Air Quality Advisory Committee

August 9, 2023

Agenda

1. Welcome/Introductions
2. Recap of Previous Meeting
3. Community Opens
4. AQAC Opens
5. Good Neighbor Agreement Items Update
6. Agenda for Next Meeting
7. Public Comments/Questions

GNA-Specified Agenda Items

- Intel to report to the AQAC at its quarterly meetings on:
  - Stack testing completed since the last AQAC meeting; any stack testing planned before next AQAC meeting
  - Annual or semiannual reports submitted by Intel to DEQ pursuant to Intel's air permit
  - Any requests to DEQ for authority to modify emission factors or emission sources that were submitted since the last AQAC meeting or that Intel anticipates will be submitted prior to the next AQAC meeting
  - Any excess emissions and upsets reported to the Department during the most recent calendar quarter

    *Implemented measures identified on Attachment A

Stack Testing Overview

- Why does Intel perform stack testing?
  - Determination of compliance with Best Available Control Technology (BACT) emission limits
  - Determination of Rotary Concentrator Thermal Oxidizer (RCTO) control efficiencies
  - Development of emission calculations for fluorides and hydrogen fluoride
  - Good Neighbor Agreement Attachment B requirements
- Stack testing plans are reviewed and approved by Oregon DEQ and utilizes standard EPA and/or DEQ test methods
- Stack testing performed by a 3rd party stack testing firm

Stack Testing Update

- Activities since Q2 meeting (05/03/23)
  - No stack testing since last meeting
- Planned Q3 2023
  - No planned stack testing currently anticipated

Continuous Emissions Monitoring System Overview

- Rotor Concentrator Thermal Oxidizer (RCTO)
  - Used to control emissions of VOCs
  - Method of control: Thermal oxidation (combustion)
    - Temperature = Key operating parameter
    - Measurement via thermocouple
    - Minimum temperature established during stack testing
    - Temperature measurements are reviewed on an ongoing basis
    - Alarms are also set to alert when measured value outside the acceptable range
      - Alarms are indication of off-spec operation, not an indication of excess emissions or bypass

Continuous Emissions Monitoring System Overview

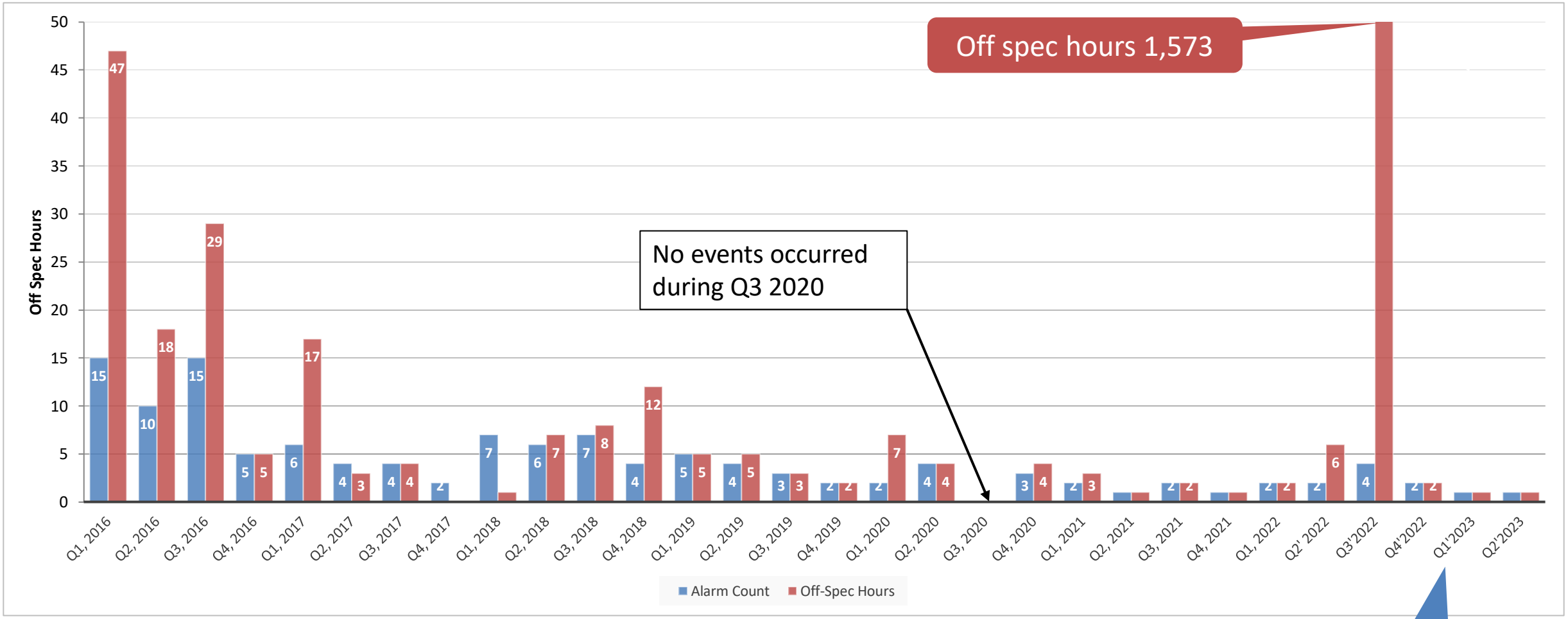
- Wet Scrubbers
  - Used to control emissions of acid gases, primarily Fluorides, HF, and HCl
  - Method of control: pH adjusted water absorption
    - Water flow rate and pH = Key operating parameters
    - Measurements via pH probe and flow meter
    - Minimum pH and flow established during stack testing
    - Measurements are reviewed on an ongoing basis
    - Alarms are also set to alert when measured value outside the acceptable range
      - Alarms are indication of off-spec operation, not an indication of excess emissions or bypass

