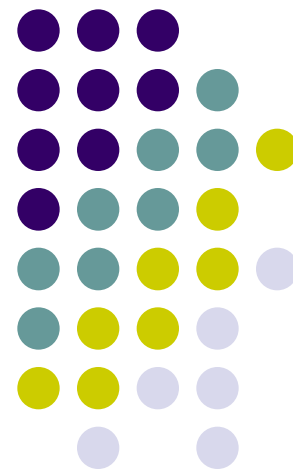
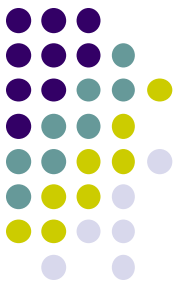


# SO<sub>2</sub> NAAQS (1-Hour) Nonattainment Areas: Cook/Will and Tazewell/Peoria Counties

## Attainment Demonstration Modeling for Illinois' Revised Sulfur Dioxide State Implementation Plan



Public Hearing - December 16, 2015  
Illinois EPA Headquarters, Springfield, Illinois



# Introduction

- Section 192(a) of the Clean Air Act - sets forth the requirement that the State Implementation Plan (SIP) is to “provide for attainment”.
- 40 CFR Part 51, Appendix W- has recommended “air quality modeling techniques that should be applied to State Implementation Plan (SIP) revisions”.
- Supplemental Modeling Guidance (e.g., *Guidance for 1-Hour SO<sub>2</sub> Nonattainment Area SIP Submissions*, USEPA, April, 2014).

# Modeling Framework, Inputs and General Methodology



Modeling System: AERMOD and preprocessors

Modeling Options: Regulatory defaults

Modeling Inventory: Sources within 50 km of violating monitor

Meteorology: Peoria/Lincoln; Chicago O'Hare/Davenport (IA)

Receptor Network: 100 m spacing (fenceline 50 m spacing)

SO<sub>2</sub> Background: Oglesby monitor

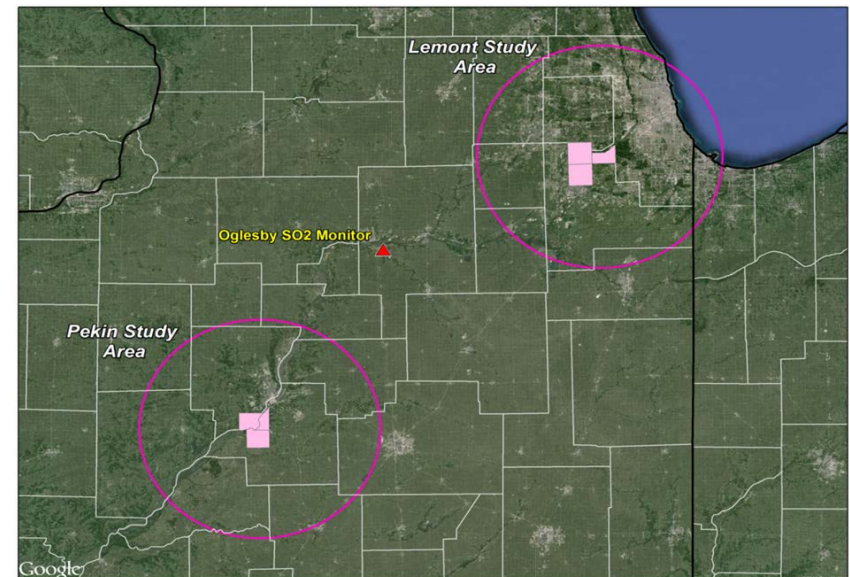
Reduced Load Analysis: EGUs

Building-Induced Downwash: Yes

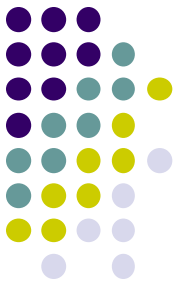
Rural vs Urban Dispersion: Rural

## **Modeling Runs**

Iterative simulations with culpability determinations for identifying emission reductions necessary to achieve NAAQS.

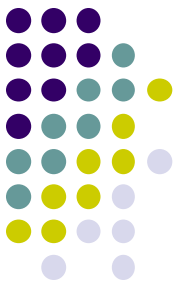


# Pekin NAA Modeling Scenarios

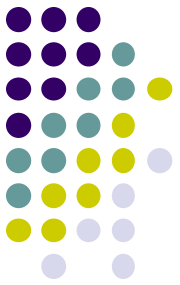


- Scenario 1: Maximum allowable emission limit (permit, rule).
- Scenario 2: Fuel oil sulfur content limits (15 ppm distillate, 1000 ppm residual, 500 ppm “exemption”); IPRG – E.D. Edwards Unit #1 retirement.
- Scenario 3: Aventine-specified emission rates; IPRG – E.D. Edwards and Midwest Generation – Powerton reductions (91% and 80%, respectively).
- Scenario 4: Reduction for Aventine #1 Germ Dryer; (MOA) IPRG – E.D. Edwards: Stack #1 – 2100 lbs/hr, Stack #2 – 2756 lbs/hr.
- Scenario 5: (MOA) IPRG – E.D. Edwards: Stack #1 – 0 lb/hr, Stack #2 – 4000 lbs/hr.

# Lemont NAA Modeling Scenarios



- Scenario 1: Maximum allowable emission limit (permit, rule).
- Scenario 2: Fuel oil sulfur content limits (15 ppm distillate, 1000 ppm residual, 500 ppm “exemption”); Fuel conversion at Midwest Generation’s Joliet and Romeoville (Will County) facilities.
- Scenario 3: Owens Corning-specified emission reduction strategy; Ingredion, Inc. - lower limits for select sources.
- Scenario 4: Midwest Generation (Will County) Unit #4 emission limit lowered to 6520 lbs/hour; Ingredion, Inc. - Channel #2, #3, and #4 emission limits lowered.
- Scenario 5: Caterpillar, Inc. (Aurora) 500 ppm “exemption”.
- Scenario 6: Midwest Generation (Will County) Unit #4 emission limit set at 5000 lbs/hour.



# Thank you . . .

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