

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 )  
AMENDMENTS TO 35 ILL. ) R23-18(1)  
ADMIN. CODE PARTS 201, 202 ) (Rulemaking-Air)  
AND 212. )  
 ) First Hearing  
 )

REPORT OF PROCEEDINGS OF THE HEARING in  
the above-captioned case, called for examination  
pursuant to the provisions of the State of  
Illinois Environmental Protection Agency, heard  
by MS. CHLOE SALK, Hearing Officer, taken before  
Kathy L. Johnson, C.S.R., on September 27th,  
2023, at the hour of 9:00 a.m., at the Illinois  
Environmental Protection Agency, Sangamon Room,  
1021 N. Grand Avenue East, Springfield, Illinois,  
62701.

## I N D E X

|    |                     |       |
|----|---------------------|-------|
| 1  |                     |       |
| 2  |                     |       |
| 3  | WITNESSES:          | PAGE: |
| 4  | ROSS GARES:         |       |
| 5  | BRYAN HIGGINS:      |       |
| 6  | DX BY MR. JAMES     | 12    |
| 7  | CX BY MR. RAO       | 30    |
| 8  |                     |       |
|    | JOHN REESE:         |       |
| 9  |                     |       |
|    | DX BY MR. ARMSTRONG | 63    |
| 10 |                     |       |
|    | CX BY MR. RAO       | 69    |
| 11 |                     |       |
| 12 | PHILIP Crnkovich:   |       |
| 13 | DX BY MR. JAMES     | 79    |
| 14 | CX BY MR. RAO       | 88    |
| 15 |                     |       |
|    | SHARENE SHEALEY:    |       |
| 16 |                     |       |
|    | CYNTHIA VODOPIVEC   |       |
| 17 |                     |       |
|    | DX BY MR. ARMSTRONG | 92    |
| 18 |                     |       |
|    | CX BY MR. RAO       | 123   |

19  
20  
21  
22  
23  
24

E X H I B I T S

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

Hearing Officer Exhibit No. 1  
Hearing Officer Exhibit No. 2  
Hearing Officer Exhibit No. 3  
Hearing Officer Exhibit No. 4  
Hearing Officer Exhibit No. 5  
Hearing Officer Exhibit No. 6  
Hearing Officer Exhibit No. 7

(All exhibits retained by Ms. Salk)

CERTIFICATE OF REPORTER

129

## A P P E A R A N C E S

MS. CHLOE SALK

ILLINOIS POLLUTION CONTROL BOARD  
60 East Van Buren Street, Ste. 630  
Chicago, Illinois 60605  
312-814-3932  
chloe.salk@illinois.gov  
Hearing Officer

OFFICE OF THE ATTORNEY GENERAL  
ASSISTANT ATTORNEY GENERAL  
ENVIRONMENTAL BUREAU

BY: MR. JASON E. JAMES  
201 West Point Drive, Suite 7  
Belleville, Illinois 62226  
872-276-3583  
Jason.James@ilag.gov

Appeared on behalf of the  
People;

OFFICE OF THE ATTORNEY GENERAL  
ASSISTANT ATTORNEY GENERAL

Chief of the Springfield Environmental  
Bureau of the Illinois Attorney  
General's Office,

BY: MR. ANDREW ARMSTRONG  
500 South Second Street  
Springfield, IL 62706  
217-782-9031

andrew.armstrong@ilag.gov  
Appeared on behalf of the  
People;

ARENTFOX SCHIFF, LLP

BY: MR. ANDREW W. SAWULA  
One Westminster Place, Suite 200  
Lake Forest, IL 60045  
847.295.4336  
Andrew.Sawula@afslaw.com

A P P E A R A N C E S

ARENTFOX SCHIFF, LLP

BY: MR. DAVID M. LORING

233 South Wacker Drive, Suite 6600

Chicago, IL 60606

312-258-5603

david.loring@afslaw.com

SIDLEY AUSTIN, LLP

BY: MR. BYRON F. TAYLOR

One South Dearborn, Suite 900

Chicago, IL 60603

312-853-4717

bftaylor@sidley.com

BOARD MEMBERS PRESENT:

MICHELLE GIBSON

JENNIFER VAN WIE

MICHAEL D. MANKOWSKI

ANAND RAO

MARIE TIPSORD, General Counsel

1 P R O C E E D I N G S

2 HEARING OFFICER: Good morning, and  
3 welcome to the Illinois Pollution Control  
4 hearing. My name is Chloe Salk and I am the  
5 hearing officer for this rulemaking proceeding  
6 entitled Amendments to 35 Illinois Administrative  
7 Code 201, 202 and 212.

8 The Board docket number for this  
9 rulemaking is R23-18(A). To get started, I want  
10 to quickly go through three preliminary items:  
11 Introductions, the procedure to date, and then  
12 housekeeping, including the order in which we'll  
13 plan to proceed.

14 First, introductions: Present today from  
15 the Board are Board member Michelle Gibson, the  
16 lead Board member assigned to this docket, Board  
17 member Jennifer Van Wie, Board member Michael D.  
18 Mankowski.

19 And present from the Board's staff are  
20 Anand Rao of the Board's technical staff, and  
21 General Counsel Marie Tipsord who is in the  
22 audience today.

23 Second, the Board's procedure to date:  
24 On August 7th, 2023, the Illinois Environmental

1 Regulatory Group, Rain Carbon, LLC, Dynegy  
2 Midwest Generation, LLC, and Midwest Generation,  
3 LLC, American Petroleum Institute, and East  
4 Dubuque Nitrogen Fertilizer, LLC, filed  
5 rulemaking proposals.

6 In an order on August 17th the Board  
7 accepted the proposals for hearing. In an order  
8 on August 17th, 2023 the hearing officer  
9 scheduled two hearings.

10 Notice for this hearing was posted on  
11 August 21st, 2023 in the Chicago Sun Times; on  
12 August 22nd in the Belleville News Democrat and  
13 the News Tribune; and on August 23rd in the  
14 News-Gazette, the State Journal-Register, and the  
15 Galena Gazette.

16 Today we are of course holding the first  
17 hearing. In the order scheduling hearings, the  
18 hearing officer directed participants intending  
19 to testify at this hearing to pre-file their  
20 testimony no later than August 28th.

21 Another hearing officer order granted  
22 Rain Carbon's motion to extend the deadline for  
23 its pre-filed testimony to September 5th. On  
24 August 28th the Board received pre-filed

1 testimony from Ross Garres, David Wall, John  
2 Derek Reese, Phillip G. Crnkovich, Sharene  
3 Shealey, and Cynthia Vodopivec. On September 5th  
4 the Board received pre-filed testimony from Bryan  
5 Higgins.

6 The order also directed participants to  
7 pre-file questions based on that testimony by  
8 Wednesday, September 20th.

9 On that date the Board received pre-filed  
10 questions from the Illinois Attorney General's  
11 Office. In a hearing office order on that date  
12 the Board also submitted questions.

13 The Board posted all of these documents  
14 to its Clerk's Office On-Line, or COOL, under  
15 this docket number R23-18(A) as they were filed.

16 Finally, our housekeeping for this  
17 hearing. This hearing is governed by the Board's  
18 procedural rules. Under Section 102.426 of those  
19 rules all information that is relevant and is not  
20 repetitious or privileged will be admitted by the  
21 hearing officer into the record.

22 Please bear in mind that any questions  
23 posted today by the Board and its staff are  
24 intended solely to help develop a clear and



1 complete record for the Board's decision, and  
2 those questions do not reflect any determination  
3 or judgment on the proposal, testimony, or  
4 questions.

5 For the sake of our court reporter please  
6 speak clearly and avoid speaking at the same time  
7 as another person so that we can help produce a  
8 clear transcript. If you are asking questions  
9 please state your name and the organization you  
10 represent prior to any questions.

11 Also, if talking about sections of the  
12 rules please spell out the Section letters such  
13 as 620.101(D), as in dog. Miss Court Reporter,  
14 please feel free to stop me or anyone else if we  
15 are going too fast, talking too softly, or if you  
16 need something repeated.

17 There's a sign-in sheet at the door over  
18 there in the back for anyone who wants to sign up  
19 for public comment. So if there are any members  
20 of the public in person here today, please go  
21 ahead and write your name on the list.

22 As a reminder, anyone can submit written  
23 comments on the Board's Clerk's Office On-Line  
24 system. The Board weighs oral and written public

1 comment equally. As to the order of today's  
2 proceedings, we'll call the following witnesses  
3 in this order. First will be Ross Gares and  
4 Bryan Higgins. Then it will be David Wall, then  
5 John Derek Reese, then Phillip G. Crnkovich, and  
6 then Sharene Shealey and Cynthia Vodopivec.

7 After being duly sworn in, the pre-filed  
8 testimony will be entered into the record as if  
9 read under Section 102.424(f) of the Board's  
10 procedural rules.

11 We will then turn to questions for each  
12 witness with pre-filed questions from the  
13 Attorney General's Office first, then to any  
14 other questions from any participants and then  
15 the Board's pre-filed questions.

16 Should we finish with witness questioning  
17 today, at the end of the hearing I'll ask if  
18 there are any public comments from the members of  
19 the public.

20 I anticipate taking a 10-minute break  
21 around 10:30 a.m. and then breaking for an hour  
22 for lunch from noon to 1:00, and then another  
23 short break -- afternoon break -- around 3:00  
24 p.m. If we haven't finished with questions and

1 public comments already we'll end today at around  
2 5:00 p.m. Are there any questions about our  
3 order of proceeding? Okay. Seeing none, we will  
4 turn to testimony starting with Ross Gares and  
5 Bryan Higgins. Are they ready to go?

6 Okay. We'll have you step up to the  
7 front table up here.

8 MR. LORING: One procedural question.

9 HEARING OFFICER: Yeah.

10 MR. LORING: There are some questions  
11 that we -- yeah, this is David Loring on behalf  
12 of Rain Carbon. There are some questions that  
13 were filed by the Illinois Attorney General that  
14 Ross Gares will answer and some Bryan Higgins  
15 will answer, and so they may be out of order.

16 HEARING OFFICER: That's fine.

17 MR. LORING: I'm not sure how we want to  
18 proceed with that.

19 HEARING OFFICER: Yeah. Yeah, we will  
20 have you sworn in first and then we'll go to  
21 questions and the questions will be directed at  
22 each person. Yeah, like a panel. Okay.

23 So would the court reporter please swear  
24 in the witnesses?

1 (Witnesses sworn)

2 ROSS GARES and BRYAN HIGGINS,  
3 being both duly sworn on oath, were examined and  
4 testified as follows:

5 HEARING OFFICER: Okay. As mentioned  
6 earlier, the witness' testimony is entered into  
7 the record as if read, and we'll enter Ross  
8 Gares' testimony as Hearing Exhibit Number One  
9 and then Bryan Higgins' testimony as Hearing  
10 Exhibit Number Two.

11 So we'll proceed with questions first  
12 from the Attorney General's Office. If you would  
13 like to step up to the podium. And if you could  
14 please state your name first for the court  
15 reporter.

16 MR. JAMES: Jason James, Illinois  
17 Attorney General's Office.

18 HEARING OFFICER: And go ahead.

19 MR. JAMES: Sure. We pre-filed a set of  
20 questions so I'll just go ahead and read on the  
21 pre-filed questions and then if I have follow-ups  
22 to those I'll go ahead and ask you after you  
23 answer.

24 DIRECT EXAMINATION BY

1 MR. JAMES:

2 MR. JAMES: Our pre-filed question number  
3 one; given that Rain Carbon's proposed amendments  
4 are site-specific, does Rain Carbon agree that  
5 the proposal is subject to the requirements of 35  
6 Illinois Administrative Code 102.110?

7 MR. LORING: Again, this is David Loring,  
8 counsel for Rain Carbon. One comment on that  
9 question before I ask my client to respond. I  
10 believe, unless I'm mistaken, that -- that you  
11 were likely referring to 102.210 --

12 MR. JAMES: Okay.

13 MR. LORING: -- which governs the  
14 contents for site-specific rulemaking. Assuming  
15 that that's correct, I do believe that this calls  
16 for a legal conclusion. If we need to file any  
17 type of post-hearing brief we will do so, but we  
18 do have a response to your question.

19 MR. JAMES: Okay. Yes, please go ahead.

20 MR. GARES: Ross Gares, Rain Carbon.  
21 Rain Carbon's proposal was filed in this sub  
22 docket at the direction of the Board's July 6th  
23 order in this proceeding which directed anyone  
24 who sought to file a rulemaking proposal for

1 alternative standards during startup,  
2 malfunction, and breakdown, to do so by August  
3 7th, 2023. We agreed with the Board's  
4 determination that this is the proper forum to  
5 submit Rain Carbon's proposal.

6 MR. JAMES: Okay. Question number two;  
7 Rain Carbon acknowledges that Illinois EPA's --  
8 and by the EPA I mean Environmental Protection  
9 Agency -- authority to grant exceptions to  
10 emission limitations during SMB events stem from  
11 their regulatory provisions appealed in R23-18.

12 R23-18(A), Rain Carbon's regulatory  
13 proposal. I'll skip the citations in the future  
14 if that makes sense since they're all written in  
15 our pre-filed comments.

16 U.S. EPA founded those provisions,  
17 including the prima facie defense provisions in  
18 35 Illinois Administrative Code, Section 201.2-65  
19 were substantially inadequate because they may  
20 grant a state official unilateral exercise of  
21 discretionary authority in violation of the Clean  
22 Air Act's enforcement structure.

23 In light of the above context, what does  
24 Rain Carbon mean when it argues that the, quote,

1 relief provided to Rain Carbon's facility during  
2 SMB events does not reflect Illinois EPA's  
3 exercise of enforcement discretion or  
4 authorization under prima facie defense to  
5 enforce it during an SMB event?

6 MR. LORING: Again, this is David Loring.  
7 I'll start off by saying I do think that question  
8 calls for a legal conclusion. If we need to file  
9 something post hearing, we will, but we do have a  
10 response.

11 MR. GARES: Ross Gares, Rain Carbon.  
12 Rain Carbon explained its meaning later in the  
13 paragraph quoted by Illinois AG on page three of  
14 its Statement of Reasons.

15 Rain Carbon explained that the SMB relief  
16 of the facility and the CAAPP permit is  
17 authorized by separate Illinois EPA's settlement  
18 agreement in 2017.

19 In other words, Rain Carbon is required  
20 by the settlement agreement to maintain a minimum  
21 inlet pyroscrubber temperature 1800 degrees  
22 Fahrenheit except during startup, malfunction,  
23 breakdown events.

24 MR. JAMES: And is that settlement

1 affected by the previous rulemaking in R23-18, or  
2 the rules that are being proposed today by Rain  
3 Carbon?

4 MR. GARES: No.

5 MR. JAMES: Okay. Question number three.  
6 Rain Carbon notes that its kilns take less than  
7 24 hours to start up and that malfunctions or  
8 breakdowns are typically resolved within four to  
9 five hours.

10 Rain Carbon's regulatory proposal 15.  
11 Rain Carbon also notes that each kiln experiences  
12 fewer than 10 start-ups annually. And then a  
13 couple subquestions to number three.

14 On average, how many malfunctions and  
15 breakdowns does each kiln experience on an annual  
16 basis over the past decade?

17 MR. GARES: Ross Gares, Rain Carbon. In  
18 response to these questions and a similar  
19 question by the Board, Rain Carbon intends to  
20 submit to the Board records related to hours of  
21 operation as well as startup, malfunction, and  
22 breakdown, and associated pyroscrubber and the  
23 temperatures.

24 It is not appropriate to average the



1 number of operational hours or the number of  
2 startup, shutdown, and malfunction hours over the  
3 past decade as such averages do not reflect  
4 changes in operation. That is based on market  
5 conditions.

6 In some years the facility has operated  
7 periodically on campaigns, and in other years the  
8 facility has operated more continuously.

9 MR. JAMES: All right. And would that  
10 response also apply to question 3B?

11 MR. LORING: It would, yes.

12 MR. JAMES: Okay.

13 MR. RAO: Mr. James, I guess a  
14 clarification. You mentioned that your response  
15 addressed a Board question on some. Are you  
16 referring to the Board's question number six?

17 MR. LORING: I believe it's question,  
18 yes, number 6B.

19 MR. RAO: And you did mention that you'd  
20 be filing something in your comments also, right?

21 MR. LORING: That's correct. So that  
22 data that both the Board requested and the AG  
23 asked for, we'll submit that post hearing.

24 MR. RAO: Mr. Gares, you -- in response

1 to Mr. James' question -- you mentioned that, you  
2 know, it's not appropriate to use averages  
3 because your operation may change depending on  
4 the market conditions.

5 The numbers that you gave in your  
6 testimony about less than five start-ups per --  
7 and 10 annual functions per year -- is that based  
8 on normal operations or when, you know, you're  
9 operating at a higher level to meet the market  
10 conditions?

11 Or what kind of, you know, what do these  
12 numbers represent in terms of your operation?

13 MR. GARES: Ross Gares, Rain Carbon. The  
14 data I'm submitting in the document was for the  
15 three years, which the plant has run  
16 campaign-type operations as market conditions --  
17 our need, our customer needs -- were met due to  
18 market conditions.

19 If we look at the normal -- I mean, Rain  
20 Carbon's position is we want to run the plant  
21 continuously --

22 MR. RAO: Yeah.

23 MR. GARES: -- and we don't want to start  
24 it up and shut it down. So it's hard -- that's

1    why I say it's hard -- to use an average because  
2    we don't really have a good average. I think the  
3    last time we had a good year of operation,  
4    continuous operation, was in 2017 at that  
5    facility. So that's why the answer was it was --  
6    it's not good to average that.

7               MR. RAO: And do you believe based on,  
8    you know, the experience that Rain Carbon over  
9    the years, that you need like 30 days per year  
10   for each kiln in terms of the relief that you  
11   have requested?

12              MR. GARES: We believe that we needed to  
13   submit something very quickly in response to this  
14   rulemaking change, and that the modeling showed  
15   that a worst-case scenario, if we did do that for  
16   720 hours, we would not impact the operation.

17              MR. RAO: That I understand. All I was  
18   asking was do you need those 30 days of 720  
19   hours? Because, you know, based on the numbers  
20   here provided as for breakdown and malfunctions  
21   it would seem that you would not need 30 days.

22              If you can take a look at it and get back  
23   to us in your comments or --

24              MR. LORING: Sure. Yeah, we'll be able

1 to provide some of that information in the  
2 context of the historical data and why we've  
3 requested the amount of hours or amount of days,  
4 however you want to look at it, in the post  
5 hearing.

6 MR. RAO: Thank you. Thank you.

7 MR. JAMES: So pick up at pre-filed  
8 question 3C. Is it appropriate to assume that  
9 when a kiln is experiencing an SMB event the  
10 temperature in the kiln is less than 1800 degrees  
11 Fahrenheit?

12 By extension is it appropriate to assume  
13 that when the temperature in the kiln is less  
14 than 1800 degrees Fahrenheit the kiln was  
15 operating in excess of its CAAPP emissions  
16 limitations?

17 MR. GARES: Ross Gares, Rain Carbon. As  
18 an initial response the relevant 1800 degrees  
19 Fahrenheit temperature is measured at the inlet  
20 of the pyroscrubber. This differs from the kiln  
21 temperature which is hotter than the inlet of the  
22 pyroscrubber.

23 The facility is prohibited under its  
24 CAAPP and the 2017 settlement agreement in

1 Illinois EPA from operating when the three hour  
2 average of the inlet to the pyroscrubber is below  
3 1800 degrees Fahrenheit, unless it is during a  
4 start-up, malfunction, or breakdown.

5 Below that temperature, the pyroscrubber  
6 cannot ensure compliance at all times with the  
7 opacity, PM, and VOM emission limits applicable  
8 to the kilns.

9 When the pyroscrubber and the temperature  
10 is below 1800 degrees Fahrenheit it is either  
11 because the kiln is in startup or because the  
12 facility has stopped adding feed to the kiln as a  
13 result of a malfunction or breakdown at the  
14 facility.

15 The converse is not always true for  
16 malfunctions and breakdowns. Some malfunctions  
17 or breakdowns are remedied quickly enough and the  
18 facility does not need to stop the kiln -- the  
19 feed to the kiln -- and therefore the  
20 pyroscrubber ambient temperatures do not always  
21 drop below 1800 degrees Fahrenheit in a rolling  
22 three hour average.

23 MR. JAMES: Thank you. Going on to 3D,  
24 there are a couple of footnotes from my pre-filed

1 questions, but I'll skip those when just talking  
2 about that today. Looking at only at start-ups,  
3 Rain Carbon exceeds its emissions limitations  
4 approximately 432 hours per year, equivalent to  
5 5.4 percent of its estimated operating time.

6 Rain Carbon proposes to establish an  
7 annual limit on the number of hours, 720, that  
8 each kiln may, during SBB events, exceed the PM  
9 standard.

10 In other words, if the proposed  
11 amendments were adopted, Rain Carbon could exceed  
12 its non-SMB emissions limitations for PM --  
13 that's particulate matter -- for up to 1440 hours  
14 per year, equivalent to 18 percent of its  
15 estimated operating time.

16 Why does Rain Carbon believe that its  
17 alternative emission limitation for PM is  
18 appropriate and narrowly tailored? How, if at  
19 all, does Rain Carbon's proposal avoid  
20 backsliding prohibited by Section 110 sub L of  
21 the Clean Air Act?

22 And I recognize some of this is already  
23 addressed by other questions that Mr. -- but the  
24 aspects that weren't brought up, could you answer

1 those?

2 MR. GARES: Sure. Ross Gares, Rain  
3 Carbon. By their very nature, startups and  
4 malfunctions and breakdowns events can vary  
5 greatly in a given year.

6 Per the Illinois AG request in the prior  
7 question, we'll provide historic startup,  
8 malfunction, and breakdown data following this  
9 hearing.

10 During the last three years, 2021, 2022  
11 and 2023, due to market conditions the facility  
12 has operated for brief campaigns during which  
13 time the kiln will operate for a few weeks to  
14 fulfill customer demand, and then go offline.

15 Prior to 2021 there were years, such as  
16 2017 and 2019, where both kilns operated more  
17 steady state. The number of malfunctions and  
18 breakdowns can increase the more hours the  
19 facility operates.

20 Similarly, operating and campaigns can  
21 require more startups in a given year. While the  
22 Illinois AG is correct to observe that the  
23 average number of startups and malfunctions have  
24 not equaled or exceeded 720 hours per year as

1 proposed, the 720 hours was selected for two  
2 reasons. First, while it is in the facility's  
3 best interest to minimize the duration of such  
4 events there may be years when startup and  
5 malfunction, breakdown hours exceed the recent  
6 past.

7           Because there are no technical or  
8 economically feasible options to control  
9 emissions while the inlet pyroscrubber  
10 temperature is below 1800 degrees, we propose 720  
11 hours to ensure a satisfactory margin of  
12 compliance.

13           Second, and relatedly, we conducted  
14 extremely conservative ambient air quality  
15 modeling to demonstrate that 720 hours per kiln  
16 per year would not interfere with the applicable  
17 PM National Ambient Air Quality standards.

18           In other words, while we do not  
19 anticipate reading -- meeting -- 720 hours per  
20 kiln in a year to exceed the PM process weight  
21 limit under part 212, the modeling demonstrates  
22 that such an occurrence would not have a negative  
23 impact on air quality.

24           We respectfully refer the Illinois AG to



1 the Technical Support documents submitted in  
2 conjunction with the pre-filed testimony of Bryan  
3 Higgins, specifically sections two and three of  
4 the pre-filed testimony, that details how Rain  
5 Carbon's proposed AELs are consistent with  
6 Section 110.1 of the Clean Air Act.

7 MR. JAMES: Thank you. And then number  
8 four; USEPA describes startup events as, quote,  
9 part of the normal operation of the source and  
10 should be accounted for in the design and  
11 operation of the source.

12 USEPA goes on to detail the, quote,  
13 correct approach for creating an emissions  
14 limitation during startup which considers four  
15 factors.

16 One, the emission limitation contains no  
17 exception for emissions during SSM or SMB events.  
18 The component of any alternative emissions  
19 limitation that applies during startup and  
20 shutdown is clearly stated and obviously is an  
21 emission limitation that applies to the source.

22 The component of any alternative emission  
23 limitation that applies during startup and  
24 shutdown meets the applicable stringency level

1 for this type of emission limitation. And four,  
2 the emission limitation contains requirements to  
3 make it legally and practically enforceable. Do  
4 each of Rain Carbon's proposed amendments satisfy  
5 these factors? If so, please provide bases for  
6 each factor in each proposed amendment.

7 MR. LORING: And just again as a, for the  
8 record, as an initial matter I do think that this  
9 calls in part for a legal -- a legal conclusion.  
10 But with that -- with that said, I'll ask Bryan  
11 Higgins to respond on behalf of Rain Carbon.

12 MR. HIGGINS: Bryan Higgins, Rain Carbon.  
13 Yes, Rain Carbon's Statement of Reasons provides  
14 substantial support that each of the proposed  
15 AELs is consistent with USEPA's 2015 SSM SIP  
16 call, including the factors identified in the  
17 AG's question.

18 We believe it is worth noting for the  
19 record that USEPA clarified in that same preamble  
20 that numerical limitations are not required at  
21 all times, stating that, quote, EPA has not taken  
22 the position and sources will be subject to SIP  
23 emission limitations that are set at the same  
24 numerical level at all times or that are

1     expressed as numerical limitations, end quote.

2             MR. JAMES:   Thank you.   And then number  
3     five, why does Rain Carbon believe that adopting  
4     the proposed amendment, 35 Illinois  
5     Administrative Code, Section 212.124(e) is  
6     preferable to pursuing an adjusted opacity  
7     standard pursuant to Section 212.126?

8             MR. HIGGINS:   Bryan Higgins, Rain Carbon.  
9     Section 212.126 does not apply to Rain Carbon's  
10    facility.   Section 212.126 governs adjusted and  
11    -- adjusted and visible -- adjusted visible  
12    emission standards for emission sources subject  
13    to Sections 212.201, 212.202, 212.203, or  
14    212.204.

15            Those sections apply only to fuel  
16    combustion sources.   The facility operates kilns  
17    that are process emission units which are not  
18    fuel combustion emission units.

19            MR. JAMES:   Thank you.   Number six, Rain  
20    Carbon asserts that its proposed amendments,  
21    quote, are narrowly tailored and provide  
22    alternative emissions limitations for particulate  
23    matter during startup, malfunction, or breakdown.

24            Rain Carbon notes that to estimate the

1 impact of alternative emissions limitations on  
2 particulate matter, NAAQS, the company conducted  
3 an engineering test during startup conditions.

4 is it appropriate to draw our conclusion  
5 about PM emissions during malfunction or  
6 breakdown events based on modeling that relied on  
7 data gathered during start-up?

8 MR. HIGGINS: Yes. Bryan Higgins, Rain  
9 Carbon. Yes, it is appropriate to model  
10 malfunction breakdown emissions based on PM data  
11 collected during start-up conditions.

12 The common denominator during startup,  
13 malfunction and breakdown is that the ambient  
14 temperature to the pyroscrubber is below 1800  
15 degrees Fahrenheit which limits the ability of  
16 the affected kiln to comply with the applicable  
17 PM process weight emission limit.

18 In fact, the use of emissions data during  
19 startup to model malfunction, breakdown  
20 conditions is inherently conservative. This is  
21 largely because of, one, startup events generally  
22 last longer than malfunction breakdown events.

23 Two, during the initial hours of startup  
24 the inlet temperature to the pyroscrubber is

1 lower than the temperature typically experienced  
2 during a malfunction breakdown, meaning that  
3 startup events have greater PM emissions.

4 And three, during malfunction, breakdown  
5 events the facility stops feed to the kiln as  
6 compared to startup conditions where feed is  
7 increased, helping to minimize the generation of  
8 PM emissions.

9 This is further explained on pages 14 and  
10 15 of Rain Carbon's Statement of Reasons.

11 MR. JAMES: Thank you. And number seven,  
12 Rain Carbon describes conducting its engineering  
13 test during the startup of kiln one. Rain Carbon  
14 assumes that, quote, due to similar design  
15 operations, kiln two would have similar results  
16 to kiln one if it were subjected to the same  
17 engineering test.

18 Are there any differences between kiln  
19 one and kiln two which could call into question  
20 the conclusion that similar emission results  
21 during startup would be expected between both  
22 kilns?

23 MR. GARES: Ross Gares, Rain Carbon. No,  
24 they are not. Kiln one and kiln two are nearly

1 identical in design. The model impact from kiln  
2 one and two differ because of the different  
3 geographic location of the stacks from the  
4 pyroscrubber servicing each kiln.

5 MR. JAMES: Thank you. That's all.

6 HEARING OFFICER: Thank you. Okay. Are  
7 there any other questions from any other  
8 participants? Okay. Seeing none, we will next  
9 go to the Board's questions.

10 CROSS EXAMINATION BY

11 MR. RAO:

12 MR. RAO: Okay. Like the AG, we had  
13 pre-filed questions so I'll just read off the  
14 questions, starting with -- there's a general  
15 question that we had pre-filed that applies to  
16 all proponents. It's changes to the rule  
17 language.

18 And we'd like you to get back to us in  
19 your comments if those changes are acceptable.  
20 We went to Rain Carbon. Mr. Gares, this is a  
21 question for you on pre-filed questions.

22 On page one you note that you advised all  
23 Rain Carbon U.S. facilities, including the one in  
24 Illinois, on startup and operation of coke

1 calciners and associated equipment.

2 2A, how many calcining facilities does  
3 Rain Carbon operate in the U.S. and where are  
4 they located?

5 MR. GARES: Ross Gares, Rain Carbon. We  
6 have four calcining plants in Louisiana. We have  
7 another calcining plant in Mississippi, and of  
8 course the one we're discussing in Robinson,  
9 Illinois.

10 MR. RAO: Are any of Rain Carbon's  
11 facilities located in other states covered by  
12 USEPA's 2015 SIP call?

13 MR. GARES: My understanding -- Ross  
14 Gares, Rain Carbon. Sorry. My understanding is  
15 that most states are covered by 2015's SIP call.

16 MR. RAO: If so, can you comment how  
17 those facilities are addressing SSM SIP call  
18 compliance?

19 MR. GARES: Ross Gares, Rain Carbon. At  
20 this time Rain Carbon has not taken any action at  
21 these facilities to address any changes in state  
22 rules governing startup, shutdown, or  
23 malfunction.

24 MR. RAO: How is the state of Louisiana

1 implementing 2015 SIP call with respect to your  
2 facilities, or are you aware of that?

3 MR. GARES: We haven't -- Ross Gares,  
4 Rain Carbon. We haven't looked into it so  
5 post-hearing conference --

6 MR. LORING: Post-hearing comments.

7 MR. GARES: Comments.

8 MR. RAO: Okay.

9 MR. LORING: We'll provide.

10 MR. RAO: All right. Thank you.

11 Question three. On pages two and three you state  
12 that the facility will often be forced to shut  
13 down and restart the kilns during malfunction  
14 events.

15 Can you describe typical malfunction or  
16 breakdown events encountered at the Robinson  
17 facility?

18 MR. GARES: Ross Gares, Rain Carbon.  
19 There's no such thing as a typical malfunction or  
20 breakdown. A malfunction or breakdown could be  
21 the result of a mechanical failure, an electrical  
22 failure, a refractory failure of our process  
23 equipment.

24 Another form of malfunction could be



1 plugging of material. Petroleum coke is a solid  
2 material that can have the tendency to build up,  
3 create, and convey transitions of the pour  
4 chutes. When that happens it requires some  
5 manual intervention by the operations or  
6 maintenance staff to clear the plug-up. It is  
7 important to note that each kiln is operated as  
8 an independent train of equipment.

9 MR. RAO: Can malfunctions also include  
10 any problems with the air pollution control if  
11 you have any on these kilns, or is it just  
12 associated with the operation of the kilns?

13 MR. GARES: It would be associated with  
14 the operation of the equipment and the kilns.

15 MR. RAO: Okay.

16 MR. GARES: Our associated equipment for  
17 the kiln operations.

18 MR. RAO: The proposed alternative --  
19 this is question four. The proposed alternative  
20 particulate matter --

21 MR. LORING: Excuse me. I'm sorry for  
22 interrupting you just for a second.

23 MR. RAO: Sure.

24 MR. LORING: Part of Ross' response he

1 wanted to convey to you just to read, so I just  
2 wanted to make sure we put that into the record.  
3 Thank you.

4 MR. GARES: Ross Gares, Rain Carbon.  
5 Continuing the answer there; in my pre-filed  
6 testimony I stated that without the ability to  
7 operate the kilns when the inlet pyroscrubber is  
8 below 1800 degrees the facility would often be  
9 forced to shut down during a malfunction or  
10 breakdown.

11 That is because some malfunctions or  
12 breakdowns can be repaired in a reasonable time  
13 period which allows the facility to operate in an  
14 idle or slow roll mode, meaning that coke is not  
15 added to the kiln.

16 This can cause the inlet temperature to  
17 the pyroscrubber to drop below 1800 degrees  
18 Fahrenheit without the requested rules to allow  
19 alternative emissions limits.

20 When the inlet pyroscrubber drops below  
21 1800 degrees Fahrenheit the facility would be  
22 required to shut down during these malfunctions  
23 and breakdowns.

24 I would refer the Board members to pages

1 seven and eight of my pre-filed testimony where I  
2 discuss this in further detail.

3 MR. RAO: Thank you. Question four; the  
4 proposed alternative particulate matter standard  
5 under Section 212.322(d)2 states in part, quote,  
6 it shall not be a violation of this part to  
7 operate the pyroscrubber servicing kiln one or  
8 kiln two below the minimum operating temperature  
9 in subsection (d)(1) during this time, unquote.

10 Please clarify if Rain Carbon is required  
11 by any provisions in part 212 to operate the  
12 pyroscrubber servicing kiln one or kiln two to  
13 operate at 1800 degrees Fahrenheit.

14 If not, please explain the proposed  
15 intent.

16 MR. GARES: Rain Carbon is required to  
17 demonstrate compliance with part 212,  
18 specifically PM emissions for process emission  
19 units under Section 212.322.

20 During periods when the inlet to the  
21 pyroscrubber is below 1800 degrees Fahrenheit the  
22 facility cannot demonstrate continuous compliance  
23 with the PM emissions limits as determined under  
24 Section 212.322.

1           Stated differently, the facility is  
2 effectively required to maintain a temperature at  
3 or above 1800 degrees Fahrenheit at the inlet to  
4 the pyroscrubber to ensure that the PM emissions  
5 are sufficiently controlled by the pyroscrubber  
6 to demonstrate compliance with Section 212.322.

7           In addition, as discussed in Rain  
8 Carbon's Statement of Reasons supporting his  
9 proposed rulemaking, I would refer the Board  
10 members to pages 16 through 20 of the Statement  
11 of Reasons, as well as pages nine and 10 of my  
12 pre-filed testimony.

13           In 2017 Rain Carbon entered into a  
14 settlement agreement with Illinois EPA. That  
15 settlement agreement requires, which remains in  
16 effect to this day, that the facility maintain an  
17 inlet pyroscrubber temperature of 1800 degrees  
18 Fahrenheit in order to ensure compliance with the  
19 PM emissions limits under part 212, Section 4.2.2  
20 FIE of the CAAPP permit explicitly incorporates  
21 this requirement to maintain an 1800 degree  
22 Fahrenheit inlet scrubber temperature except  
23 during startup and malfunction, breakdown  
24 conditions.

1           A copy of the CAAPP permit and a copy of  
2   the 2017 Illinois EPA settlement agreement was  
3   provided to the Board as exhibits to the  
4   Statement of Reasons.

5           MR. RAO: Thank you. Question five. On  
6   page six you stated the natural gas burners are  
7   used to increase the temperature of the kiln and  
8   pyroscrubber from ambient to a minimum  
9   temperature of 400 degrees Farenheit as measured  
10   at the inlet to the pyroscrubber.

11           Please comment on whether high  
12   temperature natural gas burners are available  
13   that may be used to help increase the temperature  
14   of the kiln and pyroscrubber from ambient to a  
15   minimum temperature 1800 degree Fahrenheit.

16           If so, discuss the implications of using  
17   such high temperature burners in the calcining  
18   kilns.

19           MR. GARES: The burners are utilized to  
20   reach a minimum temperature of 400 degrees  
21   Fahrenheit at the inlet to the pyroscrubber.  
22   This is further discussed on page five of my  
23   pre-filed testimony.

24           The kiln temperatures achieved by firing

1 the burner before feed is added to the kilns are  
2 much higher. Approximately 1100 degrees  
3 Fahrenheit on the discharge end of the kiln and  
4 approximately 800 degrees Fahrenheit on the feed  
5 and inlet chamber of the kiln. It is important  
6 for there to be clear understanding of the  
7 function of the burners.

8 The burners are not operated and are not  
9 designed for the purpose of achieving a minimum  
10 pyroscrubber inlet temperature to ensure  
11 environmental compliance.

12 The purpose of the burner is to preheat  
13 the refractory line kiln and its supporting  
14 refractory line equipment. The addition of green  
15 coat to the kiln is necessary to achieve the 1800  
16 degree Fahrenheit pyroscrubber inlet temperature.

