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January 25, 2024

Mr. Owen Rudloff
Air Quality Modeler
Oregon Department of Environmental Quality
owen.rudloff@deq.oregon.gov

*RE: 30-0123 (PDX138) Generator Modeled Location Change Projects – CAO Evaluation*

Dear Mr. Rudloff:

Amazon Data Services, Inc. (ADS) received Standard Air Contaminant Discharge Permit (ACDP) 30-0123-ST-01 on September 25, 2023, for a new data center, PDX138, located in Hermiston, OR. Condition 15.1 states that the permittee must complete a risk reassessment when proposing to modify any physical feature of the source that was used as a modeling parameter in the risk assessment that may increase risk.[1] A permit modification application is required if the newly assessed risk requires additional or changed permit conditions.[2] This letter is being submitted as an addendum to the previously approved Cleaner Air Oregon (CAO) Level 3 evaluation for the projects described herein and shows all projects result in a decreased risk for the surrounding communities. As such, ADS is requesting approval of these updated evaluations for the proposed projects and concurrence that the proposed changes will not increase risk and require no further action under the CAO program.

Per discussion with Oregon Department of Environmental Quality (DEQ), the risk assessment must be approved prior to implementing the proposed projects. ADS has submitted $4,800 in fees to the Oregon DEQ Business Office associated with the TEU Risk Assessment without permit modification ($1,000) and the Level 3 modeling review ($3,800).[3]

## PROJECTS

ADS has updated the PDX138 site design plan by swapping the location of the 600 kW Industrial Water Treatment (IWT) generator with the location of the 450 kW Industrial Water Building (IW) generator. With this update, the 600 kW generator will be used as the IW generator, while the 450 kW generator will be used as the IWT generator. These generators have not yet landed onsite but are expected in Quarter 1 of 2024. No change to operating parameters or emissions are expected from this swap.

Additionally, ADS is proposing a temporary relocation of one existing permitted generator to serve as backup for the redesigned facility's 600 kW IW generator. The temporary backup generator will be placed next to the expected 600 kW location for up to six months. It will then be moved to the location originally listed in the ACDP. The backup generator could be any of the three following generators:

[1] OAR 340-245-0100(8)(a) and (e).

[2] OAR 340-245-0100(8)(a)(D).

[3] OAR 340-216-8030 and Condition 13.1

- 1,825 kW transitory generator,
- 750 kW house generator, or
- 2,500 kW main generator.

## GENERATOR SWAP UPDATED CAO DEMONSTRATION

An updated Form AQ520 is provided in Attachment 1 for this generator swap. While there is no change to emissions overall, the unit description has been updated to match the appropriate expected throughput.

The update to the modeling protocol is the physical location of the IWT and IW generators. Table 1 shows the modeled parameters for the swapped location of the IWT and IW generators.

**Table 1. Updated Detailed Toxic Point Source Parameters at 10% Load**

| Source ID | UTM Easting (m) | UTM Northing (m) | Elevation (m) | Source Type | Stack Height (m) | Exhaust Temperature (K) | Exhaust Velocity (m/s) | Stack Diameter (m) |
|---|---|---|---|---|---|---|---|---|
| IWT | 323,907.5 | 5,075,165.8 | 197.30 | POINTCAP | 2.65 | 592.75 | 14.49 | 0.20 |
| IW | 323,906 | 5,075,207.4 | 197.31 | POINTCAP | 3.66 | 557.43 | 10.67 | 0.25 |

The methodology to determine potential risk described in the risk assessment work plan remains unchanged. Attachment 1 includes the updated Appendix C through H from the risk assessment and displays the updated screening model result rankings from Appendix F for the worst-case generators used in the risk assessment.[4] Attachment 5 includes electronic model files. With the swapped location there is no difference in the generator rankings for chronic or acute risk assessment. Updated risk results are summarized in Table 2.

**Table 2. Risk Assessment Results by Exposure Category**

| Risk Scenario | Residential Chronic Cancer Risk | Residential Chronic Non-Cancer Risk | Child Chronic Cancer Risk | Child Chronic Non-Cancer Risk | Worker Chronic Cancer Risk | Worker Chronic Non-Cancer Risk | Acute Non-Cancer Risk |
|---|---|---|---|---|---|---|---|
| Previous Submittal [a] | 1.21 | 0.03 | 3.40E-02 | 3.95E-03 | 0.96 | 5.55E-02 | 0.68 |
| Site Plan Update | 1.05 | 0.02 | 3.00E-02 | 3.49E-03 | 0.91 | 5.23E-02 | 0.67 |

As Table 2 shows, no change in risk action level will result from the design update. The expected risk will decrease from the original risk assessment for each exposure type. Table 3 summarizes the updates required for each file associated with the initial ACDP submission.

[4] Appendix C through G of the risk assessment are identical to Appendix D through H of the risk assessment work plan.

