STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Eastern Region Office

4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

January 22, 2026

Chris Napier
CyrusOne LLC – Quincy Data Center
2850 North Harwood Street, Suite 2200
Dallas, TX 75201

Re: **Notice of Construction** - Approval Order No. 26AQ-E008
AQPID: A0250317

Dear Chris Napier:

The Department of Ecology Air Quality Program has reviewed the Notice of Construction application submitted on August 9, 2025, for the reduction in total facility emergency generators from 42 to 22 and updating approval conditions at the Quincy facility located at 1025 D Street NW, in Quincy, Washington, Grant County.

Enclosed is the Approval Order No. 26AQ-E008. The 30-day public comment period was completed on December 1, 2025. Ecology received comments, a Response to Comments summary is in Appendix B of the Technical Support Document.

All correspondence relating to this document should be directed to me at the Department of Ecology, Regional Air Quality Section, 4601 N. Monroe, Spokane, Washington 99205-1295. If you have any questions concerning the content of the document, please contact me at (509) 405-2487 or jenny.filipy@ecy.wa.gov.

Sincerely,

Jenny Filipy, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

JF:sg

Enclosures: Approval Order No. 25AQ-E008

Certified Mail: 9214 8901 9403 8352 9794 76

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

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State of Washington Department of Ecology
Notice of Construction Approval Order

In the matter of approving making revision to an existing source for **CyrusOne LLC**	)))	Approval Order No. 26AQ-E008 AQPID No. **A0250317**

Project Summary

CyrusOne – Quincy Data Center, herein referred to as the Permittee, is an existing Data Center located at 1025 D Street NW, Quincy, Washington, in Grant County. The Permittee is classified as a synthetic minor for Nitrogen Oxides. The project consists of reducing the facility total emergency generators from 42 to a total of 22 and updating operating conditions.

ID	Capacity	Engine SN	Generator SN	Manufacturer Program ID	Install Date
1	2.25 MWe (3,351 bhp)	548104029	95030504016	MTU DS2250 – 16V400084S – 2250kW	Oct-23
2	2.25 MWe	548104051	95030504019	MTU DS2250 – 16V400084S – 2250kW	Oct-23
3	2.25 MWe	548104027	95030504020	MTU DS2250 – 16V400084S – 2250kW	Oct-23
4	2.25 MWe	548104024	95030504180	MTU DS2250 – 16V400084S – 2250kW	Oct-23
5	2.25 MWe	548104070	95030504203	MTU DS2250 – 16V400084S – 2250kW	Oct-23
6	2.25 MWe	548104025	95030504015	MTU DS2250 – 16V400084S – 2250kW	Oct-23
7	2.25 MWe	548104061	95030504014	MTU DS2250 – 16V400084S – 2250kW	Oct-23
8	2.25 MWe	548104072	95030504017	MTU DS2250 – 16V400084S – 2250kW	Oct-23
9	2.25 MWe	548104073	95030504018	MTU DS2250 – 16V400084S – 2250kW	Oct-23
10	2.25 MWe	548104252	95030504418	MTU DS2250 – 16V400084S – 2250kW	Jan-24
11	2.25 MWe	548104250	95030504413	MTU DS2250 – 16V400084S – 2250kW	Jan-24
12	2.25 MWe	548104230	95030504277	MTU DS2250 – 16V400084S – 2250kW	Dec-23
13	2.25 MWe	548104216	95030504416	MTU DS2250 – 16V400084S – 2250kW	Dec-23
14	2.25 MWe	548104238	95030504419	MTU DS2250 – 16V400084S – 2250kW	Jan-24
15	2.25 MWe	548104228	95030504279	MTU DS2250 – 16V400084S – 2250kW	Dec-23

ID	Capacity	Engine SN	Generator SN	Manufacturer Program ID	Install Date
16	2.25 MWe	548104214	95030504294	MTU DS2250 – 16V400084S – 2250kW	Dec-23
17	2.25 MWe	548104229	95030504415	MTU DS2250 – 16V400084S – 2250kW	Dec-23
18	2.25 MWe	548104239	95030504280	MTU DS2250 – 16V400084S – 2250kW	Jan-24
19	2.25 MWe	548104218	95030504417	MTU DS2250 – 16V400084S – 2250kW	Dec-23
20	2.25 MWe	548104234	95030504278	MTU DS2250 – 16V400084S – 2250kW	Dec-23
21	2.25 MWe	548104257	95030504414	MTU DS2250 – 16V400084S – 2250kW	Jan-24
22	0.75 MWe (1,121 bhp)	16701008257	95010501571	MTU DS750 – 12V1600G71S – 750kW	Jul-23

Legal Authority

The emissions from the proposed modification have been reviewed under the legal authority of RCW 70A.15.2210 and the applicable rules and regulations adopted thereunder. The proposed modification, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.

This Notice of Construction (NOC) Approval Order rescinds and replaces NOC Approval Order No. 24AQ-E036. NOC Approval Order No. 24AQ-E036 is no longer in effect.

Therefore, it is ordered that the project as described in the NOC application and more specifically detailed in plans, specifications, and other information submitted to the Washington State Department of Ecology (Ecology) is approved for construction and operation, provided the following conditions are satisfied:

Approval Conditions

1. Equipment Restrictions

a. Any engine used to power the electrical generators must be certified by the manufacturer to meet 40 C.F.R. 60 Tier II emission levels or other more restrictive specifications required by the EPA at the time the engines are installed. Each engine to be installed must be permanently labeled by the manufacturer as an emergency engine in accordance with 40 C.F.R. § 60.4210(f). Each engine approved in this Order must operate as an emergency engine as defined at 40 C.F.R. 60, Subpart IIII or 40 C.F.R. 63, Subpart ZZZZ, and as limited by the other conditions of this approval.

b. The only engines and electrical generating units approved for operation at the CyrusOne Data Center are those listed by serial number in Table 1.

c. The installation of any new engines, including replacement of failed engines with identical engines (same manufacturer and model), after 18 months of the issuance date of this permit, will require notification to Ecology that includes engine manufacturer's specification sheets. Ecology will determine whether new source review is required based on various factors including whether the new engines will have either an increased emission rate or result in an emission concentration that may increase impacts over those evaluated for this approval Order, or if an update to the current BACT analysis is necessary.

d. The 21 MTU Model 16V4000G84S engine exhaust stack heights must be greater than or equal to 35 feet above ground level, and no more than 18 inches in diameter. The remaining one MTU Model 12V1600G71S engine exhaust stack height must be greater than or equal to 25 feet above ground level, and no more than 10 inches in diameter. CyrusOne Data Center must verify that exhaust stack parameters such as diameter, height, and exhaust rate and velocity do not result in ambient impacts greater than what was evaluated for this project.

e. This Order only applies to the 21 MTU Model 16V4000G84S engines each with a rated full standby capacity of 2250 kWe (3,351 bhp), and the one MTU Model 12V1600G71S engine, engine with a rated full standby capacity of 750 kWe (1,121 bhp) that were proposed in the Notice of Construction application for this facility approval. On a case-by-case basis, Ecology may require additional ambient impacts analyses prior to installation of engines not listed in Table 1.

