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MEMO TO : Oil and Gas Production Companies

FROM : James L. Semerad
Director
Division of Air Quality

RE : High Efficiency Program
Specifically Applies to Combustors
For Upstream Production Facilities

DATE : March 18, 2021

Based on numerous emissions testing submitted to and reviewed by the North Dakota Department of Environmental Quality – Division of Air Quality (Department), it appears that the Questor Model Q5000 (Questor) and American Welltest Incinerator (AWI) Model 100 combustors are able to achieve a destruction and removal efficiency (DRE) greater than or equal to 99.5%. In addition, testing has been conducted to document NO_x and CO emission factors on both combustor models. Therefore, both combustor models have been approved for the use of a NO_x emission factor of 0.30 lb/MMBtu and a CO emission factor of 0.15 lb/MMBtu.

The Department has authorized the use of Questor and AWI combustors within the High Efficiency Program at approved facilities that comply with Conditions 1 through 11 set forth below:

1. Initial testing of AWI and Questor combustors is required by any company entering into the High Efficiency Program. All combustors entering into the High Efficiency Program must be tested within 45 days after initial startup of the combustor(s). Emissions testing shall be conducted in accordance with EPA Reference Methods listed in 40 CFR 60, Appendix A. Notification of the planned emissions testing must be submitted to the Department within CERIS-ND at the facility level at least 30 calendar days in advance of the testing. The Department shall be contacted for approval of the initial testing schedule and methodology. Successful testing and report submittal will be reviewed by the Department prior to acceptance to the High Efficiency Program.

2. Each model requires separate approval. This approval is limited to Questor Model Q5000 and AWI Model 100 combustors. If a combustor with a model number different from the ones currently approved is to be used in the High Efficiency Program, additional testing and subsequent Department approval will be required in accordance with Condition 1.

3. The Department must be contacted within ten days of installation and operation of any combustors, including the installation of approved models, to determine if testing must be conducted once the combustors have been installed and operations have commenced.

4. The site information must be updated in CERIS-ND within 90-days of the installation of a combustor at any site and within 30 days following the removal of a combustor from any site. A copy of the Department's approval letter to your company must be attached.

5. Any registrations that request the use of 99.5% DRE, or a CO and/or NO_X emission factor other than the EPA's accepted AP-42 values should clearly state the request. In addition, each registration must include the following:

   - The combustor manufacturer and model number
   - The installation date of the combustor
   - The serial number of the combustor
   - The estimated natural gas to be flared
   - A copy of the Department approval allowing the use of 99.5% DRE and a CO and/or NO_X emission factor other than the EPA's accepted AP-42 values
   - Whether the site is new or being re-registered for 99.5% DRE and a CO and/or NO_X emission factor other than the EPA's accepted AP-42 values
   - An assessment of sales-line capacity at the site
     i. If applicable, an explanation shall also be provided as to why a new well must be drilled when gas takeaway capacity is not available for sales-lines and alternatives that have been reviewed to limit flaring.

6. The Department will allow companies to move a combustor consistent with the High Efficiency Program to different sites. However, companies must notify the Department five calendar days prior to the installation and operation of the combustor at a new site and operations must remain consistent with operations used during initial testing. The notification to the Department shall be in the form of revised registrations for both the facility where the combustor is removed and the facility where the combustor is installed.

7. An emissions test shall be conducted annually not to exceed 13 months of operations between tests, in accordance with Condition 1 for every year of operation of the combustor. This applies to combustors that have operated in the same location *and* those that have operated at multiple locations.

8. The combustor must be operated in accordance with the manufacturer's recommendations during all operations.

9. The ability of the combustors to achieve 99.5% DRE, a NO_X emission factor of 0.30 lb/MMBtu, and a CO emission factor of 0.15 lb/MMBtu is based on the average operating temperature of the stack on the combustor. Initial testing should be based around expected operating temperatures. The Department will require that operating conditions while using the combustors remain at or above the lowest tested temperature that demonstrated the requirements of the High Efficiency Program. If a company wishes to utilize 99.5% DRE

and a CO and/or NO_x emission factor other than the EPA's accepted AP-42 values at a temperature lower than was tested, testing must be performed at lower temperatures.

