PMBeICOL PEmails

From: Creek, Carolyn P [cpcreek@tva.gov]
Sent: Wednesday, May 07, 2008 1:31 PM
To: Mallecia Hood
Cc: Neil Haggerty
Subject: Email No. Two of Three Letter to NRC
Attachments: Response to Environmental Report Attachment A.pdf; Response to Env Att-B.pdf

Letter to NRC Dated May 2, 2008 Response to Environmental Report Sufficiency Review

Email No. Two of Three with the fillowing.

Attachments - A and B

A- Correspondanc e

B- Methodology and Findings

<<Response to Environmental Report Attachment A.pdf>>

<<Response to Env Att-B.pdf>>

Attachment A

Attachment B

Carolyn Creek
Management Assistant
Nuclear Generation Development
1101 Market Street, LP 5A
Chattanooga, Tn. 37402
(423) 751-6518 Fax: (423)-751-6509

Hearing Identifier: Bellefonte_COL_Public_EX
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Subject: Email No. Two of Three Letter to NRC
Sent Date: 5/7/2008 1:31:22 PM
Received Date: 5/7/2008 1:32:00 PM
From: Creek, Carolyn P

Created By: cpcreek@tva.gov

Recipients:
"Neil Haggerty" <neilhaggerty@comcast.net>
Tracking Status: None
"Mallecia Hood" <Mallecia.Hood@nrc.gov>
Tracking Status: None

Post Office: TVACOCXVS1.main.tva.gov

Files	**Size**	**Date & Time**
MESSAGE	787	5/7/2008 1:32:00 PM
Response to Environmental Report Attachment A.pdf	2411655	
Response to Env Att-B.pdf	226458	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
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Recipients Received:

SHPO Correspondence Omitted from BLN COLA Part 3, ER Appendix A

- Letter from Richard J. Grumbir, NuStart Energy Consortium, to Robert Thrower, Tribal Historic Preservation Officer, Poarch Band of Creek Indians, "NVA/NuStart Bellefonte Project, Request for Information on Cultural, Historic, and Archaeological Resources," dated August 28, 2006.
- Letter from Thomas O. Maher, Ph.D., Tennessee Valley Authority, to Ms. Elizabeth A. Brown, Deputy State Historic Preservation Officer, State of Alabama, Alabama Historic Commission, Explains TVA/NuStart/Enercon project roles, dated September 7, 2006.
- Letter from Thomas O. Maher, Ph.D., Tennessee Valley Authority, to Deborah Luchsinger, Ph.D., Enercon Services, Inc., "Bellefonte NuStart Energy Development Project Area of Potential Effects," dated September 14, 2006 (copy to Ms. Elizabeth A. Brown, Alabama SHPO).
- Letter from Thomas O. Maher, Ph.D., Tennessee Valley Authority, to Colonel John Neubauer, State Historic Preservation Officer, State of Alabama, Alabama Historical Commission, "AHC 2006-1211; Bellefonte NuStart Energy Development; Jackson County," dated April 17, 2007.
- Letter from Colonel (Ret.) John A. Neubauer, State Historic Preservation Officer, State of Alabama, Alabama Historical Commission, to Diane A. Cargill, Cargill Archaeological Services, "AHC 06-1211, Jackson Camp, Bellefonte Nuclear Site, Jackson County, Alabama," dated July 26, 2007.

NuStart Energy$_{sm}$

August 28, 2006

Mr. Robert Thrower
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, Alabama 36502

Subject: TVA/NuStart Bellefonte Project
Request for Information on Cultural, Historical, and Archeological Resources

Dear Mr. Thrower:

As you may know, NuStart Energy Development LLC has selected TVA's Bellefonte site in Jackson County, Alabama, as one of two sites that will be the subject for applications for an advanced technology nuclear power plant. NuStart is a consortium of two nuclear reactor vendors and ten electric utility companies, including TVA, working together to demonstrate the combined Construction and Operating License (COL) process for advanced reactor designs in support of potential future construction and operation decisions.

While TVA has not committed to building a nuclear plant at the site, NuStart's work will provide TVA and its other members with detailed information regarding the licensing process as well as additional studies that will support the decision making process for future nuclear plant construction. NuStart is doing the preliminary work needed to apply for a combined construction and operating license from the Nuclear Regulatory Commission (NRC) at Bellefonte, and we have contracted with Enercon Services, Inc to complete much of the environmental and emergency planning work needed in the license application.

With this letter, NuStart is requesting information regarding your requirements for additional Section 106 consultation in support of the analysis of potential environmental impacts from the proposed activity. It is our strong desire to accurately depict the local cultural, historical, and archeological resources and work together to preserve any of these aspects, including traditional cultural properties (TCP).

With that perspective, Enercon has reviewed existing information and determined that the 1,600-acre Bellefonte site currently contains two partially-completed pressurized water reactors that were never put into use. The Bellefonte site is situated on a peninsula of the Tennessee River, on the western shore of Guntersville Reservoir, northeast of Scottsboro, Alabama. The primary land uses in the surrounding area are forestry and agriculture; however, urban-industrial development has grown over the past

several years around the plant along the Guntersville Reservoir. Guntersville Lake on the Tennessee River would be used as the source of makeup water for a Bellefonte nuclear plant. The site is already zoned as industrial. About 900 acres of the Bellefonte site have been developed with buildings and facilities, roads, parking lots or other uses related to the previous nuclear option. Approximately 20 acres are currently used by a local farmer for hay production. The remaining approximately 600 acres are in various stages of grassland or forest combination, with perhaps 200 acres that would be considered forest.

In accordance with the U.S. Nuclear Regulatory Commission regulations for submitting a COL application, NuStart is currently preparing an Environmental Report. Among other key aspects, the Environmental Report will assess the impact of the construction and operation of the nuclear power generation facility on properties within the proposed site that are listed in or eligible for inclusion in the *National Register* or are included in Alabama or local registers or inventories of historic and archaeological resources. This assessment includes traditional cultural properties.

The initial archeological reconnaissance of the 1,600 acres was conducted in 1972. As a result of this initial survey and subsequent assessments, two sites discovered during the pre-inundation archaeological survey of Guntersville Lake in 1936 (1JA978 and 1JA112) were verified and three additional sites were discovered (1JA300-302). Site 1JA978 was noted in the riverbank and contains both Archaic and Woodland components; 1JA112 is on a natural levee adjacent to the original riverbank and is primarily inundated and cultural affiliation could not be determined. Site 1JA300 covers an area of approximately 200- by 250-feet on a knoll adjacent to a small unnamed inlet that serves as the plant intake for make-up cooling water. The site contains Archaic, Woodland, and Mississippian components. Site 1JA301 consists of surficial remains from the Archaic on a knoll adjacent to two limestone hills. Site 1JA302 consists of a Woodland component in the northeast edge of the peninsula near the confluence of Town Creek and the Tennessee River and is potentially eligible for inclusion in the National Register of Historic Places. Since site 1JA300 was going to be adversely impacted by the construction of the original plant intake structure and an access road, data recovery excavations were conducted in 1973 by the University of Alabama.

Previous archival record search, field verification, and prior discussions with the Alabama Historical Commission deduced that the only historical site of potential significance was the original town site of Bellefonte. All structures associated with the original Bellefonte town site, including the 1845 Tavern and Inn, have been removed since 1974 when it was initially determined that the town site was eligible for placement on the National Register of Historic Places. The former town site is on the north side of and adjacent to Jackson County Highway 33, between U.S. 72 and the project Bellefonte project site. The town site is not on TVA property, and the buildings were removed by the owners.

Construction activities for the plant and ancillary facilities would not adversely affect the identified cultural, historic, or archeological properties. Additionally, no artifacts were discovered during extensive construction activities already completed for this site.

Please let us know if we should consider any other nearby historic, archaeological or cultural resources, including TCPs, under your legal jurisdiction in our analysis. Attached to this letter are several figures for reference, including a photograph of the site

showing current conditions, a topographic map, and an aerial photograph with the new plant outline. Personnel from Enercon Services, Inc will likely follow up on this letter to ensure any potential questions or requests for additional information are adequately addressed.

Thank you very much for your support and assistance. If you have questions regarding the environmental impact assessment effort, please contact Dr. Deborah Anne Luchsinger of Enercon, 303-927-6501 or dluchsinger@enercon.com. Should you have any questions regarding the entire NuStart COL demonstration project, please contact the NuStart communications team leader Carl Crawford, 601-368-5658. Written comments can be submitted to:

Dr. Deborah Luchsinger
Enercon Services, Inc.
6500 Crestbrook Drive
Morrison, Colorado 80465

We look forward to hearing from you at your earliest convenience.

