Attendee	Health and Safety	The mixture of hydrocarbons, including methane, contribute to air and water pollution. Chronic exposure to methane results in cardiovascular disease and cancer. Solar is a better option.	Please see the response to Comment #136.
158	Audrey Elion	Health and Safety	Fossil fuels like methane gas contribute significant to air and climate pollution, posing serious risks to both human health and environment. Since chronic exposure to methane and its byproducts has been linked to serious health outcomes, what are the long term	Please see the response to Comment #136.

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			effects of the combustion turbines emissions?	
159	Rachel	Opposes Project	No more turbines! Our community deserves to have clean, safe air to breathe. No business that has zero positive contributions to our community should be allowed to destabilize our health and security for pure greed.	Please see the response to Comment #136.
160	Rachel Bauer	Opposes Project	More gas turbines nearby would exacerbate our health problems.	Please see the response to Comment #136.
161	Sharonanne	Opposes Project	Your pending facility would be detrimental, certain to kill us & our children & loved ones	Please see the response to Comment #136.
162	Naomi Sharp	Opposes Project	I do not think that this project will benefit Memphis and the proposed information is very misleading. I believe this project is harmful to Memphis, it’s people, and environment	Please see the response to Comment #136.
163	Senethua Gage, Boxtown Neighborhood Association	Opposes Project	We would like to live in a healthier environment enjoy sitting outside without a mask. Please help us as we strive to help ourselves by not adding to a already unhealthy environment.	Please see the response to Comment #136.
164	Francine Smith	Opposes Project	What sense does it make to put more gas turbines in an area that originally attributed to health issues such as asthma, respiratory illness and cancer; and polluted the air. I Deserve to breathe Clean Air. It's a Human Right!!	Please see the response to Comment #136.

Comment Number	Commenter	Topic	Comment	TVA Response
165	Vicki Kintener-Duffy	Opposes Project	<p>Please Do NOT place additional turbines in South Memphis, or really anywhere.</p> <p>The pollution from these turbines will further harm the residents of Memphis who already suffer from a variety of illnesses linked to increased pollution.</p>	Please see the response to Comment #136.
166	Pamela Moses, Rise Up America	Air Quality	<p>The introduction of turbine engines poses a significant risk to our already fragile air quality. Polluted air can lead to respiratory issues and other serious health problems, particularly affecting children, the elderly, and those with pre-existing conditions. We cannot afford to allow any more pollution into our atmosphere when we are striving to improve the health and quality of life for all residents.</p>	Please see the responses to Comments #2 and #136.
167	Dominique Banks-Terry	Air Quality	<p>The link between fossil fuel emissions and public health issues cannot be ignored. Memphis, like many other cities, relies on gas turbines and other industrial sources for energy production, but this comes at a cost to air quality and community health.</p> <p>Implementing stricter regulations on industrial emissions and investing in cleaner technologies can also help reduce the impact of pollution on residents.</p>	Please see the responses to Comments #2, #136, and #197.
168	Lily McMullen, Charity Mattingly, Annalise Roig, Gwen Ridgeway	Opposes Project	<p>We oppose the proposed project due to its continued reliance on fossil fuels, insufficient consideration of clean energy alternatives, and potential harm to vulnerable species and communities.</p>	Please see the responses to Comments #2, #136, and #204.

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Comment Number	Commenter	Topic	Comment	TVA Response
169	Kelvin Shorter	Health and Safety	There shouldn't be an instance of any sort, where the safety, and health of a community be put at risk for any person(s) to profit from.	Comment noted. Please see the response to Comment #53.
Shou170	Nicole Ford	Health and Safety	We don't want this pollution in our area. Would you put this plant next to your home? No you would not.	Comment noted.
171	Jasmine Bernard	Health and Safety	I urge you to care for the environment and those in the community that you are actively performing a genocide on.	Comment noted.
172	Julia Stokes	Health and Safety	As a Memphis homeowner and concerned area resident, I'm writing to demand stricter controls on the TVA in order to decrease pollution.	Comment noted.
173	Joseph Pasilis, Evan Dial, Emilio Reyes, and Gabriella Cartier	NEPA Analysis	Further, detailed air quality, noise modeling, and groundwater modeling should be performed with goals towards mitigation.	<p>As noted in Section 3.1 of the EIS, TVA would take measures to address potential air quality impacts. Please see the response to Comment #28.</p> <p>The methodology used by TVA to analyze the potential noise effects of the proposed action is sufficient to support TVA's conclusions that noise effects during construction and operation would be minor (see Section 3.9.2.2 of the EIS). Additional noise modeling is not necessary. Please see the response to comment #180.</p> <p>TVA's analysis of groundwater (section 3.3.2.2 of the EIS) indicates that the potential impacts to groundwater would also be minor. Only shallow excavations are planned during construction and BMPs would be applied to control the effects of potential spills. Given the</p>

Comment Number	Commenter	Topic	Comment	TVA Response
				<p>minor nature of these potential effects on groundwater resources, detailed modeling is not necessary.</p>
174	Tennessee Department of Environment and Conservation	NEPA Analysis	<p>Several actions could negatively impact air quality on a short-term basis. TDEC recommends that TVA evaluate such potential impacts prior to any clearing, demolition, or construction. Such impacts may include, but are not limited to, air pollution from construction equipment, open burning associated with land clearing activities, and fugitive dust.</p> <p>Local air quality conditions are available online at https://www.airnow.gov/.</p>	<p>The EIS addresses potential impacts to Air Quality during construction (Section 3.1). Fugitive dust produced from construction activities would be temporary and controlled by BMPs (e.g., wet suppression) as stated in the TVA's fugitive dust control plans required under existing CAA Title V operating permits. Low ground-pressure-type equipment would be used in specified locations (such as areas with soft ground) to reduce the potential for environmental impacts per TVA BMPs. However, new emission control technologies and fuel mixtures have significantly reduced vehicle and equipment emissions, and it is expected that all vehicles and equipment would be properly maintained and employ the use of diesel emission controls and cleaner fuel, which also would reduce emissions. Demolition activities are not included in the</p>

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Comment Number	Commenter	Topic	Comment	TVA Response
				<p>proposed project scope and as the proposed project is located within the ACT, a previous disturbed site, minimal land clearing is expected.</p>
175	Tennessee Department of Environment and Conservation	NEPA Analysis	<p>Truck traffic associated with construction projects generate emissions of PM, CO, NO2, SO2, VOC, and CO2, and TDEC recommends the operation of trucks with up-to-date emission control technologies and proper maintenance to minimize vehicle and equipment emissions. The Department also recommends the adoption of best practices to minimize vehicle idling to minimize the impact of mobile source emissions on ambient air quality.</p>	<p>Please see the response to Comment #174.</p>
176	Center for Biological Diversity	NEPA Analysis	<p>As discussed below, the Draft EIS is fundamentally deficient under the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4321, et seq., because it only considers a single alternative, where the entire purpose of NEPA is to compare the relative environmental impact of reasonable alternatives.</p> <p>TVA should complete an EIS that comprehensively analyzes a fossil fuel-free alternative and choose that alternative for the future of the site.</p> <p>TVA must explore reasonable alternatives to address the purpose and need identified in the EIS, including distributed energy resources (“DER”),</p>	<p>TVA addresses other alternatives not considered in detail in Section 2.2.3 of the EIS. In the section, TVA explains why alternative technologies would not meet the purpose and need of the project. TVA has updated this section to provide further explanation as to why certain other resource options were eliminated from detailed consideration (e.g., battery storage and a combination of technologies). Agencies exercise substantial discretion in identifying feasible alternatives. <i>Seven County Infrastructure Coalition v. Eagle County, CO.</i>, 605 U.S. ---, Slip Op. at 10 (2025).</p> <p>TVA is actively pursuing the installation and operations of other non-fossil fuel</p>

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>storage, energy efficiency improvements, and demand response.</p> <p>The EIS must consider a broader suite of alternatives and compare their relative environmental impacts.</p>	<p>generation resources through other TVA programs. Just as TVA's IRP identifies CT generation as having critical benefits to its system, the IRP includes a wide variety of resource options, including demand management programs.</p>
177	Southern Alliance for Clean Energy	NEPA Analysis	<p>We call on TVA to complete a new set of analyses, one that compares the economic and environmental impacts of meeting the need described in this DEIS with aero CTs, with a suite of demand-side programs, solar and wind energy (including renewables-plus-storage), and non-polluting grid support technologies as needed. Resources should be sought from within TVA's service territory and also from SPP and MISO. Most likely, a combination of one or more of these clean technologies should be combined for the optimal option for TVA customers and the environment. TVA should then issue a supplemental DEIS with the results of the comparison of several alternatives.</p> <p>TVA can look at the list of needs it developed for this location on the grid in South Memphis and then assemble the renewable, battery and demand-side resources that can meet these needs.</p>	<p>Please see the responses to Comments #176 and #197 addressing the alternatives considered by TVA in the EIS. See also the response to Comment #237 addressing the purpose and need for TVA's proposed action and why the alternatives suggested in this comment would not meet TVA's purpose and need for this action.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
178	Center for Biological Diversity	NEPA Analysis	The 2019 IRP projections and subsequent resource decisions are outdated, based on market and climate conditions from 6 years ago.	TVA's 2019 IRP continues to be a valid guide for TVA's proposed site-specific action studied in this EIS. TVA is not required, under the TVA Act or any other applicable law, to forego relying on an in-place and still applicable IRP while a new IRP is in development. Any decision associated with this EIS would be a specific, discrete component of TVA's asset strategy. The proposed project is consistent with the recommended target power supply mix in the 2019 IRP, which reflects the result of the least-cost planning process conducted at the system level as required by Section 113 of the Energy Policy Act of 1992. The specific purpose and need for this EIS is based on the need for firm, dispatchable generation to accommodate increased load growth and to increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. The action alternative meets this purpose and need, prompting TVA to identify this alternative as the Preferred Alternative. The addition of aeroderivative CT generation under Alternative B is consistent with the target supply mix in the 2019 IRP. The 2019 IRP and the assumptions undergirding that IRP continue to remain valid, and TVA will continue to implement the 2019 IRP until a new IRP is in place. TVA's 2019 IRP is a strategic and forward-looking tool and continues to serve as a solid basis for guiding decision-making to ensure a reliable and cost-effective energy future.

Comment Number	Commenter	Topic	Comment	TVA Response
				<p>It considers and plans for meeting the Valley's future needs over a 20-year study period, while also including more specific directions over the first 10-year period.</p>
179	Center for Biological Diversity	NEPA Analysis	<p>We look forward to seeing TVA go back to the drawing board and issuing either a new Draft EIS that provides an opportunity for the public to comment on reasonable alternatives, or at minimum a Final EIS for the Allen Plant that fully addresses these concerns.</p>	<p>Comment noted.</p>
180	Southern Environmental Law Center	Noise	<p>TVA has failed to address how the increased noise from construction and long-term operation of additional turbines at TVA Allen would affect the nearby community, unreasonably finding that the effects would be minimal.</p> <p>But TVA has not explained how the agency would determine if abatement technologies are necessary. TVA has not proposed potential abatement technologies or identified off-site noise receptors. To support its finding that noise impacts would be minimal, TVA must provide more detail about its noise abatement strategy.</p>	<p>TVA addresses potential impacts to ambient noise in Section 3.9 of the EIS. The EPA noise guideline recommends outdoor noise levels do not exceed Ldn of 55 dBA, which is sufficient to protect the public from the effect of broadband environmental noise in typical outdoor and residential areas. The potential impacts to nearby communities and sensitive receptors would be below the EPA's recommended outdoor noise levels (55 dBA), operation of the six aeroderivative CTs would result in noise attenuation of 24.45 dBA at the nearest residence (1.5 miles southeast of the ACT Plant). Section 3.9 of the EIS has been revised to show that noise abatement technologies are not needed as ambient noise impacts would be</p>

Comment Number	Commenter	Topic	Comment	TVA Response
				below the EPA recommended outdoor noise levels.
181	Brenda Thomas	Noise	What is the expected level of noise for the turbines and will they be in housing?	Please see the response to Comment #180.
182	Southern Alliance for Clean Energy	Other Energy Saving Measures	<p>TVA also did not evaluate distributed generation and demand-reduction alternatives that could be deployed rapidly to lessen the need for fossil gas generation at the Allen site, likely for a lower cost.</p> <p>TVA could easily expand its program offerings and amend its contracts with the 153 local power companies that it serves to promote self-generation and reduce demand with clean alternatives, but it does not evaluate that as an alternative here.</p> <p>This failure to identify customer-sited and demand-side resources through program offerings is not logical given that TVA does not have shareholders and therefore does not have a reason to prefer to build capital projects over distributed or demand-side alternatives.</p>	<p>As explained in Table 2-2 of the EIS, while TVA actively pursues demand-side management programs and distributed energy resources options through other programs, such alternative generation resources do not meet the objectives of this proposed action. Although TVA is encouraging and rewarding residents, businesses, and federal agencies to build a more resilient grid with over \$1.5 billion in funding for the TVA energy efficiency and demand management portfolio through Fiscal Year 2027, the demand management and energy efficiency options have limitations. Demand response programs are limited in the number of calls available and would not meet the purpose and need of the project. Energy efficiency programs take time to scale and market, which increases costs at the high penetration levels required to meet needs. Distributed energy resources would not meet the need for firm dispatchable generation identified in TVA's power supply planning or for improved flexibility and stability of TVA's system in western Tennessee.</p>

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183	Southern Alliance for Clean Energy	Other Energy saving measures	Insofar as TVA is concerned with meeting peak demand on cold winter mornings, energy efficiency should be the first resource TVA deploys, keeping people comfortable and safe while not adding any demand to the system. TVA should also grow their demand response programs that provide incentives for energy customers to shift their power usage away from the times where others have the most need for power, which helps avoid the risk of blackouts and keeps costs lower for everyone.	Please see the response to Comment #182.
184	Southern Alliance for Clean Energy	Other Energy saving measures	TVA should start with investing in energy efficiency—measures like sealing air leaks and adding insulation in buildings—to make Memphians’ homes more comfortable and healthy while lowering their bills.	Comment noted. TVA currently has a number of energy efficiency programs to reduce the use of energy. TVA is encouraging and rewarding residents, businesses, and federal agencies to build a more resilient grid with over \$1.5 billion in funding for the TVA energy efficiency and demand management portfolio through Fiscal Year 2027.
185	Public via Sierra Club	Other Energy saving measures	5. Increase funding for energy efficiency projects	Comment noted. TVA currently has a number of energy efficiency programs to reduce the use of energy. A summary of these programs can be found in Section 2.5 of the Draft 2025 IRP EIS, available here: www.tva.com/irp . TVA is encouraging and rewarding residents, businesses, and federal agencies to build a more resilient grid with over \$1.5 billion in funding for the TVA energy efficiency and demand management portfolio through Fiscal Year 2027.

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186	Dennis Lynch	Other Energy saving measures	3. Develop pricing strategies which encourage and incentivize end-customers to reduce their peaking via scheduling and battery resources.	TVA agrees that such programs are important. TVA currently has a number of demand-side management programs to reduce the use of energy and has dedicated over \$1.5 billion in funding for our energy efficiency and demand management portfolio through Fiscal Year 2027. A summary of the Energy Efficiency Programs can be found in Section 2.5.1 of the draft 2025 IRP EIS, available here: www.tva.com/irp .
187	Southern Alliance for Clean Energy	Other Energy saving measures	TVA should work to streamline their contracting and interconnection queue processes to bring clean resources online faster.	Comment noted.
188	Southern Alliance for Clean Energy	Project Alternatives	<p>TVA is relying on a document that is more than six years out of date. This is fundamentally inappropriate because the policy, economic, and technological assumptions are no longer even remotely accurate and valid.</p> <p>Additionally, TVA has already exceeded its estimated need for new CTs in the 2019 IRP under normal conditions.</p>	As noted in other comments, the 2019 IRP continues to be a valid guide for and TVA’s site-specific generation decision making. The 2019 IRP power supply mix ranges for gas is up to 5.2 GW by 2028 and up to 8.6 GW by 2038. TVA’s proposed resource additions, including Allen CT, remain within the approved bounds of the 2019 IRP.
189	Sharonanne	Project Alternatives	Have you looked to determine if there is anywhere there are no people around to be affected?	Proposed activities would occur on previously disturbed lands located within TVA’s existing Allen Fossil, Allen Combined Cycle and Allen CT facility locations. TVA considers a number of factors when considering sites for generation expansion. TVA often identifies existing TVA sites for new generation to utilize critical infrastructure that is already in place (e.g., transmission, pipelines). Construction and operation of generation at previously

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				<p>disturbed sites typically reduces impacts to the environment. Regional transmission system needs are also considered. These factors were considered by TVA when identifying the Allen CT site for new generation.</p>
190	Southern Environmental Law Center	Project Alternatives	<p>As detailed in our scoping comments, TVA cannot rely on its 2019 IRP or CT Modernization Study to limit the range of alternatives to a gas plant. Relying on the 2019 IRP to inform a decision to build a new gas plant in 2023 is irresponsible and arbitrary because neither that document nor the modeling exercise on which it is based reflect TVA's climate commitments, coal retirement plans, major climate legislation, and significant changes in the energy market.</p> <p>In other words, not only does the 2019 IRP fail to account for the dramatically changed world of 2023, even on its own terms it is so vague that it does not in any way justify TVA's proposal to build a gas plant to replace the Kingston Fossil Plant.</p>	<p>The 2019 IRP continues to be effective and valid. TVA is not required, under the TVA Act or any other applicable law, to forego relying on an in-place and still applicable IRP while a new IRP is in development. Any decision associated with this EIS would be a specific, discrete component of TVA's asset strategy. The proposed project is consistent with the recommended target power supply mix in the 2019 IRP, which reflects the result of the least-cost planning process conducted at the system level as required by Section 113 of the Energy Policy Act of 1992. The specific purpose and need animating this EIS is based on the need for firm, dispatchable generation to accommodate increased load growth and the need for flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. The action alternative meets this purpose and need, prompting TVA to identify this alternative as its preferred alternative. The addition of CT generation under Alternative B is consistent with the target supply mix in the 2019 IRP. The 2019 IRP and the assumptions undergirding that IRP continue to remain valid, and TVA will</p>

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				<p>continue to implement the 2019 IRP until a new IRP is in place. TVA’s 2019 IRP is a strategic and forward-looking tool and continues to serve as a solid basis for guiding decision-making to ensure a reliable and cost-effective energy future. It considers and plans for meeting the Valley’s future needs over a 20-year study period, while also including more specific directions over the first 10-year period.</p> <p>TVA is not relying upon the CT Modernization Study in the manner suggested by the commenter. The study is noted in the Background section of the EIS (Section 1.2) due to its relevance to the previous units at Allen CT.</p>
191	Center for Biological Diversity	Purpose and Need	It is premature for TVA to propose action on the Allen Plant, especially committing to building more dangerous and costly fossil fuel generation, before finalizing the 2025 Integrated Resource Plan (“2025 IRP”).	Please see the response to Comment #190.
192	Southern Environmental Law Center	Project Alternatives	TVA cannot offset its greenhouse gas emissions by pointing to potential clean energy projects elsewhere. TVA must be clear: the Allen CT Gas Plant will worsen climate change.	The EIS discusses potential impacts to Climate Change and Greenhouse Gases (Section 3.2). The EIS determines that compared to the overall TVA system GHG emissions, the proposed project would represent a minor increase (0.22 to 0.82 percent dependent on capacity factor) to GHG emissions.
193	Southern Environmental Law Center	Project Alternatives	Agencies must consider the impacts and alternatives of their proposals before committing to any one action. Yet TVA appears to have committed to the Allen CT Gas Plant before completing this	The EIS will serve as an important contribution to TVA’s decision-making process. The NEPA review process does not prevent agencies from submitting applications for a permit or making

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			<p>review.</p> <p>In addition to apparently contracting to purchase the combustion turbines, TVA has already begun pursuing an air permit for the Allen CT Gas Plant. There is no indication TVA has similarly pursued permitting for any other reasonable alternative.</p> <p>Particularly concerning, TVA's unlawful precommitment appears to have prevented TVA from taking a good-faith look at any alternative ways to meet demand for electricity. In the Final EIS, TVA must address the scope of its financial and contractual commitment to the Allen CT Gas Plant. TVA should disclose any contracts it has signed, as well as the expenses it has incurred in implementing the Allen CT Gas Plant proposal.</p>	<p>purchases of long-lead-time equipment, as long as such administrative activities do not result in adverse environmental effects or limit the choice of alternatives (18 CFR 1318.405). An agency may take initial steps, such as submitting permits or contracting to purchase long lead-time equipment, to prepare for an alternative if it is selected; the agency is also not required to take equivalent steps to implement other alternatives. To ensure the timely completion of permitting and review processes, TVA routinely begins permit processes for proposed actions prior to the completion of environmental reviews.</p> <p>These preliminary activities would not result in adverse environmental effects or result in obligations under which TVA must undertake an action.</p>
194	Representative Justin J. Pearson (TN District 86)	Project Alternatives	<p>You all are writing and operating as though everything's a done deal and the comments from myself and my constituents will mean nothing to the plans you have already set which is antithetical to the purpose of a NEPA analysis in the first place.</p>	<p>The EIS will serve as an important contribution to TVA's decision-making process. The public review period provides TVA the opportunity to communicate and provide information to the public and discuss the potential impacts of its proposals. The public is provided the opportunity to learn about the proposal and provide valuable feedback. Working with important stakeholders, interagency partners, and the public informs the decision-making process. TVA appreciates the input provided by the public during this review period and has considered the input</p>

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				<p>when finalizing the EIS. As noted in numerous TVA responses to comments, the public’s input has led TVA to revise and clarify sections of the Final EIS.</p>
195	Morgan McDowell, Rylee Reginald, Charlotte Farnall, Victoria Infante	Project Alternatives	TVA suggests the project will support renewable integration but offers no modeling or data to support this claim.	<p>The inclusion of natural gas-fired CTs and CCs on the TVA system is driven by the demand for reliable electricity, the increased amount of solar penetration, system dispatchable capacity requirements, commodity prices, costs relative to alternative resource options, and transmission system reliability. Transmission-related benefits ensure reliability and stability by maintaining dynamic reactive power and inertia in the area. Dynamic reactive power is complex power produced by generation plants needed to maintain system stability and voltage under steady state and fault conditions. Inertia produced by spinning generation, such as CTs and CCs, helps maintain system stability and frequency by resisting sudden changes on the power system and adding strength to the area.</p> <p>Natural gas-fired CT or CC units can be operated year-round to meet the fluctuating demand on the power system, including, for instance, overnight, during cold pre-dawn winter mornings, and during warm summer evenings as solar generation fades. The inclusion of dispatchable power generation from natural gas-fired CTs and CCs effectively enables systemwide integration of solar while providing</p>

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				<p>critical transmission-related benefits to ensure reliability, resiliency, and power quality. The addition of CT units to the fleet aligns with the direction in the 2019 IRP, which recommended enhancing system flexibility to integrate renewables and distributed resources, with substantial solar additions expected over the next two decades. As the amount of solar generation in the TVA generation portfolio continues to increase, the flexibility of the remainder of the fleet becomes even more important. Cloud patterns that temporarily block the sun and reduce solar generation require other generating units to respond to continue to reliably supply power to customers. CTs provide flexible, dispatchable generation, enabling the remainder of the system to better integrate renewables.</p>
196	Southern Alliance for Clean Energy	Project Alternatives	<p>In addition, TVA criticizes solar for not being able to provide reliable power during winter peaks, but they fail to recognize that gas plants have been unreliable in meeting winter peaks in extreme weather, as shown during winter storms Elliott and Uri. During Elliott, TVA had failures at both coal and gas plants, and gas supply across the Eastern US was severely limited.</p>	<p>The temporal availability of solar resources to generate power is an inherent characteristic of the resource. Winter Storm Elliott was unique in TVA's history due to the large geographical reach of the storm across the southeast and beyond. Since that storm, TVA made significant investments to further harden its generating resources, which improved cold weather performance of gas assets during winter storms in 2024 and 2025 that set new peak records.</p>
197	Southern Environmental Law Center	Project Alternatives	<p>In the Draft EIS, TVA presented two "alternatives" for its project: TVA will either build the Allen CT Gas Plant, or it won't. This all-or-nothing approach fails</p>	<p>TVA has adequately considered alternatives and discloses its evaluation of alternative generation sources. In conducting an alternatives analysis,</p>

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			<p>to consider reasonable alternatives—including battery storage and a clean energy portfolio—that can meet the purpose and need for this proposal.</p>	<p>agencies must evaluate reasonable alternatives to the proposed action, and for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination. See <i>Coal. for the Advancement of Reg'l Transp. v. Fed. Highway Admin.</i>, 576 F. App'x 477, 481 (6th Cir. 2014); <i>Citizens Against Burlington, Inc. v. Busey</i>, 938 F.2d 190, 195 (D.C. Cir. 1991) (“[A]n alternative is reasonable only if it will bring about the ends of the federal action.”). Agencies exercise substantial discretion in identifying feasible alternatives. <i>Seven County Infrastructure Coalition v. Eagle County, CO.</i>, 605 U.S. ---, Slip Op. at 10 (2025).</p> <p>The purpose of the proposed action is to support continued load growth within the TVA service territory and improve flexibility of TVA's system in western Tennessee. The action is consistent with the recommendations in the 2019 IRP, which allows TVA to meet the demand for electricity while facilitating the integration of renewables onto the electric grid. The 2019 IRP recommended the addition of up to 5,200 MW of CTs by 2028 and up to 8,600 MW by 2038 to accommodate load growth. As the region's power provider, TVA needs to provide dispatchable generation capacity to ensure that TVA can reliably meet required year-round generation, maximum capacity system demands, planning reserve margin targets, and</p>

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				<p>comply with the requirement under the TVA Act that power be sold at rates as low as feasible.</p> <p>This proposed action is one piece of TVA's overall asset strategy, which blends a combination of resource technologies to allow TVA to support affordable, reliable, and cleaner energy for its customers. TVA's asset strategy already contemplates the blending of resources to provide the least-cost, optimal portfolio under a variety of future conditions. A key beneficial result of TVA's asset strategy is the reduction of carbon emissions. As discussed in detail throughout EIS Section 1.2, this action is a specific, discrete component of that asset strategy and is consistent with the need established by the 2019 IRP to establish new dispatchable capacity in the TVA region, increase reliability and flexibility, integrate larger amounts of renewables on the grid, increase energy efficiency, and meet TVA energy production goals. The need for the action derives from these IRP objectives.</p> <p>TVA recognizes the benefits of both short and long duration storage. Emerging long-duration storage technologies, such as advanced chemistry batteries and other nascent technologies, have the potential to provide longer duration storage in the future. Currently, the combination of renewable energy and storage technologies, available today, cannot</p>

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				<p>provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables.</p> <p>Table 2-2 of the EIS discusses a summary of alternative resource options and the reason they were eliminated from further detailed consideration and has been updated with additional information. The summary of options has been revised in the Final EIS to provide further discussion.</p>
198	Representative Justin J. Pearson (TN District 86)	Project Alternatives	Second, your plans do not even list an alternative option to be considered which is consequential and condemning of this entire project.	TVA addresses other alternatives not considered in detail in Section 2.2.3 of the EIS. In the section, TVA explains why alternative options would not address the purpose and need of the project. Please see the response to Comment #197.
199	Southern Environmental Law Center	Renewable Energy Alternatives	<p>However, TVA does not fully consider the possibility of pairing solar or wind energy with battery storage to create a dispatchable energy source.</p> <p>Battery storage and a clean energy portfolio can meet the purpose and need of this proposal without emitting any climate pollution.</p>	Please see the response to Comment #197.
200	Southern Environmental Law Center	Project Alternatives	TVA has unreasonably ignored alternatives “that are technically and economically feasible, and meet the purpose and need of the proposal.	Please see the response to Comment #197.

