**Environmental Compliance Strategy**

**2025**

Georgia Power Company

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Certain information contained in this report is forward-looking information based on current expectations and plans that involve risks and uncertainties. Forward-looking information includes, among other things, statements concerning environmental regulations and related compliance plans and estimated expenditures. Georgia Power cautions that there are certain factors that can cause actual results to differ materially from the forward-looking information that has been provided. The reader is cautioned not to put undue reliance on this forward-looking information, which is not a guarantee of future performance and is subject to a number of uncertainties and other factors, many of which are outside the control of Georgia Power; accordingly, there can be no assurance that such suggested results will be realized. The following factors, in addition to those discussed in Georgia Power’s Annual Report on Form 10-K for the fiscal year ended December 31, 2023 and subsequent securities filings, could cause actual results to differ materially from management expectations as suggested by such forward-looking information:the impact of recent and future federal and state regulatory changes, including tax, environmental, and other laws and regulations to which Georgia Power is subject, as well as changes in application of existing laws and regulations; the extent and timing of costs and legal requirements related to coal combustion residuals; current and future litigation or regulatory investigations, proceedings, or inquiries; the ability to control costs and avoid cost and schedule overruns during the development, construction and operation of facilities or other projects; the ability to construct facilities in accordance with the requirements of permits and licenses and to satisfy any environmental performance standards and the requirements of tax credits and other incentives; advances in technology, including the pace and extent of development of low- to no-carbon energy and battery energy storage technologies and negative carbon concepts; state and federal rate regulations and the impact of pending and future rate cases and negotiations, including rate actions relating to cost recovery mechanisms; catastrophic events such as fires, earthquakes, explosions, floods, tornadoes, hurricanes and other storms, droughts, pandemic health events, political unrest, wars or other similar occurrences; and the effect of accounting pronouncements issued periodically by standard-setting bodies. Georgia Power expressly disclaims any obligation to update any forward-looking information.

2025 Environmental Compliance Strategy Executive Summary

Georgia Power Company’s (“Georgia Power,” “GPC,” or the “Company”) 2025 Environmental Compliance Strategy (“ECS”) continues to apply a comprehensive annual process to review, refine, and/or update the 10-year outlook for environmental control plans. The goals of the Company’s strategy are to ensure compliance and provide cost-effective solutions for the generating fleet that are in the best interests of customers. 2024 marked a significant year in environmental policy development, with the Environmental Protection Agency (“EPA”) finalizing a suite of power sector rules in the spring, including the Clean Air Act Section 111 Greenhouse Gas Rules (“111 GHG Rules”), the Supplemental Effluent Limitations Guidelines (“Supplemental ELG Rule”), the Mercury and Air Toxics Standards Residual Risk and Technology Rule (“MATS RTR”), and the Coal Combustion Residuals Legacy Surface Impoundments Rule (“CCR Legacy Rule”). Each of these rules has been legally challenged, but legal stays were denied in each case, meaning all of the rules remain in effect while the legal proceedings are ongoing.

Given the uncertainty in environmental rules that are final and in effect, Georgia Power plans to employ a flexible and adaptive environmental strategy to ensure continued compliance and resource planning optionality. In some cases, such as with the 111 GHG Rules and Supplemental ELG Rule, Georgia Power must investigate and pursue the possibility of multiple outcomes to both ensure compliance with upcoming requirements while also maintaining the ability to adjust to any changes that may occur through the rulemaking or legal process for the benefit of customers. The Company’s compliance strategy for each of these new final rules is outlined below.

111 GHG Rules

EPA’s 111 GHG Rules have far-reaching implications for both new natural gas combined cycle units (“NGCC”) and existing coal units, especially for utility resource planning in a time of significant projected load growth. Due to concerns about impacts to electricity reliability and affordability, 25 states and many industry groups challenged the rules in the D.C. Circuit, including the state of Georgia and the Electric Generators for a Sensible Transition, a utility coalition that includes Southern Company. The U.S. Supreme Court recently decided against putting the rules on hold while the litigation is ongoing but noted that “the applicants have shown a strong likelihood of success on the merits as to at least some of their challenges.”[[1]](#footnote-2) Despite the legal activity, the rules remain in effect, with state plan deadlines and timelines for generation decisions fast approaching and the legal proceedings for these rules far from over. Thus, it is critical for Georgia Power to move swiftly to prepare for compliance while also remaining ready for a range of possible outcomes, up to revocation of the rule.

The federal standards limit new NGCC units to a 40% capacity factor, unless 90% carbon capture and storage (“CCS”) is installed and operated by January 1, 2032. Although a small number of U.S. Department of Energy (“DOE”)-funded NGCC with CCS projects have been announced in the U.S., none are yet operational, and the earliest expected operational date for these federally funded demonstration projects is 2030. As such, NGCC with CCS resources have not been adequately demonstrated. Further, the immense infrastructure development needed for widespread commercial CCS deployment, such as buildout of carbon dioxide (“CO2”) pipeline networks, is in its infancy.

In Georgia, further challenges include the need for more detailed studies to support geologic storage in the state. In 2024, Georgia Power performed limited geologic studies in Georgia to support the advancement of CCS as a future option for new NGCC. The Company expects to gain further insights from a recently announced Carbon America DOE-supported study in southeast Georgia over the next several years. While technology advancement timelines are always difficult to predict, the capability for widespread deployment of NGCC with CCS may not materialize until the late 2030s and beyond. As such, CCS is currently impractical for implementation for NGCC units, especially in Georgia, leaving new NGCC units only one option for compliance – limiting operations to a 40% capacity factor by 2032. As a practical matter, this results in more than two units being required to produce the same amount of energy as previously could have been served by one unit, or potentially more than twice the capital cost.

For existing coal units, EPA’s 111 GHG Rules outline three compliance options: (1) retire by January 1, 2032; (2) operate CCS with 90% CO2 capture by January 1, 2032; or (3) co-fire 40% natural gas by January 1, 2030 and retire by January 1, 2039.[[2]](#footnote-3) However, EPA’s guidelines represent only the first step in the process to finalize unit-specific greenhouse gas (“GHG”) requirements. Under the Clean Air Act, states are charged with developing 111 state plans for existing units, in recognition that regional and site-specific factors are important considerations for the existing fleet and that states may finalize requirements that differ from EPA’s guidelines. Georgia Environmental Protection Division (“EPD”) is required to develop and submit a state plan by May 2026 to EPA for review and approval by mid-2027. If a state plan is disapproved, EPA has another year to develop a federal plan to take its place.

The 111 GHG Rules seek to influence energy policy by limiting the resource mix and operational choices of power companies. With stringent emissions limits, these rules push utilities toward early retirement of coal and greater reliance on natural gas despite the infrastructural and logistical challenges that accompany such a transition without adequate timelines. It is important to note that while the Georgia EPD plays a critical role in developing state plans and compliance strategies, it does not possess the authority to mandate the retirement of generating units. This responsibility lies solely with the Georgia Public Service Commission (“GPSC” or the “Commission”), ensuring that any decision to retire units considers broader impacts on energy reliability, affordability, and long-term resource planning.

Georgia EPD may undergo rulemaking in 2025 to set the basis for the state plan due to EPA the following year. While this means some uncertainty remains in the final requirements for Plant Bowen and Plant Scherer, the 111 GHG Rules provide insight to the compliance pathways that may be adopted by Georgia EPD and are likely to be approved by EPA. For the compliance pathways in EPA’s guidelines, none are practically achievable in their exact forms, but the natural gas co-firing option is the most realistic of the three for Georgia Power. Retirement by January 1, 2032, for Plant Bowen or Plant Scherer is not practicable considering the load growth projected in Georgia. Although CCS research and development is much further along for coal than it is for natural gas, CCS by January 1, 2032, is still not realistic for Plant Bowen or Plant Scherer given current cost, permitting, and infrastructure obstacles.

As a part of Georgia Power’s ECS, the 111 GHG Rules strategy for Plant Bowen and Plant Scherer is to pursue the natural gas co-firing compliance pathway, starting with engaging engineering firms to perform boiler studies to determine potential designs for adding natural gas co-firing capability as quickly as possible. Georgia Power will also engage with Georgia EPD and other stakeholders on the compliance timeline and requirements that will minimize the impacts to reliability and affordability for customers. While these activities can be paused or slowed down in the event of a future legal decision or policy change, waiting to start these activities could have profound consequences for resource planning in the event the rules are upheld.

Supplemental ELG Rule Compliance Strategy

EPA’s Supplemental ELG Rule represents the third major revision to the Effluent Limitations Guidelines (“ELGs”) in less than 10 years. In fact, implementation of the 2020 ELG Reconsideration Rule is still underway at Plant Bowen and Plant Scherer. The Supplemental ELG Rule finalizes changes to requirements for various waste streams, with revisions to scrubber wastewater and combustion residual leachate (“CRL”) requirements being most impactful to Georgia Power facilities.

The new CRL requirements will require the addition of treatment systems for leachate collection systems at coal combustion residual (“CCR”) landfills or closed ash ponds. For facilities with active coal plant operations beyond 2034, leachate cannot be discharged, meaning the requirement is for “zero liquid discharge” (“ZLD”). For active landfills at Plant Bowen and Plant Scherer, the ZLD limit must be met by no later than December 31, 2029, or the date prescribed in the National Pollutant Discharge Elimination System (“NPDES”) permit. For facilities without active coal plant operations, the leachate must meet certain limits before discharge, requiring a combination of physical and chemical treatment. For other landfills or closed ash ponds with leachate collection systems, the compliance deadline is also no later than December 31, 2029, or the date prescribed in the NPDES permit, or the date upon which leachate collection systems are in place after 2029. The Company’s compliance strategy for CRL includes capital costs to meet ZLD limitations at Plants Bowen and Scherer, as well as Asset Retirement Obligation (“ARO”) estimates for physical chemical treatment at retired facilities with leachate collection systems.

For scrubber wastewater, the Supplemental ELG Rule similarly requires that facilities with active coal plant operations beyond 2034 must be ZLD compliant by no later than December 31, 2029, or the date prescribed in the NPDES permit. The rule specifies that compliance implementation efforts for the 2020 ELG Reconsideration Rule must continue towards the compliance deadline of December 31, 2025, and facilities must operate in compliance with the 2020 ELG Reconsideration Rule until the ZLD requirements can be met. Plant Scherer and the very limited number of facilities across the country that qualify under the Voluntary Incentives Program (“VIP”) are the exception to this, as they are allowed to comply with the 2020 ELG Reconsideration Rule by December 31, 2028, with their scrubber wastewater requirements unchanged by the Supplemental ELG Rule.

For Plant Bowen scrubber operations, the Supplemental ELG Rule has significant implications. The requirements finalized by EPA were based on assumptions of a suite of technologies and recirculation of scrubber wastewater to plant process water to prevent discharge. Unfortunately, EPA’s assumed technology solutions are very difficult to implement at Plant Bowen due to site-specific conditions. As such, Georgia Power’s current estimate of the capital cost to implement compliance based on EPA’s assumptions is more than six times EPA’s estimate. In addition, EPA’s solution has implications for ash management and electric generating unit (“EGU”) operations. The ECS includes the membrane with evaporator-based treatment as the strategy for Plant Bowen scrubber wastewater, but the Company remains committed to actively investigating engineering and technology options to optimize and refine the compliance strategy in the best interests of customers. If available, the Company will provide supplemental information during the 2025 IRP process regarding alternative ELG compliance options for Plant Bowen.

MATS RTR Compliance Strategy

The MATS RTR is the least complex of the power sector rules finalized in 2024. The rule revision sets a more stringent particulate matter (“PM”) limit for coal units and removes compliance demonstration options to perform periodic stack testing of emissions that existed under the original MATS rule. With these changes, the rule only allows one method of PM compliance demonstration – PM continuous emissions monitoring systems (“PM CEMS”), which was also a compliance option under the original MATS rule. As such, the required compliance strategy is fairly straightforward with low risk of legal changes, albeit with some technical challenges. The compliance deadline of July 2027 is the soonest of the four rules finalized in 2024. All of these factors drive the Company to move ahead quickly with compliance implementation.

The Company does not anticipate installing additional controls to meet the lower PM standard. The Company’s 2025 ECS includes the procurement of PM CEMS for all units at Plant Bowen and Plant Scherer. A testing program is currently underway utilizing temporary monitors to determine the type of technology the Company will procure. The ECS timeline for PM CEMS allows the Company to stagger resources for installation and testing and also allows a period of time to operate the new monitors to understand emissions profiles through various time periods and modes of operation before compliance with the more stringent standard is required in 2027.

CCR Legacy Rule Compliance Strategy

In 2024, EPA expanded the reach of the federal CCR rule to encompass legacy surface impoundments and other accumulations of CCR in the CCR Legacy Rule. The CCR Legacy Rule is expected to have limited impact on Georgia Power CCR units that meet the legacy surface impoundments definition because the Georgia CCR Rule, finalized in 2016, was more stringent than the 2015 federal rule regulating legacy units with similar requirements. Although previously exempt from federal regulation, Georgia Power’s legacy surface impoundments have all been regulated under Georgia EPD’s CCR permitting program, previous state landfill permits, and/or state remediation programs. These units were or are being closed according to stringent standards for the protection of the environment. The finalization of the federal rule, however, subjects these legacy units to duplicative requirements and oversight by both the state and federal agencies. While Georgia’s comprehensive CCR, solid waste, and remediation rules have effectively regulated closure of CCR ash ponds and landfills in the state, the EPA’s CCR Legacy Rule adds certain additional requirements.

First, the CCR Legacy Rule defines a new type of CCR unit – CCR management units or “CCRMUs”. CCRMUs are areas of noncontainerized storage or management of CCR that are not part of a regulated CCR unit. The rule requires facility evaluations at all current and former coal-fired power plant facilities to identify the existence of CCRMUs. This labor-intensive effort is due in two parts, within 21 months and 33 months of the final rule. Any CCRMUs that are identified through the facility evaluations are required to close according to federal CCR rule requirements.

Second, the CCR Legacy Rule definition for legacy surface impoundments includes certain CCR units in Georgia that were previously permitted as landfills. Although the applicability of the new rule is not expected to significantly affect Georgia Power’s closure plans, the CCR Legacy Rule has the potential to introduce additional compliance timelines and impose unnecessary monitoring requirements that may differ from current plans.

Third, the CCR Legacy Rule created new definitions for key terms related to the performance standards for ash ponds that are closed in place. These new definitions for infiltration and liquids largely reflect EPA’s new interpretations of these standards, first announced in January 2022, which suggest that lateral infiltration, in addition to vertical, must be minimized to the extent practicable. The new definitions further expand the long-standing practice of dewatering to include groundwater and not just the free water necessary to allow for stability needed to install effective closure capping. The retroactive applicability of these definitions has been legally challenged. While the impact of these definitional changes remains unclear pending legal outcomes, Georgia Power’s closure-in-place units remain under the purview of the EPA-approved Georgia CCR permit program and include engineering controls designed to minimize or prevent the migration of groundwater. Two closure-in-place permits have been finalized by Georgia EPD, with four permit applications still pending. Three of the four closure in place units awaiting final permits have impermeable geosynthetic cover systems installed and are in the final stages of construction.

Georgia Power’s ECS for the CCR Legacy Rule includes complying with the administrative applicability reports and website updates required by November 8, 2024, the effective date of the rule, as well as completing the required facility evaluations that began in late 2024. To date, Georgia EPD has issued 17 CCR permits, and Georgia Power is coordinating with the agency on the remaining 14 CCR permit applications. Georgia Power is continuing to implement its CCR strategy to permanently close CCR ash ponds and landfills. The Company’s CCR strategy, approved in the 2019 IRP and again in the 2022 IRP, continues to be effectively implemented with significant progress made over the last three years. Consistent with past practice, the Company plans and sequences work strategically to ensure closure progress continues as required in the shortest amount of time consistent with recognized and generally accepted good engineering practices, while also adjusting the schedule for certain activities to mitigate risk where possible. The Company continues to evaluate opportunities to refine and optimize its closure plans.

In conclusion, Georgia Power’s ECS seeks to achieve the goals of cost effective short- and long-term decision-making, maintaining flexibility to adjust to new regulations and other new information, and ultimately implementing solutions in the best interest of customers. The Company has carefully considered the risks of future changes in environmental requirements and other key factors in making compliance plans. The 2025 ECS includes, among others, plans to ensure compliance with the collective suite of 111 GHG, ELG, MATS, and CCR rules for the benefit of customers and reliability of our system.

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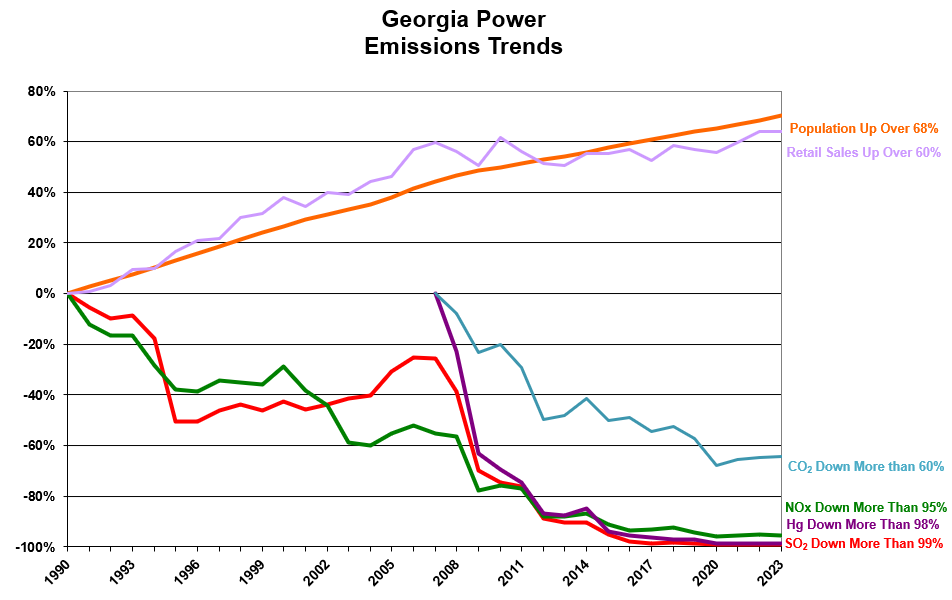
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# 1.0 Introduction

Georgia Power is committed to meeting its environmental compliance obligations while also providing customers with clean, safe, reliable, and affordable energy. The Company has reduced nitrogen oxides (“NOx”) and sulfur dioxide (“SO2”) emissions from its generating fleet by more than 95% and 99%, respectively, since 1990, while mercury emissions have decreased by more than 98% and CO2 emissions by more than 60% since 2007. Further, water withdrawals have decreased by 90% since 2003 with the transition of the generation fleet. Wastewater discharge requirements and ash pond closures have resulted in the installation of 16 wastewater treatment systems and dry or zero discharge ash handling equipment for coal facilities. The Company has also marketed for beneficial use, over a five-year average, more than 85% of the CCR generated from plant operations, significantly reducing waste streams for the benefit of customers and the environment.

**Figure 1. Georgia Power Emissions Trends**



The Company’s ECS seeks to continually optimize compliance plans in an increasingly dynamic regulatory environment. The comprehensive annual strategy development process considers existing and potential legislative and regulatory requirements and determines plant-specific compliance options. These options are evaluated based on available technology, cost, schedule, and impact to plant operations, the environment, and surrounding communities. This iterative approach is designed to provide the Company the necessary flexibility to develop and refine compliance plans to cost-effectively maintain and operate a diverse generation mix to serve customers.

As provided in GPSC Rule 515-3-4-.04(1)(c), the Company’s ECS includes a detailed overview of current and proposed environmental regulations, existing environmental law, and potential legislation applicable to electric generating plants, as well as a comprehensive and cost-effective strategy for compliance. Georgia Power’s ECS process is designed to adapt to changing regulations and assure compliance with robust control plans that are in the best interests of customers.

## 1.1 Strategy Process

The process for developing the ECS includes the comprehensive involvement of a number of organizations within the Company. In general, this integrated process includes four steps as discussed below.

1. **Anticipating and integrating the outcome of new environmental requirements**. The first step involves gathering all available knowledge about current and potential future local, state, regional, and federal environmental requirements, whether through legislation, rulemaking, permitting, or other processes. Some rules may mandate specific requirements on specific plants or assets, and others may require participation in an allowance-based cap and trade program over a regional or national scale. For many rules, the possibility that litigation will result in further changes creates additional uncertainty.
2. **Developing assumptions on federal and state levels.** In order to anticipate the impacts of federal and state environmental requirements on generating plants, the Company engages in a robust integrated resource planning process. This process evaluates the economic and reliability impacts of numerous generating resource decisions across a range of scenarios. The scenarios include a range of assumptions that appropriately consider future regulatory and market uncertainty and risk.
3. **Applying generating unit-specific control technology options.** The application of control technology requirements in the process is performed on a unit-by-unit basis. In some cases, the plant or unit’s environmental control requirements are mandated, such as a plant-specific limit to meet the NPDES permit requirements. In other cases, such as the cap-and-trade program for SO2 established to address acid rain, utilities can choose the most cost-effective of multiple options, such as fuel switching, applying a control technology, or purchasing emission allowances. As discussed in [Appendix C](#_ECS_-_Appendix), Research and Development (“R&D”) continues to be an integral part of the overall Georgia Power environmental strategy and compliance plan. Through research, development, and demonstration, technologies are evaluated and selected for possible implementation to meet compliance with applicable environmental requirements. Technology-related decisions are made based on compliance alternatives, technical review (often following actual testing), schedules, equipment vendor price quotes, total costs over the useful life, specific unit issues, and performance guarantees. The process reviews the cost, control effectiveness, regulatory timing requirements, system reliability impacts, and operational considerations of the applicable options in developing a unit-specific decision on the application of environmental control technologies.
4. **Determining and evaluating the financial requirements of the strategy.** The final step is to determine the cost and financial impacts of the ECS. If environmental controls are mandated for a specific unit, then both the economic and system reliability value of the generating asset’s continued operation must be considered in the Company’s integrated resource planning process along with the cost of the control technology. The Company makes triennial filings with the GPSC seeking approval of its Integrated Resource Plan (“IRP”), which includes economic evaluations of generating plants that consider load growth, compliance costs, and other economic pressures.

