

SUMMARY

PURPOSE OF AND NEED FOR ACTION

Demand for electricity in the Tennessee Valley Authority (TVA) power service area has grown at the average rate of 2.3 percent per year from 1990 to 2008. Although the 2008-2009 economic recession has slowed load growth in the short term and adds uncertainty to the forecast of power needs, future power needs are not expected to change dramatically. TVA's medium forecast analysis of future demands for electricity from its power system has identified the need for approximately 2,000 megawatts (MW) of additional baseload capacity in the 2018-2020 time frame. At the same time, TVA has set a goal of reducing fossil-fuel emissions and lowering its delivered cost of power.

TVA proposes to complete or construct and operate a single 1,100 - 1,200 MW nuclear generating unit at the Bellefonte Nuclear Plant (BLN) site located in Jackson County, Alabama. As part of its proposal, TVA is seeking to (1) assure future power supplies, (2) maximize the use of existing assets and licensing processes, (3) avoid larger capital outlays by using those existing assets; and (4) avoid the environmental impacts of siting and constructing new power generating facilities elsewhere. Completing a single nuclear unit at the BLN site would meet a substantial portion of TVA's future generating needs and would help meet the agency's goal of having 50 percent of its overall power supply from low or zero carbon-emitting sources by 2020. The single nuclear unit would provide a low-carbon-emitting power source at a significantly lower cost per installed kilowatt than other baseload power options.

Currently, there are two partially constructed Babcock and Wilcox pressurized light water reactors (B&W) with a rated capacity of about 1,200 MW each at the BLN site. TVA may choose to complete and operate either one of these partially constructed units, or construct and operate a new Westinghouse AP1000 advanced pressurized light water reactor (AP1000) using some of the existing infrastructure. Under any of the proposed alternatives, TVA would use licensing processes that are already underway. TVA currently holds a construction permit for the two B&W units and has applied for a combined (construction and operating) license for two AP1000 units. TVA's current proposal is to complete only one of these four previously proposed units. The considerable work that has been accomplished toward licensing the B&W and AP1000 technology would reduce the time and cost of bringing a single nuclear generating unit at BLN on line.

The purpose of this draft supplemental environmental impact statement (Draft SEIS) is to inform decision makers, agencies and the public about the potential for environmental impacts that would result from a decision to complete or construct and operate a single nuclear generating unit at the BLN site. This document supplements the original 1974 *Final Environmental Statement Bellefonte Nuclear Plant Units 1 and 2* (1974 FES) for the BLN project and updates other related environmental documents including the 2008 environmental report for the construction and operation of Westinghouse AP1000 units at the BLN site. It also updates the need for power analysis. This SEIS tiers from TVA's Energy Vision 2020 Integrated Resource Plan. In June 2009, TVA announced the preparation of a new Integrated Resource Plan (IRP) to replace Energy Vision 2020 which is scheduled to be completed in early 2011. Given the long lead time for bringing a nuclear plant online, completing the SEIS for BLN while simultaneously developing the new IRP will help ensure that a new generation unit could be built in time to meet the projected demand for base load energy.

NEED FOR POWER

TVA's high, medium, and low load forecasts all show the need for additional baseload capacity by 2018-2020. The completion or construction and operation of a single nuclear unit at the BLN site would provide TVA's customers with additional fuel diversity to reduce risk from volatile fuel prices, supply reliable, low-cost power from a proven high-energy producing resource, and afford increased operating flexibility in the face of increasing environmental constraints.

ALTERNATIVES

TVA considered a number of alternatives to constructing and operating BLN 1&2 in its 1974 FES, including various sources of baseload generation and alternative plant locations. Alternative sites and energy options were also included in the 2008 environmental report as part of the COLA process for locating Westinghouse AP1000 units (BLN 3&4) at the BLN site. In this Draft SEIS, TVA evaluates three generation alternatives and two transmission alternatives. The generation alternatives are Alternative A – No action, Alternative B – Completion and operation of a B&W pressurized light water reactor, and Alternative C – Construction and operation of an AP1000 pressurized light water reactor. The transmission alternatives include No Action and an Action Alternative. All of these alternatives are within the bounds of alternatives considered in previous environmental reviews which are incorporated herein by reference. Previous reviews also considered alternatives to nuclear generation, including energy sources not requiring new generating capacity, alternatives requiring new generating capacity, and combinations of alternatives. Alternative sites for additional nuclear generation were also considered

TVA conducted a study of the delivery of power produced from a single nuclear unit at the BLN site and determined that transmission network upgrades would be required to prevent overloading while transmitting electricity generated at BLN. These network upgrades represent the Action Alternative for the transmission system, and consist of modifications to 222 miles of existing transmission lines and two existing switchyards. The decision to approve and fund a single nuclear generating unit would be made first. If either Alternative B (B&W) or Alternative C (AP1000) were selected and implemented, the Action Alternative would be selected. The scope of work for the transmission Action Alternative is the same under Alternatives B and C.

