BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
NASHVILLE, TENNESSEE

May 20, 2022

IN RE:	**)**	
CHATTANOOGA GAS COMPANY	**)**	**Docket No.**
PETITION FOR APPROVAL OF ITS	**)**	
2021 ANNUAL RATE REVIEW	**)**	**22-00032**
FILING PURSUANT TO	**)**	
TENN. CODE ANN. § 65-5-103(d)(6)	**)**	

CHATTANOOGA GAS COMPANY RESPONSES AND OBJECTIONS TO CHATTANOOGA REGIONAL MANUFACTURERS ASSOCIATION'S FIRST SET OF DISCOVERY REQUESTS

Chattanooga Gas Company ("CGC" or "Company") files these Responses and Objections to the First Set of Discovery Requests of Chattanooga Regional Manufacturers Association ("CRMA") filed May 6, 2022.

To assist the Hearing Officer in evaluating this matter, CGC is setting forth its objections and responses in two parts. Part I sets forth general objections applicable to CGC's discovery responses. Part II sets forth objections to specific discovery requests propounded by CRMA.

I. GENERAL OBJECTIONS

CGC objects generally to any definitions or instructions to the extent that they are inconsistent with and request information that is beyond the scope of the Tennessee Rules of Civil Procedure. CGC's responses will comply with the requirements of the Tennessee of Rules of Civil Procedure.

Any requests for production of documents are interpreted to describe each item or category of items requested with reasonable particularity as required by Tenn. R. Civ. P. 34.02. CGC will

produce items and/or data in its possession, custody or control as required by Tennessee Rules of Civil Procedure.

CGC further objects to these discovery requests to the extent they seek information that is beyond the scope of legitimate discovery in this case or that is subject to any privilege, including the attorney-client privilege and/or attorney work product doctrine. However, without waiving any of these General Objections, the Company will respond to CRMA's discovery requests by providing responsive, non-privileged information. These General Objections are continuing and are incorporated by reference in CGC's responses to all discovery requests to the extent applicable.

Further, CGC is proceeding in the traditional course of providing information that it deems to be confidential pursuant to the terms of the TPUC's Protective Order issued on April 21, 2022, by marking the information as confidential. CGC is acting in good faith reliance on CRMA's compliance with the Protective Order.

II. SPECIFIC RESPONSES AND OBJECTIONS

1. For the winter months of November - March 2021, and November - March 2022, provide a daily itemized list of the following:

   a) CGC total metered volume for each day;

   b) Deliveries by pipeline for each day; and

   c) For each delivery, please provide whether or not this gas was purchased at Monthly index, storage withdrawal, or gas daily.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

2. For the winter months of November - March 2021, and November - March 2022, when there was a balancing order issued by CGC, and the full firm transportation pipeline entitlements were not fully utilized by CGC firm sales customers, please provide an explanation of why CGC did not offer incremental gas to CGC T-l customers.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

3. For the winter months of November - March 2021, and November - March 2022, when there was a balancing order issued by CGC, and CGC's LNG plant was utilized by CGC, please provide an explanation on why CGC did not offer incremental gas to CGC T-l customers.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

4. For the winter months of November - March 2021, and November - March 2022, when there was a balancing order issued by CGC, and CGC's LNG plant was utilized for peaking, were there any days when the manager of the LNG plant did not nominate the full firm transportation entitlements of CGC? Please provide explanation for the manager's decision.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated

in this case.

5. Based on CGC's current load forecasting model for gas system requirements, please provide the anticipated Heating Degree Days (HDD), when the LNG plant will be needed to provide peaking.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding, in this case, forecasted winter 2022-2023 information regarding the LNG plant. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

6. Based on CGC's recent addition of firm transportation capacity from East Tennessee, (February 2022), please provide the anticipated Heating Degree Days (HDD), when the LNG plant will be needed to provide peaking.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding, in this case, forecasted winter 2022-2023 information regarding the LNG plant. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

7. For the winter months of November - March 2021, and November - March 2022, when there was a balancing order issued by CGC, and the LNG plant was utilized for peaking, provide a proforma model on the end of winter LNG inventory if CGC had provided incremental sales to T-l customers each day that the LNG was operational.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding, in this case, the creation of a model based upon speculation as to gas sales that did not occur. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

8. The recent Exeter Report made recommendations to CGC that they needed to consider off systems sales transactions using their LNG plant for displacement. Please provide any

provisions that CGC has made in the current AMA agreement that would allow for this type of transaction. Please provide an explanation on whether or not this type of transaction would take precedence over offering incremental sales to CGC T-l customers.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case. CGC does not necessarily agree with the CRMA's characterization of what the Exeter Report says, which speaks for itself. Further, the current AMA approved by the Commission in 2021 reflects those changes the Commission directed CGC and the Commission Staff to address for possible inclusion, with some of those changes recommended in the Exeter Report being included; thus, the current AMA speaks for itself.