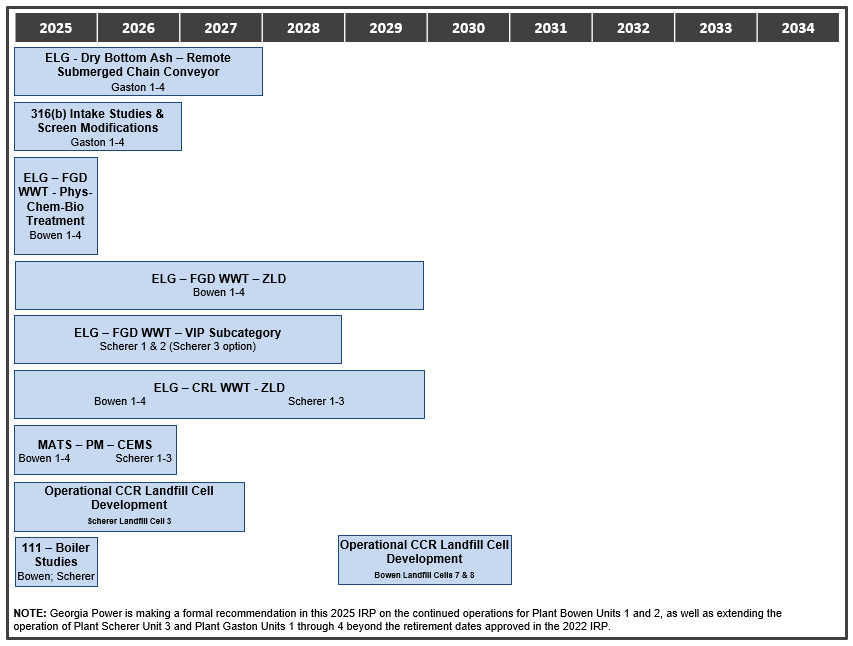
One major goal of the ECS process is to maintain flexibility in compliance options and operations across the generating fleet. A key advantage of this process is that it allows decision-making on an incremental basis. While the strategy includes environmental control plans for the next ten years, final decisions on specific projects are not made until the Company has sufficient information to complete the necessary technical and economic analyses. This process is a balanced approach to providing cost-effective solutions to environmental regulations on behalf of customers.

The uncertainty surrounding the legislative and regulatory environment reinforces the need for a flexible, robust compliance strategy. Accordingly, the Company’s ECS balances the need to make decisions on certain timelines, considering factors such as the lead time required for fuel and equipment purchases, with the need for more information relative to regulatory, reliability, and economic drivers. The analysis will be updated to determine the most cost-effective compliance decisions while maintaining future flexibility and preserving system reliability in the strategy.

## 1.2 Strategy Assumptions

As a result of the ECS process, the ten-year outlook for ECS projects for operational generating units is summarized in **Figure 2.** Details on the compliance requirements that drove this strategy, along with information on existing controls that continue to operate to maintain compliance, are provided in Section 2. Environmental compliance requirements covered by AROs, including ash pond and landfill closures are summarized in **Table 1** and **Table 2**. For these projects, estimated closure construction timeframes vary by location and are site-specific. Estimated ash pond timeframes can be influenced by numerous factors, including, but not limited to, state and federal regulatory actions and rule amendments, legislative action, necessary scope changes, weather, final ash quantities, beneficial use market trends, contractor productivity, and other market and external factors. Factors that affect landfill estimated timeframes in Table 2 include status of plant operations, unit capacity factors, available landfill capacity, and whether the landfill is designated to support ash pond closure activities. Landfill closure dates at coal generating plants are significantly influenced by generation output and how much operational ash is sold for beneficial use and not disposed of in the onsite landfill. Estimated closure completion timelines are indicative of aggressive targets, and future risks or opportunities could cause these estimated timeframes to shift. The Company will continue to update project schedules as each project progresses.

**Figure 2. Georgia Power 10-year Environmental Compliance Strategy Schedule**

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**Table 1. Ash Pond Estimated Closure Construction Timeframes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Closure by Removal** | **Closure in Place** | **Total** | **Estimated Closure Construction Completion1** |
| **Bowen** |  | 1 | **1** | **2036** |
| **Branch** | 5 |  | **5** | **2041** |
| **Hammond** | 3 | 1 | **4** | **2034** |
| **Kraft** | 1 |  | **1** | **2016 A** |
| **McDonough** | 1 | 3 | **4** | **2026** |
| **McIntosh** | 1 |  | **1** | **2022 A** |
| **McManus** | 1 |  | **1** | **2020 A** |
| **Mitchell** | 3 |  | **3** | **2028** |
| **Scherer** |  | 1 | **1** | **2033** |
| **Wansley** | 1 |  | **1** | **2035** |
| **Yates** | 5 | 2 | **7** | **2028** |
| **Total** | 20 | 9 | **29** |  |

*1 For those sites with multiple ash ponds, the date above reflects the last pond’s estimated closure construction completion date for the site in total. The “Estimated Closure Construction Completion” date reflects the estimated end of closure construction and estimated completion of major restoration activities that may go beyond the submittal of the Closure Certification Report or the Certification of Removal Report.*

*A Denotes actual closure construction completion date.*

**Table 2. Landfill Estimated Closure Construction Timeframes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Existing CCR Landfills** | **Future, New Permitted Landfills** | **Total** | **Estimated Closure Construction Completion1** |
| **Arkwright** | 3 | 1 | **4** | **2032** |
| **Bowen** | 1 |  | **1** | **2040** |
| **Branch** |  | 1 | **1** | **2041** |
| **Hammond** | 1 |  | **1** | **2034** |
| **Kraft (Grumman Rd)** | 1 |  | **1** | **2024 A** |
| **McIntosh** | 2 |  | **2** | **20232** |
| **Scherer** | 1 |  | **1** | **2046** |
| **Wansley** | 1 |  | **1** | **2035** |
| **Yates** | 23 |  | **2** | **2025** |
| **Total** | 12 | 2 | **14** |  |

*1 For those sites with multiple landfills or landfill cells, the date above reflects the last cell’s estimated closure construction completion date for the site. The “Estimated Closure Construction Completion” date reflects the estimated end of closure construction and estimated completion of major restoration activities, which may go beyond the submittal of the Closure Certification Report*

*2 In 2023, a request was approved by the EPD to allow for the episodic disposal of CCR at Plant McIntosh.*

*3 Plant Yates Gypsum Landfill was released from its CCR permit on November 25, 2024.*

*A Denotes actual closure construction completion date.*

# 2.0 Regulatory and Strategy Updates

The Company routinely monitors and evaluates environmental legislation and regulation applicable to electric generating units as a part of the ECS process. This includes federal requirements stemming from the Clean Water Act (“CWA”), Resource Conservation and Recovery Act (“RCRA”), Clean Air Act (“CAA”), or other legislation, as well as relevant state rules and permitting requirements. These policy and regulatory reviews and the associated compliance strategy that results from the ECS process are categorized into water, CCR, and air topics in the following subsections.

## 2.1 Water Regulatory and Strategy Updates

The water compliance strategy considers a variety of regulations related to water quality and use, including both nationwide standards, as well as state requirements for the use and discharge of water. Based on currently available information, the strategy to meet water compliance requirements is summarized in **Table 3**. The areas of legislation, regulation, permitting, or other actions that set or are anticipated to set critical water compliance requirements are discussed below.

**Table 3. Cooling Type / Wastewater Treatment / ELG Technologies**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Unit** | **316(b)** | **Low Volume Waste**  **water** | **Bottom Ash** | **Fly Ash** | **Scrubber Wastewater (2020 ELG)** | **Scrubber Wastewater (2024 ELG)** | **Combustion Residual Leachate** |
| Bowen 1 & 21 | Flow Monitor | Phys-Chem | RMDC | Dry Handling | Phys-Chem-Bio | Membranes +Evaporator/  Crystallizer | Evaporator/  Crystallizer |
| Bowen 3 & 4 | Flow Monitor | Phys-Chem | RMDC | Dry Handling |
| Gaston 1 – 41,2 | Intake Screens | Phys-Chem/ Pond | RMDC | Dry Handling | N/A | N/A | N/A |
| McDonough 4 – 6 | Flow Monitor | N/A | N/A | N/A | N/A | N/A | N/A |
| McIntosh 10 & 11 | Flow Monitor | Pond | N/A | N/A | N/A | N/A | N/A |
| Scherer 1 & 2 | Flow Monitor | Phys-Chem | Ash Cooler | Dry Handling | Membranes | Membranes +Evaporator / Crystallizer | Evaporator/  Crystallizer |
| Scherer 31 | Flow Monitor | Phys-Chem | Ash Cooler | Dry Handling |
| Yates 6 & 7 | Flow Monitor | Pond | N/A | N/A | N/A | N/A | N/A |
| *1 Georgia Power is making a formal recommendation for the continued operations for Plant Bowen Units 1 and 2, as well as extending the operation of Plant Scherer Unit 3 and Plant Gaston Units 1 through 4 beyond the retirement dates approved in the 2022 IRP.*  *2 Note that ash handling systems for Gaston 1-4 are only required for limited operation on coal as a backup fuel.*  **Control Equipment Key:**  *Phys-chem = physical and chemical treatment*  *Bio =biological treatment*  *RMDC = Remote Mechanical Drag Chain* | | | | | | | | |

### 2.1.1 Waters of the United States (33 CFR 328 and 40 CFR 120)

The regulatory definition of “waters of the United States” (“WOTUS”) outlines the scope of waters federally regulated under the CWA. The definition affects all CWA programs that rely on this definition, including the NPDES permit program, the dredge-and-fill permit program, and oil spill prevention and response programs. Regulation regarding WOTUS is administered by the EPA and the U.S. Army Corp of Engineers (the “Corps” and together, “the Agencies”).

In August 2015, the Agencies issued a final rule redefining WOTUS to exert very broad jurisdiction over water features, including features that have not previously been regulated, such as ephemeral drainages and isolated ponds at industrial facilities. Then, in April 2020, the Agencies finalized the Navigable Waters Protection Rule (“NWPR”) to repeal the 2015 definition, effectively restoring the regulatory text that existed prior to the 2015 rulemaking.

In 2021, the Agencies, in response to court order, announced they halted implementation of the NWPR and were interpreting WOTUS consistent with the pre-2015 regulatory regime until further notice. The Agencies completed review of the NWPR under the Biden Administration’s Executive Order 13990 and determined the NWPR would be replaced. In December 2021, EPA proposed a rule revision intended to repeal the 2020 NWPR and to purportedly restore regulations defining “waters of the United States” that were in place prior to 2015 but with updates to be consistent with relevant Supreme Court decisions.

On January 18, 2023, EPA published the final updated WOTUS definition (“Phase I WOTUS”), which was challenged by multiple parties, including the State of Georgia, in several courts across the U.S. and stayed in 27 states, including Georgia. On May 25, 2023, the U.S. Supreme Court issued its decision in *Sackett v. EPA*, which effectively invalidated portions of the 2023 WOTUS rule that would have changed the way wetlands are defined and determined by the Corps. On September 8, 2023, the EPA and Corps published the final revised WOTUS rule, with the stated intent of aligning the definition of “WOTUS” under the CWA with the U.S. Supreme Court’s May 25th decision in *Sackett v. EPA*. The Agencies have indicated that they are “developing regionally-specific tools to facilitate implementation,” and emphasized that they have “a wide range of available approaches” to address remaining issues, including permitting actions, jurisdictional determinations, guidance, rulemakings, and agency forms and training materials. [[3]](#footnote-4) As a result of the existing injunctions in 27 states, the revisions do not yet apply in those states, including Georgia.

The Company continues to follow developments of regulatory definitions of WOTUS because of the potential impacts to CWA programs like the NPDES permitting program and programs regulating wetland and stream impacts for new development. The impacts of definitional changes to WOTUS can be significant due to potential stream and wetland mitigation costs, and schedule impacts for new generation and power delivery construction projects.

### 2.1.2 Cooling Water Intake Structures (40 CFR 122 and 125)

Section 316(b) of the CWA (“316(b)") requires that the location, design, construction, and capacity of any cooling water intake structure reflect Best Technology Available (“BTA”) to minimize adverse impacts from impingement and entrainment of fish, shellfish, and other aquatic organisms. In August 2014, EPA published a final 316(b) rule that established impingement mortality and entrainment requirements for existing power generating facilities and manufacturing and industrial facilities that are designed to withdraw more than 2 million gallons per day from WOTUS and use at least 25 percent of the water they withdraw exclusively for cooling purposes.

Facilities subject to the rule must comply with one of seven options identified for impingement mortality, which include modified traveling screens and closed-cycle recirculating cooling. For entrainment, the rule relies on the determination of BTA requirements by the permitting authority on a site-specific basis.

#### 2.1.2.1 316(b) Compliance Strategy

For purposes of 316(b) rule compliance, Plants Bowen, McDonough, McIntosh CC, Scherer, and Yates employ closed-cycle cooling, which EPD has determined complies with the impingement and entrainment BTA requirements of the 316(b) rule. As such, the only requirement EPD has or is expected to add to NPDES permits is the addition of intake flow monitoring equipment, where not already installed, or an alternative flow calculation method, to demonstrate effective operation as a closed-cycle cooling facility.

Plant Gaston’s strategy for 316(b) compliance includes intake screen modifications with a fish-friendly return system to reduce impingement and entrainment of aquatic species. The final 316(b) compliance strategy will be determined through the NPDES permit process by the Alabama Department of Environmental Management (“ADEM”). The timing of the installation is dependent on the permit issuance, with a current projected compliance date of 2027.

### 2.1.3 Steam Electric Effluent Limitations Guidelines (40 CFR 423)

The ELGs for steam electric power generating facilities establish technology-based effluent limitations for wastewater discharges. In November 2015, EPA updated the steam electric ELGs for the first time since 1982 (the “2015 Rule”), requiring compliance as soon as November 1, 2018, but no later than December 31, 2023, as determined by the NPDES permitting authority. Technology-based standards affecting coal ash management included a ZLD limit for bottom ash and fly ash transport water and new limits for direct discharges of “legacy wastewater,” which includes water remaining in ash ponds. The 2015 Rule also distinguished CRL (wastewater collected from lined landfills) from low volume wastewater and set mercury, arsenic, selenium, and nitrate-nitrite limits for scrubber wastewater. The rule established a VIP for scrubber wastewater providing a later compliance deadline of December 31, 2023, for plants able to meet more stringent scrubber wastewater limits based on advanced evaporation technology.

With pending legal challenges and petitions for reconsideration, in 2017, the then-EPA Administrator took actions that pushed out the earliest compliance dates, specifically for bottom ash transport water and scrubber wastewater, by two years to November 1, 2020, to provide time for EPA to reconsider the standards for those waste streams. In addition, in April 2019, the U.S. Court of Appeals for the Fifth Circuit vacated aspects of the 2015 Rule related to legacy wastewater and CRL, determining that EPA should have considered more advanced technology in setting the standards and requiring EPA to consider revising these portions of the rule.

In October 2020, EPA finalized revisions to the ELGs for steam electric power generating facilities (“ELG Reconsideration Rule”) for scrubber wastewater and bottom ash transport water, providing a two-year extension of compliance time frames to no later than December 31, 2025, for these waste streams. For bottom ash transport water, the rule established a case-by-case permitting mechanism to recognize that some systems may require a limited purge rate, rather than a blanket no discharge limit as established in the 2015 Rule. For scrubber wastewater, the ELG Reconsideration Rule established standards based on wastewater treatment technology consisting of a combination of chemical precipitation followed by biological treatment (also referred to as physical-chemical-biological treatment or “phys-chem-bio”). As compared to the 2015 Rule, the scrubber wastewater limits were slightly less stringent for arsenic and selenium and significantly more stringent for mercury and nitrate-nitrite.

The ELG Reconsideration Rule also revised or established subcategories with tailored limits and applicability dates. The revised VIP subcategory for scrubber wastewater provides until December 31, 2028, for plants to achieve more stringent ELGs for mercury, arsenic, selenium, nitrate-nitrite, bromide, and total dissolved solids based on membrane filtration. A new subcategory was established that provided a compliance exemption for EGUs that will permanently cease the combustion of coal (through retirement or repowering) no later than December 31, 2028. For the cessation of coal combustion subcategory and for the VIP subcategory, a Notice of Planned Participation (“NOPP”) was required to be submitted by the facility to the permitting authority by October 2021. Two other new subcategories, high scrubber flow plants and EGUs with capacity factors of less than 10%, do not apply to Georgia Power operations.

In 2020, the ELG Reconsideration Rule was challenged by environmental groups and consolidated in the U.S. Court of Appeals for the Fourth Circuit, with industry groups intervening in the case. In 2021, the court granted EPA’s motion to put the case on hold while EPA reviewed the ELG Reconsideration Rule. EPA announced in August 2021 that it would initiate a new rulemaking but stated that permitting authorities should continue to implement the ELG Reconsideration Rule requirements during the process.

On March 29, 2023, EPA published the proposed Supplemental ELG Rule, which proposed to set a more stringent ZLD requirement for scrubber wastewater with compliance required by December 31, 2029. EPA based the requirements on the implementation of membrane-based scrubber wastewater treatment technology and assumes that facilities can use the treated permeate as scrubber or boiler make-up water in order to achieve zero liquid discharge. The proposed rule also addressed new requirements for CRL based on physical-chemical treatment and legacy wastewater based on case-by-case determinations by the permitting authority. Under the proposal, the VIP option and cessation of coal combustion subcategories would remain unchanged. In the proposal, EPA stated that facilities should continue to pursue their 2020 ELG Reconsideration Rule compliance plans, despite the fact that the proposal represented a significant change from current requirements.

New Regulatory Updates

* On May 9, 2024, EPA published the final Supplemental ELG Rule, which is substantially similar to the 2023 proposal and includes the following key provisions:
  1. *ZLD requirement for scrubber wastewater, bottom ash transport water, and combustion residual leachate:* The Supplemental ELG Rule sets more stringent ZLD requirements with compliance required by no later than December 31, 2029. The VIP and cessation of coal combustion subcategories remain unchanged from the 2020 Rule. In the 2024 Rule, EPA also maintains the 2020 Rule scrubber wastewater requirements and the December 31, 2025 deadline for phys-chem-bio treatment to meet arsenic, mercury, selenium, and nitrate-nitrite limitations until the applicability dates of the new zero-discharge limitations are met (no later than December 31, 2029).
  2. *EGUs permanently ceasing coal combustion (“PCCC”) by 2034*: Facilities qualify for this subcategory by satisfying the 2020 Rule’s generally applicable limits for scrubber wastewater and bottom ash transport water and ceasing coal combustion (retire or repower) by December 31, 2034. This option requires filing a NOPP by December 31, 2025.
  3. *Discharges of unmanaged CRL:* EPA defined unmanaged CRL as, (1) discharges of CRL that the permitting authority determines are the Functional Equivalent Direct Discharge to a WOTUS through groundwater or (2) discharges of CRL that has leached from a waste management unit into the subsurface and mixed with groundwater before being captured and pumped to the surface for discharge directly to a WOTUS. The Supplemental ELG Rule establishes technology-based limitations for arsenic and mercury based on chemical precipitation by a date determined by the permitting authority that is as soon as possible beginning July 8, 2024, but no later than December 31, 2029.
  4. *Additional waste streams:* For legacy wastewater (ash pond dewatering), and CRL from previously retired facilities, EPA did not establish new technology-based limitations. For these waste streams, Georgia EPD, must establish site-specific technology-based limits using its Best Professional Judgment (“BPJ”).
  5. *NOPP Transfers:* The final rule retained the 2020 ELG Reconsideration Rule transfer provisions, which provide the flexibility to transfer between subcategories or to the 2020 VIP provisions until December 31, 2025.
  6. *Website requirements:* Similar to the CCR website requirements, the final rule also requires facilities to maintain an “ELG Rule Compliance Data and Information” website that makes available to the public all reporting and recordkeeping information. [[4]](#footnote-5)
* Numerous groups (including the Utility Water Action Group, “UWAG”), electric generators, and states filed petitions challenging the rule in multiple federal circuit courts, and, on June 14, 2024, the challenges were consolidated in the U.S. Court of Appeals for the Eighth Circuit. On July 26, 2024, UWAG, electric generators, and state petitioners filed a motion to stay the rule pending judicial review, which was denied on October 10, 2024. Full merits briefing will be completed on February 21, 2025, with oral argument to follow.

#### 2.1.3.1 ELG Compliance Strategy

The Company’s strategy for compliance with ELG requirements for fly ash and bottom ash waste streams necessarily considered the state and federal CCR rules, as well as ELG requirements. To meet the timing requirements for the CCR rules, fly ash and bottom ash handling projects were completed by 2019 to cease ongoing use of the ash ponds. For fly ash, projects included conversions to pneumatic (dry handling) systems that convey ash via vacuum/blowers to collection hoppers and silos for beneficial use or landfill disposal at Plants Bowen and Scherer. Compliance options to meet zero discharge of bottom ash included either an under-boiler or remote system. The technology decision for each site was primarily determined by space availability and headroom constraints under the boiler. The Company’s strategy for bottom ash transport water compliance was installation of “dry” handling Ash Coolers at Plant Scherer and “wet” remote mechanical drag chains (“RMDCs”) at Plant Bowen. In addition to ash management projects, the Company implemented changes and/or additions to low volume wastewater treatment systems at all affected sites to cease ongoing use of the ash ponds.

Compliance with the ELG Reconsideration Rule for scrubber wastewater is a site-specific effort that requires a tailored design for each facility’s water chemistry and water volume needs, as well as site-specific logistics and space availability. After evaluation of the different compliance pathways allowed by the ELG Reconsideration Rule, the Company filed NOPPs with Georgia EPD by the required October 13, 2021, deadline. These filings notified Georgia EPD of the Company’s intent to permanently cease coal combustion no later than December 31, 2028, for Plant Bowen Units 1 and 2, Plant Scherer Unit 3, and Plant Wansley Units 1 and 2; to pursue ELG compliance for Plant Scherer Units 1 and 2 through the VIP subcategory with a compliance deadline of December 31, 2028; and to comply with the generally applicable requirements for Plant Bowen Units 3 and 4 by December 31, 2025. For Plant Gaston Units 1-4, a NOPP was submitted to ADEM indicating the intent to permanently cease coal combustion through retirement by December 31, 2028. In the 2022 IRP, the Commission approved the retirements of Plant Wansley Units 1 and 2 in August 2022, and Plant Scherer Unit 3 and Plant Gaston Units 1-4 by December 31, 2028. The Commission deferred the decision for retirement of Plant Bowen Units 1 and 2 to the 2025 IRP.

