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## Memorandum

**To:** Rickey Bouffard (CTDEEP)

**From:** Kathryn Brown (TRC), Albert Wilder (TRC)

**Subject:** AGT Cromwell Volatile Organic Compounds (VOC) Reasonably Available Control Technology (RACT) Consent Order Compliance Plan

**Date:** October 20, 2021

**CC:** Phillip Wiedenfeld (Enbridge), Caitlin Shaw (Enbridge), Barry Goodrich (Enbridge), Dana Lowes-Hobson (TRC), Lakisha Stephenson (CTDEEP), Seng Phouthakoun (CTDEEP)

**Project No.:** 456494

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On behalf of Algonquin Gas Transmission, LLC (AGT), TRC provides the following summary of compliance activities thus far and an update with the proposed plan for complying with RCSA 22a-174-32 (VOC RACT), in connection with Consent Order No. 2525 (the Consent Order) for the Cromwell Compressor Station (the facility), received by AGT on September 2, 2021. AGT respectfully requests that the CTDEEP accept the compliance plan proposed herein for VOC RACT.

### Status Update

AGT has completed the following items to address the issues in the consent order:

- Paid the assessed penalties (By checks dated September 8, 2021 and September 17, 2021).
- Submitted the Intent-to-Test (September 15, 2021) for EMU #3 and conducted the required stack testing on October 6, 2021 (Report pending).
- Submitted a Corrective Action Plan on October 11, 2021 outlining the following activities:
  - For EMU #3
    - Replaced the differential pressure transducer on the oxidation catalyst.
    - Replaced the catalyst temperature monitor with a more robust design to prevent future failures.
    - Implemented operational procedures to be followed in the event of abnormal operations associated with the catalyst.
    - Proposed the submission of a permit modification to authorize low load operation by providing information for review and discussion with the CTDEEP Air Permitting Group.

- For EMU #1 and EMU #2
  - Implemented fuel clamps to prevent exceeding the maximum hourly fuel limit.
- Submitted a proposed compliance plan memorandum to CTDEEP on September 27, 2021 to comply with VOC RACT. The CTDEEP provided feedback on the proposed compliance plan memo by email on September 29, 2021 and provided additional feedback during a conference call on September 30, 2021.

### **AGT's Proposed Revised Approach for the CTDEEP's Consideration**

Based on the feedback CTDEEP provided to AGT on September 30 concerning the development of a compliance plan set forth in AGT's September 27 memo, AGT presents the following revised proposed compliance plan for consideration by the CTDEEP so that AGT may proceed with preparation of the VOC RACT Compliance Plan and associated forms.

AGT seeks to comply with the VOC RACT by a permit or order implementing an alternative compliance plan pursuant to RCSA 22a-174-32(e)(1)(D), as listed in Section B.2 of the Consent Order. The rule requires that an alternative compliance plan include an examination of the technological and economic feasibility of additional VOC control on all sources at the facility. AGT is proposing to do so through a combination of demonstrating that the facility has already implemented many practices from the current 2016 U.S. Environmental Protection Agency (EPA) Control Technology Guidelines (CTGs) for the Oil and Natural Gas Industry and is willing to commit to further enforceable reductions of VOC through process changes at the site that are determined to be technically and economically feasible.

Below is a list of VOC sources currently at the facility, and the proposed alternative compliance mechanism that demonstrates implementation of RACT for each source.

- **Fugitive emissions (~11.45 tpy VOC)**
  - Piping components (~9.87 tpy VOC)
    - Currently subject to NSPS OOOOa leak detection and repair (LDAR) program.
    - NSPS OOOOa aligns with the 2016 CTG guidance to implement a LDAR program for fugitive emission components at facilities in the oil and natural gas production and processing segments.
    - AGT proposes that the NSPS OOOOa LDAR requirements currently in the Title V permit are the enforceable controls for this source and no further analysis is required.
  - Storage vessels/tanks and truck loading (~1.17 tpy VOC)
    - Currently storage vessels and tanks at the site have a potential to emit significantly less than 6.0 tpy VOC each.
    - The 2016 CTG for tanks in the transmission industry segment recommends no further control for tanks with potential to emit less than 6.0 tpy VOC.
    - AGT proposes that enforceable limits on potential emissions from tanks would be RACT for these sources and that no further analysis is required.
    - AGT proposes that truck loading emissions do not need to implement RACT as potential emissions are less than 0.01 tpy VOC.