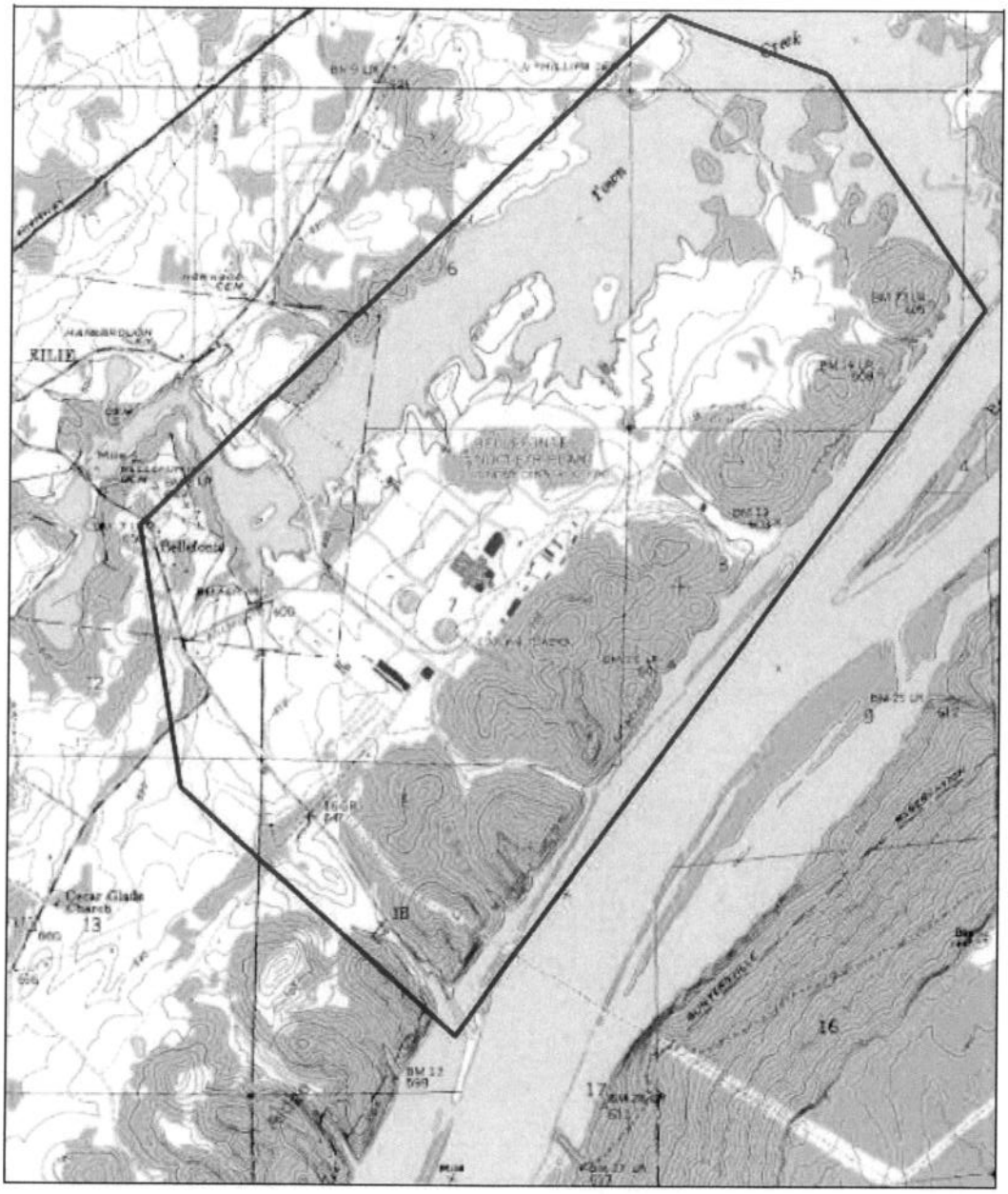
Very truly yours,

Richard J. Grumbir, AP1000 Project Manager
NuStart Energy Consortium

Enclosures: 1) Topographic Map
2) Aerial Photograph
3) Photograph

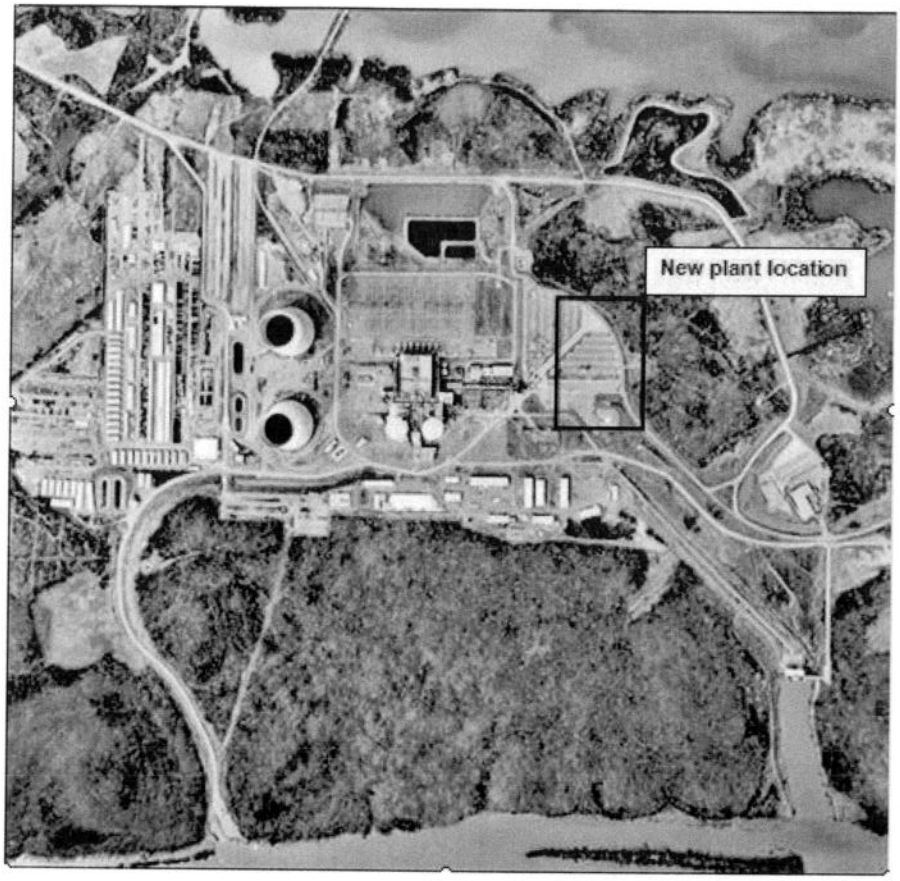
cc: Jack A. Bailey
James S. Chardos
B. J. Gatten

ENCLOSURE 1: Topographic map of the Bellefonte area.

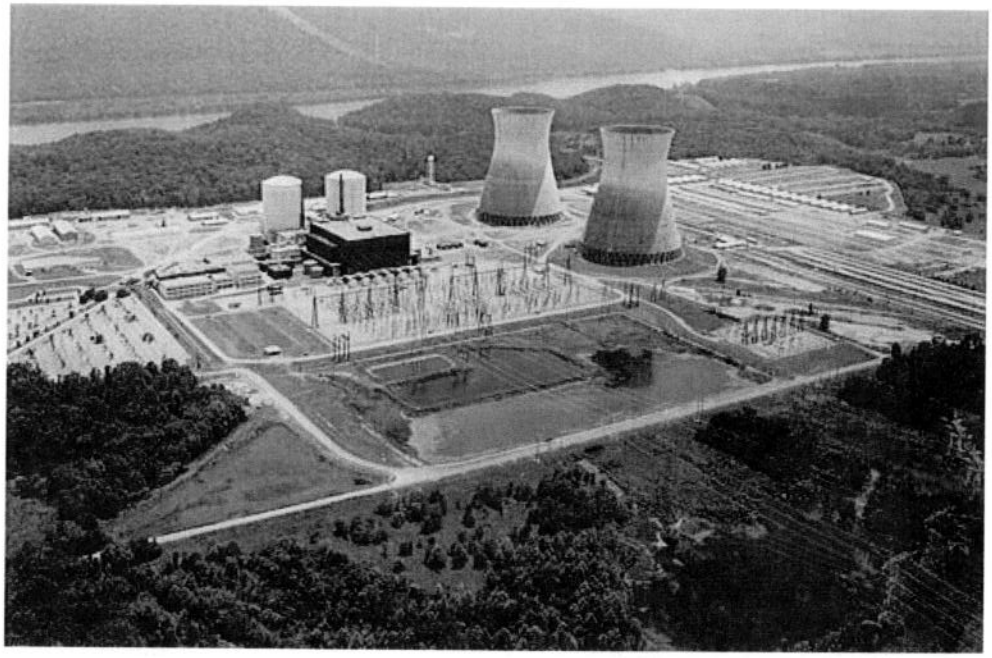


Reference: USGS Hollywood Quadrangle, Jackson County, Alabama

ENCLOSURE 2: Aerial photograph of the Bellefonte site.



ENCLOSURE 3: Photograph showing current conditions at the site.



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1401

September 7, 2006

Ms. Elizabeth Ann Brown
Deputy State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama 36130-0900

Dear ~~Ms. Brown~~ Elizabeth:

I would like to notify you about activities involving TVA's Bellefonte plant site near Scottsboro, Alabama. You may be, or have been, contacted by NuStart Energy Development (NuStart) or its environmental contractor, ENERCON. They are preparing an application for approval of an advanced nuclear plant at the Bellefonte site. This is an unusual situation and requires some explanation.

NuStart is a consortium of two nuclear reactor vendors and nine member electric companies, including TVA. The objective of NuStart's activities is to demonstrate the feasibility and efficiency of a new combined construction and operating license (COL) process established by the Nuclear Regulatory Commission (NRC) by submitting a COL application to NRC for approval. Various groups and companies are competing for funding being offered by the U.S. Department of Energy to do this. The Bellefonte site is one of the sites NuStart is using for this demonstration. Actual construction of a plant is not part of NuStart's activities, but the objective of this demonstration is to obtain NRC approval to construct and operate a plant.

Under NRC licensing guidelines, applicants are required to submit an Environmental Report (Report) to NRC. This report is similar to an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), and it addresses many of the same things as an EIS, including potential impacts on cultural resources. NRC uses information in the Report to conduct its NEPA review process. NRC also uses the information to conduct other required processes, including the Section 106 process under the National Historic Preservation Act.

TVA fully supports the NuStart efforts and our participation in this process, so far, has included providing ENERCON information regarding the Bellefonte site to facilitate the consultant's preparation of the license application and the Report. The license application may list TVA as the applicant because TVA controls the Bellefonte site, but TVA has not decided to construct a new plant on the site or allow others to use the site. If TVA proposes to do this in the future, we would initiate consultation with your office in accordance with Section 106. In the meantime, we plan to work with ENERCON to ensure that it appropriately identifies potential impacts on cultural resources.

If you wish to discuss this further, do not hesitate to contact me (865-632-7452) or our tribal liaison, Pat Bernard Ezzell (865-632-6461).

Yours truly,

Thomas O. Maher

Thomas O. Maher, Ph.D.
Manager, Cultural Resources
Environmental Stewardship and Policy
WT 11D-K

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1401

September 14, 2006

Dr. Deborah Luchsinger
ENERCON Services, Inc.
6500 Crestbrook Drive
Morrison, Colorado 80465

BELLEFONTE NUSTART ENERGY DEVELOPMENT PROJECT AREA OF POTENTIAL EFFECTS

Dear Dr. Luchsinger:

Please find enclosed copies of TVA's recommendation for the area of potential effects (APE) and the area that we feel should be included in an archaeological survey. This decision was based on the following factors:

- The true extent of ground disturbing activities within the identified APE that may occur as a result of construction (such as laydown yards, equipment staging areas, borrow and spoil locations, required security features, etc.) is not known at this time. By creating a larger APE, it can be ensured that all historic properties will be identified in areas that may be included in such activity.
- There is some belief among local residents that a Civil War site is located in the upland area adjacent to the plant site. Identifying any potentially significant resources such as this will help address potential public concern that may be submitted during the Nuclear Regulatory Commission public meetings.
- One known National Register eligible archaeological resource is located adjacent to the intake structure. The current conditions of this site need to be assessed to determine whether any future plant activities may have an effect on the site.
- A larger APE will allow for potential changes in the scope of the project.