9. Please provide a spreadsheet showing how much LNG gas was sold off system each month from November 1, 2017 to current.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding, back to 2021. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

10. Describe the methodology the Company uses to forecast annual consumption and peak day.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information regarding the methodology the Company uses to forecast annual consumption and peak day, which is not relevant to an assessment of CGC's 2021 non-gas sales. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

11. Provide the forecasting spreadsheet in excel format.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information regarding the methodology the Company uses to forecast annual consumption and peak day, which is not relevant to an assessment of CGC's 2021

non-gas sales. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

12. Provide the forecast of annual volume and peak day for the period 2022 through 2032.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. CGC's only obligation is to provide its expense budget for the current calendar year, which it has done. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

13. Provide the historic forecast of annual consumption and peak day submitted in prior years for the year immediately following the specific filing. Please provide data for the period 2011 through 2021.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. CGC notes that there is no prior historic consumption and peak day information submitted in prior years because such information is not relevant to this ARM Docket proceedings. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

14. Provide the actual annual consumption and peak day for the period 2011 through 2021.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

15. Provide customer count data, historic and projected and by customer class from 2011 to 2032.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Further, the request seeks information outside of the scope of the Historic Base Period at issue in this proceeding. CGC has provided customer count information by class for 2021 as it is required to do under the orders approving CGC's ARM filing. CRMA may review CGC's prior ARM Docket filings and its 2018 rate case, which are available from the Commission, for other historic customer information, which is nevertheless irrelevant to these proceedings. Regarding

projected information, customer count information beyond 2021 is irrelevant to a determination of CGC's 2021 historic costs. Aside from the 2021 data included with CGC's ARM filing in this docket, there is no other information that is relevant to the subject matter of this action or otherwise would have any conceivable bearing on this case.

16. Provide an explanation of LNG facility improvement projects that have been undertaken over the past five years, or are planned. For any planned project provide the capital cost estimate, and construction timetable.

CGC RESPONSE: Please see CRMA 1-16a Attachment.

17. Explain why since 2018 there have been no sales of LNG to non-system supply customers of the Company or off-system customers.

CGC RESPONSE: CGC objects to this request as excessive, unduly burdensome, and not likely to lead to the discovery of relevant information. Gas commodity costs, including sales, supply, and pipeline balancing orders, are not included in the ARM because gas costs are recovered through the PGA which is not a part of CGC's ARM. Why there has or has not been off system sales has no relevance to an evaluation of the non-gas related expenses that are considered and evaluated in this proceeding. Further, the request seeks information outside of the scope of the Historic Base Period (calendar year 2021) at issue in this proceeding. Therefore, this request does not seek information relevant to the subject matter of this action and has no conceivable bearing on the historic costs evaluated in this case.

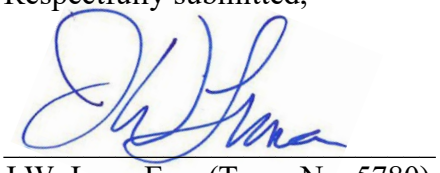
18. Confirm that the capital cost of the LNG facility is currently being recovered in base rates and allocated to all customer classes.

CGC RESPONSE: It is confirmed that the capital cost (return, interest, and depreciation) related to the LNG facility is being recovered through base rates and not through the PGA or other rate factors. Since CGC's rates established by the Commission are not based on costs that are allocated or otherwise assigned to individual Rate Schedules, it cannot be confirmed that the capital cost of the LNG facility is allocated to a specific customer class.

19. Confirm that the capital cost of the LNG facility is being recovered in rates charged to transportation customers.

CGC RESPONSE: Since CGC's rates established by the Commission are not based on the allocation of cost or the otherwise assignment of cost to individual Rate Schedules, it cannot be confirmed that any LNG cost is charged to the transportation customers and not recovered from another customer class. It is recognized that interruptible transportation customers pay lower base rates than similar customers served under firm sales Rate Schedules or customers that elect interruptible transportation with firm gas supply backup.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that a true and exact copy of the foregoing Responses and Objections to the CRMA's Discovery Requests have been forwarded via electronic mail on Friday, May 20, 2022, to the following:

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Dated: May 20, 2022

YEAR	PROJECT ID	PROJECT NAME[1]	PROJECT JUSTIFICATION
2017	147588	8100-CGC LNG Solar Turbine	This Solar turbine overhaul project and includes the engine exchange, BAM kit for vibration, oil temperature and pressure regulator, freight, spare parts and installation labor. Turbine overhaul is based on run hours and must be sent back to the factory for repair. Currently Chattanooga's turbine is at 28,280 hours of run time with an overhaul scheduled at 30,000 hours. Based on liquefaction projections into Q1 of 2016 the turbine will exceed 30,000 hours and require an overhaul.
2017	148174	GAOPS - CHLNG - LNG Valves	This project will replace the valves and insulation at the LNG pumps. The existing valves are leaking by and need to be replaced with zero leakage valves. Also the insulation at the pump pit will also be replaced at the same time. This is required by FERC.
2017	152048	8100-CHLNG-Tank Found Mortar	This project will remove the existing mortar and caulk bead around the LNG tank foundation, inspect the foundation for structural integrity and apply new mortar and sealant.
2017	153476	8100-CHLNG-Pump Pit Retain Wal	This project will install a retaining wall at the LNG Pump Pit area. Currently the pump pit was expanded for the truck loading pump and operators/maintenance must climb over large rocks to get to the de-ethanizer skid, which could result in an injury. This wall will create a safe walking path.
2017	153548	8100-CHLNG -New Property Fence	This project will install fencing around a recent property purchased on Wisdom street as additional buffer around the plant. This property is currently not fenced or secured. Installing fencing and lighting adds another level of security to the plants existing security system.
2017	153572	8100-CHLNG New Heater Platform	This project will address a safety issue associated with personnel access for performing testing or maintenance on reliefs located on heaters. Installing a permanent ladder and platform will eliminate safety issues associated with temporary scaffolding, ladders and platforms.
2017	153910	8100-CHLNG-New Waste Oil Sys	Waste oil for compressors, fuel skid, turbine is collected in 5 gallon buckets and then dumped into a holding tank for disposal. This project will install an automatic pumping system would prevent spills emptying buckets and possible back injuries.
2017	155762	8100-CHLNG - Building Lighting	This project will install a new LED lighting at several locations inside the plant. LED lights are brighter and require less frequent changeout which improves safety.
2017	155931	8100-CHLNG-Dehydrator Vlv Repl	This project will replace the 19 orbit valves at the dehydrators. The existing valves are at end of life.
2017	156632	8100-CHLNG-York Comp Panel Rpl	This project will replace the existing control panel on the York compressor. The panel is an upgrade to the latest operating system and components. There are several obsolete components, power supplies, circuit boards on the existing panel, and upgrading will install the latest versions increasing the life of the equipment.
2017	156634	CHLNG-Turbine Cooler Replace	This project is for replacing the existing turbine lube oil cooler with a new unit capable of higher cooling capacity. The existing unit is damaged due to hail, and doesn't cool adequately during warm weather months. The new unit will have a hail guard, and a complete replacement is more cost effective than rebuilding the existing unit.
2017	156636	CHLNG - Condenser Rebuild	This project will rebuild the existing MRL condenser, and to install new isolation valves on the inlet and outlet lines. The new valves will allow Operations to isolate the condenser to mitigate the amount of refrigerant that is blown down each time it's opened up for maintenance/cleaning. For the condenser rebuild the tubes and tube sheets will be replaced, and the shell portion will be coated to help prevent corrosion.
2017	157755	8100-CHLNG Fire Pump Panel Rep	This project will replace and upgrade the fire pump control panel. The existing panel keeps having maintenance issues, and parts are obsolete.
2017	157756	8100-CHLNG MRL Storage	This project is for engineering design work associated with the MRL storage project. Currently there is no way to store the MRL when maintenance occurs on the condenser and associated equipment, and approximately $40k in MRL gets lost each time this occurs. The project will create a storage option for the MRL similar to all of the other LNG plants.