2. Operating Limitations

a. The fuel consumption at the CyrusOne Data Center facility after full build-out and commissioning (a total of 22 engines) must be limited to a total of 132,016 gallons per year of diesel fuel equivalent to on-road specification No. 2 distillate fuel oil (less than 0.00150 weight percent sulfur). Total annual fuel consumption by the facility may be averaged over a three-year period using monthly rolling totals.

b. The 22 CyrusOne Data Center engines are limited to the following average hours of operation, and averaging periods:

   i. Except during commissioning, each engine must not exceed 38 hours of operation (at any load, for any purpose) per year, on a rolling monthly three-year average, and averaged over all engines in service.

   ii. Operating a single engine at one time for the purposes of scheduled monthly and annual maintenance and testing must occur only between the hours of 7:00 a.m. to 7:00 p.m.

c. A load bank will be used for electrical energy dissipation whenever prescheduled monthly maintenance testing, corrective testing or annual load bank testing occurs above idle.

d. The CyrusOne Data Center must develop an operating schedule that must be available for review by Ecology upon request. Changes to the operating schedule will not trigger revision or amendment of this Order if approved in advance by Ecology.

e. All startup and commissioning testing must be conducted during daylight hours.

3. General Testing and Maintenance Requirements

a. The CyrusOne Data Center will follow engine-manufacturer's recommended diagnostic testing and maintenance procedures to ensure that each engine will conform to the emission limits in Condition 4 of this approval throughout the life of each engine.

b. Following installation and commissioning, to demonstrate the engines are commissioned and programmed to run within the Tier 2 emission limits in Condition 4(b), PM (filterable only), NO, NO_2, NMHC, and CO emissions measurement must be conducted for at least one representative engine from each manufacturer and each size engine from each manufacturer of engines installed. Testing must be conducted at the loads of 100 percent, 75 percent, 50 percent, 25 percent, and 10 percent using weighted averaging according to table in Appendix II(a)(1) of 40 C.F.R. 1039. Testing may be conducted using 40 C.F.R. 1065.

c. Within 60 months of the first engine installation of each phase of installation, and every 60 months thereafter, to demonstrate the engines continue to meet Tier 2 emission limits in Condition 4(b), PM (filterable only), NO, NO_2, NMHC, and CO emissions measurement must be conducted for at least one representative engine from each manufacturer and each size engine from each manufacturer of engines installed. Testing must be conducted at the loads of 100 percent, 75 percent, 50 percent, 25 percent, and 10 percent using weighted averaging according to the table in Appendix II(a)(1) of 40 C.F.R. 1039. Testing may be conducted using 40 C.F.R. 1065. The selection of the engine(s) to be tested must be subject to prior approval by Ecology and must be defined in the source test protocol submitted to Ecology no less than 30 days in advance of any compliance-related stack sampling conducted by CyrusOne. Each engine tested must be the engine from each batch (same manufacturer and size) of engines installed with the most operating hours not previously tested.

d. The following procedures must be used for each test for the engines required by Approval Condition 3(b) and 3(c) unless an alternate method is proposed by the CyrusOne Data Center and approved in writing by Ecology prior to the test:

i. Initial and periodic emissions stack testing should be combined with other pre-scheduled maintenance testing and annual load bank engine testing. Additional operation of the engines for the purpose of emissions testing beyond the operating hours allowed in this Order must be approved by Ecology in writing.

ii. The F-factor method, as described in EPA Method 19, may be used to calculate exhaust flow rate through the exhaust stack. The fuel meter data, as measured according to Approval Condition 3(f), must be included in the test report, along with the emissions calculations.

iii. In the event that any stack test indicates non-compliance with the emission limits in Condition 4, CyrusOne must repair or replace the engine and repeat the test on the same engine plus two additional engines from the same phase of installation as the engine showing non-compliance. Test reports must be submitted to Ecology within 60 days of the final day of testing. Test reports must be submitted to the address in Condition 8(a) and must report units and averaging periods consistent with the applicable emission standard or limit listed in Condition 4(b).

e. Each engine must be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

f. Each engine must be connected to a properly installed and maintained fuel flow monitoring system that records or calculates the amount of fuel consumed by that engine. The fuel monitoring system may consist of:

i. a fuel meter incorporated into each engine control module; or

ii. a system that calculates fuel consumption based on the maximum engine load measured during each run, using manufacturer-provided load-based fuel consumption rates.

4. Emission Limits

a. The 22 engines must meet the emission rate limitations contained in this section. The limits are for an engine operating in a steady-state mode (warm) and do not include emission rates during initial commissioning testing of the engines. The annual limits may be averaged over a rolling monthly three-year period. Unless otherwise approved by Ecology in writing, compliance with emission limits for those pollutants that are required to be tested under Approval Conditions 3(b) and 3(c) must be based on emissions test data determined according to those approval conditions.

b. To demonstrate compliance with the g/kWm-hr EPA Tier II average emission limits through stack testing, the CyrusOne Data Center must conduct exhaust stack testing and averaging of emission rates for five individual operating loads (10 percent, 25 percent, 50 percent, 75 percent, and 100 percent) according to the table in Appendix II(a)(1) of 40 C.F.R. 1039, and/or 40 C.F.R. Part 60, Subpart IIII, or any other applicable EPA requirement in effect at the time the engines are installed. The Tier 2 emission limits for the 22 engine generators:

i. NMHC + NOx: 6.4 g/kWm-hr

ii. CO: 3.5 g/kWm-hr

iii. PM (filterable): 0.20 g/kWm-hr

c. The facility must meet the following emission rate limitations.

i. Diesel Engine Exhaust Particulate (DEEP: filterable only) emissions from all 22 engines must not exceed 0.33 tons per year averaged over a rolling monthly three-year period.

ii. Total Particulate Matter ($PM=PM_{2.5}$) emissions from all 22 engines combined must not exceed 1.2 tons/yr averaged over a rolling monthly three-year period.

iii. Nitrogen Oxides emissions from all 22 engines combined must not exceed 19 tons per year averaged over a rolling monthly three-year period.

iv. Nitrogen dioxide (NO_2) emissions from all 22 engines combined must not exceed 1.9 tons/yr averaged over a rolling monthly three-year period.

v. Volatile organic compound (VOC) emissions from all 22 engines combined must not exceed 0.93 tons/yr averaged over a rolling monthly three-year period.

vi. Carbon Monoxide (CO) emissions from all 22 engines combined must not exceed 4.1 tons/yr averaged over a rolling monthly three-year period.

vii. Sulfur dioxide (SO_2) emissions from all 22 engines combined must not exceed 0.014 tons/yr averaged over a rolling monthly three-year period.

viii. Visual emissions from each diesel electric generator exhaust stack must be no more than ten percent, with the exception of a five-minute period after unit start-up. Visual emissions must be measured by using the procedures contained in 40 C.F.R. 60, Appendix A, Method 9.