Several evaluations in the form of environmental reviews, studies, and white papers have been prepared for actions related to the construction and operation of a nuclear plant or alternative power generation source at the BLN site. As provided in the National Environmental Policy Act (NEPA) implementing regulations (40 CFR Part 1502), this Draft SEIS updates, tiers from, and incorporates by reference information contained in these documents about the BLN site and about completing or constructing and operating a single nuclear generation unit at the BLN site.

CHANGES IN THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Under the No Action Alternative, TVA would continue to maintain the construction permits for BLN 1&2 in deferred status. In deferred status, any construction activities would be related to maintaining the existing plant infrastructure, including intake and discharge structures, cooling tower, and wastewater system. Under Alternatives B and C, construction activities would incorporate existing facilities and structures and use previously disturbed ground where possible. Both the B&W and AP1000 unit would use the existing

intake channel and pumping station, cooling towers, blowdown discharge diffuser, switchyard, and transmission system. Under Alternative B, a partially constructed B&W unit would be completed on previously cleared ground and minimal new site clearing or grading would occur. The majority of the construction activities on plant systems and components would involve replacement or refurbishment of equipment contained within the current structures. Under Alternative C, the AP1000 unit would be constructed on a new nuclear island located on vacant ground within the BLN project area. Construction of an AP1000 unit and associated structures are anticipated to disturb approximately 185 additional acres within the 1,600-acre site.

Potential environmental impacts of the three nuclear generation alternatives are summarized in Table S-1 below. Potential environmental impacts of the two alternatives for transmission upgrades are summarized in Table S-2 below. TVA would implement various mitigation measures to reduce or avoid environmental impacts under all of the action alternatives.

MITIGATION

TVA has identified the following measures to mitigate the potential environmental impacts associated with completion or construction and operation of a nuclear unit at BLN: These measures go beyond those of earlier reviews which either have been met during construction or will be addressed by required permits and authorizations.

- Avoid disturbance of archaeological site 1JA111.
- Take appropriate steps to mitigate potential housing impacts during plant construction in Jackson County as needed.
- Implement any avoidance or mitigation measures resulting from the U. S. Fish and Wildlife Service Biological Opinion.
- For Alternative C, purchase wetland mitigation credits at an approved mitigation bank in compliance with a Section 404/401 permit.
- For Alternative C, mitigate for noise impacts through use of noise dampening measures and limit blasting to daylight hours.

Should TVA select Alternative B or C, the following mitigation measures would be implemented to address the potential impacts of the proposed transmission upgrades. Prior to implementing any ground-disturbing work, TVA would:

- Conduct botanical surveys to examine all sites in areas to be disturbed where listed plant species have been previously reported to determine if the rare species are still present and the full extent of the plants in the ROW. The location of any federally and state-listed species resources would be identified on construction plans and avoided by construction crew.
- Conduct wetlands surveys in the areas to be disturbed. Pending this review, specific commitments including avoidance, minimization measures, or mitigation measures may be placed on wetland areas to ensure no significant impacts or loss of wetland function occurs.

- Evaluate the presence of historic structures and archaeological sites in areas to be disturbed, in accordance with Memorandum of Agreements (MOA) for the treatment and protection of archaeological resources that TVA is developing with each of the affected states (Alabama, Tennessee, and Georgia). Under these MOA, if avoidance were not possible, mitigation (i.e., additional archaeological investigation and data recovery) may be required.