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201	Center for Biological Diversity	Environmental Justice	TVA is actively moving in the wrong direction by not only planning to build new fossil fuel generation, but also only even considering an action alternative in the Draft EIS that would cement the region's dependence on fossil fuels, burdening communities, particularly Black and low-wealth communities in Memphis, with increased air and water pollution, health hazards, and volatile prices that aggravate existing energy burdens.	Please see the responses to Comments #197, #84, and #71.
202	Center for Biological Diversity	Renewable Energy Alternatives	Furthermore, while TVA claims that this new generation is essential to improve system reliability and support continued system load growth, these goals can be satisfied with resilient distributed renewable energy, battery storage, energy efficiency technology and demand response, particularly once TVA takes long-duration storage technologies into account.	Please see the response to Comment #197.
203	Form Letter Commenters (see rows 102 through 134)	Project Alternatives	Troublingly, in proposing the new methane gas-burning turbines, TVA failed to do basic due diligence by examining alternative methods of meeting these needs. Had they done their homework, they likely would have found that all of these goals can be accomplished through energy efficiency and demand management, renewable energy, energy storage, and grid support technologies with less risk, less cost, and less pollution than through more gas burning.	Please see the response to Comment #197 and Section 2.2.3 of the EIS.

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204	Center for Biological Diversity	Decarbonization Goal	TVA Must Choose Fossil Fuel-Free Alternatives to Meet New Energy Demand to Comply With The TVA Act and Achieve Rapid Greenhouse Gas Reductions That Are Critical To Addressing The Climate Emergency.	Please see the response to Comment #197.
205	Dominique Banks-Terry	Renewable Energy Alternatives	<p>To mitigate these negative effects, city officials and energy companies must explore more sustainable alternatives, such as renewable energy sources like wind, solar, and hydroelectric power.</p> <p>The city must take proactive steps to address these issues, investing in cleaner energy and reducing emissions to create a healthier environment for all residents.</p>	Please see the response to Comment #197. The activities of the City of Memphis are outside the scope of TVA’s review.
206	Lily McMullen, Charity Mattingly, Annalise Roig, Gwen Ridgeway	Renewable Energy Alternatives	<p>Fails to Evaluate Clean Energy Alternatives: While the DEIS mentions limitations of solar and battery storage, it fails to consider hybrid or grid-integrated models, such as solar plus battery with demand response, which are being implemented across the country. Building new fossil fuel infrastructure risks locking in emissions for decades. Nearby communities deserve energy solutions that prioritize long-term sustainability and environmental health. Clean energy alternatives should be seriously and transparently evaluated as part of the final EIS.</p>	Please see the response to Comment #197.
207	Mary Gibson	Renewable Energy Alternatives	I strongly oppose more fossil fuel buildup by TVA in the City of Memphis and Shelby County. Clean energy solutions such as solar and wind are cheaper and cleaner alternatives that are predictably	Please see the response to Comment #197.

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			<p>priced. At a time when our climate is warming due to carbon pollution and the City of Memphis continues to have a smog problem, alternatives to dirty, polluting and unpredictably priced fossil fuels should be considered.</p>	
208	Wayne Jones	Renewable Energy Alternatives	<p>While the world is seeking to provide energy utilizing proven clean energy solutions, why is TVA doing the exact opposite in an area that's predominantly populated with minorities?</p> <p>Where's the consideration for humanity, and the people that are going to have generational illnesses from the pollution of the atmosphere and geological compounds that make this place our source for sustenance from the award winning water we are blessed to drink, the food we eat, and the clothes we wear?</p> <p>Seek proven clean energy producing solutions and not rush into situations for the sake of money, status, or pressure from people that don't represent the greater good for everybody for generations to come.</p>	Please see the response to Comment #197.
209	Amy Benson	Renewable Energy Alternatives	<p>We should invest in green energy solutions do not pollute the southwest Memphis community and the larger Memphis area.</p>	Please see the response to Comment #197.
210	Eddie Lee Johnson, People Power	Renewable Energy Alternatives	<p>If this is not addressed publicly on how you plan to create technologies to clean energy,</p>	Please see the response to Comment #197.

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211	Memphis Community Against Pollution	Renewable Energy Alternatives	Sustainability will not hurt anyone, this earth is not an infinite resource. Lets try something new! Also, it is you all that should be footing the bill for higher energy costs and demands, not people who cannot afford it. PAY UP	Please see the response to Comment #197.
212	Denise Corsa	Renewable Energy Alternatives	We need more safe, non-polluting ways of producing energy, not more pollution!	Please see the response to Comment #197.
213	Sandy Furrig	Renewable Energy Alternatives	Move to clean energy production for the health of the citizens of Southwest Memphis and our planet.	Please see the response to Comment #197.
214	Memphis Community Against Pollution	Renewable Energy Alternatives	We need investments in clean, renewable solutions that prioritize public health, not profits.	Please see the response to Comment #197.
215	Vicki Kintener-Duffy	Renewable Energy Alternatives	Instead, we want you to work towards clean energy for Tennessee so we can preserve our beautiful state and care for our residents.	Please see the response to Comment #197.
216	Margaret B.	Renewable Energy Alternatives	No more fossil fuels! Our world is on fire and once-in-a-lifetime natural disasters are becoming a daily occurrence. We need to commit to greener energy options today!!!	Please see the response to Comment #197.
217	Mary VanGieson	Renewable Energy Alternatives	Invest in a clean energy future build on energy efficiency, solar, wind, battery storage and demand reduction.	Please see the response to Comment #197.

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218	Center for Biological Diversity	Renewable Energy Alternatives	TVA Must Consider Renewable Energy Alternatives in the EIS That Would Help Reduce Energy Demand, Build Energy Resilience, and Avoid Harm to TVA Customers	Please see the response to Comment #197.
219	Center for Biological Diversity	Renewable Energy Alternatives	The impacts of the climate crisis and worsening energy injustice for the communities that TVA serves are concrete, palpable, and are projected to worsen — and will certainly do so should TVA fail to consider and pursue non-fossil fuel alternatives.	Please see the response to Comment #197.
220	Center for Biological Diversity	Renewable Energy Alternatives	TVA has an opportunity to improve the quality of life of people in the region, and that starts with completing an EIS that examines DERs, storage, demand response, and energy efficiency improvements instead of expanding fossil gas operations.	Please see the response to Comment #197.
221	Southern Alliance for Clean Energy	Project Alternatives	TVA clearly did not identify all available options and instead proposes a project that will increase the pollution burden in the surrounding South Memphis community while committing TVA ratepayers to decades of fossil fuel price increases.	Please see the responses to Comments #197 and #136.
222	Morgan McDowell, Rylee Reginald, Charlotte Farnall, Victoria Infante	Project Alternatives	Incomplete Alternatives Analysis: Additionally, we do not believe that all reasonable alternatives were adequately considered in this EIS. By limiting the scope of analysis, the TVA fails to explore a wider range of alternatives that could help meet project goals while reducing environmental or financial impacts. The analysis also lacks a clear, data-driven explanation as to how	Please see the responses to Comments #197 and #182.

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			<p>implementing these CT units will increase renewable energy use, simply stating how improving TVA’s transmission system stability will help “TVA expand and integrate renewable energy.” This assertion requires a more detailed comparative analysis to prove its claims. To address these issues and enhance the integrity of the EIS, we strongly recommend the TVA to consider other alternatives for their plan, such as a phased or reduced CT unit deployment, and provide a comparative analysis to justify how renewable energy will be improved upon.</p>	
223	Sarah Hadskey	Renewable Energy Alternatives	<p>You definitely need to research net zero carbon power around the world – Portugal, Texas, Iowa, South Dakota, California, UK, EU.</p>	<p>Comment noted.</p>
224	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>A unique opportunity available to TVA is to take advantage of the legacy of the historic Allen Fossil Plant and utilize the “energy communities” federal tax credit, available where coal power units have retired in recent years, which would give TVA a 10% discount on any energy storage or renewable energy developed at the Allen Plant facility, within the census tract, or in any adjacent census tract.</p>	<p>Comment noted. TVA works closely with the 153 local power companies to ensure that the needs of their customers are served, including adding locally sourced energy for their customers. The terms of wholesale power contracts between TVA and local power companies are outside the scope of this environmental review.</p>
225	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>Finally, insofar as there is need for grid support to facilitate the increased penetration of renewable energy, TVA should use non-polluting grid stabilizing technologies. In particular, TVA should reexamine their outdated assumption that inverter-based resources, such as</p>	<p>Please see the response to Comment #197.</p>

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			solar paired with storage, “introduces transmission instability and reliability issues.”	
226	Whitney Noel, Madison Ford, Kiyoko Shivers, Troy Norman	Project Components	<p>The T.E. Maxson Wastewater Treatment Facility has recently been upgraded to meet new water treatment requirements, making it a potential source of reused water (U.S. Environmental Protection Agency, 2024). By connecting with this facility, the project could access treated wastewater for cooling processes and reduce the need for freshwater.</p> <p>We suggest that the TVA consider collaboration opportunities with the T.E. Maxson Wastewater Treatment Facility and the upcoming xAI Water Reuse Plant to source reusable water for the combustion turbine project.</p>	Comment noted. As noted in Section 3.4.2.2.2, TVA anticipates that impacts to water resources during plant operation would be negligible, given the quantities of potable water needed and applicable permit requirements.
227	Brenda Thomas	Project Components	Will emissions be allowed to increase for startup, emergency and shutdown, e.g., exhaust clouds?	The EIS discusses potential impacts to air quality (Section 3.1) and includes an analysis of the requested permitted limit of operation of the aeroderivative CT units (40 percent capacity factor) and the predicted operation of the aeroderivative CT units (11.1 percent capacity factor). While actual capacity factor may vary, the 40 percent capacity factor analysis captures the bounding air emissions.
228	Adriana Gaines	Project Components	Is it legally binding that these turbines only operate in the winter and not contribute to heat in the summer?	The proposed project could operate year-round, however each aeroderivative CT unit is anticipated to operate 3,260 hours per year with 350 startup/shutdown events.

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				Operations of the aero CTs would not impact ambient air temperatures except within portions of the Allen CT site.
229	Avin Wolfe, Hanna Celaya, Kiara R. Earley, Mianna Anderson	Project Components	<p>Combined Cycle Plant Considerations: The DEIS should provide a detailed explanation of the benefits of using combined cycle technology. This should include a comparison of emissions and efficiency compared to simple-cycle turbines.</p> <p>The DEIS should explain how the combined cycle plant will integrate with the aeroderivative CT units to optimize performance and minimize emissions.</p>	The proposed project does not include combined cycle technology, the units being proposed are aeroderivative units which provide flexibility and serve as support to the continued load growth experienced in the TVA power service area. TVA will continue to operate the CC Plant as normal outside of operations of the proposed action. TVA will utilize best practices and efficiencies learned at past and existing plants to assist in minimizing emissions and support plant optimization.
230	Tina Sizer	Project Components	Do you foresee more than 6 turbines in the next 5 years? How many more?	At this time, TVA has no plans to install or operate more than six new aeroderivative CT units at the Allen CT facility.
231	Brenda Thomas	Project Components	What is the status of the permit?	TVA has submitted an air permit application to Shelby County Health Department and is expecting to receive a response by Mid to Late 2025.
232	Public Meeting Attendee	Air Quality	What is the timeline for the ISD and air permit.	Please see the response to Comment #231.
233	Public Meeting Attendee	Project Components	Why were the 16 old units removed in recent year? How much generation was those units compared to what is proposed? Please compare the emissions of the old units to the proposed units.	TVA retired units 1 through 16 at Allen CT after conducting a study in 2019 to evaluate the condition of TVA’s current CT units and form recommendations for investments to ensure the fleet can reliably support peaks in demand into the future. Originating from the early 1970s, the 16 units at Allen were among those CT units determined to be the most challenged (i.e., having received

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				<p>little recent investment, being older than 40 years, and with uncertain reliability). The study recommended retirement and replacement for the units. These units were replaced by TVA as part of its Paradise (Kentucky) and Colbert (Alabama) CT projects.</p> <p>The sixteen CT units that were retired had a capacity of 240 MW in the summer and 320 MW in the winter, whereas under TVA's proposal, the six new Aero CT units would generate 200 MW. The new Aero CTs would have state-of-the-art technologies to reduce air emissions. For example, TVA estimates that the new units would have (approximately) 98% fewer Nitrogen Oxide emissions and 35% fewer Carbon Dioxide emissions than the retired units.</p>
234	Anonymous	Public Comment Period	I need TVA to commit to the people and environment of this community. There are too many community members confused about this project. More education and opportunity for public comment is needed	As described in Section 1.6, during the scoping period for the project and during the public review of the Draft EIS, and through numerous interactions over the past 18 months, TVA has provided information about the scope of its proposal and to clarify the TVA activities under consideration. Through TVA's public webpage, public meeting and webinar (April 2025), and interactions with community stakeholders, TVA has provided information helpful to understanding this proposal.

Appendix A – Public and Agency Comments on the Draft EIS and TVA’s Responses

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235	Avin Wolfe, Hanna Celaya, Kiara R. Earley, Mianna Anderson	Public Comment Period	Inadequate Public Comment Period. it (minimum 45-day public comment period) does not allow individuals enough time to research and become knowledgeable enough about the project. A time period of 90 days or more would greatly increase the amount of useful and actionable public comments on any given project. A longer commenting period would allow community members to more thoroughly review the complex technical information presented in the DEIS, consult more experts, and formulate well-reasoned comments.	The length of the review of the Draft EIS is the standard period provided by TVA for the public to review draft EISs and was consistent with the CEQ regulations that were effective at the time TVA issued its draft EIS. TVA is pleased to have received numerous comments from the public during the review period.
236	Representative Justin J. Pearson (TN District 86)	Purpose and Need	You must go back to the drawing board and do an official and intentional plan to recognize, study, and then write up your plan. Currently, the Allen CT plan fails to address the meaningful list of worries and concerns of people in our district.	The current proposal resulted from extensive study and planning. TVA has evaluated and extensively discussed ways in which TVA can minimize effects on local communities. TVA appreciates the input provided by the public during the review process.
237	Center for Biological Diversity	Purpose and Need	<p>Because TVA Has Narrowed the Purpose And Need For Expanding the Allen Plant, The Agency Has Not Meaningfully Evaluated Reasonable Alternatives And Their Relative Impacts.</p> <p>In the Draft EIS, TVA has narrowed the purpose of its proposed action to favor the fossil gas alternative as opposed to considering additional alternatives like DERs. This violates NEPA, which requires that an agency “specify the underlying purpose and need for the proposed action,” 40 C.F.R. § 1502.13, and prohibits an agency from defining</p>	TVA has appropriately identified the underlying purpose and need for the proposed action (Section 1.3). Power providers need dispatchable power to effectively and quickly meet electricity demands for short periods, and the region has experienced an increase in demand and load growth. Such capabilities provide flexibility to power providers. System reliability and stability is also required. In its 2019 IRP, TVA identified the need for new natural gas generation as part of its generation portfolio. The consideration of other alternatives is addressed in Section

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			<p>“its objectives in unreasonably narrow terms.”</p> <p>By limiting the purpose in this manner, TVA has avoided meaningfully considering alternatives that would improve quality of life in the Valley and hasten TVA’s transition to non-polluting energy sources, including an alternative that prioritizes DERs, storage, energy efficiency, and other non-wires alternatives.</p>	<p>2.2.3, which has been revised to provide additional information.</p> <p>As stated in the Purpose and Need, TVA is in need of firm, dispatchable power to help meet growing demand. Firm, dispatchable power ensures that TVA can call on the generating capacity year-round, particularly during peak load events – those periods of maximum electricity demand from customers, typically late afternoon in the summer and before or around dawn in the winter. Renewable energy sources are variable resources, as generation is available when the sun is shining, or wind is blowing. Firm, dispatchable power provides a backstop for variable resources that are unable to or are very limited in their ability to meet maximum demand that occurs during peak seasons.</p>
238	Southern Environmental Law Center	Purpose and Need	<p>TVA presented an overly narrow statement of purpose and need for the Allen Aeroderivative Project in the DEIS, disregarding reasonable, carbon-free alternatives.</p> <p>TVA’s purpose and need for the Allen Aeroderivative Project is too narrowly drawn such that it violates the requirements of NEPA.</p> <p>TVA should limit the definition to allow for non-dispatchable power or should consider dispatchable power in conjunction with a clean energy source.</p>	Please see the response to Comment #237.

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239	Joseph Pasilis, Evan Dial, Emilio Reyes, Gabriella Cartier	Purpose and Need	<p>These projected emission conflicts sharply with the TVA’s stated climate commitments, disproportionately burdens environmental justice communities, and neglects viable, cost-effective renewable alternatives.</p> <p>While TVA claims these emissions are “negligible” (p.vi), it conflicts with Executive Order 13990 that reestablished the Interagency Working Group’s SC-GHG estimates.</p> <p>However, this (2019 IRP) is contradictory with the more recent Inflation Reduction Act of 2022 (Pub. L. No. 117-169) which increased incentives for renewable energy, highlighting their need for more recent regulation updates.</p> <p>A thorough evaluation of project goals to be made to determine if they align with TVA’s overall sustainability goals.</p>	<p>While the 2019 IRP does not estimate the net change in GHG emissions attributable to specific resources in the TVA system, it does demonstrate that TVA’s resources are being managed in a manner that contributes to a net reduction in the amount of GHG being released while TVA meets the demand of its electricity customers. TVA has reduced carbon emissions 58 percent from a 2005 baseline, and over 50 percent of TVA’s power supply comes from carbon free sources. While preliminary, TVA’s draft 2025 IRP study also indicates that the TVA power supply mix would continue these trends into the future.</p> <p>EO 13990 was rescinded by President Trump in January 2025 (see EO 14154, “Unleashing American Energy”).</p>
240	Lily McMullen, Charity Mattingly, Annalise Roig, Gwen Ridgeway	Renewable Energy Alternatives	<p>Failure to Consider Reasonable Alternatives: TVA proposed the expansion as necessary for reliability, however, they failed to properly analyze alternatives that could meet the same goal. While the Draft EIS currently mentions alternatives such as battery storage and expandable renewable energy (Section 2.2.3), TVA claims they are not “technically and economically feasible” without providing additional data.</p>	<p>As explained in Section 1.3 of the EIS, TVA needs flexible, dispatchable power to meet required year-round generation and maximum capacity system demands and planning reserve margin targets. Dispatchable power is also needed to successfully integrate increasing amounts of renewable energy sources. Dispatchable synchronous condensing capabilities are known to address vulnerabilities to voltage instability that may result from increased renewable generation in the region. Reliability of the system would also be improved by</p>

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				<p>generation sources with black start capabilities that can support system restoration in the event of a system failure.</p> <p>Also, please see the responses to Comments #195 and #197.</p>
241	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>In the DEIS, TVA extols the value of black start capability available with the Preferred Alternative construction of gas turbines, yet overlooks that black start is also available via grid forming inverters paired with battery energy storage systems. TVA also clearly values synchronous condensers in the DEIS for their ability to provide voltage control, and proposes to use synchronous condenser mode on the gas turbines in the Preferred Alternative, but TVA overlooks that they can build standalone synchronous condensers and flywheels for grid support independently of new electrical generating units.</p>	<p>As set forth in TVA's 2019 IRP and the purpose and need statement of the EIS, TVA needs flexible, dispatchable power to meet required year-round generation and maximum capacity system demands and planning reserve margin targets. Synchronous condensers and flywheels help provide grid stability but are not dispatchable power generation sources.</p>
242	Rave' Richardson Craine	Renewable Energy Alternatives	<p>There was a member of the TVA who presented his feedback and vote for alternative energy. Isn't it true that battery power energy depends on combustions systems?</p>	<p>Batteries are limited in that they do not generate power, but rather store the power generated by other generation resources. Batteries are net consumers of energy. Batteries may be charged by any generating source.</p>
243	Joe and Fran Frain Aguirre	Renewable Energy Alternatives	<p>YES to clean, breathable air for all. How many wind turbines have you in Tennessee? Build wind turbines and place solar on any roofs especially in car ports!</p>	<p>Comment noted. TVA addresses why solar and wind energy resources were not considered in detail in Table 2-2 of the EIS.</p>

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244	Nancy LaPlaca	Renewable Energy Alternatives	SOLAR is the cheapest electricity on Earth! Why are you killing it? WHY are cutting people off from doing WHAT THEY WANT AND NEED, i.e. clean and cheap energy. SOLAR USES NO FUEL, PRODUCES NO POLLUTION, AND USES NO WATER.	Comment noted. TVA addresses why solar and wind energy resources were not considered in detail in Table 2-2 of the EIS.
245	Dr. Kimberly Ownes-Pearson	Renewable Energy Alternatives	SOLAR POWERED or WIND TURBINES	Comment noted. TVA addresses why solar and wind energy resources were not considered in detail in Table 2-2 of the EIS.
246	Representative Justin J. Pearson (TN District 86)	Renewable Energy Alternatives	The TVA is refusing to invest in solar and wind in a way that makes our communities safe and healthy. This is unacceptable and this analysis is woefully inadequate to address the historical, social, and environmental challenges we face.	Comment noted. TVA addresses why solar and wind energy resources were not considered in detail in Table 2-2 of the EIS.
247	Southern Alliance for Clean Energy	Renewable Energy Alternatives	TVA should consider energy storage technology at the Allen Power Plant and nearby locations with participation from the local community and guarantees of benefits to the local community, which would help ensure that customers’ demands for power are met at high-usage times, like cold winter mornings when heaters work hard and hot summer afternoons when A/C units are cooling homes and buildings.	Comment noted. TVA recognizes the benefits of both short and long duration storage. Emerging long-duration storage technologies, such as advanced chemistry batteries and other nascent technologies, have the potential to provide longer duration storage in the future. Currently, the combination of renewable energy and storage technologies, available today, cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables.

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248	Dennis Lynch	Renewable Energy Alternatives	7. Allow local power companies LPC's to maximize local implementation of solar + batteries without requiring TVA's illegal 20-year Evergreen contract.	Comment noted. TVA works closely with the 153 local power companies to ensure that the needs of their customers are served, including adding locally sourced energy for their customers. The terms of wholesale power contracts between TVA and local power companies are outside the scope of this environmental review.
249	Mykila Miller	Renewable Energy Alternatives	I would like to see TVA allow MLGW to invest in more solar and battery storage on the local grid without requiring the utility to sign unfair and unnecessary contracts.	Please see the response to Comment #248.
250	Southern Alliance for Clean Energy	Renewable Energy Alternatives	TVA summarily dismissed solar, wind energy, and battery energy storage in general terms with no evidence TVA performed any real analysis, as described previously in this comment letter, and did not even mention consideration of energy efficiency or demand management at all in the DEIS, despite multiple scoping comments calling for their consideration.	Demand management and energy efficiency is addressed in Table 2-2 of the EIS.
251	Suzanne Martin	Renewable Energy Alternatives	Another alternative, battery storage with clean solar charging the batteries is a preferable alternative. The Allen Plant's gas normal supply could provide energy to charge the batteries, when solar is not available and needed.	In Section 2.2.3 of the EIS, TVA discusses its determination that other generation resources, including battery storage and solar generation, would not achieve TVA's objectives for this proposal. TVA needs flexible, dispatchable power to meet required year-round generation and maximum capacity system demands and planning reserve margin targets. Dispatchable synchronous condensing capabilities are known to address vulnerabilities to

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				<p>voltage instability that may result from increased renewable generation in the region. Reliability of the system would also be improved by generation sources with black start capabilities that can support system restoration in the event of a system failure.</p> <p>In Section 1.2 of the EIS, TVA discusses the importance of having dispatchable power on its system and how it is needed to successfully integrate increasing amounts of renewable energy sources. Inclusion of natural gas-fired CTs and CCs in the target power supply mix is driven by the demand for reliable electricity, the increased amount of solar penetration, system dispatchable capacity requirements, commodity prices, costs relative to alternative resource options, and transmission system reliability. Transmission-related benefits ensure reliability and stability by maintaining dynamic reactive power and inertia in the area. Dynamic reactive power is complex power produced by generation plants needed to maintain system stability and voltage under steady state and fault conditions. Inertia produced by spinning generation, such as CTs and CCs, helps maintain system stability and frequency by resisting sudden changes on the power system and adding strength to the area.</p> <p>TVA recognizes the benefits of both short and long duration storage. Emerging long-duration storage</p>

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				<p>technologies, such as advanced chemistry batteries and other nascent technologies, have the potential to provide longer duration storage in the future. But currently, the combination of renewable energy and storage technologies, available today, cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables.</p>
252	Public Meeting Attendee	Renewable Energy Alternatives	Why doesn't TVA use battery storage instead of natural gas?	Please see the response to Comment #251.
253	Lisa	Renewable Energy Alternatives	TVA should be investing in clean, renewable energy solutions like solar and battery storage—options that are not only cost-competitive but also safer and more sustainable for our future. Instead of outdated, harmful energy sources, we need innovation that puts people and the planet first.	Please see the responses to Comments #195 and #251.
254	Joe Ozegovich	Renewable Energy Alternatives	In the interest of saving the local emissions from these gas turbines, I wish to communicate that this project would be better utilized using battery storage with solar providing the charging, and backed up by the Combined Cycle plant, when solar is not available. All this with hardly any maintenance costs. This technology would not contribute to the overwhelming emissions which are plaguing this neighborhood. A gesture by TVA to use this superior technology would be a warm welcome to the residents of this community and region.	Please see the response to Comment #251.

