

# Nebraska Air Operating Permits

## Permit Classifications & What They Mean

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# Today's Presentation

- Operating Permit (OP) Flexibility
- Potential-to-Emit (PTE) Review
- PTE Thresholds & OP Type
- Types of OPs & Characteristics

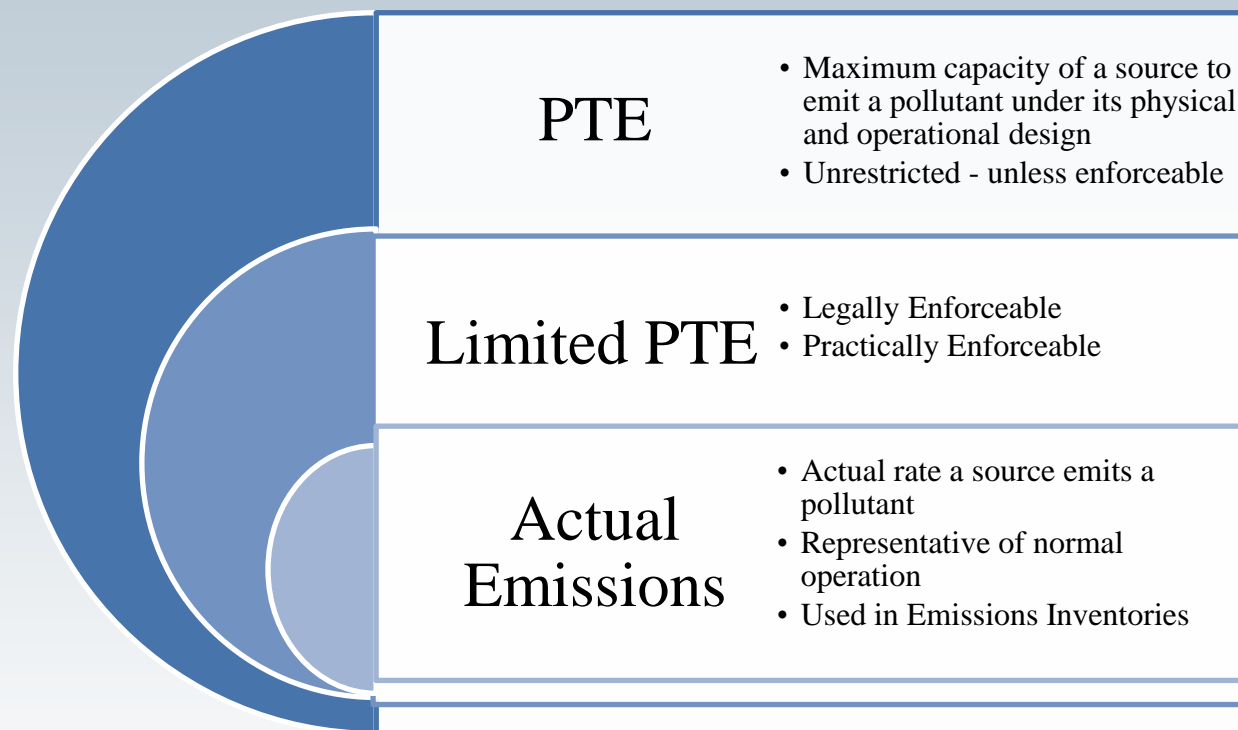
# Today's Presentation

- If you have questions during the presentation, please enter them in the chat box.
- For any questions you have after the presentations is over, please email your detailed question to [NDEE.AirQuality@nebraska.gov](mailto:NDEE.AirQuality@nebraska.gov)