If the applicable one-hour average temperature of the stack on the combustor drops below the allowable temperature, then one of the following must occur as soon as practicable:

(1) the temperature must be increased,

(2) the natural gas must be diverted to the facility's engineered flare until the temperature returns to the allowable range, or

(3) all well-site operations requiring the combustor must cease.

These requirements do not include times when there is no excess gas being burned and the pilot flame is the only source of combustion.

Recordkeeping for the combustors shall include recording each one-hour average temperature of the stack on the combustor for all operations and notification to the Department must be made within three calendar days if the one-hour average temperature of the stack on the combustor falls below the allowable temperature for more than three consecutive hours. The notification to the Department shall contain a statement giving all pertinent facts, including the reason the temperature decreased below the allowable temperature and which of the three actions from the list above were taken. If applicable, companies should also notify the Department of any necessary maintenance actions that were taken to avoid future possible upsets.

Records of all temperature readings shall be retained by each company for a minimum of two years. Records of temperature readings that fall below the minimum required temperature shall be highlighted within the records. These records shall be available for Department review upon request.

10. If necessary, companies may substitute a previously installed combustor with another combustor of the same model and continue to utilize a 99.5% DRE, a NO_x emission factor of 0.30 lb/MMBtu, and/or a CO emission factor of 0.15 lb/MMBtu at the subject facility. If a combustor is replaced, a revised registration will not be required. The new combustor shall be tested in accordance with Condition 1.

11. All conditions listed above are requirements to comply with the Department's High Efficiency Program. Non-compliance with any of the above conditions is grounds for suspension or removal from the High Efficiency Program and/or enforcement action initiated by the Department.

Important Considerations and Requirements:

A company's installation of an approved combustor and compliance with the conditions enumerated above satisfies the company's obligation to comply with the control requirements of the North Dakota Administrative Code (NDAC) Chapter 33.1-15-07. Pursuant to its authority under the NDAC, the Department may enforce any failure by a company to install, operate, or maintain the combustors consistent with the above operating conditions, records retention, and

notification requirements. If violations of the above-described conditions are identified or leaks that are indicative of a violation are discovered, the Department may initiate an enforcement action. *Pursuant to the authority under North Dakota Century Code Chapter 23.1-06-14, any air pollution control equipment, inclusive of flares that are not operating properly, are subject to a fine of not more than ten thousand dollars per day per violation.*

Furthermore, this approval is granted only under the conditions outlined in each company's approved application and herein. If new information becomes available, the Department reserves the right to modify or rescind this approval.

This approval may be suspended if the Department initiates any enforcement action with the company. For example, documentation of unlit flare(s), combustor(s), excessive leaks, or improper operations and maintenance at any facility registered in the High Efficiency Program may be grounds for suspension or revocation of this approval. If this approval is suspended, the company shall use the EPA approved AP-42 emission factor for CO and NO_x, and a DRE of 98.0% during the period of the enforcement action.

- The Department will provide written notification to each company of any suspensions of approval.

- Emissions shall be recalculated in accordance with the suspension.

- If recalculated emissions indicate that a facility is a major source under the Title V or Prevention of Significant Deterioration rules, the Department must be notified.

The Department will provide written notification to each company once they have been approved to utilize 99.5% DRE, a CO emission factor of 0.15 lb/MMBtu, and a NO_x emission factor of 0.30 lb/MMBtu for approved combustors within the High Efficiency Program.

If you have any questions concerning the above, I encourage you to contact Angela Seligman of my staff at (701)328-5291 or aseligman@nd.gov for further assistance.

JLS/ANS:saj