In October 2023, the Company filed a 2023 IRP Update in response to extraordinary load growth and an accelerated capacity need beginning in the winter of 2025/2026 – a full three years earlier than projected in the 2022 IRP. With the continuing increase to the Company’s projected load forecast and the magnitude of capacity needs in 2028 and beyond, for planning purposes, the Company has assumed a retirement date at the end of 2035 for Plant Bowen Units 1-2. The Company also reviewed capacity needs in a scenario in which Plant Scherer Unit 3 and Plant Gaston Units 1-4 continue operating through 2035. The Company is making a formal recommendation in this 2025 IRP on the continued operations for Plant Bowen Units 1 and 2, as well as extending the operation of Plant Scherer 3 and Plant Gaston Units 1-4 beyond the previously approved retirement dates in 2028. While the Company’s proposed NOPPs for these units indicated the planned cessation of coal combustion by 2028, the GPSC’s decision-making related to the operation of these units will ultimately be a factor Georgia EPD and ADEM must consider. In addition, due to the site-specific water balances, the Company’s scrubber wastewater treatment strategy for Plants Bowen and Scherer provides the flexibility to include those units in the treatment systems that are currently under construction if Plant Bowen Units 1-2 and Plant Scherer Unit 3 continue to operate beyond 2028. Plant Gaston does not have scrubber wastewater. To meet 2020 Rule generally applicable limitations of zero discharge, Gaston plans to continue use of a RMDC system currently onsite but will require additional pipe installations.

The Company’s R&D and testing of water treatment technologies, as further discussed in [Appendix C](#_ECS_-_Appendix), has included phys-chem-bio treatment systems, as well as membrane-based treatment systems. Based on this research and testing, the Company selected a phys-chem-bio treatment system for Plant Bowen Units 3 and 4 to be in commercial operation by December 31, 2025. If the GPSC approves the Company’s plan for the continued operation of Plant Bowen Units 1 and 2 beyond 2028, scrubber wastewater from those units will use the same treatment system currently under construction for Plant Bowen Units 3 and 4. Based on plant-specific equipment and operational characteristics, the Company has selected a membrane-based technology system to meet the VIP compliance subcategory requirements for Plant Scherer Units 1 and 2 by December 31, 2028. Similarly, if the GPSC approves the Company’s plan for the continued operation of Plant Scherer Unit 3 beyond 2028, the scrubber wastewater will be treated with the other units. The site-specific water quality and quantity characteristics at Plant Scherer are a unique technical fit for the VIP pathway, allowing the membrane technology to be cost competitive.

As required by EPA in the 2020 Reconsideration Rule that remains in effect, the Company continues to pursue the procurement and construction of the scrubber wastewater projects described above for Plant Bowen and Plant Scherer to meet the respective December 31, 2025, and December 31, 2028, deadlines. However, the requirements of the final 2024 Supplemental ELG Rule creates additional treatment needs for Plant Bowen. The Company has worked diligently to analyze compliance with the rule as part of its technical and economic process in the 2025 IRP. For Plant Bowen, two alternatives have been identified as potentially feasible. First, the Company previously analyzed a membrane-evaporator-crystallizer system when the 2024 Rule was proposed and provided comments to EPA on the technical and economic challenges of implementation. Despite these challenges, the membrane-evaporator-crystallizer system (among others) was established by EPA in the 2024 Rule as the technology basis for the ZLD limit. The Company has included control assumptions and costs related to installation of a membrane-evaporator-crystallizer treatment system in this ECS and 2025 IRP. Second, the Company is investigating and considering an evaporator-only system that would exclude the membrane system from the previous option. Should the evaporator-only treatment system show appropriate technical viability and costs compared to the membrane-evaporator-crystallizer system, the Company will pursue the evaporator-only system. The benefits of this dual-path evaluation include the ability to perform further technical feasibility analysis, adjust to future regulatory changes, and provides the flexibility to install the best technology for the plant-specific scrubber wastewater volumes and characteristics.

In addition, the final rule requires ZLD of CRL at operational coal-fired facilities, which is significantly more stringent than the physical-chemical treatment-based limits EPA indicated in the proposed rule. Due to this departure from what was proposed, the Company has been limited in its ability to analyze ZLD options for CRL. Currently, the Company’s plan for leachate treatment at the operational coal-fired facilities, Plant Bowen and Plant Scherer, is based on an evaporative process and estimated costs are only at a prescreening level of certainty. For facilities that have previously retired coal-fired generation, the rule requires the permitting authority (Georgia EPD) to establish site-specific technology-based limits using BPJ. CRL treatment systems based on physical-chemical treatment are assumed for CCR landfills at retired facilities with costs reflected in the Company’s CCR-ARO. Similarly, for legacy wastewater produced during ash pond closure activities, the Company’s plans already include treating all contact water under dewatering plans approved by the EPD, as discussed further in Section 2.2. The Supplemental ELG Rule’s requirement for case-by-case technology-based effluent limitations established by the permitting authority requires further review and potential permitting actions. However, the existing treatment technology assumptions and associated costs are being maintained for planning purposes.

As noted with other regulations in this ECS, the Supplemental ELG Rule is currently in active litigation with opening briefs filed in November 2024. The final outcome of the case is still pending, meaning the Company must continue its plan to achieve compliance with the ELG Supplemental Rule while staying on track to complete systems to meet the 2025 and 2028 deadlines of the 2020 Reconsideration Rule, and stay flexible for various legal outcomes, including the suspension of some or all ELG Supplemental rule requirements. The Company will continue to assess compliance obligations as these progress.

## 2.2 Coal Combustion Residuals Regulatory and Strategy Updates

The CCR ECS (as approved in the 2019 and 2022 IRP proceedings, Docket Nos. 42310 and 44160, respectively) focuses on federal and state regulations related to ash pond closures and CCR management, as summarized in **Table 4**. Per the 2022 IRP Final Order, any determination by the EPD causing a change in closure strategy for ash ponds closing in place requires the Company to notify the GPSC within 30 days of such determination. The areas of legislation, regulation, permitting, or other actions that set or are anticipated to set critical CCR compliance requirements are discussed below.

**Table 4. Georgia Power’s Ash Ponds and Existing CCR Landfills**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ash Pond Closure Method** | | | **Existing CCR Landfills** |
|  | **Closure by Removal** | **Closure in**  **Place** | **Total** |
| **Arkwright** |  |  |  | **3** |
| **Bowen** |  | 1 | **1** | **1** |
| **Branch** | 5 |  | **5** |  |
| **Hammond** | 3 | 1 | **4** | **1** |
| **Kraft** | 1 |  | **1** |  |
| **Kraft (Grumman Road)** |  |  |  | **1** |
| **McDonough** | 1 | 3 | **4** |  |
| **McIntosh** | 1 |  | **1** | **2** |
| **McManus** | 1 |  | **1** |  |
| **Mitchell** | 3 |  | **3** |  |
| **Scherer** |  | 1 | **1** | **1** |
| **Wansley** | 1 |  | **1** | **1** |
| **Yates** | 4 | 3 | **7** | **2** |
| **Total** | 20 | 9 | **29** | **12** |

### 2.2.1 Federal CCR Rule Revisions (40 CFR 257)

Ash ponds were designed, installed, and operated to function as a treatment system for power plant wastewaters under the NPDES permit program, and effectively served as the industry standard for such treatment for decades. Regulation of ash ponds and CCR changed in April 2015, when EPA published the Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities final rule, (“Federal CCR Rule”), that provided a comprehensive set of requirements for the disposal of CCR as a solid waste under RCRA. Through this rulemaking and based on extensive studies, EPA confirmed decades of previous Agency determinations that coal ash should be regulated as non-hazardous waste. The Federal CCR Rule was issued as a “self-implementing” rule that set national minimum standards for management of coal ash and gypsum.

The 2015 Federal CCR Rule set standards for certain CCR units and provided exemptions for others. Those CCR units subject to the Federal CCR Rule include the following: new and existing CCR landfills and surface impoundments (ash ponds), including any lateral expansions of such units, and inactive surface impoundments located at active electric generating facilities. The Federal CCR Rule included exemptions from all or portions of the requirements for various units or activities, including CCR landfills that ceased receiving CCR prior to October 19, 2015; practices that meet the definition of a beneficial use of CCR; municipal solid waste landfills that receive CCR; inactive surface impoundments that closed within three years (the “three-year closure” exemption); and CCR units located at sites that ceased generating electricity, regardless of the fuel type, as of October 19, 2015.

For regulated units, the Federal CCR Rule established a comprehensive set of compliance requirements related to location and siting criteria, design and operating criteria, groundwater monitoring and corrective action requirements, structural integrity requirements, closure and post-closure care requirements, a range of reporting and recordkeeping requirements, and posting of information to a publicly available CCR website. Failure to demonstrate compliance with certain criteria by specified deadlines resulted in required closure of the CCR unit, with specific requirements around closure timeframes and methods. The Federal CCR Rule explicitly authorized both closure in place and closure by removal as options, with each option subject to its own set of closure performance criteria. The rule allowed for extensions for surface impoundments to continue to receive CCR for a limited amount of time if alternative options are not available without the existence of that CCR unit.

Since the original publication of the Federal CCR Rule, there have been several developments related to litigation, administration policy changes, or legislative actions that amended the requirements or changed how the rule is enforced, as discussed below.

Federal CCR Rule Revisions: 2015 Litigation and 2016 Settlement Agreement

In December 2015, several parties, including industry and environmental groups filed legal challenges to the Federal CCR Rule. In June 2016, the D.C. Circuit Court approved a settlement addressing several, but not all, issues that were raised in the CCR litigation. As part of the settlement, the court vacated the three-year closure exemption for inactive surface impoundments, and EPA agreed to finalize rulemaking to address a number of technical issues. For the three-year closure exemption, in August 2016, EPA finalized a roughly 1.5-year extension of certain compliance dates for ash ponds that were to close within three years under the 2015 Federal CCR Rule.

Federal CCR Rule Revisions: 2017 Petition for Reconsideration, Phase One and Two Amendments

In September 2017, EPA granted a Petition for Reconsideration of the Federal CCR Rule filed by the Utility Solid Waste Activities Group (“USWAG”), an industry group of which Georgia Power is a member. In November 2017, EPA outlined a phased approach to amending the Federal CCR Rule, with intent to cover numerous technical requirements with a Phase One and Phase Two rulemaking schedule, and subsequently issued both Phase One and Phase Two proposed rulemakings.

While the proposed Phase One Rule covered numerous technical requirements, only a subset of these provisions was finalized in July 2018 with Part One of the Phase One Amendments to the Federal CCR Rule (“Phase One, Part One Rule”). The Phase One, Part One Rule established groundwater protection standards for lithium, molybdenum, cobalt, and lead and extended the deadline to cease receipt of both CCR and non-CCR wastes to October 31, 2020, under certain conditions. As a result of litigation, in March 2019, the D.C. Circuit granted EPA’s request to voluntarily review and revise the rule, but it left the rule requirements in place in the meantime.

In August 2019, the EPA published the Phase Two proposed amendments, which address criteria relating to beneficial use practices, proposes a potential boron groundwater protection standard, and requires groundwater data and annual reports to be more accessible and transparent to the public. In December 2020, the EPA sought additional comment related to these proposed amendments, especially on beneficial use processes, but has not yet taken final action.

Federal CCR Rule Revisions: 2018 Litigation, Part A and Part B Rulemakings

In August 2018, the U.S. Court of Appeals for the D.C. Circuit issued a decision that: (1) vacates an exemption from the Federal CCR Rule for inactive surface impoundments at inactive power plants; (2) requires all unlined CCR surface impoundments to close, irrespective of whether the impoundments are meeting the rule’s groundwater protection standards; and (3) vacates a provision that classified certain clay-lined impoundments as “lined,” meaning that all clay-lined impoundments are considered unlined and must close. As a result of the court decision, EPA was required to revisit certain elements of the Federal CCR Rule.

After the D.C. Circuit decision, EPA proposed two separate rulemakings to address certain issues, one titled “A Holistic Approach to Closure Part A: Deadline to Initiate Closure” (“Part A Rule”) and the other titled “Holistic Approach to Closure Part B; Alternate Demonstration for Unlined Surface Impoundments; Implementation of Closure” (“Part B Rule”). In August 2020, EPA finalized the Part A Rule, which incorporated a new deadline for unlined impoundments to cease receipt of waste and initiate closure no later than April 11, 2021; extended the existing alternative closure extensions to include CCR and non-CCR waste streams; added requirements for the publicly accessible CCR website; and changed the classification of compacted-soil lined, or “clay-lined,” surface impoundments to “unlined.” In November 2020, EPA finalized a portion of the proposed Part B Rule, providing a pathway for owners/operators to demonstrate that alternative liner systems, such as natural clay, perform as well as or better than the composite liner systems required by the CCR rule.

Federal Part A Rule and Part B Rule Determinations

In January 2022, EPA issued proposed determinations for multiple facilities across the industry in response to compliance extension requests to allow continued use of facility specific ash ponds under the Part A Rule. In EPA’s review of Part A applications, EPA expressed new positions on various aspects of the Federal CCR Rule compliance requirements. These positions include:

* Closure plans did not adequately demonstrate how CCR units would meet closure performance standards when the unit is to be closed in contact with groundwater or to be closed without preventing the horizontal infiltration of liquids;
* Flaws in groundwater monitoring systems including well placement, number of wells, improper characterization of background, and monitoring multi-units;
* Inadequate alternate source demonstrations;
* Timing of remedy selection for CCR units that are in corrective action is inadequate;
* Qualified Professional Engineer certifications; and
* Beneficial use of CCR to close units.

Georgia Power did not apply for a Part A extension as the Company had initiated closure by 2019. In April 2022, USWAG and a group of utilities filed petitions for review in the D.C. Circuit Court of Appeals, challenging EPA’s January 2022 actions. The primary basis of the challenge was whether EPA’s actions are new “legislative” rules that should have been subject to notice-and-comment rulemaking. Throughout 2022 and 2023, EPA continued to issue Part A determinations related to facilities outside of Georgia.

In February 2023, EPA issued proposed denials for all of the Part B Rule applicants (Georgia did not apply for Part B extension) that were demonstrating their alternative liners would ensure the protection of human health and the environment to be able to continue to use the CCR unit, along with a press release announcing their decisions. EPA proposed to deny six of the demonstrations and issue one letter finding that a facility’s demonstration was insufficient to show that its liners meet the criteria for an alternative composite liner. EPA’s letter describes alleged compliance issues and notes that the facility is no longer eligible for utilizing the schedule under the Part B rule for continued usage of the pond. EPA’s reasoning for denying all Part B applications include inadequate groundwater monitoring networks, insufficient alternate source demonstrations, inadequate documentation for the design and performance of the impoundment liners, and failure to meet all location restrictions.

National Enforcement and Compliance Initiatives

In August 2023, EPA added CCR enforcement to its National Enforcement and Compliance Initiatives (NECI) for the next four fiscal years (October 2023 to September 2027). EPA indicated it will focus on “conducting investigations, particularly at coal ash facilities impacting vulnerable or overburdened communities; taking enforcement action at coal ash facilities that are violating the law; and protecting and cleaning up contaminated groundwater, surface water, and drinking water resources.”[[5]](#footnote-6) In 2023, EPA began developing a number of enforcement cases across EPA regions, seven of which have been resolved through settlement, including one in Region 4. To date, no facilities in Georgia have been the subject of EPA enforcement.

Federal CCR Rule Revisions: Legacy Surface Impoundments

In October 2020, EPA published an advanced notice of proposed rulemaking on legacy surface impoundments, or inactive surface impoundments at retired electricity generation facilities. This notice solicited data and information on the status and number of legacy impoundments. EPA stated that a future proposed rule may include a new definition for legacy surface impoundments and may propose requiring such impoundments to follow existing regulatory requirements for fugitive dust, groundwater monitoring, closure, and other technical requirements.

New Regulatory Updates

* On May 8, 2024, EPA published the final CCR Legacy Rule, with an effective date of November 8, 2024, which establishes two new categories of federally regulated CCR units: legacy surface impoundments and CCRMU.
* Legacy surface impoundments are surface impoundments that no longer receives CCR but contained both CCR and liquids on or after October 19, 2015, and still contains both CCR and liquids on or after October 19, 2015.
* CCRMU means an area of land in which any noncontainerized accumulation of CCR is received, placed, or otherwise managed, that is not a regulated CCR unit. This does not include roadbed and associated embankments in which CCR is used unless it is determined that the roadbed is causing or contributing to groundwater impacts.
* The final CCR Legacy Rule:
  + Requires designation of legacy surface impoundments through applicability reports by November 8, 2024.
  + Requires owners of an active facility or inactive facility with one or more legacy surface impoundment to initiate a two-step facility evaluation process to identify all CCRMUs at the facility. The Part 1 report is due in 2026 and will include evaluations of historical and current documents, desktop studies, and a site evaluation plan to identify data gaps. The Part 2 report is due in 2027 and will include any information from the physical site evaluation as well as identify potential CCRMUs to be regulated.
  + Requires legacy surface impoundments and CCRMUs to meet certain existing regulatory requirements, including a requirement to initiate closure by 2028 for legacy surface impoundments and by 2029 for CCRMUs.
  + Provides the option to defer closure of previously closed units where certain criteria have been met.
  + Finalized an alternative provision for closure by removal that will allow owners or operators to certify completion of closure while conducting groundwater monitoring and corrective action during post-closure care.
  + Created new definitions for key terms related to the performance standards for ash ponds that are closed in place. These new definitions for infiltration and liquids primarily reflect the EPA’s new interpretations of these standards, first announced in January 2022. They indicate that both lateral and vertical infiltration must be minimized to the greatest extent practicable. Additionally, the longstanding practice of dewatering has been expanded to include groundwater, not only the free water necessary for achieving stability during the installation of effective closure capping. The retroactive applicability of these definitions is being legally challenged.
* Multiple petitions for review challenging the CCR Legacy Rule were filed, and on August 9, 2024, the petitions were consolidated into one case in the U.S. Court of Appeals for the D.C. Circuit. Petitioners include industry trade associations (including USWAG), a coalition of states, and electric generators. On August 19, 2024, Petitioner East Kentucky Power Cooperative (“EKPC”) filed a motion seeking to stay the CCR Legacy Rule pending judicial review. On November 1, 2024, the D.C. Circuit denied the stay motion. Merits briefing will begin on January 31, 2025, and conclude in June 2025 with oral argument to follow.
* EKPC filed emergency stay application with the U.S. Supreme Court which was denied by the court on December 11, 2024.
* On June 28, 2024, the U.S. Court of Appeals for the D.C. Circuit rendered a decision dismissing industry challenges to the EPA's actions and interpretations dated January 11, 2022, concerning the closure performance standards outlined in the 2015 CCR Rule.
* On Friday, November 8, 2024, the EPA published the Technical Corrections Rule for the Legacy Surface Impoundments Rule, addressing errors in the regulatory text.

State Coal Combustion Residuals Rule (391-3-4-.10) (“Georgia CCR Rule”)

In October 2016, the Georgia Department of Natural Resources (“DNR”) Board adopted amendments to Georgia’s Rules for Solid Waste Management pertaining to the storage and disposal of CCR. At the time, the Georgia CCR Rule acted in addition to, rather than a replacement of, the Federal CCR Rule. Under the state’s authority, the Georgia CCR Rule regulated all CCR ash ponds and landfills, regardless of operational status, making it more stringent than the federal rule at the time. The Georgia CCR Rule requires site-specific permits detailing design, operations, closure, groundwater monitoring, inspections, and post closure care with oversight and enforcement by Georgia EPD. All existing CCR units, including ash ponds and landfills previously closed, were required to submit a CCR permit application to Georgia EPD by November 22, 2018. The permitting process includes review of the Company’s plans, engineering design, public notice, and public comment. Georgia EPD updated the state CCR Rule in March 2018 and again in February 2022 to align with relevant Federal CCR Rule revisions.

Water Infrastructure Improvements for the Nation Act (WIIN Act, Section 2301)

In December 2016, the Water Infrastructure Improvements for the Nation Act (“WIIN Act”) was approved by the U.S. Congress, including a section that amends a portion of RCRA to allow states to submit their CCR permit programs for EPA approval and subsequent periodic review based on various defined triggers. An EPA-approved state permit program provides more regulatory certainty and reduces the burden of overlapping regulations since it would authorize states to enforce state regulations for CCR units and operate a permitting program in lieu of the federal rule. In March 2017, Georgia EPD submitted Georgia’s CCR Rule for EPA’s review and approval as a “partial” permit program, meaning that Georgia EPD did not seek approval of certain elements of the Federal CCR Rule.

In June 2019, Georgia received notice from EPA that their application was complete, officially initiating the 180-day review and approval process. In January 2020, EPA finalized a partial approval of Georgia’s CCR permit program, the second of only three state approvals to-date. Georgia’s program was partially approved because the Georgia Rules for Solid Waste Management (i.e., Georgia CCR Rule) did not include provisions to cover the applicability of requirements for endangered species. Georgia’s partial program approval allows the Georgia EPD to enforce rules promulgated under its solid waste statute related to CCR activities, as well as to issue permits and to enforce compliance.

In February 2020, EPA issued a proposed rule to establish a Federal CCR Permit Program for states that are not actively pursuing their own state CCR permit program for approval and to cover specific rules sections that are not included in state programs with partial approval.

The finalization of the CCR Legacy Rule subjects legacy units to duplicative requirements and oversight by both the state and federal agencies. RCRA allows a state to update its program within three years of any applicable revision to the Federal CCR Rule in order to maintain approval. Until this approval, the Georgia CCR Rule will continue to operate in lieu of the portions of the federal program adopted by the state in 2020 in addition to the new regulations that are in effect.

New Regulatory Updates

* According to the 2024 Spring Unified Agenda, EPA was expected to finalize the Federal CCR Permit Program in October 2024. Because Georgia EPD did not incorporate the endangered species review requirements in the Georgia CCR Rule and with the issuance of the 2024 CCR Legacy Rule, when finalized, the Federal CCR Permit Program may apply in Georgia for these items.