# Operating Permit Flexibility



# Operating permits – Potential to Emit (PTE)

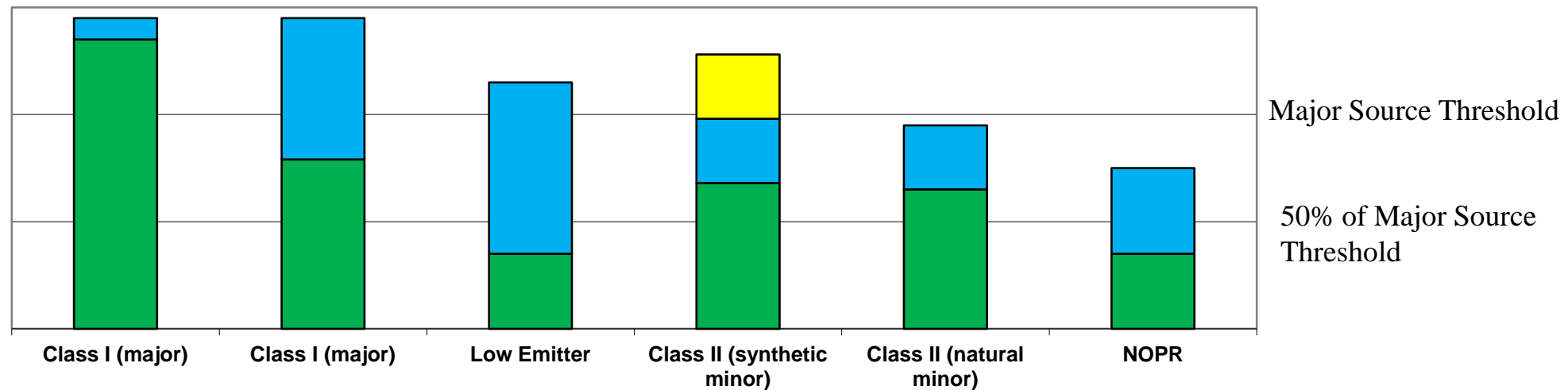


- PTE determines Operating Permit classification
- The Operating Permit provides enforceable limits to ensure facility maintains this classification

# Operating permits – PTE thresholds

- Operating permit applicability is based on source-wide potential to emit (PTE) thresholds (**Title 129 – Chapter 5 → Chapter 6**)
  - PTE exceeding one-half of any or all Major Source Thresholds will require an operating permit applicability decision.
    - 50 tpy – individual air pollutant ( $PM_{10}$ ,  $NO_x$ ,  $SO_x$ , VOCs, CO)
    - 12.5 tpy – total combined HAPs
    - 5 tpy – individual HAP
    - 2.5 tpy – Lead (Pb)
  - Major Source Thresholds – Class I
    - 100 tpy – individual air pollutant ( $NO_2$ ,  $SO_2$ , VOCs, etc)
    - 25 tpy – total combined HAPs
    - 10 tpy – individual HAP
    - 5 tpy – Lead (Pb)

# Operating permits – PTE & Permit Classifications

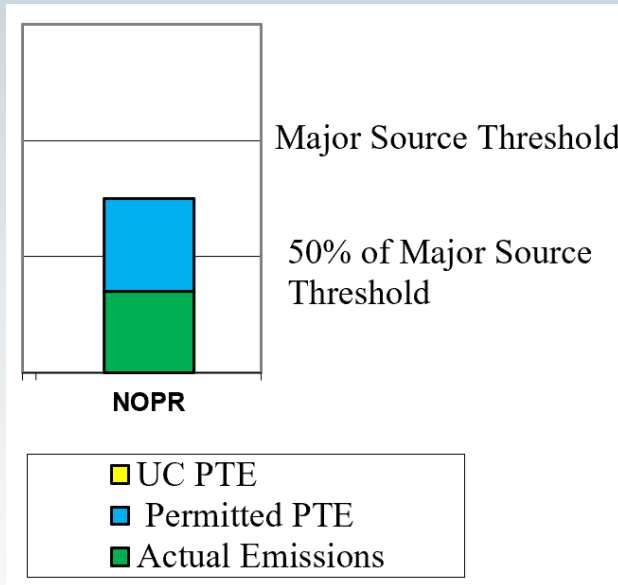


- UC PTE = Uncontrolled Potential to Emit
- PTE = Potential to Emit
- NOPR = No Permit Required

The two Class I (major) bars indicate that PTE determines Class I, *not Actual emissions*.