17 That temperature cannot be achieved by  
18 burners alone. As discussed on pages 11 and 12  
19 of my pre-filed testimony, the facility has  
20 already agreed as part of a settlement agreement  
21 earlier this year with USEPA to increase each  
22 burner's natural gas-firing capacity.

23 That burner upgrade project is currently  
24 underway and with an anticipated completion

1 before the end of 2023. The higher capacity  
2 burners will not be able to raise temperatures  
3 anywhere near sufficient to maintain 1800 degrees  
4 Fahrenheit at the pyroscrubber inlet temperature.  
5 Therefore, the burner upgrade project will not  
6 eliminate the need for the requested alternative  
7 emissions limits contained in the Rain Carbon's  
8 proposed rule language.

9 MR. RAO: You mentioned the burner  
10 upgrade will not help in raising the temperature  
11 to 1800 degrees Fahrenheit, but will it reduce  
12 the time it takes to reach 1800 degrees  
13 Fahrenheit?

14 MR. GARES: I think it would be premature  
15 to give you that answer now.

16 MR. RAO: Okay.

17 MR. GARES: We -- we've -- when we  
18 complete this project obviously we will learn a  
19 lot from it. We believe that the capacity  
20 increase will be 20 to 30 percent more capacity  
21 on the burner.

22 Whether that comes to actual fruition  
23 upon completion of that project and what we get  
24 as a result of this project, but it would not --

1 I don't -- I think -- we want to make sure that  
2 we point out to you is we won't get to the 1800  
3 degrees --

4 MR. RAO: Okay.

5 MR. GARES: -- that's required of the  
6 burner.

7 MR. RAO: Thank you. Question six. We  
8 already touched on this and you said you'll get  
9 back to us some of the information in that  
10 question, so we'll skip that one.

11 Question seven. Mr. Gares, on page 11  
12 you reference to a settlement agreement made with  
13 USEPA recently. Can you please say if that  
14 agreement is in the record? If not, can you  
15 please send us a copy of it?

16 MR. GARES: The 2023 Consent Agreement  
17 with USEPA was submitted as Exhibit C --

18 MR. RAO: Okay.

19 MR. GARES: -- to Rain Carbon's Statement  
20 of Reasons.

21 MR. RAO: Thank you.

22 MR. GARES: Yes.

23 MR. RAO: Question eight. On page 14 you  
24 state the proposed particulate matter alternate



1 emission limit provides limited relief during the  
2 period of startup when it's not possible to read  
3 the pyroscrubber temperature sufficient to  
4 control PM, particulate matter, rather than an  
5 averaging period for the duration of the startup.  
6 Please comment on whether there is a significant  
7 difference between the two time periods?

8 MR. GARES: The ability of the facility  
9 to demonstrate compliance with the opacity and PM  
10 regulations differ. Opacity is generally  
11 expected to -- opacity is generally expected to  
12 achieve compliance -- with the 30 percent opacity  
13 standard by the end of the first hour of startup  
14 from ambient temperatures.

15 This was demonstrated during the recent  
16 engineering testing in July of this year. While  
17 opacity exceeded 50 percent during the periods of  
18 the first hour of startup, the averaging period  
19 proposed by Rain Carbon's alternative emissions  
20 limit is appropriate to demonstrate compliance  
21 with the opacity limit because opacity levels are  
22 generally highest during the initial period of  
23 startup, and rapidly decrease thereafter.

24 An averaging period is appropriately

1 tailored for this type of emissions profile. By  
2 contrast, compliance with the PM emission limits  
3 may not be achieved until the pyroscrubber inlet  
4 temperature reaches 1800 degrees F. It generally  
5 can take from 17 to 24 hours after feed is  
6 introduced to the kiln to achieve a pyroscrubber  
7 inlet temperature of 1800 degrees during a  
8 startup, and anywhere from five to seven hours  
9 after feed is reintroduced to the kiln to reach  
10 that temperature if the kiln was in idle or slow  
11 roll state during a malfunction or breakdown  
12 event.

13 Thus, while opacity compliance may be  
14 achieved within one hour, PM compliance will take  
15 substantially longer.

16 As observed during the July engineering  
17 test, see table 4-1 of the Technical Support  
18 Document, PM emissions were greater than the  
19 calculated maximum allowable PM emission rate  
20 under Section 212.322 throughout portions of the  
21 startup period.

22 Even as temperatures continue to climb  
23 from about 700 degrees Fahrenheit through about  
24 1400 degrees Fahrenheit, PM emissions rates also

1 fluctuated during this period. Taken together,  
2 the engineering test evidences that PM emissions  
3 may exceed regulatory limits during any period of  
4 time that the inlet temperature to the  
5 pyroscrubber is below 1800 degrees Fahrenheit.

6 This includes periods of startup as well  
7 as malfunctions and breakdowns that cause  
8 temperatures to drop below 1800 degrees  
9 Fahrenheit.

10 As a consequence, the averaging period  
11 approach utilized for capacity -- excuse me,  
12 utilized for opacity -- is not appropriate as an  
13 alternative emissions limit for PM due to the  
14 longer and more varied scenarios when PM  
15 compliance cannot be achieved.

16 MR. RAO: Thank you. I think you  
17 answered the second part of the question. So  
18 that's all I have for you, Mr. Gares. I have a  
19 few questions for Mr. Higgins.

20 (Starting questions directed to Mr. Higgins)

21 MR. RAO: On pages six and seven of your  
22 testimony you state that Trinity and USEPA's  
23 Significant Impact Levels for assessing the  
24 environmental impact of the proposed AELs because

1 of lack of thresholds for evaluating the  
2 environmental impact from SMB events. Line A.  
3 Please comment on whether this methodology has  
4 been previously used in Illinois and other states  
5 to evaluate the impact of SMB emissions on  
6 attainment or maintenance of NAAQS to USEPA.

7 MR. HIGGINS: If you don't mind, I'll  
8 answer B and C all together.

9 MR. RAO: Okay.

10 MR. HIGGINS: Okay. We are not familiar  
11 with how or whether other states are modeling  
12 impact of proposed startup, malfunction or  
13 breakdown rulemakings following U.S. -- yeah.

14 We are not familiar with how or whether  
15 other states are modeling the impact of proposed  
16 startup, malfunction, or breakdown rulemakings  
17 following the USEPA SSM SIP com.

18 Nevertheless, it is important to clarify  
19 that the modeling of emissions generated during  
20 startup, malfunction and breakdown events are no  
21 different than modeling emissions generated  
22 during normal operations, except in terms of  
23 their frequency and randomness.

24 That is to say that AERMOD, the ambient

1 air quality modeling software, does not  
2 differentiate between emissions during normal  
3 operations and those during startup, malfunction  
4 and breakdown. This is relevant because the use  
5 of significant impact levels to assess the impact  
6 of a proposed major modification is a  
7 well-accepted methodology.

8 its application to assess the impact of  
9 additional emissions from operation during  
10 startup, malfunction and breakdown is no  
11 different as the AERMOD software considers these  
12 emissions as if they were generated by a plan  
13 modification.

14 That is, the model considered the  
15 increase in emissions that would result from  
16 operating during startup, malfunction and  
17 breakdown as compared to normal or baseline  
18 operations.

19 As explained in Section eight of Rain  
20 Carbon's Statement of Reasons, specifically pages  
21 30 and 31, the use of Sils to demonstrate and  
22 honor appearance under Section 110 L of the Clean  
23 Air Act is appropriate because the impacts of the  
24 model below the Sil are regarded as having a,

1 quote, not meaningful or significant, end quote,  
2 impact on air quality.

3 Using the Sil to demonstrate that  
4 proposed AELs would have an insignificant impact  
5 on air quality also demonstrates that the  
6 proposed AELs will not interfere with the PM or  
7 ozone max in Illinois.

8 MR. RAO: Thank you. Question 10. On  
9 page 1-1 the Technical Support Document states  
10 that during the startup test performed on July  
11 20th, 2023, the maximum opacity reading was  
12 recorded at 50 percent and about 30 percent for  
13 more than eight minutes in a 60 minute feed,  
14 which is I think named as run number one.

15 The other four test runs did not exceed  
16 opacity limit of 30 percent. Based on the  
17 opacity testing results, 10(a), what would be the  
18 shortest averaging time required to comply with  
19 the 30 percent opacity limit?

20 I realize Mr. Gares answered some of  
21 these questions about opacity and PM, but --

22 MR. HIGGINS: Sure.

23 MR. RAO: -- if you want to add anything  
24 please feel free.

1           MR. HIGGINS:   So Rain Carbon believes  
2   that the July 20th, 2023 engineering test was a  
3   representative startup event at the facility.  
4   However, because the facility is not required by  
5   rule or by its CAAPP permit to monitor opacity  
6   during startup, the July engineering test  
7   reflects the only available data of method nine  
8   opacity observations during startup.

9           Rain Carbon lacks sufficient data to  
10   determine the shortest averaging time required to  
11   comply with the 30 percent opacity standard  
12   during startup.

13           Part of the reason is that, as noted  
14   above, the facility does not routinely conduct  
15   method nine observations during startup  
16   conditions.

17           In addition, the startup conditions are  
18   inherently variable. While the startup on July  
19   20th of 2023 may have resulted in a few minutes  
20   of opacity exceeding the 30 percent standard,  
21   subsequent startups at different time periods  
22   under different conditions will produce different  
23   results.

24           For example, the first opacity

1 observation on July 20th occurred when the inlet  
2 temperature to the pyroscrubber was about 600  
3 degrees Fahrenheit. See tables 2-1 and 4-1 of  
4 the TSD. A lower temperature, for example,  
5 closer to 400 degrees Fahrenheit, is expected to  
6 result in higher opacity readings.

7 The proposed averaging period in Rain  
8 Carbon's AEL for opacity is intended to  
9 accommodate such higher and longer duration of  
10 opacity readings.

11 MR. RAO: Does that answer 10(b) or --

12 MR. HIGGINS: Yes.

13 MR. RAO: Okay. Go on to question 11.

14 On page 3-1 the Technical Support Document notes  
15 that the mass VOM emission rates calculated by  
16 AirSource during each of the five test runs were  
17 significantly below the allowable volatile  
18 organic material emission rate of eight pounds  
19 per hour under 35 Ill. Admin code 215 -- I think  
20 it should be 3-0.

21 I'll have to get that citation. I think  
22 the citation that we have applies to question  
23 one. So given the test runs conducted by  
24 AirSource were procedurally representative of a



1 typical startup, do you believe that the test  
2 results support a much shorter averaging time  
3 rather than the proposed 24-hour averaging figure  
4 for VOM emissions during startups?

5 MR. HIGGINS: Well, the July 20th, 2023  
6 engineering test was conducted during a  
7 representative startup event. The VOM sampling  
8 results serve to demonstrate that VOM emissions  
9 are substantially higher during the initial  
10 period of startup when the inlet temperature to  
11 the pyroscrubber is lowest.

12 Looking at table 3-1 of the Technical  
13 Support Document, VOM emissions during run one  
14 were over six times greater than emissions during  
15 runs where the pyroscrubber inlet temperature was  
16 approximately over 300 degrees Fahrenheit hotter.

17 And while run one was below the eight  
18 pound per hour regulatory limit, the inlet  
19 pyroscrubber temperature during run one was close  
20 to 700 degrees Fahrenheit, nearly 300 degrees  
21 Fahrenheit hotter than the typical 400 degree  
22 Fahrenheit temperature at which green coat is  
23 typically introduced.

24 VOM emissions are therefore expected to

1 be significantly higher than 2.41 pounds per hour  
2 when the inlet temperature to the pyroscrubber is  
3 below 700 degrees Fahrenheit, as is often the  
4 case. As a result, the proposed AEL for VOM that  
5 allows for averaging VOM emissions during startup  
6 remains an appropriate averaging period to  
7 accommodate expected high VOM emissions during  
8 initial periods of startup.

9 MR. RAO: Thank you.

10 HEARING OFFICER: Okay.

11 MR. RAO: That's all.

12 HEARING OFFICER: I do have one other  
13 question. If you could please respond here today  
14 or in a public written comment to the Joint  
15 Committee on Administrative Rules or JCAR's staff  
16 changes to add the questions to the rule text in  
17 public comment two. Okay.

18 MR. LORING: Yeah, we will -- we'll  
19 respond in our post-hearing comments.

20 HEARING OFFICER: Excellent. Thank you.  
21 Are there any other questions from the Board?  
22 Okay. Thank you so much. So one second. Okay.  
23 Yeah. And there might be more changes as well so  
24 we'll submit those and then the hearing officer

1 will adopt those.

2 MR. LORING: Okay. Thank you. Thank  
3 you.

4 HEARING OFFICER: Okay. Next we will  
5 have David Wall of the Illinois Environmental  
6 Regulatory Group. Please step up here. All  
7 right. If you're ready would the court reporter  
8 please swear in the witness?

9 (Witness sworn)

10 DAVID WALL,  
11 being first duly sworn on oath, was examined and  
12 testified as follows:

13 HEARING OFFICER: Okay. As mentioned  
14 earlier, the witness' testimony is entered into  
15 the record as if read and it's entered as Hearing  
16 Exhibit Number Three.

17 We will again proceed with questions  
18 first from the Attorney General's Office, if you  
19 want to step up.

20 DIRECT EXAMINATION BY

21 MR. JAMES:

22 MR. JAMES: Jason James, Illinois  
23 Attorney General's Office. I'm going to go  
24 through my pre-filed questions like I did with

1 Rain Carbon and maybe have some follow-ups  
2 depending on your responses.

3 IERG states that its proposed amendment,  
4 quote, has no potential to adversely impact air  
5 quality. In support, IERG states that, quote,  
6 there has never been a carbon monoxide  
7 non-attainment area in the state of Illinois  
8 under the National Ambient Air Quality Standards  
9 Program, also known as NAAQS.

10 However, IERG proposes to implement  
11 standards based on the National Emission  
12 Standards for hazardous air pollutants known as  
13 NESHAP, rather than the NAAQS program.

14 The federal boiler NESHAP is intended to  
15 regulate emissions of hazardous air pollutants  
16 known as HAPs. HAPs are types of pollutants that  
17 are known or suspected to cause cancer or other  
18 serious health effects, often in very low  
19 quantities.

20 So sub question A; how does Illinois'  
21 attainment status for carbon monoxide under the  
22 NAAQS program relate to HAP emissions from  
23 boilers and compliance with the federal boiler  
24 NSEHAP?

1           MR. WALL: Illinois' attainment status  
2 for CO does not directly relate to HAP emissions  
3 for boilers. Rather, it demonstrates the current  
4 levels of CO emissions which includes SMB  
5 emissions from heaters and boilers within the  
6 state are not and have not caused adverse ambient  
7 air quality impacts of CO in Illinois.

8           This further demonstrates that IERG's  
9 proposal, which will not increase CO emissions  
10 from regulated sources, will not cause or  
11 contribute to any adverse ambient impacts.

12           MR. JAMES: But in IERG's proposal the  
13 alternative emissions location is based on the  
14 NESHAP regulation, is that right?

15           MR. WALL: So IERG's proposal references  
16 the boiler map of NESHAP because it's an  
17 established USEPA approved program that regulates  
18 SSM similar to SMB emissions from combustion  
19 sources.

20           And as we can explain, I believe, when we  
21 get to question 2(b), it's appropriate to look at  
22 that as an established regulatory format for CO  
23 emissions as that boiler map uses CO as the  
24 surrogate pollutant for HAP under that rule.

1           MR. JAMES: Okay. I'll go ahead and move  
2 onto B then. The federal boiler NESHAP is not  
3 primarily intended to limit carbon monoxide  
4 emissions, rather it uses carbon monoxide as a  
5 surrogate for limits on organic hazardous air  
6 pollutants.

7           Why does the federal boiler NESHAP  
8 operate in this way? How does using carbon  
9 monoxide as a surrogate for organic HAPs relate  
10 to IERG's proposal? And like you said, we sort  
11 of already addressed this, but please go ahead  
12 and add anything else.

13          MR. WALL: The USEPA included CO as a  
14 surrogate for organic HAP emissions in the boiler  
15 map regulation as the pollutants generally trend  
16 together from combustion sources as both are  
17 products of incomplete combustion and are  
18 impacted by similar operational parameters.

19          It is also simpler and more economical to  
20 set emission limits, work practice standards, or  
21 monitor emissions from a single pollutant  
22 compared to several, which is why USEPA often  
23 utilizes surrogate pollutants in rulemaking.

24          Further, the feasible control

1 technologies are the same for both pollutants.  
2 That is to say, good combustion practices. IERG  
3 is proposing to reference the SMS language from  
4 the boiler map as it is an established regulatory  
5 compliance option, in this case a work practice,  
6 established by USEPA with respect to SSM  
7 emissions from combustion sources.

8 While NESHAP regulates organic HAP  
9 emissions it sets CO as a surrogate pollutant.  
10 As the formation of the pollutants is impacted by  
11 the same operating characteristics and the  
12 feasible control technologies and limitations of  
13 their effectiveness during SSM are the same, it  
14 is appropriate to follow the same requirements  
15 minimizing CO emissions as for organic HAP  
16 emissions from combustion sources.

17 MR. JAMES: Thank you. Question C; could  
18 IERG's proposed regulations have any adverse  
19 impact on human health or the environment due to  
20 emissions of HAPs?

21 MR. WALL: No. IERG's proposal does not  
22 address or change any requirements regarding  
23 HAPs. Rather, IERG's proposal would use the same  
24 work practice requirements from the boiler map

1    which does regulate HAPs but with C/O as a  
2    surrogate to regulate CO emissions. The proposal  
3    would not have any adverse impact on human health  
4    or the environment as the emissions from  
5    regulated sources will not increase under this  
6    proposal.

7               MR. JAMES: Thank you. Question D; have  
8    boilers in Illinois emitted organic HAPs in  
9    violation of state or federal environmental laws  
10   or regulations?

11              MR. WALL: Emissions of HAP from boilers  
12   within Illinois are not specifically relevant to  
13   IERG's proposal. IERG does not have knowledge of  
14   the compliance history of all boilers within the  
15   state given the large number of boilers operating  
16   within the state.

17              While not relevant to IERG's proposal,  
18   USEPA has identified a number of organic HAPs for  
19   which CO serves as a regulated surrogate under  
20   the boiler map.

21              These emissions can also vary  
22   significantly by type and magnitude depending on  
23   the type of fuel combusted. These emissions  
24   could include, however, acetaldehyde, benzene,



1 chloroform, formaldehyde, hexane, and toluene as  
2 well as many others.

3 Again, however, these organic HAPs are  
4 not relevant here. IERG is proposing an  
5 alternative emission limit only as to the CO  
6 standard in Section 216.121.

7 MR. JAMES: Thanks. And that answer also  
8 addresses the question in 1E, is that right, that  
9 asks for types of HAPs?

10 MR. WALL: Yes.

11 MR. JAMES: Okay. Question number two;  
12 at hearing for the R23-18 rulemaking, Illinois  
13 EPA testified that the US Environmental  
14 Protection Agency is now requiring SIP  
15 submittals, and that's State Implementation Plan  
16 submittals, to include impacts on environmental  
17 justice or EJ areas and EJ communities.

18 Neither IERG's proposal nor testimony in  
19 this R23-18(a) docket mentioned environmental  
20 justice. At the second hearing in R23-18, IERG  
21 stated that, quote, IERG's proposed provisions  
22 will not result in any adverse impacts on EJ  
23 areas or EJ communities.

24 IERG's post-hearing responses stated that

1 based on IEPA's EJ Start tool, quote, at least  
2 one IERG member that could be impacted by IERG's  
3 alternative proposal is located in an  
4 environmental justice area. IERG intends its  
5 proposal to be submitted to USEPA as a SIP  
6 revision upon being adopted.

7 Is it your understanding that USEPA will  
8 require discussion of EJ impacts to be included  
9 in this SIP submittal? What's your understanding  
10 of the kind of information about EJ impacts USEPA  
11 requires?

12 Does the current rulemaking record in  
13 R23-18(a) include sufficient information about EJ  
14 impacts to support a SIP submittal?

15 MR. WALL: It is IERG's understanding  
16 that pursuant to a federal executive order,  
17 federal agencies are directed to identify and  
18 address EJ impacts of their actions to the  
19 greatest extent practicable and permitted by the  
20 law.

21 However, it is also IERG's understanding  
22 that neither the Clean Air Act nor the  
23 implementing regulations for SIP submittals  
24 requires or prohibits an EJ evaluation.

1           Regardless, as IERG has previously  
2   stated, the proposal will not result in any  
3   increase in emissions from the regulated  
4   combustion sources. Boilers and heaters across  
5   the state have always had elevated emissions  
6   during SMB events.

7           Under IERG's proposal regulated sources  
8   will continue to operate as they always have with  
9   no increase in emissions. With no increased  
10   emissions there is no potential for adverse  
11   impact to EJ areas as a result of this proposal.

12           Therefore, it is IERG's position that its  
13   proposal include sufficient information needed to  
14   support SIP submittal.

15           MR. JAMES: And when you say no increase,  
16   is that -- that's relative to the regulations  
17   that existed before the rule was adopted in  
18   R23-18?

19           MR. WALL: That's relative to how the  
20   boilers have always operated and are likely to  
21   continue to operate.

22           MR. JAMES: How would it change relative  
23   to the rules as they currently exist which  
24   include the regs that the Board adopted in

1 R23-18?

2 MR. WALL: I don't believe they will  
3 change, as I previously testified. It's not  
4 economically or technically feasible to control  
5 emissions during SMB events.

6 MR. JAMES: Okay. 2(b). What impact  
7 will IERG's proposal in R23-18(a) have on EJ  
8 communities and EJ areas relative to Illinois'  
9 current air regulations? And then provide the  
10 locations of these communities and areas that  
11 would be affected.

12 MR. WALL: There are a number of  
13 currently identified EJ areas within Illinois as  
14 IEPA's EJ Start mapping tool demonstrates.

15 Given the number of regulated combustion  
16 sources within the state, there are numerous  
17 boilers and heaters operating within a number of  
18 these EJ areas within the state.

19 However, as noted previously, the IERG  
20 proposal will have no impact on emissions and  
21 therefore no adverse impact to any EJ area in the  
22 state.

23 MR. JAMES: Thanks. Question three. The  
24 regulatory text of IERG's proposal incorporates

1 by reference 40 C.F.R. 63, Subpart DDDDD, that's  
2 five D's, (2022). Last year USEPA revised  
3 Subpart DDDDD, five D's. The 2022 annual edition  
4 of Title 40 of the Code of Federal Regulations  
5 was published on July 1st, 2022. Therefore, the  
6 2022 annual editions, Title 40, does not contain  
7 the most recent revisions to Subpart DDDDD.

8 The Title 40 in the e-C.F.R. -- that's  
9 electronic C.F.R. -- is regularly updated and  
10 does contain the most recent version of Subpart  
11 DDDDD. Does IERG's proposed regulatory language  
12 refer to the 2022 annual edition of the C.F.R.?

13 If not, what does IERG's proposed  
14 regulatory language refer to?

15 MR. WALL: IERG's proposal refers to the  
16 current version of the boiler map as of today,  
17 last amended October 6th, 2022.

18 MR. JAMES: And is that reflected in the  
19 proposed regulatory text that's submitted by  
20 IERG?

21 MR. WALL: I believe that was the intent  
22 of our proposal, and we can clarify that as  
23 needed.

24 MR. JAMES: Okay. And that sort of goes

1 to my question in 3B. Does IERG's most recent --  
2 and then onto 3C -- should it directly cite the  
3 most recently revised version to avoid ambiguity,  
4 or would you propose some other form of citing  
5 this?

6 MR. WALL: IERG has referenced the boiler  
7 map because it contains approved USEPA work  
8 practices for minimizing emissions, including  
9 organic HAPs, with CO as a surrogate for  
10 combustion sources during SMS events.

11 IERG is amenable to referencing the most  
12 recently revised version of the boiler map as  
13 amended October 6th, 2022.

14 MR. JAMES: Okay. Thank you. That's all  
15 I have.

16 HEARING OFFICER: Okay. Are there any  
17 other questions from any other participants?  
18 Seeing none --

19 MR. RAO: I'd just like to note for the  
20 record, the Board had questions -- previously  
21 asked questions -- of Mr. Wall, and it's still  
22 part of the record. So your answers to those  
23 questions will be used in our evaluation.

24 HEARING OFFICER: Yes. Do any Board

1 members have any additional questions? Okay.  
2 Again, I'm just going to reiterate, if you could  
3 please respond here or in a written public  
4 comment to JCAR's staff changes to the questions  
5 in the rule text in public comment number two.  
6 Awesome. Thank you.

7 All right. So we will move on to the  
8 next witness which is John Derek Reese with the  
9 American Petroleum Institute. All right. Would  
10 the court reporter please swear in the witness?

11 (Witness sworn)

12 JOHN REESE,  
13 being first duly sworn on oath, was examined and  
14 testified as follows:

15 HEARING OFFICER: Okay. As mentioned  
16 earlier, the witness' testimony is entered into  
17 the record as if read and entered as hearing  
18 Exhibit Number Four. So we will then proceed  
19 with questions from the Attorney General's Office  
20 first.

21 And if you can please state your name  
22 first for the court reporter. Thank you.

23 DIRECT EXAMINATION BY

24 MR. ARMSTRONG:

1           MR. ARMSTRONG: Andrew Armstrong for the  
2 Illinois Attorney General's Office. Good  
3 morning.

4           MR. REESE: Good morning.

5           MR. ARMSTRONG: In its Statement of  
6 Reasons, API asserts that one of the refineries  
7 conducted screening modeling of impacts using  
8 continuous emission monitoring system data from  
9 recent startup events to conservative estimate of  
10 ambient impacts during these events.

11           The incremental emission impact during  
12 startups were less than three percent and six  
13 percent of the one hour and eight hour standards  
14 respectively. So that's taken from API's  
15 statement of Reasons at page 40.

16           Question number one: Does this assertion  
17 refer to monitoring data summarized in the  
18 Technical Support Document accompanying Marathon  
19 Petroleum Company, LLC's Petition For an Adjusted  
20 Standard at page TSD-14?

21           MR. REESE: John Derek Reese, American  
22 Petroleum Institute. This passage instead refers  
23 to the modeling conducted by ExxonMobil and  
24 described in their petition for the adjusted



1 standard.

2 MR. ARMSTRONG: Oh. Okay. Thank you.  
3 If I could though ask about the Marathon data.  
4 Why was Marathon required to operate the two  
5 monitoring stations from calendar years 2017  
6 through 2019?

7 When were the monitoring stations first  
8 installed, and have the monitoring stations been  
9 operated at any time since the end of the 2019  
10 calendar year?

11 MR. REESE: John Derek Reese, American  
12 Petroleum Institute. Marathon was required to  
13 operate two monitoring stations per the  
14 conditions of the consent order effective May  
15 15th, 2015, between Marathon and the State in  
16 People versus Marathon Petroleum Company,  
17 Crawford County, as a result of the resolution of  
18 the alleged violations which were mostly  
19 permitting vapor pressure and VOM-related  
20 allegations, which Marathon did not admit to.

21 Marathon agreed to conduct a supplemental  
22 environmental project SEP. The purpose of the  
23 SEP was to undertake an ambient air modeling and  
24 monitoring project at and around the Robinson

1 refinery to evaluate emissions from the refinery  
2 for baseline purposes and to compare them, then  
3 recently revised as of two NAAQS. The project  
4 included installation of two ambient air monitors  
5 and a meteorological station. The project  
6 operated from January 1st of 2017 through  
7 December 31st, 2020.

8 The monitoring stations monitor the  
9 following emissions; carbon monoxide, CO; nitrogen  
10 dioxide, NO<sub>2</sub>; total reduced sulfur. TRS; PM<sub>10</sub>; and  
11 VOC.

12 MR. ARMSTRONG: Thank you. That covered  
13 number three so we'll move on to number four.  
14 Please describe the location of the two  
15 monitoring stations relative to both (a) the  
16 Marathon refinery's fence line, and (b) the  
17 Marathon refinery's fluid catalytic cracking  
18 unit, FCCU, including both distance and  
19 direction.

20 MR. REESE: John Derek Reese, American  
21 Petroleum Institute. A little wordy as I give  
22 you the details, but you have it. Monitoring  
23 station number one is situated on property owned  
24 and maintained by Marathon and is located

1 approximately 670 feet north of the northeastern  
2 Section of the refinery fence line and  
3 approximately 95 feet southeast of a refinery  
4 service road. Monitoring station number one is  
5 approximately 2000 feet north of the FCCU.

6 Monitoring station number two is situated  
7 on property owned and maintained by Marathon and  
8 is approximately -- is located approximately --  
9 115 feet west of the western edge of Southeast  
10 Street, 80 feet northeast of the nearest edge of  
11 East Orlando Drive, and 100 feet west of the  
12 southwestern fence line.

13 Monitoring station number two is located  
14 at approximately 1900 feet southwest of the FCCU.

15 MR. ARMSTRONG: Thank you. Question  
16 number five. Please state the date and time of  
17 each of the five FCCU startups at the Marathon  
18 refinery during calendar years 2017 through 2019  
19 as described in Marathon's Technical Support  
20 Document at TSD-14.

21 MR. MESSINA: Alec Messina on behalf of  
22 API. And again there is a chart that he's going  
23 to read off but it may be easier to look at the  
24 chart.

1           MR. REESE: John Derek Reese, American  
2     Petroleum Institute. I'll go in order. So the  
3     first startup begins January 7th, 2018 at 01:45.  
4     Startup is completed January 8th, 2018 at 07:30.  
5     The second startup is February 17th, 2019 at  
6     23:00 hours. Startup is complete February 18th,  
7     2019, 16:45.

8           The third startup is April 4th, 2019,  
9     17:30. It ends April 5th, 2019 at 04:30. The  
10    fourth startup is June 6th, 2019, 13:30. It's  
11    complete June 7th, 2019 at 00:30. The last one  
12    is December 8th, 2019 at 15:30. It's complete at  
13    December 9th, 2019 at 12:00.

14          MR. ARMSTRONG: Thank you. And I know we  
15    won't be reading this into the record today, but  
16    if API could please provide all monitoring data  
17    available from the two monitoring stations from  
18    the dates of those five FCCU startups at the  
19    Marathon refinery that were just summarized in  
20    post-hearing comments, we would appreciate that.

21          MR. REESE: John Derek Reese, American  
22    Petroleum Institute. We will do that.

23          MR. ARMSTRONG: That's all for us. Thank  
24    you.

1           HEARING OFFICER: Thank you. All right.  
2   Are there any other questions from any other  
3   participants? Okay. Seeing none, we will go to  
4   Board questions.

5           MR. RAO: Okay.

6   CROSS EXAMINATION BY

7   MR. RAO:

8           MR. RAO: Good morning, Mr. Reese.

9           MR. REESE: Good morning.

10          MR. RAO: Let's start with the Board's  
11   question number 13. On page one of your  
12   testimony you state that your current  
13   responsibilities include advocating on  
14   environmental and process safety issues that may  
15   impact the procedures and/or operations of the  
16   refineries in the United States.

17          13(a). Please comment on how many  
18   refineries with petroleum catalytic cracking  
19   units have been affected by USEPA's 2015 SSM SIP  
20   call in states other than Illinois?

21          MR. REESE: John Derek Reese, American  
22   Petroleum Institute. There are over 100  
23   refineries operating in 31 different states.  
24   Each state had distinctive changes that were

1 required by the USEPA's 2015 SSM SIP call. Those  
2 changes have been focused primarily on the rule  
3 of affirmative defense language. What is unique  
4 about Illinois' response is that it eliminated  
5 for purposes of safety, compliance and startups,  
6 use of a federal emission alternative for  
7 catalytic cracking unit startups which was  
8 specifically written to address safety concerns.

9 MR. RAO: Are you -- 13B. Are you aware  
10 of how the affected refineries in other states  
11 are addressing the SIP call requirements?

12 MR. REESE: John Derek Reese, American  
13 Petroleum Institute. I refer the Board back to  
14 the public testimony of David Wall on behalf of  
15 IERG in the original rulemaking R200-23-018.

16 In that testimony he stated that other  
17 states either do not have CO standards, FCCUs, or  
18 they exempt units subject to federal regulations.  
19 Examples from Indiana and California were  
20 provided with links.

21 The 200 part per million CO limit in  
22 Section 216.361 is unique to Illinois without the  
23 proposed AEL. As such, refineries in other  
24 states are able to utilize the federal

1 alternatives for startups. Again, Illinois is  
2 the outlier on their approach with respect to  
3 process safety. But not including the federal  
4 alternative as part of their SIP changes it's  
5 important to note that U.S. refineries have been  
6 implementing the federal alternatives  
7 successfully since 2019.

8 MR. RAO: Does that answer 13(c) or do  
9 you have any more to add to your response?

10 MR. REESE: John Derek Reese. Just a  
11 couple more sentences. So all U.S. refineries  
12 and catalytic cracking units are subject to Part  
13 63 NESHAP standards.

14 These standards have been applicable  
15 since the promulgation of the rule in 2016. The  
16 final compliance state was 2019. The alternative  
17 standard prescribed in refinery Section rules are  
18 applicable requirements in all states.

19 MR. RAO: Question 14. Please clarify  
20 whether new or existing petroleum catalytic  
21 cracking units are generally subject to the  
22 NESHAP standards for petroleum refineries, or  
23 would they have to comply with them only if the  
24 proposed alternative standards are adopted by the

1 Board?

2 MR. REESE: All U.S. refineries with  
3 catalytic cracking units are subject to the part  
4 63 NESHAP standards. These standards have been  
5 applicable since 2016 promulgation of these  
6 standards.

7 The alternative standard prescribed in  
8 the refinery section rules are applicable  
9 requirements in all states. Illinois, without  
10 the proposed alternative emission limit which  
11 incorporates these standards, removes the  
12 provision for SCC and startup in refineries.

13 While this is unlikely to be the intent,  
14 the effect of not having an AEL would essentially  
15 mandate the refinery conduct startup operations  
16 in an unsafe manner.

17 MR. RAO: Question 15. On page three of  
18 your testimony you note that if refractory  
19 repairs were made a refractory dry-out period is  
20 required and the regenerator temperature must be  
21 raised slowly to prevent water from damaging the  
22 refractory.

23 15(a). Please comment on how frequently  
24 refractory repairs are done on the cracking



1 units.

2 MR. REESE: Every refinery startup is  
3 unique and an individual company decision as to  
4 the extent of the repairs and the maintenance  
5 actions taken during the downtime.

6 Refractory inspection is a typical task  
7 during downtime or when vessel entry occurs.  
8 Inspection findings identify the type of  
9 refractory repairs to be executed.

10 MR. RAO: 15(b). What would be typical  
11 rate of regenerator temperature increase under  
12 normal startup conditions when no refractory  
13 repair is involved?

14 MR. REESE: It's not possible to provide  
15 a typical profile answer to the question. The  
16 temperature increase profile is dependent upon  
17 the individual's vessels and the extent of the  
18 refractory work conducted. So some would, you  
19 could go faster or slower, depending on the  
20 amount of work you had. Right.

21 MR. RAO: Question 16. On page 10  
22 regarding Marathon Refinery's adjusted standard  
23 petition you indicate that Marathon's FCCU had  
24 five startups over a period of three years.

1 16(a). Please clarify whether one or two  
2 startups per year are typical for a catalytic  
3 cracking unit?

4 MR. REESE: The number of unit startups  
5 can vary based on the reasons for unit downtime.  
6 As such, while large turnarounds are on  
7 multiple-year intervals is not uncommon for  
8 unplanned events to create unit shutdowns or hot  
9 standby in a given year, a power outage due to  
10 grade issues or weather such as winter storms,  
11 hurricanes, or flooding may necessitate a  
12 catalytic crack to be shut down.

13 Equipment breakdowns at the catalytic  
14 cracking unit or other units may necessitate a  
15 shutdown and subsequent startup.

16 MR. RAO: 16(b). Would it be possible to  
17 provide startup information like Marathon's for  
18 FCCUs at other refineries covered by the API's  
19 proposal?

20 MR. REESE: The existing federal refinery  
21 standards for catalytic cracking units require  
22 continuous emissions monitoring, SIMS, for CO.  
23 Performance reports for these monitors is  
24 provided on a semiannual basis to IEPA and USEPA.

1 In these reports the CO concentrations are  
2 recorded as well as the periods of shutdown,  
3 startup, malfunctions, and/or maintenance which  
4 are provided by date and hour.

5 In its pre-filed questions the Attorney  
6 General's Office records Marathon's ambient  
7 monitoring data. To our knowledge, the other  
8 Illinois refineries have not had similar monitors  
9 in their areas in recent years.

10 MR. RAO: Okay. And you will be  
11 responding to the Attorney General's question?

12 MR. REESE: Right. Yes, sir.

13 MR. RAO: Okay. Question 17. Also on  
14 page 10 you note that API's proposed alternative  
15 emissions limit requires the frequency and  
16 duration of operations in startup or hot standby  
17 mode are minimized to the greatest extent  
18 practicable.

19 17(a). Please comment on whether the  
20 affected refineries maintain information on  
21 frequency and duration of FCCUs in hot standby  
22 mode on a monthly or yearly basis. If so, please  
23 provide such data.