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			<p>It is important to lead with 21st century clean technology and not go backwards with a dirty fossil fuel source, even if it is more efficient the previous version.</p>	
255	Paul Klein	Renewable Energy Alternatives	<p>I appeal to you to be a good neighbor and explore alternative renewable and clean energy, like solar and battery storage.</p>	<p>Please see the response to Comment #251.</p>
256	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>There is no acknowledgement that costs for many technologies such as battery storage have significantly decreased and that the Inflation Reduction Act (IRA) has created incentives that can further reduce costs for clean energy resources. TVA did not give any serious thought to the many available clean alternatives, including battery storage and utility-scale solar (both of which are abundant in TVA’s Interconnection Queue), transmission interties with neighboring balancing authorities, and demand-side resources.</p>	<p>Section 2.2.3 of the EIS addresses the potential for the Inflation Reduction Act to improve costs and availability of renewable and storage resources. It may take years for the domestic supply chain to mature and ease the current constraints for certain technologies.</p>
257	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>There is no serious discussion of battery storage as an alternative, despite the fact that battery storage would meet the need even better than the Preferred Alternative, the 200 MW peaker. If peaking resources are needed in the region due to real time load growth and the planned addition of renewables, then battery storage should be evaluated for this project.</p>	<p>Table 2-1 in the FEIS has been updated to provide further explanation as to why BESS was eliminated from further detailed consideration. CTs contribute to system flexibility and have the ability to run for more sequential hours during high loads. Although battery benefits may be higher in spring and fall months where there is potential for excess solar generation during periods of lower loads, batteries are limited in the duration of energy storage (typically 4 hours). Further, batteries are limited in that they do not generate power, but rather store</p>

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				<p>the power generated by other sources and are net consumers of energy. At this time, the combination of renewable energy and storage cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables. TVA is evaluating the addition of more batteries to the portfolio as part of TVA's overall blended asset strategy.</p>
258	Southern Environmental Law Center	Renewable Energy Alternatives	<p>TVA provides no basis for its statement that “the combination of renewable energy and storage technologies cannot provide the same magnitude of reliable and cost-effective energy year-round as is possible with CTs in combination with renewables.</p>	<p>Please see the response to Comment #257.</p>
259	Southern Environmental Law Center	Renewable Energy Alternatives	<p>While storage alone could meet TVA's purpose and need, TVA can also use other clean resources to complement storage in meeting peak demand, including energy efficiency, demand response, solar, wind, and market purchases.</p>	<p>Please see the response to Comment #257.</p>
260	Center for Biological Diversity	Renewable Energy Alternatives	<p>Accordingly, TVA may not rely on simple economic or reliability considerations to refuse to consider additional scenarios for its power mix in the coming decades, including DER, energy efficiency, and storage alternatives. This is particularly true given TVA's statutory mission to be a “leader in technology innovation, low-cost power and environmental stewardship.” 16 U.S.C. § 831a(b)(5). To meet this mandate TVA must explore opportunities to invest in renewable</p>	<p>Through the IRP process, TVA studies multiple scenarios and strategies in identifying its target power supply mix. As stated in Sections 1.2 and 1.5, the IRP target power supply mix included the addition of up to 5,200 MW of CTs by 2028, and up to 8,600 MW of CTs by 2038. The proposed action evaluated in the EIS supports TVA's Preferred Alternative and the target power supply mix, as described in the IRP and accompanying EIS. In its IRP process,</p>

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			<p>energy technologies, battery storage, energy efficiency, and demand response that will help reduce electricity prices and make those technologies even more cost-competitive in the coming years.</p> <p>In effect, DERs and especially flexible load could provide system-wide benefits by displacing the need for polluting and health hazardous fossil gas turbines, including the new turbines proposed in the Draft EIS for the Allen Plant.</p> <p>TVA should look at what it can do today to prioritize the closure of the Allen Plant and invest in non-polluting and resilient technologies like DERs, storage, demand response, and energy efficiency that will minimize health and safety risks.</p>	<p>TVA considered and identified DER, energy efficiency, renewable, and storage needs in the future.</p>
261	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>TVA's failure to analyze renewable alternatives comes despite the fact that the public comments on the scoping process overwhelmingly called for 1) clean energy and storage and 2) making sure the financial incentives from the Inflation Reduction Act (IRA) are being taken into account and utilized to provide ratepayer savings.</p>	<p>TVA appreciates the public's input during the scoping period and has addressed the consideration of other resource options in Section 2.2.3 of the EIS, which addresses the potential for the Inflation Reduction Act to improve costs and availability of renewable and storage resources. It may take years for the domestic supply chain to mature and ease the current constraints for certain technologies.</p>
262	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>TVA should earnestly develop and procure clean renewable energy in Shelby County, western Tennessee, and the surrounding region, including rooftop solar energy, large-scale solar energy, and rural wind energy.</p>	<p>TVA employs a diverse resource mix to meet the region's energy demand. New aeroderivative CT generation is only one component of TVA's diverse generation strategy. Renewable energy resources are also a valuable component of TVA's resource mix, as reflected by the target</p>

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				<p>power supply mix identified in the 2019 IRP. TVA has planned numerous renewable energy projects in western Tennessee and northern Mississippi and continues to implement demand-side management programs.</p>
263	Form Letter Commenters (see rows 102 through 134)	Renewable Energy Alternatives	<p>Instead of locking our community into another generation of air pollution from burning methane gas, I urge TVA to invest instead in energy efficiency, solar, battery storage, and grid support technologies - solutions that will keep our costs lower, improve electric reliability, and create a healthier future for our communities.</p>	<p>TVA has a variety of generation resources in its system. TVA has existing solar capacity commitments of nearly 3,200 MW. TVA is continuing to expand its renewable energy commitments through procurement methods such as requests for proposals and opportunities at existing TVA sites. In July 2022, TVA issued a request for proposals for up to 5,000 MW of additional renewable energy resources. The 2019 IRP indicated that the near-term actions required TVA to enhance system flexibility to integrate renewable resources. TVA continues to work with long-term LPC customers as well to deploy additional distributed resources through a flexibility option under TVA's long-term agreement with individual LPC customers. The addition of CT units to the fleet aligns with the direction in the IRP, which recommended enhancing system flexibility to integrate renewables and distributed resources.</p>
264	Center for Biological Diversity	Renewable Energy Alternatives	<p>More than anything, TVA should be exploring long-duration battery storage and demand response alternatives that would help curb that peak demand.</p> <p>TVA again fails to consider the critical role that long-duration battery storage</p>	<p>TVA has updated Section 2.2.3 of the EIS to provide additional information about its consideration of battery storage resources. TVA determined that, at this time, the combination of renewable energy and battery storage would not provide the same magnitude of reliability</p>

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			<p>can play in helping solar systems adjust for any dips in generation caused by weather (also known as “solar smoothing”).</p>	<p>and would be less cost-effective as a year-round energy source. Alternative resources should be dispatchable generation and capable of providing year-round peak capacity needs. Please see the response to Comment #257.</p>
265	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>TVA briefly mentions battery storage as a complement to solar but then adds a caveat regarding cost that is not supported in this DEIS or in the 2019 IRP:</p> <p>“It adds cost” is merely a statement that is supposed to be accepted as fact, and it is followed by the falsehood that battery storage introduces transmission instability and reliability issues. The current reality is that 1) battery storage has come down in price significantly since 2019 and 2) battery storage is actually proven to improve transmission stability and reliability.</p> <p>It should be noted that there are 1,425 MW of solar plus battery storage projects waiting in the TVA queue in the counties that surround Shelby County (Hardeman TN, Pinola and Marshall MS, and Mississippi AR). These are emissions-free dispatchable resources that could help TVA meet the needs identified for the Allen peaker project.</p> <p>TVA appears to be stuck in the past and has not put forth the effort to identify resources that are cleaner, safer, and less expensive.</p>	<p>Please see the response to Comment #264.</p>

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266	Southern Alliance for Clean Energy	Renewable Energy Alternatives	TVA also did not evaluate resources in other jurisdictions that will become available with existing, potential, or planned interties. While TVA participates in inter-regional transmission planning as a member of Southeastern Transmission Planning Collaborative (SERTP), TVA applied for and received federal funding for an 800 MW intertie with SPP. That intertie would likely connect into TVA in or near Shelby County, and would open up the availability of wind resources to be able to meet winter peaks in TVA.	TVA is in need of firm, dispatchable power to help meet growing demand. Firm, dispatchable power ensures that TVA can call on the generating capacity year-round, particularly during peak load events – those periods of maximum electricity demand from customers, typically late afternoon in the summer and before or around dawn in the winter. Renewable energy sources, like wind, are variable resources, as generation is available when the sun is shining, or wind is blowing. While wind does not meet the Purpose and Need being studied in this EIS, TVA recognizes the value of wind and is soliciting wind options through renewable request for proposal processes.
267	Dennis Lynch	Renewable Energy Alternatives	<p>2. Use sufficient batteries for peak demands</p> <p>4. Maximize use of solar, and Battery storage</p> <p>6. Community oriented approach AND TVA Law requires TVA to support public need and environmental requirements. Therefore maximize solar + batteries- TVA owned and other.</p>	Please see the response to Comment #247.

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268	Rachel Bauer	Renewable Energy Alternatives	There are other, safer options, such as Megapacks, solar panels, or a combination of both, that should be used instead. Tennessee Valley Authority (TVA)'s Aaron Melda suggested fusion technology at the Apr 2, 2025 MLGW Board meeting, which would also be a safer alternative.	Please see the response to Comment #247. Nuclear fusion is also an emerging technology that has tremendous potential to provide reliable and consistent power supply, but its wide-scale deployment is premature. For more information about how TVA is pursuing this technology, visit www.tva.com/energy/fusion .
269	Joseph Pasilis, Evan Dial, Emilio Reyes, and Gabriella Cartier	Renewable Energy Alternatives	<p>Studies done by the National Renewable Energy Laboratory have illustrated grid-scale battery storage as both cost effective and viable (NREL, 2020). The current research combined with the incentives from the Inflation Reduction Act (IRA) would provide TVA with a more environmentally friendly yet cost effective option.</p> <p>We recommend that TVA revise the Final EIS to include a fossil free alternative that centers on distributed energy resources (DERs), utility-scale battery storage, and enhanced energy efficiency.</p>	Please see the response to Comment #247.
270	Southern Alliance for Clean Energy	Renewable Energy Alternatives	TVA relied on language in its outdated IRP to discount the ability of battery storage to provide these services, but the 2019 assumptions are no longer relevant. TVA also states that battery storage is limited to a 4 hour duration, which is no longer the case. Flow batteries provide 12 hours of support, and Form’s iron air battery provides 100 hours of support. Additional types of	Please see the response to Comment #247.

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			<p>energy storage include flywheels and compressed air. Even the typical lithium iron phosphate battery can be stacked and staggered to deliver more than 4 hours of energy to the grid.</p>	
271	Center for Biological Diversity	Renewable Energy Alternatives	<p>TVA is putting off the renewable energy transition by cramming through one fossil gas plant after another on the premise that at some point in the distant future this costly fossil fuel buildout will stabilize the grid enough to accommodate more renewable energy.</p> <p>While TVA tries to downplay the benefits of battery storage, citing added costs because of necessary transmission improvements, TVA fails to acknowledge the significant and long-term costs of new fossil gas generation.</p>	Please see the response to Comment #65.
272	Southern Alliance for Clean Energy	Renewable Energy Alternatives	<p>Additionally, TVA failed to consider grid support technologies that inverter based resources and standalone synchronous condensers can provide. Importantly, there is no evidence that TVA gave serious consideration to these clean energy resources together as a portfolio, working together to meet different needs at different times and with different contributions to reliability.</p>	TVA's consideration of alternative generation resources is included in Section 2.2.3 of the EIS, which has been updated to provide more discussion on the evaluation of these resources as alternatives.
273	Pamela Moses, Rise Up America	TVA Board	<p>I formally request that my concerns be acknowledged and that I be placed on the agenda to speak at the next meeting regarding this matter. It is imperative that our voices are heard, and we will not stand by while decisions are made that threaten the future of our community and the health of its residents.</p>	The public is provided an opportunity at each quarterly TVA Board of Directors meeting to provide input. Information about the "public listening sessions" at upcoming meetings can be found at https://www.tva.com/about-tva/our-leadership/board-of-directors .

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274	Amy Benson	TVA Board	TVA should allow MLGW to invest in more solar and battery storage on the local grid.	TVA continues to work with local power companies to discuss opportunities for generation on the local system.
275	Lily McMullen, Charity Mattingly, Annalise Roig, Gwen Ridgeway	Visual Impacts	<p>Fails to Consider Light and Visual Pollution.</p> <p>Pollution occurs in many forms, and the DEIS does not adequately address the light and visual pollution that would impact communities surrounding this project.</p> <p>it (the EIS) overlooks nighttime light pollution, which is known to disrupt circadian rhythms and behavior in many species, including amphibians and migratory birds (Longcore & Rich, 2004). Given the site’s proximity to McKellar Lake and the Mississippi Flyway, light pollution from this project could have broader ecological effects than is addressed in this DEIS. TVA should include a full analysis of these impacts and propose mitigation strategies.</p>	<p>Section 1.6.1 outlines the scope of the EEIS, and determines that there are no sensitive viewing receptors within 0.5 mile radius of the ACT Plant.</p> <p>Additionally, because the proposed Aero CT units would be located within the ACT Plant, the proposed action would not result in any new permanent visual discord. The project area has been highly developed and industrialized for decades. Wildlife using this area are habituated to the industrial setting and its visual and noise characteristics; habitat of similar or better quality is available nearby to species.</p> <p>The EIS addresses Wildlife and Threatened and Endangered Species in sections 3.5 and 3.6, respectively. The project area does not provide suitable habitat for many of the common wildlife species and several Threatened and Endangered Species. TVA has committed to conservation measures to avoid and minimize impacts for select species, including bat species, bald eagle, osprey, and the interior least tern.</p>
276	Brenda Thomas	Water Quality	Where will the water come from and will the used water be treated prior to discharge?	All potable water would be obtained from MLGW. The existing wastewater and stormwater systems would be modified to include new area drains. Oil-contaminated drains would be directed to the existing oil-water separator, whereas stormwater would be directed

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				to the existing stormwater collection system. Wastewater from offline water wash would be collected in totes and disposed per TVA procedures. Additionally, a site-specific stormwater pollution prevention plan will be developed to address accidental spills or releases.
277	Pamela Moses, Rise Up America	Water Quality	Additionally, our water quality is a precious resource that needs protection. The potential contamination of our drinking water sources due to industrial runoff is a risk that we simply cannot take. Clean water is a fundamental right, and allowing this project to move forward jeopardizes that right for our community.	Please see the response to comment #276.
278	Center for Biological Diversity	Water Quality	It is unthinkable that TVA would propose a project that would further strain Memphis' water supply and put Memphian's access to safe drinking water at risk.	Please see the response to comment #276.
279	Individual	Air Quality	Memphians deserve clean air and clean water, these corporations that our polluting our city need to clean up our mess!	Please see the response to comments #2 and #276.
280	Individual	Air Quality	Please stop TVA and XAI from polluting our air and water.	Please see the response to comments #2 and #276.
281	Memphis Community Against Pollution	Air Quality	Stop the contaminated water and toxins in our air.	Please see the response to comments #2 and #276.
282	Shelley Cates	Air Quality	The air and water quality has always been very poor.	Please see the response to comments #2 and #276.

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283	Tennessee Department of Environment and Conservation	Water Quality	Coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activities Permit (CGP) will be required as the land disturbance, including staging areas, is expected to be more than one acre. Application for CGP coverage requires submission of a Notice of Intent and a site-specific Stormwater Pollution Prevention Plan (SWPPP) to TDEC’s Division of Water Resources.	TVA will obtain all applicable permits including NPDES.
284	Lily McMullen, Charity Mattingly, Annalise Roig, Gwen Ridgeway	Wildlife/Endangered Species	<p>Failure to consider the effects on Alligator Snapping Turtle, proposed to be listed under ESA.</p> <p>The DEIS concludes that there would be “no effect” on this species, yet fails to address indirect and cumulative impacts that could occur downstream.</p> <p>This project would have runoff and waste disposal into McKellar Lake, which feeds into the Mississippi river. McKellar Lake, which is already degraded, has historically served as habitat for the Alligator Snapping Turtle.</p> <p>This raises serious concerns that the project could contribute to the extirpation of this species from the lake. We urge TVA to revisit this analysis and explore alternative actions that minimize further harm, especially given the turtle’s proposed federal listing.</p>	<p>In its analysis, TVA found that the nearest known record of the Alligator Snapping Turtle was collected in the 1830s about 12 miles north of the area (in a tributary stream that enters the Mississippi River above Memphis). The project area does not include any wetlands or waterbodies. As discussed in Section 3.4.1.2 of the EIS, with the proper implementation and maintenance of BMPs, only minor, temporary impacts to local surface waters (including McKellar Lake, about 300 feet away) would be expected during the proposed construction. Operations proposed by TVA would continue to comply with regulations set forth in all wastewater and stormwater NPDES permits. Due to continued compliance with permit requirements and minor alterations in wastewater and stormwater discharges, impacts to water resources during operation are negligible.</p>

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285	U.S. Department of the Interior	Wildlife/Endangered Species	<p>The delisted interior least tern has been observed in the past at the site, and TVA has committed to following conservation measures to avoid impacts to this species if it is encountered during project activities. These commitments include:</p> <ul style="list-style-type: none"> • Weekly observations of potential nesting sites within the project area would begin in mid-May and end in mid-August of any given year (for the duration of the project) to identify any terns that return to the area. • If terns return to project area and are seen nesting, no activities would be permitted within 300 feet of the nests. These commitments are appropriate to protect the species from harm during project activities. 	<p>Comment noted. These mitigation measures are incorporated into Section 2.4.2 of the final EIS and would be implemented should TVA move forward with its proposal.</p>
286	Steven Garcia	Wildlife/Endangered Species	<p>The sound produced by these aeroderivative combustion turbines should be observed when considering wildlife communities.</p> <p>With the use of these aeroderivative combustion turbines it can significantly increase sound pollution which in turn results in animals losing their sense of hearing, promoting the ineffectiveness of sound cues between animals and their environment, increasing stress to the point of animals reproducing less as well as leaving their habitat entirely, and changing their behavior to adapt to this new disturbance (Arcangeli et al., 2022).</p> <p>With increasing levels of sound many species could eventually become</p>	<p>The project area and vicinity has been highly developed and industrialized for decades. Natural gas turbines have been operated in the area since the early 1970s. Wildlife using this area are habituated to elevated levels of noise and habitat of similar (or better) quality is available nearby. Typical operational noise emissions would not result in noise levels that exceed 55 dB at off-site noise receptors; noise impacts from operations would be minor.</p>

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			<p>endangered because these sound cues indicating that a predator or prey is nearby would become harder to detect with the utilization of these machines, leading to many other species to face the same fate of reduced fitness as well as potential extinction in extreme cases.</p> <p>Will the decibels produced during the project be continuously monitored since creating a table demonstrating this would aid in evaluating its effectiveness.</p>	
287	Tennessee Department of Environment and Conservation	Solid and Hazardous Waste	<p>There were no active facilities or ongoing petroleum underground storage tank cleanups in the map area submitted for review. However, if any unexpected underground storage tanks are encountered that contain petroleum, contact the Memphis Environmental Field Office and ask to speak to someone in the Division of Underground Storage Tanks as soon as possible for instructions.</p> <p>For tanks containing hazardous materials other than petroleum contact the Division of Remediation or Solid Waste. The divisions can also be reached at the number below.</p>	Comment noted.
289	Laura Bontrager	xAl	I ask for an environmental impact report to be done on the long term effects of the XAI facility in South Memphis and a clear and public accounting to be done of its impacts to our water supply and air quality.	During the public review period for the Allen Aeroderivative CT project, TVA received numerous comments from the public stating opposition to the development of the xAl data facility near the Allen CT site. The comments cover a range of concerns regarding that project's effects on air quality, the community, environmental justice, health

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<p>and safety, water quality, and demand on energy. These comments are outside the scope of the environmental review.</p> <p>Some commenters raised concerns regarding the cumulative impact analysis, which includes the xAI facility. Section 3.14.3.1 discusses cumulative impacts to Air Quality. As noted in that Section, air quality in Shelby County is managed by the Shelby County Air Pollution Control Branch, which is also responsible for permitting, performing facility inspections and air pollution testing, and enforcement</p> <p>Other commenters raised similar concerns regarding TVA's proposed action, and TVA has provided responses to these comments.</p>				
290	Erin Lewis	xAI	We want the removal of xAI's turbines and a stop to their reckless expansion. Our air, water, and health are at stake.	Please see the response to Comment #289.
291	Greta Falls	xAI	Please deny gas permit to xai.	Please see the response to Comment #289.
292	Anonymous	xAI	I absolutely say No to the existence of AXI in our community.	Please see the response to Comment #289.
293	Roosevelt Moody Jr.	xAI	I'm concerned about the air pollution being emitted into our community resulting from the recent construction of the Elon Musk AxI turbines.	Please see the response to Comment #289.
294	Tara Fredenburg	xAI	It (xAI's turbines) is therefore likely violating the Clean Air Act. At minimum, you must pause xAI's use of gas turbines. Then, you must put the burden of proof on xAI to show how their further operation will not harm the community. If	Please see the response to Comment #289.

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			they are unable to do so, xAI should be removed from Memphis and Shelby County.	
295	Tara Fredenburg	xAI	Lots of health issues in the United States have been linked to factors like gas turbines ("natural gas" or not), and it is not worth the risk to keep these things going.	Please see the response to Comment #289.
296	Katie Tomaszczuk	xAI	Please stop the polluting of southwest Memphis and disallow the gas turbines from being used for xAI. Our air is one of our most valuable resources and xAI should not be allowed to pollute and harm our residents.	Please see the response to Comment #289.
297	Tyler Dooley	xAI	TVA is mistreating the Memphis community and poisoning the people by allowing xAI to continue work in the South Memphis area. Turbines that’s pollute the air and water should not be allowed in this community.	Please see the response to Comment #289.
298	Patricia Ange	xAI	Protect my community from pollution and from those who wish to make money at the expense of our quality for life. Musk did not get permission required for his operation. Again, protect our air and our water. Do your job, please.	Please see the response to Comment #289.
299	Elizabeth Savell	xAI	I just want to take the time to urge the stop of XAI and the unregulated turbines that are allowed to run without the knowledge of the majority. I want to urge the stop of the pollutants put out by these turbines and request that director Taylor as well as our mayor go to XAI and see first hand what is happening.	Please see the response to Comment #289.
300	Jasmine Bernard	xAI	Stop these advancements on a AI and the pollution of the Memphis community.	Please see the response to Comment #289.

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301	Eric Mintz	xAl	He is polluting the air with toxic gases, using the water (1 million gallons per day) that people need to drink, bathe, do domestic chores, and grow fruits and vegetables, and is harming the climate causing severe flooding, hurricanes, and drought by emitting tons of greenhouse gases. People will suffer. People with little will suffer less than rich people, but toxic gases, hurricanes, and a dying environment don't care how much money people have.	Please see the response to Comment #289.
302	Teri Mason	xAl	Increasing the already dangerously high levels of air and water pollutants in low income areas in Memphis to provide more Al capacity is appalling. So is turning a blind eye to the extensive environmental violations allowed throughout this initiative. There are already high levels of asthma in this area, especially among children, as with cancer. In addition, running the huge computers taints enormous of clean water from the aquifer here. Why are politicians allowing this? Corruption?	Please see the response to Comment #289.
303	Patricia Tolbert	xAl	I encourage all those in regulatory & leadership positions to push back on this project (xAl) in every possible way.	Please see the response to Comment #289.
304	DeAndra Kelley	xAl	There are currently 35 gas turbines polluting the air with nitrogen oxide linked to several severe health issues. Now the plan is to add more when it was initially communicated that there would only be 15.	Please see the response to Comment #289.
305	DeAndra Kelley	xAl	Expanding dirty gas infrastructure in already overburdened neighborhoods in	Please see the response to Comment #289.

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			Southwest Memphis is not just environmental negligence, it is environmental racism. I demand that you all stop targeting marginalized communities as dumping grounds for dangerous energy projects.	
306	DeAndra Kelley	xAI	The community has already paid the price for decades of industrial pollution that has caused cancer, asthma, and damage to the brain and nervous system, in addition to other health problems. We have seen the health disparities and we feel the impact.	Please see the response to Comment #289.
307	DeAndra Kelley	xAI	Shut down this xAI project completely.	Please see the response to Comment #289.
308	Breanne Washington	xAI	The action to build these turbines with full knowledge of the risk they pose to public health is reprehensible. If there was general consensus that XAI did no harm to the public then why were we not consulted before the original 15 were installed and after the remaining 20 were added?	Please see the response to Comment #289.
309	Noah Nordstrom	xAI	I am against this because XAI is significantly increasing pollution in our community. This data center has very little economic benefit. We must prioritize the long term health of our community over short term profits for a few	Please see the response to Comment #289.
310	Kayla Mack	xAI	I am writing to express my strong opposition to the Tennessee Valley Authority’s involvement in supporting xAI’s facility in South Memphis, a project that threatens the health, environment, and quality of life of residents in an	Please see the response to Comment #289.

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			<p>already overburdened community.</p> <p>South Memphis has long suffered from environmental racism, with a legacy of industrial pollution contributing to elevated rates of asthma, cancer, and other chronic illnesses. The introduction of a resource-intensive operation like xAI—potentially requiring massive amounts of electricity and water—raises serious concerns about air quality, noise pollution, strain on infrastructure, and further environmental degradation.</p> <p>I am particularly alarmed by TVA’s role in providing power to this facility without transparent community engagement or a comprehensive environmental impact assessment. Supporting such projects directly contradicts TVA’s stated mission to serve the people of the Valley while protecting natural resources.</p> <p>I urge TVA to pause all support for xAI’s operations in South Memphis until a full environmental and social impact study is conducted, and meaningful consultation with local residents takes place. TVA must not contribute to furthering environmental injustice in communities that have borne the brunt of industrial development for decades.</p>	
311	C. Williams	xAI	<p>Stop the rise of gas pollution by XAI. Find a more restricted and safer area for the disburse. Stop harming the people, the children, the elderly and more!</p>	<p>Please see the response to Comment #289.</p>

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312	Edith Shorter	xAl	More and more pollution has been allowed to come into this area for the sake of money. Because they do nothing for our neighborhoods. No to Elon Musk	Please see the response to Comment #289.
313	Christine Demby	xAl	I’m deeply concerned about the effects xAl will have on not just our air and water quality but wild life and human lives as well. Increasing smog will have detrimental effects for the people living in and around Memphis, increasing respiratory illnesses and cancer risks among other issues. It is vital that xAl have complete independent oversight and ultimately not be allowed to continue to do business in Memphis. The health and wellness of the people living here are worth more than the money Elon Musk is offering.	Please see the response to Comment #289.
314	Jonathan Cole	xAl	Elon Musk’s xAl facility in South Memphis is a major threat to public health due to its unpermitted use of methane gas turbines that emit dangerous levels of nitrogen oxides and formaldehyde—both harmful pollutants linked to asthma and cancer. Located in a predominantly Black neighborhood already burdened by industrial pollution, the facility operates without proper permits or community input, worsening environmental injustice. Immediate action is needed to protect residents and enforce environmental laws.	Please see the response to Comment #289.
315	Susan Williams	xAl	I am writing to ask you to oppose the permitting of the XAl gas turbine facility. It is critical to protect the air, people and environment for the people in Memphis who have for years suffered from	Please see the response to Comment #289.