#### 2.2.1.1 CCR Compliance Strategy

Georgia Power’s ash pond closure plans and CCR unit compliance strategy are designed to comply with both the Federal CCR Rule and the Georgia CCR Rule. The Company ceased placement of coal ash in all ash ponds in 2019, and the CCR units are in various stages of operation, construction, and closure. Under the requirement in both the federal and state rules to maintain a publicly available website of CCR compliance documents and data, the Company website includes detailed information for each CCR unit, such as permit documents, dewatering plans, groundwater monitoring data, and more. [[6]](#footnote-7) Under EPA’s new CCR Legacy Rule, certain CCR units currently subject to the state rule would also become subject to the federal rule, see **Table 5**. While these units are now subject to federal regulation, the closure plans are not changing due to the state rule’s comprehensive nature to regulate all CCR units. This duplicative regulation would persist until Georgia seeks and EPA approves incorporation of the CCR Legacy Rule into the Georgia CCR Rule through the WIIN Act process. The CCR Legacy Rule requires completion of Applicability Reports for all legacy surface impoundments and commencement of compliance obligations such as physical inspections, fugitive dust reporting, installation of signage, etc. starting on the November 8, 2024, effective date of the rule. Other ongoing activities include facility evaluations with associated reporting in 2026, to identify the presence of CCRMUs that will also be subject to the CCR requirements. The CCR Legacy Rule also created new definitions related to performance standards. The Company is working with Georgia EPD, through extensive permitting efforts, to evaluate applicability to its closure plans. These new definitions for infiltration and liquids primarily reflect the EPA’s new interpretations of these standards, first announced in January 2022. They indicate that both lateral and vertical “infiltration” must be minimized to the greatest extent practicable. Additionally, the longstanding practice of dewatering (removing the water necessary for achieving stability during the installation of effective closure capping) has now been expanded to include groundwater. The retroactive applicability of these definitions is one of the subjects of the legal challenge of the rule.

**Table 5. Georgia Power’s Legacy Surface Impoundment Applicability Reports Filed November 2024**

|  |  |  |
| --- | --- | --- |
|  | Legacy Surface Impoundments | Notes |
| **Arkwright** | **2** | Two of the three CCR units at Arkwright are classified as legacy surface impoundments. These units were previously closed as landfills and are identified as such in Georgia. |
| **Branch** | **5** | All of the CCR units at Branch are classified as legacy surface impoundments. |
| **Kraft** | **1** | Kraft AP-1 is classified as a legacy surface impoundment. The parcel containing AP-1 is owned by Georgia Ports Authority but operated by Georgia Power for purposes of the Legacy Impoundment rule. |
| **Mitchell** | **2** | Two of the three CCR units at Mitchell are classified as legacy surface impoundments. |
| **Total** | **10** |  |

Ash Pond and Landfill Closure Strategy

Georgia Power’s site-specific CCR closure strategies for 29 ash ponds and 12 existing CCR landfills at 12 sites across the state are shown in **Table 6**. The closure plans are based on detailed site-specific designs performed by third party professional engineers with expertise in solid waste permitting and design. The site-specific plans consider various important factors, including the size and volume of each CCR unit, local geology and topography, detailed modeling of site stability, the availability of on-site or off-site landfill space, safety requirements, the compliance deadline, and other site-specific constraints.

**Table 6. Georgia Power CCR Unit Closure Strategies**

| **Facility** | **Landfills** | **Ash Ponds** | **Closure Strategy** |
| --- | --- | --- | --- |
| Arkwright | AP-1 Landfill, AP-2 DAS Landfill, AP-3/Monofill Landfill |  | The existing landfills were closed in 2010 under Solid Waste Regulations applicable at the time. Under the Georgia CCR Rule, the existing landfills will be closed by removal. The ash from Plant Arkwright will be trucked to the permitted landfill at Plant Branch to be screened for marketable ash and processed through the Plant Branch beneficial use facility. |
| Future LF |  | The future permitted onsite landfill has been removed from the current strategy and budget in lieu of beneficial use and off-site disposal at Plant Branch. |
| Bowen |  | AP-1 | AP-1 is being closed in place by excavating and consolidating CCR into a fully contained engineered structure (composite-lined and final-covered area). Additionally, a large portion of the ash is contracted to be processed for beneficial use. |
| LF |  | The permitted landfill is to remain active as part of ongoing plant operations and will also support ash pond closure. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed. This ECS includes construction of new landfill cells at Plant Bowen to support continued plant operations. |
| Branch |  | AP-A | AP-A was closed by removal and consolidated within AP-E before the Georgia CCR Rule became effective. |
|  | AP-B, C, D, E | AP-B, C, D, & E will be closed by removal to a future permitted on-site landfill. Additionally, a large portion of the ash is contracted to be processed for beneficial use. |
| Future LF |  | The permitted landfill is under construction and will support ash pond closures. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed. |
| Hammond |  | AP-1, AP-2 | AP-1 and AP-2 are being closed by removal to a Company-owned off-site permitted landfill (Huffaker Road). |
|  | AP-3 | AP-3 has been closed in place with an engineered impermeable cap-cover system. Consistent with the post-closure plan, a TreeWell® system has been installed, in accordance with the CCR permit conditions, outside and downgradient of the CCR footprint. |
|  | AP-4 | AP-4 will be closed by removal to a Company-owned off-site permitted landfill (Huffaker Road). |
| Huffaker Rd |  | The permitted landfill will be expanded and then closed when permitted capacity is reached or when CCR disposal is no longer needed. |
| Kraft |  | AP-1 | AP-1 was closed by removal to offsite permitted landfills prior to the Georgia CCR Rule. The removal was part of an expanded plant retirement project and was regulated by Georgia EPD’s Response and Remediation Program. The parcel containing AP-1 is owned by Georgia Ports Authority but operated by Georgia Power for purposes of the Legacy Impoundment Rule. |
| Grumman Rd |  | The landfill was closed in accordance with its current landfill permit requirements. Permitting for closure under the Georgia CCR regulations is ongoing. |
| McDonough |  | AP-1 | AP-1 was largely closed in place with installation of a geosynthetic cap cover system in 2017, consistent with the closure plans, the installation of a fully encompassing barrier wall is planned following final design approval through permit issuance. |
|  | AP-2 | AP-2 has been removed and the CCR consolidated with AP-1, AP-3, and AP-4. |
| McDonough |  | AP-3 & AP-4 | AP-3 and AP-4 are being consolidated and closed in place with an engineered impermeable cap-cover system. Consistent with closure plans, closure construction includes an underslope drainage system and the continued interim use of pumping wells. |
| McIntosh |  | AP-1 | AP-1 has been closed by removal with CCR placed in a permitted on-site landfill. |
| LF3 |  | The landfill was closed in accordance with the landfill permit in 2008. |
| LF4 |  | The permitted landfill is permitted to receive CCR as needed. The landfill will undergo final closure when CCR disposal is no longer needed. |
| McManus |  | AP-1 | AP-1 has been closed by removal with CCR placed in an off-site permitted landfill. |
| Mitchell |  | AP-A, 1, 2 | AP-A, 1, and 2 are being closed by removal with CCR transported offsite for beneficial use, with ash that does not meet beneficial use specifications placed in an off-site permitted landfill. |
| Scherer |  | AP-1 | AP-1 will be closed in place with an engineered impermeable cap-cover system. Consistent with the closure plans, the planned closure construction includes consolidation of the current ash pond footprint, with extension of the final cover system over non-CCR containing areas to minimize stormwater infiltration. |
| LF |  | The permitted landfill to remain active as part of ongoing plant operations. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed.  This ECS includes development of a new landfill cell to support continued plant operations. |
| Wansley |  | AP-1 | AP-1 will be closed by removal with CCR placed in a permitted on-site landfill. |
| LF |  | The permitted landfill will be expanded and then closed when permitted capacity is reached or when CCR disposal is no longer needed. |
| Yates |  | AP-1 | CCR from AP-1 was removed from the ash pond and consolidated to R6, AP-B’ and AP-3. |
|  | AP-2 | AP-2 was closed by removal to AP-B’ and AP-3. |
|  | AP-3, B’ | AP-3 and AP-B’ are being consolidated and will be closed in place with an engineered impermeable cap-cover system. Consistent with the closure plans, a subsurface hydraulic conveyance system has been installed as part of the closure. |
|  | AP-A | AP-A was closed by removal to AP-B’ and AP-3. |
|  | AP-B | AP-B is being closed by removal to AP-B’ and AP-3. |
|  | AP-C | AP-C was previously incorporated into the on-site permitted landfill, R6. |
| LF R6 |  | The landfill is being closed in accordance with its current landfill permit requirements. |
| LF Gypsum |  | The gypsum landfill has been closed by removal. Georgia EPD accepted the Plant Yates Gypsum Landfill Decontamination Demonstration/ Certification and released the unit from the CCR Permit. |

In November 2018, Georgia Power submitted 29 CCR permit applications as required by the Georgia CCR Rule for all existing ash ponds and CCR landfills. These permit applications outlined detailed engineering information about Georgia Power’s ash pond closure and landfill operations plans and were developed with significant internal resources supported by multiple third-party engineering firms and licensed professional engineers and geologists. As part of the permitting process, Georgia EPD reviews and provides comments to Georgia Power on the site-specific details of the individual permit applications. The Company took steps to address Georgia EPD’s comments, which included working with third-party engineering firms to update groundwater monitoring plans, revise permit documents, and update closure drawings and engineering calculations. However, while Georgia EPD required the Company to update its permit applications and plans, final permits have been largely consistent with permit applications and did not significantly change the Company’s closure plans.

To date, Georgia EPD has issued a total of 17 final permits, including two closure-in-place permits, eight closure-by-removal permits, and seven landfill permits. In November 2023, more than two years after the draft permit was issued and following numerous discussions between Georgia EPD and EPA, Georgia EPD issued a final permit for Hammond AP-3, a closure-in-place unit. The Georgia EPD has not issued any additional final permits since 2023. Early in 2024, EPA sent Georgia EPD a letter questioning the issuance of the final permit for Hammond AP-3 and requesting continued communication on permit issuances. Georgia EPD responded to EPA with information defending the permitting action. The EPA's engagement in the permitting process and revised interpretations, years after the original rule was established, hinder Georgia EPD’s progress in issuing permits. For example, in July 2024, EPA provided comments on the draft Wansley AP-1 closure-by-removal permit questioning the efficacy of the well network and ultimate issuance of the draft permit. Discussions on Georgia’s CCR program are expected to continue into 2025, regarding EPA’s positions first expressed in the January 2022 determinations for facilities outside of Georgia and in subsequent actions related to closure performance standards, groundwater monitoring, and corrective action. With additional developments expected in 2025 related to a CCR federal permit program, CCR Legacy Rule compliance, litigation, and other EPA actions, Georgia Power remains committed to working with Georgia EPD on the issuance of the remaining CCR permits, as required by the Georgia CCR Rule.

Regardless of the timing of permit issuance, in order to advance ash pond closures and meet the closure deadlines associated with the Federal CCR Rule, Georgia CCR Rule, or agreement with the Georgia EPD, the Company must continue to proceed with work, including groundwater monitoring, detailed engineering designs, construction activities, as well as develop and implement site-specific and comprehensive ash pond dewatering processes. In certain instances, specific portions of the closure plans are pending Georgia EPD review and input through the permitting process in order to finalize designs and/or implementation. At McDonough AP-1, while the closure is substantially complete in accordance with CCR Rule requirements and deadlines, Georgia EPD review of the design of the fully encompassing barrier wall is ongoing. Therefore, recognizing these factors are beyond the Company’s control, Georgia EPD used the consent order process to provide additional time to complete the closure while finalizing permitting. In December 2022, the Company entered into a consent agreement with Georgia EPD to extend the closure timeline for McDonough AP-1, and in December 2023, Georgia EPD approved of the milestone schedule submitted by the Company in fulfillment of the consent order requirements.

The Company has provided landfill and ash pond closure certifications and/or ash removal certifications to Georgia EPD for certain CCR Units at Plants Hammond, McDonough, McManus, McIntosh, and Yates. These certifications document important information regarding the closure activities, quality control information, and verification of compliance with the CCR rules. Georgia EPD has issued acknowledgement letters for completion of CCR removal for certain CCR Units at Plants McManus, McDonough, McIntosh, and Yates, demonstrating the Company’s compliance with the Georgia CCR Rule’s closure requirements as well as Georgia EPD’s active oversight regardless of final permit status. Additionally in late 2024, Georgia EPD released the Company from its solid waste handling permit at Plant Yates Gypsum Landfill designating the former CCR Landfill as closed.

The purpose of the Company’s CCR compliance strategy process is to produce cost-effective compliance solutions that will minimize the impact to customers while achieving environmental objectives and ensuring compliance with all requirements. The multiple ongoing judicial reviews of CCR regulations introduce a significant degree of uncertainty regarding future regulatory requirements. This uncertainty complicates long-term planning, as legal interpretations and regulatory standards may shift based on court rulings. The Company remains vigilant in monitoring these developments, understanding that the outcomes may impact compliance strategies. While uncertainty around EPA’s interpretation of the Federal CCR Rule requirements continues, the Company remains focused on compliance and will continue to work with the Georgia EPD to ensure safe and effective closure of all ash ponds. The Company’s closure plans are safe and protective of human health and the environment. In compliance with the regulatory requirements, the closures will continue to be monitored throughout closure and for years into the future.

Dewatering and Water Treatment

The Company’s dewatering process during ash pond closures involves treating all ash contact water to meet the requirements of each plant’s wastewater permit, as well as the associated dewatering plans approved by Georgia EPD, to ensure compliance with water quality standards. The dewatering activities occur under the direction of independent, third-party licensed wastewater treatment plant operators throughout the duration of each closure project. Water quality monitoring data is reported monthly to Georgia EPD, and a monthly summary is also placed on Georgia Power’s external website. In some cases, water treatment may continue into the post-closure care (“PCC”) period to manage ongoing water treatment requirements. This support will continue until the needs of the sites are addressed. In addition, the Company has engaged independent, third-party contractors for weekly effluent and bi-monthly receiving stream sampling throughout dewatering. Samples collected by independent contractors are analyzed by accredited independent laboratories.

The dewatering process is dynamic and complex. The treatment system demands are often impacted by rainfall and site-specific closure conditions. For these reasons, the required treatment technologies may be different at each site and may change during the closure process to support the needs of the site, which may cause labor resources, operating schedules, and associated costs to fluctuate. The Company will adjust the individual site water treatment infrastructure to align with site needs and regulatory requirements during closure and post-closure as required.

Groundwater Monitoring and Post Closure Care

Georgia Power continues to monitor groundwater at its ash ponds and CCR landfills and to report the results to Georgia EPD, as well as to post regular updates to the Company’s external website. Georgia Power has installed comprehensive groundwater monitoring networks, including more than 600 wells, at its facilities across the state to actively monitor groundwater quality at each site. As required under the federal and state CCR rules, the Company performs routine sampling and reporting for the compliance parameters listed in the federal and state CCR rules. Where parameters have been observed at statistical levels above the groundwater protection standard (“GWPS”), the Company has completed evaluations and, when necessary, entered into assessment of corrective measures (“ACM”).

As required under the federal and state CCR rules, the Company has installed additional monitoring wells to further characterize groundwater quality near CCR units in ACM. As the Company continues the ACM and Remedy Selection process, prior to selecting a corrective measure or remedy, the Company will conduct additional activities such as continued site characterization (including groundwater sampling, well and piezometer installation, and laboratory bench scale testing) and provide those results to Georgia EPD for review. Following further data evaluation and EPD concurrence with the proposed remedies, the Company is required by the CCR Rules to host a public meeting to solicit public comments on the proposed remedy.

Once ash pond closure is complete, post-closure care will be implemented in accordance with the federal and state CCR rules. Post-closure care will include inspecting CCR landfills and former ash ponds that are closed in place to verify continued structural integrity, maintaining the integrity and effectiveness of the final cover system for close in place units, maintaining and sampling the groundwater monitoring systems, and regulatory reporting.

Beneficial Use

To minimize or offset costs related to CCR storage, landfill construction, and associated O&M, Georgia Power has marketed for beneficial use, over a four-year average, more than 85% of the CCR generated from plant operations.

Georgia Power’s fleetwide CCR closure strategy includes evaluating opportunities to recycle ponded ash during closures as viable opportunities arise and technology and markets develop. The Company intends to maximize the benefits of beneficial use by engaging in R&D (as discussed in [Appendix C](#_ECS_-_Appendix) with the Ash Beneficial Use Center), leveraging geographical market opportunities, and using the competitive bidding process. The Company will continue to seek out beneficial use opportunities during ash pond closures where it adds value for the Company and our customers and will continue working with Georgia EPD to obtain permit modifications in the future needed to support beneficial use.

One example of the Company’s ability to leverage geographical market opportunities includes the beneficial use plans at Plant Mitchell. Plant Mitchell is located in south Georgia, in close proximity to Portland cement and concrete processing facilities, which are located primarily in Florida. As coal ash can be used to create concrete, this proximity is advantageous to the cost effectiveness of the beneficial use project to remove the stored coal ash at Plant Mitchell’s three ash ponds. Over the next several years, Georgia Power anticipates that up to approximately two million tons of coal ash are planned to be removed from the site to help create Portland cement, reducing the amount of ash required to be removed and relocated to an off-site landfill and ultimately serving to produce a valuable product. As of the end of 2024, nearly half of the material onsite has been sent for beneficial use.

In June 2022, Georgia Power announced the beneficial use project at Plant Bowen, where investments have been made to construct an ash processing facility to excavate up to nine million tons of coal ash to generate a marketable ash product specifically for cement replacement in concrete. The harvested ash is being processed for beneficial use through particle size screening and drying to remove excess moisture. The processing facility at Plant Bowen began operations in first quarter 2024. In May 2023, Georgia Power finalized an agreement for the beneficial use project at Plant Branch, where investments are being made to build a processing facility with plans to excavate up to eight million tons of coal ash for use in concrete. The harvested ash will be processed through particle screening, drying, and thermal beneficiation, which creates a more marketable ash product by using heat to reduce the remaining carbon in the CCR material. Additional progress updates are provided in the Company’s Semi-Annual Report in Docket No. 43083.

The CCR ARO compliance program is long term in nature with the possibility for changing market conditions, technology advancements, and many other factors over the coming decades. The Company will continue to monitor progress with its current beneficial use plans, consider additional beneficial use opportunities as appropriate in the future, and will evaluate future revisions to the CCR rules and CCR permit developments for any impacts to beneficial use projects.

## 2.3 Air Regulatory and Strategy Updates

The air compliance strategy considers a variety of regulations related to air quality and emissions, including both federal and state requirements. Based on the information currently available, the strategy to meet air compliance requirements is summarized in **Table 7**. The areas of legislation, regulation, permitting, or other actions that set, or are anticipated to set, critical air compliance requirements are discussed below.

**Table 7. Emissions Control Equipment at Coal, Natural Gas Combined-Cycle, and New Combustion Turbine Units**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Unit** | **Primary Fuel** | **NOx Control** | **SO2/Acid Gas Control** | **Mercury Control** | **PM Control** | **CO/VOC Control** |
| Bowen 1 & 2 | Coal | LNCS/SCR | Scrubber | ACI/ALK/MRCS FGD/SCR | ESP/FGD | N/A |
| Bowen 3 & 4 | Coal | LNCS/SCR | Scrubber | ACI/ALK/BH FGD/SCR | ESP/BH/FGD | N/A |
| Gaston 1 – 4 | Natural Gas | LNCS | N/A | N/A | N/A | N/A |
| McDonough 4 – 6 | Natural Gas | LNCS/SCR | N/A | N/A | N/A | OC |
| McIntosh 10 & 11 | Natural Gas | LNCS/SCR | N/A | N/A | N/A | OC |
| Scherer 1 – 3 | Coal | LNCS/SCR | Scrubber | BH/ACI | ESP/BH/FGD | N/A |
| Yates 6 & 7 | Natural Gas | LNCS | N/A | N/A | N/A | OC |
| Yates 8 – 10 | Natural Gas | LNCS/SCR | N/A | N/A | N/A | OC |

|  |  |  |
| --- | --- | --- |
| **Control Equipment Key:**  BH = Baghouse  ACI = Activated Carbon Injection  ALK = Alkali Sorbent Injection | ESP = Electrostatic Precipitator  LNCS = Low NOx Combustion System  MRCS = Mercury Re-emission Control | OC = Oxidation Catalyst  SCR = Selective Catalytic Reduction |

### 2.3.1 National Ambient Air Quality Standards and Georgia Regulations

The CAA of 1970 centralized the authority to set National Ambient Air Quality Standards (“NAAQS”) and requires EPA to review the primary and secondary NAAQS every five years and revise them as necessary. Primary standards are designed to protect the health of ‘sensitive’ populations such as asthmatics, children, and the elderly, while secondary standards are concerned with protecting the environment, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. These reviews have resulted in multiple, significant changes to the ozone and PM NAAQS, the addition of short-term primary SO2 and NO2 NAAQS, and other air quality standards updates. Implementing these standards is generally a state responsibility; however, EPA has also issued rules, such as the NOx Budget Trading Program, the Clean Air Interstate Rule (“CAIR”), and the Cross State Air Pollution Rule (“CSAPR”) programs, that deal with the transport of pollutants on a regional or multi-state scale to facilitate attainment with the NAAQS.

Ozone (40 CFR 50.10)

In 1979, EPA put into place an air quality standard on 1-hour ozone concentrations of 120 parts per billion (“ppb”). Subsequently, EPA replaced the 1-hour standard with an 8-hour standard of 80 ppb in 1997, which was lowered to 75 ppb in 2008 and again to 70 ppb in 2015. In December 2020, EPA issued a final rule to retain the current standards for ozone, both primary and secondary, without revision based on EPA’s review of the air quality criteria and the NAAQS.

For each historical ozone standard, portions of the Atlanta metropolitan area were designated as nonattainment during implementation before meeting the standard, as measured by air quality monitors, over a period of time. Georgia’s implementation of past ozone standards included the establishment of more stringent emissions limits and requirements for various types of sources in specific counties in and around the Atlanta area. For electric generating units, affected sources include stationary engines, combustion turbines, and utility boilers. For example, Georgia Rule 391-3-1-.02(2)(jjj) (“Rule (jjj)”), NOx Emissions from Electric Utility Steam Generating Units required the installation of low NOx combustion technology at various coal-fired units and selective catalytic reduction (“SCR”) systems at select coal-fired units at Plants Bowen, Hammond, and Wansley in the early 2000s.

For the current 2015 standard, all areas in Alabama and Georgia, except the Atlanta area, were designated as in attainment with the current standards. The Atlanta area subsequently met the standards in 2020, and EPA finalized the official redesignation of Atlanta to attainment with the 2015 ozone standard in October 2022, bringing the entire state of Georgia into attainment with all air quality standards. As a result, on May 23, 2023, Georgia EPD finalized revisions to the Georgia rules which removed non-attainment requirements for air permitting in all former nonattainment areas.