2017	157798	8100-CHLNG Turbine Air Intake	This project will add a new protective enclosure around the turbine air intake to prevent wind driven rain from entering and causing a shutdown during liquefaction.
2017	157800	CHLNG Truck Loading Arm Suppor	This project will provide swing arms – supports for the truck loading hoses preventing damage and making handling safer.
2017	158582	8100-CHLNG - Security Upgrades	This project is for upgrading the security system for the plant. The existing components are obsolete, and parts are no longer avaiable. The latest technology will be used to upgrade the cameras, security software, and intrusion detection. The complete scope will be: Provide and Install new fence security system. Provide and Install new Pelco security cameras. Provide and Install new workstation for the camera system.
2017	158685	8100-CHLNG - Equipment Shelter	This project is for installing a 40'x50' covered equipment shelter. The equipment currently sits outside in the elements, and a coverage shelter is needed for storage and equipment maintenance.
2017	159825	8100-CHLNG Vaporizer Slab and	The existing containment area does not have adequate slope which causes it to continuously hold water. The project will add additional concrete and a drain to prevent water accumulation. We will also modify and improve the condition of the road on the west side of the property. The existing road floods during storms which makes this section of the property inaccessible.
2017	160217	8100-CHLNG Building Remodel	This project is for the remodel and addition of a 20 foot extension onto the existing old control building to convert it into a warehouse and office space. Purchase shelving and shop equipment for new warehouse.
2018	164769	8100-CHLNG Thermocouple Upgrad	This project will replace 55 thermocouples throughout the plant. The existing ones are obsolete and starting to have maintenance/reliability issues.
2018	165390	8100-CHLNG Tornado Shelter and	This project will install a tornado shelter in the control building and purchasing a portable forklift ramp. This is all new equipment and new construction.
2018	165514	8100-CHLNG Driver Building	This project will construct a 10'x14' metal building and concrete slab near the rear of the truck scale for the drivers to stay out of the weather and still observe loading operations. The building will have HVAC, lights and communication to the main control room.
2018	165515	8100-CHLNG Tank Heat	This project will replace the existing tank heating system that prevents frost heave. It is prone to failures and beyond it's useful life.
2018	165846	8100-CHLNG Solar Panel Upgrad	This project will replace the existing Solar Turbine Panel and install an air conditioning unit and enclosure for the panel to keep it cool and for protection from the weather.
2018	165892	8100-CHLNG CO2 monitor	This project will install a new CO2 monitor/detector in the process piping.
2018	165988	8100-CHLNG Fire Protection En	This project will complete a new NFPA 59A fire protection engineering study per FERC recommendation. This will be the initial engineering portion of a larger capital protect to upgrade the fire water systems at the facility.
2018	166671	8100-CHLNG Fire Protection Eng	This project will complete detailed engineering design and new firewater drawing package for the Chattanooga LNG Plant. The new design will cover the firewater pump building (new electric firewater pump/controls), the new underground firewater piping design, create detailed drawings of the firewater system that are up to date to ensure regulatory compliance, and an evaluation and design of the foam suppression system.
2018	167724	8100-Chatt LNG LOTO Implementa	This project will involve purchasing new lockout/tag out supplies, creating a new database, and everything else involved in implementing the LOTO program at the plant.
2018	171558	CHLNG Fire Pump Backup Genera	This project will completing the detailed engineering design and installation of a new natural gas driven backup generator for both of the electric fire water pumps. The Fire Marshall requested that we install a new generator capable of powering both electric fire pumps after the recent installation of the second electric pump.
2018	171648	CHLNG Instrument Air Compress	This project will be for the piping replacement of the instrument air compressors to allow for easier maintenance and access. The existing piping is at the end of life. The project scope includes installing new piping, valves, regulators and adding new roof ventilation.
2018	171651	CHLNG Turbine Waste Oil System	This project will include the installation of (2) Jatco J-5000CX enviromental tanks and (1) 250 gallon waste oil storage tank to automate the collection of waste oil. The scope will include all new air and oil piping to the tanks.