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			<p>exposures to industrial facilities.</p> <p>Please support them in providing healthy environments for now and for future generations.</p>	
316	Jean Tarry	xAI	I am STRONGLY OPPOSED to Elon's venture being forced onto Memphis!! We do NOT want the pollution, nor do we want him using millions of gallons of our PRECIOUS WATER!!	Please see the response to Comment #289.
317	Elsa Jarosz	xAI	I am asking you to STOP the XAI data center in Memphis from using the 35 turbines currently in use, and access to TVA power in the future. The community of Memphis has not been fairly treated, already lives under at state of environmental stress, and not even consulted.	Please see the response to Comment #289.
318	Joshua Perkins	xAI	I really appreciate a cutting edge technology company making Memphis its home. I appreciate MLGW and the TVA supporting such endeavors.	Comment noted.
319	Southern Alliance for Clean Energy	xAI	<p>Billionaire Elon Musk's vanity project is polluting the community – without a permit. xAI is already burning methane in Southwest Memphis without full infrastructure, without full permits, and without regard for the people who live here.</p> <p>The portable methane gas turbines at 3231 Paul R. Lowry Road used to power xAI were installed and operated before proper permits were secured in a neighborhood that has already endured decades of environmental injustice. Now, after the fact, xAI wants approval</p>	Please see the response to Comment #289.

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			<p>for its pollution? It's unthinkable. We deserve a fair future. I have family in Memphis and want them to be healthy and safe. Environmental justice isn't a slogan – it's a lifeline to help secure a Memphis where no child grows up wondering if the air is safe, communities are protected, not sacrificed, technology serves people - not the other way around, and health matters more than profit. Memphis and beyond. It starts there.</p>	
320	Charlotte Bachus	xAI	<p>I am asking that the Shelby County Health Department to deny the permit for Elon Musk's xAI Plant immediately.</p>	<p>Please see the response to Comment #289.</p>
321	Anonymous	xAI	<p>Pollution by XAI is awful, and finding the site with 35 turbines, when they have a permit for 15 shows they plan to increase pollution. 20 extra turbines and no permit for them yet shows they assume they will be running 20 more turbines without consent from the people of Memphis and it is tragic</p>	<p>Please see the response to Comment #289.</p>
322	Richard Henighan	Opposes Project	<p>The question of additional gas turbines at the Allen Plant site cannot be separated from the additional turbines to be located at the xAI site in the same area of Memphis, an area which already has heavily polluted air and with a history of serious environmental racial injustice.</p> <p>Recent reports from the Southern Environmental Law Center locate 35 illegal (unpermitted) turbines already placed and operating at the xAI facility. This issue needs to be resolved before an approval for still more turbines at the</p>	<p>Please see the response to Comment #289.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>TVA facility moves forward. There needs to be an overall determination of how many (if any) new turbines can safely be installed in this area of Memphis. I strongly urge that there be no approval at this time for new turbines at the Allen Plant</p>	
323	Marsheila Hayes	xAl	<p>PLEASE DENY THE PERMIT FOR ELON MUSK XAL PLANT! HE DOESN'T HAVE TO LIVE HERE!! WE DO!!</p>	<p>Please see the response to Comment #289.</p>
324	Joseph Maloney	xAl	<p>I think allowing any more turbines to be installed for use by XAI is a horrible idea. There is no way that this is a “minor” pollution producer and it’s frankly insulting to the intelligence of the community that it would be characterized as such.</p>	<p>Please see the response to Comment #289.</p>
325	Jeff McAdory	Opposes Project	<p>I am among many concerned Memphians that the addition of 6 turbines, on top of the 35 xAl turbines already operating, will worsen air pollution and endanger public health in a neighborhood already suffering serious health effects from the Allen plant, nearby refineries, and now xAl.</p>	<p>Please see the response to Comment #289.</p>
326	Kalimah Lee	xAl	<p>This is unacceptable. This cannot stand. No super computer is more important than people’s health. Isn’t the point of the computer to make people’s lives better. Please believe that people all over this country will be mobilizing to shut down Xai’s use of dirty wind turbines and water guzzling factory. We will stand together. And this will end. Do what’s right by the people whom you serve and whom businesses are suppose to serve. No company is bigger</p>	<p>Please see the response to Comment #289.</p>

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			than anyone’s life. No jobs worth anyone’s health.	
327	Jane Jeffrey	xAI	I am opposed to XAI in Memphis, TN. I have been following and attending community information events about the development of this facility, its history and lack of community engagement.	Please see the response to Comment #289.
328	Margaret Mullins	xAI	NO to the Elon Musk turbines!!!	Please see the response to Comment #289.
329	Laterica Rose	xAI	Get Musk and his toxic company out of Memphis!	Please see the response to Comment #289.
330	Alicia Edwards	xAI	I am basically opposed to the AI being place near my home. Find another location and stop trying to poison us.	Please see the response to Comment #289.
331	Christie Noel	xAI	As a native of Whitehaven community I do not approve of the xAI FACILITY OPENING UP. The city of Memphis deserves better. We need a new Mayor that cares about his city.	Please see the response to Comment #289.
332	Stephanie Browley	xAI	No to XI.	Please see the response to Comment #289.
333	Dorothy Thmas	xAI	<p>What's happening in Memphis should not be considered just a local occurrence. The AI turbines and the waste water treatment are issues affecting America's overall health of our planet. No doubt it is affecting us locally here in Memphis. I think it deserves national attention as well as government oversight.</p> <p>I am only one of many that have said no to both the AI and waste water treatment facilities and it is as though we are saying nothing. I am very disappointed and upset with what's happening here in</p>	Please see the response to Comment #289.

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			<p>Memphis with both the AI data facilities and waste water facilities.</p>	
334	LaShonda Marshall	xAI	<p>The permit of Elon Musk should be denied and he should not be able to operate in our city. With the chemicals that will be released with the operation of this company pose serious threat to our community in the form of our health, safety and environment.</p> <p>The residents of our community deserves clean air, water and protection from companies that prioritize profit over people.</p>	Please see the response to Comment #289.
335	Minnie Taylor	xAI	<p>The permit of Elon Musk should be denied and he should not be able to operate in our city. With the chemicals that will be released with the operation of this company pose serious threat to our community in the form of our health, safety and environment.</p> <p>The residents of our community deserves clean air, water and protection from companies that prioritize profit over people.</p>	Please see the response to Comment #289.
336	Julia Stokes	xAI	<p>and to say no to current xAI turbines operating without permits and future xAI turbines in the Memphis area.</p>	Please see the response to Comment #289.
337	Bianca Covington	xAI	<p>I think what's going on is not right at all. Elon gets to make decision on things without this community even knowing about it. This need to change. I been living down here all my life. I'm really against what's going on.</p>	Please see the response to Comment #289.

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338	Center for Biological Diversity	xAI	<p>Notably, the ever-expanding xAI facility that neighbors the Allen Plant is straining local power needs in Memphis. Rather than explore alternatives that would curb demand from high-energy using industries like xAI, TVA is yielding to wealthy corporations while harming communities and the environment who will suffer from the agency’s fossil fuel expansion.</p> <p>Communities in Memphis should not have to suffer from worsened air and water quality as TVA invests in more highly polluting fossil fuel generation to meet new data center load.</p>	Please see the response to Comment #289.
339	Avin Wolfe, Hanna Celaya, Kiara R. Earley, Mianna Anderson	Supports Project	We support the project’s implementation on pre-disturbed land, as this approach helps avoid destroying valuable land, resources, or habitats.	Comment noted.
340	Dennis Lynch	Opposes Project	1. No Aeroturbines. No burning of gas for Peaker Plants	Comment noted.
341	Pamela Moses, Rise Up America	Opposes Project	<p>I am writing to express my vehement opposition to the proposed Allen Aeroderivative Combustion Turbine Project in Memphis, Tennessee.</p> <p>As concerned residents, we are calling for the Tennessee Valley Authority to reconsider this project and redirect any plans for turbine engine operations to areas that are more suitable, such as Knoxville. Our community does not have the infrastructure or the capacity to</p>	Comment noted.

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			accommodate the adverse effects of this project.	
342	Amy M.	Opposes Project	No more turbines. We deserve a healthy environment.	Comment noted.
343	Lisa	Opposes Project	I am writing as a resident of Southwest Memphis to strongly oppose TVA's plan to install six new aeroderivative turbines powered by methane gas in our community.	Comment noted.
344	Lecil McGlocklin	Opposes Project	There is no reason to pollute TN valley air, water, rivers, lakes with TVA'S natural gas generators, please support renewable energy projects in TN.	Comment noted.
345	William Murray	Opposes Project	I am opposed to TVA's proposal of adding six gas turbines at the Allen Combined Cycle Plant.	Comment noted.
346	Kayla Brooks	Opposes Project	We do not want these turbines in our community. We deserve to have clean air and water that is not polluted.	Comment noted.
347	Simone Vitale	Opposes Project	No more turbines. We need a clean environment for the safety of our kids.	Comment noted.
348	Kenneth Owens	Opposes Project	No more turbines! This has to stop	Comment noted.
349	Chelsea Shipp	Opposes Project	NO MORE TURBINES! Thank you.	Comment noted.
350	Kayla Smith	Opposes Project	NO GAS TURBINES!	Comment noted.

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351	Pamela Buford	Opposes Project	No more dirty gas turbines.	Comment noted.
352	Wallace Cunningham	Opposes Project	My community does not want gas turbines to be built in our community.	Comment noted.
353	Amy Benson	Opposes Project	We should not add six aeroderivative turbines in Southwest Memphis, an area already overburdened with dirty gas plant operations.	Comment noted.
354	Ronald Copeland	Opposes Project	“No more dirty gas turbines!”	Comment noted.
355	Carolyn Eisom	Opposes Project	No more dirty gas turbines	Comment noted.
356	Darin Cates	Opposes Project	I oppose adding more pollution to the local community. Please deny the permits and approvals for this project.	Comment noted.
357	Elizabeth Savell	Opposes Project	We need them to say no to the new gas plant that is being proposed.	Comment noted.
358	Debra Mason	Opposes Project	No more dirty gas turbine in Southwest Memphis. You have ignored the huge amount of pollution proposed gas plant would pump into South Memphis.	Comment noted.
359	Paul Klein	Opposes Project	I am writing to ask that you please do not add any more dirty gas turbines to the Allen complex.	Comment noted.
360	Kamille Coleman	Opposes Project	I don't approve of TVA allowing a company to come put turbines into our community. Your job is to protect the people. We the people are not for sale.	Comment noted.
361	Mykila Miller	Opposes Project	I am against allowing TVA adding any aerioderivative turbines in southwest Memphis at its Tallen combustion plant. We don't want any more gas plants In TN Memphis.	Comment noted.

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362	Corey Miller	Opposes Project	I beg please to put a stop to this and find other healthy alternatives.	Comment noted.
363	Denise Corsa	Opposes Project	Please do not allow these new turbines! Again, no to the new turbines!	Comment noted.
364	Foyice Clark	Opposes Project	I don't understand why we're doing this considering the political atmosphere we're in.	Comment noted.
365	Sandy Furrig	Opposes Project	Now is the time to stop. Please put an end to turbines from TVA.	Comment noted.
366	Elaine Farstad	Opposes Project	Please shut down the gas turbines	Comment noted.
367	Erma Taylor	Opposes Project	I oppose TVA adding gas turbines in the Southwest area of Memphis Tennessee	Comment noted.
368	Christina	Opposes Project	We need to maintain and expand more strict environmental regulations for TVA and xAl m. No more turbines.	Comment noted.
369	Mary Ogle	Opposes Project	Do not approve this proposal.	Comment noted.
370	LaTorya Hordges	Opposes Project	NO MORE TURBINES	Comment noted.
371	Calvin Shorter	Opposes Project	No more pollution, walker homes has had enough	Comment noted.
372	Vanessa Hess	Opposes Project	We need to have a say in what's allowed in our communities BEFORE giving Permits. We also need stricter Regulations. And NO MORE TURBINES!!	Comment noted.
373	Ronnie Williams	Opposes Project	We have had enough pollution in Southwest Memphis. Can we come up with an alternative solution?...We sure can try.	Comment noted.

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374	S, Richardson	Opposes Project	Stop polluting our community	Comment noted.
375	Terrance Johnson	Opposes Project	No more pollution	Comment noted.
376	Melvin Rice Jr.	Opposes Project	No more environmental pollution!! Move these places to your zip codes and then let's have the conversation	Comment noted.
377	Shemicka Holt	Opposes Project	ABSOLUTELY NO MORE TURBINES!!!!!!	Comment noted.
378	Carolyn Gillespie	Opposes Project	No	Comment noted.
379	Amy Marie Conley	Opposes Project	While progress is excellent, one must be mindful of the damage it could do for the future. No to turbines.	Comment noted.
380	Billie Sallie	Opposes Project	No, I don't want this in our neighborhood. Take it out now. We didn't ask or voted on this. Leave our neighborhood along. 38109.	Comment noted.
381	Sarah Gladney, Boxtown Neighborhood Association	Opposes Project	The people in Boxtown have suffered far too long. We have fought TVA waste facility, the Valero Byhalia Pipelines, and currently XAI and TVA	Comment noted.
382	Patricia Ange	Opposes Project	No new turbines! Our air is not for sale,	Comment noted.
383	Sheryl Smith	Opposes Project	Deny the permit.	Comment noted.
384	Marilyn Brien	Opposes Project	Please respect our citizens. No pollutants in the air. Develop another plan.	Comment noted.
385	Jeff McAdory	Opposes Project	We need a clean energy solution, not more dirty gas plants spewing pollution into the air.	Comment noted.
386	Judith Haas	Opposes Project	I oppose the turbine project.	Comment noted.

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387	Joe and Fran Acuirre	Opposes Project	NO to more pollution. No more gas turbines!	Comment noted.
388	Nancy LaPlaca	Opposes Project	Please, why are you building more gas plants? Don't you realize that methane gas is 86 times worse for the climate than even CO2?	Comment noted.
389	Francine Smith	Opposes Project	I am opposed to the SCHD Issuing a permit to TVA to operate 6 high powered gas turbines, particularly after the Allen Steam Plant was shut down that formerly operating 16 gas turbines. I beg you not to issue a permit to TVA.	Comment noted.
390	Alicia Edwards	Opposes Project	I am opposed to the turbines or any other equipment that is going to cause illness for our environment.	Comment noted.
391	Representative Justin J. Pearson (TN District 86)	Opposes Project	I am writing on behalf of District 86 to vehemently oppose more cancer-causing pollution in our community of Memphis & Shelby County but most especially in the 38109 zip code.	Comment noted.
392	Mary VanGieson	Opposes Project	I am writing to tell you to stop the methane gas expansion at the Allen Plant	Comment noted.
393	U.S. Environmental Protection Agency	Air Quality	The draft EIS indicates that Shelby County is designated attainment or unclassifiable for all National Ambient Air Quality Standards (NAAQS; TVA, p. 25). While this is currently the designation, EPA's 2023 Design Value Report for Shelby County shows the county violated the 2015 8-hour ozone NAAQS in 2023, and data from 2024, certified on May 1, 2025, indicate a continued violation. Given that the applicable permitting and control technology discussions in the draft EIS rely on the	TVA has revised Section 3.1 of the EIS to provide more information regarding Shelby County's attainment status

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>attainment designation, and the ozone violations may affect decisions related to the environmental consequences, the Affected Environment discussion should acknowledge the most recent data and its potential implications as required by 42 U.S.C. Section 4332(2)(C-D).</p>	
394	U.S. Environmental Protection Agency	Air Quality	<p>The draft EIS provides estimates of the proposed project’s operational emissions at both 40% and 11.1% operating capacities (see Table 3-1 and Table 3-2; pp 30-31). For both scenarios, the draft EIS indicates the proposed project is considered a major source under both the CAA Title V Operating Permit Program and the Prevention of Significant Deterioration Program (PSD). For the 40% capacity factor, for which the TVA has indicated they will seek a permit, the proposed project will have emissions over the major source significance thresholds of nitrogen oxides, particulate matter and greenhouse gases (p.30). Under the 11.1% scenario, the draft EIS indicates the facility will have significant emissions of nitrogen oxides and greenhouse gases (p. 31). The draft EIS Environmental Consequences section for air quality concludes that compliance with the Title V/PSD operating permit requirements are protective of ambient air quality and would “ensure no impact on air quality” or “change of attainment status would occur as a result of implementing these projects.” The EPA notes that while the PSD permitting</p>	<p>Information about TVA's PSD Permit application modeling and results have been incorporated into the EIS in Section 3.1.</p> <p>Section 3.1.2.2.3 has also been revised to clarify that while the permitting process is protective of the region’s air quality, the impacts of Alternative B on regional air quality would be moderate.</p>

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>program is intended to prevent significant deterioration of ambient air quality, compliance with these CAA permits does not ensure “no impact,” as stated in the EIS.”</p> <p>Given the 2023-2024 ozone design value status discussed above (i.e., that the area is currently experiencing violations of the ozone NAAQS) and that the project is a significant source of air quality emissions under the CAA, ambient air quality impact modelling is required by the CAA as incorporated into Shelby County Air Code 3-5 and needed to demonstrate that the project, as proposed in the draft EIS, will not cause or contribute to a violation of a NAAQS standard. The draft EIS indicates that the modelling protocol was submitted to Shelby County in December 2024, but the air quality data and modelling results, needed to determine the impacts, are not included in the draft EIS or appendices. The results of modelled air quality impacts and associated emissions data should be included in an Appendix and discussed in the final EIS.</p>	
395	U.S. Environmental Protection Agency	Air Quality	Section 3.1.2.2.3 discusses Best Available Control Technology (BACT; TVA, p.31); however, the draft EIS does not discuss emissions of sulfur hexafluoride (SF6) from electric utility switchgears. According to Shelby County Air Code 3-5, SF6 emissions are subject to BACT for this project, and must be discussed in the EIS, as well as	TVA’s proposed action would not involve the use of SF6; SF6-free switchgear would be used. Therefore, a BACT analysis was not conducted for potential SF6 emissions.

Appendix A – Public and Agency Comments on the Draft EIS and TVA’s Responses

Comment Number	Commenter	Topic	Comment	TVA Response
			<p>considered controls. NEPA also requires, under 42 U.S.C. § 4332(C)(ii), a detailed statement on any reasonably foreseeable adverse environmental effects which cannot be avoided. The EPA has confirmed with manufacturers that the new high voltage switchgears using vacuum technology have higher reliability and lower operation and maintenance costs than current SF6 technology. The EPA has partnered with utilities to reduce the use of this pollutant and if requested can connect the TVA with further resources on SF6 free switchgears.</p>	

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APPENDIX B – AGENCY CORRESPONDENCE

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400 West Summit Hill Drive, Knoxville, Tennessee 37902

April 30, 2024

Mr. E. Patrick McIntyre, Jr.
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), ALLEN AERODERIVATIVE PROJECT, SHELBY COUNTY, TENNESSEE (TVA TRACKING NUMBER – CRMS 85773012561) (35.0720, -90.1450)

TVA proposes to construct and operate six new aeroderivative (Aero) combustion turbine (CT) units at the Allen Combustion Turbine site (ACT), located in Shelby County, Tennessee, southwest of the City of Memphis (Figure 1). CT units generate power much like a jet engine by combusting natural gas combined with compressed air. Aero CTs are a newer technology that is more efficient than traditional CT units such as those constructed at this site in 1971-72. The six Aero CT units would generate approximately 200 Megawatts (MW) of dispatchable power for TVA's system. TVA may also continue to operate two existing 60-MW CT units on the site. Construction would take place within previously disturbed areas at ACT and adjacent land (Figure 2). Commercial operations for the new units would begin in 2025 or 2026. Figure 3 shows the proposed project layout. The completed Aero CT plant would be largely similar in appearance to the existing CT plant, although it would include 50-foot exhaust stacks, which current units lack.

TVA has determined that the proposed project is an undertaking (as defined at 36 CFR § 800.16(y)) with potential to cause effects on historic properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP). TVA proposes the undertaking's area of potential effects (APE) should be considered as the construction footprint (shown in Figure 2) and areas within one-half mile of the proposed Aero CT plant from which it would be visible. Given the level topography and lack of vegetation, the only feature of this landscape that could block views of the proposed plant is the built environment.

Background

Over the past several years TVA has seen a strong increase in electrical demand and this project would help meet that demand as quickly as possible. They would also provide flexible and dispatchable transmission grid support and facilitate the integration of renewable energy generation onto the TVA bulk transmission system, consistent with TVA's 2019 Integrated Resource Plan.

Archaeological sites

The Aero CT units would be installed at the same location as the 16 existing CT units that TVA plans to remove (we previously completed consultation with your office concerning the ACT demolition project). Surrounding paved surfaces, and parking areas to the west and north, would be used for laydowns and parking during construction. Prior to the retirement of the Allen Fossil Plant site (ALF) the area north of the ACT site was used for coal storage, but after 2018 the coal was removed and the area was covered in gravel. The entire footprint is within ALF. In 2019, TVA completed a Section 110 inventory of archaeological sites at ALF. The survey excluded the area within the ACT fence because this area is clearly developed. The survey identified no archaeological sites and indicated that this location lacks potential for intact Holocene soils. Your office agreed with this finding (letter dated 3/19/2020). We consulted with your office in August 2023 regarding TVA's proposal to demolish some or all of the existing Allen CT units and fuel oil tanks. Based on the previous survey and a desktop analysis that referenced other previous Section 106 reviews at the ALF site, TVA found that the Allen CT demolition would not affect archaeological sites. Your office agreed by letter dated August 11, 2023. The current project significantly overlaps the footprint for that project. This area as a whole has been profoundly disturbed by past construction of ALF and ACT and consists of construction fill with very low potential for intact archaeological sites.

Historic architectural properties

The APE consists of a late-20th century industrial landscape (Figures 4-6). All buildings, structures, and parking areas within the APE belong to one of five entities: ALF, ACT, the Allen Combined Cycle (ACC) plant, CMC Container Maintenance Corporation, and the TE Maxson Wastewater Treatment Facility (Figure 7). TVA has previously, separately, determined ALF (2014) and ACT (in 2022) are ineligible for listing in the NRHP, in consultation with your office. TVA retired ALF in 2018 and is in the process of completing the demolition. ACC was completed and went into operation in 2018. The CMC Container Maintenance facility went into operation in 2014, based on historic images in Google Earth. The wastewater treatment facility appears to have been under construction in 1971-1973, based on historic aerial photographs. TVA has not completed an NRHP assessment of that facility. However, were the wastewater facility to be determined eligible, the construction of the Aero CT plant on the site of the (soon to be demolished) ACT plant would not result in an adverse effect, as the new gas units would be largely similar in overall dimensions, materials, and appearance to the existing CT plant, resulting in only minor changes to integrity of setting.

Findings

As the proposed Aero CT units would be built in the same location as the existing CT units, TVA finds that the current undertaking also would not affect any archaeological sites that are listed in or eligible for listing in the NRHP. TVA finds further that the undertaking would cause no adverse effects to any NRHP-listed or -eligible historic architectural properties.

Mr. E. Patrick McIntyre, Jr.
Page 3
April 30, 2024

Closing

Pursuant to 36 CFR Part 800.3(f)(2), TVA is consulting with federally recognized Indian tribes regarding properties within the proposed project's APE that may be of religious and cultural significance to them and eligible for the NRHP.

Pursuant to 36 CFR Part 800.5(c) we are notifying you of TVA's finding of no adverse effect; providing the documentation specified in § 800.11(e); and inviting you to review the finding.

Please contact Steve Cole by email, sccole0@tva.gov with your comments.

Sincerely,



Brandon Hartline
Senior Manager
Cultural Compliance

SCC:ERB

Enclosures

cc (Enclosures):

Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

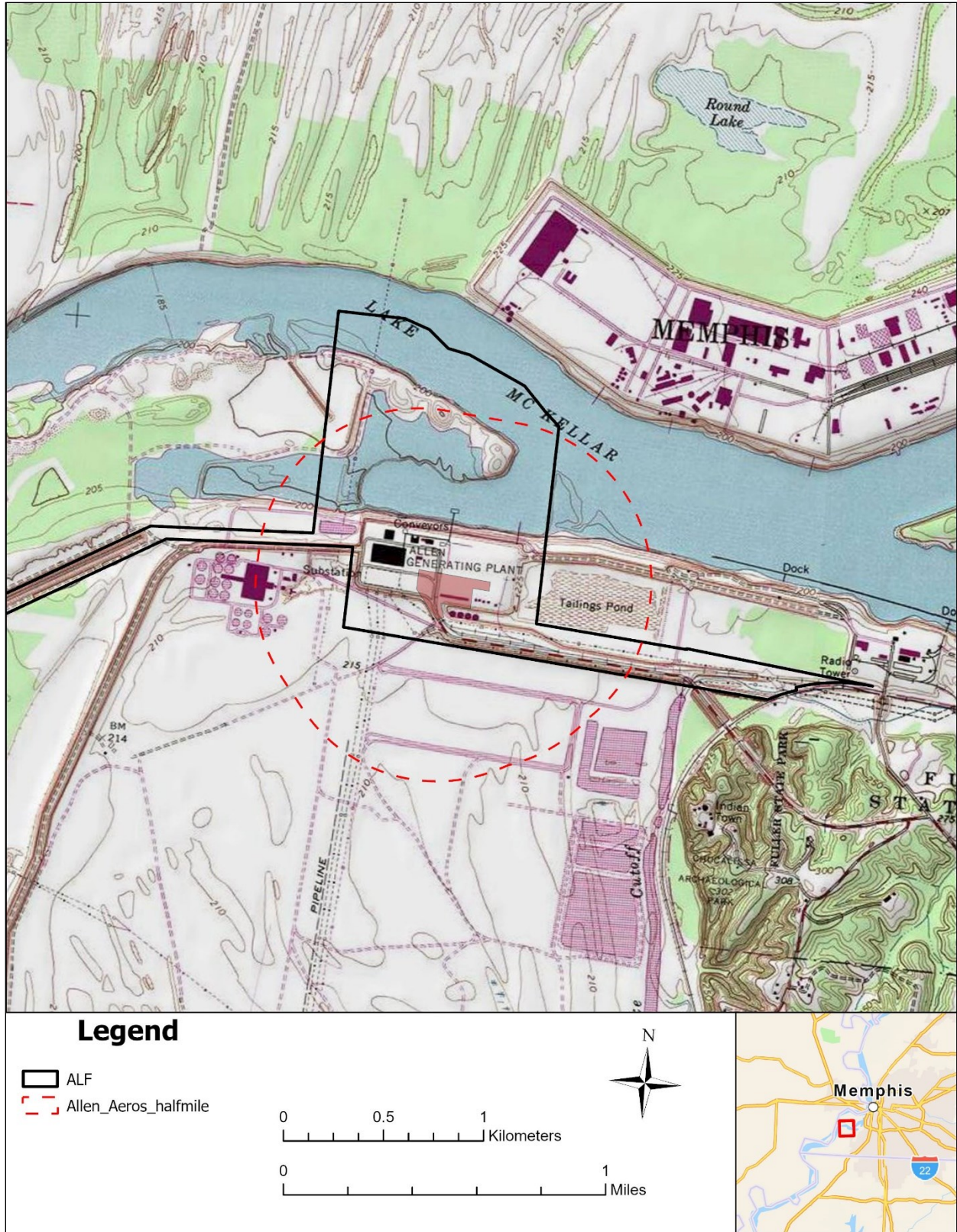


Figure 1. Project location (pink shading) and half-mile radius. Base map: USGS Fletcher Lake, TN 7.5-minute quadrangle.

