Georgia Power

Bin 10230
241 Ralph McGill Boulevard NE
Atlanta, GA 30308-3374

PUBLIC DISCLOSURE

November 4, 2025

Ms. Sallie Tanner
Executive Secretary
Georgia Public Service Commission
244 Washington Street, SW
Atlanta, GA 30334-5701

RE: Georgia Power Company's Integrated Hydrogen Microgrid Report, Docket Nos. 44160 and 44161

Dear Ms. Tanner:

In accordance with the Georgia Public Service Commission's (the "Commission") July 29, 2022 Order Adopting Stipulation in Georgia Power Company's ("Georgia Power" or the "Company") 2022 Integrated Resource Plan in Docket Nos. 44160 and 44161, enclosed for filing is Georgia Power Company's Q3 2025 Integrated Hydrogen Microgrid Report ("Report").

The Report contains certain information that is being filed under the trade secret rules of the Commission. As such, a redacted version of this information and the basis for the trade secret assertion are also enclosed for public disclosure.

If you have any questions regarding this filing, please contact Cheryl Johnson at 404-506-6837.

Sincerely,

/s/ Jeremiah Haswell

Jeremiah C. Haswell
Director, Regulatory Affairs
Georgia Power Company
jhaswell@southernco.com

Enclosure

BEFORE THE GEORGIA PUBLIC SERVICE COMMISSION

GEORGIA POWER COMPANY
DOCKET NOS. 44160 and 44161

Basis for the Assertion that Redacted Portions of the Information Submitted are Protected Trade Secrets

In accordance with the Order Adopting Stipulation Agreement issued by Georgia Public Service Commission ("Commission") in Docket Nos. 44160 and 44161, Georgia Power Company ("Georgia Power" or the "Company") is providing to the Commission the Q3 2025 Integrated Hydrogen Microgrid Report (the "Report"). The Report contains confidential information relating to the Company's business plans, forecasted costs, and projected budget (the "Information"). Such Information constitutes trade secret information of Southern Company, Georgia Power, and its affiliates, and is therefore protected from public disclosure under Commission Rule 515-3-1-.11.

The trade secret portions of the Information derive economic value from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from their disclosure or use. Specifically, the Information contains confidential details on the timing and estimated amount of forecasted costs, as well as a sensitive project schedule. The trade secret portions of the Information are considered confidential and proprietary by the Company and its contractors and are not generally known by the public. If the timing and projected costs were disseminated to the public, vendors, equipment suppliers, and service providers as well as competing projects could use the information to set a floor on pricing thereby arbitrarily increasing costs to Georgia Power's customers. In addition, if the timing of the costs were made public, a competitor or service provider on another project could leverage this information to gain access to equipment, supplies, and services in an already constrained market. Georgia Power's competitors are generally not required to reveal similar information and to require the Company to do so could place it at an economic disadvantage to the detriment of its customers.

The trade secret portions of the Information are subject to substantial procedures to maintain its secrecy. Only select Georgia Power and Southern Company personnel, and their legal counsel, are granted access to this information. Those personnel receive access only on a "need to know" basis. Parties outside Georgia Power and Southern Company and their legal counsel who have been granted access to the Information, if any, have been required to sign confidential agreements with respect to the Information.

Jeffrey R. Grubb, first being duly sworn, deposes and states that he has reviewed the attached document and that the information included in such document is accurate to the best of his knowledge and that the specific information designated as trade secret constitute trade secrets pursuant to Article 27, Chapter 1, Title 10 of the Georgia Code.

Jeffrey R. Grubb
Resource Planning Director

Subscribed and sworn to before me this 3rd day of NOV 2025.

Notary Public

My Commission expires: 9/25/29

JANELLE SHAFFER
NOTARY PUBLIC
My Commission Expires
September 25, 2029
CARROLL COUNTY, GEORGIA



Integrated Hydrogen Microgrid Project

Quarterly Report

Reporting Period End Date: September 30, 2025

Table of Contents

Special Notes (as of October 16, 2025) 3
Key Updates (July 1, 2025 – September 30, 2025) 4
Project Background 4
Vehicles Update 7
Fueling Update 7
Microgrid Update 9
Analysis Update 10
Southern Company Accomplishments During Previous Reporting Period 11
Southern Company Plans for Next Reporting Period 12
Southern Company Budget and Schedule 12