NEXT STEPS

This Draft SEIS will be available for 45 days following publication of the Notice of Availability in the Federal Register. At the close of the public comment period, TVA will respond to the comments received and incorporate any required changes into the Final SEIS. TVA will also complete consultation with the U. S. Fish and Wildlife Service and the appropriate State Historic Preservation Officers. The completed Final SEIS will be transmitted to EPA who will publish a notice of its availability in the *Federal Register*. TVA will make a decision on the proposed action no sooner than 30 days after the NOA of the Final SEIS is published in the *Federal Register*. This decision will be based on the project purpose and need, anticipated environmental impacts, as documented in the Final SEIS, along with cost, schedule, technological, and other considerations. To document the decision, TVA will issue a Record of Decision (ROD).

Table S-1. Summary of the Environmental Impacts of the Three Nuclear Generation Alternatives

| Resource | Attribute/Potential Effects | Alternative | | |
|---------------------------|--|--|--|--|
| | | A - No Action | B – 1 B&W Unit | C – 1 AP1000 Unit |
| Surface Water | Chemical or thermal degradation of surface water quality; changes to hydrology and consumptive use of surface water | No impacts or changes anticipated | <p>Temporary and minor impacts associated with construction. No long-term or cumulative impacts to water quality associated with cooling water discharge.</p> <p>No impacts are anticipated to water supply. Minor impacts from chemical discharges.</p> | <p>Minor effects similar to Alternative B, but less due to smaller amount of blowdown water withdrawal and discharge</p> <p>Temporary and minor impacts associated with construction. No long-term or cumulative impacts to water quality associated with cooling water discharge.</p> <p>No impacts to water supply.</p> <p>Minor impacts from chemical discharges.</p> |
| Groundwater | Chemical impacts to groundwater quality; changes in use of groundwater | No impacts expected. | No impacts expected. | No impacts expected. |
| Floodplain and Flood Risk | <p>Construction or modification to the floodplain.</p> <p>Flooding of the plant site from the river, Town Creek, or Probable Maximum Precipitation (PMP)</p> | <p>No anticipated adverse impacts to the floodplain.</p> <p>All safety-related structures are located above the Probable Maximum Flood (PMF) and PMP drainage levels or are flood-protected to the resulting levels.</p> | <p>Minor impacts from construction and dredging.</p> <p>All safety-related structures are located above the Probable Maximum Flood (PMF) and PMP drainage levels or are flood-protected to the resulting levels.</p> | <p>Minor impacts from construction and dredging.</p> <p>All safety-related structures are located above the Probable Maximum Flood (PMF) and PMP drainage levels or are flood-protected to the resulting levels. The new Administrative building would be located above the 100-year and FRP elevations.</p> |
| Wetlands | Destruction of wetlands or degradation of wetland functions | No impacts | No impacts | Loss of 12.2 acres of wetlands to be mitigated in-kind within watershed. No indirect or cumulative impacts. |

| Resource | Attribute/Potential Effects | Alternative | | |
|-----------------------------------|--|---------------|---|---|
| | | A - No Action | B – 1 B&W Unit | C – 1 AP1000 Unit |
| Aquatic Ecology | Destruction of aquatic organisms; degradation or destruction of aquatic habitat | No impacts | Minor impacts to benthos from dredging intake, to aquatic communities from thermal discharge, impingement, and entrainment. No cumulative effects. | Effects similar to Alternative B but slightly less dredging. Impacts from thermal discharge and impingement and entrainment minor and less than Alternative B due to smaller water volumes. No cumulative effects. |
| Terrestrial Ecology | Removal or degradation of terrestrial vegetation, wildlife habitat, and/or wildlife | No impacts | No impacts | Little to no direct impacts from removal of 50 acres of forest and native grass. No indirect or cumulative effects. |
| Endangered and Threatened Species | Mortality, harm, or harassment of federally listed or state-listed species including impacts to their critical habitat | No impacts | No impacts from site construction or run-off. Adverse direct, indirect, and cumulative impacts to the pink mucket and sheepsnose mussel from dredging and towing barges. Minor indirect effects from stress of potential mussel host fish from thermal effluent; negligible effect of impingement/entrainment of potential host fish. | No impacts from site construction or run-off. Little or no impact to Indiana bats from removal of low quality potential roost habitat with some moderate quality potential roost trees. Adverse direct, indirect, and cumulative impacts to the pink mucket and sheepsnose mussel from dredging and towing barges. Fewer individuals affected than under Alternative B. Operational impacts to pink mucket and other aquatic species same as Alternative B |
| Natural Areas | Degradation of the values or qualities of natural areas | No impacts | No impacts | No impacts |