5. Operation and Maintenance

a. The Permittee must follow all recommended installation, configuration, operation, and maintenance provisions supplied by emission unit and component manufacturers.

b. An operations and maintenance (O&M) manual must be updated by the Permittee for each emission unit. The manufacturer's instructions may be referenced in the O&M manual.

i. The O&M manual must include the following, at a minimum:

A. Manufacturer's testing and maintenance procedures that will ensure that each individual engine will conform to the EPA Tier Emission Standards appropriate for that engine throughout the life of the engine.

B. Normal operating parameters for emissions units.

C. A maintenance schedule for each emissions unit.

D. A description of the monitoring procedures.

E. Monitoring and record keeping requirements.

F. Actions for abnormal control system operation.

ii. The O&M manual must be updated within 30 days of commencing operation of each emission unit.

c. Emission units must be operated and maintained in accordance with the O&M manual.

d. The Permittee must assess all complaints received. The Permittee must initiate corrective action in response to a complaint within three calendar days of receipt of the complaint.

6. Monitoring and Recordkeeping

a. The O&M manual must be reviewed annually.

i. The date of each review and the person performing each review must be documented in the O&M manual.

ii. The O&M manual must be updated to reflect any modifications to emission units or operating procedures.

b. O&M records must be kept on premises in hard copy or readily available on-site electronically.

c. For all air-quality related complaints, the following records must be kept:

i. A written record of the complaint received by the Permittee or forwarded to the Permittee.

ii. The Permittee's action to investigate the validity of the complaint, any corrective action that was taken in response to the complaint, and the effectiveness of the remedial action.

d. The date, time, duration, and cause of any periods where control technology equipment is out of service must be documented and maintained.

e. All data required by this NOC Approval Order must be maintained in a readily retrievable manner for a period of five years and must be made available to authorized representatives of Ecology upon request.

f. The Permittee must complete any additional monitoring or recordkeeping necessary to determine compliance with the requirements of this NOC Approval Order, as determined by Ecology.

g. The following records are required to be collected and maintained:

i. Fuel receipts with amount of diesel and sulfur content for each delivery to the facility.

ii. Monthly and annual hours of operation for each diesel engine.

iii. Purpose, electrical load, and duration of runtime for each diesel engine during any periods of operation.

iv. Annual gross power generated by or for each independent tenant at the facility and total annual gross power generated by the facility.

v. Upset condition log for each engine and generator that includes date, time, duration of upset, cause, and corrective action.

vi. Air quality complaints received from the public or other entity, and the affected emissions units.

h. The number of hours each engine has run, the fuel consumed, and the date must be recorded. Data must be provided to Ecology on request.

7. Testing Plan Requirements

a. The Permittee must submit a test plan to Ecology for review and approval at least 30 days prior to source testing. Ecology may require a new protocol for re-test events conducted after a failed source test, when required, and Ecology may approve a shorter timeframe for submission for the re-test protocol. The test plan must include the following information, at a minimum:

i. Identification of each emission unit to be tested.

ii. The operating parameters to be monitored during the test.

iii. A description of the emission units to be tested.

iv. The time and date of the proposed source test.

v. Identification and qualifications of the source test personnel.

vi. A description of the test methods and procedures to be used.

b. Test reports must be submitted to Ecology within 60 days of completion of the source testing. Test reports must include the following information, at a minimum:

i. The information described under Approval Conditions 3 and 7(a).

ii. The information described in the test plan and any subsequent test plan approval letters.

iii. Field and analytical laboratory data.

iv. Quality assurance/quality control procedures and documentation.

v. Analyzer data recorded during the test.

vi. A summary of results, reported in units and averaging periods consistent with the applicable emission limit.

vii. A summary of control system and equipment operating conditions.

viii. Copies of all field data.

ix. Chain of custody information.

x. Calibration documentation.

xi. Discussion of any abnormalities associated with the results.

xii. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

xiii. Emission calculations.

c. The Permittee must provide adequate sampling ports, safe sampling platforms, and access to platforms and utilities for sampling and testing, in accordance with 40 C.F.R. 60.8, 40 C.F.R. 63.7(d), and WAC 173-400-105(4).

d. When information obtained by Ecology indicates the need to quantify emissions, Ecology may require the Permittee to conduct material analysis or air emission testing under WAC 173-400-105. This testing requirement is in addition to any testing required by Ecology in this NOC Approval Order, other permits, or other state or federal requirements.

e. Alternate test methods and procedures may be proposed by the Permittee for Ecology review; a justification for the change must be included. Proposed alternates must not be utilized unless an approval is issued by Ecology, in writing, prior to the test.

8. Reporting

a. All notifications, plans, reports, and other submittals must be submitted in a manner approved by Ecology.

Washington State Department of Ecology
Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

Reports may also be submitted electronically to: ecyaqciero@ecy.wa.gov

Or as directed.

b. Within 10 business days after entering into a binding agreement with a new tenant, CyrusOne must notify Ecology of such an agreement. The serial number, manufacturer make and model, standby capacity, and date of manufacture of engines proposed will be submitted prior to installation of engines in any of the phases of this project.

c. The following information will be submitted to the AQP at the address in Condition 8(a) above by January 31 of each calendar year. This information may be submitted with annual emissions information requested by the AQP.

   i. Monthly rolling annual total summary of air contaminant emissions.

   ii. Monthly rolling hours of operation for each engine with annual total.

   iii. Monthly rolling gross power generation with annual total as specified in Approval Condition 6(vi).

   iv. A log of each start-up of each diesel engine that shows the date, the purpose, fuel usage, and duration of each period of operation.

d. Any air quality complaints resulting from operation of the emissions units or activities must be promptly assessed and addressed. CyrusOne must maintain a record of the action taken to investigate the validity of the complaint and what, if any, corrective action was taken in response to the complaint. Ecology must be notified within three days of receipt of any such complaint.

e. CyrusOne must notify Ecology by e-mail or in writing within 24 hours of any engine operation of greater than 60 minutes if such engine operation occurs as the result of a power outage or other unscheduled operation. This notification does not alleviate CyrusOne from annual reporting of operations contained in any section of Approval Condition 8.

f. The Permittee must notify Ecology within 30 days of the following events:

   i. Commencement of construction of the project.

   ii. Completion of the construction of the project.

   iii. If construction or operation has been discontinued for more than 18 months.

g. The Permittee must notify Ecology within 60 days (or longer as approved by Ecology) of the following events:

   i. Changes in operation contrary to information submitted in the NOC application.

   ii. Discontinued operations. This notification must include a shutdown status maintenance plan containing the following information, at a minimum:

      A. Maintenance that will be performed during the shutdown to allow startup in a timely manner with minimum amount of work and emissions, (allowable emission levels as of the date of shutdown cannot increase upon reopening).

   iii. Reactivating the facility following discontinued operations of 18 months or more. This notification must include a start-up plan containing the following information, at a minimum:

      A. Documentation that the shutdown maintenance was performed during shutdown to allow startup in a timely manner with minimum amount of work and emissions (allowable emissions levels as of the date of shutdown cannot increase upon reopening).

