NATIONAL AMBIENT AIR )
QUALITY STANDARD )
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PUBLIC HEARING HELD
DECEMBER 16, 2015
(Hearing commenced at 10:05 a.m.)


ILLINOIS ENVIRONMENTAL PROTECTION AGENCY BUREAU OF AIR

IN THE MATTER OF: )
)
A REVISION TO THE ILLINOIS )
STATE IMPLEMENTATION PLAN )
ATTAINMENT DEMONSTRATION )
FOR THE 2010 SULFUR DIOXIDE )
NATIONAL AMBIENT AIR )
QUALITY STANDARD )

Public Hearing held, pursuant to
Notice, on the $16 t h$ day of December, 2015 , between the hours of 10:00 a.m. and 10:35 a.m., at 1021 North Grand Avenue East, Springfield, Illinois, before Mr. Dean Studer, duly appointed Hearing Officer.

1 IEPA STAFF PRESENT:
2 Mr. Dean Studer, Hearing Officer
3 Mr. Jeffrey W. Sprague, Manager, Modeling Unit, Air Quality Planning

Mr. Rory Davis, Environmental Protection Engineer, Air Quality Planning Section
Ms. Dana Vetterhoffer, Assistant Counsel, Division of Legal Counsel

COURT REPORTER:
Ms. Dorothy J. Hart, CSR, RPR
Illinois CSR No. 084-001390
Midwest Litigation Services
15 South Old State Capitol Plaza
Springfield, Illinois 62701
(217) 522-2211
$24 \quad 1-800-280-3376$

HEARING OFFICER STUDER: Let's go on the record.

My name is Dean Studer and I am the hearing officer for the Illinois Environmental
Protection Agency. Good morning.

This hearing is being held for the purpose of gathering public comments on the draft Illinois Sulfur Dioxide Attainment Demonstration
for Lemont, Lockport, and DuPage Townships in Cook
and Will Counties, and also for Cincinnati, Pekin,
and Hollis Townships in Pekin and Tazewell
Counties. I should say in Tazewell and Peoria
County I believe is what that is. We refer to this
document as Attainment Demonstration. It sets
forth the State's plan for attaining the 2010
Sulfur Dioxide National Ambient Air Quality
Standard in those areas. The Illinois EPA intends
to submit the Attainment Demonstration to the
United States Environmental Protection Agency as a
revision to Illinois' State Implementation Plan,
otherwise referred to as a SIP, under the Clean Air
Act, 42 USC Section 7401 et. sequel.
This hearing is being held under the
provisions of 35 Illinois Administrative Code Part

1 164, Procedures for Informational and Quasi-

2 Legislative Public Hearings. Copies of these
3 procedures can be accessed on the website for the
4 Illinois Pollution Control Board at

5 www.ipcb.state.il.us, or, if you do not have easy
6 access to the web, they can be obtained from me 7 upon request.
today will introduce themselves and make a brief
presentation. Following this overview, I will
allow the public to provide comments and ask
questions. You are not required to verbalize your
comments, as written comments are given the same
consideration and may be submitted to the agency at
any time within the public comment period which
ends on January 15th, 2016. Any person who wants
to make oral comments may do so as long as the
statements are relevant to the issues that are
addressed at this hearing and such person has
indicated on their registration card that he or she
would like to comment. If you have lengthy
comments or questions, it might be helpful to
submit them to me in writing before the close of
the comment period, and $I$ will ensure that they are