| Resource | Attribute/Potential Effects | Alternative | | |
|-------------------------------------|--|----------------------|---|--|
| | | A - No Action | B – 1 B&W Unit | C – 1 AP1000 Unit |
| Recreation | Degradation or elimination of recreation facilities or opportunities | No impacts | Minor impacts from construction and operation noise and withdrawal of water. | Minor impacts from construction and operation noise and withdrawal of water. |
| Archaeology and Historic Structures | Damage to archaeological sites or historic structures | No impacts. | No impacts. Mark and avoid site 1JA111. | No impacts. Mark and avoid site 1JA111. |
| Visual | Effects on scenic quality, degradation of visual resources | No additional impact | Minor, temporary impacts during construction. Minor impact of vapor plume. Little or no additional impacts to scenic quality. Minor cumulative impacts to regional visual setting. | Construction of new buildings offset by removal of existing buildings; construction impacts minor. Minor impact of vapor plume. Little or no additional impacts to scenic quality. Minor cumulative impacts to regional visual setting. |
| Noise | Generation of noise at levels causing a nuisance to the community | No impact | Small to moderate impacts from temporary noise during hydro-demolition and other construction. Minor impacts during operation. | Small to moderate impacts from temporary noise during blasting and other construction. Minor impacts during operation. |

| Resource | Attribute/Potential Effects | Alternative | | |
|--|---|---|--|---|
| | | A - No Action | B – 1 B&W Unit | C – 1 AP1000 Unit |
| Socioeconomics and Environmental Justice | Changes in population, employment, income, and tax revenues. | No impact | No substantial change in population; no significant adverse effects; minor beneficial impacts. | No substantial change in population; no significant adverse effects; minor beneficial impacts. |
| | Disproportionate effects on low income and/or minority populations. | No impact | No disproportionate impact. | No disproportionate impact. |
| | Changes in availability of housing and services. | No impact | Minor to potential significant adverse impacts during construction; minor impacts during operation. Potentially apply measures to mitigate demand for housing. | Minor to potential significant adverse impacts during construction; minor impacts during operation. Potentially apply measures to mitigate demand for housing. |
| | Public Services | No impact | Minor with the exception of significant increase in demand for schools during construction; moderate increase in demand for schools during operation. | Minor with the exception of significant increase in demand for schools during construction; moderate increase in demand for schools during operation. |
| | Changes in land use. | No impact | Minor indirect impact from increased residential use. | Minor indirect impact from increased residential use. |
| | Cumulative effects associated with Redstone Arsenal | No impact | Minor impact, minor cumulative effects. | Minor impacts, minor cumulative effects. |
| Solid and Hazardous Waste | Generation and disposal of solid and hazardous waste | No impact related to construction; Minor indirect impact of offsite disposal in permitted facilities. | No direct or cumulative impacts; minor indirect impacts during construction and operation from offsite disposal in permitted facilities. | Quantity of construction waste greater than under Alternative B. No direct or cumulative impacts; minor indirect impacts during construction and operation of offsite disposal in permitted facilities. |

| Resource | Attribute/Potential Effects | Alternative | | |
|----------------------|---|---------------------|---|---|
| | | A - No Action | B – 1 B&W Unit | C – 1 AP1000 Unit |
| Seismology | Seismic adequacy | No change. | No adverse seismic effects anticipated. | No adverse seismic effects anticipated. |
| Air Quality | Emissions resulting in increases of air pollutants | No impacts expected | Minor impacts from emissions controlled to meet current applicable regulatory requirements. Minor impacts from vehicular emissions. | Minor impacts from emissions controlled to meet current applicable regulatory requirements. Minor impacts from vehicular emissions. |
| Radiological Effects | Effects to humans and non-human biota from normal radiological releases | No impacts expected | Annual doses to the public well within regulatory limits; no observable health impacts. Doses to non-human biota well below regulatory limits; no noticeable acute effects. | Annual doses to the public well within regulatory limits; no observable health impacts. Doses to non-human biota well below regulatory limits; no noticeable acute effects. |

