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Air Quality, Energy and Sustainability
Division of Air Quality
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Commissioner

RESPONSE TO COMMENTS DOCUMENT

for

General Operating Permit (GOP-009)
Boiler
Heat Input Greater than or equal to 10 MMBTU/hr
and less than 50 MMBTU/hr

Art Lehberger Environmental Engineer 3 Operating Permits	5/29/2020 Date	Bachir Bouzid Section Chief Operating Permits	5/29/2020 Date

Written comments on the draft approval were received from (1) Jeff Tittel, Director, NJ Sierra Club and (2) Bill Wolfe. No other comments were received. Responses to the comments received are addressed in this document.

1. Comment:

We oppose granting this rule allowing for a General Operating Permit (GOP-009) for Boilers. We have concerns about increased air pollution and GHG emissions. Even though the department has the ability to regulate CO2 emissions since 2005, under this permit, there are no monitoring or recording requirements. There is no data to show how many boilers there are in New Jersey, where they are located and their pollution emissions. Therefore we will not know the impact of this permit. There is no analysis of GHG emissions or DEP will regulate GHG requirements under the Global Warming Response Act. (1)

Response:

In response to Governor Murphy's goal of a 100% clean energy generation and to meet the Global Warming Response Act's (GWRA) 80% emission reduction economy-wide by 2050, State Agencies have taken action to create regulations and programs that will allow the State to achieve those goals, including a planning initiative called the Integrated Energy Plan (IEP), undertaken as part of the Energy Master Plan (EMP). The IEP conducted modeling of least cost pathway to achieve those energy goals. Modeling results show that natural gas is expected to remain the predominant building heating fuel source in the near term without a change in State, regional, or federal policies. Specifically, buildings will maintain gas heating over the next 10 years, during which case studies and demonstration projects will be done to pave the way for transformation of the sector after 2030, and by 2050.

In addition, the NJDEP is in the process of developing a Greenhouse Gas Reporting Rule as mandated in the GWRA. The GHG Reporting Rule will lay the ground rules for GHG reporting requirements, including CO_2 and Short-Lived Climate Pollutants.

Also, the Murphy Administration has embarked on a targeted regulatory reform effort that will modernize environmental laws to Protect Against Climate Threats (PACT). NJ PACT will usher critically needed changes to our air emissions and environmental land use regulations, to enable government, businesses, and residents to effectively respond to current climate threats, and reduce future climate damages. The NJDEP has scheduled a series of stakeholder sessions to gather input from residents, businesses and advocates on the development of new greenhouse gas reduction and environmental land use regulations aimed at reducing the impact of climate change and adapting to the realities of certain impacts, like sea-level rise.

2. Comment:

The permit fails to have requirements for state of the art pollutions controls, or the best available practices, or even latest available. There are no standards for combustion efficiency, energy

efficiency, or requirements to maintain a boiler. New Jersey has the authority to have its own requirements for boilers for not only CO2 and GHGs, but for sulfur dioxide, nitrous oxide, and hazardous air pollutants however under the permit, there are no state standards adhere to, they may be able to default to weaker federal standards. There is also no data provided on optimal or actual proficiency for these boilers. New Jersey is home to manufacturers who are headquartered in this state that are building the highest efficiency boilers in the country. It is critical that DEP should promote facilities to use boilers with a minimum requirement of 95% efficiency. (1)

Response:

All boilers permitted through GOP-009 are natural gas boilers and required to meet the New Jersey State of the Art (SOTA) emission levels for NOx, CO and VOC as specified in GOP-009 Section V. Equipment Specifications and the Facility Specific Requirements (Compliance Plan) Applicable Requirements Ref. #6, #7 and #8 for natural gas only boilers, and Ref. #8, #9 and #10 for natural gas boilers firing No. 2 fuel oil for emergency only. A boiler that registers for GOP-009 meets SOTA requirements: Minimizes degradation of air quality from new sources; Improves air quality when existing sources are replaced; and Promotes pollution prevention. The SOTA emission levels specified in GOP-009 reflect the emission levels achieved by the best performing sources, with the best pollution prevention measures and air pollution control apparatus that leads to better combustion efficiency. The state of the art NO_x emission levels for natural gas-fired boilers for the size ranges 10 to 50 MMBTU/hr heat input rate have been achieved with the use of Low NO_x Burners (LNBs) with Flue Gas Recirculation (FGR) or ultra LNBs (ULNB). The state of the art CO and VOC emission levels for natural gas-fired boilers greater than 10 MMBTU/hr heat input rate have been achieved with combustion controls. The Permittee is required to submit manufacturer documentation at the time of registration showing that the boiler meets the SOTA NOx, CO and VOC emission levels specified in the general operating permit (GOP). All boilers are required to adjust the combustion process annually as specified in the GOP compliance plan to maintain the boiler. In addition, boilers with a 25 MMBtu/hr, or greater, heat input require stack emission testing to demonstrate compliance with the state of the art emission levels.

Natural gas has inherent low sulfur and particulate content that equates to lower SO_2 and particulate emissions compared to fuel oil. SO_2 emissions are below the permit report threshold and SOTA threshold, and particulate emissions are below the SOTA threshold. Also, see Response to Comment 1 concerning natural gas and greenhouse gas (GHG) emissions.

All applicable state and federal standards are included in the GOP compliance plan. The GOP includes the completed online application with the respective allowable potential to emit (PTE) emission limits and does not default to federal standards.

When the GOP is incorporated into the facility's Title V operating permit during the next modification or at time of permit renewal, the facility potential to emit carbon dioxide equivalent $CO_2(e)$ emissions will be reviewed, and updated in Section A of the Title V operating permit, to include the $CO_2(e)$ emissions from the new boiler GOP in the facility total.

3. Comment:

Giving facilities a GOP limits public participation in the permit process and is instead streamlined. The general permit will limit transparency. These are industrial boilers and some are very old and very dirty. They can burn close to 150 gallons of oil per hour, adding more SOx and NOx and even more CO2 per lb. than gasoline. Mercury and hazardous pollutants like mercury, chromium, and lead are emitted from these boilers as well. These air emissions apply to both natural gas and oil boilers. One boiler can produce around 40,000 metric tons of CO2 per year, which is very concerning, especially since we still don't know how many boilers there are. (1)

Response:

The Draft GOP was published in the NJ Register and was open for public comment. A GOP boiler is incorporated into a facility's operating permit the first time the operating permit is opened for a modification that proposes an increase in actual emissions, or at renewal, whichever occurs first. Operating permit renewals and significant modifications include 30 day public comment periods to allow for public participation.

A boiler that registers for GOP-009 is a natural gas fired boiler, that is permitted to operate using ultra low sulfur No. 2 fuel oil during emergency only. Older boilers are unable to meet the requirements in GOP-009, and therefore, would not be eligible for the general operating permit. A boiler that obtains GOP-009 is either a new boiler that meets state of the art requirements, or a boiler that installs a replacement burner that meets state of the art requirements.

The potential metric tons of CO_2 per year for a 50 MMBtu/hr natural gas boiler, firing no. 2 fuel oil during emergency only, is approximately 24,000 metric tons of CO_2 per year based on 8,760 hours per year operation. The Title V operating permit includes the potential CO_2(e) emissions for all equipment at the facility. When the GOP is incorporated into the operating permit during the next modification or at time of permit renewal, the potential CO_2(e) emissions for the facility operating permit will be reviewed and updated to include the emissions from the new boiler GOP.

4. Comment:

Many of these facilities using boilers are in Environmental Justice Communities. Granting this boiler permit that limits transparency and accountability of air pollution is directly against Governor Murphy's EO 23 EJ communities. It also goes against EO 28 on reducing GHGs and climate impacts. The EMP calls for the DEP to use less fossil fuels for heating whether it is gas or oil, this permit goes against the draft Energy Master Plan. It will allow for major increases in air pollution for industrial processing. The Governor talks about climate change, GHGs and reductions, however we need to see real action from the Murphy Administration when it comes to regulating these boilers and making sure they are efficient. We respectfully request the DEP to withdraw this proposal. Instead, the state should develop standards or efficiency, air, and carbon while holding facilities with oil and gas boilers accountable. (1)

Response:

Environmental Justice (EJ) Communities are notified when a Title V operating permit facility in an EJ area submits a permit modification or renewal. If a facility has registered for a GOP, the EJ Communities can comment at the time of modification or renewal when the GOP is being incorporated into the Title V operating permit.

