



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

Hand Delivery

Brickhouse Road – Unloading Facility
Louisa County, VA

Re: Conditional Use Permit Rev01

Dear Linda Buckler,

Amelia AD1 and Commonwealth Gas Pipeline Corp. (Owner/Applicant) are requesting the use of land for a renewable natural gas unloading facility.

Project Description:

The Project, which is an unmanned renewable natural gas ("RNG") unloading station, will be located at the property [Parcel ID # 37-44] (the "Property"). The Property is presently vacant wooded land, owned by Commonwealth Gas Pipeline Corp. under TC Energy ("TCE"), and it is directly adjacent to one of TCE's existing facilities and an underground RNG pipeline owned and operated by TCE at the location. The purpose of Project is to provide a service – RNG delivery – that is necessary to support development within the immediate vicinity of the existing TCE facility. The Project layout in total is within the existing facility boundaries and consists of only minor structures and small facilities required to unload and prepare the RNG for handoff to TCE. Essentially, the Project serves as a truck pad with a hose post that a trailer will connect to upon arrival to discharge the RNG.¹ The small ancillary facilities at the Project include an unloading panel with two host posts, a decant cabinet skid, a natural gas booster compressor, a natural gas buy back meter, a natural gas odorizer, an office trailer, electrical distribution equipment, and an instrument air compressor (see below for equipment descriptions).

The gas injected into the TC Energy VM System Pipelines at Louisa Compressor Station (and the proposed brickhouse injection site) passes through the Louisa High School MS valve site (metering station) after it leaves the compressor station. The site is 4 to 5 pipeline miles from the proposed injection site. Gas metered at this station is used in Louisa County. All TC Energy projects (including the Brickhouse Rd Compressor Station) are federally approved and they have not sought out Virginia State Corporation Commission approval.

¹ Once connected to the unloading station, the RNG will automatically unload into the existing processing facility, which takes between 3 and 5 hours, during which time the truck driver may remain on site. Two trailers [40-foot containers ~approx 70,000lbs] per day will visit the Project to unload, seven (7) days per week, between the hours of 7am and 7pm. At times when a trailer is not actively unloading, the unloading station will remain unmanned and in standby mode. TC Energy's Metering and Regulating station will have various maintenance trucks with trailers approximately the size of an F-250.



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

Twice a day, the RNG-filled trailers arrive on site at the injection station at approximately 4,000 psig. The pipeline pressure ranges from 450-767 psig. During trailer unloading, the booster compressor is used only when the trailer pressure falls below the pipeline pressure. Otherwise, the booster compressor is on standby. The estimated time ranges that the compressor will run are 9:30-10:30am and 3:00-4:00pm.

In the Vendor-provided table below, we will never operate below 200 psig (Cases 1, 2, 8, 15, 16, or 17) for our plant. Our most power consuming case is #11 at 125 HP. The compressor we plan to purchase is maxed at 150 HP, and our injection line is currently sized at a 2" pipe going to TCE's station. By comparison, the existing adjacent TCE facility, Louisa Compressor Station, hosts 4 compressors that total ~9,000 HP servicing pipelines VM107 and VM109, which are 18" and 24" pipelines, respectively.

J-W Power EA-150-2 Trailer Off-Load Compressor				
Case	Suction Pressure (psig)	Discharge Pressure (psig)	Capacity (SCFM)	Required Horsepower
1	75.00	600.00	318.217	64
2	100.00	600.00	429.390	74
3	200.00	600.00	884.382	97
4	300.00	600.00	1,354.557	102
5	400.00	600.00	1,838.610	95
6	500.00	600.00	2,336.632	81
7	600.00	600.00	2,918.679	47
8	100.00	750.00	413.014	79
9	200.00	750.00	866.542	111
10	300.00	750.00	1,335.637	123
11	400.00	750.00	1,819.560	124
12	500.00	750.00	2,316.891	117
13	600.00	750.00	2,826.908	103
14	750.00	750.00	3,710.369	55
15	50.00	450.00	223.892	48
16	75.00	450.00	334.404	58
17	100.00	450.00	446.223	66
18	200.00	450.00	903.095	78
19	300.00	450.00	1,374.473	73
20	450.00	450.00	2,155.764	38

The compressor package is designed for optimum performance at the conditions listed above.
Process gas specific gravity = 0.57; Suction Temperature = 80°F; Elevation = 2,000'; Ambient Air = 100°F.
Package operating conditions are *not* limited to those described above. Variations in package flow capacity due to site conditions, including elevation, gas temperatures, gas composition, fuel composition, etc., should be expected, consult the J-W Power Company Applications Department with actual conditions for site ratings.
J-W Power Company guarantees Ariel 7.7.12.0 performance runs predicted flow at 94%.

Further, the design of the station equipment is specified to produce less than 80 dB of noise at 10 feet, is gated for security, and has a tree line buffer as well as the equipment being set back ~200 feet from public roadways. The site boundary will have a sound pressure limit of 55 dB which will be dampened further by the tree line screening. Please refer to the preliminary site layout, attached as Exhibit A, for an overview of the Project along with cut sheets of all major equipment and truck route.



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

Assessment of Impacts:

Environmental Impacts:

The environmental effects from the operation of the facility include discharge of noise and an increased traffic flow for the existing compressor site. The total acreage of land disturbance is expected to be under 1-acre to construct and operate the facility.