Table S-2. Summary of the Environmental Impacts of the Two Transmission Alternatives

| Resource | Attribute/Potential Effects | Alternative | |
|-----------------------------------|--|---|---|
| | | No Action | Action |
| Surface Water | Chemical or thermal degradation of surface water quality; changes to hydrology and Surface water use | No impacts | Minor, temporary impacts during upgrade activities. Minor impacts during routine maintenance. No cumulative impacts |
| Groundwater | Chemical impacts to groundwater quality; changes in use of groundwater | Minor impacts to groundwater quality from ROW maintenance | Minor impacts to groundwater quality from ROW maintenance |
| Aquatic Ecology | Degradation of water quality; destruction of aquatic organisms | Minor direct and indirect impacts from ROW maintenance. No cumulative impacts | No impacts from ROW clearing; no additional impacts of ROW maintenance as compared to No Action |
| Terrestrial Ecology | Removal or degradation of terrestrial vegetation, associated wildlife habitat, and wildlife | No local or regional impacts | No local or regional impacts |
| Endangered and Threatened Species | Mortality, harm, or harassment of federally listed or state-listed species | No impacts | No adverse impacts |
| Wetlands | Destruction of wetlands or degradation of wetland functions | No impacts | No adverse impacts |
| Floodplains | Construction or modification to a floodplain | No floodplains affected | No adverse impacts |
| Natural Areas | Degradation of the values or qualities of natural areas | No impacts | Minor direct impact to natural areas on ROWs, no impact to natural areas nearby. |
| Recreation | Degradation or elimination of recreation facilities or opportunities | No impacts | Minor impact from refurbishing lines and routine maintenance |
| Land Use | Changes in land use and effects to uses of adjacent land | No changes to current land use | Minor disruption during upgrade activities |
| Visual | Effects on scenic quality, degradation of visual resources | No impacts | Minor short-term impacts during construction and minor long-term impacts from taller structures |

| Resource | Attribute/Potential Effects | Alternative | |
|-------------------------------------|---|-----------------------------|---|
| | | No Action | Action |
| Archaeology and Historic Structures | Damage to archaeological sites or historic structures | No impacts | Potential for adverse impact to archaeological sites and/or historic structures. Effects would be avoided or mitigated in accordance with MOAs developed in consultation with the appropriate state historic preservation officer(s). |
| Socioeconomics | Changes, at local and regional scales, in the human population; employment, income, and tax revenues; and demand for public services and housing. | No impacts | Minor impacts during construction |
| Environmental Justice | Disproportionate effects on low income and/or minority populations | No disproportionate effects | No disproportionate effects |
| Operational Impacts | Potential effects of electromagnetic fields, lightning strike hazard, electric shock hazard, and generation of noises and odors | No impacts | No significant impacts from EMF; no alteration of line grounding, minor noise, no odors |

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ACRONYMS, ABBREVIATIONS, AND SYMBOLS

| | |
|--------------|---|
| °C | Degree Celsius |
| °F | Degree Fahrenheit |
| ± | Plus or Minus |
| § | Section |
| 7Q10 | Lowest flow over 7 consecutive days that occurs once every 10 years |
| ADCNR | Alabama Department of Conservation and Natural Resources |
| ADEM | Alabama Department of Environmental Management |
| AEC | Atomic Energy Commission |
| ALARA | As Low As Reasonably Achievable |
| AMA | American Medical Association |
| ANO | Arkansas Nuclear One |
| ANSI | American National Standards Institute |
| AP1000 Units | Bellefonte Units 3 and 4 or BLN 3&4 |
| APE | Area of Potential Effect |
| AREOR | Annual Radiological Environmental Operating Report |
| ARPA | Archaeological Resources Protection Act |
| ASME | American Society of Mechanical Engineers |
| B&W | Babcock & Wilcox |
| B&W Units | Bellefonte Units 1 and 2 or BLN 1&2 |
| BFN | Browns Ferry Nuclear Plant |
| BLN | Bellefonte Nuclear Plant |
| BMPs | Best Management Practices |
| BP | Containment Bypass |
| CEQ | Council on Environmental Quality |
| CE-QUAL-W2 | A two-dimensional, laterally averaged, hydrodynamic and water quality model for reservoirs |
| CESQG | Conditionally Exempt Small Quantity Generator |
| CFE | Early Containment Failure Rupture after Core Relocation |
| CFEL | Early Containment Failure by Leakage |
| CFER | Early Containment Failure by Rupture |
| CFI | Early Containment Rupture after Core Relocation |
| CFL | Late Containment Failure |
| CFR | Code of Federal Regulation |
| cfs | cubic feet per second |
| CI | Containment Isolation Systems Failure |
| CLWR | Commercial Light Water Reactor |
| CLWR FEIS | <i>Final Environmental Impact Statement for the Production of Tritium in a Commercial Light Water Reactor</i> |
| COLA | Combined License Application |
| COLA ER | Combined License Application Environmental Report |
| COLA FSAR | Combined License Application Final Safety Analysis Report |