In the meantime, in response to President Biden’s Executive Order 13990 in 2021 requiring the review of regulations finalized during the previous Administration, EPA began the process of reconsidering the 2020 decision to retain the ozone standard, but in 2022, the EPA staff and the Clean Air Scientific Advisory Committee (“CASAC”) Ozone Review Panel released conflicting recommendations on the review of the ozone standard, with EPA staff recommending not reopening the 2020 ozone review, while CASAC supported the reconsideration. Following additional assessments from both EPA staff and CASAC, the EPA Administrator published a letter on August 18, 2023, indicating EPA would stop the reconsideration of the 2020 ozone NAAQS and will instead begin its next statutory review of the ozone NAAQS.

Particulate Matter (40 CFR 50.13)

While national air quality standards for PM were first established in 1971, EPA shifted its focus and revised the PM NAAQS to add fine particulate matter, i.e., particles with a diameter of less than 2.5 microns (“PM2.5”), in 1997, focusing on particles of a smaller size. The first PM2.5 standards were set at a level of 15 micrograms per cubic meter (“µg/m3”) on an annual average and 65 µg/m3 on a 24-hour average. In September 2006, EPA retained the annual standard but lowered the 24-hour standard from 65 µg/m3 to 35 µg/m3. In December 2012, EPA lowered the annual standard for PM2.5 to 12 µg/m3. In December 2020, EPA published a final rule to retain the particulate matter NAAQS last updated in 2012, without revision. EPA later announced that it would reconsider the December 2020 decision to retain the primary and secondary NAAQS for PM.

While the Atlanta, Floyd County, Macon, and Chattanooga areas were designated as nonattainment for the 1997 PM2.5 annual standard, all areas in Georgia have since been redesignated to attainment for the 1997 PM2.5 annual standard and also met the 2006 and 2012 revised PM standards.

On March 6, 2024, EPA published the final primary annual PM2.5 standard at 9.0 μg/m3, while retaining the existing levels of all other particulate standards. EPA is required to designate areas that are not meeting the standard as nonattainment areas within two years. EPA is also expected to issue additional rulemaking and guidance to states related to the implementation for requirements of the PM2.5 standard over the next few years. Immediately after the rule was published on March 6, 2024, a 24-state coalition (including Georgia), as well as other petitioners, filed petitions for review of EPA’s final PM NAAQS revision rule in the U.S. Court of Appeals for the D.C. Circuit. Merits briefing is completed, with oral arguments held on December 16, 2024. A decision is expected in 2025.

Startup, Shutdown, Malfunction (CAA Section 110(k)(5), 40 CFR 52, GA Rule 391-3-1-.02(2)(a)7. and 11.)

In May 2015, EPA issued a final “State Implementation Plan (“SIP”) Call” requiring 36 states, including Georgia, to remove exemptions for excess emissions that occur during periods of startup, shutdown, and malfunction (“SSM”) in previously approved state rules. The Sierra Club petitioned EPA to take this action, primarily based on the argument that such provisions allow emissions that could cause or contribute to violations of ambient air quality standards and that interfere with or preclude enforcement by agencies and citizens. Georgia Power and the State of Georgia are parties to ongoing litigation in the D.C. Circuit Court challenging the 2015 SSM Rule on the basis that the long-standing Georgia excess emissions rules have supported and not interfered with significant air quality improvements in the area. The litigation was subsequently placed on hold pending additional EPA rulemaking.

In November 2016, to address the SIP Call, Georgia EPD submitted a new state SSM rule (391-3-1-.02(2)(a)(11)) to EPA for approval as a revision to the Georgia SIP, setting requirements for work practice standards for periods of startup, shutdown, and malfunction. In subsequent years, EPA changed direction on SSM guidance and on actions taken for certain states multiple times, and no action was taken on Georgia’s SIP for many years.

In December 2021, the D.C. Circuit Court reactivated the SSM SIP Call litigation at the request of EPA and supplemental briefing and oral argument was completed in the spring of 2022. In November 2022, EPA proposed to disapprove of the Georgia SSM SIP that was submitted in November 2016 on the basis that the work practice standards in Georgia’s rule did not satisfy CAA requirements.

On January 10, 2023, Georgia EPD notified EPA that although in disagreement with EPA’s proposed disapproval, it was withdrawing the November 2016 SSM SIP and stated intentions to revise the state rule and resubmit.

On August 22, 2023, the Georgia DNR approved of another new state SSM rule to replace the submission that EPA had proposed to disapprove. However, the new Georgia SSM Rule does not go into effect until subsequent review and approval of the SIP by EPA. During this review process, the longstanding SSM requirements remain in effect. The new SSM rule would require facilities to comply with certain SIP emission limitations during startup and shutdown or request an alternative emission limitation that satisfies various criteria outlined in the rule.

*New Regulatory Updates*

* On March 1, 2024, the U.S. Court of Appeals for the D.C. Circuit issued a decision in the 2015 SSM SIP Call litigation. In a split decision, the court vacated the majority of EPA’s 2015 SSM SIP Call issued to 36 states (including Georgia), finding that EPA did not provide a sufficient basis to recall states rules with automatic exemptions, including complete affirmative defenses, or to state director’s discretion provisions. As a result, on June 24, 2024, Georgia EPD formally withdrew its request for EPA to review and approve the new state SSM rule as part of the SIP and will soon take action to remove the new rule from the state rules.

Georgia Multipollutant Rule and SO2 Emissions Rule (GA Rule 391-3-1-.02(2)(sss) and (uuu))

In response to federal environmental rules, as well as state-specific objectives, Georgia implemented a set of state rules requiring installation of emission controls and setting emission standards for coal-fired power plants.

Georgia EPD targeted emissions reductions for a broad set of air quality objectives with the Georgia Multipollutant Rule, which was finalized in June 2007. The Georgia Multipollutant Rule was designed to reduce emissions of mercury, SO2, and NOx statewide by requiring installation of specified control technologies on all of the larger coal-fired EGUs by specific dates, originally set between December 31, 2008, and June 1, 2015. Specified controls included flue gas desulfurization scrubbers, SCRs, and baghouses.

The Georgia SO2 Emissions Rule, finalized in January 2009, was designed to be a companion rule to the Georgia Multipollutant Rule. The rule requires reduction of SO2 emissions by 95% from all units required to install scrubbers under the Georgia Multipollutant Rule, except Plant Yates Unit 1 where a 90% reduction was required. The rule required compliance beginning in January 2010 for units with scrubbers in operation and requires reductions from the remaining units at dates aligning with or close to the Multipollutant Rule compliance dates.

The most recent revisions to both the Georgia Multipollutant Rule and Georgia SO2 Emissions Rule were finalized in June 2011 and April 2013. These revisions moved up the scrubber and SCR compliance dates for certain units and allowed for additional time to install controls at other units, in an attempt to streamline the compliance deadlines in the state rules with the MATS Rule deadline of April 2015. The revision also provided the option for Plant Yates units to switch to natural gas instead of installing scrubbers and SCRs.

On December 22, 2023, Georgia EPD submitted to the DNR Board a “Technology and Mercury Impact Review – Periodic Evaluation” report in accordance with Georgia Multipollutant Rule. Based on controls already imposed by Georgia EPD and implementation of EPA’s 2012 MATS Rule, Georgia EPD did not recommend any change to the Georgia Multipollutant Rule or additional regulations.

#### 2.3.1.1 NAAQS and Georgia Regulations Compliance Strategy

Georgia Power’s compliance strategy for NAAQS, SSM, and Georgia-specific requirements includes continued compliance with Georgia Rule (jjj), the Georgia Multipollutant Rule, the SO2 Emissions Rule, and continued diligence and operations of control equipment and minimizing emissions to meet SSM requirements.

With the recent lowering of the PM2.5 NAAQS and possible future changes to the ozone NAAQS area, new areas within Georgia and Alabama may become nonattainment in the future. This potential change may result in more stringent emissions and/or permitting requirements. However, because the remaining Georgia Power generating fleet is well-controlled for the relevant emissions, lower air quality standards are unlikely to result in the addition of new emission controls but could result in additional capital investment and expenses associated with operating existing emission controls.

The Company will continue to monitor developments in SSM, NAAQS, and other related state rules to determine any impacts to the environmental compliance strategy.

### 2.3.2 SO2 and NOx Emissions Allowance Programs

Congress or the EPA may use market-based programs to drive emission reductions over multi-state regions. These are typically used in instances where regional, rather than local, factors drive air quality impacts, such as acid rain or secondary formation of air pollution after direct emissions may have traveled over long distances.

Acid Rain Program (40 CFR 72 through 78)

Authorized by the 1990 Clean Air Act Amendments, the Acid Rain Program sets a cap on SO2 emissions from power plants by allocating a fixed number of allowances to each unit subject to the program. At the end of each year, a unit must surrender allowances in an amount equal to the number of tons of SO2 emitted. Unused allowances may be sold to offset the cost of compliance or saved, i.e., banked, for future use. Initial allowance allocations were received in 1995 when Phase I of the program began. When Phase II began in 2000, the number of allowances available was reduced to limit SO2 emissions to 50% below 1980 levels by 2010. The regulations also set emission rate limitations on NOx emissions from coal units, which can be met by individual units or by a group of units under an averaging plan.

Ozone or PM2.5 Interstate Transport Rules (40 CFR 96 and 97)

Since emissions to the air may, under certain conditions, travel over long distances, the CAA requires states to not only address nonattainment of air quality standards within its own borders, but also requires states to develop plans to address any out-of-state air quality issues to which they contribute. EPA has issued various rules to deal with the transport of pollutants on a regional or multi-state scale to facilitate the development of these interstate plans. In July 2011, EPA released the final Cross State Air Pollution Rule (“CSAPR”) Rule, which replaced previous interstate transport rules such as the CAIR and the NOx Budget Trading Program. The final rule applied to 27 states, including Georgia and Alabama. CSAPR established annual allowance trading programs for SO2, and NOx, to reduce transport of fine particulate matter under the 1997 NAAQS and a separate ozone season NOx allowance trading program to reduce ground-level ozone under the 1997 standard. However, in a significant departure from past federal allowance trading programs, CSAPR only allowed for limited interstate trading resulting in a more restricted allowance market. Due to rule challenges and legal proceedings, the implementation of CSAPR was delayed by three years, so that CSAPR’s Phase 1 emission budgets did not apply until 2015, and Phase 2 emission budgets began in 2017 and subsequent years.

In September 2016, EPA finalized the Cross State Air Pollution Rule Update (“CSAPR Update Rule”) to address interstate transport related to the 2008 ozone NAAQS, further restricting interstate allowance trading for ozone season NOx. As a result, allowance allocations were unchanged but facilities in Georgia could no longer trade allowances outside of the state. Alabama was among 22 states placed in a different trading group that could trade with each other but had allowance allocations reduced as a result of the CSAPR Update Rule. In October 2020, EPA issued a proposal to revise the CSAPR Update Rule in response to a D.C. Circuit Court of Appeal’s decision. Georgia and Alabama’s emissions budgets remains unchanged; however, the revision led to the creation of third ozone NOx allowance trading group, further restricting interstate trading.

In October 2021, EPA published a Federal Register notice announcing that it had proposed a consent decree with several environmental groups related to the 2015 ozone NAAQS. The proposed consent decree would establish deadlines for EPA to act on 32 SIP submissions, including the SIPs for Alabama and Georgia, addressing interstate pollution transport for the 2015 ozone NAAQS. In December 2021, EPA issued a final rule approving interstate transport provisions for the 2015 8-Hour ozone standard for Georgia, resolving the need to address interstate transport emissions from the state.

In February 2022, EPA initiated actions to disapprove 19 interstate transport SIPs for the 2015 ozone NAAQS, including Alabama, setting up the agency’s March 2022 proposed Federal Implementation Plan (“FIP”), called the Good Neighbor Plan, to effectively revise CSAPR and require reductions in ozone season NOx emissions from sources in 26 states. Georgia is not included in the Good Neighbor Plan, but Alabama was proposed to be moved to a more stringent ozone season NOx trading group starting in May 2023, which tends to have much higher allowance market prices.

On February 13, 2023, EPA published a final rule disapproving infrastructure SIP submissions with respect to the 2015 8-hour ozone NAAQS for 19 states, including Alabama. On April 13, 2023 and April 14, 2023, the State of Alabama, Alabama Power, and PowerSouth Energy Cooperative challenged the EPA's disapproval of the Alabama SIP in the U.S. Court of Appeals for the Eleventh Circuit. On August 17, 2023, the U.S. Court of Appeals for the Eleventh Circuit stayed the EPA's disapproval of the Alabama SIP, pending appeal.

On June 5, 2023, EPA published the final Good Neighbor Plan with an effective date of August 4, 2023. On August 4, 2023, the State of Alabama, Alabama Power, and PowerSouth Energy Cooperative challenged the FIP for Alabama in the U.S. Court of Appeals for the Eleventh Circuit. The FIP case is being held in abeyance pending resolution of the Alabama SIP disapproval case.

In July and September 2023, the EPA published an Interim Final Rule and an updated Interim Final Rule that stays the implementation of the FIPs for states with judicially stayed SIP disapprovals, including Alabama. The Interim Final Rule revises the existing regulations to maintain currently applicable trading programs for those states.

*New Regulatory Updates*

* On June 27, 2024, the U.S. Supreme Court stayed the 2015 Ozone National Ambient Air Quality Standards Good Neighbor FIP pending the disposition of petitions for review in the U.S. Court of Appeals for the D.C. Circuit and any petition for writ of certiorari to the Supreme Court on the merits.
* On August 5, 2024, EPA filed in the D.C. Circuit Court of Appeals a motion for partial voluntary remand of its Good Neighbor FIP to allow EPA to take “supplemental final action” to address the “record deficiency” identified by the U.S. Supreme Court in its stay decision. On September 12, 2024, the D.C. Circuit granted this motion, remanding the administrative record to EPA for further consideration of comments related to severability. On December 10, 2024, EPA published its supplemental response to comments on the Good Neighbor FIP, which addresses the administrative record deficiencies identified by the U.S. Supreme Court. The parties are required to submit motions to govern further proceedings by December 30, 2024, after which the court likely will schedule oral argument.
* On October 21, 2024, the U.S. Supreme Court issued an order granting review of a decision by the Tenth Circuit transferring challenges to EPA’s disapproval of interstate transport state implementation plans to the D.C. Circuit. Briefing at the Supreme Court is set to begin on December 13, 2024, and a decision is expected by June 2025. On October 24, 2024, the Eleventh Circuit placed the Alabama SIP disapproval case in abeyance pending the U.S. Supreme Court’s decision on the venue issue. The Alabama SIP disapproval case is fully briefed and oral argument was held on September 24, 2024.
* Various court proceedings related to the state SIP disapprovals and the Good Neighbor Plan litigation are expected to proceed in 2025. In the meantime, the judicial stays of the underlying SIP disapprovals and Good Neighbor Plan will remain in place.

#### 2.3.2.1 NOx and SO2 Emissions Allowance Programs Compliance Strategy

Georgia Power’s Acid Rain Program compliance strategy initially relied heavily upon use of low-sulfur coal. However, the strategy transitioned to rely on scrubbers for SO2 control at coal-fired steam units and through firing natural gas and low sulfur content fuel oil at combined-cycle, combustion turbine, and other steam units, which also serves as the CSAPR SO2 compliance strategy. For purposes of both Acid Rain and CSAPR compliance, Georgia Power currently expects to continue to utilize its SO2 annual allowance allocations and banked allowances, as needed, to maintain compliance. Under current regulations for the Acid Rain Program and CSAPR, projections show that no Georgia Power allowance purchases will be required in the future absent a change in legislation and regulation.

The Georgia Power compliance strategy for the Acid Rain Program for NOx historically consisted of installing low-NOx burners and/or overfire air (“OFA”) systems at coal units and use of the NOx Averaging Plan across the Southern Company coal generation fleet. However, after the retirement of all remaining coal units without SCR in 2019, use of the NOx Averaging Plan was no longer necessary. Therefore, in September of 2019, the Company terminated the NOx Averaging Plan effective January 1, 2020. Affected units covered by the regulation now demonstrate ongoing compliance through individual Acid Rain Program limits.

The compliance strategy for the CSAPR NOx programs relies on SCRs and low NOx burners for NOx control. For purposes of CSAPR NOx compliance, Georgia Power currently expects to continue to utilize its annual and ozone season allowance allocations and banked allowances, if needed, to maintain compliance. Under current regulations for the CSAPR NOx trading programs, projections show that no Georgia Power allowance purchases will be required in the future absent a change in CSAPR legislation and regulation. The Company is monitoring the litigation related to the final Good Neighbor Plan. If the new requirements come into effect, Plant Gaston Units 1-4 will receive fewer allowances from EPA and may need to manage its ozone season NOx emissions, use banked allowances, or may need to purchase allowances.

### 2.3.3 Maximum Achievable Control Technology Regulations

The CAA requires regulation of listed Hazardous Air Pollutants (“HAPs”) and requires implementation of emission limits equivalent to the Maximum Achievable Control Technology (“MACT”) for specific source categories, as determined by EPA. The standards that may apply to power generation units typically include MATS, the Combustion Turbine MACT (“CT MACT”), and the Industrial Boiler MACT. Georgia Power owns and operates EGUs that are subject to MATS and CT MACT, but currently does not own biomass-fired EGUs that would be subject to the Industrial Boiler MACT.

MATS (40 CFR 63 Subpart UUUUU)

EPA’s MATS Rule, finalized in April 2012, is a technology-based rule that regulates mercury, acid gases and certain metal emissions from coal- and oil-fired EGUs. MATS establishes stringent emission limits for hazardous air pollutants in the form of mercury, hydrogen chlorine (“HCl”) or SO2, and filterable particulate matter (“fPM”) or metals. The compliance deadline for existing sources was April 16, 2015, with the possibility of extensions granted on a case-by-case basis. Various Georgia Power units were granted one-year extensions to install controls or complete necessary transmission work to comply.

As a result of legal challenges and court decisions, EPA continued to issue rulemakings related to the MATS rule even after the compliance dates had passed. Some of the MATS rulemakings considered the foundational legal basis of the MATS rule. Although rules in 2016 (“Supplemental Finding”) and 2020 (“Reconsideration of Supplemental Finding”) came to diverging conclusions on that legal basis, EPA ultimately decided to leave the standards in place in both cases. As a part of the 2020 rulemaking, EPA also finalized the Residual Risk and Technology Review (“RTR”) for the MATS rule, which is required by the Clean Air Act Amendments of 1990 on a periodic basis*.* EPA concluded in the RTR that the remaining risk did not warrant additional standards, and a technology review did not identify any new control technologies that would further reduce emissions beyond the original standard. This rule was challenged in the D.C. Circuit Court and was subsequently included in the list of regulations the Biden Administration directed EPA to review via executive order in 2021.

Both the 2016 and 2020 rulemakings were challenged by various parties at the D.C. Circuit Court, with Georgia Power a party to the 2016 litigation. However, all related litigation was put on hold pending EPA’s completion of its rule reviews. In February 2022, EPA proposed to revoke the Reconsideration of Supplemental Finding that was finalized in 2020, effectively reverting to the 2016 Supplemental Finding for the legal basis of the MATS rule.

On March 6, 2023, EPA finalized the revocation of the Reconsideration of Supplemental Finding but made no changes to the emission standards or compliance requirements in the MATS rule.

On April 24, 2023, EPA proposed to update the MATS requirements with the MATS Residual Risk and Technology Review rule.

On July 7, 2023, the D.C. Circuit Court agreed to voluntarily dismiss litigation related to both the 2016 and 2020 rulemakings at the request of all parties involved in the cases.

*New Regulatory Updates*

* On May 7, 2024, EPA published the final MATS RTR. This rule affects coal- and oil-fired steam EGUs (does not include CTs or CCs). EPA is finalizing a more stringent standard for emissions of fPM, lowering the standard from 0.030 lb/MMBtu to 0.010 lb/MMBtu, and will require the use of PM CEMS to demonstrate compliance with the new fPM emission standard. The compliance deadline for the new CEMS requirements is three years after the rule effective date, or July 6, 2027.
* Immediately after the MATs rule was published, industry groups, electric generators, and a 23-state coalition (including Georgia) filed a challenge to the MATS Rule in the U.S. Court of Appeals for the D.C. Circuit.
* Seven motions to stay the rule were filed by petitioners, including the coalition of states. On August 6, 2024, the U.S. Court of Appeals for the D.C. Circuit denied motions to stay. After the D.C. Circuit denied the stay motions, the seven groups of petitioners subsequently filed emergency stay applications with the U.S. Supreme Court. On October 4, 2024, the U.S. Supreme Court denied the emergency stay applications. The Final Rule will remain in effect pending resolution of the ongoing challenges in the D.C. Circuit. Briefing in these challenges concluded on November 26, 2024, with oral argument likely to occur in early 2025.

Combustion Turbine Maximum Achievable Control Technology (40 CFR 63 Subpart YYYY)

Simple cycle and combined cycle CTs can also be subject to HAPs emission standards and requirements. In March 2004, EPA issued a final CT MACT rule, setting standards for formaldehyde from new gas and oil-fired CTs. In August 2004, EPA issued a stay for new sources for gas-fired turbine subcategories of the rule because of ongoing deliberation about whether gas-fired units should be regulated by this rule in the first place. EPA took this action to avoid unwarranted expenditures on the installation of emission controls if these gas-fired subcategories were delisted.

In March 2020, EPA finalized the RTR for CTs, leaving the existing CT MACT standards largely unchanged. In the final rule, EPA determined that the risks from this source category of emissions are acceptable and that the existing National Emission Standards for Hazardous Air Pollutants (“NESHAP”) provides an ample margin of safety to protect public health. EPA also determined that no new cost-effective controls under the technology review would achieve further emissions reductions from the source category. With the RTR, the stay of the standards for new gas-fired turbines remained in place.

In August 2020, EPA granted a petition for reconsideration of the final CT MACT RTR, stating that it intended to address the stay of the emission standards for new gas-fired turbines and the lack of standards for certain HAPs not currently covered by the rule. In March 2022, EPA lifted the stay on CT MACT standards and requirements for CTs that began construction after the 2003 applicability date defined in the original rule. Although the stay had been in place since 2004, sources were subject to the rule immediately, which set requirements to comply with formaldehyde emission standards and other requirements.