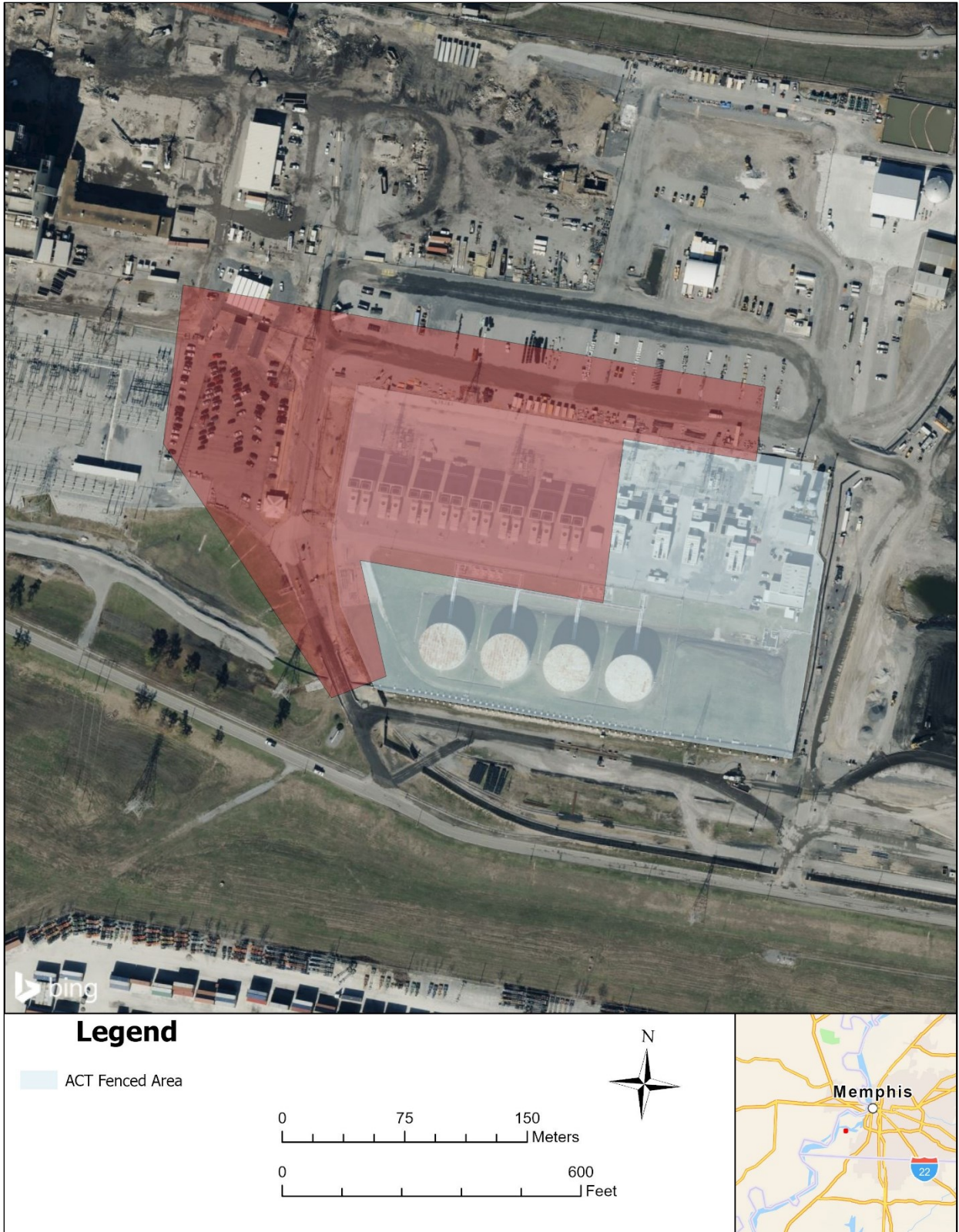


Figure 2. Project footprint. Imagery from Bing.

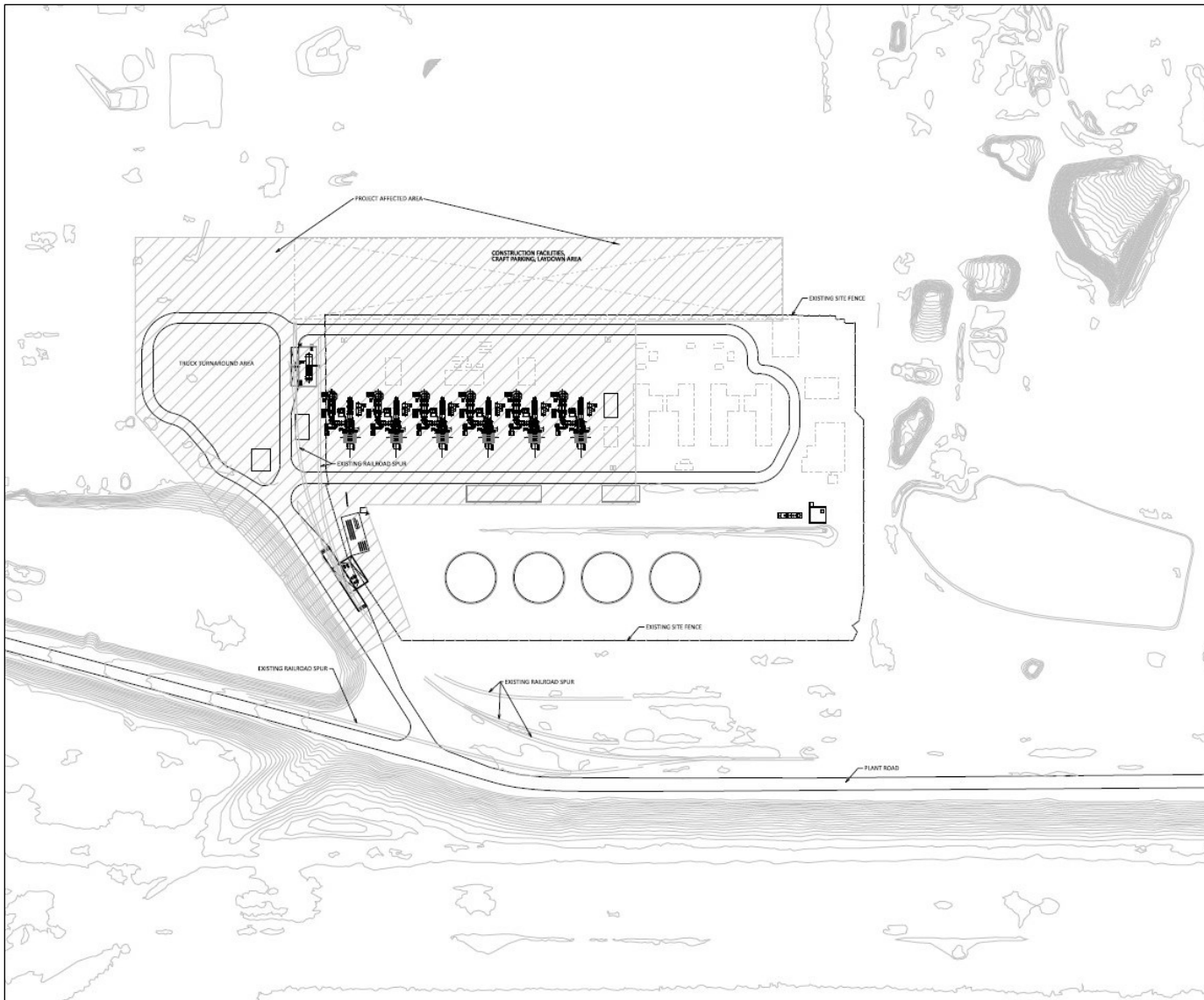


Figure 3. Proposed layout, superimposed over existing plant facilities. Current project footprint is the shaded area, which includes proposed locations of the six new Aero CT units (where existing CT units are located) and construction parking and laydown areas.



Figure 4. Oblique aerial photograph showing ACT (red polygon); view to southeast. Current project largely overlaps that area. Date of photo is unknown but it predates the removal of the coal pile in 2019/2020.



Figure 5. ACT, as seen from Plant Road. Google Street View; image dated July 2021.



Figure 6. ACC, as seen from Plant Road. Google Street View; image dated July 2021. Note CMC Container Maintenance facility in middle ground.

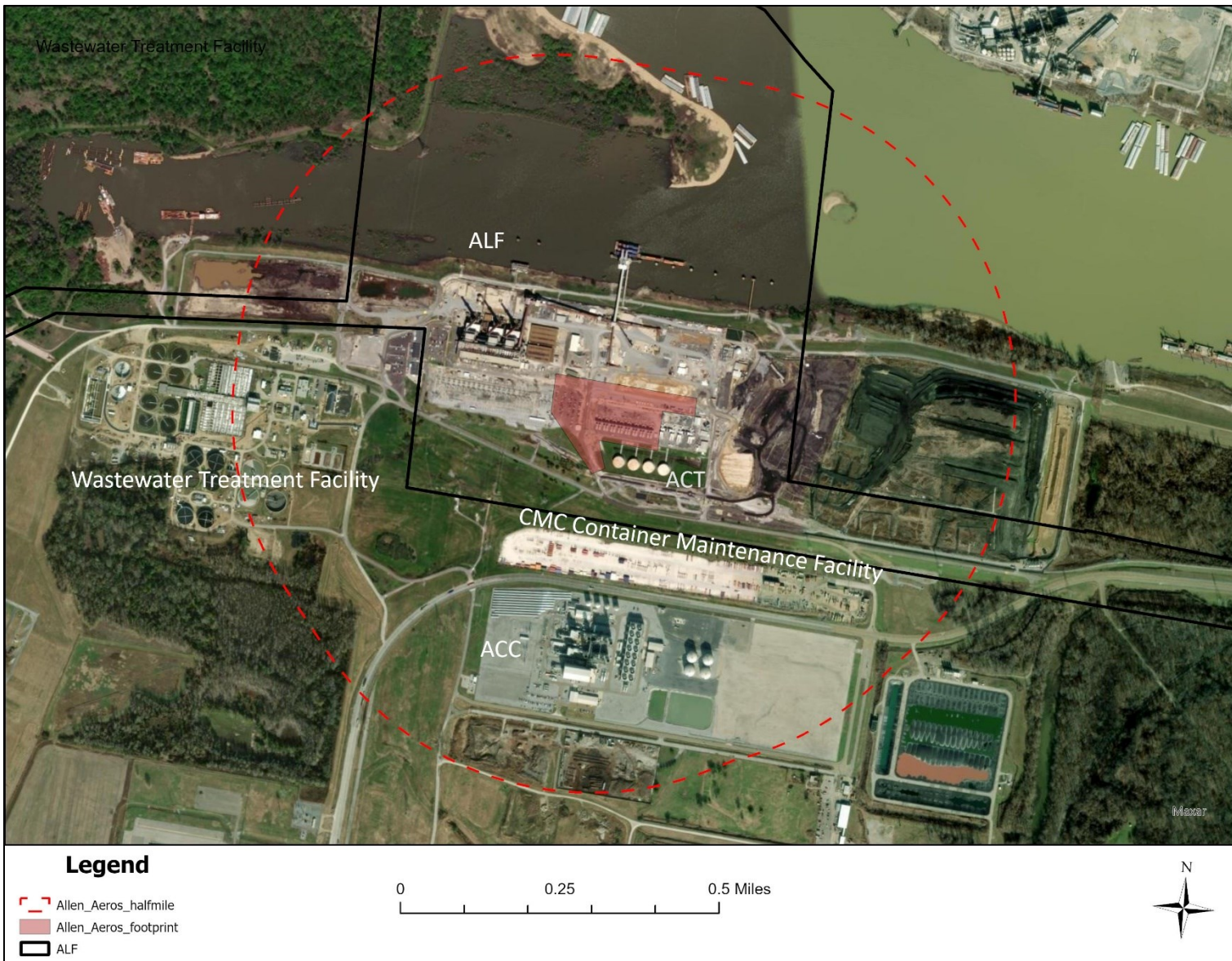


Figure 7. Existing facilities within the APE; imagery by ESRI.

From: TN Help

Sent: Thursday, May 2, 2024 11:47 AM

To: Beliles, Emily

Cc: Cole, Steve C; Hartline, Brandon Joseph

Subject: Allen Aeroderivative Project; CRMS 85773012561 - Project # SHPO0004937

This is an EXTERNAL EMAIL from outside TVA. THINK BEFORE you CLICK links or OPEN attachments. If suspicious, please click the “Report Phishing” button located on the Outlook Toolbar at the top of your screen.



TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

05-02-2024 10:44:49 CDT

Mr. Brandon Hartline
Tennessee Valley Authority

RE: Tennessee Valley Authority (TVA), Allen Aeroderivative Project; CRMS 85773012561, Project#: SHPO0004937, , Shelby County, TN

Dear Mr. Brandon Hartline:

In response to your request, we have reviewed the cultural resources documentation submitted by you regarding the above-referenced 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 applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we find that no historic properties eligible for

listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project 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. Please provide your Project # when submitting any additional information regarding this undertaking. Questions or comments may be directed to Jennifer Barnett, who drafted this response, at Jennifer.Barnett@tn.gov, +16156874780.

Sincerely,

A handwritten signature in black ink that reads "E. Patrick McIntyre, Jr." The signature is written in a cursive style with a prominent "E" and "M".

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

Ref:MSG13637542_Ed53jZuwceKkrk9zfXa



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

April 25, 2025

Via Online Submission to [Allen Aeroderivative Combustion Turbine Project](#).

Matthew Hidgon
Tennessee Valley Authority (TVA)-NEPA Compliance
400 West Summit Hill Drive, WT 11B
Knoxville, TN 37902

Dear Matthew Hidgon:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority's (TVA) Draft Environmental Impact Statement (EIS) for the Allen Aeroderivative Combustion Turbine project. Under this proposal, TVA would construct and operate six proposed natural gas-fired aeroderivative combustion turbines (aero CTs) at the existing Allen Combustion Turbine (ACT) site in Memphis, TN. The new aero CTs would generate approximately 200 Megawatts (MW) of dispatchable power to help meet the growing system demand and improve grid resiliency.

The Draft EIS evaluates the environmental impacts associated with the following two alternatives:

- Alternative 1, No Action Alternative – Under the No Action Alternative, TVA would not construct six new aero CTs or the associated support facilities to provide additional generation at the ACT Plant. TVA would continue to operate two existing units at the ACT Plant on a limited basis. Although this alternative is environmentally preferable, it does not meet the purpose and need of TVA's proposed action.
- Alternative 2, Allen Aeroderivative Project- Under the Allen Aeroderivative Combustion Turbine Project, TVA would construct and operate six aero CT units, generating approximately 200 MW of power and associated support facilities. The new units would support fast startup dispatching and synchronous condensing to enhance transmission system stability in western Tennessee as well as advance TVA's decarbonization goals. At least four of the new aero CT units would have black-start capability and thus have the ability to restore power without needing to rely upon external inputs from the electric power transmission system. TVA would further install control systems to minimize and monitor air emissions of the new aero CT units. The reduction of emissions from each aero CT unit would be achieved through a dry-low emissions combustion system and a selective catalytic reduction system.

The overall project area consists of approximately 60 acres of mostly heavily disturbed land located within the retired Allen Fossil Plant and existing ACT and Allen Combined Cycle (ACC) Plant. The project area would not be affected by project activities.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

The construction for the aero CTs is estimated to start in late 2025 with an approximately 15-month construction period to achieve the goal of beginning commercial operation in 2027.

TDEC is the environmental and natural resource regulatory agency in Tennessee with delegated responsibility from the U.S. Environmental Protection Agency (EPA) to regulate sources of air pollution; solid and hazardous waste; underground storage tanks; and water resources. TDEC has reviewed the Draft EIS and offers the following comments regarding the proposed project:

Division of Air Pollution Control

- Hazardous Air Pollutants: TDEC recommends that the final EIS state whether the Allen site is a major source of hazardous air pollutants, and that TVA address the potential applicability of 40 CFR 63 Subpart YYY.
- Air Quality Impacts: Several actions could negatively impact air quality on a short-term basis. TDEC recommends that TVA evaluate such potential impacts prior to any clearing, demolition, or construction. Such impacts may include, but are not limited to, air pollution from construction equipment, open burning associated with land clearing activities, and fugitive dust. Local air quality conditions are available online at <https://www.airnow.gov/>.
- Idling: Truck traffic associated with construction projects generate emissions of PM, CO, NO₂, SO₂, VOC, and CO₂, and TDEC recommends the operation of trucks with up-to-date emission control technologies and proper maintenance to minimize vehicle and equipment emissions. The Department also recommends the adoption of best practices to minimize vehicle idling to minimize the impact of mobile source emissions on ambient air quality.

Division of Underground Storage Tanks

- There were no active facilities or ongoing petroleum underground storage tank cleanups in the map area submitted for review. However, if any unexpected underground storage tanks are encountered that contain petroleum, contact the Memphis Environmental Field Office and ask to speak to someone in the Division of Underground Storage Tanks as soon as possible for instructions.

For tanks containing hazardous materials other than petroleum contact the Division of Remediation or Solid Waste. The divisions can also be reached at the number below.

Memphis Environmental Field Office
(901) 371-3000

Division of Water Resources

- Coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activities Permit (CGP) will be required as the land disturbance, including staging areas, is expected to be more than one acre. Application for CGP coverage requires submission of a Notice of Intent and a site-specific



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

Stormwater Pollution Prevention Plan (SWPPP) to TDEC's Division of Water Resources.

TDEC is also concerned about impacts from the proposed project's water withdrawal from the Memphis Sand aquifer via water supplied by MLGW; however, it appears that the proposed Greywater Facility could offset the impact.

"The proposed Greywater Facility could reduce groundwater withdrawals by 10 million gallons per day by diverting and processing 10 million gallons of greywater per day for industrial uses. Development of this facility has potential to provide an alternate source of industrial water for users in the vicinity of the project area and reduce overall demand on the Memphis Sands aquifer. Therefore, the cumulative effects of the ACT Plant in combination with all other actions identified in Table 3-14 would be minor would not result in incrementally greater cumulative effects to groundwater quality or quantity and may result in a net benefit to groundwater by reducing withdrawals."

TDEC appreciates the opportunity to provide comment on the Draft EIS. Please note that these comments are not indicative of approval or disapproval of the proposed project or activities contained within. Please contact me should you have any questions regarding these comments.

Sincerely,

A handwritten signature in black ink that reads "Emma Bartolo".

[Emma Bartolo \(Apr 25, 2025 11:18 CDT\)](#)

Emma Bartolo

Policy Analyst

Office of Policy and Planning

Emma.Bartolo@tn.gov



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
100 Alabama Street SW, 1924 Building
Atlanta, GA 30303

April 25, 2025

IN REPLY REFER TO:

ER 25/0108

Matthew Higdon
Tennessee Valley Authority
400 West Summit Hill Drive #WT11B
Knoxville, Tennessee 37902

Subject: Comments and Recommendations on the Allen Aeroderivative Combustion Turbine Project

Dear Mr. Higdon:

The U.S. Department of the Interior (Department) appreciates the opportunity to review the Draft Environment Impact Statement (DEIS) for Allen Aeroderivative Combustion Turbine Project located in Shelby County, Tennessee. Our office has worked with the Tennessee Valley Authority (TVA) for several years related to projects at this site, including the demolition of the Allen Fossil Plant and the proposed Combustion Turbine Project. The site has been heavily disturbed from past operations, and very little suitable habitat occurs for species of federal concern. The delisted interior least tern has been observed in the past at the site, and TVA has committed to following conservation measures to avoid impacts to this species if it is encountered during project activities. These commitments include:

- Weekly observations of potential nesting sites within the project area would begin in mid-May and end in mid-August of any given year (for the duration of the project) to identify any terns that return to the area.
- If terns return to project area and are seen nesting, no activities would be permitted within 300 feet of the nests.

These commitments are appropriate to protect the species from harm during project activities. If you have questions or concerns, please contact Robbie Sykes at robbie_sykes@fws.gov. I can be reached at joyce_stanley@ios.doi.gov or at (404) 852-5414.

Allen Aeroderivative Combustion Turbine Project – ER 25-0108

Sincerely,

Joyce A. Stanley, PhD
Regional Environmental Officer

cc:

Christina Richards - FWS
Robbie Sykes - FWS
Haigler Pate - – NPS
Christine Allen – OSMRE
Sterling Rideout – OSMRE
Alison Gordon - – USGS



REGION 4

ATLANTA, GA 30303

May 23, 2025

Matthew Higdon
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11B
Knoxville, TN 37902

Re: EPA Comments on the Draft Environmental Impact Statement for the Allen Aeroderivative Combustion Turbine Project, Shelby County, Tennessee; CEQ No: 20250030

Dear Mr. Higdon:

The U.S. Environmental Protection Agency (EPA) reviewed the Tennessee Valley Authority's (TVA) Draft Environmental Impact Statement (EIS) for the Allen Aeroderivative Combustion Turbine Project, in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). The CAA Section 309 role is unique to the EPA. Among other things, CAA Section 309 requires the EPA to review and comment on the environmental impact of any proposed Federal action subject to NEPA's EIS requirements and make the agency's comments public. The TVA prepared the draft EIS to evaluate the impacts from the proposed addition of six natural gas-fired aeroderivative combustion turbine (Aero CT) units to TVA's Allen Combustion Turbine (ACT) site in Memphis, Tennessee. The draft EIS also evaluates impacts from the no action alternative.

According to the draft EIS, the purpose of the proposed action is to help meet the growing system demand and load growth experienced in the TVA power service area and increase the flexibility and reliability of the TVA power system by improving TVA's transmission system stability in western Tennessee. The proposed action is needed to help meet required year-round generation and maximum capacity system demands and planning reserve margin targets.

Under the proposed action, the TVA would construct and operate six new General Electric LM2500 Aero CTs at ACT where the TVA currently operates two CT units. The new Aero CTs would generate approximately 200 Megawatts (MW) of power and support fast start dispatching. They would also have synchronous condensing capabilities to improve grid stability and four of the Aero CT units would have black start capabilities. Under the proposed action, the TVA would implement best available control technologies to mitigate air emissions of the new units. Construction would occur over approximately one year within previously disturbed areas at ACT and adjacent properties. Commercial operations for the new units would begin in 2027.

Based on our review of the draft EIS, the EPA has identified public health, welfare, and environmental quality matters in the analysis that are recommended to be addressed in the final EIS. Enclosed are

detailed comments and recommendations regarding air quality. These recommendations are intended to improve the environmental outcome of the proposed action.

The EPA appreciates the opportunity to review and comment on the draft EIS. If you have any questions regarding our comments and recommendations, please contact Douglas White of the NEPA Section at (404) 562-8586 or White.Douglas@epa.gov.

Sincerely,

Ntale Kajumba
NEPA Section Manager

Enclosure: Detailed Technical Comments

Enclosure

Detailed Technical Comments on the Draft Environmental Impact Statement for the Allen Aeroderivative Combustion Turbine Project CEQ No: 20250030

Air Quality (Section 3.1)

Affected Environment (Section 3.1.1.)

The draft EIS indicates that Shelby County is designated attainment or unclassifiable for all National Ambient Air Quality Standards (NAAQS; TVA, p.25). While this is currently the designation, EPA's 2023 *Design Value Report* for Shelby County shows the county violated the 2015 8-hour ozone NAAQS in 2023, and data from 2024, certified on May 1, 2025, indicate a continued violation.¹ Given that the applicable permitting and control technology discussions in the draft EIS rely on the attainment designation, and the ozone violations may affect decisions related to the environmental consequences, the *Affected Environment* discussion should acknowledge the most recent data and its potential implications as required by 42 U.S.C. Section 4332(2)(C-D).²

Environmental Consequences (Section 3.1.2.)

The draft EIS provides estimates of the proposed project's operational emissions at both 40% and 11.1% operating capacities (see Table 3-1 and Table 3-2; pp 30-31). For both scenarios, the draft EIS indicates the proposed project is considered a major source under both the CAA Title V Operating Permit Program and the Prevention of Significant Deterioration Program (PSD).³ For the 40% capacity factor, for which the TVA has indicated they will seek a permit, the proposed project will have emissions over the major source significance thresholds of nitrogen oxides, particulate matter and greenhouse gases (p.30). Under the 11.1% scenario, the draft EIS indicates the facility will have significant emissions of nitrogen oxides and greenhouse gases (p. 31). The draft EIS *Environmental Consequences* section for air quality concludes that compliance with the Title V/PSD operating permit requirements are protective of ambient air quality and would "ensure no impact on air quality" or "change of attainment status would occur as a result of implementing these projects." The EPA notes that while the PSD permitting program is intended to prevent significant deterioration of ambient air quality, compliance with these CAA permits does not ensure "no impact," as stated in the EIS."³

Given the 2023-2024 ozone design value status discussed above (i.e., that the area is currently experiencing violations of the ozone NAAQS) and that the project is a significant source of air quality emissions under the CAA, ambient air quality impact modelling is required by the CAA as incorporated into Shelby County Air Code 3-5 and needed to demonstrate that the project, as proposed in the draft EIS, will not cause or contribute to a violation of a NAAQS standard.⁴ The draft EIS indicates that the modelling protocol was submitted to Shelby County in December 2024, but the air quality data and modelling results, needed to determine the impacts, are not included in the draft EIS or appendices.