24 MR. REESE: As noted in the previous

1 answer to question 16, this information is part  
2 of the current regulatory report contents for CO  
3 SIPs.

4 MR. RAO: 17(b). Also comment on whether  
5 hot standby --

6 HEARING OFFICER: Did you have a  
7 question?

8 MR. ARMSTRONG: Yes. Andrew Armstrong  
9 with the Illinois Attorney General's Office. I  
10 have a follow-up question about the ExxonMobil  
11 AERMOD data. I believe it's referenced in the  
12 Technical Support Documents for ExxonMobil's  
13 proposal for adjusted standard on page 34.

14 It doesn't appear that there was more  
15 detail provided beyond the statement that  
16 ExxonMobil has used AERMOD to conduct screening  
17 modeling.

18 And then the -- the results of that,  
19 generally summarized -- I was wondering if API  
20 could submit more detail about the AERMOD  
21 screening that ExxonMobil performed, including  
22 the inputs and then more detail on the results?

23 MR. MESSINA: This is Alec Messina on  
24 behalf of API, and we will follow up after the

1 hearing and provide what information we can.

2 MR. ARMSTRONG: Sounds good. Thank you.

3 HEARING OFFICER: Okay.

4 MR. RAO: So where were we? 17 --

5 HEARING OFFICER: A.

6 MR. RAO: 17(b). Yeah. 17B. Also  
7 comment on whether hot standby operational mode  
8 falls under the purview of SSM SIP calls?

9 MR. REESE: Hot standby is specifically  
10 noted as an opt-in scenario for the alternative  
11 emission standard in the federal language.

12 MR. RAO: Okay. Thank you. That's all.

13 HEARING OFFICER: Okay. Are there any  
14 other questions from the Board? Okay. And then  
15 just again, if you could please respond here  
16 today or in written public comment to JCAR's  
17 staff changes to, and questions, to the rule text  
18 in public comment two as well as to the Board's  
19 suggested changes attached to its pre-filed  
20 questions. Thank you.

21 MR. REESE: All right.

22 HEARING OFFICER: It's close enough to  
23 10:30 that I think we'll take a break now for 10  
24 minutes and be back here at 10:35.

1 (Break taken at this time)

2 HEARING OFFICER: Back on the record. So  
3 we'll be going next to Philip Crnkovich with East  
4 Dubuque Nitrogen Fertilizers. Okay. Are you  
5 set? And so if the court reporter could please  
6 swear in the witness.

7 (Witness sworn)

8 PHILIP Crnkovich,  
9 being first duly sworn on oath, was examined and  
10 testified as follows:

11 HEARING OFFICER: Okay.

12 MR. TAYLOR: And just for the record, my name is  
13 Byron Taylor representing Mr. Crnkovich and East  
14 Dubuque Nitrogen Fertilizers.

15 HEARING OFFICER: Okay. As mentioned  
16 earlier, the witness' testimony is entered into  
17 the record as if read and it's entered as Hearing  
18 Exhibit Number Five.

19 We will proceed with questions first from  
20 the Attorney General's Office, if you'd like to  
21 come up here.

22 MR. JAMES: Hi. Jason James, Illinois  
23 Attorney General's Office. And like we had  
24 before, I'll read through the questions that we

1 had pre-filed and then perhaps ask some follow-up  
2 depending.

3 DIRECT EXAMINATION BY

4 MR. JAMES:

5 MR. JAMES: And so number one, how did  
6 EDNF determine that alternative -- the  
7 calculation method -- in using an averaging  
8 period was the best option to comply with  
9 emission standards while accounting for startups  
10 and shutdowns?

11 EDNF's testimony explains that it's not  
12 practicable to initiate emissions control  
13 technology sooner by increasing the temperature  
14 of the flue more quickly.

15 Were any other emission control methods  
16 considered? For example, using different  
17 reductant in the SCR process, or hydrogen  
18 peroxide injection?

19 Please explain whether any alternatives  
20 aside from increasing the flue heat more rapidly  
21 were considered, and the reasons they would or  
22 would not be effective or practical in this  
23 context.

24 MR. CRNKOVICH: Okay. East Dubuque

1 Nitrogen followed the method that USEPA approved  
2 in Subpart Ga, which explicitly includes an  
3 averaging method that does not have a  
4 carve-out for startup, shutdown or malfunction.

5 It's a standard that applies at all times  
6 during -- during all operating periods. This --  
7 okay, that's part one. To the second part of your  
8 question, the minimum temperature requirement is  
9 independent of the reductant that is used.

10 It is based on the catalyst that is  
11 utilized and that determines what temperature is  
12 necessary for the reaction that destroys the NOx  
13 -- the NO2 or NO -- so it is not emitted.

14 So changing the reductant would not have  
15 any effect. While hydrogen peroxide could  
16 theoretically improve the effectiveness of  
17 absorption it would not be -- it would be  
18 insufficient here.

19 It does reduce it somewhat, but it would  
20 not allow us to meet the three pounds per ton  
21 limit during startup and shutdown.

22 MR. JAMES: Thank you. Number two. EDNF  
23 states that the proposed 30 operating day rolling  
24



1 average and calculation method are drawn from  
2 Subpart Ga of Title 40, part 60, of the Code of  
3 Federal Regulations, which, quote, applies to any  
4 nitric acid production unit that commences  
5 construction or modification after October 14th  
6 of 2011.

7           However, both of EDNF's nitric acid  
8 processes were built and/or modified before 2011  
9 and so are governed by Subpart G. Is EDNF  
10 operationally similar to sources to which Subpart  
11 Ga applies, particularly with respect to startups  
12 and shutdowns?

13           What, if any, differences exist and how  
14 might they impact the effectiveness of the  
15 rolling average or calculation method?

16           MR. CRNKOVICH: The units that were  
17 designed and that were constructed or modified  
18 prior -- after the applicability date for Subpart  
19 Ga -- were designed to meet the Subpart Ga  
20 standard.

21           Our units were designed to meet the  
22 standards that were in effect at the time they  
23 were constructed. However, they all do different  
24 designs, so since we only have two acid plants

1 we're not familiar with others, so we cannot  
2 comment further on other units.

3 MR. JAMES: Thank you. Number three.

4 EDNF proposes to reduce the current NOx emissions  
5 limit in 35 Illinois Administrative Code  
6 217.381(a)(1) to 1.5 pounds per ton. How did it  
7 determine that limit was reasonable? Please  
8 provide any documentation in support.

9 EDNF bases other portions of the proposed  
10 amendments, including the 30-day rolling average,  
11 on USEPA standards which lowered the NOx  
12 emissions limit to 0.50 pounds per ton.

13 How do EDNF's processes differ from those  
14 sources governed by that rule and how do these  
15 differences justify the different standards?

16 MR. CRNKOVICH: EDNF completed analysis of  
17 our existing data to determine what the  
18 applicable pound per ton limit would be on --  
19 that we could comply with on a 30 -- on a 30  
20 operating day average, and that is the number  
21 that we did -- that we did propose.

22 MR. JAMES: Okay.

23 MR. CRNKOVICH: So for the sub facilities  
24 that are subject to Subpart Ga, they were

1 designed specifically for that. We have two acid  
2 plants in Illinois. They are the only two acid  
3 plants that we were aware of in Illinois.

4 And when I say acid I'm referring to  
5 nitric acid. And so we do not know -- we're not  
6 familiar with how the other plants were designed  
7 or constructed -- so we cannot comment further.

8 MR. JAMES: Okay. Thank you. Number  
9 four. If EDNF's proposal were adopted and a weak  
10 acid nitric manufacturing process were  
11 subsequently constructed or modified in Illinois,  
12 would EDNF's proposed generally applicable NOx  
13 emissions limit of 1.5 pounds per ton for new  
14 weak nitric acid manufacturing processes in 35  
15 Illinois Administrative Code 217.381(a)(1), which  
16 applies to any emission sources constructed or  
17 modified after April 14th, 1972, conflict with 40  
18 C.F.R., Section 60.72 a's limit of 0.50 pounds  
19 per ton for new nitric acid production units that  
20 commence construction or modification after  
21 October 14th, 2011?

22 MR. CRNKOVICH: A new source constructed  
23 after the Subpart Ga applicability date would be  
24 subject to the federal Subpart Ga standard of

1 0.5. It would also be subject to the applicable  
2 standard in Illinois, which we are proposing to  
3 be 1.5 on the same calculation basis.

4 MR. JAMES: Thank you. Number five.  
5 What impact, if any, does EDNF predict its  
6 proposed regulations will have on overall monthly  
7 and yearly NOx emissions relative to existing  
8 rules?

9 Please include data on current monthly or  
10 yearly NOx emissions and the maximum NOx  
11 emissions allowable under EDNF's proposed  
12 modifications?

13 MR. CRNKOVICH: The adoption of the  
14 proposed rule is not expected to result in a  
15 change in emissions from the nitric acid plants.

16 We are proposing the rule -- to have a  
17 rule that we can actually demonstrate compliance  
18 with and not have a mal -- a deviation every time  
19 we start up or shut down an acid plant.

20 MR. JAMES: Thank you. Number six. Are  
21 there any alternatives to a non-numerical opacity  
22 standard during startup and shutdown? For  
23 example, is it possible to use an averaging  
24 method like that used for NOx emissions for

1 opacity? If yes, why did EDNF choose to use  
2 non-numerical opacity standards during startup  
3 and shutdowns? Why are these non-numerical  
4 standards preferable to other options?

5 MR. CRNKOVICH: In the USEPA in the  
6 preamble to Subpart Ga it made it very clear that  
7 opacity from a nitric acid plant is  
8 non-particulate matter.

9 It is the actual color of the NO<sub>2</sub> gas  
10 that is being emitted. So they're -- and they  
11 are being -- can you rephrase or say your  
12 question again?

13 MR. JAMES: Oh, sure. Why choose to use  
14 non-numerical opacity standards during startup  
15 and shutdowns, and why is that preferable to  
16 other options?

17 MR. CRNKOVICH: Okay. Since NO<sub>x</sub> is the  
18 actual cause of the emission of opacity and that  
19 is being measured by CEMS and the whole goal is to  
20 minimize NO<sub>x</sub> emissions, so that by minimizing NO<sub>x</sub>  
21 emissions we also minimize opacity.

22 And there's not going to be any  
23 difference. By controlling NO<sub>x</sub> you're also  
24 controlling opacity.

1           MR. JAMES: Thanks. Number seven. How  
2 are EDNF's proposed amendments to opacity  
3 standards and limitations during startups and  
4 shutdowns, quote, legally practical --  
5 practically enforceable -- as required by USEPA  
6 guidance?

7           MR. CRNKOVICH: Since Subpart Ga  
8 regulates NOx without an opacity limit and is  
9 considered legally and practically enforceable,  
10 the same would be expected to apply to this  
11 regulation.

12           In particular, since the opacity  
13 literally is the NOx and NOx has numerical  
14 limitations, all operations are subject to  
15 enforceable limits.

16           MR. JAMES: Thank you. Number eight.  
17 Did EDNF consider whether the proposed  
18 non-numerical standards for startup and shutdown  
19 might be, quote, an inappropriately high level of  
20 emissions or an effectively unlimited or  
21 controlled level of emissions -- pardon me,  
22 uncontrolled level of emissions -- such that they  
23 would constitute impermissible de facto  
24 exemptions for emissions during startup and

shutdowns?

1           MR. CRNKOVICH: The proposed NOx limit in  
2 averaging period will provide an effective limit  
3 and enforceable limit on NOx emissions. And  
4 since opacity literally is the NOx, that will  
5 also provide an effective and enforceable limit  
6 on opacity.

7           MR. JAMES: Thanks. And number nine.  
8 Have any other states proposed similar  
9 non-numerical opacity standards for weak nitric  
10 acid processes during startups and shutdowns in  
11 response to the SIP call?

12           MR. CRNKOVICH: Since EDNF only has  
13 operations in Illinois, the SIP call response of  
14 other states was not investigated. Florida DEP  
15 received approval from EPA in Florida just last  
16 month, we're reviewing that and will be happy to  
17 provide comments following the hearing.

18           MR. JAMES: Great. Thank you. Those are  
19 all the questions I have.

20           MR. TAYLOR: Could I just state that  
21 questions three and five asked us to submit data  
22 and we'll respond by submitting that data in  
23 supplemental comments?

24

1 MR. JAMES: Thank you.

2 HEARING OFFICER: Okay. Are there any  
3 other questions from any other participants?  
4 Seeing none, we will go to the Board's questions.

5 CROSS EXAMINATION BY

6 MR. RAO:

7 MR. RAO: I'll start with question 80 on  
8 the Board's Hearing Officer order. On page four  
9 of your testimony you state that nitric acid  
10 processes emit more NOx per pound of production  
11 during startup and shutdown than they do during  
12 normal operations.

13 Please comment on whether EDNF maintains  
14 records of the frequency and duration of startups  
15 and shutdown of the two nitric acid processes?

16 MR. CRNKOVICH: Yes. As required by our  
17 CAAPP permit we do maintain records of each  
18 startup and shutdown which includes the start  
19 time and the end time of each startup or  
20 shutdown. And we would be more than happy to  
21 provide that information for the record.

22 MR. RAO: Thank you. Question 19. On  
23 page five you note that the nitric acid processes  
24 cannot meet Section 217.381 during startup and



1 shutdown because ammonia cannot be added to the  
2 SCRs unless the temperature of the SCRs is at  
3 least 350 degrees Fahrenheit.

4 Please comment on whether auxiliary  
5 heaters could be used to increase the SCR  
6 temperature to 350 degrees Fahrenheit prior to  
7 addition of ammonia during startup and shutdown.

8 MR. CRNKOVICH: Preheating the SCR would  
9 require a source of heat resulting in an increase  
10 in emission, and an extensive engineering study  
11 would be determined -- would be needed -- to  
12 determine whether it was actually feasible.

13 We would have to find a source for the  
14 preheating energy, a way to transfer the energy to  
15 the flue gas stream without impacting the process  
16 during normal operation and that can be physically  
17 added to the process.

18 It is not clear at this juncture where  
19 that would be -- whether that would be  
20 successful. It does not make sense to make  
21 significant changes to the operation for a few  
22 hours of reduction in NOx emissions, and the  
23 excess emissions are included in the averaging  
24 period.

1           MR. RAO: Question 20. On page 12 you  
2 note that EDNF's proposal is more stringent than  
3 the existing rule because the 30-day rolling  
4 average, rolled daily available NOx emissions  
5 limit, is lower than the current single value  
6 daily limit.

7           Please explain the rationale for  
8 proposing a NOx limit based on that 30-day  
9 rolling average during normal operations.

10          MR. CRNKOVICH: Since Subpart Ga supplies  
11 a compliance method that includes startup,  
12 shutdown and malfunction, we follow the EPA's  
13 calculation methodologies as it would have a good  
14 chance of acceptance by USEPA.

15          The Subpart methodology, Subpart Ga  
16 methodology, its averaging period provides  
17 adequate assurances to prevent spikes during  
18 normal operations.

19          But if the Board would prefer to keep the  
20 existing three pound per ton for limit other than  
21 startup and shutdown, we would not object to  
22 that.

23          MR. RAO: Thank you. That answers 20(b).  
24 Question 21. Are you aware of a recent USEPA

1 final rule? I refer the citation here. It's in  
2 Federal Register, Volume 88, number 149, dated  
3 August 4, 2023, approving Florida's State  
4 Implementation Plan revisions including NOx  
5 limitations for nitric acid plants.

6 If so, please comment on how the proposed  
7 NOx limitations compare with those in the Florida  
8 SIP revisions approved by USEPA?

9 MR. CRNKOVICH: We are just starting to  
10 review the Florida approach and we'll be happy to  
11 provide comments -- any comments that we have --  
12 following the hearing.

13 MR. RAO: Thank you. That's all I have.

14 HEARING OFFICER: Any other questions?  
15 The only other thing is if you could --

16 MR. CRNKOVICH: I'd also like to  
17 supplement my answer. On the terms of spikes, we  
18 also have other permit limits that would  
19 eliminate the possibility of spikes because,  
20 number one, an acid plant does have a separate  
21 limit on pounds per hour and pounds per ton that  
22 does not apply during startup or shutdown.

23 The pound per hour limit has an exception  
24 for startup and shutdown. The pounds per --

1     pound per ton -- has an exemption for startup,  
2     shutdown and malfunction. And that -- the latter  
3     limit -- came from USEPA's consent decree.

4             MR. RAO: Can you provide citations to  
5     those?

6             MR. CRNKOVICH: Yes.

7             MR. TAYLOR: Sure.

8             MR. RAO: Thank you.

9             HEARING OFFICER: Okay. So just one last  
10    thing. If you could please respond here today or  
11    in a written public comment to JCAR staff's  
12    changes to and questions to the rule text in  
13    public comment two as well as the Board suggested  
14    changes attached to its pre-filed questions.

15            MR. TAYLOR: We'll do that.

16            HEARING OFFICER: Okay. Thank you. All  
17    right. We will move on to the next witnesses.  
18    We'll have both Sharene Shealey from Midwest  
19    Generation and Cynthia Vodopivec with Dynegy come  
20    up, please. Okay.

21            Would the court reporter please swear in  
22    the witnesses?

23            (Witnesses sworn)

24            SHARENE SHEALEY AND CYNTHIA VODOPIVEC,

1 being first duly sworn on oath, were examined and  
2 testified as follows:

3 HEARING OFFICER: As mentioned earlier,  
4 the witness' testimony is entered into the record  
5 as a thread and Shealey's testimony will be  
6 entered in as Hearing Exhibit Six and Vodopivec's  
7 testimony will be entered as Hearing Exhibit  
8 Number Seven.

9 We'll proceed with questions from the  
10 Attorney General's Office first. And if the  
11 witnesses could please when you first answer the  
12 question state your name.

13 MR. ARMSTRONG: Thank you. Andrew  
14 Armstrong for the Illinois Attorney General's  
15 Office. One note from my last question, I  
16 referenced AERMOD. That's A-E-R-M-O-D, all  
17 capital letters.

18 DIRECT EXAMINATION BY

19 MR. ARMSTRONG:

20 MR. ARMSTRONG: Good morning. So I  
21 have -- we had questions for both Dynegy and  
22 Midwest Generation. Some of them are the same  
23 questions, so if you would like to answer them as  
24 a panel just provide one answer on behalf of the

1 joint proponents. That would be fine from our  
2 perspective. And I'll flag that when I ask one  
3 of those questions.

4 So question number one for Dynasty --  
5 Dynegy -- Dynegy Midwest Generation. Is it your  
6 opinion that condition 7.1.3 of the Baldwin,  
7 Kincaid and Newton Clean Air Act Permit Program  
8 permits authorized opacity exceedances and/or  
9 violations?

10 MS. VODOPIVEC: This is Cynthia Vodopivec  
11 from Dynegy. And before I respond I just want to  
12 note that in my testimony today I'm going to  
13 refer to Dynegy Midwest Generation, LLC, Illinois  
14 Power Generating Company, and Kincaid Generation,  
15 LLC, individually and collectively as Dynegy for  
16 the record.

17 It is my opinion and Dynegy's position  
18 that the Baldwin, Kincaid and Newton CAAPP  
19 permits authorize the opacity of emissions from  
20 the permittee's operation of coal fired boilers  
21 in these plants to exceed the applicable opacity  
22 standards set forth in the Illinois State  
23 Implementation Plan during periods of startup,  
24 malfunction and breakdown, subject to the terms

1 and conditions set forth in the conditions 7.1.3  
2 B and C of each permit. The basis for this  
3 conclusion is detailed in our Statement of  
4 Reasons included on pages 11 through 18.

5 To be clear, when I talk about the  
6 Statement of Reasons in my testimony today I am  
7 referring to the August 7th, 2023 Statement of  
8 Reasons of Dynegy and Midwest Generation in the  
9 sub document.

10 MR. ARMSTRONG: Question number two. You  
11 assert that the Joint Proposal is intuitively and  
12 demonstrably more stringent than the current SMB  
13 authorizations in the station's CAAPP, C-A-A-P-P,  
14 permits, and the Illinois SIP, which allow  
15 operations in excess of applicable opacity  
16 standards during SMB events.

17 That's from the Statement of Reasons that  
18 you referenced at page three. Sub question A.  
19 If condition 7.1.3 of the CAAPP permits only  
20 authorizes continued operation during startup,  
21 shutdown and malfunction events, how is the Joint  
22 Proposal more stringent than the conditions of  
23 these current CAAPP permits?

24 MS. VODOPIVEC: Cynthia Vodopivec from

1 Dynegey. This question is based on inaccurate and  
2 incomplete summary of condition 7.1.3. Condition  
3 7.1.3(b) of each CAAPP permit states that during  
4 startup, quote, the permittee is authorized to  
5 operate an effective boiler in violation of the  
6 applicable standards. End quote.

7 That sentence goes on to identify which  
8 applicable standards are the subject of that  
9 sentence, including the applicable opacity  
10 standards set forth in the Illinois SIP, State  
11 Implementation Plan.

12 Dynegey understands this to mean that  
13 opacity in excess of those standards is  
14 authorized during periods of startup subject to  
15 the other terms and conditions of condition  
16 7.1.3(b).

17 Condition 7.1.3(c) of each CAAPP permit  
18 states that in the event of a malfunction or  
19 breakdown, quote, the permittee is authorized to  
20 continue operation of an effective boiler in  
21 violation of the applicable standards. End  
22 quote.

23 That sentence goes on to identify which  
24 applicable standards are the subject of that



1 sentence, including the applicable opacity  
2 standards set forth in the Illinois SIP, State  
3 Implementation Plan.

4 Dynegey understands this to mean that  
5 opacity in excess of those standards is  
6 authorized during periods of malfunction and  
7 breakdown subject to the other terms and  
8 conditions of condition 7.1.3 C.

9 The Joint Proposal is more stringent  
10 because it includes a limit on the percent value  
11 and duration of an authorized opacity -- of  
12 authorized opacity -- during periods of startup,  
13 malfunction and breakdown and work practice  
14 requirements.

15 Those limits and work practice  
16 requirements are not required by the current  
17 CAAPP permits or the Illinois State  
18 Implementation Plan.

19 MR. ARMSTRONG: This question two, sub  
20 question B, could be answered as a panel question  
21 if you'd like. How, if at all, does the Joint  
22 Proposal avoid backsliding, which is prohibited  
23 under Section 110(1) of the Clean Air Act?

24 MR. SAWULA: Yeah, I think we can answer

1     that as a joint, and Cynthia can deliver the  
2     answer. Andrew Sawula, S-a-w-u-l-a, from  
3     ArentFox Schiff.

4             MS. VODOPIVEC: Cynthia Vodopivec from  
5     Dynergy again. Section 111 -- sorry. Section  
6     110(1) of the Clean Air Act prohibits USEPA from  
7     approving any SIP provision that, quote, would  
8     interfere with any applicable requirement  
9     concerning attainment and reasonable further  
10    progress as defined in Section 7501 of this  
11    title, or any other applicable requirement of  
12    this chapter. End quote.

13            Dynergy believes that the Joint Proposal  
14    is fully approvable pursuant to S110(1),  
15    including for the reasons detailed on pages 31  
16    through 33 of its Statement of Reasons.

17            In short, the Joint Proposal would not  
18    affect the emissions of any pollutant, would not  
19    negatively impact air quality in relation to any  
20    National Ambient Air Quality standard.

21            It would not negatively affect compliance  
22    with any other Clean Air Act requirement. And as  
23    explained in the Technical Support Document  
24    prepared by Steven Northey and discussed in the

1 Statement of Reasons, the Joint Proposal would  
2 not interfere with attainment, reasonable further  
3 progress, or any other Clean Air Act  
4 requirements.

5 MR. SAWULA: And Sharene Shealey would  
6 also like to make a statement in response to what  
7 was question number four from the Attorney  
8 General's pre-filed questions.

9 MS. SHEALEY: I'm Sharene Shealey,  
10 Midwest Generation, LLC. S-h-a-r-e-n-e,  
11 S-h-e-a-l-e-y. I just wanted to affirm the  
12 answer from Dynegy, we agree with that. Midwest  
13 Generation, LLC, agrees with that answer.

14 MR. ARMSTRONG: Moving on to question  
15 number three, which also could be answered as a  
16 panel if preferred. The Joint Proposal in part  
17 relies on compliance with work practices as a  
18 condition to using an alternative averaging  
19 period.

20 Specifically, what do you mean by, quote,  
21 good engineering practices? End quote. That's  
22 from the Statement of Reasons at page 24. Please  
23 explain how a standard of quote, good engineering  
24 practices, end quote, is, quote, legally and

1 practically enforceable. End quote. And that's  
2 quoting from 80 Federal Register 33840, 33978.

3 MR. SAWULA: We'll respond as a panel  
4 with Cynthia Vodopivec first answering for Dynegy  
5 and then Sharene Shealey will make a statement  
6 for Midwest Generation.

7 MS. VODOPIVEC: Cynthia Vodopivec from  
8 Dynegy. So Dynegy modeled this requirement on a  
9 recommendation -- on recommendation six -- for an  
10 alternative emission limitation from USEPA's 2015  
11 SIP State Implementation Plan call.

12 That recommendation calls for operating,  
13 quote, in a manner consistent with good practice  
14 for minimizing emissions.

15 Note also that similar terms are used in  
16 the Clean Air Act regulations and in Dynegy's  
17 CAAPP permits.

18 For example, 40 C.F.R., Section  
19 3063.10000(b), which is incorporated to the CAAPP  
20 permits -- I lost my space here. Requires  
21 operation, quote, in a manner consistent with  
22 safe and good air pollution control practices for  
23 minimizing emissions. End quote. And provisions  
24 of a national emission standard for hazardous air

1 pollutants use the term good engineering  
2 practices.

3 MS. SHEALEY: Sharene Shealey, Midwest  
4 Generation, LLC. Similarly, Powerton's stations  
5 CAAPP permit condition, I think it was 6.6.3(d),  
6 as in door, has -- has some -- has similar  
7 language, and so I affirm that answer on behalf  
8 of Midwest Gen.

9 MR. ARMSTRONG: A follow-up question on  
10 that. On September 7th JCAR staff emailed the  
11 Pollution Control Board and provided a request  
12 regarding the reference to good engineering  
13 practices.

14 Specifically, JCAR said please  
15 incorporate by reference the standard to be  
16 enforced. Do Dynegy or Midwest Generation have  
17 any suggestions about how that comment could be  
18 responded to?

19 MR. SAWULA: I think we will take that  
20 question under advisement and can respond to it  
21 in our joint comment at the end of the  
22 proceeding. Is there -- where would that  
23 specific question be located?

24 MR. ARMSTRONG: This is public comment

1 number two in the docket, the September 7th, 2023  
2 email. And I believe it is comment 30 on part  
3 212.

4 MR. SAWULA: Thank you.

5 MR. ARMSTRONG: Question number four.  
6 This is directed to Dynegy specifically. In your  
7 Statement of Reasons you explained that, quote,  
8 it is technically infeasible to avoid all opacity  
9 exceedances during SMB, end quote; and that  
10 Baldwin boiler two, equipped with a baghouse,  
11 came, quote, precariously close to exceeding the  
12 standard, end quote. That is from the Statement  
13 of Reasons at 19.

14 Sub question A. Is it your understanding  
15 that the boiler in this example did not  
16 ultimately exceed the opacity standard at that  
17 time?

18 MS. VODOPIVEC: Cynthia Vodopivec from  
19 Dynegy. Yes, that is my understanding.

20 MR. ARMSTRONG: Sub question B. From  
21 January of 2020 through the present on how many  
22 occasions has the Baldwin plant exceeded the  
23 applicable opacity standard?

24 MS. VODOPIVEC: From January 2020 through

1     September 26th, 2023, the coal fired boilers at  
2     the Baldwin plant have not exceeded the  
3     applicable opacity standard codified at 35 IAC  
4     212.123.

5                 MR. ARMSTRONG:   Question number five.  
6     Have you, Dynegy, considered utilizing baghouses  
7     or other pollution control technologies at other  
8     facilities to similarly avoid exceeding the  
9     opacity standard?

10                If so, why have you determined not to  
11     install additional pollution controls at other  
12     facilities?

13                MS. VODOPIVEC:   Cynthia Vodopivec,  
14     Dynegy.   As I explained to my declaration  
15     supported Dynegy Statement of Reasons, which I  
16     incorporated into my pre-filed testimony with sub  
17     docket, Dynegy does not believe that Kincaid and  
18     Newton coal fired boilers could avoid exceeding  
19     the opacity standard through the installation of  
20     baghouses or other pollution control  
21     technologies.

22                Installing fabric filter baghouses on  
23     Kincaid and Newton coal fired boilers might have  
24     the potential to further reduce opacity to an

1 extent; however, Dynegy believes it would not  
2 eliminate the risk of opacity exceedances during  
3 startup, malfunction and breakdown events.

4 Moreover, based on Dynegy's industry  
5 experience, Dynegy believes that baghouses would  
6 cost tens of millions of dollars at each plant.  
7 It would take approximately three years to  
8 design, procure and install.

9 That means that baghouses could not help  
10 control emissions of particulate matter and the  
11 associated opacity from those units until late  
12 2026 at the earliest. Yet, Dynegy currently  
13 plans to cease operation and retire the Kincaid  
14 and Newton plants in 2027.

15 As a result, even if Dynegy took  
16 immediate steps to add baghouses to these coal  
17 fired boilers at a cost of tens of millions of  
18 dollars, the baghouses would operate for one year  
19 or less, if at all.

20 MR. ARMSTRONG: What analyses form the  
21 basis of your opinion that installation of  
22 baghouses at Kincaid and Newton would not allow  
23 compliance with the opacity standard?

24 MS. VODOPIVEC: Cynthia Vodopivec from



1 Dynegey. So as I mentioned before, based on our  
2 experience with the baghouses we do not believe  
3 that that is going to help us, especially in our  
4 startup, shutdown -- or startup, malfunction and  
5 breakdown limitations.

6 And as I've also mentioned, even if we  
7 did install those baghouses they would not  
8 operate for very much time because of the already  
9 committed shutdown dates of those boilers.

10 MR. ARMSTRONG: But in your experience  
11 would you agree that the baghouses at Baldwin  
12 have been effective in preventing exceedances of  
13 the opacity limit at that plant?

14 MS. VODOPIVEC: So based on my knowledge,  
15 yes, the baghouses at Baldwin have been  
16 effective. However, as we've stated in our  
17 testimony, there's no guarantee that they will be  
18 effective for those periods of startup and  
19 breakdown and malfunction.

20 MR. ARMSTRONG: Okay. Question number  
21 six. And I believe this could be answered as a  
22 panel question if preferred. You state that,  
23 quote, short-term changes in opacity make no  
24 difference to the corresponding anticipated

1 maximum particulate matter emission range, end  
2 quote. That's at the Statement of Reasons at 32.  
3 What is the basis for that statement?

4 MS. VODOPIVEC: Cynthia Vodopivec,  
5 Dynegy. The full statement from the Statement of  
6 Reasons is, quote, short-term changes in opacity  
7 make no difference to the corresponding  
8 anticipated maximum PM emission rate and  
9 associated PM mass emissions under Mr. Northey's  
10 correlations or under the correlations that  
11 Illinois EPA relied upon in approving these  
12 plans, so long as the three hour opacity average  
13 remains at or below 20 percent or 30 percent as  
14 applicable.

15 The Technical Support documentation  
16 provides the rationale for this conclusion,  
17 including on pages nine, 10 and 12.

18 MR. ARMSTRONG: So with respect to the  
19 reference to the anticipated maximum particulate  
20 matter emission rate, would that be fair to say  
21 that you're referencing the rate on an hourly  
22 basis?

23 MR. SAWULA: For follow-up questions  
24 about the Technical Support Document we do have

1 Mr. Norfleet. He's en route. He's going to be  
2 here about 12:00. So if there are -- if you have  
3 questions that get into the specifics about his  
4 conclusions -- we'd be happy to have him answer  
5 those questions here today.

6 I apologize, he was -- he had travel  
7 delays -- and so I know he's arriving at about  
8 12:00 today.

9 MR. ARMSTRONG: If we could just have an  
10 answer to that in post-hearing comments that  
11 would be acceptable.

12 MR. SAWULA: Okay. I'd be happy to do  
13 that. Yeah.

14 MS. SHEALEY: Sharene Shealey, Midwest  
15 Generation. Just for the record, you didn't ask  
16 that question of Midwest Generation so that was  
17 not a panel response.

18 MR. ARMSTRONG: Oh, I'm sorry.

19 MS. SHEALEY: That's okay. I just want  
20 it to be clear.

21 MR. ARMSTRONG: Fair point.

22 MR. SAWULA: And just a follow-up  
23 question. Could you restate for me, please, the  
24 specific question you'd like us to respond to on

1     that for follow-up?

2                 MR. ARMSTRONG:   Yes.   So in the quote in  
3     question number six there's a reference to the  
4     corresponding anticipated maximum particulate  
5     matter emission rate.

6                 And my question was, in that quote would  
7     it be fair to say that rate is referring to an  
8     hourly rate of emissions?

9                 MR. SAWULA:   Thank you.   We'll --

10                MR. ARMSTRONG:   If not, what rate is that  
11     referring to?

12                MR. SAWULA:   Okay.   Thank you.   We'll  
13     respond to that.

14                MR. ARMSTRONG:   Question number seven to  
15     Dynegy.   Does a longer averaging period allow for  
16     more variability in terms of meeting the opacity  
17     standard?

18                MS. VODOPIVEC:   Cynthia Vodopivec from  
19     Dynegy.   The Joint Proposal will provide an  
20     exception to the applicable Illinois opacity  
21     standard, meaning that certain six minute  
22     exceedances of the applicable opacity -- meaning  
23     that certain -- excuse me.   Meaning that certain  
24     six minute exceedances in the applicable opacity

1 standard, but it would not result in more  
2 variability in actual performance.

3 As discussed in the Statement of Reasons,  
4 including on pages 13 through 19, the Joint  
5 Proposal is narrower on its face than the current  
6 SMP authorizations in the station's CAAPP permits  
7 which state that the permittees are authorized to  
8 operate in excess of their Illinois SIP opacity  
9 limits during startup, malfunction and breakdown  
10 events with no numerical opacity limit during  
11 such events, no numeric limit on duration of such  
12 events, and with fewer work practice  
13 requirements.

14 In practice, Dynegy has historically  
15 operated its coal fired boilers in reliance on  
16 these startup, malfunction and breakdown  
17 authorizations.

18 MR. ARMSTRONG: Question number eight,  
19 for Dynegy. How does a longer period of allowed  
20 variability opacity, which is an indicator for  
21 PM, avoid negative impacts to air quality?

22 MS. VODOPIVEC: Cynthia Vodopivec from  
23 Dynegy. So this is explained in detail in the  
24 Technical Support documentation and in related

1 portions of the Statement of Reasons, and I refer  
2 you to that explanation. But to summarize, I  
3 offer the following brief explanation.

4 Opacity can be an indicator for PM. The  
5 National Ambient Air Quality Standards for PM are  
6 set in 24-hour and annual period. The National  
7 Ambient Air Quality Standards, or NAAQS, is  
8 impacted by changes in daily PM emission.

9 The current state opacity rules which  
10 have been revised to eliminate the startup,  
11 malfunction and breakdown provisions allow a  
12 source to have 20 percent or 30 percent opacity  
13 as applicable for each six minute period.

14 Note that at times opacity could be  
15 higher. Based on 35 IAC, Sections 212.122(b),  
16 212.123(b), and 212.124. But I will focus my  
17 answer on what is allowed looking only at  
18 sections 212.122(a), and 212.123(a).

19 A source operating at 20 percent or 30  
20 percent opacity for every six minute period  
21 during the day will have a daily average of 20  
22 percent or 30 percent respectively. And it is  
23 that daily average that would correlate with the  
24 daily PM emissions rate, which in turn is a point

1 of reference for evaluating air quality under the  
2 PM NAAQS.

3 Under the Joint Proposal, six minute  
4 opacity values will be allowed to exceed 20  
5 percent or 30 percent under certain  
6 circumstances, but only if a three hour average  
7 does not exceed 20 percent or 30 percent  
8 respectively.

9 If opacity is no higher than 20 percent  
10 or 30 percent in a three hour average basis then  
11 it cannot be higher than 20 percent or 30 percent  
12 on a 24-hour basis.

13 On a 24-hour basis the current version of  
14 the State opacity regulations on the one hand, in  
15 our Joint Proposal on the other hand, both would  
16 allow the same maximum average opacity on a 24  
17 hour basis. And again, 24 hour PM and annual PM  
18 is what matters for the purposes of air quality.

19 MR. ARMSTRONG: Question number nine.  
20 And this would be a panel answer potentially.  
21 Given that the Joint Proposal would apply only to  
22 a subset of Illinois coal fired power plants,  
23 what makes it a rulemaking of general  
24 applicability as opposed to a site-specific

1 rulemaking?

2 MR. SAWULA: Before either witness  
3 answers I just wanted to object that the question  
4 calls for a legal conclusion and it's outside the  
5 scope of testimony, but there are statements that  
6 the witnesses would like to make in response.

7 MS. VODOPIVEC: So Cynthia Vodopivec,  
8 Dynegy. The Joint Proposal was filed with a sub  
9 docket at the direction of the Board in its July  
10 6th, 2023 order.