PUBLIC HEARING 12/16/2015

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included in the hearing record as an exhibit.
    Please keep your comments and questions
relevant to the issues at hand. If your comments
fall outside the scope of this hearing, I may ask
you to proceed to another issue. All comments made
during this hearing or submitted in writing during
the comment period will become part of the official
hearing record and will be considered by the
Illinois EPA. Cards are available at the
registration table, and you can fill one out and
indicate if you would like to comment today.
Anyone who legibly completes a card or submits
written comments before the close of the comment
period will be notified of Illinois EPA's decision
in this matter. That notification will also
contain information as to how you may access the
agency responsiveness summary. And in this
summary, Illinois EPA will respond to all relevant
and significant issues raised at this hearing or
submitted in writing prior to the close of the
comment period.
    Again, the written record in this
matter closes January 15th, 2016. Therefore, all
comments will be accepted as long as they are
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physically received by Illinois EPA headquarters
here in Springfield on or before January 15th,
2016. During the comment period, all relevant
comments, documents, or data will also be placed
into the hearing record as exhibits.
Please send all written documents or
data to Dean Studer, $D-e-a-n$, last name is
S-t-u-d-e-r, Office of Community Relations, Mail
Code \#5, Regarding: Sulfur Dioxide Attainment
Demonstration, Illinois Environmental Protection
Agency, 1021 North Grand Avenue East, Post Office
Box 19276, Springfield, Illinois 62794-9276. This
address is also listed on the public notice for the
hearing today.
A court reporter is here today taking a
verbatim record of these proceedings for our
administrative record. For her benefit, please
keep the general background noise in the room to a
minimum so she can hear everything that is said. I
will make arrangements to have the transcript of
this hearing posted on the Illinois EPA web page
for this proceeding when it becomes available.
While the issues raised today may
indeed be heartfelt concerns to many of us in

24 conduct this hearing and are here to listen to

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relevant issues associated with the attainment
demonstration. You may disagree with or object to
some of the statements and comments made today, but
this is a public hearing and everyone has a right
to express their comments in this matter.
    When it is your turn to speak, please
come forward to the podium and state your name,
and, if applicable, any governmental body,
organization, or association that you represent.
If you are representing yourself, you can state
that you are an interested citizen or a member of
the public. Also, for the benefit of the court
reporter, I will ask that you spell your last name.
People who have requested to speak will be called
upon in the order they registered to make a
statement unless they have made other arrangements
with the hearing officer.
    And before we start with Illinois EPA's
presentation, I'd like to record some preliminary
documents into the record as exhibits.
    For the record, Exhibit 1 is the -- is
a copy of the notice for this public hearing.
    The draft Technical Support Document
for the Illinois Sulfur Dioxide Attainment
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Demonstration is Exhibit Number 2.
Exhibit 3 are the pages from the Illinois Register in which this hearing notice was published.

Other documents may be entered into the hearing record as we progress today.

I'm going to ask that those that are representing the agency introduce themselves, and then we'll go ahead and proceed with a brief presentation.

MS. VETTERHOFFER: I'm Dana
Vetterhoffer, Assistant Counsel for Illinois EPA.

MR. BLOOMBERG: David Bloomberg, Manager of the Air Quality Planning Section.

MR. DAVIS: Rory Davis, Air Quality Planning.

MR. SPRAGUE: I'm Jeffrey Sprague. I'm the Air Quality Planning Section, Modeling Unit, Manager, and I've had principal responsibility for developing the attainment demonstration.

HEARING OFFICER STUDER: Okay. And, Jeff, you have a presentation that you'll be giving this morning. We'll go ahead and proceed with that presentation on the record.

2 -- a visual of the slides from this PowerPoint
I will also note that $I$ will make the available on the Internet, and I'll arrange to have those posted and they will go up yet this week.

MR. SPRAGUE: As Dean mentioned, I have just a brief presentation to provide to you here. This presentation is intended to provide summary remarks about the modeling performed to demonstrate attainment with the 1 -hour sulfur dioxide National Ambient Air Quality Standard for the Lemont and Pekin nonattainment areas. A detailed discussion of the modeling methodology and results is provided in the October 2015 draft document entitled Technical Support Document, Illinois Sulfur Dioxide (SO2) Attainment Demonstration: Lemont, Lockport, and DuPage Townships --

HEARING OFFICER STUDER: Can everyone hear? Okay.