■ UC PTE  
■ Permitted PTE  
■ Actual Emissions

# Operating permits – No Operating Permit Required



- PTE does not exceed Major Source thresholds and actual emissions do not exceed 50% of major thresholds (**Title 129 – Chapter 5 – 001.02 → Chapter 6 – 001.03**)
  - 50 tpy – individual air pollutants ( $PM_{10}$ ,  $NO_x$ ,  $SO_x$ , VOCs, CO)
  - 2.5 tpy – Lead (Pb)
  - 5/12.5 tpy – individual/combined HAPs
- Still subject to air pollution control regulations
  - May still be subject to Federal rules (e.g., NSPS, NESHAP)
    - Subject to compliance inspections
    - Ex: NESHAP HHHHHH – Paint Stripping and Miscellaneous Surface Coating Operations
  - Title 129
    - Opacity and PM limits applicable to emission sources (**Chapter 20 – 001-004 → Chapter 15 – 001**).
    - Open burning (**Chapter 30 → Chapter 15 – 002**)
    - Fugitive dust rules – (**Chapter 32 → Chapter 15 – 003**)
  - **MUST** have an active construction permit for the facility before a NOPR determination can be made.



# Operating permits – No Operating Permit Required

- **Example** – Following is the PTE of a facility as limited by a construction permit. Would this facility qualify for NOPR? Why or why not?

## Fact Sheet Attachment

### Potential Emissions Summary

#### *Summary of PTE (tons/year)*

Pollutant	Truck Mix Concrete Batching	Worst-Case External Combustion	Storage Piles	Haul Roads	Facility PTE
PM	46.28	0.63	14.58	21.38	82.87
PM <sub>10</sub>	13.67	1.05	7.29	<del>4.96</del> →	26.97
PM <sub>2.5</sub>	6.94	1.05	2.19	0.50	10.67
SO <sub>2</sub>	-	2.29	-	→	2.29
NO <sub>x</sub>	-	6.35	-	→	6.35
CO	-	3.61	-	→	3.61
VOC	-	0.38	-	→	0.38
Total HAPS	1.77E-02	8.11E-02	-	→	9.88E-02
Total GHG (mass basis)	-	5,124	-	-	5,124
Total GHG (CO <sub>2</sub> e basis)	-	5,129	-	-	5,129

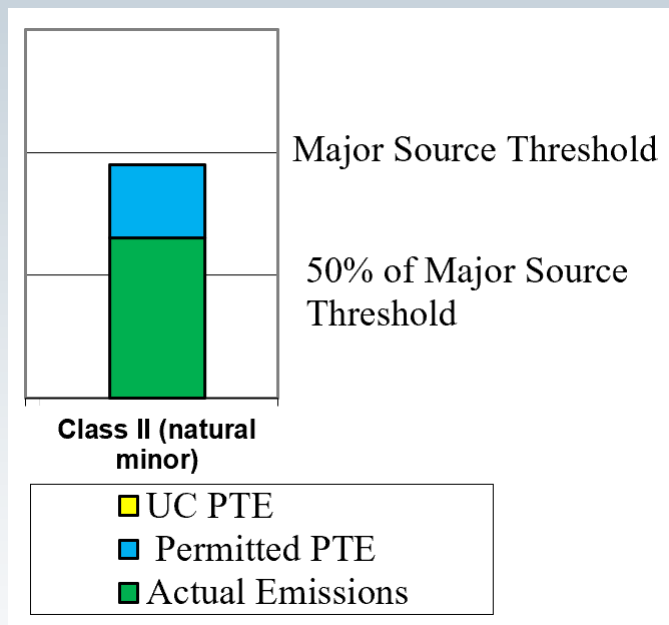
# Operating permits – General Operating Permits

- PTE does exceed Major Source threshold(s)
  - Tailored to specific operations/emission sources
    - GOP → Incinerator only
    - All incinerators required to hold an operating permit (**Chapter 5 – 001.02B → Chapter 6 – 001.03B**)
  - Provide general operating limits to ensure PTE remains below Major Source thresholds
  - Subject to monitoring, recordkeeping, and reporting requirements
  - Additional requirements established in GOP

