

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
 WATER QUALITY STANDARDS AND)
 EFFLUENT LIMITATIONS FOR THE)
 CHICAGO AREA WATERWAY SYSTEM) R08-09 (D)
 AND THE LOWER DES PLAINES RIVER:) (Rulemaking-
 PROPOSED AMENDMENTS TO 35 Ill.) Water)
 Adm. Code Parts 301, 302,)
 303 and 304.)

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 Pollution Control Board

The TRANSCRIPT FROM THE PROCEEDINGS
 taken before the HEARING OFFICER MARIE TIPSORD by
 Kari Wiedenhaupt, CSR, at the Thompson Center, 100
 West Randolph Street, Room 9-040, Chicago,
 Illinois, on the 29th day of July, 2013, A.D., at
 10:30 o'clock a.m.

1 A P P E A R A N C E S:

2 ILLINOIS POLLUTION CONTROL BOARD,
3 100 West Randolph Street
4 Suite 11-500
5 Chicago, Illinois 60601
6 (312) 814-6983
7 BY: MS. MARIE TIPSORD, Hearing Officer

8 ILLINOIS POLLUTION CONTROL BOARD MEMBERS PRESENT:

9 Mr. Jerome D. O'Leary, Lead Board Member
10 Ms. Jennifer Burke, Board Member
11 Dr. Deanna Glosser, Board Member
12 Ms. Carrie Zalewski, Board Member
13 Mr. Anand Rao, Technical Unit
14 Ms. Alisa Liu, Technical Unit

15

16

17 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,
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32 IRINA DASHEVSKY

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34 Corporation and PDV Midwest Refining, LLC;

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A P P E A R A N C E S: (Continued)

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1 A P P E A R A N C E S: (Continued)

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I N D E X

WITNESSES:	Direct	Cross	Re Direct	Re Cross	By Examiner
SCOTT A. TWAIT	10		13		
			63		
			165		
			199		

E X H I B I T S

NUMBER	MARKED FOR ID	ADMITTED
No. 480		9
No. 481	11	
No. 482		13
No. 483	17	
No. 484		127
No. 485		157
No. 486		179
No. 487	192	

1 HEARING OFFICER TIPSORD: Good
2 morning. My name is Marie Tipsord, and I have
3 been appointed by the board to serve as hearing
4 officer in this proceeding entitled, Water Quality
5 Standards and Effluent Limitations for the Chicago
6 Area Waterway System and the Lower Des Plaines
7 River: Proposed Amendments to 35 Ill. Adm. Code
8 Parts 301, 302 and 304. The docket number is
9 R08-09 and this is Subdocket D.

10 With me today to my immediate
11 left is Dr. Deanna Glosser, presiding Board
12 Member. To my immediate right is Board Member
13 Carrie Zalewski; to her right, Board Member,
14 Jennifer Burke and to the far right is Board
15 Member Jerry O'Leary. To the left of Dr. Glosser
16 is Anand Rao and Alisa Liu will be joining us from
17 our technical unit.

18 BOARD MEMBER RAO: Yes.

19 HEARING OFFICER TIPSORD: In
20 addition, today we have Chad Cruz, who is Board
21 Member Zalewski's assistant and Mark Powell, our
22 senior attorney, who are here in the audience
23 today.

24 Today's hearing is the first day

1 in Subdocket D revisited, but it is the 52nd
2 overall. A few notes to remind everyone that how
3 we are handling comments and exhibits; exhibits
4 in each of the subdockets will continue to be
5 sequentially numbered. So today, the first
6 exhibit will be given number 480. Exhibit lists
7 will be filed after the hearing along with the
8 exhibits as always, but it will only be docketed
9 in Subdocket D.

10 The Clerk's office is doing the
11 same with public comments and some comments and
12 actually exhibits are being docketed in more than
13 one subdocket.

14 Today, we will hear the
15 testimony of the Illinois Environmental Protection
16 Agency, Scott Twait, in support of a motion to
17 amend the proposal. The testimony will be marked
18 as an exhibit and entered as if read. We will
19 then begin with questioning starting with The
20 Environmental Group, then CITGO Petroleum
21 Corporation and PDV Midwest. Next will be the
22 Metropolitan Water Reclamation District of Greater
23 Chicago and then Midwest Generation. ExxonMobile
24 Corporation will go next, followed by the Illinois

1 Environmental Regulatory Group and concluding with
2 Stepan Company.

3 Anyone may ask a question. I do
4 ask that you raise your hand and wait for me to
5 acknowledge you. After I have acknowledged you,
6 please state your name and whom you represent
7 before you begin your questions. Please speak one
8 at a time. If you are speaking over each other,
9 the court reporter will not be able to get your
10 questions on the record.