In April 2022, EPA issued an Information Collection Request (“ICR”) under Section 114 of the Clean Air Act to Georgia Power and other entities to collect data in preparation for the CT MACT RTR reconsideration. The ICR created a one-time compliance obligation for sources to provide this data and was due back to EPA in January 2023. Originally, EPA asked Georgia Power to complete a questionnaire and perform extensive emissions testing at as many as 15 CT units. After Georgia Power informed EPA of the potential winter reliability concerns and cost impact to customers, EPA agreed to reduce the scope of the ICR to two simple cycle CTs (Plant McIntosh CT1 and CT2) on both oil and natural gas and two combined cycle CTs (Plant McDonough CT4A and CT4B) on natural gas.

In January 2023, Georgia Power and other companies submitted facility information and emissions testing results to EPA in response to the ICR issued in April 2022. According to the 2024 Fall Unified Agenda, EPA is expected to finalize the CT MACT RTR reconsideration before the end of 2025.

#### 2.3.3.1 MACT Compliance Strategy

Georgia Power’s compliance strategy for MATS leveraged the Company’s research and testing program to make individualized, targeted decisions for each unit that optimizes the available technology while minimizing costs to the customer. While the existing scrubbers at Plant Bowen were able to achieve compliance with the acid gas or SO2 emission requirements, additional controls were necessary to comply with mercury and metals or PM limits on a continuous basis. Therefore, Georgia Power installed activated carbon and alkali sorbent (e.g., hydrated lime) injections systems on all units at Plant Bowen by the compliance deadline of April 2016. In addition, to minimize operational costs associated with the injection systems, Mercury Re-emission Control Systems (“MRCSs”) were also installed at Plant Bowen Units 1-2 to prevent re-emission of mercury once it is captured in the scrubber. To ensure compliance with the MATS particulate matter limits, optimization of the existing electrostatic precipitators (“ESPs”) was performed at Plant Bowen Units 1-2, while baghouse retrofits were necessary at Plant Bowen Units 3-4 to capture additional particulate in the flue gases in order to comply. In addition, the Company performed plant-specific optimization projects at Plant Bowen on the existing scrubbers to minimize potential impacts to reliability and on balance of plant equipment to ensure reliability of mercury, acid gas, and particulate matter controls as a part of the MATS compliance strategy.

For the subbituminous coal-fired units at Plant Scherer, existing controls installed to comply with the Georgia Multipollutant Rule (i.e., scrubber, SCR, and baghouse with activated carbon injection (“ACI”)) are used to comply with the MATS limits. Plant Yates Units 6 and 7 and Plant Gaston Units 1-4 switched to natural gas as the primary fuel. By switching to natural gas, these units are no longer subject to MATS because MATS applies only to coal- and oil-fired units. Georgia Power determined that use of natural gas at these plants is the most economic choice for customers and is feasible both from a boiler technology as well as a natural gas fuel supply perspective.

In order to comply with the recently finalized MATS RTR, the Company does not anticipate the installation of additional controls to comply with the revised standards. Existing controls are projected to continue operating in a similar fashion to current operations to ensure compliance. Compliance will require the addition of new PM CEMS for each of Bowen Units 1-4 and Scherer Units 1-3, which the Company will operate by July 6, 2027. In 2024, the Company installed temporary PM monitors on units at both Plants Bowen and Scherer, collecting limited data to evaluate the performance and operations and maintenance (“O&M”). Stack testing was performed alongside the test monitors, which revealed likely challenges related to certifying and setting calibration curves for the monitors at Plant Bowen and Plant Scherer, which have very low emissions. The Company is evaluating potential solutions to these challenges ahead of the 2027 compliance date.

For CT MACT, the lifting of the stay on requirements for natural gas-fired units affected Plants McDonough and McIntosh combined-cycle units. However, all of the affected units were constructed with oxidation catalysts, which are considered state-of-the-art controls for formaldehyde. Thus, the units are able to comply with only minor updates to monitoring equipment and increased testing, reporting, and recordkeeping obligations. Plant Yates Units 8-10 simple-cycle CTs will also include installation and operation of oxidation catalysts and are designed to comply with the CT MACT requirements. The Company will monitor developments on the CT MACT rule following the submittal of the ICR information and will refine or update the strategy as needed through the ECS process.

In recent years, EPA promulgated rulemaking known as Major MACT to Area (“MM2A”), which codified Trump-era guidance that major sources of HAP could reclassify as an area source after taking steps to lower HAP emissions below the major source threshold. The final rule was published in the Federal Register on November 19, 2020. On September 10, 2024, U.S. EPA finalized additional requirements that certain source categories retain NESHAP standards even if reclassifying to an area source. The MM2A rulemaking does not affect electric steam generating units but could potentially apply to stationary CTs. To provide operational flexibility, Georgia Power is not currently planning to reclassify its stationary CT sites that could qualify as area sources as part of the Company’s compliance strategy. The Company will reevaluate area source reclassification for applicable facilities as part of future compliance strategies.

### 2.3.4 Regional Haze Regulations (40 CFR 51.308)

The Regional Haze Rule was finalized in July 1999 with the goal to improve visibility conditions in specified federal Class I areas, including primarily national parks and wilderness areas, back to natural conditions by 2064. The rule requires states to develop a SIP to determine and address any SO2 or NOx emissions control measures necessary to make reasonable progress toward natural visibility conditions for each 10-year planning period. The first implementation period involved the application of best available retrofit technology (“BART”) requirements, which was determined to be satisfied for power plants by CSAPR requirements for SO2 and NOx.

In January 2017, EPA finalized revisions to the second planning period under the Regional Haze Rule, which covers through 2028. These revisions included the extension of the deadline for the SIP submittal from July 2018 to July 2021 and increased requirements for state consultations with Federal Land Managers. In addition to this rulemaking, EPA has released guidance documents for Regional Haze SIP development for the second implementation period in 2016, 2019, and 2021, adjusting some elements each time.

For the Regional Haze Rule, Georgia EPD has ongoing participation in a regional planning organization for the Southeast U.S., which assessed ambient air quality data for the 2028 planning period. Based on this analysis, in July 2020, Georgia EPD selected Plant Bowen for further evaluation of SO2 emissions to determine whether additional control measures are required to make reasonable progress toward achieving the program’s goals. Georgia Power submitted the Regional Haze four-factor analysis for Plant Bowen in November 2020, recommending that no additional SO2 emission controls were necessary. Regional Haze SIPs for the 2028 planning period were due to EPA by July 2021, which was missed by a majority of states, including Georgia.

In June 2022, Georgia EPD completed and proposed its Regional Haze SIP, allowing for a period of public comment. In the proposal, Georgia EPD concurred with the Georgia Power four-factor analysis for Plant Bowen recommendation that no additional SO2 emission controls are necessary for compliance with Regional Haze. Georgia Power will be required to comply with the existing MATS SO2 emission standard using the existing scrubbers at all four Plant Bowen units as a part of the SIP. In August 2022, Georgia EPD completed and submitted its Regional Haze SIP to EPA, with the requirements for Plant Bowen remaining consistent with the four-factor analysis submitted by Georgia Power.

On September 6, 2023, Georgia EPD incorporated requirements associated with its Regional Haze SIP into Plant Bowen’s Title V operating permit.

*New Regulatory Updates*

* On June 3, 2024, EPA published a proposal to approve Georgia’s Regional Haze SIP. The SIP submission addresses requirements for the second planning period of the Regional Haze program. Given the projected improvement in visibility conditions, EPA proposes to find that the source selection methodology was reasonable.

#### 2.3.4.1 Regional Haze Compliance Strategy

The existing scrubbers at Plant Bowen are used to comply with Regional Haze requirements. While the adoption of the existing MATS SO2 limit at Bowen removed the flexibility to use both the HCl and SO2 compliance options available in the MATS rule, no incremental controls or projects are required to comply. Additionally, the existing SO2 CEMS installed on Bowen Units 1-4 are used to demonstrate compliance with the Regional Haze SIP emissions limit.

### 2.3.5 New Source Review and Other Air Permitting Regulations

Facilities that include activities with associated emissions may be required to obtain an air permit to authorize construction and/or operation. The most resource-intensive and stringent type of permitting is typically termed major New Source Review (“NSR”), which includes both federal and state requirements applicable to new sources or projects at existing sites that result in emissions over certain thresholds. Sources or projects that do not require major NSR may still need to obtain construction or operation authorization through a state or minor air permit.

New Source Review (40 CFR 52.21)

Major NSR is a pre-construction permitting program under the CAA that is required of new sources or can be triggered by changes to an existing emissions source that result in a “significant” increase of a regulated NSR pollutant. While the major NSR program was established by the 1977 Clean Air Act Amendments, the regulations, EPA’s interpretation of the requirements, and EPA’s guidance have changed over time. Georgia EPD is the approved permitting authority for Georgia. If a project triggers major NSR, applicants must submit a case-by-case analysis of control technologies and emission reductions that are feasible at a particular facility, as well as air quality modeling to ensure the project maintains air quality. As there are no areas in the state currently designated as nonattainment with air quality standards, Georgia EPD reviews and approves of the air permit application through issuance of a Prevention of Significant Deterioration (“PSD”) permit.

In 1999, under a broad nationwide enforcement initiative, EPA brought a civil action in the U.S. District Court for the Northern District of Georgia against Georgia Power, alleging that the Company had violated the major NSR provisions of the CAA and related state laws at certain coal-fired generating facilities. The civil action sought penalties and injunctive relief, including an order requiring installation of the best available control technology at the affected units. The case against Georgia Power was administratively closed in 2001 and has not been reopened.

*New Regulatory Updates*

* On May 3, 2024, EPA published the Project Emissions Accounting Proposed Rule. This proposal’s guidance asserts that states should only aggregate projects that are “substantially related.” Before counting for “project emissions accounting,” the proposal requires decreases to be made enforceable. The proposal also reviews the monitoring, recordkeeping, and reporting provisions.

Other Air Permitting (40 CFR 70, GA Rule 391-3-1-.03)

For projects that do not require major NSR permitting, Georgia may still require a construction or operating permit through the Title V program, which compiles all applicable air requirements for major sources, or through the minor source permitting programs, typically for smaller sources. These types of permitting actions are typically simpler and less resource intensive than NSR permitting. In the Fall of 2022, EPA conducted stakeholder engagement sessions focused on permitting that is not subject to major NSR. EPA indicated their efforts will focus on reviewing state and local agency’s minor source permitting programs to verify they provide adequate protection of the NAAQS and transparency to the public.

GHG Air Permitting (40 CFR § 51.166(b)(48))

In April 2010, EPA issued a final rule regulating GHG emissions from new motor vehicles under the CAA, taking the position that this action then triggered CO2 and other GHGs to become regulated pollutants under the NSR preconstruction permit program and the Title V operating permit program. As a result, the construction of new facilities or the major modification of existing power plants could trigger the requirement for a Prevention of Significant Deterioration (“PSD”) permit and the installation of controls to reduce CO2 and other GHGs, under the GHG Tailoring Rule, finalized in May 2010.

In June 2014, the Supreme Court ruled that EPA could not use either its PSD or Title V permitting programs to require permits solely based on GHG emissions but could require applicants that triggered permitting for other pollutants to undertake GHG analysis. In August 2015, EPA removed portions of the Title V and PSD regulations that were vacated as a result of the Supreme Court decision.

#### 2.3.5.1 NSR and Other Air Permitting Compliance Strategy

Georgia Power reviews projects for permitting applicability, obtains permits when required, and will continue to monitor any developments on permitting regulations, policy, and guidance. Plant Yates Units 8-10 simple cycle CTs were reviewed for air permitting applicability, and the Company determined that the project would require a PSD permit to authorize construction. The air permit application was submitted on December 8, 2023. The environmental compliance strategy for Plant Yates Units 8-10 includes SCR and oxidation catalyst technology on the dual fuel advanced class CTs in order to meet state and federal emission standards and to fulfill the case-by-case control technology evaluation required for PSD permitting. Plant Yates is located in Coweta County, which is in the former Atlanta ozone nonattainment area, and is subject to more stringent NOx emission standards from May through September. Although Units 8-10 will operate primarily on natural gas, the compliance strategy and control configuration provide the plant with the flexibility to operate on either natural gas or ultra low sulfur diesel fuel throughout the year, ensuring a reliable capacity resource for customers. Georgia EPD issued the final PSD authorizing construction of the Yates 8-10 units on June 7, 2024.

### 2.3.6 Greenhouse Gas Emissions and Climate Policy

GHG and Renewable/Clean Energy Legislation

The U.S. Congress has considered many proposals to reduce GHG emissions and/or mandate renewable or clean energy. These proposals have taken many forms, for example: a cap-and-trade program, carbon tax, and renewable/clean energy standards.

Throughout the 116th and 117th Congresses (2019-2022), there was significant activity on climate-related legislation. Of note, several bills that were introduced focused on an economy-wide carbon tax. These proposals typically impose an initial economy-wide price on carbon (e.g., dollars per ton CO2), with varying degrees of escalation each year until the proposal’s specific national emission reduction targets are achieved. The proposals contemplate initial pricing in a range from $15/ton to $52/ton and increase annually at varying rates. Another approach to pricing carbon, a clean energy standard, has also been proposed. As an example, a clean energy standard would set clean energy targets – a percentage of generation from low to zero GHG emitting sources – for retail electricity suppliers that would increase annually to 100% by some future year.

In December 2021, Congress passed the Infrastructure Investment and Jobs Act (“IIJA”). The IIJA invests $1 trillion in the American economy, including roughly $73 billion for power infrastructure, and includes provisions related to cybersecurity and resiliency, broadband deployment, electric vehicle infrastructure deployment, CCS related infrastructure and commercialization, hydrogen infrastructure and commercialization, renewable energy and storage demonstrations, hydropower improvements/enhancements, Low-Income Home Energy Assistance Program, the National Environmental Policy Act (“NEPA”), Minority Business Development Agency, nuclear, “Buy America,” and grid infrastructure and transmission.

In August 2022, the Inflation Reduction Act (“IRA”) was signed into law, providing $369 billion in funding for clean energy and climate related policies. The IRA extends, expands, and increases production and investment tax credits for clean energy projects, such as solar, wind, nuclear, hydrogen, energy storage, and carbon capture and storage. After passage of the IRA, focus on climate legislation was significantly reduced in the 118th Congress (2023-2024).

Global Climate Change International Initiatives

International climate change negotiations under the United Nations Framework Convention on Climate Change (“UNFCCC” or “Convention”) continue. Since 2005, the Convention has established various “working groups” to address key issues and negotiate future climate-related international agreements. The working groups meet periodically throughout the year and, along with the formal subsidiary bodies to the Convention, again at the annual Conference of Parties (“COP”), a Meeting of the Parties to the Kyoto Protocol (“CMP”), and a Meeting of Parties to the Paris Agreement (“CMA”). The COP is the supreme decision-making body of the Convention, which reviews the implementation of the Convention and other legal instruments. The CMP reviews the implementation of the Kyoto Protocol. The CMA oversees the implementation of the Paris Agreement, which was adopted in 2015 and establishes a universal framework for addressing GHG emissions based on nationally determined contributions. It also sets in place a process for increasing those commitments every five years.

The U.S. joined the Paris Agreement in 2016, withdrew in 2020, and reentered in 2021. After rejoining, President Biden subsequently announced a new country-specific commitment under the Paris Agreement for the U.S. to achieve a 50% to 52% reduction from 2005 levels in economy-wide net GHG emissions by 2030.

Social Cost of Greenhouse Gas

The social cost of greenhouse gas (“SC-GHG”) is a monetary estimate of the damages from climate change to society as a whole from emitting an incremental amount of GHGs. Damage estimates, which include direct and indirect impacts, have also been created for emissions of other GHGs, including methane and nitrous oxide. EPA and other agencies may use this tool to incorporate the social benefits of reductions, or the harm from emitting, GHGs into cost-benefit analysis of regulatory actions that impact cumulative global emissions. In February 2021, the Interagency Working Group on Social Cost of GHGs announced an interim SC-GHGs at $51/ton for CO2 at a 3% discount rate, reinstituting the values that were in effect under the Obama Administration that were drastically lowered during the Trump Administration. The interim SC-GHG was subsequently challenged by groups of states in two different district courts with mixed results.

In November 2022, as part of the supplementary material released with proposed Section 111 methane regulations for the oil and gas sector, EPA released a draft report which updated estimates for the SC-GHGs, including estimates that the social cost of carbon in 2020, in 2020 dollars, is between $120 to $340 per metric ton, and the social cost of methane is $1,300 to $2,300 per metric ton, using discount rates between 2.5% to 1.5%, respectively.

On April 5, 2023, the Fifth Circuit Court of Appeals dismissed a challenge of the interim SC-GHG by a group of states led by Louisiana, using similar reasoning related to lack of standing cited by the Eighth Circuit Court of Appeals in 2022. On October 10, 2023, the U.S. Supreme Court declined to review the Eight Circuit’s decision.

On March 8, 2024, EPA published the final methane rules for the oil and gas sector. EPA also released a final version of the SC-GHG report, continuing to suggest the use of much higher values than the interim SC-GHGs. The Interagency Working Group on Social Cost of Greenhouse Gases has posted a memo advising agencies moving forward to “use their professional judgment to determine which estimates of the SC-GHG reflect the best available evidence, are most appropriate for particular analytical contexts, and best facilitate sound decision-making.”[[7]](#footnote-8)

GHG Emissions Performance Standards

In October 2015, the EPA finalized the first GHG regulations under Section 111 of the CAA for new and existing sources in the power sector (“2015 111 GHG Rules”). For newly constructed coal and gas-steam resources, EPA established a standard of 1,400 pounds of CO2 per megawatt-hour (lbs CO2/MW-hr) with the standard for coal based on implementation of partial carbon capture and storage. The standard for baseload combustion turbines was set at 1,000 lbs CO2/MW-hr and based on efficiency combined-cycle technology. The final existing source rule, known as the Clean Power Plan (“CPP”), contained regulatory guidelines for GHG emissions to be used by states to develop a state-specific compliance plan. Numerous parties filed petitions for review and accompanying motions to stay the CPP, including Georgia Power. On February 9, 2016, the U.S. Supreme Court granted a stay of the CPP during the legal challenge proceedings.

On July 8, 2019, the EPA repealed the CPP and replaced it with the Affordable Clean Energy (“ACE”) Rule, establishing revised guidelines for development of state-specific compliance plans to address GHG emissions from existing coal-fired power plants only. On January 19, 2021, the D.C. Circuit Court vacated and remanded the ACE Rule back to the EPA. On June 30, 2022, the U.S. Supreme Court reversed the D.C. Circuit’s vacatur of the ACE Rule and issued an opinion limiting the EPA’s authority to regulate GHG emissions under the CAA.

On May 23, 2023, the EPA proposed new 111 GHG Rules for new and existing sources in the power sector. While the proposal for existing sources included regulations for large combustion turbines, EPA announced on February 29, 2024 that the agency would instead take additional time to develop a more comprehensive regulatory approach for existing combustion turbines that it expects to achieve a greater level of emission reductions. A notice of proposed rulemaking is expected in early 2025 with a final rule to follow at a later date.

*New Regulatory Updates*

* On May 9, 2024, the EPA finalized the new GHG regulations for existing coal and gas-steam resources and newly constructed combustion turbines (“111 GHG Rules”). Similar to the CPP and ACE Rule, states are required to develop a state-specific compliance plan to implement the new GHG guidelines. For newly constructed CTs, the standards vary depending on how much a unit operates.
* On May 9, 2024, a 25-state coalition (including Alabama and Georgia) filed a petition for review challenging the rule in the U.S. Court of Appeals for the D.C. Circuit. Numerous other industry groups and electric generators also filed petitions for review in the D.C. Circuit, including an ad hoc litigation coalition, Electric Generators for a Sensible Transition, of which Southern Company is a member. A total of eight stay motions were filed with the D.C. Circuit, and on July 19, 2024, the court denied the petitioners’ requests for a stay.
* Following the D.C. Circuit’s denial of the stays, a coalition of state and industry petitioners (again including Alabama and Georgia) filed emergency stay applications on July 23, 2024 with the U.S. Supreme Court.
* On October 16, 2024, the U.S. Supreme Court denied petitioners’ emergency stay applications. In the order denying the applications, the justices wrote that petitioners showed a strong likelihood of success on the merits, but the case was likely to be resolved in the D.C. Circuit before suffering irreparable harm.
* Merits briefing in the D.C. Circuit concluded in November 2024, and oral argument was held on December 6, 2024.

#### 2.3.6.1 GHG Climate Policy Compliance Strategy

Georgia Power continues to work with the GPSC to pursue a responsible fleet transition through a well-balanced and diversified approach that considers the critical need to supply clean, safe, reliable, and affordable electricity to customers. With a wide range of possible outcomes, the Company’s scenario planning process remains the best way to capture potential financial impacts and allow for long-term planning to mitigate risks to customers. The Company will monitor and evaluate the outcome of these executive, legislative, and regulatory actions and incorporate any new information into the compliance strategy process as appropriate. GHG controls and reduction measures are another area where the Company performs industry leading R&D, as discussed in [Appendix C](#_ECS_-_Appendix), seeking to provide the necessary long-term cost-effective solutions for the generating fleet.

#### 2.3.6.2 GHG Emissions Standard Compliance Strategy

While ongoing litigation of the 2024 111 GHG Rules creates significant uncertainty, Georgia Power must evaluate these regulations and develop compliance strategies in order to meet the compliance deadlines. The Company will continue to pursue compliance strategies for the 2024 111 GHG Rules until there is a clear indication that the rules will no longer be in effect. This uncertainty comes at a time when the Company is experiencing significant load growth, which drives the need for existing fossil fuel-fired units to operate beyond 2032 to meet growing customer demand. The following paragraphs outline the Company’s compliance strategies for new CTs (Yates Units 8-10) and existing fossil fuel-fired generating units (Yates Units 6-7, Bowen Units 1-4, Scherer Units 1-3, and Gaston Units 1-4), should the 111 GHG Rules remain in effect.

The 2024 111 GHG Rules include the following standards for Yates Units 8-10, which vary based on how much each unit operates:

* Capacity factor less than 20% - burn only natural gas and distillate oil;
* Capacity factor greater than 20% but less than 40% - comply with an emission standard that ranges from 1,170 to 1,560 lbs CO2/MW-hr depending on how much distillate oil is burned; and
* Capacity factor greater than 40% - comply with an emission standard that ranges from 800 to 1,067 lbs CO2/MW-hr depending on how much distillate oil is burned until 2032 at which time CCS is required.