List of Tables

Table 1. Revised actual and forecasted costs per calendar year. 12

List of Figures

Figure 1: Hydrogen microgrid energy system 5
Figure 2. Overall project timeline organized by workstreams 6
Figure 3 – GM Gen2 FCEV 7
Figure 4 Temporary Refueler 8
Figure 5 Temporary Refueler (side view) 9
Figure 6 - System Layout 10
Figure 7 - Project Schedule ..... **Error! Bookmark not defined.**

Special Notes (as of October 16, 2025)

The following document contains updates describing progress through September 30, 2025, consistent with the cadence of previous updates. Since then, several items have been completed:

- Grid-connected power has been installed for the Air Liquide temporary refueler commissioning system and the generator providing power during installation has been removed.
- Pre-startup safety review (PSSR) for the Air Liquide temporary refueler has been completed.
- Designs for incorporating the current Air Liquide temporary refueler into the permanent system have been prepared, potentially saving more than $1 million from project costs
- Additional modifications have been completed on the GM truck and the truck is ready to ship to the site.

The end of the current DOE budget period, during which time the contract between DOE and GM is in force, ends October 31. DOE officials had indicated that this project would be extended, but no such contract materialized before the DOE officials were furloughed pursuant to the federal government shutdown, and consequently, GM cannot award SCS the expected contract extension. Therefore, SCS will pause work on this project after October 31, 2025, until such time as a contract extension can be executed. As with past reports, this document contains forward looking statements. However, any future work is contingent on project approval past October 31, 2025.

Complicating the situation is a change in GM business strategy: On October 10, 2025, GM executives announced the shuttering of their hydrogen fuel cell vehicle business unit. This was highly unexpected by projects teams at both SCS and GM. The GM project manager has indicated that they have resources to support deployment of up to two vehicles should DOE provide contract extensions. However, even with DOE contract extensions, GM will need to re-scope the project to only focus on initial truck deployment.

The project team is actively preparing options for scenarios that include DOE contract extension, utilizing the infrastructure in collaboration with GM but without DOE contract extension, and utilizing the infrastructure apart from GM. The Company is also evaluating other opportunities to partner with Georgia businesses that may benefit from this project.

Key Updates (July 1, 2025 – September 30, 2025)

- Commissioning of the Air Liquide temporary refueler commissioning is ongoing.
- The Microgrid design contract was awarded.
- A Request for Proposal (RFP) was sent to hydrogen compressor suppliers, bids have been evaluated, and a recommendation is pending.
- An RFP was issued for the fast charger and a recommendation has been made for procurement. A contract will be awarded Q4 2025.[1]
- An RFP is prepared for the electrolyzer building and will be awarded in Q4 2025[1]