11 Please note any questions by a
12 Board Member or staff are intended to help build
13 a complete record for the Board's decision and
14 not to express any preconceived notions or bias.

15 Dr. Glosser, do you have
16 anything to add?

17 BOARD MEMBER GLOSSER: No, I don't.

18 HEARING OFFICER TIPSORD: With that,
19 is there anything else before we start?

20 (No response.)

21 HEARING OFFICER TIPSORD: Okay.

22 With that, then Ms. Williams, we will start with
23 you.

24 MS. WILLIAMS: Good morning. My

1 name is Deborah Williams. I am here on behalf of
2 the Illinois EPA, and with me from the Agency is
3 Scott Twait from the Standards Unit in the
4 Division of Water Pollution Control, and also
5 Howard Essig, E-S-S-I-G, from our Des Plaines
6 regional office.

7 I am going to start out, Scott,
8 showing you a document. Can you identify the
9 document?

10 MR. TWAIT: It's my pre-filed
11 testimony.

12 MS. WILLIAMS: And did you prepare
13 this document for today's hearing?

14 MR. TWAIT: Yes.

15 MS. WILLIAMS: I would like to have
16 the pre-filed testimony entered into the record as
17 Exhibit 480.

18 HEARING OFFICER TIPSORD: Okay.

19 Could we have him sworn in first?

20 (Whereupon, the witness was duly
21 sworn.)

22 HEARING OFFICER TIPSORD: Is there
23 any objection to entering Mr. Twait's testimony as
24 an exhibit?

1 (No response.)

2 HEARING OFFICER TIPSORD: Seeing
3 none, Mr. Twait's testimony is Exhibit 480.

4 (Whereupon, Exhibit No. 480 was
5 admitted into evidence.)

6 SCOTT A. TWAIT,
7 having been first duly sworn, was examined and
8 testified as follows:

9 DIRECT EXAMINATION

10 BY MS. WILLIAMS:

11 Q. Scott, I am going to show you a
12 second document. Can you identify that document?

13 A. It's our proposed changes to the
14 Rule Part 302.

15 MS. WILLIAMS: For purposes of the
16 record, I just want to clarify that when the
17 Agency filed proposed changes to Part 302, the
18 filing inadvertently contained three identical
19 copies of the same language. I apologize for any
20 confusion.

21 But I'd move at this time to
22 have Part 302 to proposed changes entered as an
23 exhibit into the record.

24 HEARING OFFICER TIPSORD: Is there

1 any objection?

2 (No response.)

3 HEARING OFFICER TIPSORD: Seeing
4 none, we will mark the proposed changes as
5 Exhibit 481, noting that it was a motion to amend
6 that the Board has not ruled on.

7 (Whereupon, Exhibit No. 481 was
8 marked for identification.)

9 MS. FRANZETTI: Can I ask a
10 question?

11 HEARING OFFICER TIPSORD: Sure.

12 THE COURT REPORTER: What's your
13 name?

14 MS. FRANZETTI: Susan Franzetti,
15 F-R-A-N-Z-E-T-T-I, counsel for Midwest Generation.

16 When you note it's a motion that
17 the Board has not ruled on, is the Board going to
18 rule on it as part of its decision in Subdocket D
19 down the road, first notice time period or sooner
20 than that?

21 HEARING OFFICER TIPSORD: I would
22 say that the Board will rule on it when we go to
23 first notice.

24 Okay. Anything else,

1 Ms. Williams?

2 BY MS. WILLIAMS:

3 Q. Yeah. Just one more item.

4 Mr. Twait, I have shown you a third document, and
5 can you identify what that is?

6 A. It's an errata sheet.

7 Q. And what do you mean by an errata
8 sheet?

9 A. During the review of the questions
10 that were submitted, theres' three areas that came
11 to our attention that needed to be addressed. One
12 was that the phrase, "on an average basis," should
13 have been deleted from both temperature, water
14 quality standards, and it was only done for one.