Executive Order No. 23 (EO23) requires the Department to work with other State agencies to develop a guidance document for all Executive branch departments and agencies to consider environmental justice when implementing statutory and regulatory responsibilities. The environmental justice guidance has been drafted as directed by EO23 and is currently under review. The Department has been considering environmental justice issues when making evaluations and assessments in accordance with the guidance, to the extent not inconsistent with law. Until the guidance is final, the Department will continue to operate with the existing measures the Division of Air Quality has already implemented to address some of the environmental justice issues, including but not limited to: early notification of receipt of air permit applications; information sessions with interested community organizations on permit applications; and invites to free training courses for community representatives, such as the Department's annual ACE Academy. State-wide actions the Department has taken in the last few years that will be also benefit environmental justice areas include but not limited to: the 2017 VOC and NOx RACT rules; the 2018 update of the Air Toxics rules; updating Technical Manuals 1002 and 1003, making facility-wide risk assessment more robust; and vigorous stakeholder process for rulemaking.

Executive Order No. 28 (EO28) dictates that the 2019 Energy Master Plan shall provide a comprehensive blueprint for the total conversion of the State's energy production profile to 100% clean energy sources by 2050. State Agencies have taken action to create regulations and programs that will allow the State to achieve those goals, including a planning initiative called the Integrated Energy Plan (IEP), undertaken as part of the Energy Master Plan (EMP). The IEP conducted modeling of least cost pathway to achieve those energy goals. Modeling results show that natural gas is expected to remain the predominant building heating fuel source in the near term without a change in State, regional, or federal policies. Specifically, buildings will maintain gas heating over the next 10 years, during which case studies and demonstration projects will be done to pave the way for transformation of the sector after 2030, and by 2050.

5. Comment:

The Murphy DEP once again has shown that they have no intention of regulating or reducing greenhouse gases emitted by fossil fuels. The DEP just had another opportunity to do so, but instead proposed a new "General Operating Permit" (GOP – 009) for industrial oil and gas fueled boilers that has no CO2 emissions limitations or even monitoring and reporting requirements for greenhouse gas emissions. While NJ State air pollution laws and DEP regulations define greenhouse gas emissions as air pollutants and require polluters to install "state of the art" (SOTA) pollution controls, the proposed "General Operating Permit 009″ has no standards for combustion efficiency or requirements to maintain and operate the boiler at optimum combustion efficiency. Similarly, the GOP also lacks CO2 and methane emissions

monitoring, reporting and record keeping requirements, so the DEP is flying blind and the public has no way to know about GHG emissions. (2)

Response:
See responses to Comment 1, 2 and 3.

6. Comment:

The DEP proposal provided no analysis of greenhouse gas emissions or how they relate to the GHG emission reduction requirements of the Global Warming Response Act. (2)

Response:
See responses to Comment 1, 2 and 3.

7. Comment:

In fact, in lieu of imposing strict NJ specific SOTA requirements, the proposed GOP defers to federal EPA requirements for: United States Environmental Protection Agency's AP-42 (Compilation of Air Pollutant Emission Factors) for SO2, particulates and hazardous air pollutants (HAPs). The DEP proposal provided no data on optimum or actual combustion efficiency from these kinds of industrial boilers. Instead, the proposal defers to the manufacturers' specifications. The DEP proposal provided no engineering, combustion, or pollution control specifications or standards for what constitutes "state of the art" in pollution control.
Accordingly, the public has no way to meaningfully understand or comment on the proposal. (2)

Response:

See responses to Comment 2 and 3 concerning SOTA requirements for GOP-009 boilers.