2018	171669	CHLNG Fire Protection Upgrade	This project will completing the remaining portion of implementing the ORCUS recommended fire protection upgrades. The project will include adding two new foam generators and associated valves and SS piping, installing a new electric jockey pump and controls for the fire water system feeding the foam tank, installing a new water line to the foam tank, supply and installation of the new heat (4), flame (6) and gas (3) detectors with wiring and conduit, and performing necessary controls upgrades.
2018	171671	CHLNG Cooling Tower Water Lin	This project will install a new underground line for the cooling tower supply line.
2018	171906	CHLNG Tools.	This project is for the purchase of a new tool, an IPLEX G Lite Industrial Videoscope System. This will allow the plant to complete the annual inspection on the turbine and will eliminate the costs associated with utilizing a third party.
2018	172029	CHLNG Glycol Containment Area.	This project will install a glycol containment area that is sufficiently sized for the amount of glycol that is stored on site. The new containment area will ensure any leaks or spills are properly contained for cleanup.
2018	172030	CHLNG Plant Metering Upgrade	This project will upgrade the metering devices on all plant equipment to improve accuracy and increase data. Current metering only provides a pulse and not instantaneous flow measurement. The new equipment will provide real time measurement to improve plant operations, metering accuracy and reporting.
2019	172027	CHLNG Control Room Offices Re	This project is for performing revovations to the control room building offices including new tile flooring and vinyl wall base.
2019	172832	CHLNG Pretreatment System FEED	The scope of this project is for completing the Front-End Engineering Design (FEED) for the installation of a new pretreatment system at the Chattanooga LNG peak shaving plant. The existing pretreatment vessels have exceeded the ASME recommended cyclical design life for pressure vessels, so preliminary engineering on a new pretreatment system will be completed. The deliverables include a pretreatment system performance specification, a technical memorandum outlining the pretreatment system options and recommendation, and a preliminary drawing package.
2019	173281	CHLNG Control Panel	The scope of the project is for Johnson Controls to upgrade the existing SKF Control Panel on the MRL Compressor to eliminate obsolete components, provide better functionality, requested remote access, and spare parts for lessened downtime in the future.
2019	173694	CHLNG Boil Off Compressor Cool	The scope of this project is for the replacement of the boil off compressor coolers, E-301 and E-302. The current coolers have reduced efficiency due to years of service and hail damage. The scope includes the purchase and installation of the new air cooled heat exchangers, Harsco model 93Z. The replacement will not require any mechanical or electrical changes, but the scope includes the replacement of the four flexible piping connections.
2019	174685	CHLNG Control B	The scope of this project is for the replacement of the control boards on boil off compressors, C-101 and C-102. These are oringial equipment, and the replacement will increase the reliability of the compressors. The control boards will be replaced with Altronic DE-3000 display modules, and the firmware will be updated as well.
2019	175078	CHLNG Temp Transmitters for R	The scope of this project will upgrade three (3) existing thermocouples with Yokogawa temperature transmitters and RTDs for the Regen cooler and piping. These are oringial equipment, and the replacement will increase the reliability and performance.
2019	175080	CHLNG Refeed Air Compressor	The scope of this project will move the main feed of the air compressors from the old HVP1 panel to the 480V MCC gear and refeed perimeter lights contactor from MCC.
2019	175157	CHLNG MRL Control Valves for N	The scope of this project will upgrade the existing manual valves with two (2) OMC KA10 globe control valves. The upgrade will also include YT3404L positioners, two (2) limit switches, FR10 air filter and one (1) AVCO 1100 series ball valve.The valves are oringial equipment, and the new upgrade will improve system reliability, safety, and performance.
2019	175662	CHLNG Water Treatment Buildin	This project will construct a new 17'x17' fully enclosed heated building around the water softener equipment that was installed last year. The building will also house the water treatment equipment.