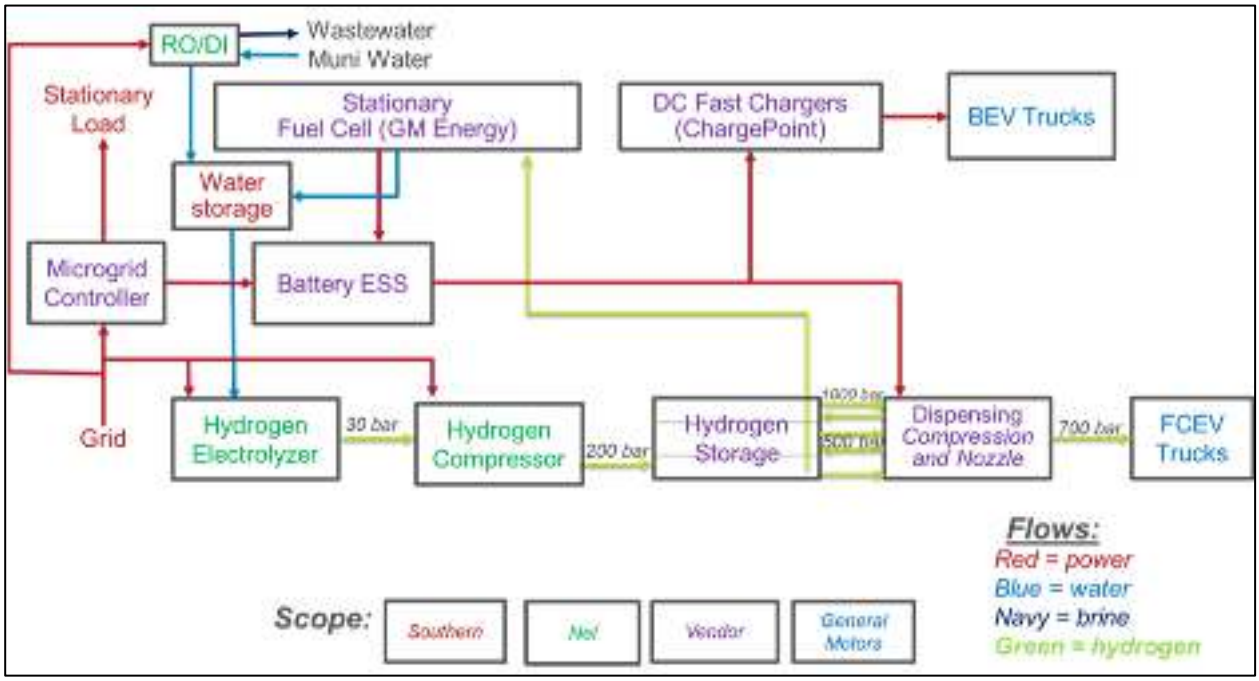
Project Background

Hydrogen is an area that may provide customers with benefits as renewable deployment increases and technology improvements occur. Using a process known as electrolysis, energy providers can create hydrogen using electrical energy and water. The hydrogen created from this process can be utilized for many purposes. For electricity production, hydrogen fuel can offset or eliminate natural gas while reducing carbon emissions. Hydrogen can also be utilized in Distributed Energy Resources ("DER") applications, as a transportation fuel, or even in certain industrial processes. Through stored hydrogen, these energy end uses could be decarbonized, providing additional low-carbon energy to energy users throughout Georgia.

To prepare for this possibility, as approved by the PSC in the 2022 IRP, Southern Company Services ("SCS") and Georgia Power Company ("Georgia Power" or the "Company") are partnering with key stakeholders to develop an integrated hydrogen microgrid as illustrated in Figure 1. This project seeks to create hydrogen from an electrolysis system utilizing grid energy. The hydrogen produced will then be used in a fuel cell microgrid application and for transportation fuel. The fuel cell component will create electricity that can be utilized to charge electric vehicles, provide backup power, or provide peaking services, thus demonstrating the flexible nature of stored energy via hydrogen for both vehicles and stationary power loads.

[1] While this was accurate as of September 30, no contract will be awarded until the project future is determined as explained in the Special Notes Section.

Figure 1: Hydrogen microgrid energy system



This project will include hydrogen fuel cell Class 4 trucks and battery electric trucks. No production zero emission vehicles are available for Class 4 trucks (which are the most common fleet vehicles in the utility industry). Based on DOE guidance, the battery electric trucks used in this project may be light-duty pickup trucks rather than Class 4 trucks owing to lack of BEV in the medium-duty classes. This project leverages federal funding[2] and collaboration between General Motors ("GM"), Southern Company Services and Georgia Power Company, Nel Hydrogen, and the Electric Power Research Institute ("EPRI").