| | |
|------------------------------------|--|
| CORMIX | Cornell Mixing Zone Expert System |
| CTBD | Cooling Tower Blow Down |
| CWA | Clean Water Act |
| DAW | Dry Active Waste |
| dB | Decibel |
| dBA | A-weighted Decibel |
| DBA(s) | Design Basis Accident(s) |
| DCD | Design Control Document |
| DCOP | Delivered Cost of Power |
| DEIS | Draft Environmental Impact Statement |
| DSEP | Detailed Scoping, Estimating, and Planning |
| DO | Dissolved Oxygen |
| DOE | U.S. Department of Energy |
| DOI | U.S. Department of Interior |
| DOT | Department of Transportation |
| DSEIS | Draft Supplemental Environmental Impact Statement or Draft SEIS |
| DSEP | Detailed Scoping, Estimating, and Planning |
| DSM | Demand-Side Management |
| DSN | Discharge Serial Number |
| EAB | Exclusion Area Boundary |
| e.g. | Latin term, <i>exempli gratia</i> , meaning “for example” |
| EIS | Environmental Impact Statement |
| EMF | Electromagnetic Field |
| Energy Vision 2020 FEIS | <i>Energy Vision 2020 - Integrated Resource Management Plan and Final Programmatic Environmental Impact Statement (TVA 1995)</i> |
| EO | Executive Order |
| EPA | U.S. Environmental Protection Agency |
| EPRI | Electric Power Research Institute |
| ER | Environmental Report |
| ERCW | Essential Raw Cooling Water |
| ESA | Endangered Species Act |
| et al. | Latin term, <i>et alii</i> (masculine), <i>et aliae</i> (feminine), or <i>et alia</i> (neutral), meaning “and others” |
| etc. | Latin term <i>et cetera</i> , meaning “and other things” “and so forth” |
| FAA | Federal Aviation Administration |
| FES | Final Environmental Statement |
| FEIS | Final Environmental Impact Statement of Final EIS |
| FERC | Federal Energy Regulatory Commission |
| FRP | Flood Risk Profile |
| FSEIS | Final Supplemental Environmental Impact Statement or Final SEIS |
| FSAR | Final Safety Analysis Report |
| ft² | Square Feet |
| GDP | Gross Domestic Product |
| GEIS | Generic Environmental Impact Statement |

| | |
|-----------------|---|
| gpm | Gallons per Minute |
| GWh | Gigawatthours |
| HIC(s) | High Integrity Container(s) |
| HPA | Habitat Protection Area |
| HUD | U.S. Department of Housing and Urban Development |
| HVAC | Heating, Ventilation, and Air Conditioning |
| HVN | Hartsville Nuclear Plant |
| HWSF | Hazardous Waste Storage Facility |
| IC | Intact Containment |
| ICRP | International Commission of Radiological Protection |
| i.e. | Latin term, <i>id est</i> , meaning “that is” |
| IGCC | Integrated Gasification Combined Cycle |
| IPEEE | Individual Plant Examination for External Events |
| IRP | Integrated Resource Plan |
| ISFSI | Independent Spent Fuel Storage Installation |
| kg | kilogram |
| kV | Kilovolt |
| kW | Kilowatt |
| kWh | Kilowatthour |
| Ldn | Day-night Noise Level |
| LLRW | Low Level Radioactive Waste |
| LPZ | Low Population Zone |
| LWR | Light Water Reactor |
| M | Magnitude |
| MACCS2 | MELCOR Accident Consequence Code System |
| Man-rem | Unit of radiation dose to an individual |
| Max | Maximum |
| mbLg | Lg wave magnitude |
| MEI | Maximally Exposed Individual |
| mG | milligauss |
| MGD | Million gallons per day |
| MH | Murphy Hill Nuclear Plant |
| Min | Minimum |
| mrem | millirem |
| msl | Mean Sea Level |
| MTU | Metric Ton Uranium |
| MVA | Megavolts-Ampere |
| MW | Megawatt |
| MWD | Megawatt-Days |
| MWe | Megawatt electrical |
| MWt | Megawatt thermal |
| MWh/year | Megawatt Hours per Year |
| N/A | Not Applicable |