MR. SPRAGUE: -- (Cook/Will Counties) and Cincinnati, Pekin, and Hollis Townships (Pekin/ Tazewell Counties) that has been available at the IEPA Peoria and Des Plaines regional offices since November 13th, 2015, and will continue to be available at these locations through January 15th,

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2016.
    Next slide.
    MR. BLOOMBERG: Can we go off the
record for a minute?
    HEARING OFFICER STUDER: Can you go off
the record?
        (Discussion off the record)
    HEARING OFFICER STUDER: Okay. We can
go back on the record. And the projector is coming
up, so we are ready to proceed to slide --
    MR. DAVIS: I think we're on the right
slide.
    MR. SPRAGUE: The Clean Air Act
requires that any state containing areas designated
nonattainment must submit "an applicable
implementation plan" that "shall provide for
attainment of the relevant primary standard as
expeditiously as practicable but no later than five
years from the date of the nonattainment
designation."
    In developing a modeling attainment
demonstration for the State Implementation Plan,
the Illinois EPA relied upon the Guideline on Air
Quality Models (codified in 40 CFR Part 51,
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Appendix W) for modeling procedures applicable to
SIP development. It is the primary source of
information on the regulatory application of air
quality models for SIP revisions. As stated in the
preface to Appendix W, "The Guideline provides a
common basis for estimating the air quality
concentrations of criteria pollutants used in
assessing control strategies and developing
emission limits."
    Additionally, specific 1-hour SO2 and
related modeling guidance documents have been
issued by the U.S. Environmental Protection Agency,
which, together with existing user manuals and
model implementation guidance for AERMOD and
associated preprocessor software, have facilitated
the development of the attainment demonstration.
In particular, the Illinois EPA has relied upon the
April 2014 USEPA document entitled Guidance for
1-Hour SO2 Nonattainment Area SIP Submissions.
    Next slide.
    A detailed description and accounting
of modeling procedures implemented for the
attainment demonstration are provided in the
Technical Support Document. I've listed on this
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slide certain key elements and considerations in
the modeling procedure and analysis.
    Regarding the modeling system: AERMOD
is USEPA's preferred nearfield dispersion model for
a range of applications, and it was used in
developing the Lemont and Pekin attainment
demonstrations. It is actually a modeling system
that also includes the software preprocessors
AERMAP for processing terrain elevations and AERMET
for processing meteorological data. Other software
was used to generate or process meteorological
surface characteristics from land use data
    (AERSURFACE), 1-minute surface winds (AERMINUTE),
and direction-specific building downwash inputs
    (BPIPPRM).
    Regarding modeling options: Regulatory
default options were specified in controlling the
execution of AERMOD. These include the use of
elevated terrain algorithms, stack-tip downwash,
calms processing routines, and missing data
processing routines.
    Regarding the modeling inventory: The
modeling emissions inventory consisted of all
permitted SO2 sources within a circle of 50-
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1 kilometer radius centered on the violating monitor for the nonattainment area. Intermittent sources were not excluded. Only those small combustion sources firing natural gas exclusively (without backup fuels) were removed from the modeling inventory.

Regarding meteorology: The Pekin nonattainment area modeling used 2009 through 2013 Peoria Airport surface characteristics data and surface meteorological observations in conjunction with Lincoln, Illinois, upper air soundings for the meteorological inputs to AERMOD. The Lemont nonattainment area modeling used Chicago O'Hare Airport surface characteristics data and surface meteorological observations in conjunction with Davenport, Iowa, upper air soundings.

Regarding the receptor network: AERMOD calculated ground level ambient concentrations for receptors located only in the nonattainment townships: Cincinnati, Pekin, and Hollis Townships for the Pekin Study Area; Lemont, Lockport, and DuPage Townships for the Lemont Study Area. Receptors were placed at approximately 50-meter intervals along facility fencelines -- and for the

|  | Lemont nonattainment area that included ten |
| :---: | :---: |
| 2 | facilities; for the Pekin nonattainment area it |
| 3 | included nine facilities -- within a gridded |
| 4 | network of receptors spaced at 100-meter intervals |
| 5 | extended outward to the margins of the |
| 6 | nonattainment townships. |
| 7 | Regarding SO2 background: Monitored SO2 |
| 8 | concentrations obtained in Oglesby, Illinois, for |
| 9 | the years 2011 through 2013 were used to represent |
| 10 | "other" emission source contributions that were not |
| 11 | discretely modeled. Temporally varying |
| 12 | concentrations by hour of day and season -- that |
| 13 | is, the second highest value for each season and |
| 14 | hour of day combination, averaged over three years |
| 15 | -- were integrated into AERMOD modeling runs to |
| 16 | represent this background component. |
| 17 | Regarding reduced load analysis: |
| 18 | Sources capable of operating under variable loads |
| 19 | may have their greatest ambient impacts under |
| 20 | reduced load conditions. The Illinois EPA |
| 21 | evaluated the impacts of electrical generating |
| 22 | units under $100 \%$, $75 \%, 50 \%$ and nominal load |
| 23 | levels. Invariably, the 100\% load condition |
| 24 | resulted in the highest modeled impacts. |