## **NEW ADDITION**

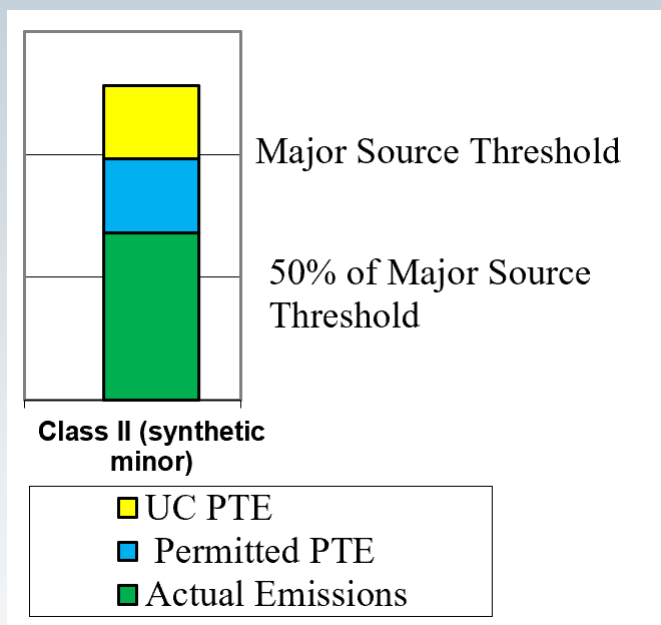
- New Title 129 establishes lifetime term for GOPs
- Would still be subject to OP permit modifications and CPs based on new activity at the facility

# Operating permits – Class II Natural Minor



- PTE does exceed one-half of Major Source threshold(s)
- Source does not require additional controls/limits in OP to ensure PTE remains below Major Source thresholds
  - 100 tpy – individual air pollutants ( $PM_{10}$ ,  $NO_x$ ,  $SO_x$ , VOCs, CO)
  - 5 tpy – Lead (Pb)
  - 10/25 tpy – individual/combined HAPs
- Nature of operation and emission sources → naturally Class II PTE
- Enforceable limits already established in Construction Permit
  - Limits remain in effect until CP revision
  - Must be carried over to OP
- Individual permits – requirements tailored to specific to source/location
  - No general operating limits as in GOP
  - Comprehensive – all emission sources

# Operating permits – Class II Synthetic Minor



- Uncontrolled PTE does exceed Major Source threshold(s)
- Source does require additional controls/limits in OP to ensure permitted PTE remains below Major Source thresholds
- Enforceable limits established in CP; expanded in OP by facility request
  - OP builds off CP limits – more restrictive
  - CP limits = foundational
  - OP limits = fluid, negotiable per permit term
- Limits can be proposed by facility
  - Possibly negotiated in pre-application meetings/correspondence and/or permit drafting stage
  - Examples:
    - More restrictive emissions limit → additional monitoring/testing
    - Restricted operating hours → additional monitoring/recordkeeping

# Class II Synthetic Minor – Advantages & Disadvantages

- Advantages

- **New Title 129** – increased permit term of 10 years
- Reduced reporting requirements
- Not subject to emission fees
- Reduced routine inspection frequency
- Reduced federal regulatory burden
  - NESHAP\*
  - CAM

- Disadvantages

- Increased monitoring/recordkeeping
- Routine performance testing
- No Permit Shield

Pros



Cons



# Operating permits – Class II Synthetic Minor

- **Example – EU-specific limits**
  - In these cases, pollutants of concern are emitted from select EUs
  - Class I/Major Source Thresholds
    - VOC – 100 tpy
    - HAP
      - Individual HAP – 10 tpy
      - Total HAPs – 25 tpy

The permittee requested in a Class II synthetic minor operating permit application dated November 2, 2009, that potential emissions be limited to below Class I thresholds for all regulated air pollutants.

Condition II.(G)(1)(a) limits emissions of each individual HAP, combined HAPs, and VOCs for the entire source; Condition III.(B)(3) limits VOC emissions from fermentation and distillation; and Condition III.(G)(4)(a) limits the hours of operation of the emergency fire water pump engine. The combination of these limits keeps potential emissions below Class I thresholds and allows the source to be a Class II synthetic minor source.