Continuous Emissions Monitoring Report – Q2 2023

Attachment C

Source	Frequency	Parameter	Monitoring Equipment	Q2, 2023 Report
Rotary Concentrator Thermal Oxidizers (RCTO)	Continuous	Temperature	Thermocouple	1 event
Acid Gas Scrubbers	Continuous	Flow pH	Flow Meter pH probe	No events No events
Emergency Generators/Fire Pumps	When used	Hours of operation including time of engine start, time of engine stop and reason for operating		No events

Continuous Emissions Monitoring Report



- Normal hourly operations for Q2 2023 is > 99.99%
  - Off-spec operation is not an indication of excess emissions and was limited to <0.01% of the hours for Q2 2023
- Blue bars indicate the number of alarms per quarter
- Red bars indicate the number of hours outside of normal operation per quarter

Correction: 1 Event Q1 2023

Q2 2023 DEQ Submittal

- EXSC stack test report resubmittal – 4/20/23
- MSB acid scrubbers and TMXW pilot notification of construction completion – 6/13/2023
- Addendum to Technical Modification for NOx abatement – 6/30/2023

DEQ Submittals since May AQAC Meeting

To support potential future expansion and enable new manufacturing process technology in support of Intel's ongoing research and development

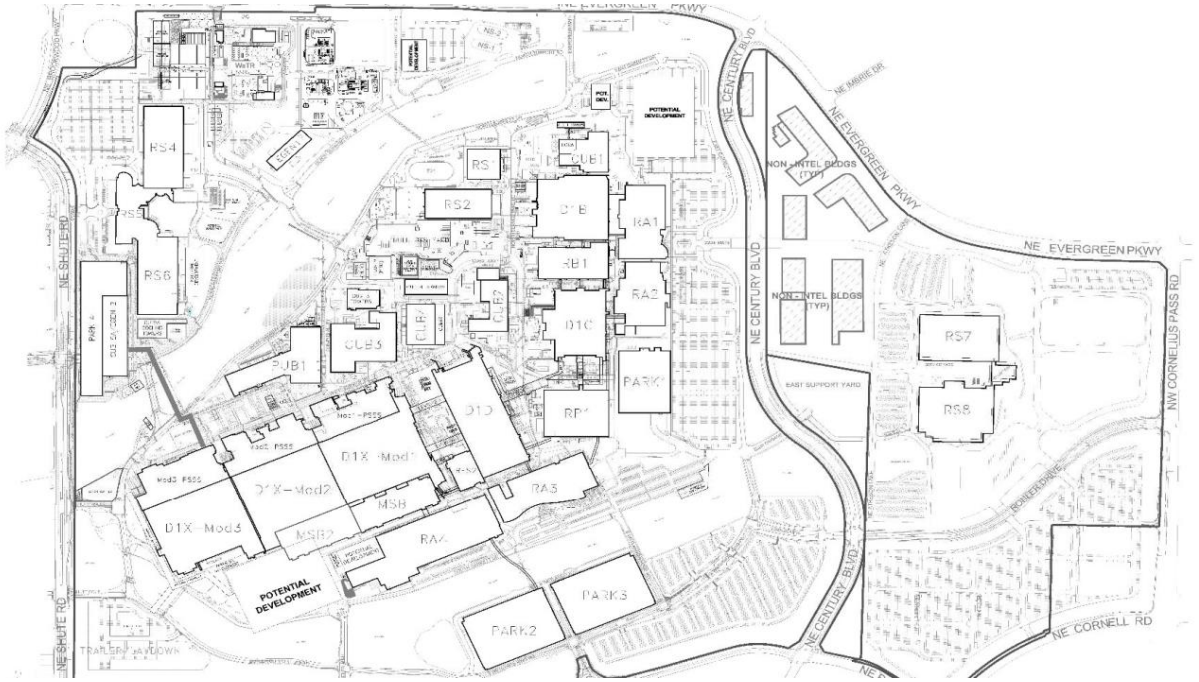
- Type 4 ACDP Submitted on 7/7/2023
    - To construct new buildings/equipment
    - Includes increased emission limits (PSELs) to reflect new manufacturing process technologies
    - Details posted on the DEQ website
    - DEQ will host a public meeting and details on the DEQ website - TBD

Intel Type 4 ACDP Air Permit Application

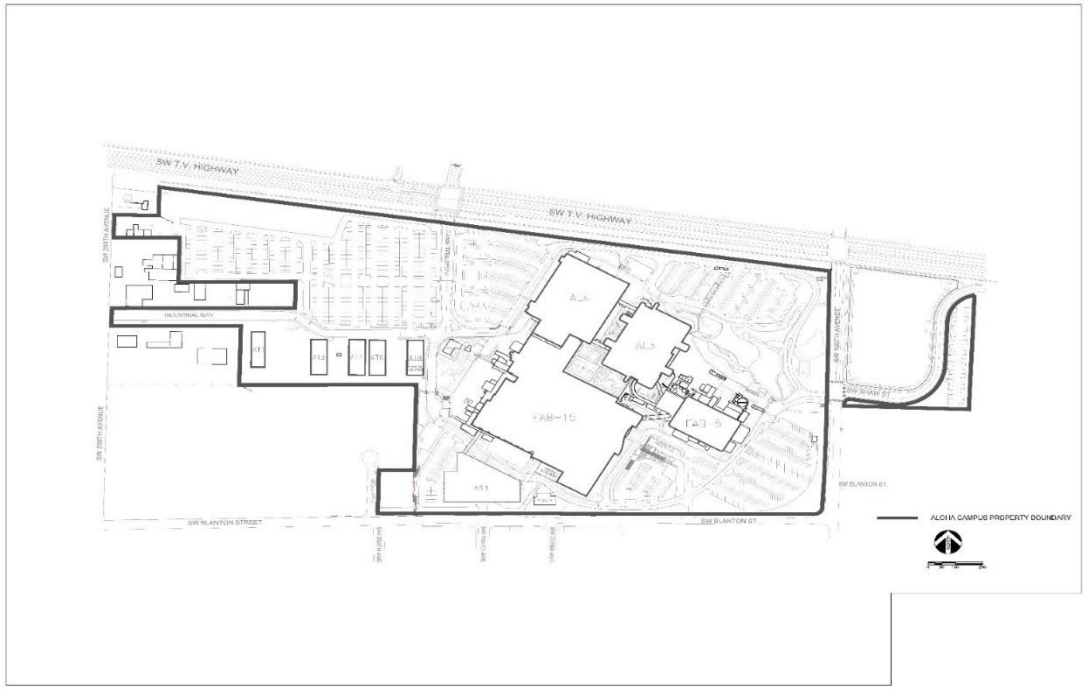
1. Project Description
2. Regulatory Requirements
   - Best Available Control Technology (BACT) Analysis
   - Air Quality Impact Analysis (AQIA)
3. Requested Plant Site Emission Limits (PSELs)
4. ODEQ's Permitting Process