11 Given that the Joint Proposal was  
12 previously submitted and discussed at length  
13 before the Board in the main docket, we have  
14 deferred to and agreed with the Board's judgment  
15 that this is the proper forum to submit the Joint  
16 Proposal.

17 MS. SHEALEY: Sharene Shealey, Midwest  
18 Generation. I affirm that answer for Midwest  
19 Generation.

20 MR. ARMSTRONG: Okay. Thank you. That  
21 is all the questions for Dynegy, so I'll move on  
22 to Midwest Generation. Question number one, is  
23 it your opinion that condition 7.1.3 of the  
24 Powerton CAAPP permit authorizes opacity



1   exceedances and/or violations?

2           MS. SHEALEY:   Sharene Shealey, Midwest  
3   Generation, LLC.   And forgive me if I say Midwest  
4   Gen, but that's -- it's Midwest Generation, LLC.  
5   It is my opinion and Midwest Generation's opinion  
6   that the Powerton CAAPP permit authorizes the  
7   opacity of emissions from its operation of the  
8   Powerton coal fired boilers to exceed the  
9   applicable opacity standards set forth in the  
10   Illinois State Implementation Plan during periods  
11   of startup, malfunction and breakdown, subject to  
12   the terms and conditions set forth in conditions  
13   7.1.3(b), bravo, and (c), cat, of the permit.

14           MR. ARMSTRONG:   Question number three,  
15   I'll skip to that one.   You have previously  
16   stated that opacity exceedances still occur when  
17   using a longer averaging period.

18           That's a reference to Midwest  
19   Generation's responses to questions received at  
20   hearing at page four from March 1st, 2023.   How  
21   does a longer averaging period address the  
22   opacity standard exceedances at issue?

23           MS. SHEALEY:   To clarify, are you  
24   referring to the following statements from page

1 four of Midwest Generation's March 1st, 2023  
2 responses to questions received at hearing?  
3 Quote, notably these are just two examples of  
4 what -- of the need for a longer averaging  
5 period.

6 Excess opacity events may last longer or  
7 result in higher opacity, thus creating the need  
8 for a proposed alternative averaging period, end  
9 quote.

10 MR. ARMSTRONG: Yes.

11 MS. SHEALEY: And can you also clarify  
12 what you mean in reference to the opacity  
13 exceedances at issue? Opacity standard  
14 exceedances at issue.

15 MR. ARMSTRONG: The opacity standard  
16 exceedances that Midwest Generation has reported  
17 at its Powerton station.

18 MS. SHEALEY: So the exceedances in --  
19 that occur -- are the opacity and we can't do  
20 anything about those. In the future what we  
21 meant on page four of the March 1st responses and  
22 in supplement to that response -- and in our  
23 supplement to that response -- was that the  
24 examples Midwest Generation provided were just

1     that, examples of actual monitoring data  
2     supporting the need for a proposed averaging  
3     period in the Joint Proposal.

4             MR. ARMSTRONG:   Okay.   I'll move to  
5     question four.   I'm sorry.   I'll move to question  
6     five.   Has Midwest Generation considered  
7     utilizing baghouses or other pollution control  
8     technologies at the Powerton plant to avoid  
9     opacity exceedances?

10            If so, why have you determined not to  
11     install additional pollution controls at the  
12     Powerton plant?

13            MS. SHEALEY:   As I explained in my direct  
14     declaration in support of Midwest Generation's  
15     Statement of Reasons, which I incorporated into  
16     my pre-filed testimony in the sub docket, Midwest  
17     Generation does not believe it can take any steps  
18     through installation or upgrading of pollution  
19     controls or changing operating practices that  
20     would eliminate the risk of opacity exceedance  
21     storm periods of startup, malfunction and  
22     breakdown.

23            My declaration explains all the steps  
24     Midwest Generation has always taken -- has

1 already taken -- pursuant to a May 10th, 2018  
2 Federal Consent Decree such as upgrading its  
3 ESPs, electrostatic precipitators, and setting an  
4 alarm to trigger at 25 percent opacity as a six  
5 minute average to alert operational personnel to  
6 take appropriate action to minimize the  
7 likelihood of an exceedance of a 30 percent  
8 opacity limit.

9           Notwithstanding that Midwest Generation's  
10 rigorous implemation -- implementation -- of the  
11 Consent Decree requirements, the Powerton coal  
12 fired boilers still experience occasional  
13 unavoidable opacity exceedances resulting from  
14 startup, malfunctions, or breakdowns.

15           As further explained in my declaration,  
16 installation and operation of fabric filter  
17 baghouses might have the potential to reduce  
18 opacity to an extent; however, Midwest Generation  
19 does not believe the installation of baghouses  
20 would eliminate the risk of opacity exceedances  
21 during SMB events, and so installation of  
22 baghouses would not obviate the need -- obviate  
23 the need -- for the relief Midwest Generation is  
24 requesting through the Joint Proposal. Moreover,

1 Midwest Generation believes it would take  
2 approximately three years to design, procure and  
3 install baghouses. Midwest Generation currently  
4 plans to cease operating and retire the Powerton  
5 station coal fired boilers on or before December  
6 31st, 2028.

7 The tremendous cost of installing  
8 baghouses cannot be justified given the limited  
9 years remaining prior to the retirement of these  
10 boilers and a limited further control improvement  
11 that the baghouses may provide, if any, compared  
12 to the controls in operational practices  
13 specified in the Consent Decree.

14 Finally, I want to emphasize that the  
15 Consent Decree was - as agreed to by the State of  
16 Illinois, United States and the organization  
17 Citizens Against Ruining the Environment -- does  
18 not require the installation of baghousees to  
19 avoid exceedances of the opacity standard.

20 MR. ARMSTRONG: And what analysis  
21 underlie Midwest Generation's conclusion that  
22 installation of baghouses at Powerton would not  
23 eliminate opacity exceedances?

24 MS. SHEALEY: I'm sorry, could you

1 please --

2 MR. ARMSTRONG: What analyses underlie  
3 Midwest Generation's conclusion that installation  
4 of baghouses at the Powerton facility would not  
5 eliminate opacity exceedances?

6 MS. SHEALEY: We don't have specific  
7 experience with baghouse ESPs combinations, but  
8 we relied on the analysis done for Baldwin plant  
9 and the Statement of Reasons.

10 MR. ARMSTRONG: Okay. I can skip number  
11 six. Question seven. And I'm referring to in  
12 this question to include good engineering  
13 practices referenced in the proposed alternative  
14 limitation.

15 How, if at all, would these work  
16 practices measurably impact elevated opacity  
17 levels during startup, shutdown and malfunction  
18 events?

19 MS. SHEALEY: Sharene Shealey, Midwest  
20 Generation. The work practices will be codified  
21 requirements. Midwest Generation already  
22 operates its boilers in a manner that would  
23 comply with these parameters; thus we do not  
24 anticipate any additional increase in opacity

1 levels during startup, malfunction or breakdown  
2 events. Please also note that the Joint Proposal  
3 does not address shutdown events except as it's  
4 related to breakdowns.

5 MR. ARMSTRONG: Question number eight.  
6 The Joint Proposal Statement of Reasons asserts  
7 that, quote, none of the affected units is  
8 located in an area designated as an EJ area.  
9 That's from the Statement of Reasons at 40.

10 Are you aware that the Illinois  
11 Environmental Protection Agency's EJ Start tool  
12 currently shows that Powerton is located in an EJ  
13 area?

14 MS. SHEALEY: I'm sorry. Sharene  
15 Shealey, Midwest Generation. Shortly before  
16 filing the Statement of Reasons, Midwest  
17 Generation reviewed IEPA's Start tool and  
18 confirmed that at that time Powerton was outside  
19 of any environmental justice area.

20 Specifically, the stack serving  
21 Powerton's coal fired boilers was more than one  
22 mile from the nearest EJ area. On August 1st of  
23 2023, just days before filing the Statement of  
24 Reasons, IEPA updated the EJ Start tool based on

1 2022 data. Midwest Generation was unaware of  
2 that update at the time it filed its Statement of  
3 Reasons. Using the 2022 data, the Powerton stack  
4 is located within a buffer area for an EJ area  
5 based on low income.

6 MR. ARMSTRONG: Question number nine.  
7 Has Midwest Generation analyzed how the EJ area  
8 in which Powerton is located will be impacted by  
9 the Joint Proposal?

10 MR. SAWULA: I guess, if I may ask a  
11 question of clarification, to ensure that we're  
12 all using the term EJ area in the same way, could  
13 you just define for us what you mean by, you  
14 know, which areas from the EJ Start tool you're  
15 referring to as qualifying as an EJ area?

16 MR. ARMSTRONG: So the Illinois EPA EJ  
17 Start tool uses two different metrics to  
18 determine whether a specific area should be  
19 considered an area of environmental justice  
20 concern.

21 And then for any area that is flagged as  
22 being in one of those parameters there's also a  
23 buffer zone around that specific area. So when I  
24 refer to EJ area I refer to any geographic area



1 identified by Illinois EPA as being an area of  
2 environmental justice concern on the EJ Starting  
3 map.

4 MR. SAWULA: And do you include the  
5 buffer area as -- as -- when you use the term EJ  
6 area do you -- do you use that term to include  
7 the buffer area or just the area that's  
8 designated based on low income or minority  
9 population?

10 MR. ARMSTRONG: Consistent with --  
11 consistent with Illinois EPA's approach, we -- I  
12 am including the buffer zone.

13 MR. SAWULA: Okay. Okay. And so for the  
14 record then our answer will -- or Midwest  
15 Generation's answer -- will similarly use the  
16 term to include the buffer zone.

17 MR. ARMSTRONG: Okay.

18 MS. SHEALEY: Yeah. Sharene Shealey,  
19 Midwest Gen. Because it's -- my whole  
20 understanding -- is that the station itself is  
21 not within the EJ area, it's within the buffer  
22 zone. That -- so just -- that's where I was  
23 getting confused, so forgive me.

24 MR. ARMSTRONG: No problem.

1 MS. SHEALEY: How is this -- okay. Could  
2 you -- after all of that could you please reask  
3 your question?

4 MR. ARMSTRONG: Yes, no problem. So  
5 referring to the EJ area as the geographic area  
6 that is identified by IEPA's EJ Start tool as an  
7 area of environmental justice concern, has  
8 Midwest Generation analyzed how the EJ area in  
9 proximity to the Powerton plant will be impacted  
10 by the Joint Proposal?

11 MS. SHEALEY: Yes. Sharene Shealey,  
12 Midwest Generation. Yes. As indicated in the  
13 Statement of Reasons, including on page 40 and as  
14 demonstrated in a Technical Support Document, the  
15 Joint Proposal will not result in any impacts to  
16 human health or the environment anywhere, and so  
17 it will not have any disproportionate impacts or  
18 create any EJ environmental justice concern for  
19 Illinois Environmental Justice communities.

20 That conclusion remains the same  
21 irrespective of whether Powerton is inside or  
22 outside the EJ area.

23 MR. ARMSTRONG: Thank you. That's all  
24 the questions we have.

1 HEARING OFFICER: And just to clarify,  
2 you're not waiting for the witness and just  
3 having them answer in a comment later on?

4 MR. ARMSTRONG: Yes. Thank you.

5 HEARING OFFICER: Okay. All right. Are  
6 there any other questions from any other  
7 participants? Seeing none, we'll go to the  
8 Board's questions.

9 CROSS EXAMINATION BY

10 MR. RAO:

11 MR. RAO: I have one question. It's  
12 question number 12 on the Board's Hearing Officer  
13 order. On page 22 of the Statement of Reasons  
14 refers to Miss Vodopivec's pre-filed testimony  
15 that indicates Dynegy's affected units are  
16 controlled by both ESPs and baghouses.

17 (A) Please clarify if all five Dynegy  
18 boilers in Baldwin, Kincaid and Newton plants  
19 which are covered by the proposed alternative  
20 emission limits are equipped with both ESPs and  
21 baghouses?

22 MS. VODOPIVEC: Cynthia Vodopivec from  
23 Dynegy. So the only two coal fired boilers  
24 equipped with both ESP and baghouses are the two

1 coal fired boilers at Baldwin. The coal fired  
2 boilers at Kincaid and Newton are equipped with  
3 ESPs but not baghouses.

4 MR. RAO: Okay. 12B. Comment on whether  
5 the Dynegy proposal could be further narrowed by  
6 limiting the proposal alternative emission  
7 standards to apply to boilers equipped with only  
8 ESPs.

9 Alternatively, could the boilers equipped  
10 with both ESPs and baghouses have a shorter  
11 averaging time than the proposed three hours?

12 MR. SAWULA: Just a quick question. Is  
13 that question directed to Dynegy or to both  
14 companies or --

15 MR. RAO: I would say Dynegy because I  
16 don't think Midwest Generation -- yeah.

17 MR. SAWULA: Thank you.

18 MS. VODOPIVEC: Cynthia Vodopivec from  
19 Dynegy. So Dynegy needs an alternative emission  
20 standard for the Baldwin coal fired boilers  
21 because it cannot assure compliance with a 30  
22 percent opacity standard on a six-minute basis  
23 100 percent of the time during periods of SMB.

24 Dynegy agrees that the risk of

1    exceedances is lower at Baldwin than at coal  
2    fired boulders not equipped with both an ESP and  
3    baghouse.

4                Consequently, while Dynegy believes that  
5    the proposed three hour standard is justified for  
6    Baldwin coal fired boilers, it is willing to  
7    accept a one hour -- a one hour averaging period  
8    -- for the Baldwin boilers.

9                This would increase the risk of  
10   non-compliance due to unavoidable opacity during  
11   SMB events, but would not result in any  
12   difference in opacity levels as the company has  
13   already taken numerous steps to minimize opacity  
14   and there are no further steps involved.

15               MR. RAO: Will you be able to submit  
16   changes to your Joint Proposal?

17               MR. SAWULA: Yes, we would be happy to do  
18   that.

19               MR. RAO: Thank you.

20               HEARING OFFICER: Okay. Any further  
21   questions from the Board members? Okay. Then  
22   just one last thing again. If you could please  
23   respond here today or in a written public comment  
24   to JCAR staff changes to and questions to the

1 rule text in public comment number two as well as  
2 to the Board's suggested changes attached to its  
3 pre-filed questions.

4 MR. SAWULA: We would be happy to. And I  
5 have one follow-up question. For the proposed  
6 changes regarding the one-hour proposal for  
7 Baldwin, is that something you would like to see  
8 in the Company's joint comment at the end of the  
9 process for the sub docket, or is that something  
10 you'd like to see sooner after this first  
11 hearing?

12 MR. RAO: If you can do it sooner it will  
13 be helpful.

14 MR. SAWULA: Okay. We will do so. Thank  
15 you.

16 HEARING OFFICER: Okay. Thank you so  
17 much. All right. So we will move on to public  
18 comments. I did not see any names on the sign-up  
19 sheet but I just want to double-check if there's  
20 anyone here who would like to provide a public  
21 comment?

22 Okay. Seeing none, I'd like to go off  
23 the record for just a second.

24 (Discussion off the record)

1           HEARING OFFICER: So we'll go back on the  
2 record to adjourn then. Copies of the transcript  
3 of today's hearing are expected to be available  
4 no later than Tuesday, October 3rd.

5           When the Board receives the transcript we  
6 will promptly post it to COOL from which it can  
7 be viewed and printed.

8           The second hearing is scheduled on  
9 Wednesday, November 1st, 2023, beginning at 9:00  
10 a.m. at the Michael A. Bilandic Building in  
11 Chicago.

12           The deadline to pre-file testimony for  
13 the second hearing is October 18th, 2023, and to  
14 pre-file questions is Wednesday, October 25th,  
15 2023. Before the second hearing adjourns we will  
16 set a post-hearing comment deadline.

17           Are there any other matters that need to  
18 be addressed at this time? Yes?

19           MR. SAWULA: Can I ask a follow-up  
20 question off the record on the second hearing?

21           HEARING OFFICER: Yes. We'll go off the  
22 record, please.

23           (Discussion off the record)

24           HEARING OFFICER: We'll go back on the

1 record. Okay. I would like to thank everyone  
2 for participating today, and this first hearing  
3 is adjourned.

4

5 (Hearing end time: 11:42 a.m.)

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24



## 1 CERTIFICATE OF REPORTER

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

I, Kathy L. Johnson, a Certified Court Reporter, and Notary Public within and for the State of Illinois, DO HEREBY CERTIFY that the testimony of all witnesses in the foregoing hearing were duly sworn to testify to the truth and nothing but the truth; that the testimony of said witnesses was taken by stenographic means by me to the best of my ability and thereafter reduced to print under my direction.

I further certify that I am neither attorney nor counsel for, nor related, nor employed by any of the parties to the action in which this deposition was taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially interested in this action.

*Kathy Johnson*  
-----  
Kathy Johnson

Notary Public within and  
For the State of Illinois.



# Magna

## Key Contacts

Schedule a Deposition:

**Scheduling@MagnaLS.com | 866-624-6221**

Order a Transcript:

**CustomerService@MagnaLS.com | 866-624-6221**

General Billing Inquiries:

**ARTeam@MagnaLS.com | 866-624-6221**

Scheduling Operations Manager:

**Patricia Gondor (E: PGondor@MagnaLS.com | C: 215-221-9566)**

Customer Care:

**Cari Hartley (E: CHartley@MagnaLS.com | C: 843-814-0841)**

Director of Production Services:

**Ron Hickman (E: RHickman@MagnaLS.com | C: 215-982-0810)**

National Director of Discovery Support Services:

**Carmella Mazza (E: CMazza@MagnaLS.com | C: 856-495-1920)**

Billing Manager:

**Maria Capetola (E: MCapetola@MagnaLS.com | C: 215-292-9603)**

Director of Sales Operations:

**Kristina Moukina (E: KMoukina@MagnaLS.com | C: 215-796-5028)**

| A  |  |  |  |
|--|--|--|--|
| <b>ability</b><br>28:15 34:6 41:8<br>129:10<br><b>able</b><br>19:24 39:2 70:24<br>125:15<br><b>above-captioned</b><br>1:10<br><b>absorption</b><br>80:18<br><b>accept</b><br>125:7<br><b>acceptable</b><br>30:19 107:11<br><b>acceptance</b><br>90:14<br><b>accepted</b><br>7:7<br><b>accommodate</b><br>48:9 50:7<br><b>accompanying</b><br>64:18<br><b>accounted</b><br>25:10<br><b>accounting</b><br>79:9<br><b>acetaldehyde</b><br>56:24<br><b>achieve</b><br>38:15 41:12 42:6<br><b>achieved</b><br>37:24 38:17 42:3,14<br>43:15<br><b>achieving</b><br>38:9<br><b>acid</b><br>81:4,7,24 83:1,2,4,5<br>83:10,14,19 84:15<br>84:19 85:7 87:10<br>88:9,15,23 91:5,20<br><b>acknowledges</b><br>14:7<br><b>Act</b><br>22:21 25:6 45:23 | 58:22 94:7 97:23<br>98:6,22 99:3 100:16<br><b>action</b><br>31:20 116:6 129:14<br>129:18<br><b>actions</b><br>58:18 73:5<br><b>actual</b><br>39:22 85:9,18 109:2<br>115:1<br><b>Act's</b><br>14:22<br><b>add</b><br>46:23 50:16 54:12<br>71:9 104:16<br><b>added</b><br>34:15 38:1 89:1,17<br><b>adding</b><br>21:12<br><b>addition</b><br>36:7 38:14 47:17<br>89:7<br><b>additional</b><br>45:9 63:1 103:11<br>115:11 118:24<br><b>address</b><br>31:21 55:22 58:18<br>70:8 113:21 119:3<br><b>addressed</b><br>17:15 22:23 54:11<br>127:18<br><b>addresses</b><br>57:8<br><b>addressing</b><br>31:17 70:11<br><b>adequate</b><br>90:17<br><b>adjourn</b><br>127:2<br><b>adjourned</b><br>128:3<br><b>adjourns</b><br>127:15<br><b>adjusted</b><br>27:6,10,11,11 64:19<br>64:24 73:22 76:13 | <b>Admin</b><br>1:4 48:19<br><b>Administrative</b><br>6:6 13:6 14:18 27:5<br>50:15 82:5 83:15<br><b>admit</b><br>65:20<br><b>admitted</b><br>8:20<br><b>adopt</b><br>51:1<br><b>adopted</b><br>22:11 58:6 59:17,24<br>71:24 83:9<br><b>adopting</b><br>27:3<br><b>adoption</b><br>84:13<br><b>adverse</b><br>53:6,11 55:18 56:3<br>57:22 59:10 60:21<br><b>adversely</b><br>52:4<br><b>advised</b><br>30:22<br><b>advisement</b><br>101:20<br><b>advocating</b><br>69:13<br><b>AEL</b><br>48:8 50:4 70:23<br>72:14<br><b>AELs</b><br>25:5 26:15 43:24<br>46:4,6<br><b>AERMOD</b><br>44:24 45:11 76:11,16<br>76:20 93:16<br><b>affect</b><br>98:18,21<br><b>affirm</b><br>99:11 101:7 112:18<br><b>affirmative</b><br>70:3<br><b>afternoon</b><br>10:23 | <b>AG</b><br>15:13 17:22 23:6,22<br>24:24 30:12<br><b>agencies</b><br>58:17<br><b>Agency</b><br>1:12,16 14:9 57:14<br><b>Agency's</b><br>119:11<br><b>agree</b><br>13:4 99:12 105:11<br><b>agreed</b><br>14:3 38:20 65:21<br>112:14 117:15<br><b>agreement</b><br>15:18,20 20:24 36:14<br>36:15 37:2 38:20<br>40:12,14,16<br><b>agrees</b><br>99:13 124:24<br><b>AG's</b><br>26:17<br><b>ahead</b><br>9:21 12:18,20,22<br>13:19 54:1,11<br><b>air</b><br>14:22 22:21 24:14,17<br>24:23 25:6 33:10<br>45:1,23 46:2,5 52:4<br>52:8,12,15 53:7<br>54:5 58:22 60:9<br>65:23 66:4 94:7<br>97:23 98:6,19,20,22<br>99:3 100:16,22,24<br>109:21 110:5,7<br>111:1,18<br><b>AirSource</b><br>48:16,24<br><b>alarm</b><br>116:4<br><b>Alec</b><br>67:21 76:23<br><b>alert</b><br>116:5<br><b>allegations</b><br>65:20 |

|   |   |   |   |
|---|---|---|---|
| <b>alleged</b><br>65:18<br><b>allow</b><br>34:18 80:21 95:14<br>104:22 108:15<br>110:11 111:16<br><b>allowable</b><br>42:19 48:17 84:11<br><b>allowed</b><br>109:19 110:17 111:4<br><b>allows</b><br>34:13 50:5<br><b>alternate</b><br>40:24<br><b>alternative</b><br>14:1 22:17 25:18,22<br>27:22 28:1 33:18,19<br>34:19 35:4 39:6<br>41:19 43:13 53:13<br>57:5 58:3 70:6 71:4<br>71:16,24 72:7,10<br>75:14 77:10 79:6<br>99:18 100:10 114:8<br>118:13 123:19<br>124:6,19<br><b>Alternatively</b><br>124:9<br><b>alternatives</b><br>71:1,6 79:19 84:21<br><b>ambient</b><br>21:20 24:14,17 28:13<br>37:8,14 41:14 44:24<br>52:8 53:6,11 64:10<br>65:23 66:4 75:6<br>98:20 110:5,7<br><b>ambiguity</b><br>62:3<br><b>amenable</b><br>62:11<br><b>amended</b><br>61:17 62:13<br><b>amendment</b><br>26:6 27:4 52:3<br><b>amendments</b><br>1:4 6:6 13:3 22:11<br>26:4 27:20 82:10 | 86:2<br><b>American</b><br>7:3 63:9 64:21 65:11<br>66:20 68:1,21 69:21<br>70:12<br><b>ammonia</b><br>89:1,7<br><b>amount</b><br>20:3,3 73:20<br><b>analyses</b><br>104:20 118:2<br><b>analysis</b><br>82:16 117:20 118:8<br><b>analyzed</b><br>120:7 122:8<br><b>Anand</b><br>5:16 6:20<br><b>Andrew</b><br>4:14,19 64:1 76:8<br>93:13 98:2<br><b>andrew.armstrong...</b><br>4:16<br><b>Andrew.Sawula@...</b><br>4:21<br><b>and/or</b><br>69:15 75:3 81:8 94:8<br>113:1<br><b>annual</b><br>16:15 18:7 22:7 61:3<br>61:6,12 110:6<br>111:17<br><b>annually</b><br>16:12<br><b>answer</b><br>11:14,15 12:23 19:5<br>22:24 34:5 39:15<br>44:8 48:11 57:7<br>71:8 73:15 76:1<br>91:17 93:11,23,24<br>97:24 98:2 99:12,13<br>101:7 107:4,10<br>110:17 111:20<br>112:18 121:14,15<br>123:3<br><b>answered</b><br>43:17 46:20 97:20 | 99:15 105:21<br><b>answering</b><br>100:4<br><b>answers</b><br>62:22 90:23 112:3<br><b>anticipate</b><br>10:20 24:19 118:24<br><b>anticipated</b><br>38:24 105:24 106:8<br>106:19 108:4<br><b>API</b><br>64:6 67:22 68:16<br>76:19,24<br><b>API's</b><br>64:14 74:18 75:14<br><b>apologize</b><br>107:6<br><b>appealed</b><br>14:11<br><b>appear</b><br>76:14<br><b>appearance</b><br>45:22<br><b>Appeared</b><br>4:10,17<br><b>applicability</b><br>81:18 83:23 111:24<br><b>applicable</b><br>21:7 24:16 25:24<br>28:16 71:14,18 72:5<br>72:8 82:18 83:12<br>84:1 94:21 95:15<br>96:6,8,9,21,24 97:1<br>98:8,11 102:23<br>103:3 106:14<br>108:20,22,24<br>110:13 113:9<br><b>application</b><br>45:8<br><b>applies</b><br>25:19,21,23 30:15<br>48:22 80:5 81:3,11<br>83:16<br><b>apply</b><br>17:10 27:9,15 86:10<br>91:22 111:21 124:7 | <b>appreciate</b><br>68:20<br><b>approach</b><br>25:13 43:11 71:2<br>91:10 121:11<br><b>appropriate</b><br>16:24 18:2 20:8,12<br>22:18 28:4,9 41:20<br>43:12 45:23 50:6<br>53:21 55:14 116:6<br><b>appropriately</b><br>41:24<br><b>approvable</b><br>98:14<br><b>approval</b><br>87:15<br><b>approved</b><br>53:17 62:7 80:1 91:8<br><b>approving</b><br>91:3 98:7 106:11<br><b>approximately</b><br>22:4 38:2,4 49:16<br>67:1,3,5,8,14<br>104:7 117:2<br><b>April</b><br>68:8,9 83:17<br><b>area</b><br>52:7 58:4 60:21<br>119:8,8,13,19,22<br>120:4,4,7,12,15,18<br>120:19,21,23,24,24<br>121:1,5,6,7,7,21<br>122:5,5,7,8,22<br><b>areas</b><br>57:17,23 59:11 60:8<br>60:10,13,18 75:9<br>120:14<br><b>ArentFox</b><br>4:18 5:3 98:3<br><b>argues</b><br>14:24<br><b>Armstrong</b><br>2:9,17 4:14 63:24<br>64:1,1,5 65:2 66:12<br>67:15 68:14,23 76:8<br>76:8 77:2 93:13,14 |
|---|---|---|---|

|  |  |   |   |
|--|--|---|---|
| 93:19,20 95:10<br>97:19 99:14 101:9<br>101:24 102:5,20<br>103:5 104:20<br>105:10,20 106:18<br>107:9,18,21 108:2<br>108:10,14 109:18<br>111:19 112:20<br>113:14 114:10,15<br>115:4 117:20 118:2<br>118:10 119:5 120:6<br>120:16 121:10,17<br>121:24 122:4,23<br>123:4<br><b>arriving</b><br>107:7<br><b>aside</b><br>79:20<br><b>asked</b><br>17:23 62:21 87:22<br><b>asking</b><br>9:8 19:18<br><b>asks</b><br>57:9<br><b>aspects</b><br>22:24<br><b>assert</b><br>95:11<br><b>assertion</b><br>64:16<br><b>asserts</b><br>27:20 64:6 119:6<br><b>assess</b><br>45:5,8<br><b>assessing</b><br>43:23<br><b>assigned</b><br>6:16<br><b>ASSISTANT</b><br>4:7,12<br><b>associated</b><br>16:22 31:1 33:12,13<br>33:16 104:11 106:9<br><b>assume</b><br>20:8,12<br><b>assumes</b> | 29:14<br><b>Assuming</b><br>13:14<br><b>assure</b><br>124:21<br><b>attached</b><br>77:19 92:14 126:2<br><b>attainment</b><br>44:6 52:21 53:1 98:9<br>99:2<br><b>attorney</b><br>4:6,7,12,12,13 8:10<br>10:13 11:13 12:12<br>12:17 51:18,23<br>63:19 64:2 75:5,11<br>76:9 78:20,23 93:10<br>93:14 99:7 129:13<br>129:16<br><b>audience</b><br>6:22<br><b>August</b><br>6:24 7:6,8,11,12,13<br>7:20,24 14:2 91:3<br>95:7 119:22<br><b>AUSTIN</b><br>5:7<br><b>authority</b><br>14:9,21<br><b>authorization</b><br>15:4<br><b>authorizations</b><br>95:13 109:6,17<br><b>authorize</b><br>94:19<br><b>authorized</b><br>15:17 94:8 96:4,14<br>96:19 97:6,11,12<br>109:7<br><b>authorizes</b><br>95:20 112:24 113:6<br><b>auxiliary</b><br>89:4<br><b>available</b><br>37:12 47:7 68:17<br>90:4 127:3<br><b>Avenue</b> | 1:17<br><b>average</b><br>16:14,24 19:1,2,6<br>21:2,22 23:23 81:1<br>81:15 82:10,20 90:4<br>90:9 106:12 110:21<br>110:23 111:6,10,16<br>116:5<br><b>averages</b><br>17:3 18:2<br><b>averaging</b><br>41:5,18,24 43:10<br>46:18 47:10 48:7<br>49:2,3 50:5,6 79:7<br>80:3 84:23 87:2<br>89:23 90:16 99:18<br>108:15 113:17,21<br>114:4,8 115:2<br>124:11 125:7<br><b>avoid</b><br>9:6 22:19 62:3 97:22<br>102:8 103:8,18<br>109:21 115:8<br>117:19<br><b>aware</b><br>32:2 70:9 83:3 90:24<br>119:10<br><b>Awesome</b><br>63:6<br><b>a's</b><br>83:18<br><b>A-E-R-M-O-D</b><br>93:16<br><b>a.m</b><br>1:15 10:21 127:10<br>128:5<br><hr/> <b>B</b> <hr/> <b>b</b><br>3:1 44:8 54:2 66:16<br>95:2 97:20 102:20<br><b>back</b><br>9:18 19:22 30:18<br>40:9 70:13 77:24<br>78:2 127:1,24<br><b>backsliding</b> | 22:20 97:22<br><b>baghouse</b><br>102:10 118:7 125:3<br><b>baghousees</b><br>117:18<br><b>baghouses</b><br>103:6,20,22 104:5,9<br>104:16,18,22 105:2<br>105:7,11,15 115:7<br>116:17,19,22 117:3<br>117:8,11,22 118:4<br>123:16,21,24 124:3<br>124:10<br><b>Baldwin</b><br>94:6,18 102:10,22<br>103:2 105:11,15<br>118:8 123:18 124:1<br>124:20 125:1,6,8<br>126:7<br><b>based</b><br>8:7 17:4 18:7 19:7,19<br>28:6,10 46:16 52:11<br>53:13 58:1 74:5<br>80:11 90:8 96:1<br>104:4 105:1,14<br>110:15 119:24<br>120:5 121:8<br><b>baseline</b><br>45:17 66:2<br><b>bases</b><br>26:5 82:9<br><b>basis</b><br>16:16 74:24 75:22<br>84:3 95:2 104:21<br>106:3,22 111:10,12<br>111:13,17 124:22<br><b>bear</b><br>8:22<br><b>beginning</b><br>127:9<br><b>begins</b><br>68:3<br><b>behalf</b><br>4:10,17 11:11 26:11<br>67:21 70:14 76:24<br>93:24 101:7 |
|--|--|---|---|

|  |  |  |   |
|--|--|--|---|
| <b>believe</b><br>13:10,15 17:17 19:7<br>19:12 22:16 26:18<br>27:3 39:19 49:1<br>53:20 60:2 61:21<br>76:11 102:2 103:17<br>105:2,21 115:17<br>116:19<br><b>believes</b><br>47:1 98:13 104:1,5<br>117:1 125:4<br><b>Belleville</b><br>4:9 7:12<br><b>benzene</b><br>56:24<br><b>best</b><br>24:3 79:8 129:10<br><b>beyond</b><br>76:15<br><b>bftaylor@sidley.com</b><br>5:9<br><b>Bilandic</b><br>127:10<br><b>Board</b><br>1:1 4:3 5:12 6:8,15<br>6:15,16,16,17 7:6<br>7:24 8:4,9,12,13,23<br>9:24 16:19,20 17:15<br>17:22 34:24 36:9<br>37:3 50:21 59:24<br>62:20,24 69:4 70:13<br>72:1 77:14 90:19<br>92:13 101:11 112:9<br>112:13 125:21<br>127:5<br><b>Board's</b><br>6:19,20,23 8:17 9:1<br>9:23 10:9,15 13:22<br>14:3 17:16 30:9<br>69:10 77:18 88:4,8<br>112:14 123:8,12<br>126:2<br><b>boiler</b><br>52:14,23 53:16,23<br>54:2,7,14 55:4,24<br>56:20 61:16 62:6,12 | 96:5,20 102:10,15<br><b>boilers</b><br>52:23 53:3,5 56:8,11<br>56:14,15 59:4,20<br>60:17 94:20 103:1<br>103:18,23 104:17<br>105:9 109:15 113:8<br>116:12 117:5,10<br>118:22 119:21<br>123:18,23 124:1,2,7<br>124:9,20 125:6,8<br><b>boulders</b><br>125:2<br><b>bravo</b><br>113:13<br><b>break</b><br>10:20,23,23 77:23<br>78:1<br><b>breakdown</b><br>14:2 15:23 16:22<br>19:20 21:4,13 23:8<br>24:5 27:23 28:6,10<br>28:13,19,22 29:2,4<br>32:16,20,20 34:10<br>36:23 42:11 44:13<br>44:16,20 45:4,10,17<br>94:24 96:19 97:7,13<br>104:3 105:5,19<br>109:9,16 110:11<br>113:11 115:22<br>119:1<br><b>breakdowns</b><br>16:8,15 21:16,17<br>23:4,18 34:12,23<br>43:7 74:13 116:14<br>119:4<br><b>breaking</b><br>10:21<br><b>brief</b><br>13:17 23:12 110:3<br><b>brought</b><br>22:24<br><b>Bryan</b><br>2:5 8:4 10:4 11:5,14<br>12:2,9 25:2 26:10<br>26:12 27:8 28:8 | <b>buffer</b><br>120:4,23 121:5,7,12<br>121:16,21<br><b>build</b><br>33:2<br><b>Building</b><br>127:10<br><b>built</b><br>81:8<br><b>Bureau</b><br>4:7,13<br><b>Buren</b><br>4:3<br><b>burner</b><br>38:1,12,23 39:5,9,21<br>40:6<br><b>burners</b><br>37:6,12,17,19 38:7,8<br>38:18 39:2<br><b>burner's</b><br>38:22<br><b>Byron</b><br>5:7 78:13<br><hr/> <div style="text-align: center;"><b>C</b></div> <hr/> <b>c</b><br>4:1 5:1 6:1 40:17<br>44:8 55:17 95:2<br>97:8 113:13<br><b>CAAPP</b><br>15:16 20:15,24 36:20<br>37:1 47:5 88:17<br>94:18 95:13,19,23<br>96:3,17 97:17<br>100:17,19 101:5<br>109:6 112:24 113:6<br><b>calciners</b><br>31:1<br><b>calcining</b><br>31:2,6,7 37:17<br><b>calculated</b><br>42:19 48:15<br><b>calculation</b><br>79:7 81:1,15 84:3<br>90:13<br><b>calendar</b> | 65:5,10 67:18<br><b>California</b><br>70:19<br><b>call</b><br>10:2 26:16 29:19<br>31:12,15,17 32:1<br>69:20 70:1,11 87:11<br>87:13 100:11<br><b>called</b><br>1:10<br><b>calls</b><br>13:15 15:8 26:9 77:8<br>100:12 112:4<br><b>campaigns</b><br>17:7 23:12,20<br><b>campaign-type</b><br>18:16<br><b>cancer</b><br>52:17<br><b>capacity</b><br>38:22 39:1,19,20<br>43:11<br><b>capital</b><br>93:17<br><b>carbon</b><br>7:1 11:12 13:4,8,20<br>14:7,24 15:11,12,15<br>15:19 16:3,6,11,17<br>16:19 18:13 19:8<br>20:17 22:3,6,11,16<br>23:3 26:11,12 27:3<br>27:8,20,24 28:9<br>29:12,13,23 30:20<br>30:23 31:3,5,14,19<br>31:20 32:4,18 34:4<br>35:10,16 36:13 47:1<br>47:9 52:1,6,21 54:3<br>54:4,8 66:9<br><b>Carbon's</b><br>7:22 13:3,21 14:5,12<br>15:1 16:10 18:20<br>22:19 25:5 26:4,13<br>27:9 29:10 31:10<br>36:8 39:7 40:19<br>41:19 45:20 48:8<br><b>carve-out</b> |
|--|--|--|---|