15 The term "uses" should be
16 deleted to -- deleted between "to protect fish and
17 aquatic life from the deleterious effects of cold
18 shock."

19 And the other one is Section
20 302.410, the title should have been changed.

21 MS. WILLIAMS: Thank you. I don't
22 have anything further.

23 HEARING OFFICER TIPSORD: If there
24 is no objection, we will admit the errata sheet as

1 Exhibit 482.

2 (No response.)

3 HEARING OFFICER TIPSORD: Seeing
4 none, it's Exhibit 482.

5 (Whereupon, Exhibit No. 482 was
6 admitted into evidence.)

7 Anything else?

8 MS. WILLIAMS: I don't have anything
9 else.

10 HEARING OFFICER TIPSORD: Okay.
11 With that, we will begin the questions starting
12 with Mr. Ettinger.

13 CROSS-EXAMINATION

14 BY MR. ETTINGER:

15 Q. Yes, I am Albert Ettinger. That's
16 E-T-T-I-N-G-E-R. I am representing today the
17 Environmental Law and Policy Center, Natural
18 Resources Defense Council, Open Lands, Friends of
19 the Chicago River, Prairie Rivers Network and the
20 Illinois Chapter of the Sierra Club.

21 With that, I will go through the
22 pre-filed questions. Number one, is it the IEPA's
23 proposal that the Upper Dresden Island Pool be
24 treated like other general use waters once the

1 designation is finally adopted and that all of the
2 water quality standards will be applied there as
3 they are in Section 302, Subpart B of the Illinois
4 standards?

5 A. Yes, with the exception of bacteria
6 standard.

7 Q. How will the bacteria standard vary?

8 A. The Board has adopted a designated
9 use that does not have a fecal coliform bacteria
10 standard. So no fecal coliform bacteria standard
11 would apply.

12 Q. Is that true of the other waters in
13 the CAWS or of the waters in the CAWS that there
14 is no fecal coliform standard?

15 A. Not all of them. The Board
16 designated a primary contact recreation for five
17 segments of the CAWS. Otherwise, with the
18 exception of those five segments, there is no
19 bacteria standard.

20 Q. So as I understand it then, as to
21 the Upper Dresden Pool, the area above the I-55
22 bridge will not have a fecal coliform standard,
23 but the area below the I-55 bridge, which is
24 already general use has the statewide fecal

1 coliform standard?

2 A. That is correct.

3 Q. Okay. Number two, specifically
4 regarding temperature, is it the IEPA's proposal
5 that provisions of Section 302.211 will be applied
6 to the entire Upper Dresden Island Pool?

7 A. Yes, that's our current proposal.

8 Q. And that includes the five degree
9 delta T provisions and provisions to maintain
10 seasonal temperatures?

11 A. Yes.

12 HEARING OFFICER TIPSORD: And
13 Mr. Dimond, do you have a follow-up with that?

14 MR. DIMOND: I also have a follow-up
15 on number one.

16 Referring to the Agency's Exhibit
17 No. 481, which is the revised proposal, and
18 directing you in particular to 35 Illinois
19 Administrative Code 302.101(d), is it correct that
20 that proposed regulation states that the standards
21 for the Chicago Area Waterway System and the Lower
22 Des Plaines River are set forth in Subpart D?

23 THE WITNESS: No. The Lower Des
24 Plaines River will be part of Subpart B. We have

1 taken them out of Subpart D.

2 MR. DIMOND: But as proposed,
3 doesn't that regulation say Subpart D contains the
4 Chicago Area Waterway System and the Lower Des
5 Plaines River water quality standards?

6 THE WITNESS: Yes, it does.

7 MR. DIMOND: Is that consistent with
8 the testimony that you have just given, that it's
9 the Agency's intent that the aquatic life use
10 standards for general use apply to the Upper
11 Dresden Island Pool?

12 THE WITNESS: That language is not
13 consistent.

14 MR. DIMOND: And if I could also
15 direct you to -- for this question, I -- Madame
16 Hearing Officer, I think I need to enter another
17 exhibit. This is a -- what I am proposing to
18 enter is a copy of 35 Illinois Administrative Code
19 Part 303.