2019	175663	CHLNG Chiller Water Piping Re	This project will replace a 10' section of 14" HDPE chiller piping with 14" 304SS stainless steel piping. A new 14" butterfly valve and a vent and drain with valves will also be added for draining and isolation purposes.
2019	175703	CHLNG Temperature Transmitters	This project will improve on safety by preventing / monitoring LNG moving downstream into the outlet of the plant. The project is for the installation of four (4) new Yokogawa temperature transmitters with RTDs for the Ethanizer Skid. The transmitters with RTDs will monitor glycol temperatures on the outlet of the ethane removal system.
2019	177178	CHLNG Gas Detectors	The scope of this project is for the purchase of new portable gas detectors, test stand and related equipment. The current calibration system is obsolete, so a new calibration system and detectors are needed for safety and compliance.
2019	177319	CHLNG Regeneration Gas Cooler	The scope of this project is for the replacement of the regeneration gas cooler, E-101. The current heat exchanger has reduced efficiency due to years of service and hail damage. The scope includes the purchase and installation of the new air cooled heat exchanger, Harsco model HAC1012S08. The new cooler will be more efficient and have several upgrades: hail guard, motor removal trolley, and mechanical louvers.
2019	177321	CHLNG PSV Needle Valve Additio	This project is for the addition of isolation and needle valves at each pressure safety valve (PSV) on the boiloff compressors and three PSVs on the vaporizer system. The PSVs are difficult to access, and the new valves will allow the testing to occur in place, increasing the safety and efficiency of the task.
2019	177702	CHLNG Security Upgrades	This project is for the two security upgrades at the Chattanooga LNG facility. Currently, the local access controller and cameras will not properly connect to the security domain in the event of network outage. This creates a loss of gate control and camera visibility. A domain controller will be added to allow local communications to the security domain. Additionally, new security devices will be installed on all exterior doors to ensure compliance with DHS, eliminate key management, improve security and enhance safety. The new devices are identical to existing locks on the control room building.
2019	177703	CHLNG North Security Fence Roa	This project is for the addition a new roadway along the north fence line. The scope includes tree/limb removal and the installation of a 12' wide gravel road. The new road will improve access for security rounds and provide better visibility along the north fence line. This item has been recommended by the Department of Homeland Security to improve security.
2019	178123	CHLNG Cooling Tower Control Va	This project is for the installation of a new control valve on the cooler tower at the Chattanooga LNG plant. The current system relies on a mechanical float to control water flow. The mechanical float is prone to failure and reduces the reliability of the system. The system will be upgraded to a new electronic level controller and control valve.
2019	178410	CHLNG Heater Bld Overhead Door	This project is for the installation of a new 12' high and 9' wide rolling steel door with chain hoist operation in the heater building. A concrete ramp will also be installed to allow for forklift access to the new door. This door will improve access to the building for maintenance and will be utilized during the molecular sieve change out. This will ensure the new sieve is protected from the elements during the replacement.
2019	178602	CHLNG BOC Compressor Exhaust F	This project is for the installation of four new Greenheck RDU-24-622A20 exhaust fans to improve ventilation in the boil off compressor building. Currently, there are two existing fans that provide up to 10,500 CFM each, but the building is extremely hot during the summer.
2020	180557	180557-CHLNG Adsorber Valve Positione	This project is for the replacement of (18) adsorber valve positioners at the Chattanooga LNG facility. Currently, the conduit runs above the valves and allows moisture to run into the solenoids, causing failures. New electrical and stainless steel tubing will be rerouted from the junction box to the new positioners to prevent this issue from occurring in the future.
2020	181154	181154-CHLNG Refrigerant Pump P-108	The scope of this project is for the replacement of the Refrigerant Pump P-108. The pump failed last year and the scope of this work is to replace the existing pump and associated piping, transmitters, hoses, and valve assemblies.
2020	181263	181263-CHLNG Pump C Replacement	The scope of this project is for the replacement of failed LNG Pump C.
2020	181265	181265-CHLNG MCC Upgrade	The scope of this project is for the replacement of MCC-A, MCC-B, and MCC-D with new Allen Bradley MCC. Currently, the existing MCC system is loop together and opening the main breaker on MCC-C will shut-down the associated MCCs. All power and control wiring for all motor starters to be reconnected and tested for normal operation for MCC-A/B. This new upgrade will improve on plant operation, LOTO, Safety, and maintenance. opening the main breaker on MCC-C will shut-down the associated MCCs. All power and control wiring for all motor starters to be reconnected and tested for normal operation for MCC-A/B. Player and Company to provide individual feed, conduit and wiring to connect new MCC to new distribution breakers. New FVNR starters to be provided for all motors in MCC-D, new VFDs to be provided for LNG Pumps A&B, and all existing power and control wiring to be reconnected to the new termination point. In addition, Player and Company will construct a new 480 volts service including feeders from existing utility transformer to new 2000A transfer switch, provide new 2000A rated ATS, and four (4) new distribution breakers. Electrical schematic drawings and updated arc flash study including new labels to be provided.
2020	185999	185999-CHLNG Boiler Bld Exhaust Fans	This project is for the installation of four new Greenheck RDU-24-622A20 exhaust fans to improve ventilation in the boil off compressor building. Currently, the building is extremely hot during the summer and keeping the building at moderate temperatures will improve the life of the equipment and improve working conditions. The four new upblast fans can provide 9,000 CFM each, which will help move additional air to improve ventilation. Additionally, 18 explosion proof receptacles will be installed through out the plant to improve the safety of tasks that require power.