The following table summarizes the potential and actual emissions:

Regulated Air Pollutant <sup>[1]</sup>	Potential Emissions as limited by permit <sup>[2]</sup> (tons/year)	Actual Emissions <sup>[3]</sup> (tons/year)
Particulate Matter (PM)	57.22	Not reported
Particulate Matter less than or equal to 10 microns (PM <sub>10</sub> )	24.59	15.64
Particulate Matter less than or equal to 2.5 microns (PM <sub>2.5</sub> )	14.51	13.84
Sulfur Dioxide (SO <sub>2</sub> )	0.52	0.27
Oxides of Nitrogen (NO <sub>x</sub> )	71.80	45.50
Carbon Monoxide (CO)	66.22	38.07
Volatile Organic Compounds (VOCs)	99.20	21.42
Greenhouse Gases (GHGs) <sup>[1]</sup>		
Mass Basis (lbs/yr)	249,131.62	241,982.67
Carbon Dioxide Equivalent (lbs CO <sub>2</sub> e/yr)	249,212.95	242,455.35
Hazardous Air Pollutants (HAPs)		
Acetaldehyde <sup>[4]</sup>	9.63	4.965
Acrolein	0.18	0.052
Hexane	1.36	--
Methanol	1.15	--
All Other HAPs	12.24	1.026
Total HAPs <sup>[4]</sup>	24.56	6.043



# Class II Synthetic Minor - continued

## • Example – Source-wide limits

- Again, pollutants of concern are emitted from same/similar EUs (e.g., all RICE)
- Class I/Major Source Thresholds
  - NO<sub>x</sub> – 100 tpy

(e) Each engine shall be equipped with a kW-hr meter [Issued December 30, 1998 Construction/Operating Permit, Condition XXV.(E); and Title 129, Chapter 8, Section 004].

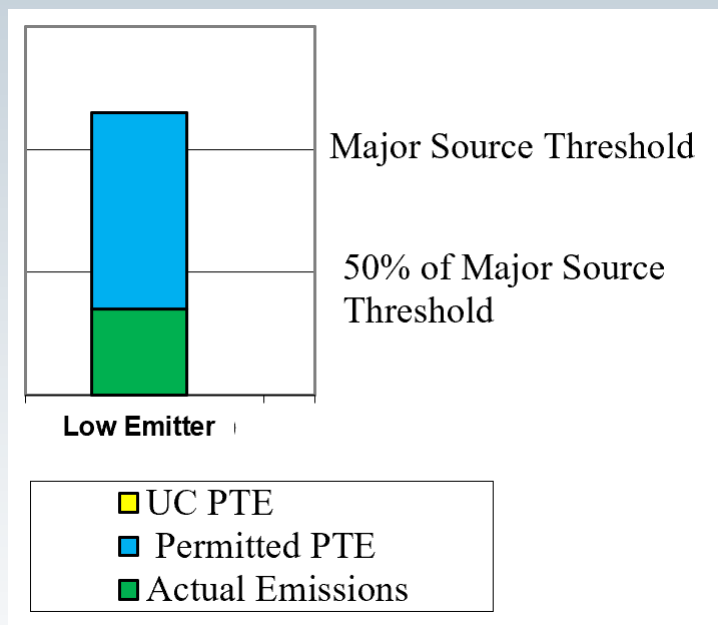
- (i) The total kilowatt hours (kWh) generated by EU-1, EU-2, EU-3, EU-4, and EU-5, combined, shall be recorded monthly and shall not exceed 6,045,600 kWh per any period of 12 consecutive rolling calendar months [Issued December 30, 1998 Construction/Operating Permit, Condition XXV.(B)(1)(a); and Title 129, Chapter 5, Section 001.03A1, Chapter 8, Sections 004.01B, 013 and 015].

### (5) Recordkeeping and Reporting Requirements:

- (a) The source shall notify the NDEE, in writing, if the 12 consecutive rolling calendar month period of total kWh generated by EU-1 through EU-5 combined exceeds 4,534,200 kWh (75% of total permitted kWh generation). Notification shall be sent within fifteen (15) days of such knowledge by the source. Upon such notification, the NDEE may require performance testing to ensure that the source is in compliance with the NO<sub>x</sub> emission limit in Condition III.(A)(3) [Issued December 30, 1998 Construction/Operating Permit, Conditions XXV.(C) and (D); and Title 129, Chapter 34, Section 001].