At this time, TVA does not think that an archaeological survey will be necessary for the existing de-energized transmission lines. TVA has conducted a preliminary review of these lines and does not believe that major maintenance will be required to activate these lines. Should this change in the future, a Sensitive Area Review of areas proposed for major maintenance can be conducted to identify historic properties that may be affected. I can provide you a copy of the process TVA uses to do this so that it can be included in the environmental review if you think this would be helpful.

We are copying the Alabama State Historic Preservation Officer (SHPO) on this letter. Please let us know if additional correspondence from TVA regarding the APE is necessary and keep us apprised of any future discussions and copy us on any correspondence with the SHPO about this.

Because ENERCON is commissioning the Phase I archaeological survey at the Bellefont site, it will be necessary for the archaeological contractor to obtain a permit from TVA under the Archaeological Resources Protection Act prior to conducting the survey. This is not a difficult process, the consultant will need to submit their proposal to our office for review, and we will administer the permit within a few days.

If you have any questions, please contact Erin Pritchard at (865) 632-2463 or by e-mail at eepritchard@tva.gov, or contact Danny Olinger at (865) 632-3468 or by e-mail at deolinger@tva.gov.

Sincerely,

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

Enclosures
cc: Ms. Elizabeth Ann Brown
Deputy State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama 36130-0900

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

April 17, 2007

Colonel John Neubauer
106 Coordinator
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama 36130-0900

Dear Colonel Neubauer:

AHC 2006-1211; Bellefonte NuStart Energy Development; Jackson County

As per our previous discussion with your office (enclosed letter dated September 7, 2006), the Tennessee Valley Authority (TVA) is a participant in the NuStart Energy Development proposal to submit an application to the Nuclear Regulatory Commission (NRC) for a combined construction and operating license at the TVA-owned Bellefonte Nuclear Site (BLN) in Jackson County, Alabama.

In a previous letter dated January 8, 2007, Cargill Archaeological Services, LLC, under contract with ENERCON Services, Inc., reported the findings and recommendations of a Phase I archaeological survey performed by TRC, Inc. (TRC). TRC identified one new archaeological site (1Ja1103) and attempted to relocate four previously recorded archaeological sites (1Ja111, 113, 300, and 301). TRC recommended site 1Ja111 as potentially eligible for listing in the National Register of Historic Places (NRHP). Sites Ja113, 300, 301, and 1103 were recommended as ineligible for listing in the NRHP due to total site destruction and/or lack of integrity.

In a letter response dated January 31, 2007, the Alabama State Historic Preservation Officer (SHPO) agreed with the recommendation that site 1Ja111 is potentially eligible, but disagreed with the ineligible recommendation for site 1Ja1103 due to lack of sufficient research. No official eligibility determinations have been made for these sites by NRC or TVA at this time.

TVA is submitting this letter of assurance to the SHPO that all sites recommended as potentially eligible or eligible for listing in the NRHP, will be avoided and protected by the following measures in the event that the BLN site is selected:

- A 50-foot protective buffer will be established around each site which will be further protected by an obstructive barrier;
- The obstructive barrier will consist of construction fencing or temporary chain link fencing; and
- A sign will be posted informing personnel that an archaeological resource protected under the Archaeological Resource Protection Act is present.

With these measures in place, TVA believes that these sites will not be adversely affected by future construction activity. If avoidance is not possible, TVA will require Phase II testing to determine the sites' NRHP eligibility status. In the event that future construction and/or maintenance activities at the BLN are determined to potentially effect these sites (once final approval of the project has been made by TVA), TVA will coordinate these activities with your office pursuant to Section 106 of the National Historic Preservation Act.

If you have any questions regarding this project, please contact Ted Wells at ewwells@tva.gov or 865-632-2259.

Sincerely,

Thomas O. Maher

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

Enclosure

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

COLONEL (RET.) JOHN A. NEUBAUER
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

July 26, 2007

Diane A. Cargill
Cargill Archaeological Services
619 Tantra Drive
Boulder, Colorado 80305

Re: AHC 06-1211
Jackson Camp
Bellefonte Nuclear Site
Jackson County, Alabama

Dear Ms. Cargill:

Upon consultation with your office, we have determined the following. We continue to agree that site 1Ja1103 is not eligible for the National Register and that site 1Ja111 is eligible for the National Register and should be avoided. Furthermore, we agree that the proposed avoidance methods outlined on page 2 in Dr. Tom Maher's letter of April 17, 2007 will adequately protect this site. Therefore, we agree with the project proceeding. However, should any cultural resources be discovered during project activities, work shall cease in that area and our office shall be notified immediately.

We appreciate your continued efforts on this project. Should you have any questions, my point of contact for this matter is Greg Rhinehart at (334) 230-2662. Please have the AHC tracking number referenced above available and include it with any correspondence.

Sincerely,

Elizabeth Ann Brown for

Colonel (Ret.) John A. Neubauer
State Historic Preservation Officer

JAN/SGH/GCR/gcr

CC: Dr. Thomas O. Maher
TVA
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
P.O. BOX 300900
MONTGOMERY, ALABAMA 36130-0900

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BOULDER CO 80305

GISUT31 80305

Bellefonte Nuclear Plant Environmental Justice Impact Assessment Methodology and Findings

Tennessee Valley Authority

May 2, 2008

Bellefonte - Environmental Justice
Impact Assessment Methodology and Findings

Environmental Justice Policy Overview

In the Bellefonte Nuclear Plant, Units 3 and 4 (BLN) COLA Environmental Report (ER), TVA based its environmental justice analysis on federal guidance, including NUREG-1555, *Environmental Standard Review Plan*, and guidance provided by the Council on Environmental Quality.

TVA recognized in its analysis that environmental justice refers to a federal policy under which each federal agency identifies and addresses, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority or low-income populations.

Identification of Minority and Low-Income Populations

The methodology suggested by the guidance calls for the identification of minority and low-income populations located on or near the proposed site. TVA conservatively selected the 50-mile region surrounding the BLN site as the environmental impact areas for the EJ analyses. This methodology and results are detailed in Subsection 2.5.4 of the BLN ER.

Concentrations of Minority or Low-income Populations

Using the results of the methodology for identifying minority and low-income populations, ESRI ArcGIS 9 mapping software, and public data, including U.S. Census Bureau 2000 data, the BLN region was searched to identify locations of minority or low-income populations. The resulting maps are presented in the BLN ER as Figures 2.5-9 through 2.5-28.

Identification Process for Uniquely Vulnerable Populations

NRC guidance (NUREG-1555) recommends the identification of any unique economic, social, or human health circumstances and lifestyle practices of minority and low-income populations that could result in disproportionately high and adverse impacts to these populations from plant construction and operation. Such circumstances and practices may include, for example, concentrations of minority or low-income populations within a compact area (e.g., Native American settlement), exceptional dependence on subsistence resources, or pre-existing health conditions within a community that might make it more susceptible to potential plant-related impacts.

Subsistence Resource Evaluation

The U.S. Department of Agriculture (USDA) Forest Service has conducted research regarding the practice of contemporary subsistence on public lands. USDA research is based on available peer-reviewed literature and interviews with resource managers, sociologists, etc. The USDA stresses the difficulty in finding quantifiable statistical data on the practice, outside of the state of Alaska. In a report cited by the USDA, research was conducted by Auburn University in 1992 and 1993, in which Alabama freshwater anglers were surveyed regarding personal consumption of their catch. The study

concluded that reliance on subsistence from fishing exists in the state. But no USDA or state population numbers were found that directly associates the practice with any TVA identified minority or low-income populations within the BLN vicinity or region. (Emery, et. al., U.S. Department of Agriculture, 2004)

Because of a lack of national or state data on subsistence populations, various organizations were contacted to locate and assess uniquely vulnerable minority and low-income populations that practice subsistence. Local county services and organizations provide another means of identifying subsistence populations. Managers of these services and organizations are closest to the communities and may have knowledge of cultural practices that could help identify these populations in ways that federal or state databases and current literature do not. However, when contacted, the agency and organizations either provided no response to the information requests or the responses produced no information that would help identify subsistence populations. In the event that the contact was not initially available, multiple contact attempts (via telephone or e-mail, if available) were made. The following local and county agencies and organizations were contacted:

Cherokee Tribe of Northeast Alabama (Cherokees of Jackson County)	(256) 593-8102
City of Hollywood, Alabama	(256) 259-4845
City of Scottsboro, City Hall	(256) 574-3100
Jackson County Agriculture Extension Office	(256) 574-2143
Jackson County Chamber of Commerce	(256) 259-5500
Jackson County Economic Development Authority	(256) 574-1331
Jackson County Emergency Management	(256) 574-9344
Jackson County Health Department	(256) 259-4161
Scottsboro Public Library	(256) 574-4335
Scottsboro-Jackson Heritage Center	(256) 259-2122
U.S. Department of Agriculture - Jackson County Local Office	(256) 638-7423

Research was extended further to contacting local sporting goods and bait and tackle shops in an effort to help identify subsistence populations that historically supplement their food supply through hunting and fishing. When such businesses were contacted, their responses produced no pertinent information that would help identify subsistence populations, or there was no response to the information request. The following businesses were contacted:

- Big Daddy's Outdoor Inc. (256) 495-9225
- Goose Pond Colony, Bait and Tackle Store (256) 574-1083
- Kirks Pro-Am Inc. (256) 259-1402
- Scottsboro Gun & Pawn Shop (256) 259-0693
- Southern All-Sports (256) 574-6755

Pre-existing Health Conditions

The Center for Disease Control (CDC) has national data that identify examples of health disparities in vulnerable populations by minority or race. The most frequently cited specific illnesses noted in the health profiles for the various minority groups include cancer, diabetes, heart disease, and stroke (CDC, Office of Minority Health & Health Disparities, 2000).

BLN ER Section 4.4.1.6 states, “While emissions from construction activities and equipment are unavoidable, a mitigation plan minimizes impacts to local ambient air quality and the nuisance impacts to the public in proximity to the project, particularly the residents living at Creeks Edge.” Because these impacts could potentially reach adjacent properties, the possibility of disproportionately impacting minority and low-income populations was evaluated. Of the potential health-related pathways, asthma was the only disease identified with a pathway related to the construction impact described above. No other pathways related to the impacts listed in the ER were identified as being potentially aggravated by site construction or operation. Nationally, the CDC reports Puerto Ricans have the highest overall asthma prevalence rate. “When only race is considered, American Indians, Alaska Natives, and black people had a 25% higher prevalence than white people.” (Center for Disease Control, 2003-05) No CDC data profiling pre-existing health conditions were found specific to Jackson County, Alabama, or the counties in the BLN region.