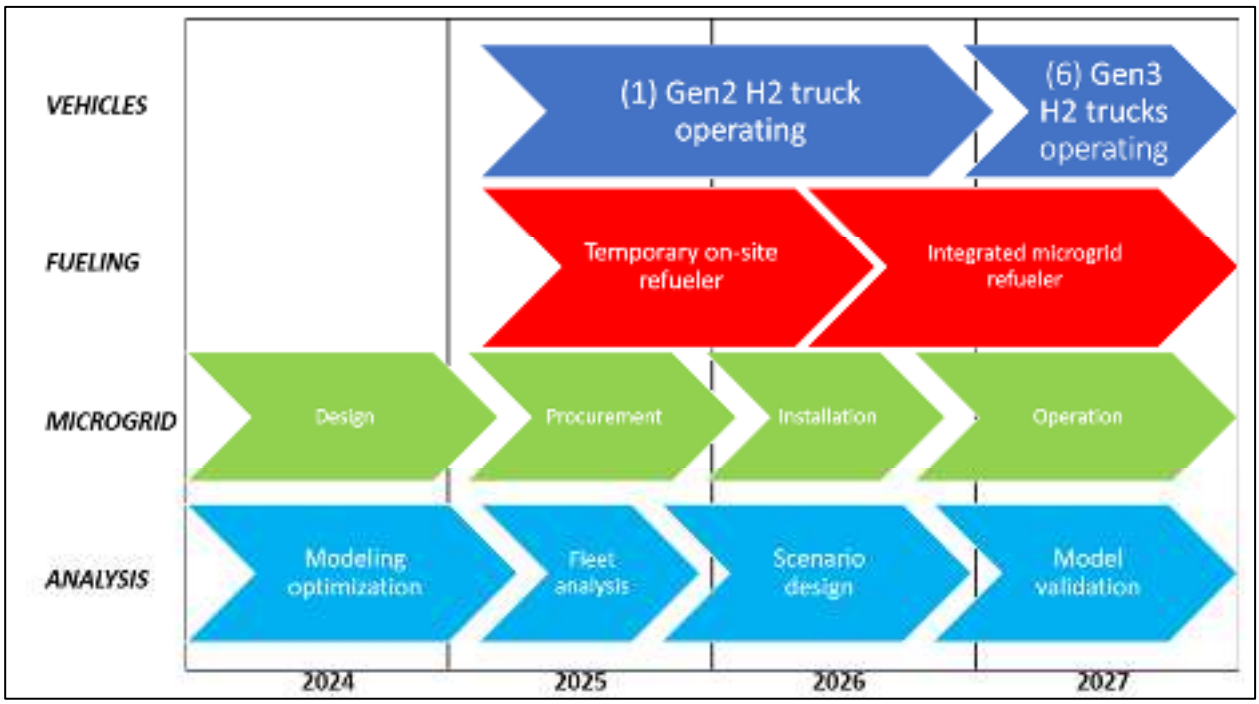
Specific objectives include:

- Demonstrate system benefits to grid and create value through use-case stacking:
  - Electrolyzer and fuel cell as dispatchable loads
  - Fuel cell for peak shaving
  - Fuel cell for back-up power
- Develop path toward deployment of energy storage systems
- Design and demonstrate zero-emission vehicles for utility applications
- Illustrate Green House Gas ("GHG") emissions reductions
- Demonstrate microgrid and zero-emission vehicle integration for customers

The project is executed through four workstreams, with associated high-level activities shown in **Error! Reference source not found.**. Specific updates are provided in the following sections.

[2] Super Truck 3 – DOE Proposal Awarded - https://www.energy.gov/articles/doe-announces-nearly-200-million-reduce-emissions-cars-and-trucks

Figure 2. Overall project timeline organized by workstreams



Vehicles Update

GM is providing a Gen2 hydrogen fuel cell electric vehicle (FCEV) for initial demonstration (3), followed by Gen3 FCEV which will be medium-duty vehicles for vocational service. Battery electric vehicles may be supplied by GM or utilized by existing fleet vehicles. The initial vehicle will be a Class 4 pickup with a shop-service body for use by GPC Fleet Services (Sands Place facility in Marietta, GA) in support of system maintenance. This vehicle has already been constructed by GM using an existing conventional vehicle frame atop a new chassis with two (2) GM Hydrotec fuel cells and with an estimated range of greater than 300 miles at Gross Vehicle Weight, or greater than 100 miles range with 10 hours of export power at a worksite. It is planned for delivery in Q4 2025[3]. Once it is on-site in Georgia, additional safety and operational training will be provided by GM.

Figure 3 – GM Gen2 FCEV



Gen2 FCEV is like the vehicle to be demonstrated in this project. The GPC vehicle will have conventional cab, not crew cab, and a longer toolbox.

Fueling Update

GM has procured a site-based refueling system from Air Liquide, which has been fabricated in Houston. TX and was delivered to the site in Q2 2025. The system is currently in the

[3] While this was accurate as of September 30, no further action will be taken until the project future is determined as explained in the Special Notes Section.

commissioning and start-up phase. This system will use hydrogen supplied from a conventional tube trailer and compress it for dispensing into the vehicle. GM will also be procuring the hydrogen supply utilizing local suppliers and supported in this procurement by Southern Company Supply Chain. This conventional tube trailer is the same type used at Plant McDonough to supply hydrogen for generator cooling. Equipment from Air Liquide was delivered and is set in place. Interconnecting tubing was tested and installed. A 480V electrical supply was installed for installation and start-up activities. Air Liquide technicians began loop checks and other programming checks. They will continue commissioning and start-up activities in Q4, 2025. Intertek completed their review of the Air Liquide skid and provided certification. In Q4, 2025 the team completed a ready for hydrogen review in preparation for receiving hydrogen and has since received hydrogen and commissioning is ongoing.