¹ A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS). See Source: EPA, AQS Ozone Design Value Report, 2023 "Ozone Design Values, 2023" under the tab "Table 2. Other Violations"; 06/04/25; available at: <https://www.epa.gov/air-trends/air-quality-design-values#report>; accessed April 16, 2025.

² 42 U.S.C. Section 4332(2)(C)(i); 42 U.S.C. Section 4332(2)(D).

³ 42 U.S.C. 7401 et seq.

⁴ Shelby County Air Code 3-5 (References Tenn. Comp. R & Regs. 1200-03-09-.01(4)).

The results of modelled air quality impacts and associated emissions data should be included in an Appendix and discussed in the final EIS.⁵

Operational Emissions (Section 3.1.2.2.3.)

Section 3.1.2.2.3 discusses Best Available Control Technology (BACT; TVA, p.31); however, the draft EIS does not discuss emissions of sulfur hexafluoride (SF6) from electric utility switchgears. According to Shelby County Air Code 3-5, SF6 emissions are subject to BACT for this project,⁶ and must be discussed in the EIS, as well as considered controls. NEPA also requires, under 42 U.S.C. § 4332(C)(ii), a detailed statement on any reasonably foreseeable adverse environmental effects which cannot be avoided. The EPA has confirmed with manufacturers that the new high voltage switchgears using vacuum technology have higher reliability and lower operation and maintenance costs than current SF6 technology.⁷ The EPA has partnered with utilities to reduce the use of this pollutant and if requested can connect the TVA with further resources on SF6 free switchgears.⁸

⁵ 42 U.S.C. § 4332(2)(C)(E).

⁶ Shelby County Air Code 3-5 (References Tenn. Comp. R & Regs. 1200-03-09-.01(4)(b)(46)).

⁷ C. Clement, personal communication, 03/20/2025; N. Siddiqui, personal communication, 12/05,2023.

⁸ For more information on SF6, see Source: <https://www.epa.gov/eps-partnership/sulfur-hexafluoride-sf6-basics>; accessed April 17, 2025.

APPENDIX C – ADDITIONAL SOCIAL COST OF GHG ANALYSIS

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Prior to the issuance of Executive Order 14154, *Unleashing American Energy*, in January 2025, TVA had calculated the SC-GHG of Alternative B (the proposed project) using the Interagency Working Group (IWG) guidance published in its *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under EO 13990* and guidance published by EPA in *Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, “Standards of Performance for New, Reconstruction, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*. These calculations are provided below.

In February 2021, the IWG published *Technical Support Document: “Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under EO 13990”* (IWG 2021). This document was an interim technical document that updated previous guidance from 2016. Table C-1 details the annualized estimated SC-GHG under the IWG Technical Support Document.

Table C-1. IWG Interim Estimated Annualized Social Cost of Carbon Associated with the Proposed Action

	Emissions (Co ₂ e) (tons/ year)	SC-GHG 7%	SC-GHG 3%
Maximum Operations (Capacity Factor of 40 Percent)	401,800	\$6,830,600	\$22,500,800
Predicted Operations (Capacity Factor of 11.1 Percent)	107,268	\$1,823,556	\$6,007,008
GHG Life Cycle Analysis Emissions	23,730.551	\$403,419	\$166,114
Total (Maximum)	425,530.551	\$7,234,019	\$23,829,711
Total (Predicted)	130,998.551	\$2,226,975	\$7,335,919

Key: CH₄ = methane; CO₂ = carbon dioxide; GHG = greenhouse gas; SC-GHG = social cost of greenhouse gases

In 2023, EPA released social cost values that used lower discount rates and higher dollars per ton for both carbon and methane (see Table C-2).

Table C-2. Comparison of Social Cost Values

	Feb. 2021 IWG Interim Estimates (2020 dollars at a 3% discount rate)	Dec. 2023 EPA Report Estimates (2020 dollars at a 2% discount rate)
Social Cost of Carbon	\$51/ton	\$190/ton
Social Cost of Methane	\$1,500/ton	\$1,600/ton

Source: Environmental & Energy Law Program Harvard Law School 2023.

The EPA guidance incorporated numerous methodological updates that addressed the near-term recommendations of the National Academies of Sciences, Engineering, and Medicine (the National Academies). This modular approach involved four components, or modules, of the SC-GHG estimation – socioeconomic and emissions, climate, damages, and discounting – and was developed by drawing on research and expertise from the scientific disciplines relevant to that component (EPA 2023c) and recommendations from the National Academies. The SC-GHG estimates presented below incorporate several limitations, as would be expected for any modeling exercise that covers such a broad scope of scientific and economic issues across a complex global landscape. There are still many categories of climate impacts and associated damages that are only partially—or not at all—reflected in these estimates and sources of uncertainty that have not been fully characterized due to data and modeling limitations.

Table C-3 details the annualized estimated SC-GHG under the EPA’s *Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking*.

**Table C-3. EPA Social Cost of Greenhouse Gases Application
Annualized Values of All GHG Emission Changes (CO2, CH4, N2O) (millions, 2020\$)**

	Emissions (Co2e) (tons/ year)	SC-GHG 2.5%	SC-GHG 2.0%	SC-GHG 1.5%
Maximum Operations (Capacity Factor of 40 Percent)	401,800	\$77.00	\$118.50	\$189.18
Predicted Operations (Capacity Factor of 11.1 Percent)	107,268	\$20.56	\$31.64	\$50.51
GHG Life Cycle Analysis Emissions	23,730.551	\$3.01	\$4.93	\$8.41
Total (Maximum)	425,530.551	\$80.01	\$123.43	\$197.59
Total (Predicted)	130,998.551	\$23.57	\$36.57	\$58.92

Key: CH4 = methane; CO2 = carbon dioxide; GHG = greenhouse gas; SC-GHG = social cost of greenhouse gases

Note: The EPA Social Cost of Greenhouse Gases Application requires emissions inputs year by year. Therefore, the SC-GHG for Life Cycle Analysis Emissions have been calculated as if they occur during a single year (2025). While the life cycle emissions would occur over the entire life of the project, this assumption that all life cycle emissions occur during one single year still provides a reasonable estimation of total emissions over the life of the project

APPENDIX D – BAT STRATEGY PROJECT REVIEW FORM

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Project Review Form - TVA Bat Strategy (06/2019)

*This form should **only** be completed if project includes activities in Tables 2 or 3 (STEP 2 below). This form is not required if project activities are limited to Table 1 (STEP 2) or otherwise determined to have no effect on federally listed bats. If so, include the following statement in your environmental compliance document (e.g., add as a comment in the project CEC): "Project activities limited to Bat Strategy Table 1 or otherwise determined to have no effect on federally listed bats. Bat Strategy Project Review Form NOT required." This form is to assist in determining required conservation measures per TVA's ESA Section 7 programmatic consultation for routine actions and federally listed bats.¹*

Project Name: Allen Aeros **Date:** Sep 12, 2023
Contact(s): Joe Santangelo **CEC#:** _____ **Project ID:** 43448
Project Location (City, County, State): Shelby County, TN

Project Description:

The Tennessee Valley Authority (TVA) proposes to construct and operate six new aeroderivative combustion turbine (CT) units at the Allen Combustion Turbine site (ACT), located in Shelby County, Tennessee, southwest of the City of Memphis.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

STEP 1) Select TVA Action. If none are applicable, contact environmental support staff, Environmental Project Lead, or Terrestrial Zoologist to discuss whether form (i.e., application of Bat Programmatic Consultation) is appropriate for project:

- | | |
|---|--|
| <input type="checkbox"/> 1 Manage Biological Resources for Biodiversity and Public Use on TVA Reservoir Lands | <input type="checkbox"/> 6 Maintain Existing Electric Transmission Assets |
| <input type="checkbox"/> 2 Protect Cultural Resources on TVA-Retained Land | <input type="checkbox"/> 7 Convey Property associated with Electric Transmission |
| <input type="checkbox"/> 3 Manage Land Use and Disposal of TVA-Retained Land | <input type="checkbox"/> 8 Expand or Construct New Electric Transmission Assets |
| <input type="checkbox"/> 4 Manage Permitting under Section 26a of the TVA Act | <input type="checkbox"/> 9 Promote Economic Development |
| <input checked="" type="checkbox"/> 5 Operate, Maintain, Retire, Expand, Construct Power Plants | <input type="checkbox"/> 10 Promote Mid-Scale Solar Generation |

STEP 2) Select all activities from Tables 1, 2, and 3 below that are included in the proposed project.

TABLE 1. Activities with no effect to bats. Conservation measures & completion of bat strategy project review form NOT required.

<input type="checkbox"/> 1. Loans and/or grant awards	<input type="checkbox"/> 8. Sale of TVA property	<input type="checkbox"/> 19. Site-specific enhancements in streams and reservoirs for aquatic animals
<input type="checkbox"/> 2. Purchase of property	<input type="checkbox"/> 9. Lease of TVA property	<input type="checkbox"/> 20. Nesting platforms
<input type="checkbox"/> 3. Purchase of equipment for industrial facilities	<input type="checkbox"/> 10. Deed modification associated with TVA rights or TVA property	<input type="checkbox"/> 41. Minor water-based structures (this does not include boat docks, boat slips or piers)
<input type="checkbox"/> 4. Environmental education	<input type="checkbox"/> 11. Abandonment of TVA retained rights	<input type="checkbox"/> 42. Internal renovation or internal expansion of an existing facility
<input type="checkbox"/> 5. Transfer of ROW easement and/or ROW equipment	<input type="checkbox"/> 12. Sufferance agreement	<input type="checkbox"/> 43. Replacement or removal of TL poles
<input type="checkbox"/> 6. Property and/or equipment transfer	<input type="checkbox"/> 13. Engineering or environmental planning or studies	<input type="checkbox"/> 44. Conductor and overhead ground wire installation and replacement
<input type="checkbox"/> 7. Easement on TVA property	<input type="checkbox"/> 14. Harbor limits delineation	<input type="checkbox"/> 49. Non-navigable houseboats

TABLE 2. Activities not likely to adversely affect bats with implementation of conservation measures. Conservation measures and completion of bat strategy project review form REQUIRED; review of bat records in proximity to project NOT required.

<input checked="" type="checkbox"/> 18. Erosion control, minor	<input type="checkbox"/> 57. Water intake - non-industrial	<input type="checkbox"/> 79. Swimming pools/associated equipment
<input type="checkbox"/> 24. Tree planting	<input type="checkbox"/> 58. Wastewater outfalls	<input type="checkbox"/> 81. Water intakes – industrial
<input type="checkbox"/> 30. Dredging and excavation; recessed harbor areas	<input type="checkbox"/> 59. Marine fueling facilities	<input checked="" type="checkbox"/> 84. On-site/off-site public utility relocation or construction or extension
<input type="checkbox"/> 39. Berm development	<input type="checkbox"/> 60. Commercial water-use facilities (e.g., marinas)	<input type="checkbox"/> 85. Playground equipment - land-based
<input type="checkbox"/> 40. Closed loop heat exchangers (heat pumps)	<input type="checkbox"/> 61. Septic fields	<input checked="" type="checkbox"/> 87. Aboveground storage tanks
<input type="checkbox"/> 45. Stream monitoring equipment - placement and use	<input type="checkbox"/> 66. Private, residential docks, piers, boathouses	<input type="checkbox"/> 88. Underground storage tanks
<input type="checkbox"/> 46. Floating boat slips within approved harbor limits	<input checked="" type="checkbox"/> 67. Siting of temporary office trailers	<input type="checkbox"/> 90. Pond closure
<input checked="" type="checkbox"/> 48. Laydown areas	<input type="checkbox"/> 68. Financing for speculative building construction	<input type="checkbox"/> 93. Standard License
<input type="checkbox"/> 50. Minor land based structures	<input type="checkbox"/> 72. Ferry landings/service operations	<input type="checkbox"/> 94. Special Use License
<input type="checkbox"/> 51. Signage installation	<input type="checkbox"/> 74. Recreational vehicle campsites	<input type="checkbox"/> 95. Recreation License
<input type="checkbox"/> 53. Mooring buoys or posts	<input checked="" type="checkbox"/> 75. Utility lines/light poles	<input type="checkbox"/> 96. Land Use Permit
<input type="checkbox"/> 56. Culverts	<input type="checkbox"/> 76. Concrete sidewalks	

Table 3: Activities that may adversely affect federally listed bats. Conservation measures AND completion of bat strategy project review form REQUIRED; review of bat records in proximity of project REQUIRED by OSAR/Heritage eMap reviewer or Terrestrial Zoologist.

<input type="checkbox"/> 15. Windshield and ground surveys for archaeological resources	<input type="checkbox"/> 34. Mechanical vegetation removal, includes trees or tree branches > 3 inches in diameter	<input checked="" type="checkbox"/> 69. Renovation of existing structures
<input type="checkbox"/> 16. Drilling	<input type="checkbox"/> 35. Stabilization (major erosion control)	<input type="checkbox"/> 70. Lock maintenance/ construction
<input type="checkbox"/> 17. Mechanical vegetation removal, does not include trees or branches > 3" in diameter (in Table 3 due to potential for woody burn piles)	<input checked="" type="checkbox"/> 36. Grading	<input type="checkbox"/> 71. Concrete dam modification
<input type="checkbox"/> 21. Herbicide use	<input type="checkbox"/> 37. Installation of soil improvements	<input type="checkbox"/> 73. Boat launching ramps
<input type="checkbox"/> 22. Grubbing	<input type="checkbox"/> 38. Drain installations for ponds	<input checked="" type="checkbox"/> 77. Construction or expansion of land-based buildings
<input type="checkbox"/> 23. Prescribed burns	<input type="checkbox"/> 47. Conduit installation	<input type="checkbox"/> 78. Wastewater treatment plants
<input checked="" type="checkbox"/> 25. Maintenance, improvement or construction of pedestrian or vehicular access corridors	<input type="checkbox"/> 52. Floating buildings	<input type="checkbox"/> 80. Barge fleeting areas
<input type="checkbox"/> 26. Maintenance/construction of access control measures	<input type="checkbox"/> 54. Maintenance of water control structures (dewatering units, spillways, levees)	<input type="checkbox"/> 82. Construction of dam/weirs/ levees
<input checked="" type="checkbox"/> 27. Restoration of sites following human use and abuse	<input type="checkbox"/> 55. Solar panels	<input type="checkbox"/> 83. Submarine pipeline, directional boring operations
<input checked="" type="checkbox"/> 28. Removal of debris (e.g., dump sites, hazardous material, unauthorized structures)	<input type="checkbox"/> 62. Blasting	<input type="checkbox"/> 86. Landfill construction
<input checked="" type="checkbox"/> 29. Acquisition and use of fill/borrow material	<input type="checkbox"/> 63. Foundation installation for transmission support	<input type="checkbox"/> 89. Structure demolition
<input type="checkbox"/> 31. Stream/wetland crossings	<input type="checkbox"/> 64. Installation of steel structure, overhead bus, equipment, etc.	<input type="checkbox"/> 91. Bridge replacement
<input type="checkbox"/> 32. Clean-up following storm damage	<input type="checkbox"/> 65. Pole and/or tower installation and/or extension	<input type="checkbox"/> 92. Return of archaeological remains to former burial sites
<input type="checkbox"/> 33. Removal of hazardous trees/tree branches		

STEP 3) Project includes one or more activities in Table 3?

YES (Go to Step 4)

NO (Go to Step 13)

STEP 4) Answer questions a through e below (applies to projects with activities from Table 3 ONLY)

- a) Will project involve continuous noise (i.e., ≥ 24 hrs) that is greater than 75 decibels measured on the A scale (e.g., loud machinery)? **NO** (NV2 does not apply) **YES** (NV2 applies, subject to records review)
- b) Will project involve entry into/survey of cave? **NO** (HP1/HP2 do not apply) **YES** (HP1/HP2 applies, subject to review of bat records)
- c) If conducting **prescribed burning (activity 23)**, estimated acreage: and timeframe(s) below; **N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 31	<input type="checkbox"/> Apr 1 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
VA	<input type="checkbox"/> Sep 16 - Nov 15	<input type="checkbox"/> Nov 16 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 15	<input type="checkbox"/> Jun 1 - Jul 31
AL	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 15	<input type="checkbox"/> Mar 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
NC	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 15	<input type="checkbox"/> Apr 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
MS	<input type="checkbox"/> Oct 1 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 30	<input type="checkbox"/> Jun 1 - Jul 31

- d) Will the project involve vegetation piling/burning? **NO** (SSPC4/SHF7/SHF8 do not apply) **YES** (SSPC4/SHF7/SHF8 applies, subject to review of bat records)

- e) If **tree removal (activity 33 or 34)**, estimated amount: **ac** **trees** **N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 31	<input type="checkbox"/> Apr 1 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
VA	<input type="checkbox"/> Sep 16 - Nov 15	<input type="checkbox"/> Nov 16 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 15	<input type="checkbox"/> Jun 1 - Jul 31
AL	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 15	<input type="checkbox"/> Mar 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
NC	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 15	<input type="checkbox"/> Apr 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
MS	<input type="checkbox"/> Oct 1 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 30	<input type="checkbox"/> Jun 1 - Jul 31

- If warranted, does project have flexibility for bat surveys (May 15-Aug 15): **MAYBE** **YES** **NO**

*** For **PROJECT LEADS** whose projects will be reviewed by a Heritage Reviewer (Natural Resources Organization only), **STOP HERE**. Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information. Otherwise continue to Step 5. ***

SECTION 2: REVIEW OF BAT RECORDS (applies to projects with activities from Table 3 ONLY)

STEP 5) Review of bat/cave records conducted by Heritage/OSAR reviewer?

- YES** **NO** (Go to Step 13)

Info below completed by: **Heritage Reviewer** (name) Date

OSAR Reviewer (name) Date

Terrestrial Zoologist (name) Rob Stinson Date Oct 3, 2023

- Gray bat records: None Within 3 miles* Within a cave* Within the County
- Indiana bat records: None Within 10 miles* Within a cave* Capture/roost tree* Within the County
- Northern long-eared bat records: None Within 5 miles* Within a cave* Capture/roost tree* Within the County
- Virginia big-eared bat records: None Within 6 miles* Within the County
- Caves: None within 3 mi Within 3 miles but > 0.5 mi Within 0.5 mi but > 0.25 mi* Within 0.25 mi but > 200 feet* Within 200 feet*

- Bat Habitat Inspection Sheet completed?** **NO** **YES**

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): (**ac** **trees**)* **N/A**

STEP 6) Provide any additional notes resulting from Heritage Reviewer records review in Notes box below then
 **Go to Step 13**

Notes from Bat Records Review (e.g., historic record; bats not on landscape during action; DOT bridge survey with negative results):

STEPS 7-12 To be Completed by Terrestrial Zoologist (if warranted):

STEP 7) Project will involve:

- Removal of suitable trees within 0.5 mile of P1-P2 Indiana bat hibernacula or 0.25 mile of P3-P4 Indiana bat hibernacula or any NLEB hibernacula.
- Removal of suitable trees within 10 miles of documented Indiana bat (or within 5 miles of NLEB) hibernacula.
- Removal of suitable trees > 10 miles from documented Indiana bat (> 5 miles from NLEB) hibernacula.
- Removal of trees within 150 feet of a documented Indiana bat or northern long-eared bat maternity roost tree.
- Removal of suitable trees within 2.5 miles of Indiana bat roost trees or within 5 miles of Indiana bat capture sites.
- Removal of suitable trees > 2.5 miles from Indiana bat roost trees or > 5 miles from Indiana bat capture sites.
- Removal of documented Indiana bat or NLEB roost tree, if still suitable.
- N/A

STEP 8) Presence/absence surveys were/will be conducted: YES NO TBD

STEP 9) Presence/absence survey results, on NEGATIVE POSITIVE N/A

STEP 10) Project WILL WILL NOT require use of Incidental Take in the amount of acres or trees proposed to be used during the WINTER VOLANT SEASON NON-VOLANT SEASON N/A

STEP 11) Available Incidental Take (prior to accounting for this project) as of

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
5 Operate, Maintain, Retire, Expand, Construct Power Plants				

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: \$ OR N/A

TERRESTRIAL ZOOLOGISTS, after completing SECTION 2, review Table 4, modify as needed, and then complete section for Terrestrial Zoologists at end of form.

SECTION 3: REQUIRED CONSERVATION MEASURES

STEP 13) Review Conservation Measures in Table 4 and ensure those selected are relevant to the project. If not, manually override and uncheck irrelevant measures, and explain why in ADDITIONAL NOTES below Table 4.

Did review of Table 4 result in ANY remaining Conservation Measures in **RED**?

- NO** (Go to Step 14)
- YES** (STOP HERE; Submit for Terrestrial Zoology Review. Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information).

Table 4. TVA's ESA Section 7 Programmatic Bat Consultation Required Conservation Measures

The Conservation Measures in Table 4 are automatically selected based on your choices in Tables 2 and 3 but can be manually overridden, if necessary. To Manually override, press the button and enter your name.

Manual Override

Name: Rob Stinson

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
		<p>NV1 - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.</p> <hr/> <p>SSPC1 (Transmission only) - Transmission actions and activities will continue to Implement A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities. This focuses on control of sediment and pollutants, including herbicides. Following are key measures:</p> <ul style="list-style-type: none"> ○ BMPs minimize erosion and prevent/control water pollution in accordance with state-specific construction storm water permits. BMPs are designed to keep soil in place and aid in reducing risk of other pollutants reaching surface waters, wetlands and ground water. BMPs will undertake the following principles: <ul style="list-style-type: none"> ● Plan clearing, grading, and construction to minimize area and duration of soil exposure. ● Maintain existing vegetation wherever and whenever possible. ● Minimize disturbance of natural contours and drains. ● As much as practicable, operate on dry soils when they are least susceptible to structural damage and erosion. ● Limit vehicular and equipment traffic in disturbed areas. Keep equipment paths dispersed or designate single traffic flow paths with appropriate road BMPs to manage runoff. ● Divert runoff away from disturbed areas. ● Provide for dispersal of surface flow that carries sediment into undisturbed surface zones with high infiltration capacity and ground cover conditions. ● Prepare drainage ways and outlets to handle concentrated/increased runoff. ● Minimize length and steepness of slopes. Interrupt long slopes frequently. ● Keep runoff velocities low and/or check flows. ● Trap sediment on-site. ● Inspect/maintain control measures regularly & after significant rain. ● Re-vegetate and mulch disturbed areas as soon as practical. ○ Specific guidelines regarding sensitive resources and buffer zones: <ul style="list-style-type: none"> ● Extra precaution (wider buffers) within SMZs is taken to protect stream banks and water quality for streams, springs, sinkholes, and surrounding habitat. ● BMPs are implemented to protect and enhance wetlands. Select use of equipment and seasonal clearing is conducted when needed for rare plants; construction activities are restricted in areas with identified rare plants. ● Standard requirements exist to avoid adverse impacts to caves, protected animals, unique/ important habitat (e.g., cave buffers, restricted herbicide use, seasonal clearing of suitable habitat).

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SSPC2 - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.

SSPC3 (Power Plants only) - Power Plant actions and activities will continue to implement standard environmental practices. These include:

- Best Management Practices (BMPs) in accordance with regulations:
 - Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy
 - Maintain every site with well-equipped spill response kits, included in some heavy equipment
 - Conduct Quarterly Internal Environmental Field Assessments at each sight
 - Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant.
 - When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage
- Construction Site Protection Methods
 - Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites
 - Storm drain protection device
 - Check dam to help slow down silt flow
 - Silt fencing to reduce sediment movement
- Storm Water Pollution Prevention (SWPP) Pollution Control Strategies
 - Minimize storm water contact with disturbed soils at construction site
 - Protect disturbed soil areas from erosion
 - Minimize sediment in storm water before discharge
 - Prevent storm water contact with other pollutants
 - Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac)
- Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to
 - Minimize fuel and chemical use Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy
 - Maintain every site with well-equipped spill response kits, included in some heavy equipment
 - Conduct Quarterly Internal Environmental Field Assessments at each sight
 - Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant.
 - When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage
- Construction Site Protection Methods
 - Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites
 - Storm drain protection device
 - Check dam to help slow down silt flow
 - Silt fencing to reduce sediment movement
- Storm Water Pollution Prevention (SWPP) Pollution Control Strategies
 - Minimize storm water contact with disturbed soils at construction site
 - Protect disturbed soil areas from erosion
 - Minimize sediment in storm water before discharge
 - Prevent storm water contact with other pollutants
 - Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac)
- Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to minimize fuel and chemical use

L1 - Direct temporary lighting away from suitable habitat during the active season.

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L2 - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).
--

¹Bats addressed in consultation (02/2018), which includes gray bat (listed in 1976), Indiana bat (listed in 1967), northern long-eared bat (listed in 2015), and Virginia big-eared bat (listed in 1979).

Hide All Unchecked Conservation Measures

- HIDE
- UNHIDE

Hide Table 4 Columns 1 and 2 to Facilitate Clean Copy and Paste

- HIDE
- UNHIDE

NOTES (additional info from field review, explanation of no impact or removal of conservation measures).

AR-1 AR-2 removed, no new demolition proposed.
--

STEP 14) Save completed form (Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date") in project environmental documentation (e.g. CEC, Appendix to EA) AND send a copy of form to batstrategy@tva.gov
Submission of this form indicates that Project Lead/Applicant:

Joe Santangelo

(name) is (or will be made) aware of the requirements below.

- Implementation of conservation measures identified in Table 4 is required to comply with TVA's Endangered Species Act programmatic bat consultation.
- TVA may conduct post-project monitoring to determine if conservation measures were effective in minimizing or avoiding impacts to federally listed bats.

For Use by Terrestrial Zoologist Only

Terrestrial Zoologist acknowledges that Project Lead/Contact (name) has been informed of any relevant conservation measures and/or provided a copy of this form.

For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take ac trees and that use of Take will require \$ contribution to TVA's Conservation Fund upon completion of activity (amount entered should be \$0 if cleared in winter).

For Terrestrial Zoology Use Only. Finalize and Print to Noneditable PDF.