The Alabama Department of Public Health provides county-level reports, including the Jackson County 2006 Health Profile. (Alabama Department of Public Health, 2006) An additional report contains Jackson County data on death rates for the year 2005, differentiated by cause of death, race, and gender. Asthma is not mentioned in the Jackson County 2006 Health Profile. The deaths and death-rates list asthma as the cause of death for one white woman in 2005 (Alabama Department of Public Health, 2005). No other Alabama Health Department data profiling pre-existing health conditions was found specific to Jackson County, Alabama, or the counties in the BLN region.

Vulnerable Populations Summary

Based on the demographic and environmental justice analyses set forth above, TVA is not aware of any subsistence resource dependencies, practices, or other circumstances, that could result in disproportionate impacts to minority or low-income populations.

Indeed, the foregoing analysis suggests that such disproportionate impacts are unlikely given the observed distribution of low-income and minority populations within the BLN vicinity and region. Specifically, TVA identified no low-income populations within two miles of the BLN center point where potential plant-related impacts would be expected to be most significant. Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN ER describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks.

As reflected in ER Figures 2.5-27 and 2.5-28, low-income populations identified within the BLN region are located primarily within urban areas, where subsistence dependence on natural resources (e.g., fish, game, agricultural products, and natural water sources) is difficult to identify or quantify. To the extent that fishing, hunting, or gardening occur in the BLN vicinity or region, it is difficult to differentiate between those activities which are recreational in nature as opposed to those which are subsistence practices. No quantifiable data have been identified that associates subsistence practices with any TVA-identified minority or low-income groups.

ER Impact Assessments and Potential Environmental Justice Pathways

NUREG-1555 recommends that environmental justice analyses include input from several sections in the ER to be used as the basis for establishing potential environmental justice pathways. The purpose of using these inputs is to compare all potential impacts related to construction (ER Chapter 4) or operation (ER Chapter 5) to the inventory of low-income and minority populations, and their locations as described in ER Subsection 2.5.4.

For ER Chapters 4 and 5, NUREG-1437, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*, was used for quantification purposes only in impact assessments and not as the basis of analysis in categorizing impacts. NUREG-1437 operational plant case studies were not utilized in the BLN ER sections. BLN impact evaluations reflect site-specific analysis of socioeconomic interactions relating to construction and operations activities. Throughout ER Chapters 4 and 5, impacts are categorized as SMALL, MODERATE, or LARGE based on the following NUREG-1437 definitions:

SMALL - Environmental effects are not detectable or are so minor that they neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the Commission has concluded that those impacts that do not exceed permissible levels in the Commission's regulations are considered small.

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.

Unless the significance level is identified as beneficial, the impact is adverse, or in the case of "SMALL", may be negligible.

Potential adverse and beneficial impacts were identified and discussed in Chapters 4 and 5 of the ER. Impacts included in the Environmental Justice analysis are included in the attached tables (Tables 1 and 2). These impacts were compared to the low-income and minority population data described in ER Subsection 2.5.4 to identify any possible interaction during construction or operation. If it was determined that the potential for interaction is present, the pathway was analyzed to determine if a disproportionate

impact involving identified low-income or minority populations exists. If the analysis illustrated that a potential pathway exists, the level of impact was determined (which included degree and significance) and assigned an impact of SMALL, MODERATE, or LARGE, as defined above.

Impact Analysis and Conclusion Rational

The attached tables (Tables 1 and 2) provide an overview of the analysis of ER impact statements and potential pathways for both beneficial and adverse impacts. Reviewing the potential impact and pathways for construction, summarized in Table 1, resulted in identifying housing as a possible environmental justice pathway for this site during the construction phase. Subsection 4.4.3.2 describes the housing impact on low-income populations, and potential mitigation measures are described in Subsection 4.4.2.4. There were no environmental justice pathways identified for the operation phase.

References

Alabama Department of Public Health, County Health Profiles Alabama 2006, Montgomery, Alabama, ADPH-HS-501D/REV. 10-07, October 2007.

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Bellefonte - Environmental Justice
Impact Assessment Methodology and Findings

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
1	Land-Use Impacts (4.1)	The Site and Vicinity (4.1.1)	Because most of the construction does not disturb any previously undisturbed land, and/or construction is planned for areas with existing structures, the impact on land use of the site from construction is considered SMALL and does not require mitigation.	Because there is no population on the site, this impact will not disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
2		The Site and Vicinity (4.1.1)	The impacts on land use in the vicinity of the BLN from construction of the facility are considered SMALL, because no additional land outside of the existing site boundary is needed for construction of the BLN. No mitigation is required.	Because the land use in the vicinity is not expected to change as a result of the proposed activity, this impact will not disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
3		Transmission Corridors and Off-site Areas (4.1.2)	Because transmission corridors already exist, and no new transmission corridors are required, impacts on land use in the transmission corridors from construction are considered SMALL and do not require mitigation.	Because the land use in the transmission corridors is not expected change as a result of the proposed activity, this impact will not disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
4		Historic Properties (4.1.3)	The Alabama SHPO has concurred with the recommendation that BLN site construction be allowed to proceed, including within the areas occupied by archaeological sites determined not eligible for inclusion in the NRHP. Therefore, the potential impacts of BLN site construction on ineligible archaeological sites range from inadvertent avoidance resulting in no impacts to total site destruction, but by definition there will be no impacts on cultural heritage.	Because it was determined by TVA and concurred by the state SHPO that there will be no impacts on cultural heritage, this impact will not disproportionately affect identified low-income and minority populations.	No Disproportionate Impact
5	Water-Related Impacts (4.2)	Hydrologic Alterations (4.2.1)	Construction activities follow BMPs for soil and erosion control as required by applicable federal and state laws and regulations. Therefore, impacts to the local hydrology and wetlands from construction activities are considered to be SMALL and not warrant mitigation.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
6	Water-Related Impacts (4.2)	Hydrologic Alterations (4.2.1)	Impacts to surface water bodies are considered to be SMALL due to the implementation of a construction stormwater pollution protection plan (SWPPP) and continued compliance with existing regulatory permits and applicable regulations. Impacts to wetland areas and groundwater resources are expected to be minimal while construction activities are taking place.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
7		Hydrologic Alterations (4.2.1)	Construction activities follow BMPs for soil and erosion control as required by applicable federal and state laws and regulations. Therefore, impacts to the currently undisturbed areas from construction activities are considered to be SMALL and not warrant mitigation.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
8		Hydrologic Alterations (4.2.1)	The existing road system is expected to adequately handle the construction traffic required for the new facility, and no new off-site road construction is expected to be needed. Therefore, no off-site hydrologic alterations are expected.	Because there are no expected offsite hydrological alterations due to road construction outside of the property boundary, no disproportionate impact on no identified minority and low-income populations is expected.	No Disproportionate Impact
9		Hydrologic Alterations (4.2.1)	Current construction plans do not call for extensive dewatering activities that could affect groundwater flow and quality. In addition, groundwater is not expected to be utilized during construction; therefore, the impact to groundwater availability is considered to be SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
10		Hydrologic Alterations (4.2.1)	Because the existing discharge structures are planned to be utilized, impacts from construction activities are considered to be SMALL.	Because the discharge structures will not change, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
11	Water-Related Impacts (4.2)	Hydrologic Alterations (4.2.1)	The greatest potential impacts during construction are expected to be from runoff that may contain higher-than-normal concentrations of silt and clay. Construction area runoff is directed to settling ponds prior to discharge to minimize this threat. NPDES limitations on physical and chemical parameters are met during construction activities and the impacts to the terrestrial and aquatic ecosystems are considered SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
12		Water-Use Impacts (4.2.2)	It is anticipated that potable water continues to be obtained from the Scottsboro Municipal Water System. The quantities of water obtained from Guntersville Reservoir are expected to have little effect on the availability of water for other users and is considered a SMALL impact.	Because the water obtained from the Guntersville reservoir is expected to have little affect on the availability water for other users, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
13		Water-Use Impacts (4.2.2)	Impacts from effluents from construction activities are considered to be SMALL. Water is withdrawn from Guntersville Reservoir in sufficient quantities to produce concrete, provide dust suppression water for roads, and provide for other construction activities as needed. The water withdrawn is essentially consumed with no free-flowing streams or runoff generated from these activities.	Because there is no free-flowing streams or runoff generated there will be no impact due to effluents from construction activities.	No Disproportionate Impact
14		Water-Use Impacts (4.2.2)	Because pipe cleaning discharges are monitored and restricted by the requirements of the BLN NPDES permit, the impacts to the environment from the pre-operational piping flushes are considered to be SMALL and do not warrant mitigation.	Because these events are monitored and are not expected to have any impacts on the environment, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
15		Water-Use Impacts (4.2.2)	Because most of the water needed for construction is expected to be withdrawn from Guntersville Reservoir, there should be no effects to the water quality or detrimental impacts that would affect any other user's consumption.	Because water quality and user consumption is not anticipated to be affected, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
16	Water-Related Impacts (4.2)	Water-Use Impacts (4.2.2)	Only very localized and transient impacts due to substrate exposure are anticipated and are considered SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
17		Water-Use Impacts (4.2.2)	The TVA has programs in place to minimize and address spills and accidents and there are no local groundwater users within the area affected by the construction activities; therefore, the environmental effects of these impacts to groundwater are considered SMALL and would be handled by state programs for environmental releases.	Because there are no local ground water users within the affected area, no pathways to identified low-income or minority populations were found.	No Disproportionate Impact
18		Water-Use Impacts (4.2.2)	Localized shoreline and bottom materials potentially can be affected during the dredging of the intake structure area; however, the implementation of erosion controls is planned resulting in a SMALL impact.	Because this impact is localized and very short in duration, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
19	Ecological Impacts (4.3)	Terrestrial Ecosystems (4.3.1)	Acreages that are affected by construction are common to the area and BMPs such as limiting deforestation, delineating a construction footprint and scheduling construction outside of sensitive breeding or nesting periods, are used to minimize adverse construction impacts in areas that cannot be avoided. For these reasons, effects of construction on terrestrial vegetation are considered to be SMALL.	Because the impacts on terrestrial vegetation is confined to the site, no pathways to identified low-income or minority populations were found.	No Disproportionate Impact
20		Terrestrial Ecosystems (4.3.1)	Because vegetative communities within the BLN boundary are common within the entire Sequatchie Valley, the affected area located on BLN property would be a very small percentage relative to the total areas present in the region.	Because the impacts are limited to the site, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
21		Terrestrial Ecosystems (4.3.1)	Because a small percentage of habitat on the BLN site is expected to be disturbed, ample habitat is available adjacent to the construction site, which provides refuge for displaced animals. Avoidance behavior surrounding construction sites partially offsets the risk of wildlife colliding with equipment or vehicles. Therefore, impacts are considered to be SMALL.	Because there is ample habitat for wildlife, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
22	Ecological Impacts (4.3)	Terrestrial Ecosystems (4.3.1)	Aside from the possibility of an accidental toxic release, the only permanent disturbance regarding construction is the loss of habitat due to the destruction of forested land or addition of permanent facilities. Consequently, effects of construction in affected areas lower the overall carrying capacity for wildlife within the BLN site. However, given the limited area of construction and that no additional transmission corridors are planned, impact to terrestrial habitats and wildlife in BLN construction areas are considered to be SMALL.	Because impacts are limited to the construction areas within the site, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
23		Terrestrial Ecosystems (4.3.1)	Alterations occurring from proposed construction at the BLN site are limited to habitat types common to the surrounding area. Therefore, construction activities are not expected to permanently adversely affect the constellation of residential wildlife populations. Impacts are considered to be SMALL.	Because there are no expected permanent adverse effects, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
24		Aquatic Ecosystems (4.3.2)	Potential impacts to the Guntersville Reservoir during the construction of the BLN are considered to be SMALL, similar to those measured during the construction of Bellefonte Units 1 and 2. Because intake and discharge structures are already in place, new construction is not expected to occur near the banks of the reservoir, and accidental discharge and stormwater runoff is limited under the SWPPP and SPCCP, which are implemented prior to construction initiation.	Because activities, and the subsequent outcomes, associated with this impact are temporary, no disproportionate impact on identified minority and low-income populations is anticipated.	No Disproportionate Impact
25	Ecological Impacts (4.3)	Aquatic Ecosystems (4.3.2)	Town Creek embayment is an extensive shallow overbank, which flows into the Tennessee River at Tennessee River mile (TRM) 393.4. Town Creek embayment is located west of the BLN construction area. An SPCCP specific to the construction period, as well as an SWPPP, provides measures to prevent runoff and chemical discharge to Town Creek embayment, and is prepared before construction begins. Therefore, impacts to Town Creek embayment are considered to be SMALL.	Because preconstruction measures prevent runoff and chemical discharge to Town Creek Embayment, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
26		Aquatic Ecosystems (4.3.2)	One mapped intermittent stream is located on the western edge of the BLN property (Figure 2.4-4). Given its distance from the BLN construction area, the intermittent stream would not be affected by construction activity.	Because this intermittent stream will not be affected by construction activities, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
27		Aquatic Ecosystems (4.3.2)	Several pond areas exist on the BLN site. Over time, on-site ponds have developed communities of vegetation kept in check by grass carp, fish, amphibians, invertebrates, and beavers. The WWRB functions as a settling pond and cascades into Pond A which is a functioning stormwater retention pond. Pond A discharges to Town Creek. Toxic wastes would not be disposed of in the WWRB, and solids are expected to settle in either the WWRB or Pond A. Based on the functioning of the existing site ponds, the impacts to on-site ponds were determined to be SMALL.	Because these ponds are entirely onsite and no adverse affects are expected, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
28		Aquatic Ecosystems (4.3.2)	Fishes adjacent to the BLN site during construction are expected to experience some degree of stress to their hearing mechanism, which may at least temporarily cause them to relocate or cause a temporary threshold shift, which may affect their foraging and predator avoidance capabilities. However, because Guntersville Reservoir is more than 70 mi. long, impacts to fish populations stemming from BLN construction noise is considered to be SMALL.	Because construction noise impacts to fish are expected to be temporary and localized, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
29	Ecological Impacts (4.3)	Aquatic Ecosystems (4.3.2)	In regard to the Anthony's River Snail and the Pink Mucket Mussel, alterations occurring from proposed construction projects are temporary and limited to aquatic habitat types common to the surrounding area. The BLN construction activities do not permanently adversely affect residential aquatic wildlife populations and impacts are therefore, considered to be SMALL.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact

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Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
30	Socioeconomic Impacts (4.4)	Physical Impacts (4.4.1)	People who could be vulnerable to noise, fugitive dust, and gaseous emissions resulting from construction activities at the plant are people working or living immediately adjacent to the site.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
31		Physical Impacts (4.4.1)	Impacts to transportation from construction workers and deliveries are considered a temporary MODERATE TO LARGE impact during the peak construction period. Potential mitigation measures include establishing a centralized parking area away from the site and shuttling construction workers to the site, encouraging carpooling, installing traffic control lighting and directional signage, county road modifications and staggering shifts to avoid traditional traffic congestion time periods.	This impact is expected to be confined to routes used between the site and US 72. Census data reveal one minority census block is located near one of the Bellefonte access roads. This block is surrounded by nonminority blocks. Therefore, no disproportionate impact is anticipated.	No Disproportionate Impact
32		Physical Impacts (4.4.1)	Based on existing structures and the topographic layout of the vicinity, the impact of construction at the BLN site on aesthetics and recreational opportunities is considered to be SMALL and requires no mitigation efforts.	Because there will be very little change in aesthetics no disproportionate impacts are anticipated.	No Disproportionate Impact

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Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
33	Socioeconomic Impacts (4.4)	Physical Impacts (4.4.1)	Based upon the projected noise levels at various site and vicinity receptors and the duration of construction activities, noise impacts from BLN site construction are expected to be SMALL, for the surrounding communities and SMALL to MODERATE for the nearest residents of Creek's Edge addition.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
34		Physical Impacts (4.4.1)	Transmission line corridor maintenance, after the initial maintenance activity is performed, is scheduled on a periodic basis and is of short duration; Therefore, these activities are expected to have SMALL noise impacts to surrounding communities and habitat.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, this is not anticipated to be a disproportionate impact.	No Disproportionate Impact
35		Physical Impacts (4.4.1)	Peak traffic noise during construction is expected to have a SMALL to MODERATE impact at approximately 10 homes along the access road, and off-peak traffic would have a SMALL impact to surrounding communities.	The identified minority blocks are located nearer to US 72 than they are the access routes. Each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
36		Physical Impacts (4.4.1)	Impacts to air quality from construction are considered to be SMALL and do not warrant mitigation beyond the measures described in the ER.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
37	Socioeconomic Impacts (4.4)	Social and Economic Impacts (4.4.2)	It is assumed that all workers and their families settle in Jackson County. Therefore, the influx of construction workers and families would likely represent a 10 percent increase in population in Jackson County. Therefore, construction workers and their families represent a small percentage of the existing county population and the impact is anticipated to be SMALL. Within Jackson County, the impacts to the communities within the vicinity are expected to be MODERATE.	The increase in population due to the construction workforce and their families are not anticipated to disproportionately impact the identified minority and low-income populations. However, the manner in which this population increase interacts with various socioeconomic variables have been analyzed in the following impact assessments.	No Disproportionate Impact
38		Social and Economic Impacts (4.4.2)	Expenditures and benefits include the creation of jobs, employee purchasing, and increased tax revenues. Thus the impact from plant construction employees is considered a MODERATE to LARGE beneficial impact in the vicinity and a SMALL beneficial impact in the region.	This impact is anticipated to beneficially impact the residents in the vicinity proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations. This impact is anticipated to beneficially impact the residents in the region proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact
39		Social and Economic Impacts (4.4.2)	Given the structure by which the TVA makes payments in lieu of taxes, the general distribution structure of funding by the state of Alabama, as well as the increase in personal sales and property tax, the potential impact of taxes within the region is expected to be SMALL and beneficial. The potential impact within Jackson County, Alabama, is expected to be a MODERATE to LARGE beneficial impact.	This impact is anticipated to beneficially impact Jackson County proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations. This impact is anticipated to beneficially impact the region proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact
40		Social and Economic Impacts (4.4.2)	The impacts of on-site construction activity on local police and firefighters are expected to be SMALL and offset by increased tax revenue.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
41	Socioeconomic Impacts (4.4)	Social and Economic Impacts (4.4.2)	Highlands Medical Center is the only hospital in Jackson County, Alabama. Because the hospital has adequate beds and staff, the impacts of plant construction on medical services are expected to be SMALL and not warrant mitigation. Social services, such as Medicaid and welfare, are funded through the Federal and State governments. The BLN construction boom is not expected to have an impact on these social services.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact
42		Social and Economic Impacts (4.4.2)	The impacts of plant construction on the housing market in Jackson County are expected to be MODERATE to LARGE based on an estimated deficit in the number of available houses. With mitigation, this impact could be reduced to SMALL to MODERATE. The availability of housing would be reviewed again during the construction phase to assess whether mitigation efforts are needed. These efforts could include housing assistance for employees, transportation assistance for commuting employees, or remote parking areas with shuttles.	The increase in housing costs are anticipated to be evenly distributed within Jackson County; therefore, it is not expected to disproportionately impact identified minority populations. However, the low-income populations in the county are anticipated to be disproportionally impacted because they are more vulnerable to an increase in housing costs. Mitigative efforts, as described in Subsection 4.4.2.4, can reduce the impact to SMALL to MODERATE.	Small to Moderate
43		Social and Economic Impacts (4.4.2)	The impacts of construction on the educational system of Jackson County, Alabama is expected to be MODERATE to LARGE but temporary, depending on the speed with which current school district expansion plans are implemented.	The impacts on education due to construction are anticipated to occur mainly in Jackson County. The impacts are also expected to be distributed throughout the county. Because the impacts are expected to be evenly distributed throughout the county, there is no expected disproportionate impact on minorities or low-income populations.	No Disproportionate Impact
44		Social and Economic Impacts (4.4.2)	The nearest parks to the BLN site (Camp Jackson, a Boy Scout camping facility located 4.2 mi. from the site, and Jackson County Park, located 7.5 mi. from the site) are more than 4 mi. away. Therefore, impacts of construction on recreation would be SMALL and require no mitigation.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact

Table 1: Environmental Justice Impact Assessment Table for Construction

#	Section	Subsection	Impact Summary	Minority and Low-Income Perspective	EJ Impact
45	Radiation Exposure to Construction Workers (4.5)		Due to the exposures from BLN Unit 3 normal operations, there would be a radiation protection and ALARA program for BLN Unit 4 construction workers. This program meets the guidance of Regulatory Guide 8.8 to maintain individual and collective radiation exposures ALARA. This program also meets the requirements of 10 CFR 20.1302. Measures and controls to protect Unit 4 construction workers are given in Section 4.6. The construction worker impact due to radiation exposures from Unit 3 normal operations is SMALL.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
1	Land-Use Impacts (5.1)	The Site and Vicinity 5.1.1	Adverse impacts to the BLN site and vicinity occur primarily during construction of the BLN, as documented in Section 4.1. It is anticipated that BLN operation has SMALL impacts on land use within the site boundary and in the vicinity of the BLN site.	Because there is no population living on the site, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
2		The Site and Vicinity 5.1.1	No new areas are expected to be disturbed after the construction phase ends, and no agricultural crop production is expected to occur on the BLN site. Therefore, operations at the BLN site are expected to have SMALL impacts on the pasture and developed land located within the site boundary.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
3		The Site and Vicinity 5.1.1	No land used for agricultural purposes exists within the BLN site. Therefore, impacts on land use located within the site boundary at the BLN site due to operation are considered SMALL.	Because there is no population living on the site, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
4		The Site and Vicinity 5.1.1	Because the land use in the vicinity is expected to remain the same, this impact will not affect identified minority and low-income populations.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
5	Land-Use Impacts (5.1)	The Site and Vicinity 5.1.1	Because there is waste-minimization plan in place, there is a minimal amount of waste generated; therefore, the impacts to off-site land use due to disposal of wastes generated at BLN are considered SMALL and do not warrant mitigation.	Because state and local waste disposal rules will be followed, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
6		Transmission Corridors and Off-Site Areas 5.1.2	Although the transmission lines and corridors already exist, maintenance activities are not expected to result in land-use restrictions or changes. Therefore, impacts on land use associated with operation and maintenance of the transmission corridors and off-site areas are considered SMALL.	Because the land use in the transmission corridors is expected to remain the same, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
7		Historic Properties 5.1.3	Operations have no effects on any potentially eligible or eligible prehistoric archaeological sites within the BLN site APE. With regard to prehistoric sites located beyond the BLN site APE (but within 1 mi.) and the numerous prehistoric and multi-component archaeological sites within the 10-mi. radius, there are no effects from BLN site operations because operations are expected to be confined to the site, and because indirect (noise-related and visual) effects are extraneous considerations for archaeological sites. Therefore, the impacts of BLN site operations on prehistoric archaeological sites are considered SMALL. Mitigation is not warranted.	Plant operations will not cause a historical properties land use change. Because there is no change in land use, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
8	Land-Use Impacts (5.1)	Historic Properties 5.1.3	Because 1JA1103 is the only Historic Period site within the BLN site APE and because indirect (noise-related or visual) effects are extraneous considerations for archaeological sites, no BLN site operation effects on Historic Period archaeological sites are anticipated. Therefore, operation impacts on Historic Period archaeological sites on the BLN site, in its vicinity, and within a 10-mi. radius of it are considered SMALL. No mitigation is warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
9		Historic Properties 5.1.3	BLN site operations have no effects on historic sites. The impacts of BLN site operations on aboveground historic sites are considered SMALL, and mitigation is not warranted.	Plant operations will not cause a historical properties land use change. Because there is no change in land use, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
10		Historic Properties 5.1.3	BLN site operations should have no effects on historic cemeteries. The impact of BLN site operations on historic cemeteries is considered SMALL. Mitigation is not warranted.	Because operations are not expected to have an affect on historic cemeteries, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
11		Historic Properties 5.1.3	No traditional cultural properties (TCP) are located on the BLN site, in its vicinity, or within a 10-mi. radius from the site (see Subsection 2.5.3.7). Therefore, BLN operations have no effect on TCPs in these areas. Therefore, the impacts of BLN site operations on TCP are considered SMALL. Mitigation is not warranted.	Because operations will have no effect on cultural properties within a ten-mile radius from the site, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
12		Historic Properties 5.1.3	The impacts of BLN site operations on historic properties associated with transmission line corridors are considered SMALL, and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
13	Land-Use Impacts (5.1)	Historic Properties 5.1.3	As TVA has already determined that no further historic property considerations or assessments along the extant transmission line corridor are deemed necessary, it is expected that the impacts of transmission line maintenance on historic properties are considered SMALL. Mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
14	Water-Related Impacts (5.2)	Hydrologic Alterations and Plant Water Supply 5.2.1	Based upon an evaluation of present and future water use, water withdrawal and discharge from the BLN are considered to be of SMALL direct, indirect, and cumulative impact, and mitigation is not warranted.	Based upon evaluation of present and future water use, withdrawal, and discharge, no pathways to identified minority and low-income populations were found.	No Disproportionate Impact
15		Hydrologic Alterations and Plant Water Supply 5.2.1	The water use at the BLN is considered to be of SMALL impact on downstream users including recreational, navigational, and water consumers and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
16		Hydrologic Alterations and Plant Water Supply 5.2.1	Operational activities at the BLN are considered to be of SMALL impact and mitigation is not warranted, based upon minimal impact from dredging discharge design, and no need for dewatering during operation.	Based on minimal impact from dredging discharge design, and no need for dewatering during operation, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
17	Water-Related Impacts (5.2)	Hydrologic Alterations and Plant Water Supply 5.2.1	Water availability downstream of the BLN site during low-flow periods operation of the units at the BLN is considered to be of SMALL impact, because only about 1 percent of the river's flow is diverted and lost. River-level associated with consumptive water losses resulting from two unit operations does not affect recreational boating in summer, when river use is at its highest, even during extreme low-flow conditions. At this level of consumptive water use, impacts to river level is considered to be SMALL and mitigation is not warranted.	Because the water obtained from the river is expected to have little effect on the availability of water for other users, identified minority and low-income populations are not anticipated to be disproportionately affected.	No Disproportionate Impact
18		Hydrologic Alterations and Plant Water Supply 5.2.1	Surface-water-use impacts to groundwater are considered to be SMALL during normal operations and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
19		Hydrologic Alterations and Plant Water Supply 5.2.1	The operation of the BLN is not expected to cause hydraulic alterations to surface water bodies or groundwater resources, thus the operation of the BLN is considered to be of SMALL impact, and mitigation is not warranted based upon the information provided in ER Subsection 5.2.1.6.	Because hydrological alterations are not expected, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
20		Water-Use Impacts 5.2.2	By maintaining cooling tower discharges within water quality criteria (e.g., NPDES permits), impacts are considered to be SMALL and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
21	Water-Related Impacts (5.2)	Water-Use Impacts 5.2.2	Although the volume of the cooling tower blowdown is anticipated to be small when compared to the river flow, and the treatment chemicals added are largely consumed leaving very small concentrations by the time they are discharged, the discharge is regulated by the existing NPDES permit and complies with applicable state water quality standards as discussed in ER Subsection 2.3.3. Therefore, impacts of residual chemicals (discharged in the permitted blowdown) on river water quality are considered to be SMALL and mitigation is not warranted.	Because these impacts are regulated, monitored and no mitigation is required, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
22		Water-Use Impacts 5.2.2	Results of simulations show a small thermal plume that dissipates quickly. Therefore, temperature of the discharge from the BLN is considered to be of SMALL impact and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
23		Water-Use Impacts 5.2.2	Additional BLN water withdrawal volumes based on different BLN operational scenarios is presented on Table 3.4-2. Impacts from water consumption at the BLN site are considered to be of SMALL impact and mitigation is not warranted.	Disproportionate impacts from water consumption are not expected for identified minority and low-income populations.	No Disproportionate Impact
24		Water-Use Impacts 5.2.2	Impacts to terrestrial and aquatic ecosystems from the intake of water from and discharge to the Guntersville Reservoir is considered to be of SMALL impact and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
25	Water-Related Impacts (5.2)	Water-Use Impacts 5.2.2	The temperature of the discharge from the BLN is considered to be of SMALL impact and mitigation is not warranted. See ER Subsection 5.3.2 for further details regarding the thermal plume's mixing zone.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
26	Cooling System Impacts (5.3)	Intake System 5.3.1	A mussel survey performed in April, 2007 identified only common mussels in low densities adjacent to the BLN site (ER Section 2.4). Therefore, impacts from the intake system to shellfish are expected to be SMALL.	Impacts of the intake system on shellfish are not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
27		Intake System 5.3.1	Given the percentage of reservoir water necessary to cool the BLN, negative impacts to the fishery on Guntersville Reservoir are considered SMALL.	Because the water obtained from the Guntersville reservoir is expected to have little effect on the availability of water for the fishery, identified minority and low-income populations are not anticipated to be disproportionately affected.	No Disproportionate Impact
28		Intake System 5.3.1	Threadfin shad and the freshwater drum have consistently been collected in population surveys indicating the operation of WCF intake structure has not dramatically reduced populations of these fishes. Population impacts stemming from impingement and entrainment of fish are, therefore, considered to be SMALL.	Because fish populations are not dramatically reduced due to the intake structures, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
29		Discharge System 5.3.2	Calculated plume in the winter is 35 ft. Given the plume's small size within the reservoir, any impacts to drifting organisms is SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
30	Cooling System Impacts (5.3)	Discharge System 5.3.2	Accelerated spawning, possibly leading to increased larval mortality from asynchrony with food source development or cold shock of migrant larvae. Because the heated water plume is small in comparison to the reservoir size, these impacts are expected to be SMALL, having a negligible effect on total reservoir populations.	Because fish population impacts are localized and expected to be small relative to the size of the reservoir, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
31		Heat Discharge System 5.3.3	Sodium salt from the natural draft cooling towers (NDCT) is predicted to deposit at a maximum rate of 0.089 pounds per 100-acre-month at a distance of 7542 ft. southwest of the NDCT. NUREG-1555 Subsection 5.3.3.2 indicates maintaining a deposition rate below 89.2 to 178.4 pounds per 100-acre-month is generally not damaging to vegetation. The nearest garden is 0.71 mi. WNW of the cooling tower locations; therefore, operations at the BLN site are anticipated to have SMALL impacts on land use in the vicinity of the site.	Because cooling tower salt deposition is not expected to damage vegetation in the vicinity, there is no anticipated impact on minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
32		Heat Discharge System 5.3.3	The maximum NDCT sodium salt deposition rate of 0.089 lb per 100-ac-mo is predicted to occur at 7542 ft. southwest of the NDCTs. NUREG-1555, Subsection 5.3.3.2 indicates maintaining a deposition rate below two kilogram per ha per month (178.4 lb per 100-ac-mo), preventing damage to vegetation. Therefore, impacts associated with salt deposition stemming from cooling tower operation both on-site and outside the BLN site are SMALL.	Because cooling tower salt drift is not expected to damage vegetation on site and in the vicinity, there is no anticipated impact on minority and low-income populations.	No Disproportionate Impact
33	Cooling System Impacts (5.3)	Heat Discharge System 5.3.3	The precipitation amount due to the towers is inconsequential compared to the total annual rainfall (56.8 in.) experienced in this region and is expected to have a SMALL impact on resident species.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
34		Heat Discharge System 5.3.3	An investigation into the climatic conditions conducive to induced snowfall indicated that a very cold air temperature (less than -11ºF), plume height (4900 ft.), and stable atmosphere with moderate winds (15 fps) optimized this situation (Subsection 5.3.3.1). This type of meteorological condition occurs infrequently at BLN; therefore, it is expected that impacts to area weather are SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
35	Cooling System Impacts (5.3)	Heat Discharge System 5.3.3	The height of the cooling towers and their evaluated plume make it unlikely that fogging could occur. Icing, which is associated with fogging, can result during periods of sub-freezing temperatures. However, because fogging is not expected, icing events would also be rare, thus having SMALL impacts on terrestrial ecology and not warrant mitigation.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