|  |   |   |   |
|--|---|---|---|
| 80:4<br><b>case</b><br>1:10 50:4 55:5<br><b>cat</b><br>113:13<br><b>catalyst</b><br>80:11<br><b>catalytic</b><br>66:17 69:18 70:7<br>71:12,20 72:3 74:2<br>74:12,13,21<br><b>cause</b><br>34:16 43:7 52:17<br>53:10 85:18<br><b>caused</b><br>53:6<br><b>cease</b><br>104:13 117:4<br><b>certain</b><br>108:21,23,23 111:5<br><b>CERTIFICATE</b><br>3:12 129:1<br><b>Certified</b><br>129:3<br><b>certify</b><br>129:5,12<br><b>chamber</b><br>38:5<br><b>chance</b><br>90:14<br><b>change</b><br>18:3 19:14 55:22<br>59:22 60:3 84:15<br><b>changes</b><br>17:4 30:16,19 31:21<br>50:16,23 63:4 69:24<br>70:2 71:4 77:17,19<br>89:21 92:12,14<br>105:23 106:6 110:8<br>125:16,24 126:2,6<br><b>changing</b><br>80:15 115:19<br><b>chapter</b><br>98:12<br><b>characteristics</b><br>55:11 | <b>chart</b><br>67:22,24<br><b>check</b><br>112:3<br><b>Chicago</b><br>4:4 5:4,8 7:11 127:11<br><b>Chief</b><br>4:13<br><b>Chloe</b><br>1:13 4:2 6:4<br><b>chloe.salk@illinois...</b><br>4:5<br><b>chloroform</b><br>57:1<br><b>choose</b><br>85:1,13<br><b>chutes</b><br>33:4<br><b>circumstances</b><br>111:6<br><b>citation</b><br>48:21,22 91:1<br><b>citations</b><br>14:13 92:4<br><b>cite</b><br>62:2<br><b>citing</b><br>62:4<br><b>Citizens</b><br>117:17<br><b>clarification</b><br>17:14 120:11<br><b>clarified</b><br>26:19<br><b>clarify</b><br>35:10 44:18 61:22<br>71:19 74:1 113:23<br>114:11 123:1,17<br><b>Clean</b><br>14:21 22:21 25:6<br>45:22 58:22 94:7<br>97:23 98:6,22 99:3<br>100:16<br><b>clear</b><br>8:24 9:8 33:6 38:6<br>85:6 89:18 95:5 | 107:20<br><b>clearly</b><br>9:6 25:20<br><b>Clerk's</b><br>8:14 9:23<br><b>client</b><br>13:9<br><b>climb</b><br>42:22<br><b>close</b><br>49:19 77:22 102:11<br><b>closer</b><br>48:5<br><b>coal</b><br>94:20 103:1,18,23<br>104:16 109:15<br>111:22 113:8<br>116:11 117:5<br>119:21 123:23<br>124:1,1,20 125:1,6<br><b>coat</b><br>38:15 49:22<br><b>code</b><br>1:4 6:7 13:6 14:18<br>27:5 48:19 61:4<br>81:2 82:5 83:15<br><b>codified</b><br>103:3 118:20<br><b>coke</b><br>30:24 33:1 34:14<br><b>collected</b><br>28:11<br><b>collectively</b><br>94:15<br><b>color</b><br>85:9<br><b>com</b><br>44:17<br><b>combinations</b><br>118:7<br><b>combusted</b><br>56:23<br><b>combustion</b><br>27:16,18 53:18 54:16<br>54:17 55:2,7,16<br>59:4 60:15 62:10 | <b>come</b><br>78:21 92:19<br><b>comes</b><br>39:22<br><b>commence</b><br>83:20<br><b>commences</b><br>81:4<br><b>comment</b><br>9:19 10:1 13:8 31:16<br>37:11 41:6 44:3<br>50:14,17 63:4,5<br>69:17 72:23 75:19<br>76:4 77:7,16,18<br>82:2 83:7 88:13<br>89:4 91:6 92:11,13<br>101:17,21,24 102:2<br>123:3 124:4 125:23<br>126:1,8,21 127:16<br><b>comments</b><br>9:23 10:18 11:1<br>14:15 17:20 19:23<br>30:19 32:6,7 50:19<br>68:20 87:17,24<br>91:11,11 107:10<br>126:18<br><b>committed</b><br>105:9<br><b>Committee</b><br>50:15<br><b>common</b><br>28:12<br><b>communities</b><br>57:17,23 60:8,10<br>122:19<br><b>companies</b><br>124:14<br><b>company</b><br>28:2 64:19 65:16<br>73:3 94:14 125:12<br><b>Company's</b><br>126:8<br><b>compare</b><br>66:2 91:7<br><b>compared</b><br>29:6 45:17 54:22 |
|--|---|---|---|

|  |  |  |   |
|--|--|--|---|
| 117:11<br><b>complete</b><br>9:1 39:18 68:6,11,12<br><b>completed</b><br>68:4 82:16<br><b>completion</b><br>38:24 39:23<br><b>compliance</b><br>21:6 24:12 31:18<br>35:17,22 36:6,18<br>38:11 41:9,12,20<br>42:2,13,14 43:15<br>52:23 55:5 56:14<br>70:5 71:16 84:17<br>90:11 98:21 99:17<br>104:23 124:21<br><b>comply</b><br>28:16 46:18 47:11<br>71:23 79:8 82:19<br>118:23<br><b>component</b><br>25:18,22<br><b>concentrations</b><br>75:1<br><b>concern</b><br>120:20 121:2 122:7<br>122:18<br><b>concerning</b><br>98:9<br><b>concerns</b><br>70:8<br><b>conclusion</b><br>13:16 15:8 26:9 28:4<br>29:20 95:3 106:16<br>112:4 117:21 118:3<br>122:20<br><b>conclusions</b><br>107:4<br><b>condition</b><br>94:6 95:19 96:2,2,15<br>96:17 97:8 99:18<br>101:5 112:23<br><b>conditions</b><br>17:5 18:4,10,16,18<br>23:11 28:3,11,20<br>29:6 36:24 47:16,17 | 47:22 65:14 73:12<br>95:1,1,22 96:15<br>97:8 113:12,12<br><b>conduct</b><br>47:14 65:21 72:15<br>76:16<br><b>conducted</b><br>24:13 28:2 48:23<br>49:6 64:7,23 73:18<br><b>conducting</b><br>29:12<br><b>conference</b><br>32:5<br><b>confirmed</b><br>119:18<br><b>conflict</b><br>83:17<br><b>confused</b><br>121:23<br><b>conjunction</b><br>25:2<br><b>consent</b><br>40:16 65:14 92:3<br>116:2,11 117:13,15<br><b>consequence</b><br>43:10<br><b>Consequently</b><br>125:4<br><b>conservative</b><br>24:14 28:20 64:9<br><b>consider</b><br>86:16<br><b>considered</b><br>45:14 79:16,21 86:8<br>103:6 115:6 120:19<br><b>considers</b><br>25:14 45:11<br><b>consistent</b><br>25:5 26:15 100:13,21<br>121:10,11<br><b>constitute</b><br>86:22<br><b>constructed</b><br>81:17,23 83:7,11,16<br>83:22<br><b>construction</b> | 81:5 83:20<br><b>contain</b><br>61:6,10<br><b>contained</b><br>39:7<br><b>contains</b><br>25:16 26:2 62:7<br><b>contents</b><br>13:14 76:2<br><b>context</b><br>14:23 20:2 79:23<br><b>continue</b><br>42:22 59:8,21 96:20<br><b>continued</b><br>95:20<br><b>Continuing</b><br>34:5<br><b>continuous</b><br>19:4 35:22 64:8<br>74:22<br><b>continuously</b><br>17:8 18:21<br><b>contrast</b><br>42:2<br><b>contribute</b><br>53:11<br><b>control</b><br>1:1 4:3 6:3 24:8<br>33:10 41:4 54:24<br>55:12 60:4 79:12,15<br>100:22 101:11<br>103:7,20 104:10<br>115:7 117:10<br><b>controlled</b><br>36:5 86:20 123:16<br><b>controlling</b><br>85:23,24<br><b>controls</b><br>103:11 115:11,19<br>117:12<br><b>converse</b><br>21:15<br><b>convey</b><br>33:3 34:1<br><b>COOL</b><br>8:14 127:6 | <b>Copies</b><br>127:2<br><b>copy</b><br>37:1,1 40:15<br><b>correct</b><br>13:15 17:21 23:22<br>25:13<br><b>correlate</b><br>110:23<br><b>correlations</b><br>106:10,10<br><b>corresponding</b><br>105:24 106:7 108:4<br><b>cost</b><br>104:6,17 117:7<br><b>counsel</b><br>5:17 6:21 13:8<br>129:13,17<br><b>County</b><br>65:17<br><b>couple</b><br>16:13 21:24 71:11<br><b>course</b><br>7:16 31:8<br><b>court</b><br>9:5,13 11:23 12:14<br>51:7 63:10,22 78:5<br>92:21 129:3<br><b>covered</b><br>31:11,15 66:12 74:18<br>123:19<br><b>crack</b><br>74:12<br><b>cracking</b><br>66:17 69:18 70:7<br>71:12,21 72:3,24<br>74:3,14,21<br><b>Crawford</b><br>65:17<br><b>create</b><br>33:3 74:8 122:18<br><b>creating</b><br>25:13 114:7<br><b>Crnkovich</b><br>8:2 10:5<br><b>Crnkovich</b> |
|--|--|--|---|



|   |   |  |  |
|---|---|--|--|
| 2:12 78:3,8,13<br>79:24 81:16 82:16<br>82:23 83:22 84:13<br>85:5,17 86:7 87:1<br>87:12 88:16 89:8<br>90:10 91:9,16 92:6<br><b>CROSS</b><br>30:10 69:6 88:5<br>123:9<br><b>current</b><br>53:3 58:12 60:9<br>61:16 69:12 76:2<br>82:4 84:9 90:5<br>95:12,23 97:16<br>109:5 110:9 111:13<br><b>currently</b><br>38:23 59:23 60:13<br>104:12 117:3<br>119:12<br><b>customer</b><br>18:17 23:14<br><b>CX</b><br>2:7,10,14,18<br><b>Cynthia</b><br>2:16 8:3 10:6 92:19<br>92:24 94:10 95:24<br>98:1,4 100:4,7<br>102:18 103:13<br>104:24 106:4<br>108:18 109:22<br>112:7 123:22<br>124:18<br><b>C-A-A-P-P</b><br>95:13<br><b>C.F.R</b><br>61:1,9,12 83:18<br>100:18<br><b>C.S.R</b><br>1:14<br><b>C/O</b><br>56:1<br><hr/> <b>D</b> <hr/> <b>d</b><br>2:1 5:15 6:1,17 35:9<br>56:7 | <b>daily</b><br>90:4,6 110:8,21,23<br>110:24<br><b>damaging</b><br>72:21<br><b>data</b><br>17:22 18:14 20:2<br>23:8 28:7,10,18<br>47:7,9 64:8,17 65:3<br>68:16 75:7,23 76:11<br>82:17 87:22,23<br>115:1 120:1,3<br><b>date</b><br>6:11,23 8:9,11 67:16<br>75:4 81:18 83:23<br>84:9<br><b>dated</b><br>91:2<br><b>dates</b><br>68:18 105:9<br><b>David</b><br>5:3 8:1 10:4 11:11<br>13:7 15:6 51:5,10<br>70:14<br><b>david.loring@afsla...</b><br>5:5<br><b>day</b><br>36:16 80:24 82:20<br>110:21<br><b>days</b><br>19:9,18,21 20:3<br>119:23<br><b>DDDDD</b><br>61:1,3,7,11<br><b>de</b><br>86:22<br><b>deadline</b><br>7:22 127:12,16<br><b>Dearborn</b><br>5:8<br><b>decade</b><br>16:16 17:3<br><b>December</b><br>66:7 68:12,13 117:5<br><b>decision</b><br>9:1 73:3 | <b>declaration</b><br>103:14 115:14,23<br>116:15<br><b>decrease</b><br>41:23<br><b>decree</b><br>92:3 116:2,11 117:13<br>117:15<br><b>defense</b><br>14:17 15:4 70:3<br><b>deferred</b><br>112:14<br><b>define</b><br>120:13<br><b>defined</b><br>98:10<br><b>degree</b><br>36:21 37:15 38:16<br>49:21<br><b>degrees</b><br>15:21 20:10,14,18<br>21:3,10,21 24:10<br>28:15 34:8,17,21<br>35:13,21 36:3,17<br>37:9,20 38:2,4 39:3<br>39:11,12 40:3 42:4<br>42:7,23,24 43:5,8<br>48:3,5 49:16,20,20<br>50:3 89:3,6<br><b>delays</b><br>107:7<br><b>deliver</b><br>98:1<br><b>demand</b><br>23:14<br><b>Democrat</b><br>7:12<br><b>demonstrably</b><br>95:12<br><b>demonstrate</b><br>24:15 35:17,22 36:6<br>41:9,20 45:21 46:3<br>49:8 84:17<br><b>demonstrated</b><br>41:15 122:14<br><b>demonstrates</b> | 24:21 46:5 53:3,8<br>60:14<br><b>denominator</b><br>28:12<br><b>dependent</b><br>73:16<br><b>depending</b><br>18:3 52:2 56:22<br>73:19 79:2<br><b>deposition</b><br>129:15<br><b>Derek</b><br>8:2 10:5 63:8 64:21<br>65:11 66:20 68:1,21<br>69:21 70:12 71:10<br><b>describe</b><br>32:15 66:14<br><b>described</b><br>64:24 67:19<br><b>describes</b><br>25:8 29:12<br><b>design</b><br>25:10 29:14 30:1<br>104:8 117:2<br><b>designated</b><br>119:8 121:8<br><b>designed</b><br>38:9 81:17,19,21<br>83:1,6<br><b>designs</b><br>81:24<br><b>destroys</b><br>80:13<br><b>detail</b><br>25:12 35:2 76:15,20<br>76:22 109:23<br><b>detailed</b><br>95:3 98:15<br><b>details</b><br>25:4 66:22<br><b>determination</b><br>9:2 14:4<br><b>determine</b><br>47:10 79:6 82:7,17<br>89:12 120:18<br><b>determined</b> |
|---|---|--|--|

|  |  |   |  |
|--|--|---|--|
| 35:23 89:11 103:10<br>115:10<br><b>determines</b><br>80:12<br><b>develop</b><br>8:24<br><b>deviation</b><br>84:18<br><b>differ</b><br>30:2 41:10 82:13<br><b>difference</b><br>41:7 85:23 105:24<br>106:7 125:12<br><b>differences</b><br>29:18 81:13 82:15<br><b>different</b><br>30:2 44:21 45:11<br>47:21,22,22 69:23<br>79:16 81:23 82:15<br>120:17<br><b>differentiate</b><br>45:2<br><b>differently</b><br>36:1<br><b>differs</b><br>20:20<br><b>dioxide</b><br>66:10<br><b>direct</b><br>12:24 51:20 63:23<br>79:3 93:18 115:13<br><b>directed</b><br>7:18 8:6 11:21 13:23<br>43:20 58:17 102:6<br>124:13<br><b>direction</b><br>13:22 66:19 112:9<br>129:11<br><b>directly</b><br>53:2 62:2<br><b>director</b><br>87:15<br><b>discharge</b><br>38:3<br><b>discretion</b><br>15:3 | <b>discretionary</b><br>14:21<br><b>discuss</b><br>35:2 37:16<br><b>discussed</b><br>36:7 37:22 38:18<br>98:24 109:3 112:12<br><b>discussing</b><br>31:8<br><b>discussion</b><br>58:8 126:24 127:23<br><b>disproportionate</b><br>122:17<br><b>distance</b><br>66:18<br><b>distinctive</b><br>69:24<br><b>docket</b><br>6:8,16 8:15 13:22<br>57:19 102:1 103:17<br>112:9,13 115:16<br>126:9<br><b>document</b><br>18:14 42:18 46:9<br>48:14 49:13 64:18<br>67:20 95:9 98:23<br>106:24 122:14<br><b>documentation</b><br>82:8 106:15 109:24<br><b>documents</b><br>8:13 25:1 76:12<br><b>dog</b><br>9:13<br><b>dollars</b><br>104:6,18<br><b>door</b><br>9:17 101:6<br><b>double-check</b><br>126:19<br><b>downtime</b><br>73:5,7 74:5<br><b>draw</b><br>28:4<br><b>drawn</b><br>81:1<br><b>Drive</b> | 4:8 5:4 67:11<br><b>drop</b><br>21:21 34:17 43:8<br><b>drops</b><br>34:20<br><b>dry-out</b><br>72:19<br><b>Dubuque</b><br>7:4 78:4,14 79:24<br><b>due</b><br>18:17 23:11 29:14<br>43:13 55:19 74:9<br>125:10<br><b>duly</b><br>10:7 12:3 51:11<br>63:13 78:9 93:1<br>129:7<br><b>duration</b><br>24:3 41:5 48:9 75:16<br>75:21 88:14 97:11<br>109:11<br><b>DX</b><br>2:6,9,13,17<br><b>Dynasty</b><br>94:4<br><b>Dynegy</b><br>7:1 92:19 93:21 94:5<br>94:5,11,13,15 95:8<br>96:1,12 97:4 98:5<br>98:13 99:12 100:4,8<br>100:8 101:16 102:6<br>102:19 103:6,14,15<br>103:17 104:1,5,12<br>104:15 105:1 106:5<br>108:15,19 109:14<br>109:19,23 112:8,21<br>123:17,23 124:5,13<br>124:15,19,19,24<br>125:4<br><b>Dynegy's</b><br>94:17 100:16 104:4<br>123:15<br><b>D's</b><br>61:2,3 | <b>E</b><br>2:1 3:1 4:1,1,8 5:1,1<br>6:1,1<br><b>earlier</b><br>12:6 38:21 51:14<br>63:16 78:16 93:3<br><b>earliest</b><br>104:12<br><b>easier</b><br>67:23<br><b>East</b><br>1:17 4:3 7:3 67:11<br>78:3 79:24<br><b>economical</b><br>54:19<br><b>economically</b><br>24:8 60:4<br><b>edge</b><br>67:9,10<br><b>edition</b><br>61:3,12<br><b>editions</b><br>61:6<br><b>EDNF</b><br>79:6 80:23 81:9 82:4<br>82:9,16 84:5 85:1<br>86:16 87:12 88:13<br><b>EDNF's</b><br>79:11 81:7 82:13<br>83:9,12 84:11 86:2<br>90:2<br><b>effect</b><br>36:16 72:14 80:16<br>81:22<br><b>effective</b><br>65:14 79:22 87:2,5<br>96:5,20 105:12,16<br>105:18<br><b>effectively</b><br>36:2 86:19<br><b>effectiveness</b><br>55:13 80:17 81:14<br><b>effects</b><br>52:18<br><b>eight</b><br>35:1 40:23 45:19 |
|--|--|---|--|

|  |   |  |  |
|--|---|--|--|
| 46:13 48:18 49:17<br>64:13 86:15 109:18<br>119:5<br><b>either</b><br>21:10 70:17 112:2<br><b>EJ</b><br>57:17,17,22,23 58:1<br>58:8,10,13,18,24<br>59:11 60:7,8,13,14<br>60:18,21 119:8,11<br>119:12,22,24 120:4<br>120:7,12,14,15,16<br>120:24 121:2,5,21<br>122:5,6,8,18,22<br><b>electrical</b><br>32:21<br><b>electronic</b><br>61:9<br><b>electrostatic</b><br>116:3<br><b>elevated</b><br>59:5 118:16<br><b>eliminate</b><br>39:6 91:19 104:2<br>110:10 115:20<br>116:20 117:23<br>118:5<br><b>eliminated</b><br>70:4<br><b>email</b><br>102:2<br><b>emailed</b><br>101:10<br><b>emission</b><br>14:10 21:7 22:17<br>25:16,21,22 26:1,2<br>26:23 27:12,12,17<br>27:18 28:17 29:20<br>35:18 41:1 42:2,19<br>48:15,18 52:11<br>54:20 57:5 64:8,11<br>70:6 72:10 77:11<br>79:9,15 83:16 85:18<br>89:10 100:10,24<br>106:1,8,20 108:5<br>110:8 123:20 124:6 | 124:19<br><b>emissions</b><br>20:15 22:3,12 24:9<br>25:13,17,18 27:22<br>28:1,5,10,18 29:3,8<br>34:19 35:18,23 36:4<br>36:19 39:7 41:19<br>42:1,18,24 43:2,13<br>44:5,19,21 45:2,9<br>45:12,15 49:4,8,13<br>49:14,24 50:5,7<br>52:15,22 53:2,4,5,9<br>53:13,18,23 54:4,14<br>54:21 55:7,9,15,16<br>55:20 56:2,4,11,21<br>56:23 59:3,5,9,10<br>60:5,20 62:8 66:1,9<br>74:22 75:15 79:12<br>82:4,12 83:13 84:7<br>84:10,11,15,24<br>85:20,21 86:19,20<br>86:21,23 87:3 89:22<br>89:23 90:4 94:19<br>98:18 100:14,23<br>104:10 106:9 108:8<br>110:24 113:7<br><b>emit</b><br>88:10<br><b>emitted</b><br>56:8 80:14 85:10<br><b>emphasize</b><br>117:14<br><b>employed</b><br>129:14,17<br><b>employee</b><br>129:16<br><b>en</b><br>107:1<br><b>encountered</b><br>32:16<br><b>ends</b><br>68:9<br><b>energy</b><br>89:14,14<br><b>enforce</b><br>15:5 | <b>enforceable</b><br>26:3 86:5,9,14 87:3,5<br>100:1<br><b>enforced</b><br>101:16<br><b>enforcement</b><br>14:22 15:3<br><b>engineering</b><br>28:3 29:12,17 41:16<br>42:16 43:2 47:2,6<br>49:6 89:10 99:21,23<br>101:1,12 118:12<br><b>ensure</b><br>21:6 24:11 36:4,18<br>38:10 120:11<br><b>enter</b><br>12:7<br><b>entered</b><br>10:8 12:6 36:13<br>51:14,15 63:16,17<br>78:16,17 93:4,6,7<br><b>entitled</b><br>6:6<br><b>entry</b><br>73:7<br><b>environment</b><br>55:19 56:4 117:17<br>122:16<br><b>environmental</b><br>1:12,16 4:7,13 6:24<br>14:8 38:11 43:24<br>44:2 51:5 56:9<br>57:13,16,19 58:4<br>65:22 69:14 119:11<br>119:19 120:19<br>121:2 122:7,18,19<br><b>EPA</b><br>14:8,16 21:1 26:21<br>36:14 37:2 57:13<br>87:15 106:11<br>120:16 121:1<br><b>EPA's</b><br>14:7 15:2,17 90:12<br>121:11<br><b>equaled</b><br>23:24 | <b>equally</b><br>10:1<br><b>equipment</b><br>31:1 32:23 33:8,14<br>33:16 38:14 74:13<br><b>equipped</b><br>102:10 123:20,24<br>124:2,7,9 125:2<br><b>equivalent</b><br>22:4,14<br><b>ESP</b><br>123:24 125:2<br><b>especially</b><br>105:3<br><b>ESPs</b><br>116:3 118:7 123:16<br>123:20 124:3,8,10<br><b>essentially</b><br>72:14<br><b>establish</b><br>22:6<br><b>established</b><br>53:17,22 55:4,6<br><b>estimate</b><br>27:24 64:9<br><b>estimated</b><br>22:5,15<br><b>evaluate</b><br>44:5 66:1<br><b>evaluating</b><br>44:1 111:1<br><b>evaluation</b><br>58:24 62:23<br><b>event</b><br>15:5 20:9 42:12 47:3<br>49:7 96:18<br><b>events</b><br>14:10 15:2,23 22:8<br>23:4 24:4 25:8,17<br>28:6,21,22 29:3,5<br>32:14,16 44:2,20<br>59:6 60:5 62:10<br>64:9,10 74:8 95:16<br>95:21 104:3 109:10<br>109:11,12 114:6<br>116:21 118:18 |
|--|---|--|--|

|   |  |  |  |
|---|--|--|--|
| <p>119:2,3 125:11</p> <p><b>evidences</b></p> <p>43:2</p> <p><b>examination</b></p> <p>1:10 12:24 30:10</p> <p>51:20 63:23 69:6</p> <p>79:3 88:5 93:18</p> <p>123:9</p> <p><b>examined</b></p> <p>12:3 51:11 63:13</p> <p>78:9 93:1</p> <p><b>example</b></p> <p>47:24 48:4 79:16</p> <p>84:23 100:18</p> <p>102:15</p> <p><b>examples</b></p> <p>70:19 114:3,24 115:1</p> <p><b>exceed</b></p> <p>22:8,11 24:5,20 43:3</p> <p>46:15 94:21 102:16</p> <p>111:4,7 113:8</p> <p><b>exceedance</b></p> <p>115:20 116:7</p> <p><b>exceedances</b></p> <p>94:8 102:9 104:2</p> <p>105:12 108:22,24</p> <p>113:1,16,22 114:13</p> <p>114:14,16,18 115:9</p> <p>116:13,20 117:19</p> <p>117:23 118:5 125:1</p> <p><b>exceeded</b></p> <p>23:24 41:17 102:22</p> <p>103:2</p> <p><b>exceeding</b></p> <p>47:20 102:11 103:8</p> <p>103:18</p> <p><b>exceeds</b></p> <p>22:3</p> <p><b>Excellent</b></p> <p>50:20</p> <p><b>exception</b></p> <p>25:17 91:23 108:20</p> <p><b>exceptions</b></p> <p>14:9</p> <p><b>excess</b></p> <p>20:15 89:23 95:15</p> | <p>96:13 97:5 109:8</p> <p>114:6</p> <p><b>excuse</b></p> <p>33:21 43:11 108:23</p> <p><b>executed</b></p> <p>73:9</p> <p><b>executive</b></p> <p>58:16</p> <p><b>exempt</b></p> <p>70:18</p> <p><b>exemption</b></p> <p>92:1</p> <p><b>exemptions</b></p> <p>86:23</p> <p><b>exercise</b></p> <p>14:20 15:3</p> <p><b>Exhibit</b></p> <p>3:3,4,5,6,7,8,9 12:8</p> <p>12:10 40:17 51:16</p> <p>63:18 78:18 93:6,7</p> <p><b>exhibits</b></p> <p>3:10 37:3</p> <p><b>exist</b></p> <p>59:23 81:13</p> <p><b>existed</b></p> <p>59:17</p> <p><b>existing</b></p> <p>71:20 74:20 82:17</p> <p>84:7 90:3,20</p> <p><b>expected</b></p> <p>29:21 41:11,11 48:5</p> <p>49:24 50:7 84:14</p> <p>86:10 127:3</p> <p><b>experience</b></p> <p>16:15 19:8 104:5</p> <p>105:2,10 116:12</p> <p>118:7</p> <p><b>experienced</b></p> <p>29:1</p> <p><b>experiences</b></p> <p>16:11</p> <p><b>experiencing</b></p> <p>20:9</p> <p><b>explain</b></p> <p>35:14 53:20 79:19</p> <p>90:7 99:23</p> | <p><b>explained</b></p> <p>15:12,15 29:9 45:19</p> <p>98:23 102:7 103:14</p> <p>109:23 115:13</p> <p>116:15</p> <p><b>explains</b></p> <p>79:11 115:23</p> <p><b>explanation</b></p> <p>110:2,3</p> <p><b>explicitly</b></p> <p>36:20 80:2</p> <p><b>expressed</b></p> <p>27:1</p> <p><b>extend</b></p> <p>7:22</p> <p><b>extension</b></p> <p>20:12</p> <p><b>extensive</b></p> <p>89:10</p> <p><b>extent</b></p> <p>58:19 73:4,17 75:17</p> <p>104:1 116:18</p> <p><b>extremely</b></p> <p>24:14</p> <p><b>ExxonMobil</b></p> <p>64:23 76:10,16,21</p> <p><b>ExxonMobil's</b></p> <p>76:12</p> <p><b>e-C.F.R</b></p> <p>61:8</p> <hr/> <p><b>F</b></p> <hr/> <p><b>F</b></p> <p>5:7 42:4</p> <p><b>fabric</b></p> <p>103:22 116:16</p> <p><b>face</b></p> <p>109:5</p> <p><b>facie</b></p> <p>14:17 15:4</p> <p><b>facilities</b></p> <p>30:23 31:2,11,17,21</p> <p>32:2 82:23 103:8,12</p> <p><b>facility</b></p> <p>15:1,16 17:6,8 19:5</p> <p>20:23 21:12,14,18</p> | <p>23:11,19 27:10,16</p> <p>29:5 32:12,17 34:8</p> <p>34:13,21 35:22 36:1</p> <p>36:16 38:19 41:8</p> <p>47:3,4,14 118:4</p> <p><b>facility's</b></p> <p>24:2</p> <p><b>fact</b></p> <p>28:18</p> <p><b>facto</b></p> <p>86:22</p> <p><b>factor</b></p> <p>26:6</p> <p><b>factors</b></p> <p>25:15 26:5,16</p> <p><b>Fahrenheit</b></p> <p>20:14,19 21:3,10,21</p> <p>28:15 34:18,21</p> <p>35:13,21 36:3,18,22</p> <p>37:15,21 38:3,4,16</p> <p>39:4,11,13 42:24</p> <p>43:5,9 48:3,5 49:16</p> <p>49:20,21,22 50:3</p> <p>89:3</p> <p><b>failure</b></p> <p>32:21,22,22</p> <p><b>fair</b></p> <p>106:20 107:21 108:7</p> <p><b>falls</b></p> <p>77:8</p> <p><b>familiar</b></p> <p>44:10,14 82:1 83:6</p> <p><b>Fahrenheit</b></p> <p>15:22 20:11 37:9</p> <p>42:23 89:6</p> <p><b>fast</b></p> <p>9:15</p> <p><b>faster</b></p> <p>73:19</p> <p><b>FCCU</b></p> <p>66:18 67:5,14,17</p> <p>68:18 73:23</p> <p><b>FCCUs</b></p> <p>70:17 74:18 75:21</p> <p><b>feasible</b></p> <p>24:8 54:24 55:12</p> |
|---|--|--|--|

|                      |                       |                     |                      |
|----------------------|-----------------------|---------------------|----------------------|
| 60:4 89:12           | <b>findings</b>       | <b>fluid</b>        | <b>founded</b>       |
| <b>February</b>      | 73:8                  | 66:17               | 14:16                |
| 68:5,6               | <b>fine</b>           | <b>focus</b>        | <b>four</b>          |
| <b>federal</b>       | 11:16 94:1            | 110:16              | 16:8 25:8,14 26:1    |
| 52:14,23 54:2,7 56:9 | <b>finish</b>         | <b>focused</b>      | 31:6 33:19 35:3      |
| 58:16,17 61:4 70:6   | 10:16                 | 70:2                | 46:15 63:18 66:13    |
| 70:18,24 71:3,6      | <b>finished</b>       | <b>follow</b>       | 83:9 88:8 99:7       |
| 74:20 77:11 81:3     | 10:24                 | 55:14 76:24 90:12   | 102:5 113:20 114:1   |
| 83:24 91:2 100:2     | <b>fired</b>          | <b>followed</b>     | 114:21 115:5         |
| 116:2                | 94:20 103:1,18,23     | 80:1                | <b>fourth</b>        |
| <b>feed</b>          | 104:17 109:15         | <b>following</b>    | 68:10                |
| 21:12,19 29:5,6 38:1 | 111:22 113:8          | 10:2 23:8 44:13,17  | <b>free</b>          |
| 38:4 42:5,9 46:13    | 116:12 117:5          | 66:9 87:17 91:12    | 9:14 46:24           |
| <b>feel</b>          | 119:21 123:23         | 110:3 113:24        | <b>frequency</b>     |
| 9:14 46:24           | 124:1,1,20 125:2,6    | <b>follows</b>      | 44:23 75:15,21 88:14 |
| <b>feet</b>          | <b>firing</b>         | 12:4 51:12 63:14    | <b>frequently</b>    |
| 67:1,3,5,9,10,11,14  | 37:24                 | 78:10 93:2          | 72:23                |
| <b>fence</b>         | <b>first</b>          | <b>follow-up</b>    | <b>front</b>         |
| 66:16 67:2,12        | 1:5 6:14 7:16 10:3,13 | 76:10 79:1 101:9    | 11:7                 |
| <b>Fertilizer</b>    | 11:20 12:11,14 24:2   | 106:23 107:22       | <b>fruition</b>      |
| 7:4                  | 41:13,18 47:24        | 108:1 126:5 127:19  | 39:22                |
| <b>Fertilizers</b>   | 51:11,18 63:13,20     | <b>follow-ups</b>   | <b>fuel</b>          |
| 78:4,14              | 63:22 65:7 68:3       | 12:21 52:1          | 27:15,18 56:23       |
| <b>fewer</b>         | 78:9,19 93:1,10,11    | <b>footnotes</b>    | <b>fulfill</b>       |
| 16:12 109:12         | 100:4 126:10 128:2    | 21:24               | 23:14                |
| <b>FIE</b>           | <b>five</b>           | <b>forced</b>       | <b>full</b>          |
| 36:20                | 16:9 18:6 27:3 37:5   | 32:12 34:9          | 106:5                |
| <b>figure</b>        | 37:22 42:8 48:16      | <b>foregoing</b>    | <b>fully</b>         |
| 49:3                 | 61:2,3 67:16,17       | 129:6               | 98:14                |
| <b>file</b>          | 68:18 73:24 78:18     | <b>Forest</b>       | <b>function</b>      |
| 13:16,24 15:8        | 84:4 87:22 88:23      | 4:20                | 38:7                 |
| <b>filed</b>         | 103:5 115:6 123:17    | <b>forgive</b>      | <b>functions</b>     |
| 7:4 8:15 11:13 13:21 | <b>flag</b>           | 113:3 121:23        | 18:7                 |
| 112:8 120:2          | 94:2                  | <b>form</b>         | <b>further</b>       |
| <b>filing</b>        | <b>flagged</b>        | 32:24 62:4 104:20   | 29:9 35:2 37:22 53:8 |
| 17:20 119:16,23      | 120:21                | <b>formaldehyde</b> | 54:24 82:2 83:7      |
| <b>filter</b>        | <b>flooding</b>       | 57:1                | 98:9 99:2 103:24     |
| 103:22 116:16        | 74:11                 | <b>format</b>       | 116:15 117:10        |
| <b>final</b>         | <b>Florida</b>        | 53:22               | 124:5 125:14,20      |
| 71:16 91:1           | 87:14,16 91:7,10      | <b>formation</b>    | 129:12,15            |
| <b>Finally</b>       | <b>Florida's</b>      | 55:10               | <b>future</b>        |
| 8:16 117:14          | 91:3                  | <b>forth</b>        | 14:13 114:20         |
| <b>financially</b>   | <b>fluctuated</b>     | 94:22 95:1 96:10    |                      |
| 129:18               | 43:1                  | 97:2 113:9,12       | <hr/>                |
| <b>find</b>          | <b>flue</b>           | <b>forum</b>        | <b>G</b>             |
| 89:13                | 79:14,20 89:15        | 14:4 112:15         | <hr/>                |
|                      |                       |                     | <b>G</b>             |
|                      |                       |                     | 6:1 8:2 10:5 81:9    |