Single Nuclear Unit at the Bellefonte Site

| | |
|-------------------------|---|
| NAAQS | National Ambient Air Quality Standards |
| NEI | Nuclear Energy Institute |
| NEPA | National Environmental Policy Act |
| NERC | North American Electric Reliability Corporation |
| NH₄CL | Ammonium Chloride |
| NHPA | National Historic Preservation Act |
| NIEHS | National Institute of Environmental Health Sciences |
| No(s). | Number(s) |
| NOA | Notice of Availability |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NQAP | Nuclear Quality Assurance Plan |
| NRC | U.S. Nuclear Regulatory Commission |
| NRHP | National Register of Historic Places |
| NRI | Nationwide Rivers Inventory |
| NSRC | Norfolk Southern Railway Company |
| NUREG | U.S. Nuclear Regulatory Commission Regulatory Guidance Document |
| NWI | National Wetlands Inventory |
| PBN | Phipps Bend Nuclear Plant |
| PCB | Polychlorinated biphenyl |
| PCP | Process Control Program |
| Person-rem | Unit of collective radiation dose to a given population |
| PM | Particulate Matter |
| PM_{2.5} | Particulate matter having a diameter of less than 2.5 microns |
| PMF | Probable Maximum Flood |
| PMP | Probable Maximum Precipitation |
| PNNL | Pacific Northwest National Laboratory |
| ppm | parts per million |
| PPS | Protection Planning Site |
| PSA | Probabilistic Safety Assessment |
| psig | Pound-force per square inch gauge |
| PSAR | Preliminary Safety Analysis Report |
| PRA | Probabilistic Risk Assessment |
| PWR | Pressurized Water Reactor |
| Radwaste | Radioactive Waste |
| RBI | Reservoir Benthic Index |
| RCRA | Resource Conservation and Recovery Act |
| REMP | Radiological Environmental Monitoring Program |
| RFAI | Reservoir Fish Assemblage Index |
| ROD | Record of Decision |
| ROI | Region of Interest |
| ROS | Reservoir Operations Study |

| | |
|-----------------------|--|
| ROS FEIS | <i>Reservoir Operations Study Final Programmatic Environmental Impact Statement</i> (TVA 2004) |
| ROW | Right-of way |
| RV | recreational vehicle |
| SAR | Sensitive Area Review |
| SCCW | Supplemental Condenser Cooling Water |
| SEIS | Supplement Environmental Impact Statement |
| SEPA | Southeastern Power Administration |
| SERC | SERC Reliability Corporation |
| SFP | Spent Fuel Pool |
| SGB | Steam Generator Blowdown |
| SHPO | State Historic Preservation Officer |
| SNA | State Natural Area |
| SMZ | Streamside Management Zone |
| SPCC | Spill Prevention Control and Countermeasure |
| SQG | Small Quantity Generator |
| SQN | Sequoyah Nuclear Plant |
| SRP | Standard Review Plan |
| SO₂ | Sulfur Dioxide |
| SOW | Scope of Work |
| STO | Saltillo Nuclear Plant |
| SWPPP | Stormwater Pollution Prevention Plan |
| SWA | Small Wild Area |
| TBD | To Be Determined |
| TDEC | Tennessee Department of Environment and Conservation |
| TEDE | Total Effective Does Equivalent |
| Tenn. | Tennessee |
| TNC | The Nature Conservancy |
| TRM | Tennessee River Mile |
| TVA | Tennessee Valley Authority |
| TWRA | Tennessee Wildlife Resources Agency |
| U | Uranium |
| UO₂ | Uranium Dioxide |
| U.S. | United States |
| USACE | U.S. Army Corps of Engineers |
| USGS | U.S. Geological Survey |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| vs. | Versus |
| WAW | Wet Active Waste |
| WBN | Watts Bar Nuclear Plant |
| WCF | Widows Creek Fossil Plant |
| WEC | Westinghouse Electric Company |

Single Nuclear Unit at the Bellefonte Site

| | |
|------------|--------------------------------|
| WHO | World Health Organization |
| WMA | Wildlife Management Area |
| χ/Q | Atmospheric dispersion factors |
| YCN | Yellow Creek Nuclear Plant |