B. Documentation of testing performed, which demonstrates that units are still able to meet the parameters of this approval order after being inactive, or other documentation which demonstrates why testing is not necessary.

9. General Conditions

a. **Activities Inconsistent with this Order** - Any activity undertaken by the Permittee, or others, in a manner that is inconsistent with the data and specifications submitted as part of the NOC application or this NOC Approval Order, must be subject to Ecology enforcement under applicable regulations.

b. **Availability of Order** - Legible copies of this NOC Approval Order and any O&M manual(s) must be available to employees in direct operation of the equipment described in the NOC application and must be available for review upon request by Ecology.

c. **Compliance Assurance Access** - Access to the source by representatives of Ecology or the United States Environmental Protection Agency (EPA) must be permitted upon request. Failure to allow access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act and may result in revocation of this NOC Approval Order.

d. **Discontinuing Construction** - Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, or if construction is discontinued for a period of eighteen months or more. The permitting authority may extend the 18-month period upon a satisfactory showing by the permittee that an extension is justified.

e. **Equipment Operation** - Operation of the facility must be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with O&M manuals, unless otherwise approved in writing by Ecology.

f. **Registration** - Periodic emissions inventory and other information may be requested by Ecology. The requested information must be submitted within 30 days of receiving the request, unless otherwise specified. All fees must be paid by the date specified.

g. **Violation Duration** - If the Permittee violates an approval condition in this NOC Approval Order, testing, recordkeeping, monitoring, or credible evidence will be used to establish the starting date of the violation. The violation will be presumed to continue until testing, recordkeeping, monitoring, or other credible evidence indicates compliance. A violation of an approval condition includes, but is not limited to, failure of air pollution control equipment, failure of other equipment resulting in increased emissions, or a failed source test indicating an exceedance of an emission limit.

h. **Odor** - The Permittee must not cause or allow the generation of any odor which unreasonably interferes with any other property owner's use and enjoyment of their property. The Permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.

i. **Obligations Under Other Laws or Regulations** - Nothing in this NOC Approval Order must be construed so as to relieve the Permittee of its obligations under any state, local, or federal laws or regulations.

j. **Maintaining Compliance** - It must not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the operations in order to maintain compliance with the conditions of this NOC Approval Order.

k. **Visible Emissions** - No visible emissions from the source are allowed beyond the property line, as determined by 40 C.F.R. Part 60, Appendix A, Test Method 22.

l. **Changes in Operations** - Changes in operation, discontinued operation, or inadequate maintenance plans or re-start plans (see “Reporting” requirements), may require a new or amended NOC Approval Order.

Authorization may be modified, suspended, or revoked in whole or part for cause, including, but not limited to, the following:

- Violation of any terms or conditions of this authorization.
- Obtaining this authorization by misrepresentation or failure to disclose all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, must not be affected thereby.

Your Right to Appeal

You have a right to appeal this NOC Approval Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this NOC Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. “Date of receipt” is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this NOC Approval Order:

- File your appeal and a copy of this NOC Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this NOC Approval Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address and Location Information

Filing with the PCHB

For the most current information regarding filing with the PCHB, visit: https://eluho.wa.gov/ or call: 360-664-9160.

Service on Ecology

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

E-Mail Address:

ecologyappeals@ecy.wa.gov

Americans with Disabilities Act Information

Accommodation Requests

To request an ADA accommodation, email aqciero@ecy.wa.gov, call (509) 329-3400, or call Ecology through the Washington Telecommunication Relay for services including text telephone (TTY) at 711 or through your preferred relay service provider. Visit Ecology.wa.gov/ADA for more accessibility information.

Dated on this 22nd Day of January 2026.

Prepared by:	**Approved by:**
Jenny Filipy, PE Air Quality Program Department of Ecology State of Washington	Karin Baldwin, Section Manager Air Quality Program, Eastern Region Department of Ecology State of Washington

- Serve a copy of your appeal and this NOC Approval Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address and Location Information

Filing with the PCHB

For the most current information regarding filing with the PCHB, visit: https://eluho.wa.gov/ or call: 360-664-9160.

Service on Ecology

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

E-Mail Address:

ecologyappeals@ecy.wa.gov

Americans with Disabilities Act Information

Accommodation Requests

To request an ADA accommodation, email aqciero@ecy.wa.gov, call (509) 329-3400, or call Ecology through the Washington Telecommunication Relay for services including text telephone (TTY) at 711 or through your preferred relay service provider. Visit Ecology.wa.gov/ADA for more accessibility information.

Dated on this 22nd Day of January 2026.

Prepared by:

Jenny May Filipy

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State of Washington

Technical Support Document
Notice of Construction Approval Order No. 26AQ-E008
CyrusOne LLC – PNW1
AQPID No. A0250317
Quincy, WA

Prepared by: Jenny Filipy, P.E.

1. Project Summary

CyrusOne LLC – PNW1 (the source) is a data center classified as a synthetic minor source for nitrogen oxides with multiple existing emissions units. The source has requested to reduce the number of permitted emergency generators from 42 to a total of 22. This review is to remove approval conditions that limited operations of multiple generators use to one day per year on average. Modeling was performed for a worst-case scenario that allows hours of operation to extend for up to two days per year on an average of three years.

An initial Notice of Construction (NOC) application was submitted on August 9, 2025, by CyrusOne LLC – PNW1 for the Approval Order Update project. The Washington State Department of Ecology (Ecology) reviewed the initial application and found it incomplete per Washington Administrative Code (WAC) 173-400-111 on September 2, 2025. Amended NOC applications were received by Ecology on September 16, 2025, and found to be complete on October 14, 2025.

2. Application Processing

a. Public Notice

Due to anticipated public interest, Ecology scheduled a 30-day comment period October 21 through December 1, 2025. Legal notices were posted in English and Spanish on Ecology's website and The Quincy Valley Post Register. Response to comments is attached as appendix B.

Resources used to determine outreach:

Department Of Health Disparities map: [Information by Location | Washington Tracking Network (WTN)]

Washington GIS map: [Limited English Proficiency Application (arcgis.com)]

b. State Environmental Policy Act (SEPA)

City of Quincy issued a Mitigated Determination of NonSignificance (MDNS) on July 27, 2017.

3. Applicable Regulations

a. State Regulations

i. Minor New Source Review Applicability

Per WAC 173-400-110, an NOC application and an order of approval must be issued by the permitting authority prior to the establishment of a new source or modification.