20 HEARING OFFICER TIPSORD: And
21 Mr. Dimond, you need to identify yourself for the
22 record.

23 MR. DIMOND: I'm sorry. I'm Tom
24 Dimond on behalf of Stepan Company.

1 HEARING OFFICER TIPSORD: If there
2 is no objection, we will mark Part 303 as
3 Exhibit 483.

4 (No response.)

5 HEARING OFFICER TIPSORD: Seeing
6 none, it's Exhibit 483.

7 (Whereupon, Exhibit No. 483 was
8 marked for identification.)

9 MR. DIMOND: Mr. Twait, directing
10 you to section -- I will need you to refer to
11 this in a second, but if I could -- back on
12 Exhibit 481, if I could direct you to Section
13 302.401 as proposed by the Agency, it is titled
14 Scope and Applicability.

15 The second sentence of that
16 proposal reads, the Subpart B general use and
17 Subpart C public water supply standards of this
18 part do not apply to waters described in 35
19 Illinois Administrative Code 303.204 and listed in
20 35 Illinois Administrative Code 303.220 through
21 303.235 as the Chicago Area Waterway System or
22 Lower Des Plaines River, and then there is an
23 exception clause for the bacteria standard.

24 So did I read that correctly

1 into the record?

2 THE WITNESS: Yes.

3 MR. DIMOND: Okay. This section,
4 as proposed by Illinois EPA, contains a reference
5 to Illinois 35 Administrative Code 303.204. With
6 reference to what we have identified as
7 Exhibit 483, do the waters described in section
8 303.204 include the Lower Des Plaines River?

9 THE WITNESS: Yes, they do.

10 MR. DIMOND: And is the Upper
11 Dresden Island Pool included within the
12 definitions of the Lower Des Plaines River?

13 THE WITNESS: Yes, it is.

14 MR. DIMOND: Okay. And again,
15 looking back at 302.401, as proposed by the
16 Agency, and as referenced to the phrase listed
17 in 35 Illinois Administrative Code 303.220
18 through 303.235, is it correct that the Upper
19 Dresden Island Pool is listed in Section
20 303.225(h)?

21 A. Yes, it is.

22 Q. So given that we -- given that we
23 have established that the Upper Dresden Island
24 Pool is both described in Section 303.204 and

1 that it's listed in a section encompassed between
2 303.220 and 303.235, is IEPA's draft proposal for
3 Section 302.401 consistent with an intent to apply
4 the general use aquatic life use standards to the
5 Upper Dresden Island Pool?

6 MS. WILLIAMS: Objection. I don't
7 think this witness needs to be the expert on the
8 legal drafting. He is trying to explain what the
9 Agency means and intends, and if we see -- if the
10 lawyers see problems with the drafting, we are
11 certainly going to address that in the comments.
12 I don't know if this is fair for this witness.

13 MR. DIMOND: Well, anybody from the
14 Agency can respond, but I think it's important
15 that the language that was chosen be consistent
16 with the intent.

17 MS. WILLIAMS: I agree.

18 THE WITNESS: I think the Agency
19 will have to clean up that language.

20 MR. DIMOND: That's all I have.
21 Thank you.

22 HEARING OFFICER TIPSORD: Okay.
23 Mr. Ettinger, you can continue.

24 BY MR. ETTINGER:

1 Q. Well, that was very helpful.

2 So let's go back. Again, the
3 intent is to apply -- with the exception of this
4 fecal coliform standard, the intent is to apply
5 the general use standards to the Upper Dresden
6 Pool?

7 A. Yes.

8 Q. Okay. In light of Mr. Dimond's
9 clarifications, I think we are going to have to
10 be a little clearer on -- in my questions on what
11 I mean by the Lower Des Plaines River. The Lower
12 Des Plaines River for the purpose of these
13 questions now has to do with the waters that are
14 not to be designated general use under the
15 proposal, but really only -- is only really the
16 Brandon Pool of the lower Des Plaines.

17 So I would ask you to think
18 about that, because the rest of these questions or
19 most of the rest of these questions are addressed
20 to the waters, which were not to be designated
21 general uses, as I understand your proposal, but
22 to the waters that are -- either have the B or C
23 category under the Board's order?

24 A. A or B.

1 Q. A or B. I'm sorry. A or B category
2 under the Board's order. And so where it says
3 Lower Dresden Pool here, we are really just
4 talking about the Brandon Pool -- or Lower Des
5 Plaines River we are talking about the Brandon
6 Pool.