**APPENDIX E – RACE, ETHNICITY, POVERTY, AND LANGUAGE
PROFICIENCY STATISTICS FOR CENSUS BLOCK GROUPS WITHIN A
10-MILE RADIUS**

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Geography	Total Population	White Alone (not Hispanic or Latino)	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races	Hispanic or Latino	Total Minority ^a	Low Income ^b	Limited English Proficiency (LEP) ^c	Primary Language(s) Spoken in LEP Block Groups by those who speak English Less than Very Well ^d
Arkansas	3,018,669	69.7%	15.1%	0.4%	1.5%	0.4%	0.2%	4.6%	8.1%	30.3%	38.2%	3.2%	NA
Crittenden County	47,945	40.2%	50.1%	0.1%	0.8%	0.0%	0.0%	5.8%	3.0%	59.8%	45.2%	1.1%	NA
Block Group 1; Census Tract 301.01	935	4.6%	90.9%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	95.4%	63.0%	5.7%	Spanish
Block Group 2; Census Tract 301.01	1,227	2.3%	93.2%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%	97.7%	80.1%	0.0%	NA
Block Group 1; Census Tract 301.02	659	1.8%	94.8%	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%	98.2%	60.8%	0.0%	NA
Block Group 2; Census Tract 301.02	626	6.2%	77.2%	0.0%	0.0%	0.0%	0.0%	6.7%	9.9%	93.8%	54.0%	0.0%	NA
Block Group 3; Census Tract 301.02	1,412	8.0%	92.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	92.0%	66.5%	0.0%	NA
Block Group 1; Census Tract 302.01	1,504	39.2%	52.9%	0.0%	0.0%	0.0%	0.0%	1.2%	6.7%	60.8%	61.4%	0.0%	NA
Block Group 2; Census Tract 302.01	641	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.3%	0.0%	NA
Block Group 3; Census Tract 302.01	1,065	67.1%	28.2%	0.0%	0.0%	0.0%	0.0%	4.7%	0.0%	32.9%	39.0%	0.0%	NA
Block Group 4; Census Tract 302.01	1,089	81.6%	10.4%	0.0%	0.0%	0.0%	0.0%	2.8%	5.1%	18.4%	45.3%	0.0%	NA
Block Group 5; Census Tract 302.01	1,163	91.1%	0.0%	0.0%	0.0%	0.0%	0.0%	6.4%	2.4%	8.9%	38.9%	1.8%	NA
Block Group 1; Census Tract 302.02	960	86.8%	13.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.2%	21.7%	0.0%	NA
Block Group 2; Census Tract 302.02	1,766	58.7%	38.8%	0.0%	1.2%	0.0%	0.0%	1.3%	0.0%	41.3%	42.5%	1.4%	NA
Block Group 3; Census Tract 302.02	965	63.5%	21.5%	0.8%	4.0%	0.0%	0.0%	9.4%	0.7%	36.5%	26.1%	5.2%	Spanish, Chinese (incl. Mandarin, Cantonese)
Block Group 1; Census Tract 303.01	1,025	7.4%	87.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	92.6%	70.0%	5.2%	Spanish
Block Group 2; Census Tract 303.01	1,666	30.9%	68.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	69.1%	52.2%	0.0%	NA
Block Group 1; Census Tract 303.02	2,050	6.1%	92.0%	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	93.9%	72.8%	0.0%	NA
Block Group 2; Census Tract 303.02	742	25.9%	68.3%	0.0%	0.0%	0.0%	0.0%	2.7%	3.1%	74.1%	46.9%	1.4%	NA
Block Group 1; Census Tract 305.03	698	3.4%	83.0%	0.0%	0.0%	0.0%	0.0%	4.2%	9.5%	96.6%	83.0%	0.0%	NA
Block Group 2; Census Tract 305.03	709	0.0%	90.7%	0.0%	0.7%	0.0%	0.0%	3.4%	5.2%	100.0%	50.8%	0.0%	NA
Block Group 1; Census Tract 306.01	584	28.3%	65.8%	0.0%	0.0%	0.0%	0.3%	5.3%	0.3%	71.7%	55.1%	0.0%	NA
Block Group 1; Census Tract 306.02	1,248	0.0%	97.9%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	100.0%	88.1%	0.0%	NA
Block Group 3; Census Tract 306.02	1,243	47.7%	45.0%	0.0%	7.3%	0.0%	0.0%	0.0%	0.0%	52.3%	40.0%	3.1%	NA
Block Group 1; Census Tract 307.03	1,138	51.5%	15.0%	0.0%	0.0%	0.0%	0.0%	17.5%	16.0%	48.5%	72.6%	2.8%	NA
Block Group 1; Census Tract 308.03	1,748	61.3%	28.9%	0.2%	0.0%	0.0%	0.0%	7.4%	2.1%	38.7%	16.9%	0.0%	NA
Block Group 1; Census Tract 308.04	3,569	27.3%	57.5%	0.2%	2.2%	0.0%	0.0%	8.0%	4.8%	72.7%	19.9%	3.7%	NA
Block Group 2; Census Tract 308.04	930	68.0%	22.4%	0.0%	0.0%	0.0%	0.0%	4.7%	4.9%	32.0%	45.5%	1.4%	NA
Block Group 1; Census Tract 308.05	1,763	35.7%	52.9%	0.0%	4.4%	0.0%	0.0%	6.9%	0.1%	64.3%	32.8%	1.4%	NA
Block Group 2; Census Tract 308.05	1,588	82.0%	9.3%	1.6%	0.1%	0.0%	0.0%	7.1%	0.0%	18.0%	22.9%	0.0%	NA
Block Group 1; Census Tract 308.06	2,287	69.2%	23.0%	0.0%	0.6%	0.0%	0.0%	3.6%	3.6%	30.8%	13.9%	0.0%	NA
Block Group 2; Census Tract 308.06	1,444	46.4%	33.4%	0.0%	0.8%	0.0%	0.0%	13.5%	5.8%	53.6%	51.9%	0.9%	NA

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Block Group 1; Census Tract 310	543	61.1%	22.5%	0.0%	0.0%	0.0%	0.0%	16.4%	0.0%	38.9%	34.4%	0.0%	NA
Block Group 1; Census Tract 312	854	4.7%	65.6%	0.0%	2.7%	0.0%	0.0%	26.0%	1.1%	95.3%	75.1%	1.3%	NA
Block Group 2; Census Tract 312	782	3.8%	94.0%	1.3%	0.0%	0.0%	0.0%	0.6%	0.3%	96.2%	66.1%	0.0%	NA
Mississippi	2,958,846	55.9%	37.1%	0.4%	1.0%	0.0%	0.3%	2.1%	3.3%	44.1%	40.7%	1.6%	NA
DeSoto County	186,214	59.8%	30.8%	0.1%	1.3%	0.0%	0.2%	2.7%	5.2%	40.2%	25.8%	2.3%	NA
Block Group 1; Census Tract 701.01	1,429	69.0%	27.8%	0.0%	0.3%	0.0%	0.0%	0.1%	2.8%	31.0%	27.6%	0.9%	NA
Block Group 2; Census Tract 701.01	1,800	22.5%	68.7%	0.0%	2.3%	0.0%	0.0%	0.0%	6.5%	77.5%	61.3%	3.3%	NA
Block Group 1; Census Tract 701.02	1,743	63.3%	19.4%	0.4%	0.3%	0.0%	0.0%	0.2%	16.4%	36.7%	18.8%	3.7%	NA
Block Group 2; Census Tract 701.02	827	62.8%	31.3%	2.2%	3.3%	0.0%	0.0%	0.5%	0.0%	37.2%	20.8%	2.7%	NA
Block Group 3; Census Tract 701.02	1,500	45.3%	41.5%	0.1%	0.6%	0.0%	0.0%	6.5%	6.0%	54.7%	34.8%	1.2%	NA
Block Group 1; Census Tract 702.10	2,521	62.8%	27.9%	0.0%	0.0%	0.0%	0.0%	0.5%	8.8%	37.2%	12.3%	3.5%	NA
Block Group 2; Census Tract 702.10	2,027	23.1%	65.6%	0.0%	2.3%	0.0%	0.0%	0.5%	8.4%	76.9%	13.7%	3.0%	NA
Block Group 3; Census Tract 702.10	2,337	17.9%	81.6%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	82.1%	21.1%	0.0%	NA
Block Group 2; Census Tract 702.21	1,826	46.1%	26.3%	0.0%	0.0%	0.0%	0.0%	1.1%	26.6%	53.9%	56.0%	11.1%	Spanish
Block Group 3; Census Tract 702.21	521	81.6%	0.0%	0.0%	0.0%	0.0%	1.2%	15.7%	1.5%	18.4%	53.2%	0.0%	NA
Block Group 1; Census Tract 703.22	2,738	38.1%	51.1%	0.0%	2.3%	0.0%	0.0%	1.7%	6.7%	61.9%	44.4%	5.0%	Spanish, Other Asian and Pacific Island languages
Block Group 1; Census Tract 703.23	1,660	25.2%	51.4%	0.0%	0.3%	0.0%	0.0%	2.8%	20.3%	74.8%	25.3%	11.2%	Spanish, Arabic
Block Group 2; Census Tract 703.23	1,197	18.1%	53.3%	0.0%	3.2%	0.0%	0.0%	0.0%	25.4%	81.9%	26.7%	19.3%	Spanish
Block Group 3; Census Tract 703.23	2,022	25.2%	66.6%	3.1%	0.3%	0.0%	0.0%	1.2%	3.7%	74.8%	75.5%	1.1%	NA
Block Group 1; Census Tract 703.24	1,345	40.1%	52.5%	0.1%	0.0%	0.8%	0.0%	2.9%	3.6%	59.9%	53.2%	1.6%	NA
Block Group 2; Census Tract 703.24	1,532	42.4%	52.9%	0.0%	0.0%	0.0%	0.0%	0.5%	4.2%	57.6%	55.3%	5.8%	Spanish
Block Group 3; Census Tract 703.24	1,384	34.5%	50.9%	0.0%	5.4%	0.0%	0.0%	0.0%	9.2%	65.5%	54.4%	9.5%	Spanish, Other Asian and Pacific Island languages
Block Group 1; Census Tract 703.25	2,079	69.9%	19.7%	0.6%	0.0%	0.0%	0.0%	6.2%	3.7%	30.1%	54.5%	2.8%	NA
Block Group 2; Census Tract 703.25	1,338	43.0%	45.4%	0.0%	4.9%	0.0%	0.0%	0.3%	6.4%	57.0%	36.5%	2.3%	NA
Block Group 1; Census Tract 704.11	2,072	57.3%	36.7%	0.0%	0.1%	0.0%	0.0%	0.6%	5.3%	42.7%	52.0%	0.5%	NA
Block Group 1; Census Tract 704.12	1,833	29.5%	57.1%	0.0%	0.2%	0.0%	0.0%	8.4%	4.8%	70.5%	60.6%	1.4%	NA
Block Group 2; Census Tract 704.12	1,703	32.1%	65.1%	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	67.9%	70.5%	0.0%	NA
Block Group 3; Census Tract 704.12	943	73.1%	15.7%	0.0%	0.0%	0.0%	0.0%	0.0%	11.2%	26.9%	19.8%	0.0%	NA
Block Group 1; Census Tract 704.21	2,362	56.6%	36.3%	0.0%	0.0%	0.0%	0.7%	0.0%	6.5%	43.4%	24.9%	0.0%	NA
Block Group 2; Census Tract 704.21	929	56.7%	28.3%	0.0%	0.0%	0.0%	0.0%	5.3%	9.7%	43.3%	60.9%	3.7%	NA
Block Group 1; Census Tract 704.22	909	57.8%	33.1%	0.0%	0.0%	0.0%	0.7%	7.0%	1.4%	42.2%	61.3%	0.3%	NA
Block Group 2; Census Tract 704.22	1,743	58.9%	29.0%	0.7%	0.3%	0.0%	0.0%	9.6%	1.4%	41.1%	55.8%	1.0%	NA

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Block Group 2; Census Tract 705.21	888	55.7%	12.4%	0.0%	1.4%	0.0%	6.0%	0.0%	24.5%	44.3%	45.0%	16.9%	Spanish
Tennessee	6,923,772	72.6%	16.1%	0.1%	1.8%	0.0%	0.3%	3.0%	6.0%	27.4%	32.6%	3.1%	NA
Shelby County	926,440	34.5%	53.6%	0.1%	2.9%	0.0%	0.3%	1.9%	6.8%	65.5%	38.0%	3.7%	NA
Block Group 1; Census Tract 1	1,136	72.2%	12.7%	0.0%	10.7%	0.0%	0.0%	3.4%	1.0%	27.8%	18.2%	0.0%	NA
Block Group 2; Census Tract 1	2,064	59.4%	26.1%	0.5%	8.6%	0.0%	0.0%	3.4%	1.9%	40.6%	10.1%	1.1%	NA
Block Group 3; Census Tract 1	1,973	84.3%	3.2%	0.0%	7.5%	0.0%	0.0%	0.3%	4.7%	15.7%	16.8%	2.3%	NA
Block Group 1; Census Tract 2	1,211	0.0%	96.1%	0.8%	0.0%	0.0%	0.0%	2.6%	0.5%	100.0%	85.1%	0.0%	NA
Block Group 1; Census Tract 3	645	0.3%	99.5%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	99.7%	64.0%	0.0%	NA
Block Group 1; Census Tract 4	438	1.6%	98.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.4%	76.0%	0.0%	NA
Block Group 2; Census Tract 4	1,000	0.6%	97.4%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	99.4%	63.1%	0.0%	NA
Block Group 1; Census Tract 16	1,838	69.2%	16.3%	1.5%	3.6%	0.0%	0.0%	2.9%	6.5%	30.8%	12.4%	0.7%	NA
Block Group 1; Census Tract 17	1,851	51.4%	43.2%	0.0%	0.0%	0.0%	0.0%	3.1%	2.3%	48.6%	16.9%	0.2%	NA
Block Group 2; Census Tract 17	1,232	13.3%	84.7%	0.0%	0.6%	0.0%	0.0%	1.4%	0.0%	86.7%	30.7%	0.0%	NA
Block Group 3; Census Tract 17	949	50.8%	30.7%	0.0%	0.0%	0.0%	1.5%	16.0%	1.1%	49.2%	31.5%	1.0%	NA
Block Group 1; Census Tract 19	295	3.1%	96.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	96.9%	71.9%	0.0%	NA
Block Group 2; Census Tract 19	981	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	71.7%	0.0%	NA
Block Group 1; Census Tract 20	508	3.0%	97.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	97.0%	64.8%	0.0%	NA
Block Group 2; Census Tract 20	804	17.3%	73.9%	0.4%	5.1%	0.0%	0.0%	2.5%	0.9%	82.7%	45.9%	0.0%	NA
Block Group 1; Census Tract 21	1,443	8.2%	77.8%	0.0%	0.1%	0.0%	0.0%	1.0%	13.0%	91.8%	57.8%	1.4%	NA
Block Group 1; Census Tract 24	740	7.6%	85.9%	0.0%	0.0%	0.0%	0.0%	6.5%	0.0%	92.4%	34.3%	0.0%	NA
Block Group 2; Census Tract 24	833	13.4%	75.5%	0.0%	0.0%	0.0%	0.0%	4.8%	6.2%	86.6%	63.7%	6.7%	Spanish
Block Group 3; Census Tract 24	226	0.0%	92.5%	0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	100.0%	89.8%	0.0%	NA
Block Group 1; Census Tract 25	997	27.6%	59.9%	0.0%	9.4%	0.0%	0.0%	0.0%	3.1%	72.4%	53.3%	8.0%	Spanish, Other Asian and Pacific Island languages
Block Group 2; Census Tract 25	1,714	48.5%	26.6%	0.0%	3.6%	0.0%	0.0%	4.1%	17.2%	51.5%	49.3%	16.0%	Spanish, Chinese (incl. Mandarin, Cantonese)
Block Group 1; Census Tract 26	1,640	74.8%	11.2%	0.0%	0.7%	0.0%	2.5%	1.3%	9.4%	25.2%	24.7%	0.0%	NA
Block Group 2; Census Tract 26	926	76.3%	5.5%	0.0%	2.8%	0.0%	0.0%	10.2%	5.2%	23.7%	13.3%	1.3%	NA
Block Group 1; Census Tract 31	961	52.0%	24.9%	0.1%	0.9%	0.0%	6.0%	4.4%	11.7%	48.0%	30.2%	0.1%	NA
Block Group 3; Census Tract 31	833	73.7%	18.1%	0.0%	0.0%	0.0%	0.0%	4.7%	3.5%	26.3%	25.7%	0.0%	NA
Block Group 4; Census Tract 31	969	71.9%	25.7%	0.0%	0.0%	0.0%	0.0%	0.8%	1.5%	28.1%	23.5%	0.8%	NA
Block Group 1; Census Tract 32	922	60.7%	31.2%	3.6%	2.4%	0.0%	0.0%	2.1%	0.0%	39.3%	34.4%	3.5%	NA
Block Group 2; Census Tract 32	1,140	41.8%	54.9%	0.0%	0.5%	0.0%	0.0%	0.9%	1.9%	58.2%	33.2%	0.8%	NA
Block Group 3; Census Tract 32	1,797	63.7%	27.9%	0.0%	2.2%	0.0%	0.0%	1.1%	5.1%	36.3%	35.1%	0.4%	NA

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Block Group 1; Census Tract 33	1,126	97.5%	0.0%	0.0%	1.2%	0.0%	0.0%	0.7%	0.6%	2.5%	14.7%	1.2%	NA
Block Group 2; Census Tract 33	1,094	85.5%	1.6%	0.0%	5.4%	0.0%	0.0%	3.0%	4.6%	14.5%	13.6%	4.1%	NA
Block Group 1; Census Tract 34	1,188	75.4%	13.6%	0.0%	1.1%	0.0%	0.0%	7.6%	2.3%	24.6%	23.2%	0.0%	NA
Block Group 2; Census Tract 34	1,255	40.1%	49.1%	0.0%	5.6%	0.0%	0.0%	1.8%	3.5%	59.9%	36.5%	2.2%	NA
Block Group 1; Census Tract 35	891	81.6%	4.8%	0.0%	4.8%	0.0%	0.0%	3.1%	5.6%	18.4%	11.7%	0.0%	NA
Block Group 2; Census Tract 35	842	91.4%	2.4%	0.0%	3.3%	0.0%	0.0%	1.8%	1.1%	8.6%	12.1%	0.0%	NA
Block Group 3; Census Tract 35	1,636	49.7%	49.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	50.3%	38.0%	0.0%	NA
Block Group 1; Census Tract 36	499	88.2%	11.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	56.5%	0.0%	NA
Block Group 2; Census Tract 36	1,043	54.0%	32.5%	0.0%	9.2%	0.0%	0.0%	3.4%	1.0%	46.0%	47.9%	5.9%	Vietnamese
Block Group 1; Census Tract 37	537	32.0%	35.4%	1.3%	13.2%	0.0%	0.0%	5.4%	12.7%	68.0%	37.4%	1.5%	NA
Block Group 2; Census Tract 37	666	19.7%	77.3%	0.0%	0.9%	0.0%	0.0%	0.0%	2.1%	80.3%	90.4%	0.9%	NA
Block Group 1; Census Tract 38	650	22.3%	67.4%	0.0%	8.8%	0.9%	0.0%	0.0%	0.6%	77.7%	58.2%	7.4%	Other Indo-European languages
Block Group 1; Census Tract 39	1,513	20.0%	76.1%	0.0%	1.9%	0.0%	0.0%	0.1%	1.9%	80.0%	56.5%	2.0%	NA
Block Group 1; Census Tract 42	794	60.1%	28.7%	0.0%	0.0%	0.0%	0.0%	5.4%	5.8%	39.9%	29.3%	4.3%	NA
Block Group 2; Census Tract 42	969	75.4%	16.7%	0.0%	4.5%	0.0%	0.0%	0.3%	3.0%	24.6%	0.0%	0.0%	NA
Block Group 3; Census Tract 42	1,300	62.0%	12.2%	0.0%	12.9%	0.0%	0.0%	11.3%	1.6%	38.0%	0.5%	0.0%	NA
Block Group 1; Census Tract 43	1,175	59.3%	19.3%	0.0%	0.9%	0.0%	0.0%	7.0%	13.5%	40.7%	19.5%	0.0%	NA
Block Group 2; Census Tract 43	2,000	49.3%	38.9%	0.0%	8.1%	0.0%	0.0%	3.4%	0.5%	50.8%	15.0%	0.8%	NA
Block Group 1; Census Tract 45	894	4.0%	96.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	96.0%	83.0%	0.0%	NA
Block Group 1; Census Tract 46	717	6.7%	91.6%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	93.3%	84.1%	0.0%	NA
Block Group 2; Census Tract 46	663	20.5%	77.2%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	79.5%	38.6%	0.0%	NA
Block Group 1; Census Tract 50	639	5.5%	94.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	94.5%	89.7%	0.0%	NA
Block Group 2; Census Tract 50	383	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	84.3%	0.0%	NA
Block Group 1; Census Tract 53	659	0.0%	92.0%	0.0%	0.0%	0.0%	0.0%	4.4%	3.6%	100.0%	73.9%	0.0%	NA
Block Group 2; Census Tract 53	627	0.0%	98.6%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	100.0%	73.5%	0.0%	NA
Block Group 3; Census Tract 53	1,848	0.0%	98.8%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	100.0%	69.4%	0.0%	NA
Block Group 1; Census Tract 55	1,340	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.0%	89.1%	0.0%	NA
Block Group 2; Census Tract 55	65	32.3%	67.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	67.7%	60.0%	0.0%	NA
Block Group 3; Census Tract 55	739	2.4%	97.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	97.6%	83.1%	0.0%	NA
Block Group 1; Census Tract 56	1,676	0.0%	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	61.6%	0.0%	NA
Block Group 2; Census Tract 56	983	3.0%	97.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	97.0%	69.0%	0.0%	NA
Block Group 3; Census Tract 56	1,206	0.0%	99.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	100.0%	75.4%	0.0%	NA

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Block Group 1; Census Tract 57	881	6.9%	93.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	93.1%	61.9%	1.4%	NA
Block Group 2; Census Tract 57	1,324	0.0%	98.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	100.0%	73.6%	0.0%	NA
Block Group 1; Census Tract 58	236	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	84.3%	0.0%	NA
Block Group 2; Census Tract 58	672	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	83.6%	0.0%	NA
Block Group 1; Census Tract 59	482	2.5%	84.9%	0.0%	0.0%	0.0%	0.0%	0.0%	12.7%	97.5%	77.0%	3.2%	NA
Block Group 2; Census Tract 59	579	0.0%	97.2%	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	100.0%	92.7%	0.0%	NA
Block Group 3; Census Tract 59	1,062	2.9%	95.4%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	97.1%	96.2%	0.0%	NA
Block Group 1; Census Tract 60	1,065	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	46.3%	0.0%	NA
Block Group 2; Census Tract 60	715	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	64.3%	0.0%	NA
Block Group 1; Census Tract 62	753	15.0%	70.5%	0.0%	0.0%	0.0%	3.1%	0.0%	11.4%	85.0%	72.9%	1.7%	NA
Block Group 2; Census Tract 62	986	0.8%	89.9%	0.0%	0.0%	0.0%	3.8%	0.4%	5.2%	99.2%	48.1%	1.8%	NA
Block Group 1; Census Tract 63	952	85.2%	10.6%	0.0%	0.0%	0.0%	1.3%	1.7%	1.3%	14.8%	28.9%	2.1%	NA
Block Group 2; Census Tract 63	462	27.3%	72.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	72.7%	40.5%	0.0%	NA
Block Group 3; Census Tract 63	1,113	72.2%	19.9%	0.0%	1.3%	0.0%	0.0%	0.1%	6.5%	27.8%	27.9%	0.0%	NA
Block Group 1; Census Tract 64	1,775	12.1%	83.4%	0.0%	1.6%	0.0%	0.0%	0.7%	2.2%	87.9%	31.5%	0.3%	NA
Block Group 1; Census Tract 65	833	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	37.3%	0.0%	NA
Block Group 2; Census Tract 65	1,476	2.4%	92.6%	0.6%	0.4%	0.0%	0.0%	0.0%	3.9%	97.6%	72.6%	4.0%	NA
Block Group 1; Census Tract 66	1,088	40.8%	45.1%	1.8%	1.2%	0.0%	0.0%	7.3%	3.8%	59.2%	39.3%	0.0%	NA
Block Group 2; Census Tract 66	1,141	68.4%	19.9%	0.0%	3.8%	0.0%	0.0%	5.3%	2.7%	31.6%	28.4%	0.0%	NA
Block Group 1; Census Tract 67	595	8.4%	88.9%	1.5%	0.0%	0.0%	0.0%	0.0%	1.2%	91.6%	72.9%	0.0%	NA
Block Group 2; Census Tract 67	1,101	1.1%	98.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	98.9%	67.5%	0.0%	NA
Block Group 1; Census Tract 68	433	1.4%	97.2%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	98.6%	58.0%	0.0%	NA
Block Group 2; Census Tract 68	679	1.2%	98.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	98.8%	76.6%	0.0%	NA
Block Group 3; Census Tract 68	605	0.0%	99.3%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	100.0%	39.0%	0.0%	NA
Block Group 1; Census Tract 69	855	0.0%	98.7%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	100.0%	46.8%	0.0%	NA
Block Group 2; Census Tract 69	369	2.4%	95.9%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	97.6%	63.7%	0.0%	NA
Block Group 3; Census Tract 69	916	0.0%	99.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	100.0%	75.0%	0.0%	NA
Block Group 1; Census Tract 75	347	0.0%	98.6%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	100.0%	61.7%	0.0%	NA
Block Group 2; Census Tract 75	725	0.7%	98.5%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	99.3%	53.4%	0.7%	NA
Block Group 1; Census Tract 78.10	523	6.1%	93.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	93.9%	67.5%	0.0%	NA
Block Group 2; Census Tract 78.10	772	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	70.3%	0.0%	NA
Block Group 3; Census Tract 78.10	752	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	76.9%	0.0%	NA