As stated in the NOC application and consistent with Ecology's review, the project proposes changes to approval conditions and a decrease in annual emissions for all pollutants due to the reduction of permitted emergency generators from 42 to a total of 22. Modeling was performed for a worst-case scenario that allows hours of operation to extend for up to two days per year on an average of three years. These project changes are not subject to minor new source review (NSR). However, modeling of the short-term emission changes has been completed to show compliance with the National Ambient Air Quality Standards.

A. Actual Emissions

The actual emissions from the emergency generator reduction are shown below in Table 1. Annual emissions decrease for all pollutants for this project for the reduction of permitted generators from 42 to a total of 22.

Table 1. Actual emissions decrease for pollutants tons per year

Pollutant	Emissions for 42 Generators (tons per year)	Emissions for 22 Generators (tons per year)	Change in Emissions (tons per year)
Carbon Monoxide (CO)	7.9	4.1	-3.8
Nitrogen oxides (NO_X)	36	19	-17
NO_2	3.6	1.9	-1.7
Particulate Matter, PM_{10}	2.3	1.2	-1.1
$PM_{2.5}$	2.3	1.2	-1.1
Sulfur Dioxide (SO_2)	0.027	0.014	-0.013
Diesel Engine Exhaust Particulate (DEEP)	0.62	0.33	-0.29

ii. Prevention of Significant Deterioration (PSD)

PSD does not apply, based on allowable emissions.

iii. Other Applicable Requirements

In accordance with WAC 173-400-113, the generator emission sources must comply with all applicable emission standards adopted under Chapter 70A.15 RCW.

The following applicable emission standards are associated with the proposed project:

A. WAC 173-400-040 General standards for maximum emissions: limits visible emissions from all sources to no more than three minutes of 20 percent opacity, in an hour, of an air contaminant from any emission unit.

B. WAC 173-400-050 and -060 Emission standards for combustion and incineration units and general process units: limits emissions of particulate matter from combustion and general process units to 0.23 gram per dry cubic meter at standard conditions (0.10 grains per dry standard cubic foot) of exhaust gas.

C. WAC 173-400-115 Standards of performance for new sources: adopts by reference 40 C.F.R. Part 60, Subpart IIII. See more below.

b. Federal Regulations

In accordance with WAC 173-400-113, the generator emission sources must comply with all applicable new source performance standards (NSPS) included in 40 C.F.R. Part 60, national emission standards for hazardous air pollutants (NESHAPs) included in 40 C.F.R. Part 61, and NESHAPs for source categories included in 40 C.F.R. Part 63. The following applicable emission standards are associated with the proposed project:

i. Standards of Performance for New Stationary Sources

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each emergency generator. The regulation specifies: criteria for classification as emergency engines, Tier-2 or Tier 3 emission standards for the engines, depending on the power rating; and fuel, monitoring, compliance, and notification requirements for the Permittee.

ii. National Emission Standards for Hazardous Air Pollutants for Source Categories

The RICE NESHAP applies to each engine. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.

4. Emissions

a. Emission Factors

Emission factors for the emergency generator engines were provided as Not-to-Exceed-Limits by the manufacturer MTU for NOx, CO, PM, hydrocarbons (HC). The following was assumed for the emergency generators:

i. HCs were assumed to be equivalent to VOC and non-methane HC.

ii. The sum of PM and HC (assumed to all condense) and be equivalent PM_{10} and $PM_{2.5}$ for the engines.

iii. Diesel Engine Exhaust Particulate (DEEP) is assumed to equal the manufacturer provided filterable PM.

The emission factor for SO_2 was calculated based on sulfur content of the ultra-low sulfur fuel and an average heating value of diesel fuel. All sulfur was assumed to convert to SO_2.

An additional factor was added for cold-start emissions (PM, CO, total VOC, and volatile TAPs). These factors are based on short-term concentration trends for VOC and CO emissions observed immediately after startup of a large diesel backup generator. These observations were documented in the California Energy Commission's report "Air Quality Implications of Backup Generators in California" (Lents et al. 2005).

b. The table below presents the potential emissions (based on 500 hours of operation per year) and allowable emissions (based on permitted limits) for the entire facility. The facility is a synthetic minor for Nitrogen Oxides.

Table 2. Potential and Allowable Emissions for Total Source

Pollutant	Total Source Potential Emissions (tons/year)	Total Source Allowable Emissions (tons/year)
Carbon Monoxide (CO)	54	4.1
Nitrogen Oxides (NO_X)	250	19
PM_{10}	16	1.2
$PM_{2.5}$	16	1.2
Total Suspended Particulates (TSP)	16	1.2
Sulfur Dioxide (SO_2)	0.18	0.014
Volatile Organic Compounds, total (VOC)	12	0.93
Greenhouse Gases (GHG)	19,632	1,492

5. Ambient Air Quality Standards

As specified in WAC 173-400-113, the proposed new or modified source(s) must not cause or contribute to a violation of any ambient air quality standard. This includes the ambient air quality standards for both criteria and toxic air pollutants.

a. Pollutants Listed Under WAC 173-400-110 (Except TAPs)

For PM_{10}, $PM_{2.5}$, modeling was performed to satisfy the requirements of Chapter 173-400-113(3) WAC and 173-400-035 WAC. The modeling demonstrates that the result of worst-case operating scenarios of greater up to two days per year on average will not exceed the ambient air quality standards. The modeling results are included in the table below.

Table 4. Criteria Pollutant Modeling Results

Criteria Pollutant	Averaging Period	Maximum Modeled Concentration with background (μg/m³)	Ambient Air Quality Standard (μg/m³)
PM_{10}	24-hour	137	150
$PM_{2.5}$	24-hour	26	35

b. Toxic Air Pollutants (TAPs)

In accordance with WAC 173-460-040, TAP sources must meet the requirements of Chapter 173-460 WAC, unless they are exempt by WAC 173-400-110(5). There were no increases to TAP emissions over any regulated averaging period for this project.

Appendix A – Federal Rule Applicability

a. 40 C.F.R. Part 60, Subpart IIII

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each engine. The applicable portions the rule appear to be:

Citation	Subject	Notes
60.4202(a)(2)	Manufacturer emission standards	Specifies that 2007 model year and later emergency stationary CI ICE with a maximum engine power ≥37 kW and ≤2,237 KW be certified to the emission standards specified in 40 C.F.R. 1039, Appendix I.
60.4205(b)	Owner/Operator emission standards	Directs owners and operators of 2007 model year and later emergency stationary CI ICE to comply with the emission standards for new nonroad CI engines in §60.4202.
60.4209(a)	Owner/Operator monitoring requirements	Requires installation install a non-resettable hour meter prior to startup of each engine, since the engines do not meet the standards applicable to non-emergency engines.
Table 8 to Subpart IIII of Part 60	Applicability of General Provisions to Subpart IIII	The table lists what portions of 40 C.F.R. 60 Subpart I are applicable, including notification and recordkeeping requirements.

b. 40 C.F.R. Part 63, Subpart ZZZZ

The RICE NESHAP applies to each engine. Condition 1 of the Order requires general compliance with this regulation. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.