Figure 4 Temporary Refueler



Figure 5 Temporary Refueler (side view)



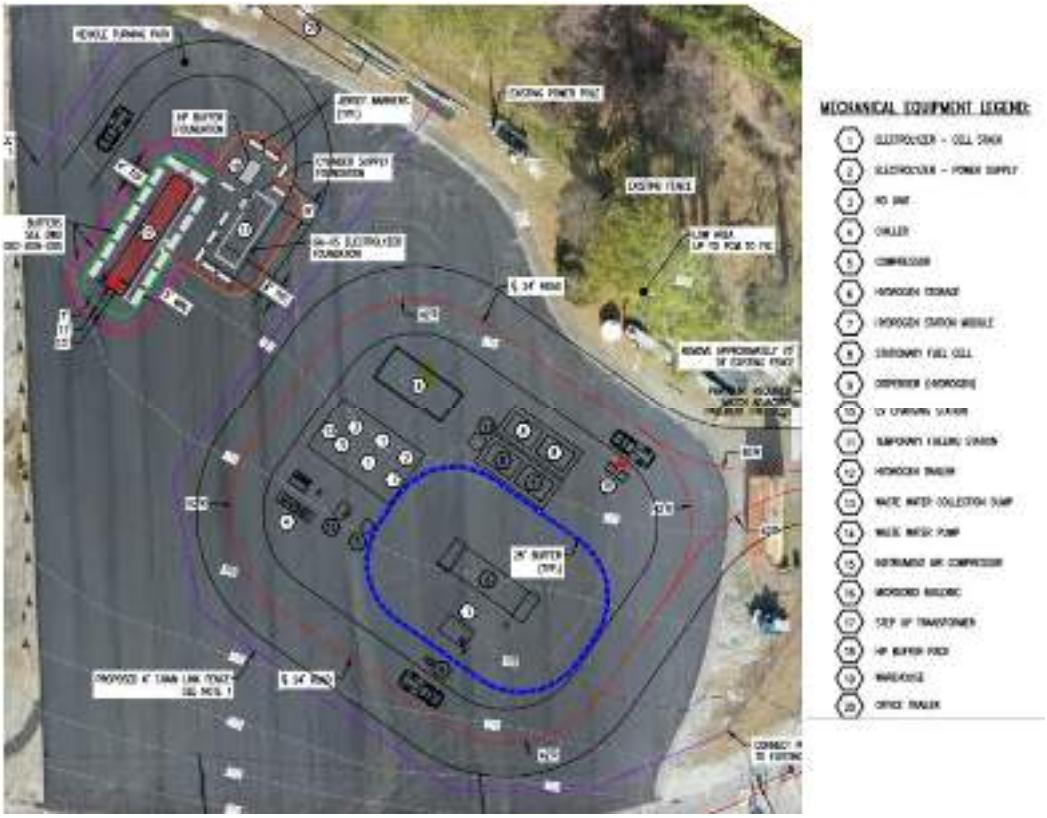
Microgrid Update

Conceptual design and layout are complete for the integrated hydrogen microgrid at the site. Figure 6 - System Layout shows the layout for the project. Piping and instrumentation diagrams as well as detailed civil design are underway. The preliminary electrical load list was created to size electrical infrastructure needed to power the project.