Georgia Power’s compliance strategy for these units is limiting capacity factors to 40%. The Company does not need additional investment in these units to comply with the regulation.

For Yates Units 6-7, as well as Bowen Units 1-4 and Scherer Units 1-3, there is additional uncertainty for existing fossil fuel-fired steam generating units as finalization of these requirements is predicated on EPA approval of the state-specific plan submitted by Georgia EPD. In the plan, Georgia EPD will establish performance standards for these sources based on EPA’s guidelines, which contain “presumptively approvable” standards for subcategories of existing coal and gas-steam resources. However, the plan will not be submitted until May 2026, and approval from EPA will not occur until July 2027. Gaston Units 1-4 will similarly be subject to a state plan developed by ADEM.

Yates Units 6-7 meet the definition of the “baseload natural gas” subcategory for existing fossil fuel-fired units and will comply with the 1,400 lb CO2/MWh presumptively approvable emissions limit for this subcategory. These units were previously converted to natural gas as part of the Company’s MATS compliance strategy and have achieved this level of performance since the conversion. Georgia Power expects current operations will comply with this limit and no additional investment is needed to comply with the presumptively approvable standard.

Gaston Units 1-4 utilize natural gas as the primary fuel with coal backup. Because natural gas is already the primary fuel, Georgia Power also expects this existing capability will be considered as a compliance option with the 111 GHG Rule and would be addressed in the state plan that will be developed by ADEM.

Bowen Units 1-4 and Scherer Units 1-3 can comply with the rule by one of three pathways: (1) retire by January 1, 2032; (2) install and operate CCS by January 1, 2032; or (3) co-fire natural gas by January 1, 2030 and retire by January 1, 2039. The first option to retire by January 1, 2032 is not feasible while maintaining reliability, building replacement generation capacity, and taking actions to meet the significant load growth that the Company projects. A compliance strategy that includes CCS has significant risks, such as large upfront capital costs, unknown technical feasibility of CCS at scale and of geological storage availability, availability of CO2 pipelines, and ability to secure Class VI injection well permits to store CO2. Due to these risks, CCS is not a feasible option on the compliance schedule of the 111 GHG Rule. Therefore, Georgia Power’s compliance strategy for existing coal units is to co-fire natural gas beginning January 1, 2030, with retirement of these units by January 1, 2039. This decision is supported by the Company’s planning tools such as Unit Retirement Studies and other scenario analyses, which indicate co-firing is the most cost-effective, technically feasible compliance pathway.

The presumptively approvable emissions standard (40% natural gas co-firing) and the January 1, 2030, compliance date are subject to further analysis, which is ongoing at the time of this filing. Both the emissions standard and compliance date will be finalized through engagement with Georgia EPD during the state plan process and are contingent on approval by EPA. The final emissions standards and compliance dates may differ from those in EPA’s guidelines through a process known as Remaining Useful Life and Other Factors (“RULOF”). In RULOF, the state can show “fundamental differences” between a facility’s circumstances and the assumptions EPA used to develop the rule to request an alternative standard or compliance date. Georgia Power is in the process of conducting engineering studies to evaluate technical feasibility and operational impacts of co-firing.

The final outcomes of ongoing litigation, potential executive actions, and potential subsequent rulemaking may take years to resolve. This uncertainty requires the Company to begin work towards compliance with final regulations at the time of this filing while staying flexible for various outcomes, including the suspension of some or all rule requirements. The Company will continue as outlined above until such time as there is more certainty on the ultimate outcome for the regulation, at which time the Company will reevaluate and adapt the compliance strategy as appropriate.

# 3.0 Financial Summary

The environmental compliance capital, O&M, and CCR ARO costs are recovered through the Environmental Compliance Cost Recovery (“ECCR”) tariff, established in the GPSC’s final order in Docket 25060.

For capital, the projected base level capital expenditures to comply with existing statutes and regulations will be a total of approximately $958 million from 2025 through 2028, with annual totals of approximately $153 million, $359 million, $202 million, and $244 million for 2025, 2026, 2027, and 2028, respectively.

The Company’s compliance strategy, including potential unit retirement and replacement decisions, and future environmental capital expenditures will be affected by the final requirements of any new or revised environmental statutes and regulations that are enacted, including the proposed environmental legislation and regulations described; the cost, availability, and existing inventory of emissions allowances; and the Company’s fuel mix.

For CCR ARO, the Company is required to adhere to Accounting Standards Codification (“ASC”) 410-20 (formerly Financial Accounting Standard No. 143 and Financial Accounting Standards Board (“FASB”) Interpretation No. 47) which requires the Company to record the legal obligation associated with the retirement of a long-lived asset. In accordance with ASC 410-20, the Company records the estimated closure and post closure care costs of CCR ash ponds and landfills under the federal and state CCR Rules. Georgia Power’s current cost estimate applicable to retail customers for the CCR ARO program over the coming decades is approximately $8.0 billion, including approximately $1.7 billion in actual costs previously incurred.

The Company will continue providing CCR projects semi-annual progress and cost data updates to the Commission under Docket No. 43083. As outlined in the Company’s CCR ARO Program Semi-Annual Program Status Report, the current forecasted spend for the CCR ARO program is the best estimate Georgia Power has at this time for this long-term compliance program spanning over approximately the next 60 years into the future. The Company’s cost estimates are based on various assumptions related to closure and post-closure costs, timing of future cash outlays, inflation and discount rates, and the methods for complying with closure requirements. Georgia Power will continue to update its cost estimates and ARO liabilities periodically as additional information related to these assumptions becomes available.

# ECS - Appendix A – Monitored Regulations

In addition to the environmental legislation, regulation, policy, and permitting discussed in the ECS, the Company continues to monitor various environmental compliance topics for any impacts to the compliance strategy. Examples of monitored regulations are listed below:

CAA – Industrial Boiler MACT

In October 2022, EPA finalized amendments to the Industrial Boiler MACT rule in response to a remand of certain requirements by the D.C. Circuit Court. The changes did not affect any Company generating units, and no changes to the ECS are required.

CAA – Reciprocating Internal Combustion Engines MACT

On August 30th, 2024, EPA published its final rule to amend the NESHAP for Reciprocating Internal Combustion Engines (“RICE”), the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (“CI ICE NSPS”), and the NSPS for Stationary Spark Ignition Internal Combustion Engines (“SI ICE NSPS”). The Final Rule requires electronic reporting and makes various other revisions to the rules.

CAA – New Source Performance Standards

In September 2022, a coalition of 17 environmental groups submitted a petition for rulemaking to EPA to eliminate startup, shutdown, malfunction and/or maintenance exemptions under the NSPS.

On December 13, 2024, EPA proposed the review of Standards of Performance for Stationary Combustion Turbines, which will apply to CTs that begin construction, modification, or reconstruction after the date of publication of the proposed rule in the Federal Register. The proposed rule subcategorizes CTs based on size and capacity factor. Depending on the subcategory, EPA has proposed combustion controls or installation of SCR. EPA is under a Consent Decree to promulgate a final rule by November 2025. The Company will continue to monitor this rulemaking and adjust the compliance strategy for CTs that may become subject to this regulation in the future.

CAA – Other NAAQS (40 CFR 50)

In addition to ozone and particulate matter, EPA also sets NAAQS for SO2, NO2, lead, and carbon monoxide. However, the most recent revisions to any of these standards occurred in 2010 or earlier and subsequent reviews completed by EPA resulted in no changes. Implementation of current standards is complete with no areas in Georgia or Alabama designated as nonattainment.

EPA is under a consent decree schedule to review and publish revisions to the secondary NAAQS for NO2 and SO2, as well as the secondary NAAQS for ecological effects for PM. On December 27, 2024, EPA promulgated a final rule addressing these standards. The final rule lowers the SO2 secondary standard to 10 ppb averaged over a three-year period. The existing secondary standards for NOx and PM are retained in this rulemaking. Lowering of the SO2 secondary NAAQS is not expected to affect the Company’s compliance strategy.

CAA – RMP

EPA finalized revisions in 2024 to the Risk Management Program (“RMP”) requirements for highly hazardous chemicals, reversing actions taken with a 2019 RMP reconsideration rule.

CAA – HFC Refrigerants

EPA finalized revisions to the hydrofluorocarbon (“HFC”) refrigerants phase down (mandated by Congress in 2020, due to the global warming potential of HFCs) in 2024, with the final rule becoming effective on December 10th, 2024.

CWA – Section 401 Water Quality Certifications

In September 2023, EPA finalized the Water Quality Certification Improvement Rule related to obtaining permits or licenses for any discharge into waters of the United States through CWA Section 401, which gives states authority over discharges that do not comply with existing state water quality requirements.

CWA – Nationwide Permit

Nationwide Permits (“NWP”) authorize certain activities with minimal impact to a WOTUS, allowing projects to move forward without receiving an individual review under CWA Section 404. The USACE recently completed update or reissuance of the NWP program requirements.

CWA – Hazardous Discharges Planning

In March 2024, EPA signed a final rule in response to a consent decree between EPA and environmental groups that would require facility response plans (“FRPs”) to address potential worst-case discharges of hazardous substances under the CWA. This would expand the current FRP program that only deals with oil releases.

PFAS Regulations

EPA has begun implementing regulation of per- and polyfluoroalkyl (“PFAS”) substances through a variety of avenues across various environmental media. For example, in April 2024, the EPA published a final rulemaking to the Federal Register to designate certain types of PFAS as “hazardous substances” under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”). In addition, in April 2024, EPA published a final rule establishing National Primary Drinking Water Regulations for six PFAS. EPA has also added many PFAS to the Toxics Release Inventory.

ESA Developments

The Company monitors developments related to the Endangered Species Act (“ESA”) on an ongoing basis, especially for affected species found in the Southeast. The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. ESA regulatory developments typically affect the construction new facilities. On April 5, 2024, the U.S. Fish and Wildlife Services (“USFWS”) published three final rules under the ESA: Blanket 4d, Section 4 and Section 7. On April 12, the USFWS published the ESA Section 10 final rule. The Blanket 4d rule codifies that threatened species including fish, wildlife, and plants will receive endangered species protection unless given a species- specific rule. This rule allows federally recognized tribes to aid protected species without a permit. The listing and critical habitat under Section 4 clarifies delisting process does need to demonstrate that a recovery plan’s criteria have been met, only if best available data provide sufficient scientific evidence that species no longer warrants protection. The interagency cooperation under Section 7 allows for reasonable and prudent measures including compensatory mitigation for non-jeopardy decisions. The Section 10 revisions are intended to provide clarity, reducing time and cost associated with the permit application process.

NEPA Developments

In April 2022, the Council for Environmental Quality (“CEQ”) finalized updates to the NEPA regulations, essentially reversing actions in the 2020 NEPA regulations. In July 2023, the CEQ proposed the Phase 2 NEPA rule named “Bipartisan Permitting Reform Implementation Rule” to implement the NEPA amendments included in the 2023 Fiscal Responsibility Act, as well as ensure “consideration of relevant environmental, climate change, and environmental justice effects.” On May 1, 2024, CEQ published the NEPA Phase 2 Final Rule. This final rule enhances consideration of climate change and environmental justice effects in the environmental review process and is intended to “encourage improved environmental outcomes.” On May 21, 2024, a 21-state coalition, including Georgia, filed suit in the U.S. District Court for the District of North Dakota challenging the final rule. The states are asking the court to vacate the Phase II NEPA Rule, remand it to CEQ, enjoin CEQ from enforcing the rule and reinstate the 2020 rule. The state coalition is led by North Dakota and Iowa and included Georgia, among others.

In another case involving several federal agencies who did not prepare an environmental assessment under NEPA and petitioner environmental groups, the D.C. Circuit Court held that the CEQ lacks the statutory authority from Congress to bind federal agencies with NEPA regulations. If the decision stands, the status of CEQ’s NEPA regulations are uncertain since the court did not directly vacate the CEQ regulations.

TMDL Developments

States are required to identify impaired waters (waters that do not meet applicable water quality standards), develop total maximum daily loads (“TMDLs”) for those waters, and impose point and non-point source limitations designed to bring the waters into compliance.

Other Generating Units

Other types of generating units, such as hydroelectric, nuclear, renewables, battery energy storage systems, and distributed energy resources (such as reciprocating internal combustion engines) also comply with various environmental requirements set by EPA and Georgia EPD related to siting, construction, and/or operation. Hydro and nuclear facilities also consider environmental impacts through regulatory processes at the Federal Energy Regulatory Commission (“FERC”) or the Nuclear Regulatory Commission (“NRC”).

# ECS - Appendix B – Acronyms/Abbreviations

ABUC Ash Beneficial Use Center

ACE Affordable Clean Energy

ACI Activated Carbon Injection

ACM Advanced Closure Methods

ADEM Alabama Department of Environmental Management

ALK Alkali Sorbent Injection

ARO Asset Retirement Obligation

ASC Accounting Standards Codification

BART Best Available Retrofit Technology

BH Baghouse

BPJ Best Professional Judgment

BTA Best Technology Available

CAA Clean Air Act

CAIR Clean Air Interstate Rule

CASAC Clean Air Scientific Advisory Committee

CCR Coal Combustion Residuals

CCRMU Coal Combustion Residuals Management Unit

CCS Carbon Capture & Storage

CEQ Council on Environmental Quality

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CFR Code of Federal Regulations

CI ICE Stationary Compression Ignition Internal Combustion Engines

CO Carbon Monoxide

CO2 Carbon Dioxide

COHPAC Compact Hybrid Particulate Collector

COP Conference of Parties

CORE-CM DOE’s Carbon Ore, Rare Earths and Critical Mineral Initiative

CMA Meeting of Parties to the Paris Agreement

CMP Meeting of the Parties to the Kyoto Protocol

CPP Clean Power Plan

CRL Combustion Residual Leachate

CSAPR Cross State Air Pollution Rule

CT MACT Combustion Turbine MACT

CWA Clean Water Act

CWWS Cylindrical Wedge Wire Screens

DAC Direct Air Capture

DNR Department of Natural Resources

DOE Department of Energy

DSI Dry Sorbent Injection

ECCR Environmental Compliance Cost Recovery

ECS Environmental Compliance Strategy

EGU Electric Generating Unit

EKPC East Kentucky Power Cooperative

ELG Effluent Limitations Guidelines

EPA U.S. Environmental Protection Agency

EPD Georgia Environmental Protection Division

EPRI Electric Power Research Institute

ESA Endangered Species Act

ESP Electrostatic Precipitator

FASB Financial Accounting Standards Board

FERC Federal Energy Regulatory Commission

FGD Flue Gas Desulfurization

FIP Federal Implementation Plan

fPM Filterable Particulate Matter

FRP Facility Response Plan

GAAP Generally Accepted Accounting Principle

GHG Greenhouse Gas

GPC Georgia Power Company

GPSC Georgia Public Service Commission

GWPS Groundwater Protection Standard

HAP Hazardous Air Pollutant

HCl Hydrogen Chlorine

HDPE High-Density Polyethylene

HFC Hydrofluorocarbon

HLRW High-Level Radioactive Waste

HTL Heat Transfer Loop

ICR Information Collection Request

IIJA Infrastructure Investment and Jobs Act

IRA Inflation Reduction Act

IRP Integrated Resource Plan

LLRW Low Level Radioactive Waste

LNCS Low NOx Combustion System

MACT Maximum Achievable Control Technology

MATS Mercury and Air Toxics Standards

MM2A Major MACT to Area

MRCS Mercury Re-emission Control System

NAAQS National Ambient Air Quality Standards

NCCC National Carbon Capture Center

NDC Nationally Determined Contribution

NEPA National Environmental Policy Act

NESHAP National Emission Standards for Hazardous Air Pollutants

NGCC Natural Gas Combined Cycle

NOPP Notice of Planned Participation

NO2 Nitrogen Dioxide

NOx Nitrogen Oxide

NPDES National Pollutant Discharge Elimination System

NSPS New Source Performance Standards

NRC Nuclear Regulatory Commission

NSR New Source Review

NWP Nationwide Permits

NWPR Navigable Waters Protection Rule

OC Oxidation Catalyst

OFA Overfire Air

O&M Operations and Maintenance

PCC Post-Closure Care

PCCC Permanently Ceasing Coal Combustion

PFAS Per- and Polyfluoroalkyl Substances

PJFF Pulse Jet Fabric Filter

PM Particulate Matter

PM2.5 Particulate Matter less than 2.5 micrometers in size

PM CEMS Particulate Matter Continuous Emissions Monitoring

PPB Parts per Billion

PRB Powder River Basin Coal

PSC Georgia Public Service Commission

PSD Prevention of Significant Deterioration

R&D Research and Development

RFP Request for Proposals

RCRA Resource Conservation and Recovery Act

R&D Research and Development

RICE Reciprocating Internal Combustion Engines

RMDC Remote Mechanical Drag Chain

RMP Risk Management Program

RTR Risk and Technology Review

RULOF Remaining Useful Life and Other Factors

SCR Selective Catalytic Reduction

SC-GHG Social Cost of Greenhouse Gases

SEC Securities and Exchange Commission

SIP State Implementation Plan

SI ICE Stationary Spark Ignition Internal Combustion Engines

SNCR Selective Non-Catalytic Reduction

SO2 Sulfur Dioxide

SSM Startup, Shutdown, Malfunction

TMDL Total Maximum Daily Load

TWS Traveling Water Screens

UNFCCC United Nations Framework Convention on Climate Change

USFWS United States Fish and Wildlife Service

UWAG Utility Water Action Group

USWAG Utility Solid Waste Activities Group

VIP Voluntary Incentive Program

VOC Volatile Organic Compounds

WIIN Act Water Infrastructure Improvements for the Nation Act

WOTUS Waters of the United States

WRC Water Research Center

WRCC Water Research and Conservation Center

ZLD Zero Liquid Discharge

# ECS - Appendix C – R&D and Environmental Control Alternatives

R&D continues to be an integral part of the overall Georgia Power environmental strategy and compliance plan. Through research, development, and demonstration, technologies are evaluated and selected for possible implementation to meet compliance with federal and state regulatory requirements. Technology-related decisions are made based on compliance alternatives, technical review (often following actual testing), schedules, equipment-vendor price quotes, total costs over the useful life, specific unit issues, and performance guarantees. Operations, maintenance, and cost-effectiveness are important parts of the decision-making process.

Since the implementation of the CAA Amendments of 1990, R&D has been crucial in assuring that the best-possible environmental compliance strategies are selected for implementation at Georgia Power. Georgia Power and Southern Company leverage existing knowledge through industry affiliations across the U.S. and around the world to identify these opportunities and help reach cost-effective paths forward. To minimize cost and risk, only proven technologies should be implemented commercially. These industry R&D efforts have successfully tested low- NOx burners, precipitators, catalyst materials for SCRs, scrubbers, mercury reduction systems, wastewater treatment systems, water balance optimization measures, ash beneficial use, and other equipment and have contributed to Georgia Power’s ability to meet stringent requirements while continuing to provide affordable energy for customers. Insight from this research benefits vendor and material selection, construction, and long-term operation, efficiency, and flexibility.

This appendix describes R&D efforts related to water, ash beneficial use, and carbon emissions and provides a list of control technologies considered in an ongoing effort to meet mandated requirements in a timely manner, maintain system reliability, and assure cost-effective generation for customers.

Water Research and Conservation Center

Originally developed in 2012 through collaboration with the Electric Power Research Institute (“EPRI”) and Southern Company, the Water Research Center (“WRC”) at Plant Bowen provided a venue for technology evaluations to address water use, withdrawal, consumption, treatment, and recycling throughout the power generation process. The WRC generated information regarding current and future regulatory compliance issues related to water withdrawal, use, and discharge restrictions that will directly support the Company’s ongoing evaluation of the anticipated 2024 ELG Final Rule and associated strategy. Work completed at the WRC will be used to inform technology decisions for compliance. Due to the success of the WRC, Southern Company and EPRI expanded the WRC to the Water Research and Conservation Center (“WRCC”), building a state-of-the-art facility at Georgia Power’s Plant McDonough. This research center provides the infrastructure needed to test and identify promising water technologies. To better manage and conserve water across our thermoelectric power generation sites, the WRCC promotes advancements in power plant cooling systems leading to reduced water withdrawal and consumption as well as improved plant efficiency while optimizing total cost and energy generation.

Since the operational start of the WRCC in 2020, several projects have been completed including an evaluation of condenser tube coatings and surface modifications in the Heat Transfer Loop (“HTL”) as part of a DOE-funded project to investigate technologies to improve heat transfer and mitigate heat transfer losses due to condenser tube fouling. Other completed projects at the WRCC include a non-chlorine biocide, as well as a technology to monitor deposition on heat transfer surfaces for better identification and control of fouling. Several ongoing and upcoming projects include testing a set of enhanced condenser tubes that can significantly improve condenser performance, a DOE-funded project focused on improving performance of air-cooled condensers, and water treatment evaluations.

Ash Beneficial Use Center

The Company, in partnership with EPRI and other utilities, has developed a center, located at Plant Bowen, for beneficial use of harvested CCR. The Ash Beneficial Use Center (“ABUC”) will strive to develop additional uses of CCR and better technologies to process ash for beneficial use, which can help reduce future costs to CCR closure projects and further open opportunities to reuse this byproduct.

The center aims to develop new technologies or processes that drive downward cost pressure associated with beneficial use and expand current and potential markets. In addition, technology developments or enhancements to current beneficial use operations could ultimately allow Georgia Power to reduce the amount of CCR that is destined for storage in landfills or reclaim CCR already stored in landfills and ash ponds. This may result in reduced capital and O&M costs for CCR management. The strategy associated with introducing additional beneficiated ash into the market, as well as limiting the quantity of CCR in landfills, benefits both current and future customers.

The core capability of the center is pre-processing harvested ash for use in technology demonstrations. Pre-processing includes drying, classifying, storing and delivering the ash for beneficial use. The major mechanical components of the center were completed in February 2021, and full commissioning and acceptance testing were completed in July 2021.

In September 2021, the ABUC was used to execute part of a critical mineral extraction project funded by the U.S Department of Defense. Approximately 75 tons of ash were harvested from a Southern Company ash pond in Alabama, and the ash was screened, dried and classified using the ABUC infrastructure. Carbon was removed from the ash using a triboelectrostatic belt separator. Lessons learned during this project will allow Georgia Power to better understand process performance and energy costs for potential future beneficiation projects.