Appendix B – Response to Comments

Commenter - Patrica Martin

Comment 1:

First, according to this application at 3.1, Cyrus One is using the Monte Carlo analysis for short term PM 2.5 and 24-hour PM10 NAAQS because Ecology accepted it in a prior Sabey application. I am requesting that Ecology provide proof that the use of the Monte Carlo for the 24-hour PM10 NAAQS, and annual PM2.5 is as protective, or more protective, than the approved modeling necessary to demonstrate compliance with the NAAQS for these criteria air pollutants.

Response to Comment 1:

In this case Monte Carlo is used when evaluating the probability of the engines running at the same time as a weather event that would result in the highest impacts. This post-processing method runs 1,000 iterations and includes the modeled outputs from all possible engine operation scenarios including power outage scenarios, maintenance, and testing, to when the engines are not running. This process uses the same model program, parameters and meteorology as any other NAAQS evaluation. Using Monte Carlo establishes that the 24-hour NAAQS standards of 98th percentile for $PM_{2.5}$ and 99.7 percentile for PM_{10} are met.

The program script that was used was written by Ecology's air modeling team and the output was evaluated by Ecology's modeling team to ensure proper use of the post processing method.

Comment 2:

I am also requesting proof of approval from EPA for the use of the Monte Carlo analysis for this purpose.

Response to Comment 2:

Ecology does not require EPA approval for the use of Monte Carlo post processing of modeling for determining NAAQs compliance for minor sources in permit applications. Ecology has discussed the methodology with EPA. They have not provided any formal approval but have also not provided any statement that it should not be used for minor sources.

Comment 3:

Additionally, assumptions that PM10 emissions equal the PM2.5 emissions is not acceptable. Instead, emission estimates based on worst case scenarios to model PM10 must be conducted. Assumptions may underestimate these emissions.

Response to Comment 3:

Particulate Matter with an aerodynamic diameter of 10 micrometers or smaller (PM_{10}) includes all potential Particulate Matter with aerodynamic diameter of 2.5 micrometers or smaller ($PM_{2.5}$). Combustion sources emit both PM_{10} and a smaller amount of $PM_{2.5}$ emissions. To be conservative all $PM_{2.5}$ emissions are assumed to be equal to the larger PM_{10} emissions.

Comment 4:

According to Table 3, Quincy is approaching both the PM10 NAAQS limits (and PM2.5), but Ecology only monitors for PM2.5 in Quincy. It is time for Ecology to include PM10 to the air monitor in Quincy. [Ecology should also monitor for NO2, because as we learned in 2010 from Jim Wilder's email, Quincy has a NOx problem due to the surrounding agricultural activities].

Response to Comment 4:

Table 3 in CyrusOne's application shows the results of modeling of the emergency generators, before the application was updated to reflect current modeling and background. Cumulative updated results for PM_{10} 24-hour average were 137 micrograms per meters cubed ($\mu g/m^3$). The background used is from the closest reliable monitor data, which is in Yakima, Washington and it is at 60 $\mu g/m^3$ which is approximately 40 percent of the PM_{10} standard of 150 $\mu g/m^3$. The Yakima, Washington, 4th Avenue monitor is approximately 76 miles to the southwest of CyrusOne Data Center in Quincy, Washington.

Ecology did monitor NO_2 and Diesel Particulate Matter (by proxy) in Quincy in 2017 - 2018 to create a baseline, and we still monitor $PM_{2.5}$ to help the community protect themselves from harmful exposure.

Comment 5:

Regarding worst-case scenarios, there needs to be clarification of exactly what that is with regard to emissions during power outages at 3.3.1. The application states "worst-case, at or near full load (≥50%)", but 50% is far from "full load." This range appears to give a great deal of latitude to Cyrus One to comply within engine operational limits, but does not address the exposure estimates during a power outage. There is a greater amount of velocity at higher loads, than at 50%, which I assume has been factored into exposure data. Doesn't explicitly identifying the load and the velocity at which pollutants will be emitted play a role in compliance with those calculations? In other words, if you don't explicitly model for the exact load, how can you model for the expected impact, including distance emissions travel?

Response to Comment 5:

> There was a load analysis done (Table B-1 of the application) to determine the loads that could create the worst-case impacts. Each pollutant has a different load where it has the worst-case emissions. This load analysis combined with emissions information determines when the worst-case impacts will happen for each pollutant. The application states that during a power outage, CyrusOne engines will operate between 50 percent and 100 percent loads, so the worst-case emissions for each pollutant and worst-case load at 50 percent load or above will be used to determine the impacts during that runtime scenario.

Comment 6:

Along that same line of thought, which NAAQS is the limiting factor during a power outage, and how will we know if it has been violated?

> **Response to Comment 6:**
>
> Approval Conditions in the Approval Order regarding fuel use and hours of operation are the basis for determining compliance with all NAAQS. Ecology determines compliance with these Approval Order conditions through record keeping and reporting requirements.

Comment 7:

Another concern that I have is low load emissions. According to Table B-1 the highest pollutant emitting load for PM2.5 and PM10, is at 10% load, but the rain caps don't open all the way at that load due to lack of velocity. What is the increased risk for residents downwind of Cyrus One or the workers onsite when engines are run at low load?

Response to Comment 7:

> Stack caps not being fully open at low loads have been factored into the modeling in this application. Adjustments to velocity and stack diameter have been considered based on this stack cap issue.

Comment 8:

Also, in looking at Table B-2, I noticed that DEEP is only considered at the front-half PM2.5 emissions, and PM for front-half plus back-half is considered the vendor's NTE PM and HC. Why the distinction?

Response to Comment 8:

The Washington State toxic air pollutant Diesel Engine Exhaust Particulate (DEEP) threshold was established based on filterable particulate matter measurements on diesel engines. PM_{10} and $PM_{2.5}$ National Ambient Air Quality Standards are based on both filterable and condensable particulate matter measurements in ambient air.

Comment 9:

Also, why aren't "shut down" emissions considered in this permit? Shutdown is a period of time when pollutant levels, especially NOx, can spike. Please redo the emission calculations to include shut down emissions. Emissions created during engine shut-down need to be included in all air quality permits for diesel engines.

Response to Comment 9:

Engine emissions during shutdown are not higher than any emissions that are modeled in the NOC application. To safely shut down an engine, the power load is removed before turning off the engine. This NOC application evaluates each hour of operation with the highest possible emission of each pollutant even at low load operations that potentially have higher carbon monoxide (CO) than at higher loads with more complete combustion.

Comment 10:

Conveniently absent from this document is compliance with the NAAQS for 1-hour and annual NO2. Will this permit be in compliance with the NO2 NAAQSs? Please provide documentation.