8. Comment:

The DEP proposal provides no data that would allow the public to know how many of these industrial boilers there are, where they are located, or how much pollution they emit statewide. A "General Permit" (GP) is a uniform permit that applies to and spells out standard requirements for an entire category of pollution sources. There are no public participation requirements for a GP, so the public has no way to know about and no say in influencing DEP's regulation of the air polluter down the street. The GP mechanism was designed by DEP as a "streamlined" cheaper and quicker bureaucratic alternative to a far more rigorous "Individual Permit" issued to each individual facility or pollution source. (2)

Response:

The GOP is not a process to evaluate the number of boilers statewide. GOP-009 is for a single

boiler firing natural gas only or for a single boiler firing natural gas and No. 2 fuel oil during emergency only. For facilities subject to Title V of the Federal Clean Air Act, a general operating permit is a pre-approved permit to construct and operate, issued pursuant to N.J.A.C. 7:27-22.14, for one or more types of similar sources. A major facility with a qualifying source may register for and operate under the conditions of the general operating permit rather than submitting a modification to the facility's operating permit. A facility may not register a boiler under GOP-009 if operating the boiler would result in the facility being subject to the requirements of N.J.A.C. 7:27-18 (Emission Offset Rules) or 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality. In such case, a significant modification to the facility's operating permit would be required.

GOP-009 includes the same requirements and in some cases more stringent requirements as a permit issued when a modification to the facility's Title V operating permit is submitted. Boilers with a heat input less than 25 MMBtu/hr submitted through an operating permit modification would not, necessarily, be required to meet state of the art requirements; however any boiler obtaining GOP-009 is required to meet state of the art emission levels.

See response to Comment 2 and Comment 3 concerning SOTA and operating permit public comment period.

9. Comment:

The DEP proposed GOP-009 that applies to industrial boilers fueled by oil or natural gas with a capacity from 10 million BTUs'/hour to 50 million BTU's per hour. For context, a 50 million BTU/hour boiler would consume about 350 gallons of oil per hour (at 140,000 BTUs per gallon) According to CO2 emission factors of the Energy Information Administration, fuel oil emits about173 pound of CO2 per million BTUs. (By comparison, gasoline for your car has about 160 pounds of CO2 per million BTUs.) At 50 million BTUs/hour, that translates into: (173 lbs CO2/million BTUs x 50 MBTUs) X (24 hours/day) X (365 days/year) = 75,774,000 pounds/year, 75,774,000 lbs/2000 lbs/ton = 37,887 tons/year CO2. For comparison, gasoline for your car emits about 19.6 pounds of CO2 per gallon. So, the industrial boiler emissions translate into about 3.87 MILLION gallons of gas per year. Assuming a typical car travels 15,000 miles per year and gets 30 miles per gallon (500 gallons per year), one 50 million BTU/hour boiler translates into the CO2 emissions of about 7,740 cars. The DEP GP proposal does not identify how many of these boilers there are in NJ or how many hours a day they typically operate, so there is no way to translate these numbers into actual CO2 emissions. The DEP GP does not indicate what the typical combustion efficiency these boilers operate at or what an optimum combustion efficiency is for these size boilers, so it is impossible to determine if the GP adequately regulates combustion efficiency in a way to minimize CO2 emissions. Amazingly, the DEP GP defers to "the manufactures recommendations" when it comes to technical issues related to combustion efficiency – there are no standards or mandatory requirements for combustion efficiency or boiler maintenance and operation in the DEP GP. There are no CO2 emissions monitoring, reporting, or record-keeping requirements in this DEP GP, so there is no way for DEP or the public to know how much CO2 they are actually emitting. When the CO2 emissions by a single industrial polluter of the equivalent of over 7,500 cars are completely

ignored, once again, we must note that the Murphy DEP is not serious about reducing greenhouse gas emissions. (2)

Response:

See responses to Comments 1, 2 and 3 concerning the GOP-009 state of the art natural gas boiler, state of the art emission levels and CO2 emissions.

-End of Response-