Following the detailed mechanical design, a hazard identification (HAZID) process will take place. Hydrogen will be produced (approximately 160 kg/day) at the site using up to 400 kW electrolyzer supplied by Nel (two C30 units) installed in a small building. Hydrogen compression, compressed gas storage, a stationary fuel cell, and a 350-kW fast charger. The stationary fuel cell will provide energy for the fast charger, thus avoiding any impact to the local power distribution system. The stationary fuel cell will also provide resilient power to a nearby warehouse at Plant McDonough site. A battery energy storage system will be designed and added to site to help stabilize the microgrid in islanded operations and maximize economic dispatch in grid-connected operations. Several RFPs have been issued for various microgrid components. An RFP was issued through SCS Supply Chain Management for the microgrid controller, battery energy storage system, and associated electrical connection equipment and installation, to qualified bidders and responses were received earlier this year. The contract was issued for work to be completed in Q4 2025. An RFP was issued for a hydrogen compressor. Bids were evaluated, and a recommendation may be made to award a hydrogen compressor for the project in Q3/Q4 2025. An RFP has been issued for the electrolyzer building. Review of bids

will be completed in Q4 2025. Lastly, an RFP was issued for the faster charger. Bids were reviewed and a recommendation was made for procurement. A contract is expected to be awarded in Q4 2025.

Figure 6 - System Layout



Analysis Update

Preliminary operational simulation has been completed, and it has been shown that most of the stored hydrogen would be used in support of peaking or resilient power. SCS awarded a Subrecipient Agreement to EPRI, pursuant to which EPRI will analyze impacts of broad deployment of the hydrogen microgrid approach, including an assessment of fleets and scenarios for providing infrastructure as those fleets convert to ZEV. EPRI is completing the first phase of that work. EPRI is providing cost-share to this project by doing the work in the Low Carbon Resources Initiative program, and by doing so, provides additional opportunities to highlight the entire project to electric and/or gas utilities.

Southern Company Accomplishments During Previous Reporting Period

Task	Accomplishments
Task 1: Simulation & Analysis	See details in Tasks below for Southern Company scope
Task 1.2: Fleet identification, baselining, and planning	**Complete**
Task 1.2.1: Identification of vocational fleet vehicles for the demonstration	**Complete**
Task 1.2.2: Collection of baseline fueling and performance data	**Complete** • MPG ranges from 5.5 to 9.4 and average of ~8,000 miles (about 12874.75 km) per year • Additional telematics provided by GM for drive train optimization • Trucks from Sands Place facility
Task 1.2.3: Simulation and analysis for charging and electrolysis scenarios for GHG and price optimization	**Ongoing with expected complete by end of BP4** • Operational model completed to calculate maximum price and GHG from primary power (typical grid ~0.4 kgCO2/kWh) • Most of the stored hydrogen needed to support resilient power
Task 1.2.4: Model impacts of utility scale adoption	**Moved to BP3 and BP4** • EPRI is being added as a subrecipient with plans to complete this scope over the next 2 years. The overall subtasks within this Task are: • Assessment of medium duty vehicles in the utility sector • Cost and GHG estimation for refueling and recharging if all MD utility vehicles were ZEV • Cost and GHG estimation for nationwide deployment of integrated hydrogen microgrids for vehicles in utility sector
Task 2: Design	See detail of Tasks below for Southern Company scope
Task 2.4.: Site planning and design at the fleet site	• **Complete**

Southern Company Plans for Next Reporting Period

As described in the Note, the project is awaiting DOE contract extension and potential re-scoping of the project with GM. However, based on the current scope, if it were continued, the next steps are described below.

Task 1.2.4

- EPRI to complete assessment of utility vehicles, especially medium duty trucks.

Task 2.4

- Award microgrid integration (controller and associated scope) design activities to start.
- Award and issue contract for hydrogen compressor, if required,
- Award and issue contract for fast charger.
- Award and issue contract for fast electrolyzer building.
- Complete commissioning of temporary refueling system (Air Liquide)
- Receive FCEV from GM at Geogia Power Fleet Services (Sands Place)

Task 4

- Complete training for Fleet Services group for first truck from GM

Southern Company Budget and Schedule

Table 1. Revised actual and forecasted costs per calendar year.

Year	2023	2024	2025	2026	2027	Total
Federal Cost ($)	$14,062	$153,131	**REDACTED**	**REDACTED**	**REDACTED**	**REDACTED**
Company Cost ($)	$27,298	$297,109	**REDACTED**	**REDACTED**	**REDACTED**	**REDACTED**
Total Cost ($)	$41,360	$450,240	**REDACTED**	**REDACTED**	**REDACTED**	**REDACTED**

Contains actuals through September 2025 and forecast for the remainder. The budgeted cost is based on the current understanding of the project which is being reviewed. Additional refinements are expected as the project matures.

The Project schedule is included on the next page.

This schdule is fully redacted.