

Periodic Structural Stability Assessment Unit 1 Bottom Ash Pond

Charles R. Lowman Power Plant

Three Notch Reference Number: R021225012

October 14, 2026

Prepared for:

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Prepared by



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REFERENCES

Three Notch Group (2026). *Report of Safety Factor Assessment: Coal Combustion Residuals Impoundment Embankments, Charles R. Lowman Power Plant.* Andalusia, AL.

CDG Engineers and Associates, Inc. (2016). *History of Construction Unit 2/3 Bottom Ash Pond, Charles R. Lowman Power Plant.* Andalusia, AL.

Three Notch Group (2026). *Inflow Design Control Plan Unit 1 Bottom Ash Pond, Charles R. Lowman Power Plant.* Andalusia, AL.

1.0 UNIT 1 BOTTOM ASH POND

1.1 OPERATOR INFORMATION

Name: Unit 1 Bottom Ash Pond

Owner/Operator: PowerSouth Energy Cooperative, Inc.
Charles R. Lowman Power Plant
Leroy, AL 36458

State ID: None Assigned

1.2 LOCATION

The Unit 1 Bottom Ash Pond is located in Section 18, Township 6N, Range 2 East in Washington, County Alabama and more specifically on the Western bank of the Tombigbee River. Figures 1 and 2 of this report show the location of the Pond.

1.3 STATEMENT OF PURPOSE

The Unit 1 Bottom Ash Pond was previously used as a settling pond for CCR wastes containing bottom ash, fly ash, and other plant wastes. Bottom ash from Unit 1 was transported to the impoundment via wet sluicing. In addition to the bottom ash sluicing operation, the Facility periodically disposed of fly ash and FGD waste within the impoundment through similar methods.

1.4 FOUNDATION AND EMBANKMENTS

The Unit 1 Bottom Ash Pond was constructed in 1965 in conjunction with Unit 1 of the Charles R. Lowman Power Plant. Based on a review of the available documentation, the Unit 1 Bottom Ash Pond was constructed by excavating below the original ground surface to a depth of $\pm$ EL 10' to EL 13'. The excavated soils were used as fill to construct the impoundment embankments. Per the available information shown on the construction plans created by Stanley Engineering Company circa 1965 the pre-construction ground surface elevation within the pond area ranged from $\pm$ EL 17' to EL 29'.

The Unit 1 Bottom Ash Pond contains exterior berms located on its northern, southern and eastern sides. The impoundment is bordered to the west by the Facility's entrance road and rail system which serves as an interior berm between the Unit 1 Bottom Ash Pond and the Unit 2/3 Bottom Ash Pond. The northern berm of the Unit 1 Bottom Ash Pond is formed by broad fill placement extending in excess of 200' from the impoundment which contains various Plant infrastructure and systems.

The crest of the embankments range from approximately EL 35' to EL 38'. Based on a review of the impoundment plans and recent topographic survey the embankments were constructed at an inclination of 2(H):1(V) and flatter. The maximum height of exterior embankments is approximately 15 feet, which is located along the eastern embankment.

Based on soil boring information, the Unit 1 Bottom Ash Pond embankments and underlying foundation soils consist of fill, Low Terrace Deposits and Coastal Plain Deposits. Fill thicknesses ranged from approximately 7' to 18'. The fill soils are comprised of silty and clayey, fine to medium-grained sand and fine sandy clay. Standard Penetration Tests (SPT) in the fill indicated a variable consistency with N-values typically ranging from 4 to 23 blows per foot (bpf).

The foundation soils underlying the embankments consist of Low Terrace Deposits and Coastal Plain Deposits. Low Terrace Deposits are water-deposited soils typically resulting from meanderings of rivers and streams. The Charles R. Lowman Power Plant is located along the western bank of the Tombigbee River. Therefore, the Terrace Deposits at this site appear to have resulted from meanderings and flooding of the Tombigbee River.