36		Impacts to Members of the Public 5.3.4	Noise stemming from the operation of existing cooling towers is expected to be similar to background at the site boundary, as noted in Subsection 5.8.1.4. Resident species quickly adapt to constant background noise or relocate to adjacent habitats. Therefore, noise is expected to have a SMALL impact on terrestrial ecology.	Because of the localized nature of the impact to terrestrial ecology, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
37	Radiological Impacts of Normal Operation (5.4)	Exposure Pathways 5.4.1	Because the liquid pathway doses due to operation of BLN are within the applicable regulatory limits of 40 CFR 190 and the goals of 10 CFR Part 50, Appendix I there are no observable health impacts and the impact to members of the public is considered to be SMALL and does not require mitigation.	Because these impacts are regulated, monitored, with no observable health impacts to members of the public, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
38	Radiological Impacts of Normal Operation (5.4)	Exposure Pathways 5.4.1	Because the gaseous pathway doses due to operation of BLN are within the applicable regulatory limits of 40 CFR 190 and the goals of 10 CFR Part 50, Appendix I there are no observable health impacts and the impact to members of the public is considered to be SMALL and does not require mitigation.	Because these impacts are regulated, monitored, with no observable health impacts to members of the public, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
39		Radiation Doses to Members of the Public 5.4.2	Because the doses due to operation of BLN are within the applicable design objective of 10 CFR Part 50, Appendix I and the criteria of 40 CFR 190 there are no observable health impacts and the impact to members of the public is considered to be SMALL.	Because these impacts are regulated, monitored, with no observable health impacts to members of the public, no disproportionate impact on identified minority and low-income populations is expected.	No Disproportionate Impact
40		Impacts to Members of the Public 5.4.3	Because the doses due to operation of BLN are within the applicable regulatory limits of 40 CFR 190 the impact to members of the public is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
41		Impacts to Biota Other than Members of the Public 5.4.4	Because the biota doses in Table 5.4-16 are below the 40 CFR Part 190 limits, no impacts are expected. The doses are well below those specified by IAEA and well below any dose expected to have any noticeable acute effects. Based on the postulated biota doses presented in Table 5.4-16, the impact due to operation of BLN is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
42	Environmental Impacts of Waste (5.5)	Nonradioactive Waste System Impacts 5.5.1	Based upon discussions in the ER, the impact from nonradiological waste management is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
43	Environmental Impacts of Waste (5.5)	Nonradioactive Waste System Impacts 5.5.1	The current NPDES permit takes biocide and chlorine concentrations in to account and the associated discharge limits are established to protect receiving waters. Because biocides and chemicals used for water treatment are added in parts per million concentrations and are largely consumed serving their purposes, and the NPDES permit takes the potential for these substances being in the discharge into consideration by establishing requirements for appropriate chemical parameter monitoring and acceptable limits the impact from these discharges is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
44		Nonradioactive Waste System Impacts 5.5.1	Waste streams are monitored during discharges from the construction holding pond at DSN002. The spent RO system filters are disposed of in accordance with applicable industrial solid-waste regulations. See ER Subsection 5.5.1.2 for additional details on solid-waste management. The impact from this stream is like that for biocides and metals and is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
45		Nonradioactive Waste System Impacts 5.5.1	Because the NPDES permit requires monitoring of floor drain systems contributing to discharges made through the WWRB and desilting pond, the impact from floor drains is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
46	Environmental Impacts of Waste (5.5)	Nonradioactive Waste System Impacts 5.5.1	Because surface drainage and roof drain system discharges (including discharges made through DSN009 – 015) are made in accordance with the facility's SWPPP and the NPDES permit requires monitoring the discharges made through DSN002 and DSN004 surface and roof drain discharge impact is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
47		Nonradioactive Waste System Impacts 5.5.1	Because nonradioactive solid wastes water-treatment and purification-waste filters from the RO unit, construction/demolition and industrial wastes, solid hazardous waste, and petroleum wastes (including fuels, such as gasoline and diesel oil, and used oil and greases) are handled per the methods described above in Subsections 5.5.1.2.1 through 5.5.1.2.3, the impact from discharges to land is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
48		Nonradioactive Waste System Impacts 5.5.1	Because limited air emissions are created from the operation of the BLN, as described above, the impact from discharges to air is considered to be SMALL.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
49	Environmental Impacts of Waste (5.5)	Nonradioactive Waste System Impacts 5.5.1	Because sanitary waste is discharged to and treated at the Scottsboro, Alabama's municipal sewage treatment plant, as described above, the impact from sanitary waste discharges is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
50		Mixed Waste Impacts 5.5.2	Due to this projected small volume of mixed waste, and because no significant emissions or releases of hazardous materials are expected as a result of control and containment requirements, the NRC generically concluded that the findings for both LLW and mixed-LLW impacts are considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
51	Environmental Impacts of Waste (5.5)	Mixed Waste Impacts 5.5.2	Because NRC regulations, ALARA chemical awareness training, and the waste minimization plan are used and followed at the BLN for managing (handling, storage, transportation and treatment) of mixed-wastes, as described above in Subsections 5.5.2 and 5.5.2.1, the impact from mixed-wastes is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
52	Transmission System Impacts (5.6)	Terrestrial Ecosystem 5.6.1	Best management practices are observed in wetland and potential wetland areas to avoid and minimize potential impacts. Potential terrestrial impacts associated with ROW maintenance are expected to be SMALL because the TVA has approved methods in place to protect terrestrial habitat from maintenance activities.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact on terrestrial habitat due to maintenance activities is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact
53		Aquatic Ecosystem 5.6.2	Given the measures taken by the TVA to avoid affecting aquatic habitat and the fact no new transmission lines are proposed, any impacts associated with routine maintenance or re-clearing of existing transmission corridors are expected to be SMALL.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact on aquatic habitat due to maintenance activities is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
54	Transmission System Impacts (5.6)	Impacts to Members of the Public 5.6.3	The impacts of BLN site operations on historic properties associated with transmission line corridors are considered SMALL, and mitigation is not warranted.	Because operations are not expected to have an affect on historic properties associated with transmission line maintenance, this impact will not disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
55		Impacts to Members of the Public 5.6.3	Impacts due to electric shock as a result of induced current are potentially adverse but can be easily mitigated; therefore, impacts are considered to be SMALL.	Because of operational mitigation efforts, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact
56		Impacts to Members of the Public 5.6.3	Because EMF diminishes with distance, routing transmission lines using constraint buffers reduces potential public exposure to EMF. Because TVA uses conservative location practices to minimize public exposure to EMF, impacts resulting from public exposure to EMF are considered SMALL.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact of EMF is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact
57		Impacts to Members of the Public 5.6.3	Because corona generally is not a problem at voltages below 765 kV, and TVA's transmission lines to BLN are at 500 kV and temporary noise from transmission line maintenance is infrequent, impacts to the public from transmission line noise are considered SMALL.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact of transmission line noise is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
58	Transmission System Impacts (5.6)	Impacts to Members of the Public 5.6.3	Electromagnetic interference with television and radio is usually the result of defective insulators or hardware. As discussed in Subsection 5.6.3.3, interference stemming from a 500-kV transmission line is minimal. Therefore, impacts associated with radio and television interference from transmission lines are SMALL.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact of electromagnetic interference is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact
59		Impacts to Members of the Public 5.6.3	The TVA attempts to maintain important viewsheds. Natural vegetation is retained at road crossings to help minimize visual impacts where possible. Because no new transmission lines are proposed, viewscapes are not further impacted by the BLN transmission system.	Because there will be very little change in aesthetics, no disproportionate impacts to identified minority and low-income populations are anticipated.	No Disproportionate Impact
60	Uranium Fuel Cycle Impacts (5.7)	Land Use 5.7.1	The BLN fuel cycle requires only 15 percent of the temporarily committed land and 13 percent of the permanently committed land that would be required by replacement with coal-fired capacity. If the quality and opportunity cost of the land is equivalent, then it is reasonable to say that land requirements are SMALL. Therefore, it is concluded that the impact on land use to support BLN is considered SMALL.	This impact is anticipated to affect the residents in the vicinity proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations. This impact is anticipated to affect the residents in the region proportionally; therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
61		Water Use 5.7.2	Given that the water discharged to water bodies and to the ground from other fuel cycle facilities for an RRY is only a small fraction of the discharge from a LWR, it is concluded that the impact to support BLN is considered to be SMALL.	Based on the comparative analysis between BLN and other fuel cycle facilities, no disproportionate impact is expected for the identified minority and low-income populations.	No Disproportionate Impact
62	Uranium Fuel Cycle Impacts (5.7)	Fossil Fuel Effects 5.7.3	Electrical energy needs for BLN associated with the UFC are presented in ER Table 5.7-2. It is concluded that the fossil fuel impacts from the consumption of electrical energy for UFC operations is considered to be SMALL relative to the net power production of BLN.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
63		Chemical Effluents 5.7.4	Tailings solutions and solids are generated during the milling process. These materials are not released in quantities sufficient to have a significant effect on the environment. It is concluded that the impact of these chemical effluents is considered to be SMALL.	Because this impact takes place outside the BLN region, no pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
64		Radioactive Effluents 5.7.5	Based on the analyses presented above, it is concluded that the environmental impact of radioactive effluents from the UFC is considered to be SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
65		Radioactive Waste 5.7.6	It is concluded that the radioactive waste disposal impact is acceptable, because the impact is not sufficiently great to require the conclusion of the NEPA analysis to be that the construction and operation of BLN should be denied. For the reasons stated above, it is concluded that the environmental impact of radioactive waste disposal from the UFC is considered to be SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
66	Uranium Fuel Cycle Impacts (5.7)	Occupational Dose 5.7.7	In the review and evaluation of the environmental effects of the UFC, the annual occupational dose attributable to all phases of the UFC for BLN is about 16.1 person-Sv (1605 person-rem). Occupational doses are maintained to meet the dose limits in 10 CFR Part 20, which is (0.05 Sv/yr) (5 rem/yr). On this basis, it is concluded that environmental effects from this occupational dose is considered to be SMALL.	Because these impacts are regulated and monitored, this impact is not expected to affect identified minority and low-income populations.	No Disproportionate Impact
67		Transportation 5.7.8	The transportation dose to workers and the public totals about 0.067 person-Sv (6.7 person-rem) annually per Table 5.7-2 for the BLN. For comparative purposes, the estimated collective dose from natural background radiation to the population within 50 mi. of BLN is 1440 person-Sv/yr (144,000 person-rem/yr). On this basis, it is concluded that the environmental impact of transportation is considered to be SMALL.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
68		Conclusions 5.7.9	Using an evaluation process as provided by NUREG-1437, this evaluation has examined the environmental impact of the UFC, considered the impact of Rn-222 and Tc-99, and appropriately scaled the data for the BLN. Based on this comparison, it is concluded that the environmental impact of the UFC is considered to be SMALL, and mitigation is not warranted.	No pathways were identified between this impact and identified minority and low-income populations.	No Disproportionate Impact
69	Socioeconomic Impacts (5.8)	Physical Impacts of Station Operation 5.8.1	Based on the distance from the nearest residences to on-site buildings and the safety standards to which the buildings are constructed, operational activities are considered to have a SMALL impact on on-site and nearby residential areas, and mitigation is not warranted.	Because of safety standards incorporated into the construction of onsite buildings, there are no anticipated impacts on identified minority and low-income populations.	No Disproportionate Impact
70		Physical Impacts of Station Operation 5.8.1	Given the current volume of traffic, as indicated by Annual Average Daily Traffic (AADT) counts in ER Subsection 2.5.2, on the road network, the addition of 612 vehicles is considered SMALL and mitigation is not warranted. During refueling and other outage periods traffic increases. Possible mitigation measures include staggering outage shifts opposite traditional high-traffic periods, mandatory carpooling, and busing in of employees, if necessary.	This impact is expected to be confined to routes used between the site and US 72. The identified minority blocks are located nearer to US 72 than they are the access routes. Each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact

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	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
71		Physical Impacts of Station Operation 5.8.1	Because the transmission service lines are already present, the impact on visual aesthetics is considered SMALL and mitigation is not warranted.	Because there will be no change in transmission lines, visual impacts are minimal with very little change in aesthetics. No disproportionate impacts are expected to affect identified minority and low-income populations.	No Disproportionate Impact
72	Socioeconomic Impacts (5.8)	Physical Impacts of Station Operation 5.8.1	Because significant noise sources are located a substantial distance from the BLN site boundary, plant operational noise is attenuated to near ambient levels beyond the site boundary; Therefore, noise impact is considered to be SMALL and mitigation is not warranted.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
73		Physical Impacts of Station Operation 5.8.1	Because the electric transmission lines are expected to be energized at 500 kV or less and receptors are located a substantial distance from the transmission lines, noise impact created by corona discharge from the transmission lines is considered to be SMALL and mitigation is not warranted.	The transmission corridor crosses one identified minority block, which according to the US Census contains four individuals. The transmission corridor does not cross any identified low-income census block groups. Therefore, the impact of transmission line noise is not anticipated to be a disproportionate impact to identified minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
74		Physical Impacts of Station Operation 5.8.1	Because off-peak traffic should not increase significantly, off-peak traffic noise impact is considered to be SMALL and no mitigation is warranted.	This impact is expected to be confined to routes used between the site and US 72. The identified minority blocks are located nearer to US 72 than they are the access routes. Each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
75	Socioeconomic Impacts (5.8)	Physical Impacts of Station Operation 5.8.1	Because air emissions from nuclear power plants are minimal, physical impacts to the surrounding population as a result of operation of the new units are considered SMALL and mitigation is not warranted.	Four minority census blocks located within two miles of the BLN center point were identified (ER Figures 2.5-9 through 2.5-26). Section 2.5.4.3 of the BLN Environmental Report describes these census blocks and their demography. In brief, the sizes of populations in the census blocks are equivalent to single families and each of these identified blocks are dispersed within a collection of non-minority census blocks. Therefore, these identified minority blocks are not anticipated to be disproportionately impacted.	No Disproportionate Impact
76		Social and Economic Impacts of Station Operation 5.8.2	The impact of plant operations on local and regional demography is considered to be SMALL as the percent increase in population is below four percent for Jackson County and mitigation is not warranted.	The increase in population due to the operational workforce and their families are not anticipated to disproportionately impact the identified minority and low-income populations. However, the manner this population increase interacts with various socioeconomic variables have been analyzed in the following impact assessments.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
77	Socioeconomic Impacts (5.8)	Social and Economic Impacts of Station Operation 5.8.2	The impacts of operation employees on the economy of the region are considered SMALL beneficial impacts due to the creation of jobs, employee purchasing, and increased tax revenues. The impact from plant operation employees in Jackson County is considered MODERATE beneficial impacts due to the higher concentration of operation employees within Jackson County and the coinciding benefits.	This impact is anticipated to beneficially impact the residents in the vicinity proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations. This impact is anticipated to beneficially impact the residents in the region proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact
78		Social and Economic Impacts of Station Operation 5.8.2	The impacts of plant operation on tax revenue in the region are considered SMALL and beneficial because of the distribution system of the revenues. The tax revenue is given to all areas that are powered by TVA, not just the county in which the plant is located. Also, 20 percent of the revenue is allocated to the Alabama general fund and is used for services and improvements anywhere in the state while in Tennessee almost 50 percent is given to the state.	This impact is anticipated to beneficially impact the region proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact
79		Social and Economic Impacts of Station Operation 5.8.2	The impacts of the plant operation on tax revenue in Jackson County are expected to be MODERATE and beneficial due to the increased revenues from the TVA property in the county.	This impact is anticipated to beneficially impact Jackson County proportionally; Therefore, no disproportionate impact is expected for the identified low-income and minority populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
80	Socioeconomic Impacts (5.8)	Social and Economic Impacts of Station Operation 5.8.2	Impacts to municipal water suppliers from the operations-related population increase are considered SMALL and mitigation is not warranted.	Because the capacity of the Scottsboro Municipal Water System will not reach its maximum capacity during the heaviest phase of construction, there is no anticipated affect on water availability during the operation of the plant. Therefore, no disproportionate impact is expected for the identified minority and low-income populations.	No Disproportionate Impact
81		Social and Economic Impacts of Station Operation 5.8.2	Based on system capacity and additional utilization, impacts to wastewater treatment facilities from the operations-related population increase are considered SMALL and mitigation is not warranted.	Because the capacity of the wastewater treatment facilities will not reach its maximum capacity during the heaviest phase of construction, there is no anticipated affect on wastewater treatment during the operation of the plant. Therefore, no disproportionate impact is expected for the identified minority and low-income populations.	No Disproportionate Impact
82		Social and Economic Impacts of Station Operation 5.8.2	Based on percentage increase in persons per police officer and firefighter ratios from the operations-related population increase, potential impacts of new facility unit operations are considered SMALL, and mitigation is not warranted. Possible mitigation would include hiring of additional police officers, purchasing additional support equipment, building new facilities, or expanding existing facilities.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
83		Social and Economic Impacts of Station Operation 5.8.2	Based on factors such as the number of hospital beds, as described in Subsection 2.5.2, the impact of plant operations on medical services is considered SMALL and mitigation is not warranted.	No pathways were identified between this impact and minority and low-income populations.	No Disproportionate Impact
84	Socioeconomic Impacts (5.8)	Social and Economic Impacts of Station Operation 5.8.2	Based on the availability of housing units and rental units in Jackson County in relation to the number of operations workers, the impacts of plant operation on housing are considered SMALL and mitigation is not warranted.	The impact on the housing market during operations is anticipated to be distributed evenly throughout Jackson County. The number of operational workers expected to move into the area is significantly less than the number of workers expected to move into the area during the construction phase. Therefore, no disproportionate impacts are expected for identified minority or low-income populations.	No Disproportionate Impact
85		Social and Economic Impacts of Station Operation 5.8.2	The impacts of plant operation on the educational system of Jackson County, Alabama are considered SMALL to MODERATE and do not require mitigation as the increase in students are offset by the increase in local government revenues paid to the school district. Any MODERATE impact is temporary and offset by the tax factors that allow the district to expand and/or update the current infrastructure and hire additional teachers.	The impacts on education due to operations are anticipated to occur mainly in Jackson County. Because the impacts are expected to be evenly distributed throughout the county, there will be no disproportionate affect to identified minorities or low-income populations.	No Disproportionate Impact

Table 2: Environmental Justice Impact Assessment Table for Operation

	Section	Subsection	Impact Summary	Minority and Low-Income perspective	EJ Impact
86		Social and Economic Impacts of Station Operation 5.8.2	Many of the recreational opportunities within the BLN region are outdoors and it is not possible to ascertain capacities. Based on aesthetic impacts discussed in ER Subsection 5.8.1.4, noise impacts discussed in ER Subsection 5.8.1.5, and the potential use of mitigation measures to control air quality; the impacts on recreational opportunities due to plant operation are discussed in ER Subsection 5.8.1.4 and are considered SMALL; mitigation efforts are not warranted.	Because the impacts are expected to be evenly distributed throughout Jackson County, there will be no disproportionate affect to identified minorities or low-income populations.	No Disproportionate Impact
87	Design Basis Accidents (7.1)		The results from ER Section 7.1 indicate that all accident doses meet the site acceptance criteria.	Because these impacts are regulated and monitored, this impact is not expected to disproportionately affect identified minority and low-income populations.	No Disproportionate Impact