Intel Type 4 ACDP Air Permit: Application Project Description

GMP at Ronler Acres



Aloha



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Intel Type 4 Air Permit Application: Requested Plant Site Emission Limits (PSEL)

Pollutant	Requested Plant Site Emission Limit (tons/12 Month)	Current Plant Site Emission Limit (tons/12 Month)
PM	67	41
PM_{10}	57	35
$PM_{2.5}$	55	31
SO_2	39	39
NO_x	402	197
CO	580	229
VOC	349	178
Fluorides	12.2	6.4
GHG*	1,697,774***	819,000**

* CO_2 Equivalents Basis

** Equivalent to 742,997 metric tons; short tons X 0.9072 = metric tons

*** Equivalent to 1,540,221 metric tons; short tons X 0.9072 = metric tons

Intel Type 4 ACDP Air Permit Application: Fee Agreement

- ORS 468.073(1): Authorizes ODEQ to collect funds to hire additional staff to enhance agency permitting resources
  - Intel has entered into a fee agreement under ORS 468.073(1)
  - The permit application is complex and ODEQ's review is resource intensive
  - The goal of this fee agreement is to minimize resource strain on ODEQ and their permitting department

Intel Type 4 ACDP Air Permit Application: Next Steps

Process

1. Intel submitted the application July 7th
2. A link to the application has been published on the AQAC website
   - https://www.oregon.gov/deq/Programs/Pages/Intel.aspx

Next Steps

1. DEQ holds public meeting after determining application is administratively complete
   - DEQ can continue to request information throughout process
2. DEQ reviews application and develops draft permit
3. DEQ publishes draft permit and requests public comment
4. DEQ holds public hearing on draft permit
5. DEQ reviews and responds to comments submitted during public comment period and at hearing
6. After considering and responding to comments, DEQ will issue a final permit and notify interested parties.

2022 Scrubber Deviation Update

- ODEQ issued a $31,000 civil penalty - 7/11/23
- Intel is in the process of settling, and paying the civil penalty

Agenda for Q3 AQAC Meeting 2023

November 8, 2023

AQAC members to have input into the next agenda for each AQAC meeting

- Standing agenda items
  - DEQ Submittals
  - Stack Testing Update
  - Project Update
- Update on Type 4 air permit application
- Other?

Public Comments/Questions

Backup

Attachment A

Emission Reduction Project	Target Date	Status / Method of Confirmation
Advocate to contractors working at the Facility to use newer onroad and nonroad diesel engines	2nd quarter 2016	Ongoing collaboration with suppliers to encourage reductions
Evaluate ways to reduce (if possible) diesel particulate matter emissions either with onsite or offsite projects	3rd quarter 2016	Reported out during Q3, 2016 AQAC quarterly meeting
Decommission four Fab 5 boilers	3rd quarter 2016	Completed
Assess feasibility of reducing waste tank emissions	4th quarter 2016	Completed
Retrofit RCTOs to optimize natural gas usage	2nd quarter 2017	Completed
Boiler replacement with ultra low-NOx burner boilers at RA2 and RP1	3rd quarter 2017	Project completed. Report out during Q3, 2017 AQAC meeting
Compare actual emissions inventory in 2020 to inventory used in HRA	2nd quarter 2021	Completed. Reported to AQAC at quarterly meeting