|  |  |   |  |
|--|--|---|--|
| <b>Ga</b><br>80:2 81:2,11,19,19<br>82:24 83:23,24 85:6<br>86:7 90:10,15<br><b>Galena</b><br>7:15<br><b>Gares</b><br>2:4 10:3 11:4,14 12:2<br>12:8 13:20,20 15:11<br>15:11 16:4,17,17<br>17:24 18:13,13,23<br>19:12 20:17,17 23:2<br>23:2 29:23,23 30:20<br>31:5,5,13,14,19,19<br>32:3,3,7,18,18<br>33:13,16 34:4,4<br>35:16 37:19 39:14<br>39:17 40:5,11,16,19<br>40:22 41:8 43:18<br>46:20<br><b>Garres</b><br>8:1<br><b>gas</b><br>37:6,12 85:9 89:15<br><b>gas-firing</b><br>38:22<br><b>gathered</b><br>28:7<br><b>Gazette</b><br>7:15<br><b>Gen</b><br>101:8 113:4 121:19<br><b>general</b><br>4:6,7,12,12 5:17 6:21<br>11:13 30:14 111:23<br><b>generally</b><br>28:21 41:10,11,22<br>42:4 54:15 71:21<br>76:19 83:12<br><b>General's</b><br>4:14<br><b>General's</b><br>8:10 10:13 12:12,17<br>51:18,23 63:19 64:2<br>75:6,11 76:9 78:20<br>78:23 93:10,14 99:8 | <b>generated</b><br>44:19,21 45:12<br><b>Generating</b><br>94:14<br><b>generation</b><br>7:2,2 29:7 92:19<br>93:22 94:5,13,14<br>95:8 99:10,13 100:6<br>101:4,16 107:15,16<br>112:18,19,22 113:3<br>113:4 114:16,24<br>115:6,17,24 116:18<br>116:23 117:1,3<br>118:20,21 119:15<br>119:17 120:1,7<br>122:8,12 124:16<br><b>Generation's</b><br>113:5,19 114:1<br>115:14 116:9<br>117:21 118:3<br>121:15<br><b>geographic</b><br>30:3 120:24 122:5<br><b>getting</b><br>121:23<br><b>Gibson</b><br>5:13 6:15<br><b>give</b><br>39:15 66:21<br><b>given</b><br>13:3 23:5,21 48:23<br>56:15 60:15 74:9<br>111:21 112:11<br>117:8<br><b>go</b><br>6:10 9:20 11:5,20<br>12:18,20,22 13:19<br>23:14 30:9 48:13<br>51:23 54:1,11 68:2<br>69:3 73:19 88:4<br>123:7 126:22 127:1<br>127:21,24<br><b>goal</b><br>85:19<br><b>goes</b><br>25:12 61:24 96:7,23 | <b>going</b><br>9:15 21:23 51:23<br>63:2 67:22 78:3<br>85:22 94:12 105:3<br>107:1<br><b>good</b><br>6:2 19:2,3,6 55:2<br>64:2,4 69:8,9 77:2<br>90:13 93:20 99:21<br>99:23 100:13,22<br>101:1,12 118:12<br><b>governed</b><br>8:17 81:9 82:14<br><b>governing</b><br>31:22<br><b>governs</b><br>13:13 27:10<br><b>grade</b><br>74:10<br><b>Grand</b><br>1:17<br><b>grant</b><br>14:9,20<br><b>granted</b><br>7:21<br><b>Great</b><br>87:19<br><b>greater</b><br>29:3 42:18 49:14<br><b>greatest</b><br>58:19 75:17<br><b>greatly</b><br>23:5<br><b>green</b><br>38:14 49:22<br><b>Group</b><br>7:1 51:6<br><b>guarantee</b><br>105:17<br><b>guess</b><br>17:13 120:10<br><b>guidance</b><br>86:6<br><hr/> <b>H</b> | 3:1<br><b>hand</b><br>111:14,15<br><b>HAP</b><br>52:22 53:2,24 54:14<br>55:8,15 56:11<br><b>happens</b><br>33:4<br><b>happy</b><br>87:17 88:20 91:10<br>107:4,12 125:17<br>126:4<br><b>HAPs</b><br>52:16,16 54:9 55:20<br>55:23 56:1,8,18<br>57:3,9 62:9<br><b>hard</b><br>18:24 19:1<br><b>hazardous</b><br>52:12,15 54:5 100:24<br><b>health</b><br>52:18 55:19 56:3<br>122:16<br><b>heard</b><br>1:12<br><b>hearing</b><br>1:5,9,13 3:3,4,5,6,7,8<br>3:9 4:5 6:2,4,5 7:7,8<br>7:10,17,18,19,21<br>8:11,17,17,21 10:17<br>11:9,16,19 12:5,8,9<br>12:18 15:9 17:23<br>20:5 23:9 30:6<br>50:10,12,20,24 51:4<br>51:13,15 57:12,20<br>62:16,24 63:15,17<br>69:1 76:6 77:1,3,5<br>77:13,22 78:2,11,15<br>78:18 87:18 88:2,8<br>91:12,14 92:9,16<br>93:3,6,7 113:20<br>114:2 123:1,5,12<br>125:20 126:11,16<br>127:1,3,8,13,15,20<br>127:21,24 128:2,5<br>129:7 |
|--|--|---|--|

|   |  |   |   |
|---|--|---|---|
| <b>hearings</b><br>7:9,17<br><b>heat</b><br>79:20 89:9<br><b>heaters</b><br>53:5 59:4 60:17 89:5<br><b>help</b><br>8:24 9:7 37:13 39:10<br>104:9 105:3<br><b>helpful</b><br>126:13<br><b>helping</b><br>29:7<br><b>hereto</b><br>129:17<br><b>hexane</b><br>57:1<br><b>Hi</b><br>78:22<br><b>Higgins</b><br>2:5 8:5 10:4 11:5,14<br>12:2,9 25:3 26:11<br>26:12,12 27:8,8<br>28:8,8 43:19,20<br>44:7,10 46:22 47:1<br>48:12 49:5<br><b>high</b><br>37:11,17 50:7 86:18<br><b>higher</b><br>18:9 38:2 39:1 48:6,9<br>49:9 50:1 110:15<br>111:9,11 114:7<br><b>highest</b><br>41:22<br><b>historic</b><br>23:7<br><b>historical</b><br>20:2<br><b>historically</b><br>109:14<br><b>history</b><br>56:14<br><b>holding</b><br>7:16<br><b>honor</b><br>45:22 | <b>hot</b><br>74:8 75:16,21 76:5<br>77:7,9<br><b>hotter</b><br>20:21 49:16,21<br><b>hour</b><br>1:15 10:21 21:1,22<br>41:13,18 42:14<br>48:19 49:18 50:1<br>64:13,13 75:4 91:21<br>91:23 106:12 111:6<br>111:10,17,17 125:5<br>125:7,7<br><b>hourly</b><br>106:21 108:8<br><b>hours</b><br>16:7,9,20 17:1,2<br>19:16,19 20:3 22:4<br>22:7,13 23:18,24<br>24:1,5,11,15,19<br>28:23 42:5,8 68:6<br>89:22 124:11<br><b>housekeeping</b><br>6:12 8:16<br><b>human</b><br>55:19 56:3 122:16<br><b>hurricanes</b><br>74:11<br><b>hydrogen</b><br>79:17 80:16<br><hr/> <b>I</b><br><hr/> <b>IAC</b><br>103:3<br><b>identical</b><br>30:1<br><b>identified</b><br>26:16 56:18 60:13<br>121:1 122:6<br><b>identify</b><br>58:17 73:8 96:7,23<br><b>idle</b><br>34:14 42:10<br><b>IEP</b><br>119:24<br><b>IEPA</b> | 74:24<br><b>IEPA's</b><br>58:1 60:14 119:17<br>122:6<br><b>IERG</b><br>52:3,5,10 55:2 56:13<br>57:4,20 58:2,4 59:1<br>60:19 61:20 62:6,11<br>70:15<br><b>IERG's</b><br>53:8,12,15 54:10<br>55:18,21,23 56:13<br>56:17 57:18,21,24<br>58:2,15,21 59:7,12<br>60:7,24 61:11,13,15<br>62:1<br><b>IL</b><br>4:15,20 5:4,8<br><b>ILC</b><br>110:15<br><b>Ill</b><br>1:4 48:19<br><b>Illinois</b><br>1:1,12,15,17 4:3,4,9<br>4:13 6:3,6,24 8:10<br>11:13 12:16 13:6<br>14:7,18 15:2,13,17<br>21:1 23:6,22 24:24<br>27:4 30:24 31:9<br>36:14 37:2 44:4<br>46:7 51:5,22 52:7<br>52:20 53:1,7 56:8<br>56:12 57:12 60:8,13<br>64:2 69:20 70:4,22<br>71:1 72:9 75:8 76:9<br>78:22 82:5 83:2,3<br>83:11,15 84:2 87:13<br>93:14 94:13,22<br>95:14 96:10 97:2,17<br>106:11 108:20<br>109:8 111:22<br>113:10 117:16<br>119:10 120:16<br>121:1,11 122:19<br>129:5,22<br><b>immediate</b> | 104:16<br><b>impact</b><br>19:16 24:23 28:1<br>30:1 43:23,24 44:2<br>44:5,12,15 45:5,5,8<br>46:2,4 52:4 55:19<br>56:3 59:11 60:6,20<br>60:21 64:11 69:15<br>81:14 84:5 98:19<br>118:16<br><b>impacted</b><br>54:18 55:10 58:2<br>110:8 120:8 122:9<br><b>impacting</b><br>89:15<br><b>impacts</b><br>45:23 53:7,11 57:16<br>57:22 58:8,10,14,18<br>64:7,10 109:21<br>122:15,17<br><b>impermissible</b><br>86:22<br><b>implemation</b><br>116:10<br><b>implement</b><br>52:10<br><b>implementation</b><br>57:15 91:4 94:23<br>96:11 97:3,18<br>100:11 113:10<br>116:10<br><b>implementing</b><br>32:1 58:23 71:6<br><b>implications</b><br>37:16<br><b>important</b><br>33:7 38:5 44:18 71:5<br><b>improve</b><br>80:17<br><b>improvement</b><br>117:10<br><b>inaccurate</b><br>96:1<br><b>inadequate</b><br>14:19<br><b>inappropriately</b> |
|---|--|---|---|

|  |  |  |   |
|--|--|--|---|
| 86:18<br><b>include</b><br>33:9 56:24 57:16<br>58:13 59:13,24<br>69:13 84:9 118:12<br>121:4,6,16<br><b>included</b><br>54:13 58:8 66:4<br>89:23 95:4<br><b>includes</b><br>43:6 53:4 80:2 88:18<br>90:11 97:10<br><b>including</b><br>6:12 14:17 26:16<br>30:23 62:8 66:18<br>71:3 76:21 82:10<br>91:4 96:9 97:1<br>98:15 106:17 109:4<br>121:12 122:13<br><b>income</b><br>120:5 121:8<br><b>incomplete</b><br>54:17 96:2<br><b>incorporate</b><br>101:15<br><b>incorporated</b><br>100:19 103:16<br>115:15<br><b>incorporates</b><br>36:20 60:24 72:11<br><b>increase</b><br>23:18 37:7,13 38:21<br>39:20 45:15 53:9<br>56:5 59:3,9,15<br>73:11,16 89:5,9<br>118:24 125:9<br><b>increased</b><br>29:7 59:9<br><b>increasing</b><br>79:13,20<br><b>incremental</b><br>64:11<br><b>independent</b><br>33:8 80:9<br><b>Indiana</b><br>70:19 | <b>indicate</b><br>73:23<br><b>indicated</b><br>122:12<br><b>indicates</b><br>123:15<br><b>indicator</b><br>109:20 110:4<br><b>individual</b><br>73:3<br><b>individually</b><br>94:15<br><b>individual's</b><br>73:17<br><b>industry</b><br>104:4<br><b>infeasible</b><br>102:8<br><b>information</b><br>8:19 20:1 40:9 58:10<br>58:13 59:13 74:17<br>75:20 76:1 77:1<br>88:21<br><b>inherently</b><br>28:20 47:18<br><b>initial</b><br>20:18 26:8 28:23<br>41:22 49:9 50:8<br><b>initiate</b><br>79:12<br><b>injection</b><br>79:18<br><b>inlet</b><br>15:21 20:19,21 21:2<br>24:9 28:24 34:7,16<br>34:20 35:20 36:3,17<br>36:22 37:10,21 38:5<br>38:10,16 39:4 42:3<br>42:7 43:4 48:1<br>49:10,15,18 50:2<br><b>inputs</b><br>76:22<br><b>inside</b><br>122:21<br><b>insignificant</b><br>46:4 | <b>inspection</b><br>73:6,8<br><b>install</b><br>103:11 104:8 105:7<br>115:11 117:3<br><b>installation</b><br>66:4 103:19 104:21<br>115:18 116:16,19<br>116:21 117:18,22<br>118:3<br><b>installed</b><br>65:8<br><b>installing</b><br>103:22 117:7<br><b>institute</b><br>7:3 63:9 64:22 65:12<br>66:21 68:2,22 69:22<br>70:13 87:15<br><b>insufficient</b><br>80:19<br><b>insurances</b><br>90:17<br><b>intended</b><br>8:24 48:8 52:14 54:3<br><b>intending</b><br>7:18<br><b>intends</b><br>16:19 58:4<br><b>intent</b><br>35:15 61:21 72:13<br><b>interest</b><br>24:3<br><b>interested</b><br>129:18<br><b>interfere</b><br>24:16 46:6 98:8 99:2<br><b>interrupting</b><br>33:22<br><b>intervals</b><br>74:7<br><b>intervention</b><br>33:5<br><b>introduced</b><br>42:6 49:23<br><b>introductions</b><br>6:11,14 | <b>intuitively</b><br>95:11<br><b>investigated</b><br>87:14<br><b>involved</b><br>73:13 125:14<br><b>irrespective</b><br>122:21<br><b>issue</b><br>113:22 114:13,14<br><b>issues</b><br>69:14 74:10<br><b>items</b><br>6:10 |
| <b>J</b>   |  |  |   |
| <b>James</b><br>2:6,13 4:8 12:16,16<br>12:19 13:1,2,12,19<br>14:6 15:24 16:5<br>17:9,12,13 18:1<br>20:7 21:23 25:7<br>27:2,19 29:11 30:5<br>51:21,22,22 53:12<br>54:1 55:17 56:7<br>57:7,11 59:15,22<br>60:6,23 61:18,24<br>62:14 78:22,22 79:4<br>79:5 80:23 82:3,22<br>83:8 84:4,20 85:13<br>86:1,15 87:7,19<br>88:1<br><b>January</b><br>66:6 68:3,4 102:21<br>102:24<br><b>Jason</b><br>4:8 12:16 51:22<br>78:22<br><b>Jason.James@ilag....</b><br>4:10<br><b>JCAR</b><br>92:11 101:10,14<br>125:24<br><b>JCAR's</b><br>50:15 63:4 77:16<br><b>Jennifer</b>  |  |  |   |



|                         |                      |                      |                      |
|-------------------------|----------------------|----------------------|----------------------|
| 5:14 6:17               | 16:11,15 19:10 20:9  | <b>largely</b>       | 22:17 25:14,16,19,21 |
| <b>John</b>             | 20:10,13,14,20       | 28:21                | 25:23 26:1,2 100:10  |
| 2:8 8:1 10:5 63:8,12    | 21:11,12,18,19 22:8  | <b>late</b>          | 118:14               |
| 64:21 65:11 66:20       | 23:13 24:15,20       | 104:11               | <b>limitations</b>   |
| 68:1,21 69:21 70:12     | 28:16 29:5,13,15,16  | <b>law</b>           | 14:10 20:16 22:3,12  |
| 71:10                   | 29:18,19,24,24 30:1  | 58:20                | 26:20,23 27:1,22     |
| <b>Johnson</b>          | 30:4 33:7,17 34:15   | <b>laws</b>          | 28:1 55:12 86:3,13   |
| 1:14 129:3,20           | 35:7,8,12,12 37:7    | 56:9                 | 91:5,7 105:5         |
| <b>joint</b>            | 37:14,24 38:3,5,13   | <b>lead</b>          | <b>limited</b>       |
| 50:14 94:1 95:11,21     | 38:15 42:6,9,10      | 6:16                 | 41:1 117:8,10        |
| 97:9,21 98:1,13,17      | <b>kilns</b>         | <b>learn</b>         | <b>limiting</b>      |
| 99:1,16 101:21          | 16:6 21:8 23:16      | 39:18                | 124:6                |
| 108:19 109:4 111:3      | 27:16 29:22 32:13    | <b>legal</b>         | <b>limits</b>        |
| 111:15,21 112:8,11      | 33:11,12,14 34:7     | 13:16 15:8 26:9,9    | 21:7 28:15 34:19     |
| 112:15 115:3            | 37:18 38:1           | 112:4                | 35:23 36:19 39:7     |
| 116:24 119:2,6          | <b>Kincaid</b>       | <b>legally</b>       | 42:2 43:3 54:5,20    |
| 120:9 122:10,15         | 94:7,14,18 103:17,23 | 26:3 86:4,9 99:24    | 86:14 91:18 97:15    |
| 125:16 126:8            | 104:13,22 123:18     | <b>length</b>        | 109:9 123:20         |
| <b>Journal-Register</b> | 124:2                | 112:12               | <b>line</b>          |
| 7:14                    | <b>kind</b>          | <b>letters</b>       | 38:13,14 44:2 66:16  |
| <b>judgment</b>         | 18:11 58:10          | 9:12 93:17           | 67:2,12              |
| 9:3 112:14              | <b>know</b>          | <b>Let's</b>         | <b>links</b>         |
| <b>July</b>             | 18:2,8,11 19:8,19    | 69:10                | 70:20                |
| 13:22 41:16 42:16       | 68:14 83:5 107:7     | <b>level</b>         | <b>list</b>          |
| 46:10 47:2,6,18         | 120:14               | 18:9 25:24 26:24     | 9:21                 |
| 48:1 49:5 61:5          | <b>knowledge</b>     | 86:18,20,21          | <b>literally</b>     |
| 112:9                   | 56:13 75:7 105:14    | <b>levels</b>        | 86:12 87:4           |
| <b>juncture</b>         | <b>known</b>         | 41:21 43:23 45:5     | <b>little</b>        |
| 89:18                   | 52:9,12,16,17        | 53:4 118:17 119:1    | 66:21                |
| <b>June</b>             |                      | 125:12               | <b>LLC</b>           |
| 68:10,11                | <b>L</b>             | <b>light</b>         | 7:1,2,3,4 94:13,15   |
| <b>justice</b>          | <b>L</b>             | 14:23                | 99:10,13 101:4       |
| 57:17,20 58:4 119:19    | 1:14 22:20 45:22     | <b>likelihood</b>    | 113:3,4              |
| 120:19 121:2 122:7      | 129:3                | 116:7                | <b>LLC's</b>         |
| 122:18,19               | <b>lack</b>          | <b>limit</b>         | 64:19                |
| <b>justified</b>        | 44:1                 | 22:7 24:21 28:17     | <b>LLP</b>           |
| 117:8 125:5             | <b>lacks</b>         | 41:1,20,21 43:13     | 4:18 5:3,7           |
| <b>justify</b>          | 47:9                 | 46:16,19 49:18 54:3  | <b>located</b>       |
| 82:15                   | <b>Lake</b>          | 57:5 70:21 72:10     | 31:4,11 58:3 66:24   |
|                         | 4:20                 | 75:15 80:22 82:5,7   | 67:8,13 101:23       |
| <b>K</b>                | <b>language</b>      | 82:12,18 83:13,18    | 119:8,12 120:4,8     |
| <b>Kathy</b>            | 30:17 39:8 55:3      | 86:8 87:1,2,3,5 90:5 | <b>location</b>      |
| 1:14 129:3,20           | 61:11,14 70:3 77:11  | 90:6,8,20 91:21,23   | 30:3 53:13 66:14     |
| <b>keep</b>             | 101:7                | 92:3 97:10 105:13    | <b>locations</b>     |
| 90:19                   | <b>large</b>         | 109:10,11 116:8      | 60:10                |
| <b>kiln</b>             | 56:15 74:6           | <b>limitation</b>    | <b>long</b>          |

|                      |                      |                      |                       |
|----------------------|----------------------|----------------------|-----------------------|
| 106:12               | 66:24 67:7           | <b>Marathon</b>      | <b>meant</b>          |
| <b>longer</b>        | <b>maintains</b>     | 64:18 65:3,4,12,15   | 114:21                |
| 28:22 42:15 43:14    | 88:13                | 65:16,20,21 66:16    | <b>measurably</b>     |
| 48:9 108:15 109:19   | <b>maintenance</b>   | 66:17,24 67:7,17     | 118:16                |
| 113:17,21 114:4,6    | 33:6 44:6 73:4 75:3  | 68:19 73:22          | <b>measured</b>       |
| <b>look</b>          | <b>major</b>         | <b>Marathon's</b>    | 20:19 37:9 85:19      |
| 18:19 19:22 20:4     | 45:6                 | 67:19 73:23 74:17    | <b>mechanical</b>     |
| 53:21 67:23          | <b>mal</b>           | 75:6                 | 32:21                 |
| <b>looked</b>        | 84:18                | <b>March</b>         | <b>meet</b>           |
| 32:4                 | <b>malfunction</b>   | 113:20 114:1,21      | 18:9 80:21 81:19,21   |
| <b>looking</b>       | 14:2 15:22 16:21     | <b>margin</b>        | 88:24                 |
| 22:2 49:12 110:17    | 17:2 21:4,13 23:8    | 24:11                | <b>meeting</b>        |
| <b>Loring</b>        | 24:5 27:23 28:5,10   | <b>Marie</b>         | 24:19 108:16          |
| 5:3 11:8,10,11,17    | 28:13,19,22 29:2,4   | 5:17 6:21            | <b>meets</b>          |
| 13:7,7,13 15:6,6     | 31:23 32:13,15,19    | <b>market</b>        | 25:24                 |
| 17:11,17,21 19:24    | 32:20,24 34:9 36:23  | 17:4 18:4,9,16,18    | <b>member</b>         |
| 26:7 32:6,9 33:21    | 42:11 44:12,16,20    | 23:11                | 6:15,16,17,17 58:2    |
| 33:24 50:18 51:2     | 45:3,10,16 80:4      | <b>mass</b>          | <b>members</b>        |
| <b>lost</b>          | 90:12 92:2 94:24     | 48:15 106:9          | 5:12 9:19 10:18       |
| 100:20               | 95:21 96:18 97:6,13  | <b>material</b>      | 34:24 36:10 63:1      |
| <b>lot</b>           | 104:3 105:4,19       | 33:1,2 48:18         | 125:21                |
| 39:19                | 109:9,16 110:11      | <b>matter</b>        | <b>mention</b>        |
| <b>Louisiana</b>     | 113:11 115:21        | 1:3 22:13 26:8 27:23 | 17:19                 |
| 31:6,24              | 118:17 119:1         | 28:2 33:20 35:4      | <b>mentioned</b>      |
| <b>low</b>           | <b>malfunctions</b>  | 40:24 41:4 85:8      | 12:5 17:14 18:1 39:9  |
| 52:18 120:5 121:8    | 16:7,14 19:20 21:16  | 104:10 106:1,20      | 51:13 57:19 63:15     |
| <b>lower</b>         | 21:16 23:4,17,23     | 108:5                | 78:15 93:3 105:1,6    |
| 29:1 48:4 90:5 125:1 | 33:9 34:11,22 43:7   | <b>matters</b>       | <b>Messina</b>        |
| <b>lowered</b>       | 75:3 116:14          | 111:18 127:17        | 67:21,21 76:23,23     |
| 82:11                | <b>mandate</b>       | <b>max</b>           | <b>met</b>            |
| <b>lowest</b>        | 72:15                | 46:7                 | 18:17                 |
| 49:11                | <b>Mankowski</b>     | <b>maximum</b>       | <b>meteorological</b> |
| <b>lunch</b>         | 5:15 6:18            | 42:19 46:11 84:10    | 66:5                  |
| 10:22                | <b>manner</b>        | 106:1,8,19 108:4     | <b>method</b>         |
|                      | 72:16 100:13,21      | 111:16               | 47:7,15 79:7 80:1,3   |
|                      | 118:22               | <b>mean</b>          | 81:1,15 84:24 90:11   |
| <b>M</b>             | <b>manual</b>        | 14:8,24 18:19 96:12  | <b>methodologies</b>  |
| 5:3                  | 33:5                 | 97:4 99:20 114:12    | 90:13                 |
| <b>magnitude</b>     | <b>manufacturing</b> | 120:13               | <b>methodology</b>    |
| 56:22                | 83:10,14             | <b>meaning</b>       | 44:3 45:7 90:15,16    |
| <b>main</b>          | <b>map</b>           | 15:12 29:2 34:14     | <b>methods</b>        |
| 112:13               | 53:16,23 54:15 55:4  | 108:21,22,23         | 79:15                 |
| <b>maintain</b>      | 55:24 56:20 61:16    | <b>meaningful</b>    | <b>metrics</b>        |
| 15:20 36:2,16,21     | 62:7,12 121:3        | 46:1                 | 120:17                |
| 39:3 75:20 88:17     | <b>mapping</b>       | <b>means</b>         | <b>Michael</b>        |
| <b>maintained</b>    | 60:14                | 104:9 129:9          | 5:15 6:17 127:10      |

|                                       |   |  |   |
|---------------------------------------|---|--|---|
| <b>Michelle</b><br>5:13 6:15          | 13:10                                     | <b>N</b>                               | <b>needs</b><br>18:17 124:19            |
| <b>Midwest</b><br>7:2,2 92:18 93:22   | <b>mode</b><br>34:14 75:17,22 77:7        | <b>N</b><br>1:17 2:1 4:1 5:1 6:1       | <b>negative</b><br>24:22 109:21         |
| 94:5,13 95:8 99:10                    | <b>model</b><br>28:9,19 30:1 45:14        | <b>NAAQS</b><br>28:2 44:6 52:9,13,22   | <b>negatively</b><br>98:19,21           |
| 99:12 100:6 101:3,8                   | 45:24                                     | 66:3 110:7 111:2                       | <b>neither</b><br>57:18 58:22 129:12    |
| 101:16 107:14,16                      | <b>modeled</b><br>100:8                   | <b>name</b><br>6:4 9:9,21 12:14        | <b>NESHAP</b><br>52:13,14 53:14,16      |
| 112:17,18,22 113:2                    | <b>modeling</b><br>19:14 24:15,21 28:6    | 63:21 78:13 93:12                      | 54:2,7 55:8 71:13                       |
| 113:3,4,5,18 114:1                    | 44:11,15,19,21 45:1                       | <b>named</b><br>46:14                  | 71:22 72:4                              |
| 114:16,24 115:6,14                    | 64:7,23 65:23 76:17                       | <b>names</b><br>126:18                 | <b>never</b><br>52:6                    |
| 115:16,24 116:9,18                    | <b>modification</b><br>45:6,13 81:5 83:20 | <b>narrowed</b><br>124:5               | <b>Nevertheless</b><br>44:18            |
| 116:23 117:1,3,21                     | <b>modifications</b><br>84:12             | <b>narrower</b><br>109:5               | <b>new</b><br>71:20 83:13,19,22         |
| 118:3,19,21 119:15                    | <b>modified</b><br>81:8,17 83:11,17       | <b>narrowly</b><br>22:18 27:21         | <b>News</b><br>7:12,13                  |
| 119:16 120:1,7                        | <b>monitor</b><br>47:5 54:21 66:8         | <b>national</b><br>24:17 52:8,11 98:20 | <b>News-Gazette</b><br>7:14             |
| 121:14,19 122:8,12                    | <b>monitoring</b><br>64:8,17 65:5,7,8,13  | 100:24 110:5,6                         | <b>Newton</b><br>94:7,18 103:18,23      |
| 124:16                                | 65:24 66:8,15,22                          | <b>natural</b><br>37:6,12 38:22        | 104:14,22 123:18                        |
| <b>mile</b><br>119:22                 | 67:4,6,13 68:16,17                        | <b>nature</b><br>23:3                  | 124:2                                   |
| <b>million</b><br>70:21               | 74:22 75:7 115:1                          | <b>near</b><br>39:3                    | <b>nine</b><br>36:11 47:7,15 87:7       |
| <b>millions</b><br>104:6,17           | <b>monitors</b><br>66:4 74:23 75:8        | <b>nearest</b><br>67:10 119:22         | 106:17 111:19                           |
| <b>mind</b><br>8:22 44:7              | <b>monoxide</b><br>52:6,21 54:3,4,9 66:9  | <b>nearly</b><br>29:24 49:20           | 120:6                                   |
| <b>minimize</b><br>24:3 29:7 85:20,21 | <b>month</b><br>87:16                     | <b>necessary</b><br>38:15 80:13        | <b>nit</b><br>80:13                     |
| 116:6 125:13                          | <b>monthly</b><br>75:22 84:6,9            | <b>necessitate</b><br>74:11,14         | <b>nitric</b><br>81:4,7 83:5,10,14,19   |
| <b>minimized</b><br>75:17             | <b>morning</b><br>6:2 64:3,4 69:8,9       | <b>need</b><br>9:16 13:16 15:8         | 84:15 85:7 87:9                         |
| <b>minimizing</b><br>55:15 62:8 85:20 | 93:20                                     | 18:17 19:9,18,21                       | 88:9,15,23 91:5                         |
| 100:14,23                             | <b>motion</b><br>7:22                     | 21:18 39:6 114:4,7                     | <b>nitrogen</b><br>7:4 66:10 78:4 80:1  |
| <b>minimum</b><br>15:20 35:8 37:8,15  | <b>move</b><br>54:1 63:7 66:13            | 115:2 116:22,23                        | <b>non-attainment</b><br>52:7           |
| 37:20 38:9 80:8                       | 115:5 126:17                              | 127:17                                 | <b>non-compliance</b><br>125:10         |
| <b>minority</b><br>121:8              | <b>Moving</b><br>99:14                    | <b>needed</b><br>19:12 59:13 61:23     | <b>non-numerical</b><br>84:21 85:2,3,14 |
| <b>minute</b><br>46:13 108:21,24      | <b>multiple-year</b><br>74:7              | 89:11                                  | 86:17 87:9                              |
| 110:13,20 111:3                       |   |  | <b>non-particulate</b>                  |
| 116:5                                 |   |  |   |
| <b>minutes</b><br>46:13 47:19 77:24   |   |  |   |
| <b>Mississippi</b><br>31:7            |   |  |   |
| <b>mistaken</b>                       |   |  |   |

|  |  |  |   |
|--|--|--|---|
| 85:8<br><b>non-SMB</b><br>22:12<br><b>noon</b><br>10:22<br><b>normal</b><br>18:8,19 25:9 44:22<br>45:2,17 73:12 88:12<br>89:16 90:9,18<br><b>north</b><br>67:1,5<br><b>northeast</b><br>67:10<br><b>northeastern</b><br>67:1<br><b>Northey</b><br>98:24 107:1<br><b>Northey's</b><br>106:9<br><b>notably</b><br>114:3<br><b>Notary</b><br>129:4,21<br><b>note</b><br>30:22 33:7 62:19<br>71:5 72:18 75:14<br>88:23 90:2 93:15<br>94:12 100:15<br>110:14 119:2<br><b>noted</b><br>47:13 60:19 75:24<br>77:10<br><b>notes</b><br>16:6,11 27:24 48:14<br><b>Notice</b><br>7:10<br><b>noting</b><br>26:18<br><b>Notwithstanding</b><br>116:9<br><b>November</b><br>127:9<br><b>NOx</b><br>82:4,11 83:12 84:7<br>84:10,10,24 85:17<br>85:20,21,23 86:8,12 | 86:12 87:1,3,4<br>88:10 89:22 90:4,8<br>91:4,7<br><b>NO2</b><br>66:10 80:14 85:9<br><b>NSEHAP</b><br>52:24<br><b>number</b><br>6:8 8:15 12:8,10 13:2<br>14:6 16:5,13 17:1,1<br>17:16,18 22:7 23:17<br>23:23 25:7 27:2,19<br>29:11 46:14 51:16<br>56:15,18 57:11<br>60:12,15,17 63:5,18<br>64:16 66:13,13,23<br>67:4,6,13,16 69:11<br>74:4 78:18 79:5<br>80:23 82:3,20 83:8<br>84:4,20 86:1,15<br>87:7 91:2,20 93:8<br>94:4 95:10 99:7,15<br>102:1,5 103:5<br>105:20 108:3,14<br>109:18 111:19<br>112:22 113:14<br>118:10 119:5 120:6<br>123:12 126:1<br><b>numbers</b><br>18:5,12 19:19<br><b>numeric</b><br>109:11<br><b>numerical</b><br>26:20,24 27:1 86:12<br>109:10<br><b>numerous</b><br>60:16 125:13<br><hr/> <b>O</b><br><b>O</b><br>6:1<br><b>oath</b><br>12:3 51:11 63:13<br>78:9 93:1<br><b>object</b><br>90:21 | <b>oblivate</b><br>116:22<br><b>observation</b><br>48:1<br><b>observations</b><br>47:8,15<br><b>observe</b><br>23:22<br><b>observed</b><br>42:16<br><b>obviate</b><br>116:22<br><b>obviously</b><br>25:20 39:18<br><b>occasional</b><br>116:12<br><b>occasions</b><br>102:22<br><b>occur</b><br>113:16 114:19<br><b>occurred</b><br>48:1<br><b>occurrence</b><br>24:22<br><b>occurs</b><br>73:7<br><b>October</b><br>61:17 62:13 81:5<br>83:21 127:4,13,14<br><b>offer</b><br>110:3<br><b>office</b><br>4:6,12,14 8:11,11,14<br>9:23 10:13 12:12,17<br>51:18,23 63:19 64:2<br>75:6 76:9 78:20,23<br>93:10,15<br><b>officer</b><br>1:13 3:3,4,5,6,7,8,9<br>4:5 6:2,5 7:8,18,21<br>8:21 11:9,16,19<br>12:5,18 30:6 50:10<br>50:12,20,24 51:4,13<br>62:16,24 63:15 69:1<br>76:6 77:3,5,13,22<br>78:2,11,15 88:2,8 | 91:14 92:9,16 93:3<br>123:1,5,12 125:20<br>126:16 127:1,21,24<br><b>official</b><br>14:20<br><b>offline</b><br>23:14<br><b>Oh</b><br>65:2 85:13 107:18<br><b>okay</b><br>11:3,6,22 12:5 13:12<br>13:19 14:6 16:5<br>17:12 30:6,8,12<br>32:8 33:15 39:16<br>40:4,18 44:9,10<br>48:13 50:10,17,22<br>50:22 51:2,4,13<br>54:1 57:11 60:6<br>61:24 62:14,16 63:1<br>63:15 65:2 69:3,5<br>75:10,13 77:3,12,13<br>77:14 78:4,11,15<br>79:24 80:7 82:22<br>83:8 85:17 88:2<br>92:9,16,20 105:20<br>107:12,19 108:12<br>112:20 115:4<br>118:10 121:13,13<br>121:17 122:1 123:5<br>124:4 125:20,21<br>126:14,16,22 128:1<br><b>one-hour</b><br>126:6<br><b>On-Line</b><br>8:14 9:23<br><b>opacity</b><br>21:7 27:6 41:9,10,11<br>41:12,17,21,21<br>42:13 43:12 46:11<br>46:16,17,19,21 47:5<br>47:8,11,20,24 48:6<br>48:8,10 84:21 85:1<br>85:2,7,14,18,21,24<br>86:2,8,11 87:4,6,9<br>94:8,19,21 95:15<br>96:9,13 97:1,5,11 |
|--|--|--|---|