Regarding building-induced downwash:
Availability of dimensional information for buildings and structures at certain facilities enabled the Illinois EPA to address buildinginduced downwash of plumes from stacks not constructed to Good Engineering Practice stack height.

Regarding rural versus urban
dispersion: The urban or rural location of a
source, as determined from land use or population
density data, is important in determining the
boundary layer characteristics that affect the
model's prediction of downwind concentrations. A
rural determination was made for both nonattainment
areas based upon land use data.
And finally, regarding the modeling
runs: Generally speaking, the attainment
demonstration modeling was an iterative process
reminiscent of a game of "whack-a-mole". Modeling
runs, coupled with individual source contribution
evaluations, resulted in a series of emission
reduction scenarios that ultimately demonstrated
attainment with the 1 -hour SO2 NAAQS.
Next slide.

The specific stepwise modeling assessment for the Pekin nonattainment area is provided in this slide.

In the initial modeling run (Scenario \#1), all sources were modeled at their maximum allowable emission limit, as determined by permit condition or state rule, whichever was more restrictive.

Fuel oil suppliers, because of market
supply limitations, are generally only able to
provide distillate fuel oil with a 15 parts per
million sulfur content limit. For Scenario \#2,
this limit, together with a 1,000 parts per million
sulfur content limit for residual fuel oil, were
applied across the modeling domain for combustion
sources using these fuel types as primary or backup
fuels. A 500 parts per million sulfur content
exemption -- that is, the use of low sulfur
distillate fuel oil -- was applied to selected
engine test cells at the Caterpillar, Incorporated
Technical Research Center in Mossville, Illinois.
Additionally, Unit \#1 at the Illinois Power
Resources Generating, Limited Liability Corporation
E.D. Edwards Power Plant is being retired, and its
SO2 emissions were zeroed out.
The highest design value concentration
from Scenario \#2 was primarily due to contributions
from sources at Aventine Renewable Energy.
Aventine provided new emission rates to mitigate
their impacts, and they also provided data for
including an additional source (the \#3 Germ Dryer).
An approximately 91\% reduction in allowable
emissions for each of the two E.D. Edwards Power
Plant stacks, and an approximately 80\% reduction
for the Powerton stack, were implemented in
modeling Scenario \#3.
In Scenario \#4, allowable emissions for
the Aventine Renewable Energy Resources \#1 Germ
Dryer were reduced. An SO2 emission rate of 2100
pounds per hour through Stack \#1 at the E.D.
Edwards Power Plant assumed operation of Unit \#2
alone. Both this emission rate and an SO 2 emission
rate of 2,756 pounds per hour through Stack \#2 (and
that's associated with Unit \#3) were consistent
with the draft Memorandum of Agreement between
Illinois EPA and Illinois Power Resources
Generating, Limited Liability Corporation.
Scenario \#5 reflects the same reduction