Discharge of Noise- The unloading facility boundary will be limited to ±55dB of sound pressure. All noise producing equipment will be installed with enclosures to lessen the final noise level to the user.

Discharge of Smoke- The unloading facility will have negligible amount of smoke discharge from the delivering trucks.

Discharge of Odor- The unloading facility will have no odor inducing processes during normal operations.

Discharge of Dust- The unloading facility will be a mix of paved asphalt and concrete pads and will have negligible amount of dust discharge from the delivering trucks.

Street Visibility- The unloading facility will be screened by Eastern Red Cedars which will be planted at a height of 12-14' and will grow 1-2' each year after. The live screen will mature to fully fill the space within 8-10 years and will continue to grow beyond that to reach full maturity in 20-25 years.

Public Agency Impacts:

The unloading facility will not impact the staffing of Louisa County as it will not require any additional employees.

Emergency Contacts:

The unloading facility will have emergency contacts posted at the entrance to the facility. The emergency contact list will include the following:

- Emergency Services: 911
- Lead Amelia AD1 Anaerobic Digester Operator: TBD
- TC Energy Reporting Hotline
- Lead TC Energy Compressor Station Operator

The existing TC Energy Compressor Station will also have the Lead Amelia AD1 AD Operator's number posted throughout their facility.

Fire and Emergency Medical Services:

The unloading facility will have two fire stations nearby: Department of Fire & EMS Station 7 – Zion Crossroads (~8 min) and Louisa County Fire & EMS (~15 min). Captain Timothy Luck of the Department of Fire and Emergency Medical Services for Louisa County has asked for operation walkthroughs once the facility is completed and on a



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

yearly basis after (seen in **Exhibit A**). TC Energy operation is willing to work with Amelia AD1 to schedule a combined meeting to review emergency response for each facility. All fire and emergency medical services will have access to the facility through the main entrance. The unloading site accessway will be able to accommodate the largest EMS vehicle swept path. The unloading facility will be located next to an existing pipeline and compressor station with all required gas leak prevention and detection. The unloading station will have a buy back meter with an odorization system to aid in detection in case of leaks at the unloading station.

Law Enforcement:

The unloading facility will be gated with 24-hour surveillance. The facility will not require additional services from law enforcement.

Parks & Recreation:

The unloading facility will not impede the neighboring Green Springs Historic District and will operate under the confined limits of the property boundary as shown on the site layout. The truck route will utilize Route 649 to ensure no compressed natural gas (CNG) trailers will pass through Route 613. The proposed truck route can be seen in **Exhibit A**.

Schools:

The unloading facility will be supported by owner contracted drivers and operators of the CNG trailers and will not directly impact schools. The owner has agreed to the following condition: *The Project Owner will attend the Louisa County High School Job Fair the year the Project will start construction. The Project Owner will attend at least one CTE class to provide information on the natural gas industry to students. This condition is null and void if the Louisa County School System rejects the Project Owner participating in the CTE class or the job fair. The Project Owner will ask the Louisa County Chamber of Commerce to share any job postings with local businesses.*

Solid Waste:

The unloading facility will have a limited impact on solid waste facilities. The office trailer on-site will be used as a break room for the trailer drivers and operators. The bathroom will have a self-contained system. This will include a potable water tank that will be filled periodically by a service provider. The trailer will also contain a septic holding tank that will be pumped and hauled away periodically by a service provider. Amelia AD1 is working with Virginia Department of Health over approval of a pump and haul permit or whether a full septic system will need to be implemented.



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

Equipment Descriptions:

Unloading Panel:

The unloading facility will have two hose posts connected to an unloading panel for truck drivers to connect their CNG delivery trucks to begin the process of unloading the CNG to be injected into the TC Energy Pipeline.

Decanting Package and Water Bath Skid:

The unloading facility will have a single zone decant system that will be used to safely depressurize the CNG to the injection pressure. This decant system will include a water bath heater to warm the gas as it is depressurized.

Booster Compressor:

The unloading facility will have a CNG trailer offload compressor to ensure the gas remains at the injection pressure requirements for the pipeline. As the CNG trailer begins to empty fully, the booster compressor will be required to compress the RNG back to the injection pressure.

Natural Gas Buy Back Meter:

The unloading facility will have a buy-back line for natural gas that will provide fuel for the water bath heater on the decant system.

Gas Odorizer:

The buy-back line will need to be odorized as a safety measure as the pipeline gas is not odorized from where we receive it. The odorizer skid will inject a stream of odorant into the unloading facility's gas line. The odor will emit a strong gas smell to identify any leaks in the natural gas line if any occur.

Instrument Air Compressor:

The unloading facility will have an instrument air compressor to provide air for each major piece of equipment and loose pneumatic valves.



vanguardrenewables.com

133 Boston Post Road
Building 15
Weston MA 02493

781.232.7597

Conclusion:

Amelia AD1/Commonwealth Gas Pipeline Corp. requests that Louisa County permit this project through a new CUP on plot 37-44. The effects of operating this station on the existing parcel next to TCE station are minimal with respect to the local agencies, schools, emergency services, and environmental effects as described above. Amelia AD1/Commonwealth Gas Pipeline Corp. looks forward to partnering with Louisa County on this Project, including addressing any permitting requirements for the installation of the unloading station.

Thank you for your time and consideration.

Sincerely,

Stephen Laliberte
Director of Development
Vanguard Renewables