|   |  |  |   |
|---|--|--|---|
| <p>97:12 102:8,16,23<br/>103:3,9,19,24 104:2<br/>104:11,23 105:13<br/>105:23 106:6,12<br/>108:16,20,22,24<br/>109:8,10,20 110:4,9<br/>110:12,14,20 111:4<br/>111:9,14,16 112:24<br/>113:7,9,16,22 114:6<br/>114:7,12,13,15,19<br/>115:9,20 116:4,8,13<br/>116:18,20 117:19<br/>117:23 118:5,16,24<br/>124:22 125:10,12<br/>125:13</p> <p><b>operate</b><br/>23:13 31:3 34:7,13<br/>35:7,11,13 54:8<br/>59:8,21 65:4,13<br/>96:5 104:18 105:8<br/>109:8</p> <p><b>operated</b><br/>17:6,8 23:12,16 33:7<br/>38:8 59:20 65:9<br/>66:6 109:15</p> <p><b>operates</b><br/>23:19 27:16 118:22</p> <p><b>operating</b><br/>18:9 20:15 21:1 22:5<br/>22:15 23:20 35:8<br/>45:16 55:11 56:15<br/>60:17 69:23 80:6,24<br/>82:20 100:12<br/>110:19 115:19<br/>117:4</p> <p><b>operation</b><br/>16:21 17:4 18:3,12<br/>19:3,4,16 25:9,11<br/>30:24 33:12,14 45:9<br/>89:16,21 94:20<br/>95:20 96:20 100:21<br/>104:13 113:7<br/>116:16</p> <p><b>operational</b><br/>17:1 54:18 77:7<br/>116:5 117:12</p> | <p><b>operationally</b><br/>81:10</p> <p><b>operations</b><br/>18:8,16 29:15 33:5<br/>33:17 44:22 45:3,18<br/>69:15 72:15 75:16<br/>86:13 87:13 88:12<br/>90:9,18 95:15</p> <p><b>opinion</b><br/>94:6,17 104:21<br/>112:23 113:5,5</p> <p><b>opposed</b><br/>111:24</p> <p><b>option</b><br/>55:5 79:8</p> <p><b>options</b><br/>24:8 85:4,16</p> <p><b>opt-in</b><br/>77:10</p> <p><b>oral</b><br/>9:24</p> <p><b>order</b><br/>6:12 7:6,7,17,21 8:6<br/>8:11 10:1,3 11:3,15<br/>13:23 36:18 58:16<br/>65:14 68:2 88:8<br/>112:10 123:13</p> <p><b>organic</b><br/>48:18 54:5,9,14 55:8<br/>55:15 56:8,18 57:3<br/>62:9</p> <p><b>organization</b><br/>9:9 117:16</p> <p><b>original</b><br/>70:15</p> <p><b>Orlando</b><br/>67:11</p> <p><b>outage</b><br/>74:9</p> <p><b>outlier</b><br/>71:2</p> <p><b>outside</b><br/>112:4 119:18 122:22</p> <p><b>overall</b><br/>84:6</p> <p><b>owned</b></p> | <p>66:23 67:7</p> <p><b>ozone</b><br/>46:7</p> <hr/> <p><b>P</b></p> <hr/> <p><b>P</b><br/>4:1,1 5:1,1 6:1</p> <p><b>page</b><br/>2:3 15:13 30:22 37:6<br/>37:22 40:11,23 46:9<br/>48:14 64:15,20<br/>69:11 72:17 73:21<br/>75:14 76:13 88:8,23<br/>90:1 95:18 99:22<br/>113:20,24 114:21<br/>122:13 123:13</p> <p><b>pages</b><br/>29:9 32:11 34:24<br/>36:10,11 38:18<br/>43:21 45:20 95:4<br/>98:15 106:17 109:4</p> <p><b>panel</b><br/>11:22 93:24 97:20<br/>99:16 100:3 105:22<br/>107:17 111:20</p> <p><b>paragraph</b><br/>15:13</p> <p><b>parameters</b><br/>54:18 118:23 120:22</p> <p><b>pardon</b><br/>86:20</p> <p><b>part</b><br/>24:21 25:9 26:9<br/>33:24 35:5,6,11,17<br/>36:19 38:20 43:17<br/>47:13 62:22 70:21<br/>71:4,12 72:3 76:1<br/>80:7,7 81:2 99:16<br/>102:2</p> <p><b>participants</b><br/>7:18 8:6 10:14 30:8<br/>62:17 69:3 88:3<br/>123:7</p> <p><b>participating</b><br/>128:2</p> <p><b>particular</b></p> | <p>86:11</p> <p><b>particularly</b><br/>81:11</p> <p><b>particulate</b><br/>22:13 27:22 28:2<br/>33:20 35:4 40:24<br/>41:4 104:10 106:1<br/>106:19 108:4</p> <p><b>parties</b><br/>129:14,17</p> <p><b>PARTS</b><br/>1:4</p> <p><b>passage</b><br/>64:22</p> <p><b>People</b><br/>4:11,17 65:16</p> <p><b>percent</b><br/>22:5,14 39:20 41:12<br/>41:17 46:12,12,16<br/>46:19 47:11,20<br/>64:12,13 97:10<br/>106:13,13 110:12<br/>110:12,19,20,22,22<br/>111:5,5,7,7,9,10,11<br/>111:11 116:4,7<br/>124:22,23</p> <p><b>performance</b><br/>74:23 109:2</p> <p><b>performed</b><br/>46:10 76:21</p> <p><b>period</b><br/>34:13 41:2,5,18,22<br/>41:24 42:21 43:1,3<br/>43:10 48:7 49:10<br/>50:6 72:19 73:24<br/>79:8 87:2 89:24<br/>90:16 99:19 108:15<br/>109:19 110:6,13,20<br/>113:17,21 114:5,8<br/>115:3 125:7</p> <p><b>periodically</b><br/>17:7</p> <p><b>periods</b><br/>35:20 41:7,17 43:6<br/>47:21 50:8 75:2<br/>80:6 94:23 96:14</p> |
|---|--|--|---|

|   |   |  |   |
|---|---|--|---|
| 97:6,12 105:18<br>113:10 115:21<br>124:23<br><b>permit</b><br>15:16 36:20 37:1<br>47:5 88:17 91:18<br>94:7 95:2 96:3,17<br>101:5 112:24 113:6<br>113:13<br><b>permits</b><br>94:8,19 95:14,19,23<br>97:17 100:17,20<br>109:6<br><b>permitted</b><br>58:19<br><b>permittee</b><br>96:4,19<br><b>permittees</b><br>109:7<br><b>permittee's</b><br>94:20<br><b>permitting</b><br>65:19<br><b>peroxide</b><br>79:18 80:16<br><b>person</b><br>9:7,20 11:22<br><b>personnel</b><br>116:5<br><b>perspective</b><br>94:2<br><b>petition</b><br>64:19,24 73:23<br><b>petroleum</b><br>7:3 33:1 63:9 64:19<br>64:22 65:12,16<br>66:21 68:2,22 69:18<br>69:22 70:13 71:20<br>71:22<br><b>Philip</b><br>2:12 78:3,8<br><b>Phillip</b><br>8:2 10:5<br><b>physically</b><br>89:16<br><b>pick</b> | 20:7<br><b>Place</b><br>4:19<br><b>plan</b><br>6:13 45:12 57:15<br>91:4 94:23 96:11<br>97:3,18 100:11<br>113:10<br><b>plans</b><br>104:13 106:12 117:4<br><b>plant</b><br>18:15,20 31:7 84:19<br>85:7 91:20 102:22<br>103:2 104:6 105:13<br>115:8,12 118:8<br>122:9<br><b>plants</b><br>31:6 81:24 83:2,3,6<br>84:15 91:5 94:21<br>104:14 111:22<br>123:18<br><b>please</b><br>8:22 9:5,9,12,14,20<br>11:23 12:14 13:19<br>26:5 35:10,14 37:11<br>40:13,15 41:6 44:3<br>46:24 50:13 51:6,8<br>54:11 63:3,10,21<br>66:14 67:16 68:16<br>69:17 71:19 72:23<br>74:1 75:19,22 77:15<br>78:5 79:19 82:7<br>84:9 88:13 89:4<br>90:7 91:6 92:10,20<br>92:21 93:11 99:22<br>101:14 107:23<br>118:1 119:2 122:2<br>123:17 125:22<br>127:22<br><b>plugging</b><br>33:1<br><b>plug-up</b><br>33:6<br><b>PM</b><br>21:7 22:8,12,17<br>24:17,20 28:5,10,17 | 29:3,8 35:18,23<br>36:4,19 41:4,9 42:2<br>42:14,18,19,24 43:2<br>43:13,14 46:6,21<br>106:8,9 109:21<br>110:4,5,8,24 111:2<br>111:17,17<br><b>podium</b><br>12:13<br><b>point</b><br>4:8 40:2 107:21<br>110:24<br><b>pollutant</b><br>53:24 54:21 55:9<br>98:18<br><b>pollutants</b><br>52:12,15,16 54:6,15<br>54:23 55:1,10 101:1<br><b>pollution</b><br>1:1 4:3 6:3 33:10<br>100:22 101:11<br>103:7,11,20 115:7<br>115:11,18<br><b>population</b><br>121:9<br><b>portions</b><br>42:20 82:9 110:1<br><b>position</b><br>18:20 26:22 59:12<br>94:17<br><b>possibility</b><br>91:19<br><b>possible</b><br>41:2 73:14 74:16<br>84:23<br><b>post</b><br>15:9 17:23 20:4<br>127:6<br><b>posted</b><br>7:10 8:13,23<br><b>post-hearing</b><br>13:17 32:5,6 50:19<br>57:24 68:20 107:10<br>127:16<br><b>potential</b><br>52:4 59:10 103:24 | 116:17<br><b>potentially</b><br>111:20<br><b>pound</b><br>49:18 82:18 88:10<br>90:20 91:23 92:1<br><b>pounds</b><br>48:18 50:1 80:21<br>82:6,12 83:13,18<br>91:21,21,24<br><b>pour</b><br>33:3<br><b>power</b><br>74:9 94:14 111:22<br><b>Powerton</b><br>112:24 113:6,8<br>114:17 115:8,12<br>116:11 117:4,22<br>118:4 119:12,18<br>120:3,8 122:9,21<br><b>Powerton's</b><br>101:4 119:21<br><b>practicable</b><br>58:19 75:18 79:12<br><b>practical</b><br>79:22 86:4<br><b>practically</b><br>26:3 86:5,9 100:1<br><b>practice</b><br>54:20 55:5,24 97:13<br>97:15 100:13<br>109:12,14<br><b>practices</b><br>55:2 62:8 99:17,21<br>99:24 100:22 101:2<br>101:13 115:19<br>117:12 118:13,16<br>118:20<br><b>preamble</b><br>26:19 85:6<br><b>precariously</b><br>102:11<br><b>precipitators</b><br>116:3<br><b>predict</b><br>84:5 |
|---|---|--|---|

|   |                                      |  |   |
|---|--------------------------------------|--|---|
| <b>prefer</b><br>90:19                    | 14:17 15:4                           | 81:4 83:19 88:10                       | 7:5,7                                   |
| <b>preferable</b><br>27:6 85:4,15         | <b>primarily</b><br>54:3 70:2        | <b>products</b><br>54:17               | <b>propose</b><br>24:10 62:4 82:21      |
| <b>preferred</b><br>99:16 105:22          | <b>print</b><br>129:11               | <b>profile</b><br>42:1 73:15,16        | <b>proposed</b><br>13:3 16:2 22:10 24:1 |
| <b>preheat</b><br>38:12                   | <b>printed</b><br>127:7              | <b>program</b><br>52:9,13,22 53:17     | 25:5 26:4,6,14 27:4                     |
| <b>preheating</b><br>89:8,14              | <b>prior</b><br>9:10 23:6,15 81:18   | 94:7                                   | 27:20 33:18,19 35:4                     |
| <b>preliminary</b><br>6:10                | 89:6 117:9                           | <b>progress</b><br>98:10 99:3          | 35:14 36:9 39:8                         |
| <b>premature</b><br>39:14                 | <b>privileged</b><br>8:20            | <b>prohibited</b><br>20:23 22:20 97:22 | 40:24 41:19 43:24                       |
| <b>prepared</b><br>98:24                  | <b>problem</b><br>121:24 122:4       | <b>prohibits</b><br>58:24 98:6         | 44:12,15 45:6 46:4                      |
| <b>prescribed</b><br>71:17 72:7           | <b>problems</b><br>33:10             | <b>project</b><br>38:23 39:5,18,23,24  | 46:6 48:7 49:3 50:4                     |
| <b>present</b><br>5:12 6:14,19 102:21     | <b>procedural</b><br>8:18 10:10 11:8 | 65:22,24 66:3,5                        | 52:3 55:18 57:21                        |
| <b>pressure</b><br>65:19                  | <b>procedurally</b><br>48:24         | <b>promptly</b><br>127:6               | 61:11,13,19 70:23                       |
| <b>prevent</b><br>72:21 90:17             | <b>procedure</b><br>6:11,23          | <b>promulgation</b><br>71:15 72:5      | 71:24 72:10 75:14                       |
| <b>preventing</b><br>105:12               | <b>procedures</b><br>69:15           | <b>proper</b><br>14:4 112:15           | 80:24 82:9 83:12                        |
| <b>previous</b><br>16:1 75:24             | <b>proceed</b><br>6:13 11:18 12:11   | <b>property</b><br>66:23 67:7          | 84:6,11,14 86:2,16                      |
| <b>previously</b><br>44:4 59:1 60:3,19    | 51:17 63:18 78:19                    | <b>proponents</b><br>30:16 94:1        | 87:1,8 91:6 114:8                       |
| 62:20 112:12                              | 93:9                                 | <b>proposal</b><br>9:3 13:5,21,24 14:5 | 115:2 118:13                            |
| 113:15                                    | <b>proceeding</b><br>6:5 11:3 13:23  | 14:13 16:10 22:19                      | 123:19 124:11                           |
| <b>pre-file</b><br>7:19 8:7 127:12,14     | 101:22                               | 53:9,12,15 54:10                       | 125:5 126:5                             |
| <b>pre-filed</b><br>7:23,24 8:4,9 10:7,12 | <b>proceedings</b><br>1:9 10:2       | 55:21,23 56:2,6,13                     | <b>proposes</b><br>22:6 52:10 82:4      |
| 10:15 12:19,21 13:2                       | <b>process</b><br>24:20 27:17 28:17  | 56:17 57:18 58:3,5                     | <b>proposing</b><br>55:3 57:4 84:2,16   |
| 14:15 20:7 21:24                          | 32:22 35:18 69:14                    | 59:2,7,11,13 60:7                      | 90:8                                    |
| 25:2,4 30:13,15,21                        | 71:3 79:17 83:10                     | 60:20,24 61:15,22                      | <b>Protection</b><br>1:12,16 14:8 57:14 |
| 34:5 35:1 36:12                           | 89:16,17 126:9                       | 74:19 76:13 83:9                       | 119:11                                  |
| 37:23 38:19 51:24                         | <b>processes</b><br>81:8 82:13 83:14 | 90:2 95:11,22 97:9                     | <b>provide</b><br>20:1 23:7 26:5 27:21  |
| 75:5 77:19 79:1                           | 87:10 88:10,15,23                    | 97:22 98:13,17 99:1                    | 32:9 60:9 68:16                         |
| 92:14 99:8 103:16                         | <b>procure</b><br>104:8 117:2        | 99:16 108:19 109:5                     | 73:14 74:17 75:23                       |
| 115:16 123:14                             | <b>produce</b><br>9:7 47:22          | 111:3,15,21 112:8                      | 77:1 82:8 87:2,5,17                     |
| 126:3                                     | <b>production</b>                    | 112:11,16 115:3                        | 88:21 91:11 92:4                        |
| <b>prima</b>                              |                                      | 116:24 119:2,6                         | 93:24 108:19                            |
|   |                                      | 120:9 122:10,15                        | 117:11 126:20                           |
|   |                                      | 124:5,6 125:16                         | <b>provided</b><br>15:1 19:20 37:3      |
|   |                                      | 126:6                                  | 70:20 74:24 75:4                        |
|   |                                      | <b>proposals</b>                       | 76:15 101:11                            |
|   |                                      |  | 114:24                                  |
|   |                                      |  | <b>provides</b><br>26:13 41:1 90:16     |
|   |                                      |  | 106:16                                  |
|   |                                      |  | <b>provision</b><br>72:12 98:7          |

|  |   |   |  |
|--|---|---|--|
| <b>provisions</b><br>1:11 14:11,16,17<br>35:11 57:21 100:23<br>110:11  | 46:2,5 52:5,8 53:7<br>98:19,20 109:21<br>110:5,7 111:1,18   | 50:21 51:17,24<br>62:17,20,21,23 63:1<br>63:4,19 69:2,4 75:5<br>77:14,17,20 78:19<br>78:24 87:20,22 88:3<br>88:4 91:14 92:12,14<br>93:9,21,23 94:3<br>99:8 106:23 107:3,5<br>112:21 113:19<br>114:2 122:24 123:6<br>123:8 125:21,24<br>126:3 127:14 | 27:3,8,9,19,24 28:8<br>29:10,12,13,23<br>30:20,23 31:3,5,10<br>31:14,19,20 32:4,18<br>34:4 35:10,16 36:7<br>36:13 39:7 40:19<br>41:19 45:19 47:1,9<br>48:7 52:1  |
| <b>proximity</b><br>122:9  | <b>quantities</b><br>52:19  | <b>quick</b><br>124:12  | <b>raise</b><br>39:2   |
| <b>public</b><br>9:19,20,24 10:18,19<br>11:1 50:14,17 63:3<br>63:5 70:14 77:16,18<br>92:11,13 101:24<br>125:23 126:1,17,20<br>129:4,21 | <b>question</b><br>11:8 13:2,9,18 14:6<br>15:7 16:5,19 17:10<br>17:15,16,17 18:1<br>20:8 23:7 26:17<br>29:19 30:15,21<br>32:11 33:19 35:3<br>37:5 40:7,10,11,23<br>43:17 46:8 48:13,22<br>50:13 52:20 53:21<br>55:17 56:7 57:8,11<br>60:23 62:1 64:16<br>67:15 69:11 71:19<br>72:17 73:15,21<br>75:11,13 76:1,7,10<br>80:8 85:12 88:7,22<br>90:1,24 93:12,15<br>94:4 95:10,18 96:1<br>97:19,20,20 99:7,14<br>101:9,20,23 102:5<br>102:14,20 103:5<br>105:20,22 107:16<br>107:23,24 108:3,6<br>108:14 109:18<br>111:19 112:3,22<br>113:14 115:5,5<br>118:11,12 119:5<br>120:6,11 122:3<br>123:11,12 124:12<br>124:13 126:5<br>127:20 | <b>quickly</b><br>6:10 19:13 21:17<br>79:14   | <b>raised</b><br>72:21   |
| <b>published</b><br>61:5   | <b>pyroscrubber</b><br>15:21 16:22 20:20,22<br>21:2,5,9,20 24:9<br>28:14,24 30:4 34:7<br>34:17,20 35:7,12,21<br>36:4,5,17 37:8,10<br>37:14,21 38:10,16<br>39:4 41:3 42:3,6<br>43:5 48:2 49:11,15<br>49:19 50:2  | <b>quote</b><br>14:24 25:8,12 26:21<br>27:1,21 29:14 35:5<br>46:1,1 52:4,5 57:21<br>58:1 81:3 86:4,18<br>96:4,6,19,22 98:7<br>98:12 99:20,21,23<br>99:24,24 100:1,13<br>100:21,23 102:7,9<br>102:11,12 105:23<br>106:2,6 108:2,6<br>114:3,9 119:7   | <b>raising</b><br>39:10  |
| <b>purpose</b><br>38:9,12 65:22  | <b>questioning</b><br>10:16   | <b>quoted</b><br>15:13  | <b>randomness</b><br>44:23   |
| <b>purposes</b><br>66:2 70:5 111:18  | <b>questions</b><br>8:7,10,12,22 9:2,4,8<br>9:10 10:11,12,14,15<br>10:24 11:2,10,12,21<br>11:21 12:11,20,21<br>16:18 22:1,23 30:7<br>30:9,13,14,21 43:19<br>43:20 46:21 50:16   | <b>quoting</b><br>100:2   | <b>range</b><br>106:1  |
| <b>pursuant</b><br>1:11 27:7 58:16<br>98:14 116:1  |   | <b>R</b>  | <b>Rao</b><br>2:7,10,14,18 5:16<br>6:20 17:13,19,24<br>18:22 19:7,17 20:6<br>30:11,12 31:10,16<br>31:24 32:8,10 33:9<br>33:15,18,23 35:3<br>37:5 39:9,16 40:4,7<br>40:18,21,23 43:16<br>43:21 44:9 46:8,23<br>48:11,13 50:9,11<br>62:19 69:5,7,8,10<br>70:9 71:8,19 72:17<br>73:10,21 74:16<br>75:10,13 76:4 77:4<br>77:6,12 88:6,7,22<br>90:1,23 91:13 92:4<br>92:8 123:10,11<br>124:4,15 125:15,19<br>126:12 |
| <b>pursuing</b><br>27:6  |   | <b>Rain</b><br>4:1 5:1 6:1  | <b>rapidly</b><br>41:23 79:20  |
| <b>purview</b><br>77:8   |   |   | <b>rate</b><br>42:19 48:18 73:11<br>106:8,20,21 108:5,7<br>108:8,10 110:24   |
| <b>put</b><br>34:2   |   |   | <b>rates</b><br>42:24 48:15  |
| <b>p.m</b><br>10:24 11:2   |   |   |  |
| <b>Q</b>   |   |   |  |
| <b>qualifying</b><br>120:15  |   |   |  |
| <b>quality</b><br>24:14,17,23 45:1   |   |   |  |



|  |   |   |  |
|--|---|---|--|
| <b>rationale</b><br>90:7 106:16  | 22:22   | 62:6 76:11 93:16<br>95:18 118:13  | 59:24  |
| <b>reach</b><br>37:20 39:12 42:9   | <b>recommendation</b><br>100:9,9,12   | <b>references</b><br>53:15  | <b>regularly</b><br>61:9   |
| <b>reaches</b><br>42:4   | <b>record</b><br>8:21 9:1 10:8 12:7<br>26:8,19 34:2 40:14<br>51:15 58:12 62:20<br>62:22 63:17 68:15<br>78:2,12,17 88:21<br>93:4 94:16 107:15<br>121:14 126:23,24<br>127:2,20,22,23<br>128:1 | <b>referencing</b><br>62:11 106:21  | <b>regulate</b><br>52:15 56:1,2  |
| <b>reaction</b><br>80:13   |   | <b>referring</b><br>13:11 17:16 83:4<br>95:7 108:7,11<br>113:24 118:11<br>120:15 122:5      | <b>regulated</b><br>53:10 56:5,19 59:3,7<br>60:15  |
| <b>read</b><br>10:9 12:7,20 30:13<br>34:1 41:2 51:15<br>63:17 67:23 78:24  | <b>recorded</b><br>46:12 75:2   | <b>refers</b><br>61:15 64:22 123:14   | <b>regulates</b><br>53:17 55:8 86:7  |
| <b>reading</b><br>24:19 46:11 68:15  | <b>records</b><br>16:20 75:6 88:14,17   | <b>refineries</b><br>64:6 69:16,18,23<br>70:10,23 71:5,11,22<br>72:2,12 74:18 75:8<br>75:20 | <b>regulation</b><br>53:14 54:15 86:10   |
| <b>readings</b><br>48:6,10   | <b>reduce</b><br>39:11 80:20 82:4<br>103:24 116:17  | <b>refinery</b><br>66:1,1 67:2,3,18<br>68:19 71:17 72:8,15<br>73:2 74:20                    | <b>regulations</b><br>41:10 55:18 56:10<br>58:23 59:16 60:9<br>61:4 70:18 81:3<br>84:6 100:16 111:14 |
| <b>ready</b><br>11:5 51:7  | <b>reduced</b><br>66:10 129:11  | <b>refinery's</b><br>66:16,17 73:22   | <b>regulatory</b><br>7:1 14:11,12 16:10<br>43:3 49:18 51:6<br>53:22 55:4 60:24<br>61:11,14,19 76:2   |
| <b>realize</b><br>46:20  | <b>reductant</b><br>79:17 80:9,15   | <b>reflect</b><br>9:2 15:2 17:3   | <b>reintroduced</b><br>42:9  |
| <b>really</b><br>19:2  | <b>reduction</b><br>89:22   | <b>reflected</b><br>61:18   | <b>reiterate</b><br>63:2   |
| <b>reask</b><br>122:2  | <b>Reese</b><br>2:8 8:2 10:5 63:8,12<br>64:4,21,21 65:11,11<br>66:20,20 68:1,1,21<br>68:21 69:8,9,21,21<br>70:12,12 71:10,10<br>72:2 73:2,14 74:4<br>74:20 75:12,24 77:9<br>77:21           | <b>reflects</b><br>47:7   | <b>relate</b><br>52:22 53:2 54:9   |
| <b>reason</b><br>47:13   | <b>refer</b><br>24:24 34:24 36:9<br>61:12,14 64:17<br>70:13 91:1 94:13<br>110:1 120:24,24   | <b>refractory</b><br>32:22 38:13,14 72:18<br>72:19,22,24 73:6,9<br>73:12,18                 | <b>related</b><br>16:20 109:24 119:4<br>129:13   |
| <b>reasonable</b><br>34:12 82:7 98:9 99:2  | <b>reference</b><br>40:12 55:3 61:1<br>101:12,15 106:19<br>108:3 111:1 113:18<br>114:12   | <b>regarded</b><br>45:24  | <b>relatedly</b><br>24:13  |
| <b>reasons</b><br>15:14 24:2 26:13<br>29:10 36:8,11 37:4<br>40:20 45:20 64:6,15<br>74:5 79:21 95:4,6,8<br>95:17 98:15,16 99:1<br>99:22 102:7,13<br>103:15 106:2,6<br>109:3 110:1 115:15<br>118:9 119:6,9,16,24<br>120:3 122:13<br>123:13 | <b>referenced</b>   | <b>regarding</b><br>55:22 73:22 101:12<br>126:6   | <b>relation</b><br>98:19   |
| <b>received</b><br>7:24 8:4,9 113:19<br>114:2  |   | <b>Regardless</b><br>59:1   | <b>relative</b><br>59:16,19,22 60:8<br>66:15 84:7 129:16   |
| <b>receives</b><br>127:5   |   | <b>regenerator</b><br>72:20 73:11   | <b>relevant</b><br>8:19 20:18 45:4<br>56:12,17 57:4  |
| <b>recognize</b>   |   | <b>Register</b><br>91:2 100:2   | <b>reliance</b><br>109:15  |
|  |   | <b>regs</b>   | <b>relied</b><br>28:6 106:11 118:8   |
|  |   |   | <b>relief</b>  |

|  |   |   |   |
|--|---|---|---|
| 15:1,15 19:10 41:1<br>116:23<br><b>relies</b><br>99:17<br><b>remaining</b><br>117:9<br><b>remains</b><br>36:15 50:6 106:13<br>122:20<br><b>remedied</b><br>21:17<br><b>reminder</b><br>9:22<br><b>removes</b><br>72:11<br><b>repair</b><br>73:13<br><b>repaired</b><br>34:12<br><b>repairs</b><br>72:19,24 73:4,9<br><b>repeated</b><br>9:16<br><b>repetitious</b><br>8:20<br><b>rephrase</b><br>85:11<br><b>report</b><br>1:9 76:2<br><b>reported</b><br>114:16<br><b>reporter</b><br>3:12 9:5,13 11:23<br>12:15 51:7 63:10,22<br>78:5 92:21 129:1,4<br><b>reports</b><br>74:23 75:1<br><b>represent</b><br>9:10 18:12<br><b>representative</b><br>47:3 48:24 49:7<br><b>representing</b><br>78:13<br><b>request</b><br>23:6 101:11<br><b>requested</b> | 17:22 19:11 20:3<br>34:18 39:6<br><b>requesting</b><br>116:24<br><b>require</b><br>23:21 58:8 74:21<br>89:9 117:18<br><b>required</b><br>15:19 26:20 34:22<br>35:10,16 36:2 40:5<br>46:18 47:4,10 65:4<br>65:12 70:1 72:20<br>86:5 88:16 97:16<br><b>requirement</b><br>36:21 80:9 98:8,11<br>98:22 100:8<br><b>requirements</b><br>13:5 26:2 55:14,22<br>55:24 70:11 71:18<br>72:9 97:14,16 99:4<br>109:13 116:11<br>118:21<br><b>requires</b><br>33:4 36:15 58:11,24<br>75:15 100:20<br><b>requiring</b><br>57:14<br><b>resolution</b><br>65:17<br><b>resolved</b><br>16:8<br><b>respect</b><br>32:1 55:6 71:2 81:11<br>106:18<br><b>respectfully</b><br>24:24<br><b>respectively</b><br>64:14 110:22 111:8<br><b>respond</b><br>13:9 26:11 50:13,19<br>63:3 77:15 87:23<br>92:10 94:11 100:3<br>101:20 107:24<br>108:13 125:23<br><b>responded</b><br>101:18 | <b>responding</b><br>75:11<br><b>response</b><br>13:18 15:10 16:18<br>17:10,14,24 19:13<br>20:18 33:24 70:4<br>71:9 87:11,13 99:6<br>107:17 112:6<br>114:22,23<br><b>responses</b><br>52:2 57:24 113:19<br>114:2,21<br><b>responsibilities</b><br>69:13<br><b>restart</b><br>32:13<br><b>restate</b><br>107:23<br><b>result</b><br>21:13 32:21 39:24<br>45:15 48:6 50:4<br>57:22 59:2,11 65:17<br>84:14 104:15 109:1<br>114:7 122:15<br>125:11<br><b>resulted</b><br>47:19<br><b>resulting</b><br>89:9 116:13<br><b>results</b><br>29:15,20 46:17 47:23<br>49:2,8 76:18,22<br><b>retained</b><br>3:10<br><b>retire</b><br>104:13 117:4<br><b>retirement</b><br>117:9<br><b>review</b><br>91:10<br><b>reviewed</b><br>119:17<br><b>reviewing</b><br>87:16<br><b>revised</b><br>61:2 62:3,12 66:3 | 110:10<br><b>revision</b><br>58:6<br><b>revisions</b><br>61:7 91:4,8<br><b>right</b><br>17:9,20 32:10 51:7<br>53:14 57:8 63:7,9<br>69:1 73:20 75:12<br>77:21 92:17 123:5<br>126:17<br><b>rigorous</b><br>116:10<br><b>risk</b><br>104:2 115:20 116:20<br>124:24 125:9<br><b>road</b><br>67:4<br><b>Robinson</b><br>31:8 32:16 65:24<br><b>role</b><br>82:14<br><b>roll</b><br>34:14 42:11<br><b>rolled</b><br>90:4<br><b>rolling</b><br>21:21 80:24 81:15<br>82:10 90:3,9<br><b>Room</b><br>1:16<br><b>Ross</b><br>2:4 8:1 10:3 11:4,14<br>12:2,7 13:20 15:11<br>16:17 18:13 20:17<br>23:2 29:23 31:5,13<br>31:19 32:3,18 33:24<br>34:4<br><b>route</b><br>107:1<br><b>routinely</b><br>47:14<br><b>Ruining</b><br>117:17<br><b>rule</b><br>30:16 39:8 47:5 |
|--|---|---|---|

|   |   |  |  |
|---|---|--|--|
| 50:16 53:24 59:17<br>63:5 70:2 71:15<br>77:17 84:14,16,17<br>90:3 91:1 92:12<br>126:1<br><b>rulemaking</b><br>6:5,9 7:5 13:14,24<br>16:1 19:14 36:9<br>54:23 57:12 58:12<br>70:15 111:23 112:1<br><b>rulemakings</b><br>44:13,16<br><b>Rulemaking-Air</b><br>1:4<br><b>rules</b><br>8:18,19 9:12 10:10<br>16:2 31:22 34:18<br>50:15 59:23 71:17<br>72:8 84:8 110:9<br><b>run</b><br>18:15,20 46:14 49:13<br>49:17,19<br><b>runs</b><br>46:15 48:16,23 49:15<br><b>R200-23-018</b><br>70:15<br><b>R23-18</b><br>14:11 16:1 57:12,20<br>59:18 60:1<br><b>R23-18(a)</b><br>6:9 8:15 14:12 57:19<br>58:13 60:7<br><b>R23-18(1)</b><br>1:4<br><hr/> <b>S</b><br><hr/> <b>S</b><br>3:1 4:1 5:1 6:1<br><b>safe</b><br>100:22<br><b>safety</b><br>69:14 70:5,8 71:3<br><b>sake</b><br>9:5<br><b>Salk</b><br>1:13 3:10 4:2 6:4 | <b>sampling</b><br>49:7<br><b>Sangamon</b><br>1:16<br><b>satisfactory</b><br>24:11<br><b>satisfy</b><br>26:4<br><b>Sawula</b><br>4:19 97:24 98:2 99:5<br>100:3 101:19 102:4<br>106:23 107:12,22<br>108:9,12 112:2<br>120:10 121:4,13<br>124:12,17 125:17<br>126:4,14 127:19<br><b>saying</b><br>15:7<br><b>SBB</b><br>22:8<br><b>SCC</b><br>72:12<br><b>scenario</b><br>19:15 77:10<br><b>scenarios</b><br>43:14<br><b>scheduled</b><br>7:9 127:8<br><b>scheduling</b><br>7:17<br><b>Schiff</b><br>4:18 5:3 98:3<br><b>scope</b><br>112:5<br><b>SCR</b><br>79:17 89:5,8<br><b>screen</b><br>89:15<br><b>screening</b><br>64:7 76:16,21<br><b>SCRs</b><br>89:2,2<br><b>scrubber</b><br>36:22<br><b>second</b><br>4:15 6:23 24:13 | 33:22 43:17 50:22<br>57:20 68:5 80:7<br>126:23 127:8,13,15<br>127:20<br><b>section</b><br>8:18 9:12 10:9 14:18<br>22:20 25:6 27:5,7,9<br>27:10 35:5,19,24<br>36:6,19 42:20 45:19<br>45:22 57:6 67:2<br>70:22 71:17 72:8<br>83:18 88:24 97:23<br>98:5,5,10 100:18<br><b>sections</b><br>9:11 25:3 27:13,15<br>110:15,18<br><b>see</b><br>42:17 48:3 126:7,10<br>126:18<br><b>Seeing</b><br>11:3 30:8 62:18 69:3<br>88:4 123:7 126:22<br><b>selected</b><br>24:1<br><b>semiannual</b><br>74:24<br><b>send</b><br>40:15<br><b>sense</b><br>14:14 89:20<br><b>sentence</b><br>96:7,9,23 97:1<br><b>sentences</b><br>71:11<br><b>SEP</b><br>65:22,23<br><b>separate</b><br>15:17 91:20<br><b>September</b><br>1:14 7:23 8:3,8<br>101:10 102:1 103:1<br><b>serious</b><br>52:18<br><b>serve</b><br>49:8<br><b>serves</b> | 56:19<br><b>service</b><br>67:4<br><b>servicing</b><br>30:4 35:7,12<br><b>serving</b><br>119:20<br><b>set</b><br>12:19 26:23 54:20<br>78:5 94:22 95:1<br>96:10 97:2 110:6<br>113:9,12 127:16<br><b>sets</b><br>55:9<br><b>setting</b><br>116:3<br><b>settlement</b><br>15:17,20,24 20:24<br>36:14,15 37:2 38:20<br>40:12<br><b>seven</b><br>29:11 35:1 40:11<br>42:8 43:21 86:1<br>93:8 108:14 118:11<br><b>Sharene</b><br>2:15 8:2 10:6 92:18<br>92:24 99:5,9 100:5<br>101:3 107:14<br>112:17 113:2<br>118:19 119:14<br>121:18 122:11<br><b>Shealey</b><br>2:15 8:3 10:6 92:18<br>92:24 99:5,9,9<br>100:5 101:3,3<br>107:14,14,19<br>112:17,17 113:2,2<br>113:23 114:11,18<br>115:13 117:24<br>118:6,19,19 119:14<br>119:15 121:18,18<br>122:1,11,11<br><b>Shealey's</b><br>93:5<br><b>sheet</b><br>9:17 126:19 |
|---|---|--|--|

|  |  |   |  |
|--|--|---|--|
| <b>short</b><br>10:23 98:17<br><b>shorter</b><br>49:2 124:10<br><b>shortest</b><br>46:18 47:10<br><b>Shortly</b><br>119:15<br><b>short-term</b><br>105:23 106:6<br><b>showed</b><br>19:14<br><b>shows</b><br>119:12<br><b>shut</b><br>18:24 32:12 34:9,22<br>74:12 84:19<br><b>shutdown</b><br>17:2 25:20,24 31:22<br>74:15 75:2 80:4,22<br>84:22 86:17 88:11<br>88:15,18,20 89:1,7<br>90:12,21 91:22,24<br>92:2 95:21 105:4,9<br>118:17 119:3<br><b>shutdowns</b><br>74:8 79:10 81:12<br>85:3,15 86:4,24<br>87:10<br><b>SIDLEY</b><br>5:7<br><b>sign</b><br>9:18<br><b>significant</b><br>41:6 43:23 45:5 46:1<br>89:21<br><b>significantly</b><br>48:17 50:1 56:22<br><b>sign-in</b><br>9:17<br><b>sign-up</b><br>126:18<br><b>Sil</b><br>45:24 46:3<br><b>Sils</b><br>45:21 | <b>similar</b><br>16:18 29:14,15,20<br>53:18 54:18 75:8<br>81:10 87:8 100:15<br>101:6<br><b>similarly</b><br>23:20 101:4 103:8<br>121:15<br><b>simpler</b><br>54:19<br><b>SIMS</b><br>74:22 85:19<br><b>single</b><br>54:21 90:5<br><b>SIP</b><br>26:15,22 31:12,15,17<br>32:1 44:17 57:14<br>58:5,9,14,23 59:14<br>69:19 70:1,11 71:4<br>77:8 87:11,13 91:8<br>95:14 96:10 97:2<br>98:7 100:11 109:8<br><b>SIPs</b><br>76:3<br><b>sir</b><br>75:12<br><b>site-specific</b><br>13:4,14 111:24<br><b>situated</b><br>66:23 67:6<br><b>six</b><br>17:16 27:19 37:6<br>40:7 43:21 49:14<br>64:12 84:20 93:6<br>100:9 105:21 108:3<br>108:21,24 110:13<br>110:20 111:3 116:4<br>118:11<br><b>six-minute</b><br>124:22<br><b>skip</b><br>14:13 22:1 40:10<br>113:15 118:10<br><b>slow</b><br>34:14 42:10<br><b>slower</b> | 73:19<br><b>slowly</b><br>72:21<br><b>SMB</b><br>14:10 15:2,5,15 20:9<br>25:17 44:2,5 53:4<br>53:18 59:6 60:5<br>95:12,16 102:9<br>116:21 124:23<br>125:11<br><b>SMP</b><br>109:6<br><b>SMS</b><br>55:3 62:10<br><b>softly</b><br>9:15<br><b>software</b><br>45:1,11<br><b>solely</b><br>8:24<br><b>solid</b><br>33:1<br><b>somewhat</b><br>80:20<br><b>sooner</b><br>79:13 126:10,12<br><b>sorry</b><br>31:14 33:21 98:5<br>107:18 115:5<br>117:24 119:14<br><b>sort</b><br>54:10 61:24<br><b>sought</b><br>13:24<br><b>Sounds</b><br>77:2<br><b>source</b><br>25:9,11,21 83:22<br>89:9,13 110:12,19<br><b>sources</b><br>26:22 27:12,16 53:10<br>53:19 54:16 55:7,16<br>56:5 59:4,7 60:16<br>62:10 81:10 82:14<br>83:16<br><b>South</b> | 4:15 5:4,8<br><b>southeast</b><br>67:3,9<br><b>southwest</b><br>67:14<br><b>southwestern</b><br>67:12<br><b>space</b><br>100:20<br><b>speak</b><br>9:6<br><b>speaking</b><br>9:6<br><b>specific</b><br>101:23 107:24 118:6<br>120:18,23<br><b>specifically</b><br>25:3 35:18 45:20<br>56:12 70:8 77:9<br>83:1 99:20 101:14<br>102:6 119:20<br><b>specifics</b><br>107:3<br><b>specified</b><br>117:13<br><b>spell</b><br>9:12<br><b>spikes</b><br>90:17 91:17,19<br><b>Springfield</b><br>1:17 4:13,15<br><b>SSM</b><br>25:17 26:15 31:17<br>44:17 53:18 55:6,13<br>69:19 70:1 77:8<br><b>stack</b><br>119:20 120:3<br><b>stacks</b><br>30:3<br><b>staff</b><br>6:19,20 8:23 33:6<br>50:15 63:4 77:17<br>101:10 125:24<br><b>staff's</b><br>92:11<br><b>standard</b> |
|--|--|---|--|