1 in allowable emissions for the Aventine Renewable

2 Energy Resources \#1 Germ Dryer as Scenario \#4, but 3 also reflects the option in the Illinois EPA and

23 this limit together with a 1,000 parts per million

24 sulfur content limit for residual fuel oil were

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applied across the modeling domain for combustion
sources using these fuel types as primary or backup
fuels. This modeling scenario also reflects the
conversion from coal to natural gas combustion
    (with backup distillate fuel) for Units #6, #7, and
#8 at the Midwest Generation - Joliet facility.
The Midwest Generation - Romeoville facility has
retired Unit #3, but if it is necessary for it to
be brought back into service, it will be fired with
distillate fuel oil, and this possible situation
was simulated. A }500\mathrm{ parts per million sulfur
content exemption (low sulfur distillate fuel oil)
was requested by Midwest Generation for its
oil-burning units and this was implemented in the
modeling.
    In the Scenario #3 modeling run, lower
allowable emission rates proposed by Owens Corning
Roofing and Asphalt, Limited Liability Corporation
were incorporated that were "more representative of
current operations". Since the highest design
value concentrations from Scenario #2 had
significant contributions primarily from Ingredion,
Incorporated as well as from Owens Corning Roofing
and Asphalt, emission reductions were also
```

| 1 | implemented for the most culpable Ingredion, |
| :---: | :---: |
| 2 | Incorporated sources (emissions were lowered to |
| 3 | levels closer to reported actual emissions) |
| 4 | In Scenario \#4, the emission rate for |
| 5 | Unit \#4 at the Midwest Generation - Romeoville |
| 6 | facility was reduced to approximately 6,520 pounds |
| 7 | per hour. This reduction, in combination with |
| 8 | further emission reductions for the Channel \#2, \#3, |
| 9 | and \#4 wet scrubbers at Ingredion, Incorporated |
| 10 | resulted in all receptors having design values |
| 11 | showing modeled attainment. |
| 12 | A 500 parts per million sulfur content |
| 13 | limit for distillate fuel oil was requested by |
| 14 | Caterpillar, Incorporated in Aurora and implemented |
| 15 | in modeling Scenario \#5. Despite this exemption, |
| 16 | the design values for all receptors still showed |
| 17 | modeled attainment. |
| 18 | An amended emission limitation for |
| 19 | Midwest Generation's Romeoville (Will County) Unit |
| 20 | \#4 in the Illinois Pollution Control Board's R15-21 |
| 21 | rulemaking proceeding was set to 5,000 pounds per |
| 22 | hour. This lower limit was implemented in the |
| 23 | final modeling run, and the design value |
| 24 | concentrations for all receptors showed modeled |

attainment.
Next slide.
And I thank you.
HEARING OFFICER STUDER: Okay. That
concludes the presentation. And for the record, I
will enter a visual of the slides into the record
as Exhibit Number 4.
Are there any questions or comments
regarding the nonattainment area or the
presentations?
MR. ALEC DAVIS: Can I ask them from
here? Can everyone hear me? I actually have two
questions.
HEARING OFFICER STUDER: Okay.
MR. ALEC DAVIS: My name's Alec Davis.
I'm with the Illinois Environmental Regulatory
Group. My questions are I think both for
Mr. Sprague.
First of all, would it be possible to
get a copy of the PowerPoint presentation that was
provided today?
MR. SPRAGUE: Sure. I have it right
now.
MR. ALEC DAVIS: Okay.

MR. SPRAGUE: Before you leave.
MR. ALEC DAVIS: That's great.

And second, you mentioned a Technical
Support Document. Were you referring to the
Technical Support Document provided to the
Pollution Control Board in the context of its
rulemaking or is there a separate Technical Support
Document for the context of this attainment
demonstration proceeding?

MR. SPRAGUE: This in is the context of
this proceeding. We also actually provided it to
the Pollution Control Board, though.

MR. BLOOMBERG: The Technical Support
Document that he's talking about is the one for the attainment demonstration.

MR. SPRAGUE: Right.
MR. BLOOMBERG: Which is already available.

MR. SPRAGUE: Through the regional offices and through requests to Dean.

MR. ALEC DAVIS: Okay. Thank you. That addresses my questions.

HEARING OFFICER STUDER: Any other
questions or comments that anyone would like to


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            CERTIFICATE OF REPORTER
STATE OF ILLINOIS )
                        ) }\textrm{SS
COUNTY OF SANGAMON )
    I, DOROTHY J. HART, a Registered
Professional Reporter and Certified Shorthand
Reporter within and for the State of Illinois, do
hereby certify that the foregoing proceedings were
taken by me to the best of my ability and
thereafter reduced to typewriting under my
direction; that I am neither counsel for, related
to, nor employed by any of the parties involved in
this proceeding, and further that I am not a
relative or employee of any attorney or counsel
employed by the parties thereto, nor financially or
otherwise interested in the outcome of the action.
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                    Registered Professional Reporter
                        Certified Shorthand Reporter
                        Illinois CSR No. 084-001390
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