2020	186000	186000-CHLNG Tools	This project is for the purchase of tools to support maintenance and troubleshooting activities at the Chattanooga LNG facility. These tools include Hart communicator, pH testing kit, chlorine testing kit, hydrotorque, and a pressure calibrator.
2021	187291	187291-CHLNG Security Cameras Upgrade	This project will upgrade the remaining (13) Pelco cameras to Honeywell cameras. The plant experienced lots of issues configuring with the existing Pelco cameras and the problem is still unresolved. The existing Pelco cameras are not compliant with NDAA.
2021	187551	187551-CHLNG Tank Lighting	This project will request funding to add four Crouse Hands V2LM2CA1/UNV1 LED Lights and improve visibility at the top of the LNG Tank. Adding the four lights would increase on safety and visibility for plant technicians.
2021	187690	187690-CHLNG UPS Upgrade	This project will upgrade the I/O and Main Control Room UPS. The existing two (2) units are obsolete and the one for the I/O is undersized. Both units are critical for overall plant operations during power failure and this upgrade will help improve on power reliability and system functionality.
2021	187991	187991-CHLNG Flame and Gas Detectors	This project will upgrade the existing Flame and Gas detectors with new 43 Gas Detectors (PIRECLA1A3T1) and 21 Flame Detectors (X3301A4N13W2). The existing detectors are at the end of life expectancy and reliability is starting to deteriorate. Plant technicians are spending lots of time troubleshooting and resetting nuisance alarms. New upgrade/technology will improve on reliability, safety, downtime and O&M expenses.
2021	188635	188635-CHLNG Glycol System Control Va	This project will replace the existing valves controlling glycol flow into the vaporizers at Chattanooga LNG. The existing valves are quarter-turn manual valves that require the operator to leave the control room and go into the field to manually adjust the valves when the ethane skid is in operation. The new valves will be automated to allow the operator to enter a set point and adjust the vavles from the control room providing better send-out control and safer operation.
2021	188810	188810-CHLNG F-101 Filter	This project will request funding for the replacement of the F-101 filter. This filter for the dehydrators is original equipment. The housing and door to replace filter is worn and filters are difficult to procure.
2021	189049	189049-Chattanooga LNG Station Renewa	This project will renew the CGC LNG M&R Station and is part of a larger project to increase and diversify capacity to West Chattanooga. This renewal will help to complete the MAOP validation and allow for the pressure decrease and transmission-to-distribution reclassification of the 12" section of main between the LNG facility and East Gate. Once this reclassification is complete along with the East Gate Station renewal and the installation of the West Chattanooga Hamilton Expansion pipeline, CGC will be able to supply gas all the way to Signal Mountain from the LNG facility.
2021	189053	189053-CHLNG HVAC Upgrade	This project will upgrade the HVAC in the old control room, I/O Electrical room, and old MCC room.
2021	189055	189055-CHLNG Flare Controls Upgrade	This project will upgrade the Flare Stack Control Panel with John Zink InstaFire Control and new Pilots. The existing Flare control system is original to the plant and is not working properly at the moment; repair part are also hard to find.
2021	189059	189059-CHLNG Anti-Surge Valve	This project will replace the existing Anti-Surge Valve with a new one. The existing valve is original to the plant and a critical component for liquefaction. The valve is leaking by all the time from wear and has caused the Turbine to loose power resulting to lower production rate at the plant; and the plant has been spending lots of time troubleshooting the valve and operational reliability is becoming an issue.
2021	189061	189061-CHLNG Fire Pump Remote IO Upgr	This project will install new Remote IO control panel for the fire pump system. Currently the fire pump system annunciator is local to the fire pump building and none of the alarms are brought back to the plant controls system.
2021	189283	189283-CHLNG KV Valves Cable Upgrade	This project will upgrade the KV Valves. The existing KV Valve cables are original to the plant and the health of the cables are deteriorating and the plant is having trouble with the return signals from the valves and power solenoids for valve control causing valves operations to malfunction.
2021	190524	190524-CHLNG Turbine Platform and Ret	This project will install a retaining wall in the LNG pump pit and a new platform for turbine maintenance. The existing send out control valve and associated equipment is located between the vaporizers and pipe rack above a rock berm. Access to the equipment for maintenance and repair is difficult and relocating would be cost prohibitive. Building an extension of the existing retaining wall near the pump pit with steps for access would eliminate a safety hazard. A new turbine platform will improve safety and reduce O&M expenses as a scaffolding company is required to install and remove scaffolding as per OSHA regulations.
2021	191159	191159-CHLNG Field Panels	This project will design, procure, and install two new field panels for the Chattanooga LNG plant. It includes two new stainless-steel enclosures, 12" Allen Bradley Panelviews, graphics development and commissioning assistance as needed to support the panel project. The field interface panels to allow operators to respond to alarms and technicians to perform maintenance in the field. Returning to the control room or using a radio can be difficult when equipment is running and noise levels are high. Operators can respond quicker to alarms at the remote panels when out making rounds or checking on equipment.
2021	191495	191495-CHLNG BOC C302 Electronics Con	The scope of this project will upgrade the existing electronics controller to Altronic DE 4000 Controller on Boil Off Compressor C302. The existing controller is malfunctioning and causing the unit to shutdown.
			Note 1: The costs associated with these projects are included in plant in service or CWIP depending on the status of the project