Nitrogen Dioxide (NO_2)	primary	1 hour	100 ppb	Annual 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	1 year	53 ppb (2)	Annual Mean

Response to Comment 10:

The one hour and annual NO_2 NAAQS were fully evaluated in previous applications that included all 42 of the data center original design emergency generators. The conditions that were removed that limited daily use, were the triggers for remodeling in this application. Not every NAAQS averaging period required reevaluation due to the reduction of the total number of emergency generators from 42 to 22, which reduced annual emissions and hourly emissions. Only worst-case daily emission estimates for PM_{10} and $PM_{2.5}$ required evaluation for this project.

Comment 11:

In Table B-7 the assumed power outage occurs between 7am and 7pm. That is not a reasonable assumption, and the model should be run for times after 7pm and before 7am since power outages can occur any time and are not constrained to the time between 7am and 7pm. Please rerun this scenario for power outages such that they occur after 7pm and before 7am, and share this new information with the public in response to our comments.

Response to Comment 11:

In CyrusOne's Notice of Construction application, Note No. 2 in Table B-7, stating "This model assumed project operations will occur between daylight hours only (assumed 7 a.m. to 7 p.m.)" only applies to monthly maintenance, annual maintenance, and stack testing. Superscript 2 is found on those three Runtime Regime descriptions, but not on the power outage Runtime Regime description. Please see the table below.

Table B-7
Summary of Ranked Generator Runtime Scenarios
CyrusOne
Quincy, Washington

Ranked Day	Runtime Regime	Assumed Duration	Assumed Days of Operation	Maximum Generators Concurrently Operating	Max. Daily Facility-wide $PM_{2.5}$ and PM_{10} Emissions[1]
		(hours per day)	(days per year)		(lbs/day)
1-2	Power outage - all generators at or near maximum load (≥50% load)	24	2	22	1,472
3-35	Monthly Maintenance and Testing (scheduled operations)[2]	12	33	1	38
36-57	Annual Maintenance and Testing (scheduled operations)[2]	12	22	1	35
58-61	Stack Testing (scheduled operations)[2]	8	4	1	23

Notes:
1. Unless otherwise stated, for the purposes of emissions ranking, emission rates are conservatively based on the maximum emission rate at full-variable load (≤100% Load).
2. This model assumed project operations will occur between daylight hours only (assumed 7 a.m. to 7 p.m.).

Comment 12:

Also, I find nothing in the documents about the 1 year NAAQS for PM2.5. See table below. Does this permit comply? What is Cyrus One's current contribution to the 1 year annual NAAQS for PM2.5? Please provide documentation that modeling demonstrates compliance.

Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	9.0 µg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years

As you are undoubtedly aware, the 1-year NAAQS for PM2.5 was reduced from 12 ug/m3 to 9.0 ug/m3 in 2024. And as you are aware, PM2.5 is more dangerous than PM10 because of its small size and impacts on the human body. Compliance with this standard is extremely important to the health of our community.

Looking back at the 2018 Cyrus application it appears that if Cyrus would have installed the remaining engines (see table below), it would violate NAAQS for the annual PM2.5. What is Cyrus One's current impact on the annual PM2.5?

Particulate Matter ($PM_{2.5}$) Annual average	15	15	12	Theoretical Max. Year	PM25_ANN.ADI	2.3	2.9	6.5	9.4
24-hour average	35	35	35	Scheduled operations (i.e., maintenance)	PM25_24HR_MT.ADI	11 [e, f]	11	21	32

http://ecology.wa.gov/getattachment/64318502-2e62-4dd6-b82e-40c007c1367b/20190219CyrusOneNOCAppWithAdd.pdf

Response to Comment 12:

This project includes a reduction of total number of engines at the facility from 42 to 22 engines. The remaining 22 engines will not have annual increases to their limits. The facility's total annual emissions decreased because of the reduction of engines and therefore modeling of annual $PM_{2.5}$ emissions was not required for this permitting effort.

In a permitting effort in 2024, the facility (with total of 42 engines) did remodel for $PM_{2.5}$ annual average using more recent models and background values. The resulting impact with background was 7.8 micrograms per meters cubed for $PM_{2.5}$ annual average. You can find that notice of construction application on Ecology's website (link below), page 7 summarizes the modeling results.

https://ecology.wa.gov/getattachment/bbd82485-5791-4620-b093-c7c54458a4f8/20240509CyrusOneNOCApp.pdf

Comment 13:

Why is Cyrus being allowed to use the Monte Carlo analysis for the 24-hour PM10 and annual PM2.5? This permit application appears to circumvent conventional modeling methodologies- with the blessing of Ecology – in favor of increased pollution and less protection for area residents. It is imperative that Ecology require that this permit revision fully considers the annual PM2.5, the NAAQS of which may be in violation by Cyrus One.

Response to Comment 13:

In this case Monte Carlo is used when evaluating the probability of the engines running at the same time as a weather event that would result in the highest impacts. This post-processing method runs 1,000 iterations and includes the modeled outputs from all possible engine operation scenarios including power outage scenarios, maintenance, and testing, to when the engines are not running. This process uses the same model program, parameters and meteorology as any other NAAQS evaluation. Using Monte Carlo establishes that the 24-hour NAAQS standards of 98^{th} percentile for $PM_{2.5}$ and 99.7 percentile for PM_{10} are met.

The program script that was used was written by Ecology's air modeling team and the output was evaluated by Ecology's modeling team to ensure proper use of the post processing method.

Comment 14:

Reviewing changes to the CAA regulations, I see that in addition to more stringent annual PM2.5 standard, there have been changes to several of the air quality models, e.g., AERMOD, etc., that are used for compliance purposes. Please list the models Cyrus One used in its modeling, and the year the model was last updated. Also, why is Cyrus One not being required to model for compliance with all the NAAQS?

Response to Comment 14:

AERMOD version 24142 was used for this project. This is the most recent version of AERMOD; it was released in 2024.

This project did not trigger modeling for every averaging period due to the reduction of overall emissions from the site. The only increase was for the 24-hour averaging period, to allow for the facility to run their emergency engines longer during power outage, while still maintaining hourly limits that are averaged over a three-year period.

Comment 15:

Moving on from the NOC and supporting documents to the NOC Approval Order, I note that only the filterable portion of the PM is being considered for compliance with manufacturer's emission rates during commissioning. During commissioning and stack testing is the perfect time to determine the amount of condensable PM2.5 being emitted with each load. Including the filterable portion during commission testing would provide additional information to assist in more accurately estimating emissions and their impact on surrounding communities.

Response to Comment 15:

Emission tests required by this permit are intended to demonstrate continued compliance with New Source Performance Standards (NSPS). Cold start and condensable emissions were factored into emission estimates used in dispersion modeling and demonstrated that emissions from engines meeting NSPS requirements would comply with the NAAQS.