**Table 3. Document Update Summary**

| File(s) | Required Update(s) |
|---|---|
| Air Toxics Models | Source Locations |
| Emission Inventory (AQ520) | Swap IWT and IW generator |
| Modeling Protocol | Swap IWT and IW generator stack and dispersion parameters |
| Risk Assessment Work Plan | Modeled generator screening results |
| Risk Assessment | Calculated risk results |

## TEMPORARY RELOCATION UPDATED CAO DEMONSTRATION

Using the updated toxic models from the design change for the IW and IWT generator, each of the possible scenarios for the temporary backup generator was evaluated. The exact location of the selected generator during the temporary backup operation is specifically unknown but is expected to be next to the currently placed 600 kW IW generator. Without more specific information, the temporary backup units have been modeled assuming the same exhaust location as the 600 kW IW generator. The expected location will be no more than 10 meters from this exhaust location. Table 4 summarizes the previously modeled source that had its location shifted to be the same as the 600 kW IW generator. Generator location is the only change for each unit.

**Table 4.**

| Model ID | ACDP ID | Previous UTM X | Previous UTM Y | Temporary UTM X | Temporary UTM Y |
|---|---|---|---|---|---|
| PDX138CAO_1317_1825 | GENPORT | 323,878.4 | 5,075,346.4 | 323,906 | 5,075,207.4 |
| PDX138CAO_1317_750 | HOUSE3 | 323,756.4 | 5,075,509.4 | 323,906 | 5,075,207.4 |
| PDX138CAO_1317_2500 | GEN78 | 323,882.9 | 5,075,529.5 | 323,906 | 5,075,207.4 |

The emission inventory will not change as a result of the updated location for these units temporarily. The change to the modeling protocol is the location as described in Table 4. The risk assessment work plan methodology will also remain consistent with historical submissions. Attachments 2-4 include the updated Appendix C through H from the risk assessment for each potential temporary generator and displays the updated screening model result rankings from Appendix F for the worst-case generators used in the risk assessment.[5] Attachment 5 includes electronic model files. The only scenario with different generators included in the final risk assessment is the scenario in which a 2,500 kW generator is temporarily moved. For this scenario, the 2,500 kW unit that is temporarily relocated was added to the list of generators used in risk determination. Updated risk results for each scenario are provided in Table 5.

[5] Appendix C through G of the risk assessment are identical to Appendix D through H of the risk assessment work plan.

**Table 5. Risk Assessment Results by Exposure Category**

| Risk Scenario | Residential Chronic Cancer Risk | Residential Chronic Non-Cancer Risk | Child Chronic Cancer Risk | Child Chronic Non-Cancer Risk | Worker Chronic Cancer Risk | Worker Chronic Non-Cancer Risk | Acute Non-Cancer Risk |
|---|---|---|---|---|---|---|---|
| Previous Submittal [a] | 1.21 | 0.03 | 3.40E-02 | 3.95E-03 | 0.96 | 5.55E-02 | 0.68 |
| 1,825 kW Gen | 0.85 | 0.02 | 2.40E-02 | 2.77E-03 | 0.85 | 4.88E-02 | 0.67 |
| 750 kW Gen | 0.82 | 0.02 | 2.32E-02 | 2.67E-03 | 0.81 | 4.54E-02 | 0.67 |
| 2,500 kW Gen | 1.03 | 0.02 | 2.95E-02 | 3.43E-03 | 0.87 | 5.01E-02 | 0.67 |

a. Submitted to Oregon DEQ June 21, 2023.

As Table 5 shows, no change in risk action level will result from the proposed update. The expected risk will decrease from the original risk assessment in every scenario for each exposure type. Table 6 summarizes the updates required for each file associated with the initial ACDP submission.

**Table 6. Document Update Summary**

| File(s) | Required Update(s) |
|---|---|
| Air Toxics Models | Source Locations |
| Emission Inventory (AQ520) | No Change |
| Modeling Protocol | Update location of X, Y, Z |
| Risk Assessment Work Plan | Modeled generator screening results |
| Risk Assessment | Calculated risk results |

## CONCLUSION

Each scenario shows a decrease in risk evaluated for all exposure types using methodologies and operations consistent with historically submitted documentation. No permit condition will be violated and there will be no increase in risk above a risk action level. Because none of the proposed scenarios will cause an increase in any permitted limit, ADS will use economic and physical factors to best determine which generator to supply this backup power to the IW generator. ADS requests approval of these updated evaluations for the proposed projects and concurrence that the proposed changes will not increase risk and require no further action under the CAO program.

If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at 309.360.9610 or Beth Ryder at 458.260.6770.

Sincerely,

S. Shri Vani

Shri Vani Sripada
Air Permitting Engineer, Amazon Data Services, Inc.

Attachments

cc: Garrett Koehler, Amazon Data Services Inc.
Beth Ryder, Trinity Consultants
Ania Loyd, Oregon DEQ
JR Giska, Oregon DEQ

# ATTACHMENT 1. Updated AQ520 Form

Attached Electronically

# ATTACHMENT 2. Generator Swap Risk Assessment Appendix Updates

Attached Electronically

# ATTACHMENT 3. 1825 kW Generator Risk Assessment Appendix Updates

Attached Electronically

# ATTACHMENT 4. 750 kW Generator Risk Assessment Appendix Updates

Attached Electronically

# ATTACHMENT 5. 2500 kW Generator Risk Assessment Appendix Updates

Attached Electronically

# ATTACHMENT 6. Model Results Updates

Attached Electronically

# ATTACHMENT 7. CAO Model Files

Attached Electronically