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions <sup>[2]</sup> (tons/year)
Particulate Matter (PM)	1.73	0.0024
Particulate Matter less than or equal to 10 microns (PM <sub>10</sub> )	1.73	0.0157
Particulate Matter less than or equal to 2.5 microns (PM <sub>2.5</sub> )	1.68	0.0152
Sulfur Dioxide (SO <sub>2</sub> )	0.05	0.0004
Oxides of Nitrogen (NO <sub>x</sub> )	95.00	0.0002
Carbon Monoxide (CO)	34.81	0.3665
Volatile Organic Compounds (VOCs)	5.96	0.0626
Greenhouse Gases (GHGs) <sup>[1]</sup>	4,840.66	46.33
Carbon Dioxide Equivalents (CO <sub>2</sub> e) <sup>[1]</sup>	5,393.75	46.42
Hazardous Air Pollutants (HAPs)		
Greatest Individual HAP(s)		
Formaldehyde	1.64	0.00
Acrolein	0.23	0.00
All Other HAPs	0.49	0.00
Total HAPs	2.36	0.00

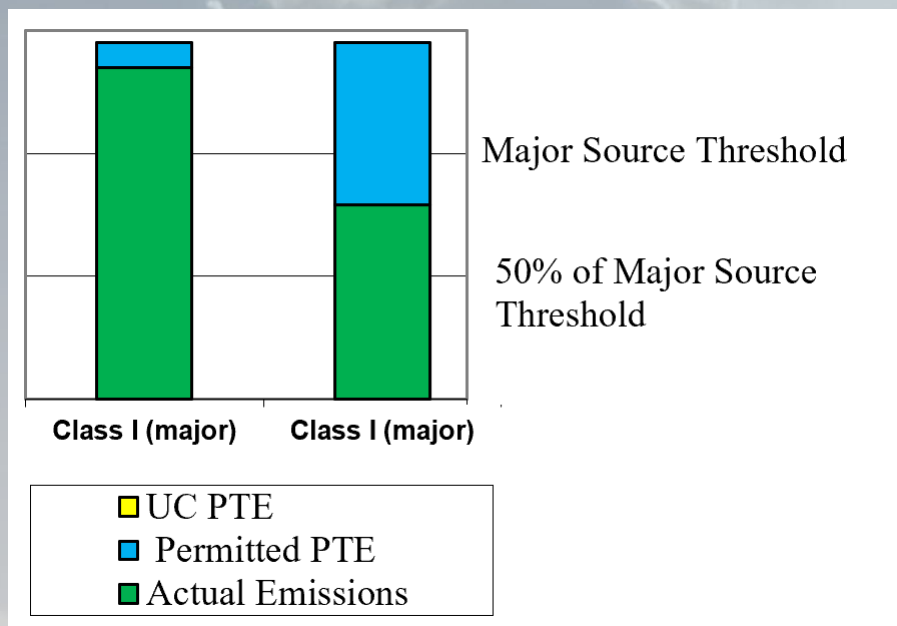
# Operating permits – Class I – Low Emitter



- PTE does exceed Major Source threshold(s)
  - Operating permit issued
- Actual emissions below 50% of Major Source thresholds
  - Demonstrated over five (5) consecutive years after Class I permit issued
- Continue to demonstrate actual emissions below 50% of Major Source thresholds
  - Monitoring & recordkeeping
  - Maintenance of control equipment
  - Subject to compliance inspection/audit
  - Actual emissions exceeding OP thresholds = violation
- Does not supersede applicable federal/state regulations
  - Construction permit
  - NESHAP/NSPS requirements



# Operating permits – Class I



- PTE does exceed Major Source threshold(s)
- Focus on reducing emissions at largest sources in the state
  - Coal-fired power plants
  - Large metal foundries
  - Portland cement plants
- Additional monitoring, recordkeeping, testing requirements
- Applicable for Permit Shield
- Possible additional requirements
  - CAM
  - Major-source NESHAPs
  - More frequent compliance inspections
  - Increased annual reporting
  - Construction projects – PSD/air dispersion modeling

# Questions?

- Visit the NDEE Assistance Webpage:
  - <http://dee.ne.gov/NDEQProg.nsf/OnWeb/Assistance>
- Email the Air Program:
  - [NDEE.AirQuality@nebraska.gov](mailto:NDEE.AirQuality@nebraska.gov)
- Call Us: (402) 471-2186