YEAR	PROJECT ID	PROJECT NAME1	PROJECT JUSTIFICATION	ESTIMATED COST[2]	CONSTRUCTION TIMEFRAME
2022 Planned	190936	CHLNG Boil Off Gas Compressor	The project includes the replacement of C-301 boil off compressor which plays a critical role in maintaining tank pressure. A failure of this compressor would prevent liquefaction and could result in the need to vent the tank to atmosphere. Evaluate replacing engine driven compressor with electric motor driven compressor. Would make easier for remote operation of plant allow for maintenance to be done while liquefaction is in operation.	$2,765,000	Q2 2023
2022 Planned	188809	CHLNG Refrigerant Compressor	This project will design, procure, and install a new refrigerant compressor that will give the ability to move refrigerant when shut down. This would reduce overall refrigerant expenses for liquefaction by allowing refrigerant to be stored and put back into the system. There is an existing process tie-in (2") that was installed for this purpose that will serve as the suction to the new compressor. Discharge of compressor will go to existing vessel (formally used for ethylene storage).	$814,794	Q4 2022
2022 Planned		Replace chromatograph	The chromatograph is obsolete and requiring additional maintenance each year. This is a vital piece of equipment for operating the LNG plant. Upgrading to the latest's technology would increase reliability and reduce O&M repair expenses.	$255,000	Q4 2022
2022 Planned	188159	CHLNG LNG Pump Vent Pipe Replacement	This project will replace the existing vent piping for the LNG pumps and pump relief valves at Chattanooga LNG. The existing vent lines for the LNG pumps are not installed per the manufacurer's recommendations and relief valve vents in the LNG pump pit do not meet code.	$260,158	Q3 2022
2022 Planned	188216	CHLNG Parts/Shop Building	The scope of this project is for the design, purchase and installation of a new building adjacent to the boiloff compressors building that would serve as shop for maintenance activities. The recent MCC upgrades required additional space in the boiloff compressors building and took away work space for maintenance work to be done. A new building would allow cleaning and inspection to be done in temperature controlled area. Overhauls have fallen in summer months as this work is scheduled by hours on equipment.	$230,000	Q4 2022
2022 Planned	190518	CHLNG Fire Pump Recirculation Line	The scope of this project will design and install a recirculation line for the fire pumps. The recirculation line will provide a more efficient and cleaner way to test the fire pumps as required by code.	$175,474	Q3 2022
2022 Planned	190934	CHLNG Emergency Generator	The scope of this project will relocate the emergency backup generator. The generator will be relocated near the main switchgear room and utility transformer. This will help improve the voltage drop, short circuit fault conditions, safety and equipment performance.	$450,500	Q3 2022
2022 Planned		Replace Tank Level Gauge	The scope of this project is to replace the Scientific Instrument level gauge for the LNG tank, which is obsolete and parts are difficult to obtain. The tank level is vital to operation of the plant.	$150,110	Q4 2022
2022 Planned	189055	CHLNG Flare Controls Upgrade	This project will upgrade the Flare Stack Control Panel with John Zink InstaFire Control and new Pilots. The existing Flare control system is original to the plant and is not working properly at the moment; repair part are also hard to find.	$388,393	Q3 2022
2022 Planned	193349	CHLNG Cooling Tower Replacement	This project is for the Front-End Engineering Design (FEED) for the cooling tower replacement at the Chattanooga LNG plant. The existing cooling tower is over 30 years old and will require significant repairs in the near future. Replacing with a closed loop glycol system would improve efficiency and eliminate environmental impact and requirements for water testing.	$1,000,000	Q4 2023
2022 Planned	193304	CHLNG Heater Blding RIO Panel	The scope of this project will install one new remote IO panel, control cables, and two gas detectors for the boilers. The new RIO panel will be located inside the boiler building. The existing controls/IO cables running between the boiler building and the main IO room are aging and the plant is experiencing lots of issues with bad cables (insulation damage) lately. This new upgrade will relocate all control cables from the main IO room to the new RIO panel.	$70,000	Q4 2022
2022 Planned	190519	CHLNG Outer Tank Valve Actuator and Flex Line	The scope of this project will design and install a new actuator for the outer tank valve and the replacement of the flex line between the outer tank valve and LNG pump suction header. The valve actuator and flex line are original to the plant and were installed in 1971.	$184,292	Q3 2022
2022 Planned		Control Net to Ethernet Conversion	This project will upgrade the communication hardware and software to faciliate easier accesss for control system changes and upgrades.	$55,000	Q3 2022
2022 Planned	188812	CHLNG Glycol Tank	This project is for the replacement of the current bladder type glycol expansion tank with a new elevated gravity tank. The current bladder tank does not work properly.	$255,000	Q3 2022
2022 Planned	192407	CHLNG Storage Tanks Site Gauges	The scope of this project will upgrade the existing gauges on D-105, ST-102 and ST-103 with new NBK-Kobold bypass Level Ind, transmitters and digital display. The existing gauges are original to the plant and plant technician are unable to see tank levels during loading of refrigerant.	$25,000	Q4 2022

Note 2: Estimated Costs are direct project costs only and do not include AFUDC or overheads. Additionally, for 2020 Planned Projects the estimates provided are the total direct project costs, including any costs expected to occur in 2023