- Parts washer (~0.41 tpy VOC)
  - The parts washer has intermittent use and complies with RCSA 22a-174-20(l) for cold cleaning degreasers, as applicable.
  - AGT proposes that the parts washer meets RACT and no further analysis is required.
- **Vented Emissions (~58.2 TPY VOC)**
  - Vented emissions from compressor seals
    - All new compressors at the site were installed with dry seals and existing compressors have been converted to use dry seal systems.
    - Dry seals are a compliance alternative to control of wet seals in NSPS OOOOa.
    - Dry seals have 95% less VOC emissions than wet seals per the 2016 CTG document.
    - AGT proposes that properly operating dry seals represent RACT for these sources and no further analysis is required.
  - Vented emissions from unit blowdowns
    - Unit blowdowns occur to reduce the pressure in the compressor when it is not operating. Historically, these would occur every time a compressor is stopped during normal operations.
    - Through the use of enhanced dry gas seal systems (upgrades) and other process changes, such as pressurized holds, AGT believes that VOC emissions from unit blowdowns can be reduced comparable to the requirements in Subdivision e(2) of the rule.
    - AGT proposes that the reduction in emissions achieved through the process changes and system enhancements is RACT for this source and no further analysis is required.
  - Vented emissions from station blowdowns
    - The facility conducts station blowdowns periodically to conduct maintenance on equipment. These events are associated with major facility maintenance and do not occur every year.
    - AGT proposes that an enforceable limit on VOC emissions from station blowdowns be implemented as RACT for this facility, and no further analysis is required.
  - Vented emissions from natural gas actuated pneumatic controllers
    - The facility only uses intermittent bleed natural gas actuated pneumatic controllers. These controllers only vent when actuated.
    - Intermittent bleed natural gas actuated pneumatic controllers are a compliance alternative to low-bleed continuous bleed pneumatic controllers in NSPS OOOOa.
    - AGT proposes that the use of intermittent bleed controllers represent RACT for these sources as they comply with NSPS OOOOa and no further analysis is required.

- Vented emissions from gas powered starters
  - Only 1 turbine has a gas-powered starter; all others are equipped with electric starters.
  - AGT proposes to replace the remaining gas-powered starter with an electric starter, which will result in 100% control of VOC emissions from this source.
  - AGT proposes that this represents RACT for this source and no further analysis is required.
- **Fuel burning equipment (~12.8 tpy VOC)**
  - AGT respectfully asserts that fuel burning equipment is exempt from analysis under RCSCA 22a-174-32(b)(4). However, we would also point out that as a result of control technologies previously installed or other operational aspects of the equipment, there are limited opportunities to provide additional VOC controls.
  - Turbines with catalyst (~8.73 tpy VOC)
    - Catalyst was installed on turbines as BACT for CO.
    - There are no other control technologies for VOC from these sources.
  - Turbines without catalyst (~3.0 tpy VOC)
    - Oxidation catalyst would only control VOC emissions during normal operations as it is not effective during startup due to low temperatures; therefore, total control efficiency would not result in significant VOC emissions reductions, and would not be cost effective.
    - No further control is proposed for these sources.
  - Other small combustion sources (~1.07 tpy)
    - Generators, boilers, heaters, etc.
    - Minimal VOC emissions reductions could be achieved on these units due to the size and available controls, therefore, no further control will be proposed as it would not be cost effective.

Many of the source and process changes that have been made and are proposed above to upgrade the Cromwell Compressor Station are consistent with the U.S. EPA 2016 CTGs for the Oil and Natural Gas Industry. Though the CTG categorizes various controls for use by the Production and Processing segment, AGT proposes that the controls represent RACT for similar sources at the Cromwell Compressor Station, which is in the Transmission and Storage segment.

The Consent Order was signed by the CTDEEP Deputy Commissioner Wingfield on August 27, 2021 and received by AGT on September 2, 2021. Per the Consent Order, the VOC RACT Compliance Plan is due to CTDEEP within sixty (60) days of that signature date, which is November 1, 2021. AGT has made good faith efforts to comply with the Consent Order, as noted herein. To the extent that additional time is needed for CTDEEP to consider this proposed compliance plan for the VOC RACT or to engage in further dialogue with AGT, AGT respectfully requests a reasonable extension of time from the November 1, 2021 deadline.

We look forward to the CTDEEP's response at its earliest convenience. Thank you.