|  |   |   |  |
|--|---|---|--|
| 22:9 27:7 35:4<br>41:13 47:11,20 57:6<br>64:20 65:1 71:17<br>72:7 73:22 76:13<br>77:11 80:5 81:20<br>83:24 84:2,22 98:20<br>99:23 100:24<br>101:15 102:12,16<br>102:23 103:3,9,19<br>104:23 108:17,21<br>109:1 113:22<br>114:13,15 117:19<br>124:20,22 125:5   | 41:2,5,13,18,23<br>42:8,21 43:6 44:12<br>44:16,20 45:3,10,16<br>46:10 47:3,6,8,12<br>47:15,17,18 49:1,7<br>49:10 50:5,8 64:9<br>68:3,4,5,6,8,10<br>72:12,15 73:2,12<br>74:15,17 75:3,16<br>80:4,22 84:22 85:2<br>85:14 86:17,23<br>88:11,18,19,24 89:7<br>90:11,21 91:22,24<br>92:1 94:23 95:20<br>96:4,14 97:12 104:3<br>105:4,4,18 109:9,16<br>110:10 113:11<br>115:21 116:14<br>118:17 119:1   | <b>stated</b><br>25:20 34:6 36:1 37:6<br>57:21,24 59:2 70:16<br>105:16 113:16<br><b>statement</b><br>15:14 26:13 29:10<br>36:8,10 37:4 40:19<br>45:20 64:5,15 76:15<br>95:3,6,7,17 98:16<br>99:1,6,22 100:5<br>102:7,12 103:15<br>106:2,3,5,5 109:3<br>110:1 115:15 118:9<br>119:6,9,16,23 120:2<br>122:13 123:13<br><b>statements</b><br>112:5 113:24<br><b>states</b><br>31:11,15 35:5 44:4<br>44:11,15 46:9 52:3<br>52:5 69:16,20,23<br>70:10,17,24 71:18<br>72:9 80:24 87:8,14<br>96:3,18 117:16<br><b>stating</b><br>26:21<br><b>station</b><br>66:5,23 67:4,6,13<br>114:17 117:5<br>121:20<br><b>stations</b><br>65:5,7,8,13 66:8,15<br>68:17 101:4<br><b>station's</b><br>95:13 109:6<br><b>status</b><br>52:21 53:1<br><b>Ste</b><br>4:3<br><b>steady</b><br>23:17<br><b>stem</b><br>14:10<br><b>stenographic</b><br>129:9<br><b>step</b> | 11:6 12:13 51:6,19<br><b>steps</b><br>104:16 115:17,23<br>125:13,14<br><b>Steven</b><br>98:24<br><b>stop</b><br>9:14 21:18<br><b>stopped</b><br>21:12<br><b>stops</b><br>29:5<br><b>storm</b><br>115:21<br><b>storms</b><br>74:10<br><b>Street</b><br>4:3,15 67:10<br><b>stringency</b><br>25:24<br><b>stringent</b><br>90:2 95:12,22 97:9<br><b>structure</b><br>14:22<br><b>study</b><br>89:10<br><b>sub</b><br>13:21 22:20 52:20<br>82:23 95:9,18 97:19<br>102:14,20 103:16<br>112:8 115:16 126:9<br><b>subject</b><br>13:5 26:22 27:12<br>70:18 71:12,21 72:3<br>82:24 83:24 84:1<br>86:13 94:24 96:8,14<br>96:24 97:7 113:11<br><b>subjected</b><br>29:16<br><b>submit</b><br>9:22 14:5 16:20<br>17:23 19:13 50:24<br>76:20 87:22 112:15<br>125:15<br><b>submittal</b><br>58:9,14 59:14 |
| <b>standards</b><br>14:1 24:17 27:12<br>52:8,11,12 54:20<br>64:13 70:17 71:13<br>71:14,22,24 72:4,4<br>72:6,11 74:21 79:9<br>81:22 82:11,15 85:2<br>85:4,14 86:3,17<br>87:9 94:22 95:16<br>96:6,8,10,13,21,24<br>97:2,5 110:5,7<br>113:9 124:7<br><b>standby</b><br>74:9 75:16,21 76:5<br>77:7,9<br><b>start</b><br>15:7 16:7 18:23 58:1<br>60:14 69:10 84:19<br>88:7,18 119:11,17<br>119:24 120:14,17<br>122:6<br><b>started</b><br>6:9<br><b>starting</b><br>11:4 30:14 43:20<br>91:9 121:2<br><b>startup</b><br>14:1 15:22 16:21<br>17:2 21:11 23:7<br>24:4 25:8,14,19,23<br>27:23 28:3,12,19,21<br>28:23 29:3,6,13,21<br>30:24 31:22 36:23 | <b>startups</b><br>23:3,21,23 47:21<br>49:4 64:12 67:17<br>68:18 70:5,7 71:1<br>73:24 74:2,4 79:9<br>81:11 86:3 87:10<br>88:14<br><b>start-up</b><br>21:4 28:7,11<br><b>start-ups</b><br>16:12 18:6 22:2<br><b>state</b><br>1:11 7:14 9:9 12:14<br>14:20 23:17 31:21<br>31:24 32:11 40:24<br>42:11 43:22 52:7<br>53:6 56:9,15,16<br>57:15 59:5 60:16,18<br>60:22 63:21 65:15<br>67:16 69:12,24<br>71:16 87:21 88:9<br>91:3 93:12 94:22<br>96:10 97:2,17<br>100:11 105:22<br>109:7 110:9 111:14<br>113:10 117:15<br>129:5,22 | <b>stated</b><br>25:20 34:6 36:1 37:6<br>57:21,24 59:2 70:16<br>105:16 113:16<br><b>statement</b><br>15:14 26:13 29:10<br>36:8,10 37:4 40:19<br>45:20 64:5,15 76:15<br>95:3,6,7,17 98:16<br>99:1,6,22 100:5<br>102:7,12 103:15<br>106:2,3,5,5 109:3<br>110:1 115:15 118:9<br>119:6,9,16,23 120:2<br>122:13 123:13<br><b>statements</b><br>112:5 113:24<br><b>states</b><br>31:11,15 35:5 44:4<br>44:11,15 46:9 52:3<br>52:5 69:16,20,23<br>70:10,17,24 71:18<br>72:9 80:24 87:8,14<br>96:3,18 117:16<br><b>stating</b><br>26:21<br><b>station</b><br>66:5,23 67:4,6,13<br>114:17 117:5<br>121:20<br><b>stations</b><br>65:5,7,8,13 66:8,15<br>68:17 101:4<br><b>station's</b><br>95:13 109:6<br><b>status</b><br>52:21 53:1<br><b>Ste</b><br>4:3<br><b>steady</b><br>23:17<br><b>stem</b><br>14:10<br><b>stenographic</b><br>129:9<br><b>step</b> | 11:6 12:13 51:6,19<br><b>steps</b><br>104:16 115:17,23<br>125:13,14<br><b>Steven</b><br>98:24<br><b>stop</b><br>9:14 21:18<br><b>stopped</b><br>21:12<br><b>stops</b><br>29:5<br><b>storm</b><br>115:21<br><b>storms</b><br>74:10<br><b>Street</b><br>4:3,15 67:10<br><b>stringency</b><br>25:24<br><b>stringent</b><br>90:2 95:12,22 97:9<br><b>structure</b><br>14:22<br><b>study</b><br>89:10<br><b>sub</b><br>13:21 22:20 52:20<br>82:23 95:9,18 97:19<br>102:14,20 103:16<br>112:8 115:16 126:9<br><b>subject</b><br>13:5 26:22 27:12<br>70:18 71:12,21 72:3<br>82:24 83:24 84:1<br>86:13 94:24 96:8,14<br>96:24 97:7 113:11<br><b>subjected</b><br>29:16<br><b>submit</b><br>9:22 14:5 16:20<br>17:23 19:13 50:24<br>76:20 87:22 112:15<br>125:15<br><b>submittal</b><br>58:9,14 59:14 |

|   |  |   |   |
|---|--|---|---|
| <b>submittals</b><br>57:15,16 58:23   | 64:17 68:19 76:19  | 99:10   | <b>technology</b><br>79:13  |
| <b>submitted</b><br>8:12 25:1 40:17 58:5<br>61:19 112:12  | <b>summary</b><br>96:2   | <b>S-h-e-a-l-e-y</b><br>99:11   | <b>temperature</b><br>15:21 20:10,13,19,21<br>21:5,9 24:10 28:14<br>28:24 29:1 34:16<br>35:8 36:2,17,22<br>37:7,9,12,13,15,17<br>37:20 38:10,16,17<br>39:4,10 41:3 42:4,7<br>42:10 43:4 48:2,4<br>49:10,15,19,22 50:2<br>72:20 73:11,16<br>79:13 80:8,12 89:2<br>89:6 |
| <b>submitting</b><br>18:14 87:23  | <b>Sun</b><br>7:11   | <b>S110(l)</b><br>98:14   |   |
| <b>Subpart</b><br>61:1,3,7,10 80:2 81:2<br>81:9,10,18,19 82:24<br>83:23,24 85:6 86:7<br>90:10,15,15 | <b>supplement</b><br>91:17 114:22,23   | <hr/> <b>T</b> <hr/>  |   |
| <b>subsection</b><br>35:9   | <b>supplemental</b><br>65:21 87:24   | <b>T</b><br>3:1   |   |
| <b>subsequent</b><br>47:21 74:15  | <b>supplies</b><br>90:10   | <b>table</b><br>11:7 42:17 49:12  |   |
| <b>subsequently</b><br>83:11  | <b>support</b><br>25:1 26:14 42:17<br>46:9 48:14 49:2,13<br>52:5 58:14 59:14<br>64:18 67:19 76:12<br>82:8 98:23 106:15<br>106:24 109:24<br>115:14 122:14 | <b>tables</b><br>48:3   |   |
| <b>subset</b><br>111:22   | <b>supported</b><br>103:15   | <b>tailored</b><br>22:18 27:21 42:1   |   |
| <b>substantial</b><br>26:14   | <b>supporting</b><br>36:8 38:13 115:2  | <b>take</b><br>16:6 19:22 42:5,14<br>77:23 101:19 104:7<br>115:17 116:6 117:1   |   |
| <b>substantially</b><br>14:19 42:15 49:9  | <b>sure</b><br>11:17 12:19 19:24<br>23:2 33:23 34:2<br>40:1 46:22 85:13<br>92:7  | <b>taken</b><br>1:13 26:21 31:20<br>43:1 64:14 73:5<br>78:1 115:24 116:1<br>125:13 129:9,15                           | <b>temperatures</b><br>16:23 21:20 37:24<br>39:2 41:14 42:22<br>43:8  |
| <b>successful</b><br>89:20  | <b>surrogate</b><br>53:24 54:5,9,14,23<br>55:9 56:2,19 62:9  | <b>takes</b><br>39:12   | <b>tendency</b><br>33:2   |
| <b>successfully</b><br>71:7   | <b>suspected</b><br>52:17  | <b>talk</b><br>95:5   | <b>tens</b><br>104:6,17   |
| <b>sufficient</b><br>39:3 41:3 47:9 58:13<br>59:13  | <b>swear</b><br>11:23 51:8 63:10<br>78:6 92:21   | <b>talking</b><br>9:11,15 22:1  | <b>term</b><br>101:1 120:12 121:5,6<br>121:16   |
| <b>sufficiently</b><br>36:5   | <b>sworn</b><br>10:7 11:20 12:1,3<br>51:9,11 63:11,13<br>78:7,9 92:23 93:1<br>129:7  | <b>task</b><br>73:6   | <b>terms</b><br>18:12 19:10 44:22<br>91:17 94:24 96:15<br>97:7 100:15 108:16<br>113:12  |
| <b>suggested</b><br>77:19 92:13 126:2   | <b>system</b><br>9:24 64:8   | <b>Taylor</b><br>5:7 78:12,13 87:21<br>92:7,15  | <b>test</b><br>28:3 29:13,17 42:17<br>43:2 46:10,15 47:2<br>47:6 48:16,23 49:1<br>49:6  |
| <b>suggestions</b><br>101:17  | <b>S-a-w-u-l-a</b><br>98:2   | <b>technical</b><br>6:20 24:7 25:1 42:17<br>46:9 48:14 49:12<br>64:18 67:19 76:12<br>98:23 106:15,24<br>109:24 122:14 | <b>testified</b><br>12:4 51:12 57:13<br>60:3 63:14 78:10<br>93:2  |
| <b>Suite</b><br>4:8,19 5:4,8  | <b>S-h-a-r-e-n-e</b>   | <b>technically</b><br>60:4 102:8  | <b>testify</b><br>7:19 129:7  |
| <b>sulphur</b><br>66:10   |  | <b>technologies</b><br>55:1,12 103:7,21<br>115:8  | <b>testimony</b><br>7:20,23 8:1,4,7 9:3<br>10:8 11:4 12:6,8,9<br>18:6 25:2,4 34:6   |
| <b>summarize</b><br>110:2   |  |   |   |
| <b>summarized</b>   |  |   |   |

|   |  |  |   |
|---|--|--|---|
| 35:1 36:12 37:23<br>38:19 43:22 51:14<br>57:18 63:16 69:12<br>70:14,16 72:18<br>78:16 79:11 88:9<br>93:4,5,7 94:12 95:6<br>103:16 105:17<br>112:5 115:16<br>123:14 127:12<br>129:6,8<br><b>testing</b><br>41:16 46:17<br><b>text</b><br>50:16 60:24 61:19<br>63:5 77:17 92:12<br>126:1<br><b>thank</b><br>20:6,6 21:23 25:7<br>27:2,19 29:11 30:5<br>30:6 32:10 34:3<br>35:3 37:5 40:7,21<br>43:16 46:8 50:9,20<br>50:22 51:2,2 55:17<br>56:7 62:14 63:6,22<br>65:2 66:12 67:15<br>68:14,23 69:1 77:2<br>77:12,20 80:23 82:3<br>83:8 84:4,20 86:15<br>87:19 88:1,22 90:23<br>91:13 92:8,16 93:13<br>102:4 108:9,12<br>112:20 122:23<br>123:4 124:17<br>125:19 126:14,16<br>128:1<br><b>Thanks</b><br>57:7 60:23 86:1 87:7<br><b>theoretically</b><br>80:17<br><b>thing</b><br>32:19 91:15 92:10<br>125:22<br><b>think</b><br>15:7 19:2 26:8 39:14<br>40:1 43:16 46:14<br>48:19,21 77:23 | 97:24 101:5,19<br>124:16<br><b>third</b><br>68:8<br><b>thread</b><br>78:17 93:5<br><b>three</b><br>6:10 15:13 16:5,13<br>18:15 21:1,22 23:10<br>25:3 29:4 32:11,11<br>51:16 60:23 64:12<br>66:13 72:17 73:24<br>80:21 82:3 87:22<br>90:20 95:18 99:15<br>104:7 106:12 111:6<br>111:10 113:14<br>117:2 124:11 125:5<br><b>thresholds</b><br>44:1<br><b>time</b><br>9:6 19:3 22:5,15<br>23:13 31:20 34:12<br>35:9 39:12 41:7<br>43:4 46:18 47:10,21<br>49:2 65:9 67:16<br>78:1 81:22 84:18<br>88:19,19 102:17<br>105:8 119:18 120:2<br>124:11,23 127:18<br>128:5<br><b>times</b><br>7:11 21:6 26:21,24<br>49:14 80:5 110:14<br><b>Tipsord</b><br>5:17 6:21<br><b>title</b><br>61:4,6,8 81:2 98:11<br><b>today</b><br>6:14,22 7:16 8:23<br>9:20 10:17 11:1<br>16:2 22:2 50:13<br>61:16 68:15 77:16<br>92:10 94:12 95:6<br>107:5,8 125:23<br>128:2<br><b>today's</b> | 10:1 127:3<br><b>toluene</b><br>57:1<br><b>ton</b><br>80:21 82:6,12,18<br>83:13,19 90:20<br>91:21 92:1<br><b>tool</b><br>58:1 60:14 119:11,17<br>119:24 120:14,17<br>122:6<br><b>total</b><br>66:10<br><b>touched</b><br>40:8<br><b>train</b><br>33:8<br><b>transcript</b><br>9:8 127:2,5<br><b>transfer</b><br>89:14<br><b>transitions</b><br>33:3<br><b>travel</b><br>107:6<br><b>tremendous</b><br>117:7<br><b>trend</b><br>54:15<br><b>Tribune</b><br>7:13<br><b>trigger</b><br>116:4<br><b>Trinity</b><br>43:22<br><b>TRSEM</b><br>66:11<br><b>true</b><br>21:15<br><b>truth</b><br>129:7,8<br><b>TSD</b><br>48:4<br><b>TSD-14</b><br>64:20 67:20<br><b>Tuesday</b> | 127:4<br><b>turn</b><br>10:11 11:4 110:24<br><b>turnarounds</b><br>74:6<br><b>two</b><br>7:9 12:10 14:6 24:1<br>25:3 28:23 29:15,19<br>29:24 30:2 32:11<br>35:8,12 41:7 50:17<br>57:11 63:5 65:4,13<br>66:3,4,14 67:6,13<br>68:17 74:1 77:18<br>80:23 81:24 83:1,2<br>88:15 92:13 95:10<br>97:19 102:1,10<br>114:3 120:17<br>123:23,24 126:1<br><b>type</b><br>13:17 26:1 42:1<br>56:22,23 73:8<br><b>types</b><br>52:16 57:9<br><b>typical</b><br>32:15,19 49:1,21<br>73:6,10,15 74:2<br><b>typically</b><br>16:8 29:1 49:23<br><hr/> <b>U</b> <hr/> <b>ultimately</b><br>102:16<br><b>unavoidable</b><br>116:13 125:10<br><b>unaware</b><br>120:1<br><b>uncommon</b><br>74:7<br><b>uncontrolled</b><br>86:21<br><b>underlie</b><br>117:21 118:2<br><b>understand</b><br>19:17<br><b>understanding</b><br>31:13,14 38:6 58:7,9 |
|---|--|--|---|

|   |  |  |   |
|---|--|--|---|
| 58:15,21 102:14,19<br>121:20<br><b>understands</b><br>96:12 97:4<br><b>undertake</b><br>65:23<br><b>underway</b><br>38:24<br><b>unilateral</b><br>14:20<br><b>unique</b><br>70:3,22 73:3<br><b>unit</b><br>66:18 70:7 74:3,4,5,8<br>74:14 81:4<br><b>United</b><br>69:16 117:16<br><b>units</b><br>27:17,18 35:19 69:19<br>70:18 71:12,21 72:3<br>73:1 74:14,21 81:16<br>81:21 82:2 83:19<br>104:11 119:7<br>123:15<br><b>unlimited</b><br>86:19<br><b>unplanned</b><br>74:8<br><b>unquote</b><br>35:9<br><b>unsafe</b><br>72:16<br><b>update</b><br>120:2<br><b>updated</b><br>61:9 119:24<br><b>upgrade</b><br>38:23 39:5,10<br><b>upgrading</b><br>115:18 116:2<br><b>use</b><br>18:2 19:1 28:18 45:4<br>45:21 55:23 70:6<br>84:23 85:1,13 101:1<br>121:5,6,15<br><b>USEPA</b> | 25:8,12 26:19 38:21<br>40:13,17 44:6,17<br>53:17 54:13,22 55:6<br>56:18 58:5,7,10<br>61:2 62:7 74:24<br>80:1 82:11 85:5<br>86:5 90:14,24 91:8<br>98:6<br><b>USEPA's</b><br>26:15 31:12 43:22<br>69:19 70:1 92:3<br>100:10<br><b>uses</b><br>53:23 54:4 120:17<br><b>utilize</b><br>70:24<br><b>utilized</b><br>37:19 43:11,12 80:12<br><b>utilizes</b><br>54:23<br><b>utilizing</b><br>103:6 115:7<br><b>U.S</b><br>14:16 30:23 31:3<br>44:13 71:5,11 72:2<br><hr/> <b>V</b> <hr/> <b>value</b><br>90:5 97:10<br><b>values</b><br>111:4<br><b>Van</b><br>4:3 5:14 6:17<br><b>vapor</b><br>65:19<br><b>variability</b><br>108:16 109:2,20<br><b>variable</b><br>47:18<br><b>varied</b><br>43:14<br><b>vary</b><br>23:4 56:21 74:5<br><b>version</b><br>61:10,16 62:3,12<br>111:13 | <b>versus</b><br>65:16<br><b>vessel</b><br>73:7<br><b>vessels</b><br>73:17<br><b>viewed</b><br>127:7<br><b>violation</b><br>14:21 35:6 56:9 96:5<br>96:21<br><b>violations</b><br>65:18 94:9 113:1<br><b>visible</b><br>27:11,11<br><b>VOC</b><br>66:11<br><b>Vodopivec</b><br>2:16 8:3 10:6 92:19<br>92:24 94:10,10<br>95:24,24 98:4,4<br>100:4,7,7 102:18,18<br>102:24 103:13,13<br>104:24,24 105:14<br>106:4,4 108:18,18<br>109:22,22 112:7,7<br>123:22,22 124:18<br>124:18<br><b>Vodopivec's</b><br>93:6 123:14<br><b>volatile</b><br>48:17<br><b>Volume</b><br>91:2<br><b>VOM</b><br>21:7 48:15 49:4,7,8<br>49:13,24 50:4,5,7<br><b>VOM-related</b><br>65:19<br><hr/> <b>W</b> <hr/> <b>W</b><br>4:19<br><b>Wacker</b><br>5:4<br><b>waiting</b> | 123:2<br><b>Wall</b><br>8:1 10:4 51:5,10 53:1<br>53:15 54:13 55:21<br>56:11 57:10 58:15<br>59:19 60:2,12 61:15<br>61:21 62:6,21 70:14<br><b>want</b><br>6:9 11:17 18:20,23<br>20:4 40:1 46:23<br>51:19 94:11 107:19<br>117:14 126:19<br><b>wanted</b><br>34:1,2 99:11 112:3<br><b>wants</b><br>9:18<br><b>water</b><br>72:21<br><b>way</b><br>54:8 89:14 120:12<br><b>weak</b><br>83:9,14 87:9<br><b>weather</b><br>74:10<br><b>Wednesday</b><br>8:8 127:9,14<br><b>weeks</b><br>23:13<br><b>weighs</b><br>9:24<br><b>weight</b><br>24:20 28:17<br><b>welcome</b><br>6:3<br><b>well-accepted</b><br>45:7<br><b>went</b><br>30:20<br><b>weren't</b><br>22:24<br><b>west</b><br>4:8 67:9,11<br><b>western</b><br>67:9<br><b>Westminster</b><br>4:19 |
|---|--|--|---|



|   |  |   |   |
|---|--|---|---|
| <b>we'll</b><br>6:12 10:2 11:1,6,20<br>12:7,11 17:23 19:24<br>23:7 32:9 40:10<br>50:18,24 66:13<br>77:23 78:3 87:23<br>91:10 92:15,18 93:9<br>100:3 108:9,12<br>123:7 127:1,21,24 | <b>written</b><br>9:22,24 14:14 50:14<br>63:3 70:8 77:16<br>92:11 125:23                               | <b>1</b><br><b>1</b><br>3:3 35:9<br><b>1E</b><br>57:8<br><b>1st</b><br>61:5 66:6 113:20<br>114:1,21 119:22<br>127:9<br><b>1-1</b><br>46:9<br><b>1.5</b><br>82:6 83:13 84:3<br><b>1:00</b><br>10:22<br><b>10</b><br>16:12 18:7 36:11<br>46:8 66:11 73:21<br>75:14 77:23 106:17<br><b>10th</b><br>116:1<br><b>10(a)</b><br>46:17<br><b>10(b)</b><br>48:11<br><b>10-minute</b><br>10:20<br><b>10:30</b><br>10:21 77:23<br><b>10:35</b><br>77:24<br><b>100</b><br>67:11 69:22 124:23<br><b>102.110</b><br>13:6<br><b>102.210</b><br>13:11<br><b>102.424(f)</b><br>10:9<br><b>102.426</b><br>8:18<br><b>1021</b><br>1:17<br><b>11</b><br>38:18 40:11 48:13 | 95:4<br><b>11:42</b><br>128:5<br><b>110</b><br>22:20 45:22<br><b>110(l)</b><br>97:23 98:6<br><b>110.1</b><br>25:6<br><b>1100</b><br>38:2<br><b>111</b><br>98:5<br><b>115</b><br>67:9<br><b>12</b><br>2:6 38:18 90:1<br>106:17 123:12<br><b>12B</b><br>124:4<br><b>12:00</b><br>68:13 107:2,8<br><b>123</b><br>2:18<br><b>129</b><br>3:12<br><b>13</b><br>69:11 109:4<br><b>13B</b><br>70:9<br><b>13(a)</b><br>69:17<br><b>13(c)</b><br>71:8<br><b>13:30</b><br>68:10<br><b>14</b><br>29:9 40:23 71:19<br><b>14th</b><br>81:5 83:17,21<br><b>1400</b><br>42:24<br><b>1440</b><br>22:13<br><b>149</b><br>91:2 |
| <b>we're</b><br>31:8 82:1 83:5 87:16<br>120:11  | <b>yeah</b><br>11:9,11,19,19,22<br>18:22 19:24 44:13<br>50:18,23 77:6 97:24<br>107:13 121:18<br>124:16 |   |   |
| <b>we've</b><br>20:2 39:17 105:16   | <b>year</b><br>18:7 19:3,9 22:4,14<br>23:5,21,24 24:16,20<br>38:21 41:16 61:2<br>65:10 74:2,9 104:18   |   |   |
| <b>Wie</b><br>5:14 6:17   | <b>yearly</b><br>75:22 84:7,10   |   |   |
| <b>willing</b><br>125:6   | <b>years</b><br>17:6,7 18:15 19:9<br>23:10,15 24:4 65:5<br>67:18 73:24 75:9<br>104:7 117:2,9           |   |   |
| <b>winter</b><br>74:10  | <b>Z</b>   |   |   |
| <b>witness</b><br>10:12,16 12:6 51:8,9<br>51:14 63:8,10,11,16<br>78:6,7,16 93:4<br>112:2 123:2  | <b>zone</b><br>120:23 121:12,16,22   |   |   |
| <b>witnesses</b><br>2:3 10:2 11:24 12:1<br>92:17,22,23 93:11<br>112:6 129:6,9   | <b>0</b>   |   |   |
| <b>wondering</b><br>76:19   | <b>0.5</b><br>84:1   |   |   |
| <b>words</b><br>15:19 22:10 24:18   | <b>0.50</b><br>82:12 83:18   |   |   |
| <b>wordy</b><br>66:21   | <b>00:30</b><br>68:11  |   |   |
| <b>work</b><br>54:20 55:5,24 62:7<br>73:18,20 97:13,15<br>99:17 109:12<br>118:15,20   | <b>01:45</b><br>68:3   |   |   |
| <b>worst-case</b><br>19:15  | <b>04:30</b><br>68:9   |   |   |
| <b>worth</b><br>26:18   | <b>07:30</b><br>68:4   |   |   |
| <b>write</b><br>9:21  |  |   |   |

|                                  |                                  |                                      |  |
|----------------------------------|----------------------------------|--------------------------------------|--|
| <b>15</b><br>16:10 29:10 72:17   | <b>1972</b><br>83:17             | 68:3,4 116:1                         | 110:16                                 |
| <b>15th</b><br>65:15             | <hr/> <b>2</b> <hr/>             | <b>2019</b><br>23:16 65:6,9 67:18    | <b>212.124(e)</b><br>27:5              |
| <b>15(a)</b><br>72:23            | <b>2</b><br>3:4                  | 68:5,7,8,9,10,11,12                  | <b>212.126</b><br>27:7,9,10            |
| <b>15(b)</b><br>73:10            | <b>2A</b><br>31:2                | 68:13 71:7,16                        | <b>212.201</b><br>27:13                |
| <b>15:30</b><br>68:12            | <b>2(b)</b><br>53:21 60:6        | <b>202</b><br>1:4 6:7                | <b>212.202</b><br>27:13                |
| <b>16</b><br>36:10 73:21 76:1    | <b>2-1</b><br>48:3               | <b>2020</b><br>66:7 102:21,24        | <b>212.203</b><br>27:13                |
| <b>16(a)</b><br>74:1             | <b>2.41</b><br>50:1              | <b>2021</b><br>23:10,15              | <b>212.204</b><br>27:14                |
| <b>16(b)</b><br>74:16            | <b>20</b><br>36:10 39:20 90:1    | <b>2022</b><br>23:10 61:2,3,5,6,12   | <b>212.322</b><br>35:19,24 36:6 42:20  |
| <b>16:45</b><br>68:7             | 106:13 110:12,19                 | 61:17 62:13 120:1,3                  | <b>212.322(d)2</b><br>35:5             |
| <b>17</b><br>42:5 75:13 77:4     | 110:21 111:4,7,9,11              | <b>2023</b><br>1:15 6:24 7:8,11 14:3 | <b>215</b><br>48:19                    |
| <b>17B</b><br>77:6               | <b>20th</b><br>8:8 46:11 47:2,19 | 23:11 39:1 40:16                     | <b>216.121</b><br>57:6                 |
| <b>17th</b><br>7:6,8 68:5        | 48:1 49:5                        | 46:11 47:2,19 49:5                   | <b>216.361</b><br>70:22                |
| <b>17(a)</b><br>75:19            | <b>20(b)</b><br>90:23            | 91:3 95:7 102:1                      | <b>217-782-9031</b><br>4:16            |
| <b>17(b)</b><br>76:4 77:6        | <b>200</b><br>4:19 70:21         | 103:1 112:10                         | <b>217.381</b><br>88:24                |
| <b>17:30</b><br>68:9             | <b>2000</b><br>67:5              | 113:20 114:1                         | <b>217.381(a)(1)</b><br>82:6 83:15     |
| <b>18</b><br>22:14 95:4          | <b>201</b><br>1:4 4:8 6:7        | 119:23 127:9,13,15                   | <b>22</b><br>123:13                    |
| <b>18th</b><br>68:6 127:13       | <b>201.2-65</b><br>14:18         | <b>2026</b><br>104:12                | <b>22nd</b><br>7:12                    |
| <b>1800</b><br>15:21 20:10,14,18 | <b>2011</b><br>81:6,8 83:21      | <b>2027</b><br>104:14                | <b>23rd</b><br>7:13                    |
| 21:3,10,21 24:10                 | <b>2015</b><br>26:15 31:12 32:1  | <b>2028</b><br>117:6                 | <b>23:00</b><br>68:6                   |
| 28:14 34:8,17,21                 | 65:15 69:19 70:1                 | <b>21</b><br>90:24                   | <b>233</b><br>5:4                      |
| 35:13,21 36:3,17,21              | 100:10                           | <b>21st</b><br>7:11                  | <b>24</b><br>16:7 42:5 99:22           |
| 37:15 38:15 39:3,11              | <b>2015's</b><br>31:15           | <b>212</b><br>1:5 6:7 24:21 35:11    | 111:16,17                              |
| 39:12 40:2 42:4,7                | <b>2016</b><br>71:15 72:5        | 35:17 36:19 102:3                    | <b>24-hour</b><br>49:3 110:6 111:12,13 |
| 43:5,8                           | <b>2017</b><br>15:18 19:4 20:24  | <b>212.122(a)</b><br>110:18          | <b>25</b><br>116:4                     |
| <b>19</b><br>88:22 102:13 109:4  | 23:16 36:13 37:2                 | <b>212.122(b)</b><br>110:15          |  |
| <b>1900</b><br>67:14             | 65:5 66:6 67:18                  | <b>212.123</b><br>103:4              |  |
|                                  | <b>2018</b>                      | <b>212.123(a)</b><br>110:18          |  |
|                                  |                                  | <b>212.123(b)</b><br>110:16          |  |
|                                  |                                  | <b>212.124</b>                       |  |

|  |   |  |   |
|--|---|--|---|
| <b>25th</b><br>127:14  | 5:5<br><b>312-814-3932</b>  | 22:5<br><b>5:00</b>  | <b>670</b>  |
| <b>26th</b><br>103:1   | 4:4<br><b>312-853-4717</b>  | 11:2   | 67:1  |
| <b>27th</b><br>1:14  | 5:9<br><b>32</b>  | <b>50</b><br>41:17 46:12   | <b>69</b><br>2:10   |
| <b>28th</b><br>7:20,24   | 106:2<br><b>33</b>  | <b>500</b><br>4:15   | <hr/> <b>7</b> <hr/>  |
| <hr/> <b>3</b> <hr/>   | 98:16<br><b>33840</b>   | <hr/> <b>6</b> <hr/>   | <b>7</b><br>3:9 4:8   |
| <b>3</b><br>3:5  | 100:2<br><b>33978</b>   | <b>6</b><br>3:8  | <b>7th</b><br>6:24 14:3 68:3,11<br>95:7 101:10 102:1                            |
| <b>3B</b><br>17:10 62:1  | 100:2<br><b>34</b>  | <b>6B</b><br>17:18   | <b>7.1.3</b><br>94:6 95:1,19 96:2<br>97:8 112:23                                |
| <b>3C</b><br>20:8 62:2   | 76:13<br><b>35</b>  | <b>6th</b><br>13:22 61:17 62:13<br>68:10 112:10  | <b>7.1.3(b)</b><br>96:3,16 113:13   |
| <b>3D</b><br>21:23   | 1:4 6:6 13:5 14:18<br>27:4 48:19 82:5   | <b>6.6.3(d)</b><br>101:5   | <b>7.1.3(c)</b><br>96:17  |
| <b>3rd</b><br>127:4  | 83:14 103:3 110:15  | <b>60</b><br>4:3 46:13 81:2  | <b>700</b><br>42:23 49:20 50:3  |
| <b>3-0</b><br>48:20  | <b>350</b><br>89:3,6  | <b>60.72</b><br>83:18  | <b>720</b><br>19:16,18 22:7 23:24<br>24:1,10,15,19                              |
| <b>3-1</b><br>48:14 49:12  | <hr/> <b>4</b> <hr/>  | <b>600</b><br>48:2   | <b>7501</b><br>98:10  |
| <b>3:00</b><br>10:23   | 3:6 91:3<br><b>4th</b>  | <b>60045</b><br>4:20   | <b>79</b><br>2:13   |
| <b>30</b><br>2:7 19:9,18,21 39:20<br>41:12 45:21 46:12<br>46:16,19 47:11,20<br>80:24 82:19,19<br>102:2 106:13<br>110:12,19,22 111:5<br>111:7,10,11 116:7<br>124:21 | 68:8<br><b>4-1</b><br>42:17 48:3<br><b>4.2.2</b><br>36:19<br><b>40</b><br>61:1,4,6,8 64:15 81:2<br>83:17 100:18 119:9<br>122:13 | <b>60603</b><br>5:8<br><b>60605</b><br>4:4<br><b>60606</b><br>5:4<br><b>620.101(D)</b><br>9:13<br><b>62226</b><br>4:9<br><b>62701</b><br>1:18<br><b>62706</b><br>4:15<br><b>63</b><br>2:9 61:1 71:13 72:4<br><b>630</b><br>4:3<br><b>6600</b><br>5:4 | <hr/> <b>8</b> <hr/>  |
| <b>30-day</b><br>82:10 90:3,8  | <b>400</b><br>37:9,20 48:5 49:21  |  | <b>8th</b><br>68:4,12   |
| <b>300</b><br>49:16,20   | <b>432</b><br>22:4  |  | <b>80</b><br>67:10 88:7 100:2   |
| <b>3063.10000(b)</b><br>100:19   | <hr/> <b>5</b> <hr/>  |  | <b>800</b><br>38:4<br><b>847.295.4336</b><br>4:20<br><b>872-276-3583</b><br>4:9 |
| <b>31</b><br>45:21 69:23 98:15   | <b>5</b><br>3:7<br><b>5th</b><br>7:23 8:3 68:9  |  | <b>88</b><br>2:14 91:2  |
| <b>31st</b><br>66:7 117:6  | <b>5.4</b>  |  | <hr/> <b>9</b> <hr/>  |
| <b>312-258-5603</b>  |   |  | <b>9th</b><br>68:13<br><b>9:00</b>  |

1:15 127:9  
**900**  
5:8  
**92**  
2:17  
**95**  
67:3