Based on operational parameters provided by the owner, historical construction data and recent engineering analysis, it is our opinion that the Unit 1 Bottom Ash Pond exhibits suitable stability. For further information on foundations and embankments refer to the *Periodic Safety Factor Assessment*, dated October 2026.

1.5 SLOPE PROTECTION AND VEGETATION

All Unit 1 Bottom Ash Pond slopes are comprised of compacted embankment fill material and an established stand of grass. Vegetation is such that erosion due to surface flows and wave action is resisted and the erosive effects are minimal.

For further information on slope protection and vegetation refer to the *History of Construction Unit 1 Bottom Ash Pond*, dated October 2016.

1.6 SPILLWAYS AND DIVERSION SYSTEMS

When the Unit 1 Bottom Ash Pond was cleaned, the original decant structure was abandoned. Should the impoundment require draining, a temporary diesel driven pump shall be used. This pump has a rating of 1,530 gallons per minute (gpm).

The Unit 1 Intake structure is capable of adequately managing the flow from the 1000-yr flood event. The Unit 1 reaches a maximum hydraulic grade (HGL) of 12.8' MSL during abnormal operations. This maximum HGL leaves a freeboard of 22.2' in the pond.

There are no hydraulic structures passing through or under any of the pond structural berms.

For further information on spillways and diversion systems refer to the *Inflow Design Control Plan Unit 1 Bottom Ash Pond*, dated October 2026.

1.7 PERIODIC SAFETY FACTOR ASSESSMENTS

State regulations [ADEM Admin. Code 335-13-15-.04(4)(e)] require that the stability of CCR impoundment embankments be periodically evaluated. A stability evaluation was conducted on the exterior embankments associated with the Unit 1 Bottom Ash Pond and is detailed in the *Periodic Safety Factor Assessment*, dated October 2026.

The evaluation indicates that the embankments exhibit factors of safety that equal or exceed the required minimum values under the maximum storage pool, maximum surcharge pool, and seismic scenarios. Additionally, the embankment soils are demonstrated not to be susceptible to liquefaction, and further analyses under the liquefaction loading scenario is not required. Therefore, the embankments comply with the periodic safety factor assessment requirements. For further information on the Unit 1 Bottom Ash Pond safety factor assessments, please refer to the *Periodic Safety Factor Assessment*, dated October 2026.

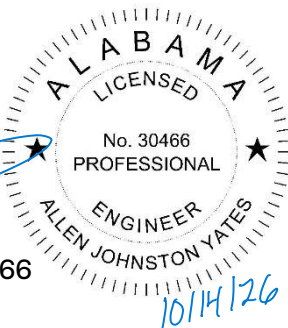
The potential for instability in the exterior Unit 1 Bottom Ash Pond embankments was evaluated based on loading associated with rapid drawdown. This potential scenario would involve flooding of the Tombigbee River followed by a subsequent rapid drop in water elevation as the flood waters subside. Based on available data (USGS, Station 02470050), the maximum recession rate of the flood waters occurs relatively slowly at approximately 2.5 feet per day. Excess pore pressures within the primarily granular berm soils are able to dissipate due to the slow drop in flood waters. Therefore, a rapid drawdown condition does not develop within the exterior embankment and further analysis is not warranted.

1.8 ENGINEER'S CERTIFICATION

The findings in this report were developed from visual observations made by Three Notch Group personnel during the preparation of this report and its supporting documents. If significant changes are made to the use of the upstream and downstream areas or capacity of the impoundments, Three Notch Group should be allowed to review our findings in light of the changes to determine if an alternate hazard potential classification is warranted.

I hereby certify that, in my professional judgement, the components of this document and associated work satisfy the applicable requirements set forth in ADEM Admin. Code r. 335-13-15.04(4)(d) and 40 CFR 257.73(d) and are consistent with generally accepted professional engineering principles and practices. The information submitted herein, to the best of my knowledge and belief, is true, accurate and complete.