Georgia Power and EPRI have met with several technology developers to discuss potential demonstrations at the ABUC. Technologies under consideration include: lower cost non-thermal carbon separation; lower cost non-thermal ash drying; evaluating energy efficient grinding systems to enable beneficial use of currently unusable volumes of coarse ash in the concrete market; production of light weight aggregate from ponded ash for concrete and other construction applications; production of coal ash geopolymer products, a potential high volume and high value use case; and production of ferric chloride from coal ash for use in water treatment, replacing conventional commercially sourced material. Increased knowledge of these emerging technologies and potential technology evaluations at ABUC will help Georgia Power to optimize current beneficial use operations and perform informed assessments on implementing new commercial beneficial use opportunities.

Additionally, Georgia Power and Southern Company are participants in the DOE’s Carbon Ore, Rare Earths and Critical Minerals (“CORE-CM”) Initiative with the goal of evaluating coal ash as a domestic source for rare earth elements and critical minerals and driving regional economic development to establish domestic supply chains.

Looking ahead to the 2025-2028 timeframe, the Company plans to invest in upgrades at the ABUC to further enhance its capabilities. Specific initiatives will involve general maintenance and repairs, installation of pilot-scale grinding equipment, and installing additional storage capacity for ash samples. Two pilot projects are also anticipated for this time frame: ferric-chloride production from CCR and carbon reduction using froth flotation. These upgrades and projects will position ABUC as a leading center for coal ash research and development, reinforcing the Company's commitment to innovative and sustainable CCR management practices.

Carbon Emissions Research & Development

The National Carbon Capture Center (“NCCC”), managed and operated by Southern Company and located in Wilsonville, Alabama, is working to accelerate the commercialization of advanced technologies to reduce greenhouse gas emissions. The NCCC was created in partnership with the DOE in 2009 and has worked with over 30 government, university, and research organizations from seven countries. The NCCC serves as a unique test bed for third-party developers to help bridge the gap between laboratory research and large-scale demonstrations to evaluate promising technologies for future commercial deployment. The R&D scope of the NCCC includes carbon capture for power generation, carbon utilization and conversion, and negative-emission technologies such as direct air capture.

Negative carbon solutions are an important component of a net-zero carbon approach and counterbalance direct GHG emissions from Company operations through either the actual capture and storage of GHG or the application of carbon offset credits created by qualifying GHG reduction projects. While many of these negative carbon solutions are still evolving or in development across the industry and the country, Georgia Power faces some unique challenges for carbon capture and storage in the state of Georgia. Unlike some neighboring states with extensive oil and gas exploration and development, Georgia lacks the detailed geological information needed to prepare for CCS deployment. To minimize risks to customers in a net-zero future, carbon capture technology and viable locations for storage will likely be necessary for continued fossil fuel operations. CCS could potentially be applied as an add-on environmental control to a generating unit to remove GHG emissions at their source or could be used to remove GHG from ambient air, known as direct air capture (“DAC”). Due to the historic lack of geologic feasibility studies in the state of Georgia, Georgia Power began partnering in 2021 with Southern Company to evaluate the technical and economic viability of CCS in potential locations in Georgia. Most recently, test borings were completed at three sites in Georgia in 2024 to gain better information about geologic formations deep underground in northwest and southeast Georgia. While the ability to implement CCS is years away, these types of early studies are necessary to keep diversified generation options viable in Georgia for the long-term future.

In 2022, Georgia Power and Mitsubishi Power, alongside EPRI, successfully validated fuel blending of hydrogen and natural gas at both partial and full load on an M501G natural gas turbine at Georgia Power’s Plant McDonough in Smyrna, Georgia. The demonstration project was the first to validate 20% by volume hydrogen fuel blending on an advanced class gas turbine in North America, and the largest test of this kind to date, with the 20% blend providing an approximately 7% reduction in carbon emissions compared to natural gas. Georgia Power collaborated with Mitsubishi Power for the landmark testing as part of a continued commitment to new R&D to build the energy grid of the future and to reduce carbon emissions across its generation fleet.

# ECS – Appendix D - Environmental Control Alternatives Index

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**environmental Control Alternatives**

**I. Low- NOx Combustion Systems (“LNCS”)**

Low- NOx combustion systems is a generic term for burners and/or air systems designed to combust fuel while reducing the amount of NOx that is formed. Since there are several different firing arrangements for fossil fuel-fired units, there are several different types of LNCS.

NOx is formed during combustion from either the nitrogen in the fuel or the air. NOx formed from nitrogen in air requires high-flame temperatures and because of this, is usually referred to as thermal NOx. While some fuels contain small amounts (2 percent or less) of nitrogen as a chemical constituent, thermal NOx is by far the predominant source of emissions over fuel NOx.

LNCS can include burners that are designed to reduce either fuel NOx or thermal NOx or both. LNCS can also include overfire air, which is air that is added above the main combustion zone to finish the combustion process, to reduce NOx. For all LNCS, the balance of air and fuel must be optimized to achieve NOx reduction and to minimize additional production of carbon monoxide.

**II.** **Selective Catalytic Reduction (“SCR”)**

SCR technology involves the catalytic reaction of ammonia, which is injected into the flue gas, with NOx to produce molecular nitrogen (N2) and water vapor. These reactions take place across one or more layers of catalyst in the SCR reactor and generally result in a NOx reduction capability of 85 to 90 percent depending upon the particular application. The SCR is sensitive to temperature and must be placed in an area with appropriate flue gas temperatures to operate optimally.

**III.** **Selective Noncatalytic Reduction (“SNCR”)**

SNCR employs chemical injection of ammonia or urea directly into the boiler at high flue gas temperatures between 1,600 and 2,100°F. In this temperature range, which is typically near the top of the boiler close to the furnace exit or in the convective pass, the reagent reacts with NOx to form nitrogen and water without the use of a catalyst to promote the reaction.

Application of SNCR to utility-scale boilers is highly site specific. Generally, SNCR is capable of 15- to 40-percent NOx removal. One particular benefit of SNCR as compared to SCR is that capital cost is limited due to the absence of catalyst and the associated reactor vessel. However, the difficulty in meeting temperature and distribution requirements and the greater potential for ammonia slip makes implementation of the technology difficult on many boilers, especially on a large-scale boiler.

**IV. Fuel Switch to Natural Gas**

Depending on availability of natural gas supply and pipelines, existing coal plants may be partially or completely converted to burn natural gas instead of coal as an emissions control strategy, since natural gas contains very little sulfur and trace metals are largely absent.

NOx emissions result from both fuel chemistry and from the air used in combustion. Therefore, a natural gas conversion does not automatically eliminate emissions of nitrogen oxides. The level of NOx in such a conversion is determined by the boiler design plus the presence and design of low NOx combustion systems (see the next section).

**V.** **Fuel Switch to Powder River Basin (“PRB”) Coal**

PRB coal is a subbituminous coal mined primarily from seams in the PRB located in Wyoming and Montana in the western U.S. PRB coal may be considered as an emission control strategy for bituminous coal-fired units due to lower sulfur content that enhances the ability of generating units to minimize SO2 emissions. NOx emission reductions are also realized because of the lower combustion flame temperature brought about by the higher moisture content in PRB coal. With this increase in moisture content come lower heat contents (heating values), possible loss of generation capacity due to unit load derating, increased heat rate, and often higher operating and maintenance costs. The considerations for a fuel switch to PRB coal are highly dependent on site-specific operating characteristics and equipment layout.

**VI. Scrubber or Flue Gas Desulfurization (“FGD”)**

A scrubber or FGD is any process that removes sulfur oxides, which is primarily SO2, from flue gas. Wet scrubber processes collect the SO2 by treating the flue gas with a water-based solution or slurry. One typical design the utility industry uses is a spray tower module where the flue gas flows up the tower and a series of nozzles spray an alkaline solution, typically limestone based, into the flue gas. Another type is a jet bubbling reactor where the flue gas flows into a limestone slurry bath. The chemical reaction in wet FGDs between limestone and SO2 produces predominantly calcium sulfate, or gypsum. The wet processes are very efficient and typically remove 95% of the SO2 in flue gas.

Dry processes typically inject an alkaline slurry into the flue gas stream in a spray dryer followed by a particulate control device. The spray dryer is a unit where the hot flue gases are contacted with the wet alkaline spray that absorbs the SO2. The hot flue gas evaporates the water and leaves a dry residue that can then be captured with the fly ash, typically in a baghouse. The residue contains a mixture of calcium sulfite/sulfate, along with the fly ash from the fuel. This waste is generally not suitable for other uses and must be disposed of in a landfill. Historically, dry scrubbing is considered to typically remove 75 to 90 percent of the SO2 in flue gas.

**VII. Dry Sorbent Injection (“DSI”)**

Dry sorbent injection is a technology that can help reduce acid gas emissions, such as HCl through two basic steps. In step one, a powdered sorbent is injected into the flue gas where it reacts with the HCl. The sorbents most commonly associated with DSI are trona (sodium sesquicarbonate, a naturally occurring mineral mined in Wyoming), sodium bicarbonate, and hydrated lime. For step two, the compound is removed by a downstream PM control device such as an ESP or a baghouse, with HCl removal performance highly dependent on site-specific factors.

DSI systems generally do not require significant capital expenses but may rely on significant quantities of sorbent to operate effectively, which increases the operating costs. Waste disposal for DSI may also be a significant variable cost. In addition, DSI's potential effectiveness is limited to certain types of plants, typically plants that are 300 megawatts or less and burn low-sulfur coal.

**VIII. Baghouses**

Baghouses are filter devices that remove solid particles from flue gas streams by passing the gases through a fabric, and thus collecting the particles. Baghouses can either operate as a standalone control device or in conjunction with other particulate capture devices. A baghouse located downstream of an existing ESP was patented by EPRI and is known as a Compact Hybrid Particulate Collector (“COHPAC”). The basic COHPAC concept is to place a pulse-jet fabric filter (“PJFF”) downstream of an existing ESP to serve as a “polishing” or performance-upgrading unit. Since the ESP removes a significant amount of the particles from the gas stream the flue gas reaching the baghouse has a significantly reduced dust load. As a result, the physical size of a COHPAC PJFF can be one-fourth the size of a normal PJFF, which may reduce the relative cost significantly.

**IX. Activated Carbon Injection (“ACI”) and Alkali Sorbent Injection (“ALK”)**

ACI for mercury control involves the addition of powdered activated carbon to flue gas streams where it adsorbs vapor phase mercury. Once injected into the flue gas, the activated carbon (and adsorbed mercury) must be collected in a particulate collection device. The applications of this technology include injection ahead of an ESP or downstream of an existing ESP but upstream of a high ratio (COHPAC) baghouse, which is an EPRI patented technology known as TOXECONTM.

Typically, due to rapid removal of the carbon in the ESP and limited contact time with the flue gas, these applications typically achieve lower removal of mercury than carbon into baghouses. In either application, the mercury removal effectiveness of ACI can be enhanced when burning coals with higher sulfur content (e.g. non-PRB coals) by employing ALK, typically hydrated lime injection, ahead of the ACI. Typically, the hydrated lime used for ALK is less expensive than the activated carbon, so the use of ACI plus ALK is a more economical process than ACI alone for a given mercury capture target.

**X. Mercury Re-Emission Controls System (“MRCS”)**

Wet scrubbers are effective at removing oxidized mercury. However, as the captured mercury may remain in a dissolved form in the scrubber slurry in the vessel, the scrubber may from time to time re-emit the mercury that was captured from the flue gas, causing increased levels of mercury emissions out of the stack. The addition of additives, such as activated carbon, into the scrubber slurry can help prevent the occurrence of mercury re-emission by encouraging the precipitation of the mercury dissolved in the slurry.

**XI. Containment and Control Technologies for Ash Storage Areas**

Several technologies are available to control and close ash storage areas. The most common or traditional closure technologies approaches include reducing the closure footprint through consolidation or partial removal of material, liners and cap systems. Proven engineering methods that divert (slurry walls, sheet pile walls, and *in situ* solidification and stabilization) or extract (vertical and/or horizontal pumping wells and French drains) water from the system can be used to supplement the traditional closure technologies and manage water during closure and post closure. A brief description of each technology is provided below.

**Closure Footprint Reduction**

Ash ponds closed in place may involve consolidating ash into a smaller footprint to reduce the area requiring long term O&M associated with maintaining the closed facility.

**Liners**

A liner is a layer of impermeable or low-permeability material placed at the bottom of ash storage facilities, which prevents ash leachate from entering soil and groundwater. Liners can be constructed of compacted natural material (such as clay), synthetic materials (such as High-Density Polyethylene (“HDPE”)), or composite materials (combination of synthetic and natural materials). Regulations require liners under new ash storage areas.

**Caps**

A cap is a layer of impermeable or low-permeability material placed on top of ash storage areas, to prevent surface water infiltration and resulting leachate. As with liners, caps can be constructed of natural materials (for example, compacted clay), synthetic materials (HDPE), or composite materials. Capping may be used in conjunction with other proven engineering methods to effectively encapsulate a material in place.

**Slurry Walls**

Slurry walls are subsurface walls that are designed and installed to a pre-determined depth based on site conditions and project objectives to divert water away from ash closed in place. A trench is filled with a slurry of materials that forms a barrier to prevent the migration of groundwater within the area. Slurry materials can include various mixtures of soil, bentonite clay, and/or cement.

**Sheet Pile Walls**

Sheet pile walls include interlocking wood, concrete, or steel sectors driven into the ground or forced into pre-dug trenches to a specified design depth based on project objectives. As with slurry walls, sheet pile walls form a barrier to control the migration of groundwater. Sheet piling is often used as a temporary measure of containment during closure to facilitate dewatering and excavation, or while other containment is constructed.

**In Situ Solidification/Stabilization**

Solidification/stabilization describes the technique of solidifying soil or waste material, to reduce the potential for groundwater interaction. Solidification refers to the addition of a binder to produce a solid. Stabilization refers to the addition of a chemical agent to convert the soil or waste material to a more chemically stable form. Some additives, such as Portland cement, produce both physical and chemical changes. Large augers or equipment with rotary blades are typically used to mix the additives with contaminated soil or waste material.

**Pumping Wells/French Drains**

Pumping wells, both horizontal and vertical, and French drains can be used to intercept and remove water from the subsurface during and after closure. Pumping wells are perforated pipes installed in the subsurface either vertically or horizontally where water collects and is removed through pumping. French drains are perforated pipes installed in the subsurface to collect and convey water either through gravity drainage or pumping. In both extraction methods, water is removed from the system, treated, and discharged.

**XII. Cooling Water Intake Screen Technology**

Inclined traveling water screens (“TWS”) and cylindrical wedge wire screens (“CWWS”) will generally be the preferred water screen technologies. Both screens will allow debris handling and the design is also adaptable to minimize impingement and entrainment. Screen wash systems for the TWS and airburst systems for the CWWS can maintain screen cleanliness to an acceptable level. If needed, continuous fish and debris handling systems can also be designed to work with the TWS. As needed, fish-return technologies are also available.

**XIII. Water Cooling Technologies**

Cooling water systems are generally placed into two categories: either wet systems, which use water as the cooling medium, or dry systems that utilize air. Wet cooling systems withdraw water to absorb heat via indirect contact with steam in a condenser. These wet cooling systems are divided into two types, based on the manner in which the cooling water is used: once-through and closed-cycle systems with cooling towers or ponds. Unlike once-through systems that continuously draw fresh cold water from a large water source, closed cycle systems recirculate the same cooling water in a continuous loop through the condenser, with only very small amounts of water being withdrawn from a source to replace the water that is lost due to evaporation, drift, and blowdown in the cooling tower.

Because of the relative simplicity, the capital and operating costs for once-through systems are less than those for closed-cycle systems with a cooling tower. Once-through systems can also include helper cooling towers to reduce thermal load at the water discharge point, but these systems do not reduce water withdrawals. Closed-cycle cooling water systems reduce water withdrawals by about 95%. Because of this, use of a closed-cycle system with a cooling tower is one potential method of minimizing impingement and entrainment. However, consumptive use of water is increased from use of cooling towers and approximately 75% of the cooling water withdrawn is not returned to source but is lost to the atmosphere via evaporation.

Dry cooling systems transfer heat to the atmosphere without the use of water. Steam leaving the turbine is piped to an air-cooled, finned-tube condenser. Dry cooling reduces power plant efficiency, requires a large area of land, and is more expensive than wet cooling. A hybrid system incorporates elements of both wet and dry cooling systems to maximize the benefits of each. Few large-scale applications of hybrid systems exist in the United States and the cost is commensurate with that of dry cooling. Neither a dry nor a hybrid cooling system is considered an economically or technically viable option for retrofit of an existing generating unit in the Southeast.

**XV. Dry or Closed-Loop Ash Handling Methods**

To prevent the discharge of ash sluicing water, facilities can convert to dry handling or closed loop ash sluicing. Such ash handling systems include pneumatic dry ash handling equipment (typically used for lighter fly ash) and remote submerged drag chain conveyors and ash coolers (typically used for bottom ash). These systems are utilized in conjunction with additional storage silos and collection systems to facilitate disposal or reuse options.

**XVI. Landfills**

With ash ponds no longer in use, use of landfills is the alternative for long-term ash storage or disposal. This technology can be implemented for ash and gypsum, requiring regulatory permitting, hydrogeologic/geologic studies, and large amounts of available property. In addition, a leachate collection and pumping system would be installed to manage any landfill leachate collected and groundwater monitoring is required.

**XVII. Wastewater Treatment**

Wastewater treatment systems remove or reduce certain constituents in wastewater prior to discharge. Wastewater treatment needs are highly site- and waste stream-specific and can include various systems or equipment, such as settling basins, tanks, clarifiers, pH adjustment, and associated pumps, piping and equipment, to meet site-specific needs.

Physical-chemical treatment systems are used to reduce solids and certain metals within a waste stream. These systems may include lined settling basins, tanks, clarifiers, pH adjustment, and associated pumps, piping and equipment. These systems are widely used across industries.

Phys-chem-bio treatment includes the same components as a physical-chemical system with the addition of a biological treatment system to remove selenium and nitrate from the waste stream. This system can be used for the scrubber wastewater. These systems are newer technologies that continue to be tested and researched.

For membrane-based treatment, scrubber return water use is maximized and scrubber wastewater discharge is minimized. The chloride purge stream is processed through an advanced membrane process to produce a clean permeate stream and a small brine concentrate stream. The concentrate is managed either through third party disposal, ash conditioning and landfill on-site or off-site, or paste processing and landfill on-site. The permeate may be discharged or may be managed through recycling back to the scrubber / boiler make-up if the unit is operational at the time.

**XVIII. Zero Liquid Discharge Technologies**

A common system to eliminate liquid discharge is using heat to evaporate water and concentrate solids and other contaminants. Some of these systems can be operated to achieve full evaporation of liquid, resulting in only a solid product (crystallization), or achieve partial evaporation of liquid. Thermal technologies can be used as standalone systems, or in series with membranes to first reduce the volume of water needed for thermal treatment. These evaporative processes can be applied to achieve zero liquid discharge (ZLD).

ZLD can also be achieved with liquid encapsulation. Encapsulation is a process that can be used to eliminate scrubber wastewater discharge. It uses chemical reactions and/or absorption processes to bond materials together so that wastewater is incorporated into the solid material. This process is also referred to as solidification. The solids are then landfilled.

Deep well injection of water is another process that meets the definition of ZLD as prescribed by the Supplemental ELG rule, and as authorized through an Underground Injection Control (UIC) permitting program.

# ECS - Appendix E – High-Level and Low-Level Radioactive Waste Storage

PLANTS HATCH AND VOGTLE

Georgia Power’s affiliate, Southern Nuclear Operating Company (“Southern Nuclear”) safely operates and maintains Plants Hatch and Vogtle in accordance with industry standards and regulatory requirements. Southern Nuclear is dedicated to maintaining the highest standards for safely handling radioactive waste to protect the public, the environment, and its workers.

**High-Level Radioactive Waste (“HLRW” - spent fuel)**

**Dry Cask Storage:**

Plant Hatch and Plant Vogtle currently store spent fuel in underwater spent fuel pools and some above ground in dry casks on concrete pads known as Independent Spent Fuel Storage Installations until such time that the federal government licenses and builds a permanent disposal facility capable of accepting this waste.

These above ground dry casks are engineered to assist in cooling the spent fuel bundles while providing adequate shielding for the protection of plant employees as well as the surrounding community and environment.

**Low-Level Radioactive Waste (“LLRW” - trash, tools, scrap, filtering media, irradiated hardware, etc.)**

Similar to others in the nuclear power industry in the United States, over 95% of the LLRW generated by Plant Hatch and Plant Vogtle is sent for processing at Energy Solutions before it is disposed at either Energy Solutions burial site in Clive, Utah or Waste Control Specialist burial site in Andrew County, Texas. Plant Hatch and Plant Vogtle may store limited amounts of this waste on the site where it was generated inside concrete shields on a concrete pad until it meets NRC/U.S. Department of Transportation requirements for transportation and disposal.

1. *W. Virginia v. EPA*, No. 24A105, 2024 WL 4501235, at \*1 (U.S. Oct. 16, 2024) [↑](#footnote-ref-2)
2. The 111 GHG Rules allow existing coal units that fully convert to fire natural gas only by January 1, 2030, to be considered natural gas-fired steam units for compliance purposes. Georgia Power evaluates this option as part of the Unit Retirement Studies completed for the 2025 Integrated Resource Plan (“IRP”) but, based on the results, only includes the coal unit compliance options in this compliance strategy. [↑](#footnote-ref-3)
3. 88 Fed. Reg. 61,964, 61,966 (Sept. 8, 2023). [↑](#footnote-ref-4)
4. https://www.georgiapower.com/our-impact/environment/environmental-compliance/compliance-information.html#elg [↑](#footnote-ref-5)
5. Memorandum from David M. Uhlmann, Assistant Adm’r, Enforcement & Compliance Assurance, EPA, to Reg’l Adm’rs et al. (Aug. 17, 2023), <https://www.epa.gov/system/files/documents/2023-08/fy2024-27necis.pdf>. [↑](#footnote-ref-6)
6. <https://georgiapower.com/ccr>  [↑](#footnote-ref-7)
7. Memorandum from the Interagency Working Group on Social Cost of Greenhouse Gases (December 22, 2023), https://www.whitehouse.gov/wp-content/uploads/2023/12/IWG-Memo-12.22.23.pdf. [↑](#footnote-ref-8)