Ecology has explored the utility of condensable testing of data center engines using EPA Method 202. The results of Method 202 testing appeared to contain unexplained variation such that the value of the data is limited. CyrusOne conservatively estimated that the condensable portion of particulate matter emissions is equal to all hydrocarbons emitted by the engines condensing into particulate matter. This analysis, which overestimates condensable particulate matter emissions, demonstrated again that emissions from engines that comply with EPA's NSPS requirements comply with the NAAQS.

By showing continued compliance with NSPS tier 2 standards every 5 years as required by the permit, the applicant will also show compliance with the NAAQS because modeling results were evaluated to take into account cold start factors and condensable estimates. Also, the dilution tunnel system required in Table 2 of Appendix B to Subpart E of 40 C.F.R. 1039 accounts for some of the condensable PM.

Comment 16:

Finally, in reviewing these documents I did not find any evidence that pollution controls – SCRs, DPFs or DOCs – were being used at Cyrus One. Is that the case? Is Cyrus One operating without pollution reduction devices? If so, why? As has been mentioned in earlier permit challenges, Ecology has failed to apply ± 30% cost of BACT with each permit. Had Ecology done so, BACT costs would be more in line with the cost of pollution control prevention devices as envisioned by the Act.

Response to Comment 16:

CyrusOne emergency engines are Tier 2 certified and do not have add-on controls. This project was a reduction of the number of emergency engines and for the remaining engines, there was no increase in annual emissions, so a new BACT analysis was not required for this project.

Because BACT is determined on a "case-by-case" basis, Ecology does not have official BACT thresholds. Ecology may make a presumptive BACT determination based on what other similar sources have determined for BACT. However, while presumptive BACT is the preferred starting point for minor NSR BACT determinations, Ecology may also perform or require a top-down analysis (such as those presented for data centers). This allows Ecology to keep up to date with cost values and technologies, that while maybe not completely feasible for emergency engines with intermittent use today, may possibly evolve to be feasible in the future.

When cost thresholds are considered (keeping in mind that cost is not the only consideration for BACT determinations), Ecology has seen incremental increases over time as shown below.

1980s	Costs over about $2,000 per ton considered unreasonable
1990s – mid 2000s	Costs over $4,000 - $7,000 per ton considered unreasonable
~2017	Costs below $5,000 per ton considered reasonable
	Costs between $5,000 and $10,000 per ton, Ecology takes a look
	Costs over $10,000 per ton considered unreasonable
2021	Costs over $12,000 per ton considered unreasonable for most criteria pollutants, except CO has a lower threshold, closer to $6,000 per ton
2022 – 2025	Updated yearly to align with Chemical Engineering Plant Cost Index updates

Commenter - Danna Dal Porto

Comment 17:

Cyrus One is using the Monte Carlo simulators to model and analyze air quality data. I had to look this procedure up and, although the references say it can be used for some analysis, the focus was not on large industrial emissions but on air pollutants like PAHs, incomplete combustion of organic materials like coal, oil and wood, in indoor environments. Other uses of Monte Carlo are to analyze data from mobile monitoring to minimize error in pollutant concentrations as well as to understand uncertainty in air quality models. The simulation selects a value from the parameters distribution and runs the process thousands of times. My reading of this explanation does not seem to say the Monte Carlo tests air quality but does a probability of a distribution of the results and identifies the likely outcome. This is the application of statistics to air monitoring and that is not sufficient to know the emissions over my community. Monte Carlo is a computerized mathematical technique that allows risk to be accounted for in quantitative analysis and decision making. All of this monitoring can be done at home, sitting in your jammies. Not acceptable. I want quality industry wide monitoring done in a professional manner, not Monte Carlo.

Response to Comment 17:

In this case Monte Carlo is used when evaluating the probability of the engines running at the same time as a weather event that would result in the highest impacts. This post-processing method runs 1,000 iterations and includes the modeled outputs from all possible engine operation scenarios including power outage scenarios, maintenance, and testing, to when the engines are not running. This process uses the same model program, parameters and meteorology as any other NAAQS evaluation. Using Monte Carlo establishes that the 24-hour NAAQS standards of 98th percentile for $PM_{2.5}$ and 99.7 percentile for PM_{10} are met.

The program script that was used was written by Ecology's air modeling team and the output was evaluated by Ecology's modeling team to ensure proper use of the post processing method.

Comment 18:

I am referencing Part 2 Technical Information. I consider this document incomplete.
Reading the application this is what I see.
Section V. Emissions Estimations of Criteria Pollutants.
Section V1. Emissions Estimations of toxic Air Pollutants.
Does your project generate toxic pollutant emissions? Marked YES
If Yes, please provide the following information regarding your toxic air pollutant emissions in your application.
Ramboll replied: Ramboll: See previous application for list of TAPs and potential emissions.
I have read almost every Data Center Permit since 2009 +/-. Never has an application required me to look up and refer to any other document held by the Washington State Department of Ecology. An applicant is to provide a document that is complete and available to the Public for consideration. This application is not complete. The Applicant is either lazy or not considering the Public, who want to review their document. I think this lack of required information is disrespectful to the Department of Ecology, the Public and the application process. I want to see this required information included in their application as it should be. I request this document be redone accurately.

Response to Comment 18:

This project was a reduction of all annual emissions, including all toxic air pollutants, due to the reduction of facility emergency generators from 42 to a total of 22. The past application for the original facility considered toxic air pollutants for emergency generators that would run for 24 hours and all other averaging scenarios. Please see the link below for the CyrusOne evaluation of toxic air pollutants, on pages 53 to 62.

https://ecology.wa.gov/getattachment/64318502-2e62-4dd6-b82e-40c007c1367b/20190219CyrusOneNOCAppWithAdd.pdf

Comment 19:

Moving on, page 5 of 5 in Part 2: Technical Information, Section V111. Best Available Control Technology and Section 1X. Ambient Air Impacts Analyses. Ramboll has, once again, decided to take a short-cut and refer readers to a previous document or previous information. I will say the same things as before: lazy, disrespectful, and inconsiderate of the reader. This information, especially BACT, should be readily available during the reading of the document. Air Quality permits have lasting effects on this community. We have the right to accurate, not speculative, facts. The air effects all of us, especially the children. I reject this haphazard application and request the applicant resubmit the document in complete, as requested by the Department of Ecology. No short-cuts, please.

Comment 20:

Because we do not have complete data in the application, I do not see any mention of pollution controls. No SCRs, DPFs or DOCs are being used at Cyrus One. Why not? Not knowing the BACT determination, this document is not informative to the Public.

Response to Comment 19 and 20:

CyrusOne emergency engines are Tier 2 certified and do not have add-on controls. This project was a reduction of the number of emergency engines and for the remaining engines, there was no increase in annual emissions, so a new BACT analysis was not required for this project. Reference to prior BACT evaluation is available online (see link below) on pages 31 to 33, and 56 to 57.

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