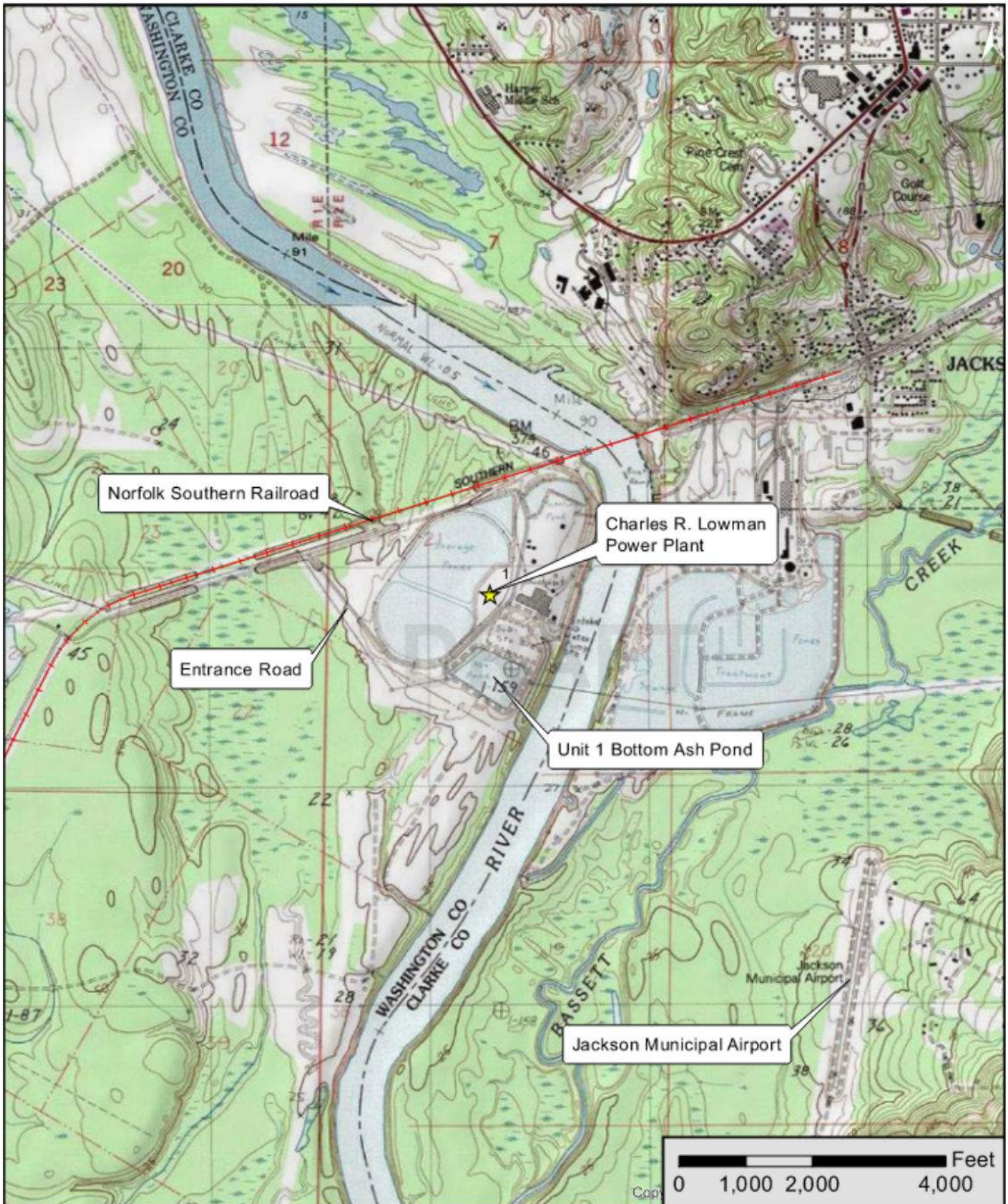

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APPENDIX A

Project Maps

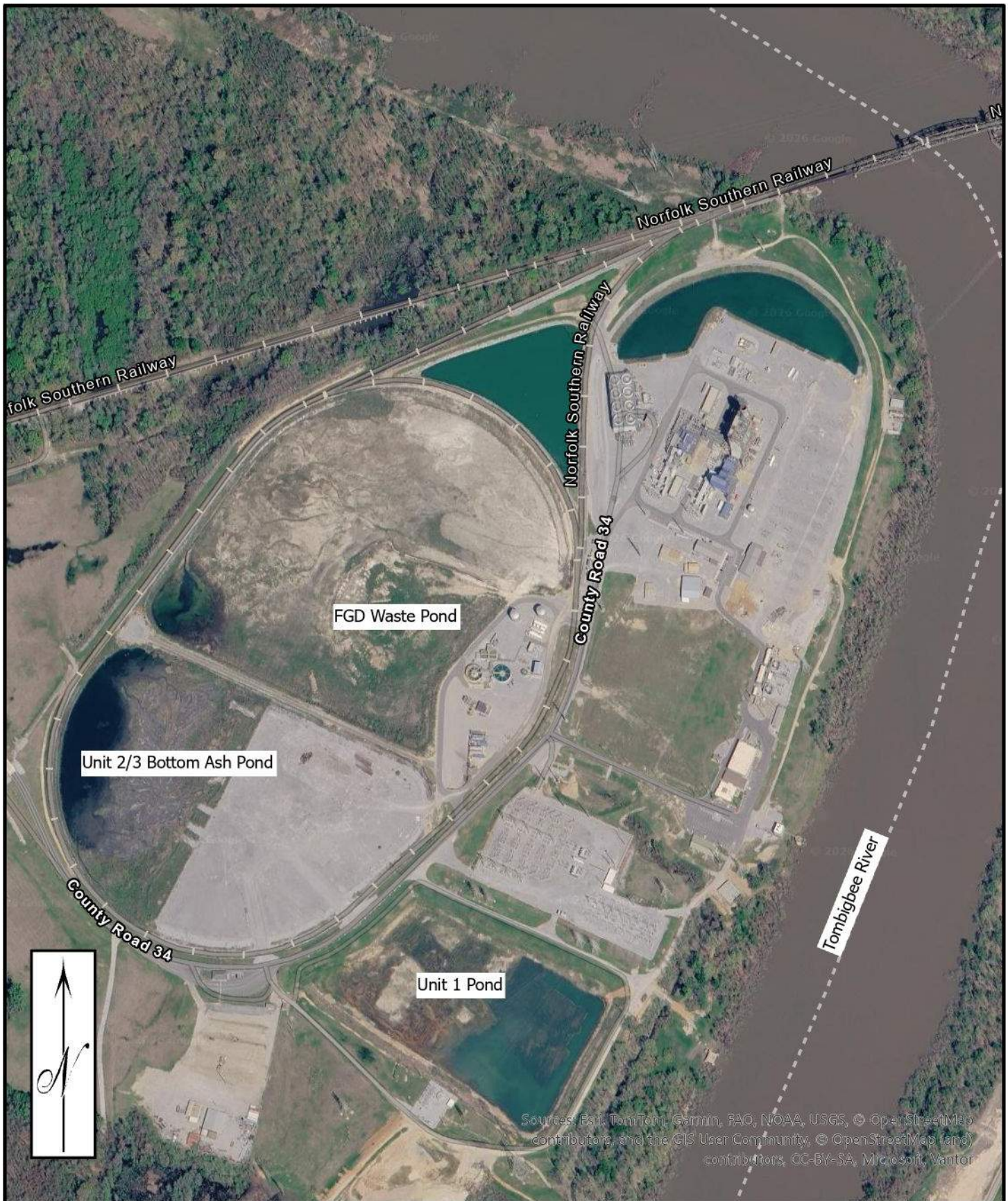


Unit 1 Bottom Ash Pond Location Map

Drawn By: AH

Date: 10/12/2026

Charles R. Lowman Power Plant
PowerSouth Energy Cooperative
Leroy, Alabama



Aerial Map of Impoundments

Drawn By: AH

Scale: 1 in = 0.1 mi

Date: 10/12/2026

Charles R. Lowman Power Plant
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Leroy, Alabama



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