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Block Group 1; Census Tract 78.21	1,576	0.9%	99.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.1%	47.0%	0.0%	NA
Block Group 2; Census Tract 78.21	497	15.7%	84.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	84.3%	36.8%	0.0%	NA
Block Group 3; Census Tract 78.21	468	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	72.0%	0.0%	NA
Block Group 4; Census Tract 78.21	1,319	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	46.1%	0.0%	NA
Block Group 5; Census Tract 78.21	478	1.5%	98.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.5%	98.7%	0.0%	NA
Block Group 1; Census Tract 78.22	1,279	5.0%	82.6%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	95.0%	64.3%	7.8%	Spanish
Block Group 1; Census Tract 81.10	1,150	0.5%	77.3%	0.0%	0.0%	0.0%	0.0%	0.0%	22.2%	99.5%	47.7%	9.2%	Spanish
Block Group 2; Census Tract 81.10	659	1.1%	96.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	98.9%	88.7%	0.0%	NA
Block Group 3; Census Tract 81.10	185	0.0%	91.4%	0.0%	0.0%	0.0%	0.0%	3.8%	4.9%	100.0%	87.6%	0.0%	NA
Block Group 4; Census Tract 81.20	655	9.9%	90.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	90.1%	90.5%	0.0%	NA
Block Group 1; Census Tract 99.01	474	7.6%	70.3%	0.0%	0.0%	0.0%	0.0%	0.0%	22.2%	92.4%	56.4%	3.4%	NA
Block Group 1; Census Tract 99.02	810	19.9%	80.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	80.1%	81.9%	0.0%	NA
Block Group 1; Census Tract 112	191	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	79.1%	0.0%	NA
Block Group 2; Census Tract 112	519	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	89.2%	1.5%	NA
Block Group 3; Census Tract 112	233	1.3%	98.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.7%	35.6%	0.0%	NA
Block Group 1; Census Tract 113	519	6.0%	83.8%	0.0%	0.0%	0.0%	0.0%	3.7%	6.6%	94.0%	59.6%	0.0%	NA
Block Group 2; Census Tract 113	663	17.8%	68.5%	0.0%	12.1%	0.0%	0.0%	1.7%	0.0%	82.2%	47.1%	8.9%	Chinese (incl. Mandarin, Cantonese)
Block Group 1; Census Tract 114.01	82	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	51.2%	0.0%	NA
Block Group 2; Census Tract 114.01	682	38.9%	53.7%	0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	61.1%	100.0%	0.0%	NA
Block Group 3; Census Tract 114.01	568	9.2%	84.9%	0.0%	0.0%	0.0%	0.0%	3.3%	2.6%	90.8%	55.8%	0.0%	NA
Block Group 1; Census Tract 114.02	822	0.0%	96.2%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	100.0%	84.5%	0.0%	NA
Block Group 2; Census Tract 114.02	2,720	28.8%	65.3%	0.0%	0.0%	0.0%	0.0%	0.9%	5.0%	71.2%	47.5%	1.5%	NA
Block Group 1; Census Tract 115	608	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	34.0%	0.0%	NA
Block Group 2; Census Tract 115	761	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	91.9%	0.0%	NA
Block Group 3; Census Tract 115	467	18.0%	82.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	82.0%	89.1%	0.0%	NA
Block Group 4; Census Tract 115	378	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	65.6%	0.0%	NA
Block Group 1; Census Tract 116	828	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	72.1%	0.0%	NA
Block Group 2; Census Tract 116	360	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	60.2%	0.0%	NA
Block Group 3; Census Tract 116	178	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	72.5%	0.0%	NA
Block Group 4; Census Tract 116	1,066	5.3%	91.8%	0.0%	0.8%	0.0%	0.0%	0.0%	2.2%	94.7%	67.5%	0.0%	NA
Block Group 1; Census Tract 117	211	6.6%	93.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	93.4%	69.4%	0.0%	NA
Block Group 2; Census Tract 117	804	6.1%	90.8%	0.0%	0.0%	0.0%	0.0%	1.5%	1.6%	93.9%	58.3%	0.0%	NA

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Block Group 1; Census Tract 201.01	1,003	65.0%	15.3%	0.0%	0.0%	0.0%	0.0%	2.2%	17.5%	35.0%	24.5%	2.4%	NA
Block Group 4; Census Tract 219	2,152	1.1%	94.8%	0.0%	0.0%	0.0%	0.0%	0.4%	3.7%	98.9%	32.1%	2.4%	NA
Block Group 1; Census Tract 220.23	1,493	1.7%	95.5%	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	98.3%	33.6%	2.3%	NA
Block Group 2; Census Tract 220.23	260	6.9%	58.5%	0.0%	0.0%	0.0%	0.0%	34.6%	0.0%	93.1%	68.1%	30.6%	French, Haitian, or Cajun
Block Group 3; Census Tract 220.23	327	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	82.6%	0.0%	NA
Block Group 1; Census Tract 220.24	1,193	1.1%	98.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.9%	41.2%	0.0%	NA
Block Group 2; Census Tract 220.24	1,898	4.1%	95.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.9%	59.9%	0.0%	NA
Block Group 1; Census Tract 220.25	972	20.2%	79.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	79.8%	47.9%	1.4%	NA
Block Group 2; Census Tract 220.25	1,600	4.3%	94.4%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	95.7%	65.9%	1.5%	NA
Block Group 3; Census Tract 220.25	1,325	0.0%	98.6%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	100.0%	91.2%	0.0%	NA
Block Group 1; Census Tract 220.26	789	5.2%	90.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%	94.8%	92.1%	6.9%	Other and unspecified languages
Block Group 2; Census Tract 220.26	1,077	3.1%	89.9%	0.0%	0.0%	0.0%	0.0%	7.1%	0.0%	96.9%	32.6%	0.0%	NA
Block Group 1; Census Tract 221.11	1,494	1.1%	98.1%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	98.9%	57.2%	3.1%	NA
Block Group 2; Census Tract 221.11	1,546	4.1%	82.3%	0.0%	0.0%	0.0%	0.0%	0.0%	13.6%	95.9%	32.9%	0.0%	NA
Block Group 3; Census Tract 221.11	1,860	6.7%	89.6%	0.0%	0.0%	0.0%	3.1%	0.6%	0.0%	93.3%	69.6%	0.0%	NA
Block Group 1; Census Tract 221.21	1,251	1.9%	98.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.1%	37.6%	0.0%	NA
Block Group 2; Census Tract 221.21	1,799	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.0%	62.7%	1.3%	NA
Block Group 3; Census Tract 221.21	1,814	4.4%	93.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	95.6%	34.7%	0.7%	NA
Block Group 1; Census Tract 221.22	583	8.6%	91.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	91.4%	45.6%	0.0%	NA
Block Group 2; Census Tract 221.22	1,151	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.0%	76.1%	0.0%	NA
Block Group 3; Census Tract 221.22	2,329	4.5%	94.8%	0.0%	0.0%	0.0%	0.6%	0.0%	0.1%	95.5%	29.8%	0.1%	NA
Block Group 1; Census Tract 221.30	1,392	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	64.8%	0.0%	NA
Block Group 2; Census Tract 221.30	1,056	6.0%	94.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	94.0%	51.1%	0.0%	NA
Block Group 3; Census Tract 221.30	933	3.8%	96.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	96.2%	55.9%	0.0%	NA
Block Group 4; Census Tract 221.30	1,204	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	55.8%	2.1%	NA
Block Group 5; Census Tract 221.30	1,107	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	38.0%	0.0%	NA
Block Group 1; Census Tract 221.31	1,650	14.6%	84.7%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	85.4%	85.4%	15.3%	French, Haitian, or Cajun
Block Group 2; Census Tract 221.31	1,020	0.0%	94.7%	0.0%	0.0%	0.0%	0.0%	2.0%	3.3%	100.0%	76.2%	3.7%	NA
Block Group 1; Census Tract 221.32	1,086	7.2%	92.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	92.8%	29.9%	0.0%	NA
Block Group 2; Census Tract 221.32	1,218	3.6%	96.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	96.4%	56.6%	0.0%	NA
Block Group 1; Census Tract 222.10	3,134	1.6%	97.6%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	98.4%	50.1%	0.0%	NA
Block Group 2; Census Tract 222.10	769	2.1%	91.0%	0.0%	0.0%	0.0%	0.0%	6.9%	0.0%	97.9%	54.4%	0.0%	NA

Geography	Total Population	White Alone (not Hispanic or Latino)	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races	Hispanic or Latino	Total Minority^a	Low Income^b	Limited English Proficiency (LEP)^c	Primary Language(s) Spoken in LEP Block Groups by those who speak English Less than Very Well^d
Block Group 3; Census Tract 222.10	638	5.8%	92.6%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	94.2%	45.1%	0.0%	NA
Block Group 1; Census Tract 222.20	716	16.1%	65.6%	3.4%	0.0%	0.0%	0.0%	1.3%	13.7%	83.9%	79.1%	11.8%	Spanish, Other and unspecified languages
Block Group 2; Census Tract 222.20	906	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	NA
Block Group 3; Census Tract 222.20	142	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	16.9%	0.0%	NA
Block Group 4; Census Tract 222.20	1,585	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	65.5%	0.0%	NA
Block Group 5; Census Tract 222.20	1,381	0.0%	94.3%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%	100.0%	65.0%	0.0%	NA
Block Group 1; Census Tract 223.10	1,632	0.0%	97.1%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	100.0%	75.6%	1.8%	NA
Block Group 2; Census Tract 223.10	1,441	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	46.3%	0.0%	NA
Block Group 3; Census Tract 223.10	1,445	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	88.9%	0.0%	NA
Block Group 4; Census Tract 223.10	1,349	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	73.4%	0.0%	NA
Block Group 1; Census Tract 223.21	375	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	46.9%	0.0%	NA
Block Group 2; Census Tract 223.21	1,276	0.5%	99.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.5%	76.3%	0.0%	NA
Block Group 3; Census Tract 223.21	2,062	5.5%	89.1%	0.0%	0.0%	0.0%	0.0%	1.2%	4.1%	94.5%	57.8%	0.0%	NA
Block Group 1; Census Tract 223.22	1,365	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	37.3%	0.0%	NA
Block Group 2; Census Tract 223.22	815	1.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.0%	23.3%	0.0%	NA
Block Group 3; Census Tract 223.22	1,030	0.0%	87.5%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	100.0%	62.9%	0.0%	NA
Block Group 4; Census Tract 223.22	233	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	55.8%	0.0%	NA
Block Group 1; Census Tract 223.30	1,085	0.0%	94.9%	0.0%	0.0%	0.0%	0.0%	1.0%	4.1%	100.0%	71.5%	1.0%	NA
Block Group 2; Census Tract 223.30	1,775	1.8%	95.9%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	98.2%	57.7%	0.0%	NA
Block Group 3; Census Tract 223.30	2,379	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	61.0%	0.0%	NA
Block Group 1; Census Tract 224.10	549	7.5%	84.0%	0.0%	0.0%	0.0%	0.0%	2.9%	5.6%	92.5%	80.1%	0.0%	NA
Block Group 2; Census Tract 224.10	799	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	36.3%	0.0%	NA
Block Group 3; Census Tract 224.10	1,231	3.7%	86.5%	0.0%	0.0%	0.0%	0.0%	9.8%	0.0%	96.3%	61.6%	0.0%	NA
Block Group 4; Census Tract 224.10	2,228	5.4%	94.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	94.6%	17.5%	0.0%	NA
Block Group 5; Census Tract 224.10	738	20.3%	67.5%	0.0%	0.0%	0.0%	0.0%	8.5%	3.7%	79.7%	24.5%	0.0%	NA
Block Group 1; Census Tract 225	2,241	13.5%	59.4%	0.0%	0.0%	0.0%	0.0%	1.3%	25.7%	86.5%	53.9%	12.9%	Spanish
Block Group 2; Census Tract 225	539	0.9%	99.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.1%	81.4%	0.0%	NA
Block Group 3; Census Tract 225	1,208	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	39.6%	0.0%	NA
Block Group 4; Census Tract 225	829	17.9%	81.3%	0.6%	0.0%	0.0%	0.0%	0.2%	0.0%	82.1%	12.3%	0.0%	NA
Block Group 1; Census Tract 227	1,037	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	54.4%	0.0%	NA
Block Group 2; Census Tract 227	851	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	38.2%	0.0%	NA
Block Group 3; Census Tract 227	2,263	8.7%	84.0%	0.0%	0.0%	0.0%	0.0%	7.2%	0.0%	91.3%	81.3%	0.0%	NA

Geography	Total Population	White Alone (not Hispanic or Latino)	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races	Hispanic or Latino	Total Minority^a	Low Income^b	Limited English Proficiency (LEP)^c	Primary Language(s) Spoken in LEP Block Groups by those who speak English Less than Very Well^d
Block Group 4; Census Tract 227	983	4.3%	95.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.7%	59.0%	0.0%	NA
Block Group 5; Census Tract 227	2,662	0.4%	99.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.6%	91.0%	1.8%	NA
Block Group 1; Census Tract 9801	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	NA
Block Group 1; Census Tract 9802	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	NA
Block Group 1; Census Tract 9803	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	NA

Source: USCB 2022b

- a) Total Minority includes everyone other than persons who identified themselves as White, Not Hispanic or Latino. Census block groups meeting the criteria as a minority population are highlighted in red.
- b) Residents below the low-income threshold, defined as two times the poverty level. Census block groups meeting the criteria as a low-income population are highlighted in red.
- c) Residents who self-identify as speaking English “less than very well.” Census block groups meeting the criteria as an LEP population are highlighted in red.
- d) Primary Languages are defined as those spoken by 20 or more people within a census block group who speak English “less than very well”.

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**APPENDIX F – CHARACTERIZATION OF CENSUS TRACTS WITHIN A
10-MILE RADIUS**

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The Council on Environmental Quality’s Climate and Economic Justice Screening Tool (CEJST) uses a compilation of various government agency datasets as indicators of burdens. The burdens are organized into eight categories. A community is highlighted as disadvantaged on the CEJST map if it is in a census tract that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden (CEQ 2023).

Communities are identified as disadvantaged if they are in census tracts that meet the criteria for any of the following burdens:

Climate Change

- ARE at or above the 90th percentile for:
 - expected agriculture loss rate
 - OR expected building loss rate
 - OR expected population loss rate
 - OR projected flood risk
 - OR projected wildfire risk
- AND are at or above the 65th percentile for low income.

Health

- ARE at or above the 90th percentile for:
 - asthma
 - OR diabetes
 - OR heart disease
 - OR low life expectancy
- AND are at or above the 65th percentile for low income.

Energy

- ARE at or above the 90th percentile for:
 - energy cost
 - OR PM2.5 in the air
- AND are at or above the 65th percentile for low income

Water and Wastewater

- ARE at or above the 90th percentile for:
 - underground storage tanks and releases
 - OR wastewater discharge
- AND are at or above the 65th percentile for low income.

Legacy Pollution

- Have at least one abandoned mine land OR Formerly Used Defense Sites OR are at or above the 90th percentile for:
 - proximity to hazardous waste facilities
 - OR proximity to Superfund sites (National Priorities List (NPL))
 - OR proximity to Risk Management Plan (RMP) facilities
- AND are at or above the 65th percentile for low income.

Housing

- Experienced historic underinvestment OR are at or above the 90th percentile for:
 - housing cost
 - OR lack of greenspace
 - OR lack of indoor plumbing
 - OR lead paint
- AND are at or above the 65th percentile for low income.

Transportation

- ARE at or above the 90th percentile for:
 - diesel particulate matter exposure
 - OR transportation barriers
 - OR traffic proximity and volume
- AND are at or above the 65th percentile for low income.

Workforce Development

- ARE at or above the 90th percentile for:
 - linguistic isolation
 - OR low median income
 - OR poverty
 - OR unemployment
- AND more than 10 percent of people ages 25 years or older whose education is less than a high school diploma.

Figure F-1 identifies the census tracts within the 10-mile socioeconomic study area that the CEJST identifies as disadvantaged based on the above criteria. Table F-1 identifies which, if any, of the eight burden categories met the criteria for each individual census tract in the study area.

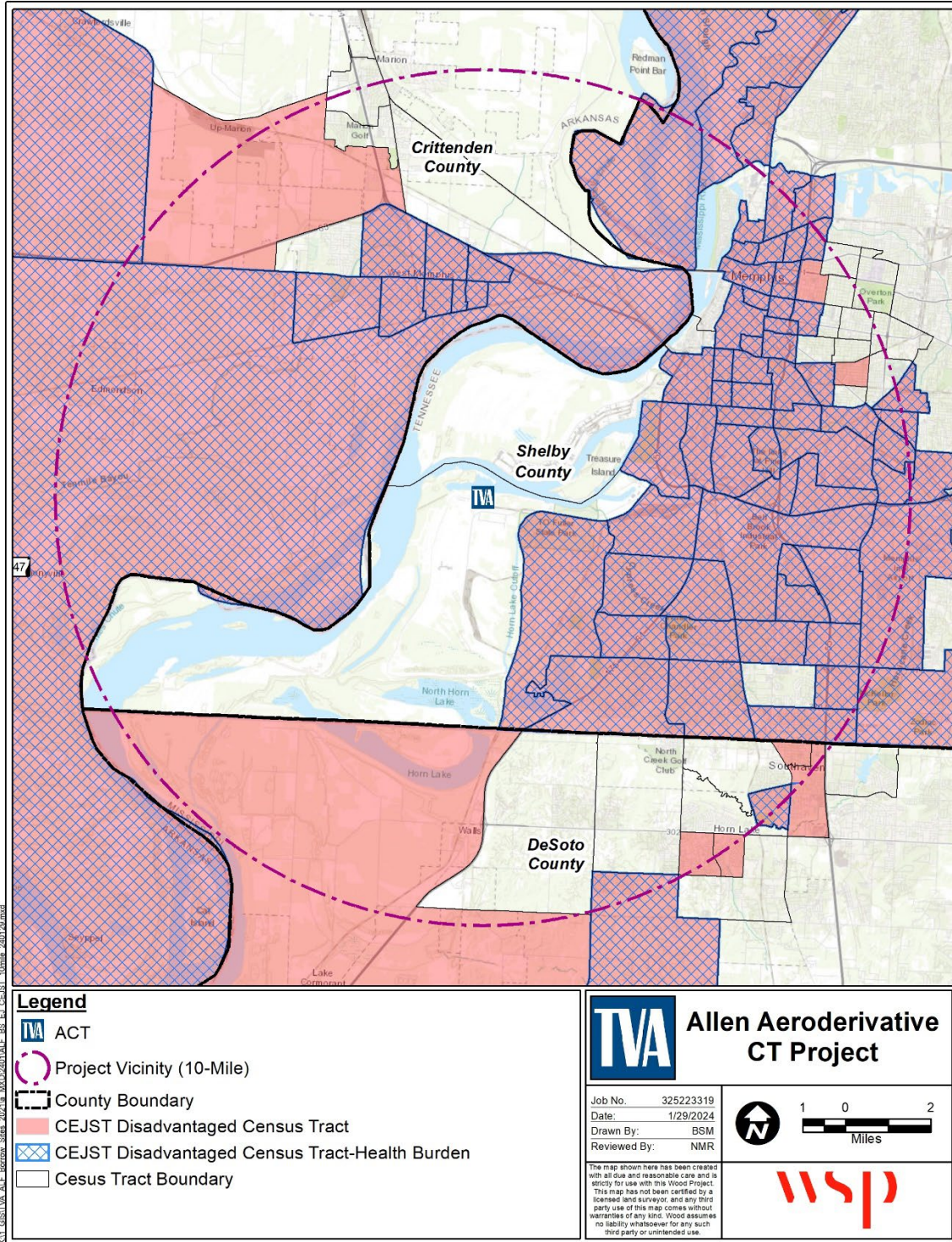


Figure F-1. Disadvantaged Census Tracts within a 10-mile Radius

Table F-1. Burden Criteria Met for Census Tracts within a 10-mile Radius

Geography	Burden Category							
	Climate Change	Legacy Pollution	Energy	Health	Housing	Transportation	Water and Wastewater	Workforce Development
Crittenden County, Arkansas								
Census Tract 301.01	YES	-	-	YES	YES	-	YES	YES
Census Tract 301.02	-	-	-	YES	-	-	-	-
Census Tract 302.01	-	-	-	YES	-	-	-	-
Census Tract 302.02	-	-	-	-	-	-	-	-
Census Tract 303.01	-	-	-	YES	YES	-	YES	YES
Census Tract 303.02	-	-	-	YES	YES	-	YES	YES
Census Tract 305.01	-	-	YES	YES	-	-	-	YES
Census Tract 305.02	-	-	YES	YES	YES	-	-	YES
Census Tract 306	YES	-	-	YES	YES	YES	-	YES
Census Tract 307.03	-	-	-	-	YES	-	-	YES
Census Tract 308.03	-	-	-	-	-	-	-	-
Census Tract 308.04	-	-	-	-	-	-	-	-
Census Tract 308.05	-	-	-	-	-	-	-	-
Census Tract 308.06	-	-	-	-	-	-	-	-
Census Tract 310	-	-	YES	YES	YES	-	-	-
Census Tract 312	-	-	YES	YES	-	-	-	YES
DeSoto County, Mississippi								
Census Tract 701.01	-	-	-	-	-	YES	-	-
Census Tract 701.02	-	-	-	-	-	-	-	-
Census Tract 702.10	-	-	-	-	-	-	-	-
Census Tract 702.21	-	-	-	YES	-	YES	-	-
Census Tract 703.22	-	-	-	-	-	-	-	-
Census Tract 703.23	-	-	-	-	-	-	-	-
Census Tract 703.24	-	-	-	-	-	YES	-	YES

Geography	Burden Category							
	Climate Change	Legacy Pollution	Energy	Health	Housing	Transportation	Water and Wastewater	Workforce Development
Census Tract 703.25	-	-	-	-	-	YES	-	YES
Census Tract 704.11	-	-	-	-	YES	-	YES	-
Census Tract 704.12	-	-	-	-	-	-	YES	-
Census Tract 704.21	-	-	-	-	-	-	-	-
Census Tract 704.22	-	-	-	YES	-	-	-	-
Census Tract 705.21	-	-	-	-	-	-	-	-
Shelby County, Tennessee								
Census Tract 1	-	-	-	-	-	-	-	-
Census Tract 2	-	-	YES	YES	YES	-	-	YES
Census Tract 3	-	-	YES	YES	YES	-	-	YES
Census Tract 4	YES	-	YES	YES	YES	YES	-	YES
Census Tract 16	-	-	-	-	-	-	-	-
Census Tract 17	-	-	-	-	-	-	-	-
Census Tract 19	-	-	YES	YES	YES	YES	-	YES
Census Tract 20	-	-	YES	YES	YES	-	-	YES
Census Tract 21	-	-	-	YES	YES	-	-	YES
Census Tract 24	-	-	-	YES	YES	YES	-	YES
Census Tract 25	-	-	-	-	YES	YES	-	-
Census Tract 26	-	-	-	-	-	-	-	-
Census Tract 31	-	-	-	-	-	-	-	-
Census Tract 32	-	-	-	-	-	-	-	-
Census Tract 33	-	-	-	-	-	-	-	-
Census Tract 34	-	-	-	-	-	-	-	-
Census Tract 35	-	-	-	-	-	-	-	-
Census Tract 36	-	-	-	YES	YES	YES	-	YES
Census Tract 37	-	-	-	YES	YES	YES	-	YES
Census Tract 38	-	YES	-	YES	YES	YES	-	YES

Appendix F – Characterization of Census Tracts within a 10-mile Radius

Geography	Burden Category							
	Climate Change	Legacy Pollution	Energy	Health	Housing	Transportation	Water and Wastewater	Workforce Development
Census Tract 39	-	YES	-	YES	YES	-	-	YES
Census Tract 42	-	-	-	-	-	-	-	-
Census Tract 43	-	-	-	-	-	-	-	-
Census Tract 45	-	-	YES	YES	YES	-	-	YES
Census Tract 46	-	-	-	YES	YES	YES	-	YES
Census Tract 50	-	-	YES	YES	YES	-	-	YES
Census Tract 53	-	YES	YES	YES	YES	-	-	YES
Census Tract 55	-	YES	YES	YES	YES	-	-	YES
Census Tract 56	-	YES	YES	YES	YES	-	-	YES
Census Tract 57	-	YES	YES	YES	YES	-	-	YES
Census Tract 58	-	-	YES	YES	YES	-	-	YES
Census Tract 59	-	-	YES	YES	YES	-	-	YES
Census Tract 60	-	YES	YES	YES	YES	-	-	YES
Census Tract 62	-	YES	YES	YES	YES	-	-	YES
Census Tract 63	-	YES	-	-	YES	-	-	-
Census Tract 64	-	-	-	-	-	-	-	-
Census Tract 65	-	YES	YES	YES	YES	-	-	YES
Census Tract 66	-	-	-	-	-	-	-	-
Census Tract 67	-	YES	YES	YES	YES	-	-	YES
Census Tract 68	-	YES	YES	YES	YES	-	-	YES
Census Tract 69	-	YES	YES	YES	YES	-	-	-
Census Tract 75	-	YES	YES	YES	YES	-	-	YES
Census Tract 78.10	-	YES	YES	YES	YES	-	-	YES
Census Tract 78.21	-	YES	YES	YES	-	YES	-	YES
Census Tract 78.22	YES	YES	YES	YES	-	YES	-	YES
Census Tract 81.10	-	YES	YES	YES	YES	-	-	YES
Census Tract 81.20	YES	YES	-	YES	-	-	-	YES
Census Tract 99.01	YES	-	-	YES	YES	-	-	YES

Geography	Burden Category							
	Climate Change	Legacy Pollution	Energy	Health	Housing	Transportation	Water and Wastewater	Workforce Development
Census Tract 99.02	-	-	YES	YES	YES	-	-	YES
Census Tract 112	YES	-	YES	YES	YES	YES	-	YES
Census Tract 113	-	-	-	YES	YES	YES	-	YES
Census Tract 114	-	-	-	YES	YES	-	-	YES
Census Tract 115	-	YES	YES	YES	YES	YES	-	YES
Census Tract 116	-	-	YES	YES	YES	-	-	YES
Census Tract 117	-	YES	YES	YES	YES	-	-	YES
Census Tract 201.01	YES	-	-	YES	-	-	-	YES
Census Tract 219	-	-	-	YES	-	-	-	-
Census Tract 220.22	YES	-	YES	YES	YES	-	-	YES
Census Tract 220.23	-	-	YES	YES	-	YES	-	YES
Census Tract 220.24	-	-	-	YES	-	-	-	-
Census Tract 221.11	-	-	-	YES	-	-	-	YES
Census Tract 221.12	-	-	-	YES	YES	YES	-	-
Census Tract 221.21	-	-	-	-	-	-	-	-
Census Tract 221.22	-	-	-	YES	-	-	-	-
Census Tract 221.30	-	-	-	YES	-	-	-	-
Census Tract 222.10	-	-	YES	YES	-	-	-	YES
Census Tract 222.20	YES	YES	YES	YES	-	-	-	YES
Census Tract 223.10	YES	-	YES	YES	YES	-	-	YES
Census Tract 223.21	-	-	-	YES	-	-	-	YES
Census Tract 223.22	YES	-	-	YES	-	-	-	-
Census Tract 223.30	-	-	-	YES	-	-	-	-
Census Tract 224.10	-	-	-	YES	-	-	-	-
Census Tract 225	YES	-	-	YES	YES	-	-	-
Census Tract 227	-	-	YES	YES	-	-	-	YES
Census Tract 9801	YES	-	-	YES	-	YES	-	YES
Census Tract 9802	-	-	-	-	-	-	-	-

Geography	Burden Category							
	Climate Change	Legacy Pollution	Energy	Health	Housing	Transportation	Water and Wastewater	Workforce Development
Census Tract 9803	-	-	-	-	-	-	-	-

Source: CEQ 2023

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APPENDIX G – LIST OF PREPARERS

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NEPA Project Management

Name: **Matthew Higdon (TVA)**
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Name: **Erin Alsop (WSP)**
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Other Contributors

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