7 Okay. So, three, in USEPA's
8 comments on the October 2007 version of proposed
9 water quality standards revisions for the Chicago
10 Area Waterway and Lower Des Plaines River, USEPA
11 requested that IEPA include additional analysis
12 showing that the proposed period average thermal
13 criteria are protective of existing and designated
14 aquatic life uses.

15 How does IEPA's proposal to use
16 background temperatures to establish period
17 averages protect existing and designated aquatic
18 life uses? Which survival end points were used to
19 establish or justify those criteria?

20 A. I will answer your first question.
21 The Agency established the background temperatures
22 on a least impacted site per Chris Yoder's
23 methodology. And I will have to ask you to
24 clarify your second sentence or your second

1 question. Which criteria are you talking about?

2 HEARING OFFICER TIPSORD: Before you
3 do that, I want to note for the record, that
4 Chris Yoder testified back in 2008, and his
5 testimony was entered in the base R08-09 docket
6 as Exhibit 13. Go ahead.

7 BY MR. ETTINGER:

8 Q. Okay. I believe we looked at a
9 series -- under the Yoder testimony, we looked at
10 a series of potential end points, and I'm not sure
11 right now I can actually tell you about them all,
12 but they had to do with various situations in
13 which the fish went belly up or avoided the area
14 based on various temperatures, and what we are
15 asking here is which of those end points that were
16 identified by Yoder were the ones that were used
17 by the Agency in setting these?

18 MS. WILLIAMS: What Scott is asking
19 for you to clarify, Albert, is in setting which?
20 So, you know, if you ask the question about the
21 summer versus the non-summer or max or average.

22 BY THE WITNESS:

23 A. Your first question was on the
24 period averages, and your second question is --

1 are you asking that question for the period
2 averages?

3 BY MR. ETTINGER:

4 Q. Yes.

5 A. None of them.

6 Q. So what -- well, let me just ask
7 the question, how did you come up with the period
8 averages based on the Yoder reference sites?

9 A. They were -- his methodology uses
10 a leased impacted site, and it looks at the
11 historical data and basically you set the standard
12 to keep the historical temperature regime from
13 that least impacted site, and in this case, the
14 Agency chose -- or has revised its site to the
15 Route 83 bridge at the -- on the Cal-Sag Channel
16 and the effluent from the MWRDGC plants.

17 Q. And so --

18 MS. WILLIAMS: Will you explain
19 about the summer period average, how that was
20 derived?

21 THE WITNESS: Yes. The summer
22 period -- or, yes, the summer period average was
23 derived by subtracting two degrees Celsius from
24 the daily max in the summer, and those summer

1 daily maxes were based on survival end points.

2

3 BY MR. ETTINGER:

4 Q. Okay. And the other -- the winter
5 averages were just that, they were averages or you
6 used a percentile?

7 A. We used percentiles to come up with
8 a period average.

9 Q. And that was the 75th and the 90th
10 percentile numbers?

11 A. Yes. We used 90th percentile for
12 the ambient station and used 75th percentile for
13 the effluent.

14 Q. Going on now to number four, in
15 USEPA's comments on the October 2007 proposal,
16 public comment number 286, USEPA recommended
17 deriving seasonally based maximum criteria to
18 replace the year round maximum thermal criteria
19 contained in IEPA's proposal. Why did IEPA
20 decline to establish lower maximum criteria
21 in the non-summer months?

22 A. The Agency believed that the
23 acute standard was to prevent fish from dying,
24 lethality, and the chronic standard protects for

1 gametogenesis. It's the Agency's position that
2 our proposal is sufficiently protective of the
3 aquatic life.

4 Q. Well, as a practical matter, this
5 may be impossible, but as a logical matter, did
6 the Agency consider whether it would be healthy
7 for the aquatic life if the temperature were to
8 briefly reach the high 80s in January or February?

9 A. We have also introduced a cold shock
10 part of our proposal, and it will protect fish
11 from lethality if the -- from the temperatures
12 warming up.

13 Q. Well, are you aware of some fish
14 eggs hatching based on the temperature of the
15 water?

16 A. Yes.

17 Q. If you had a period in which the
18 temperature got very warm in an abnormal period,
19 could the fish hatch and then not survive when it
20 reached more normal temperatures later?

21 A. I'm not qualified to answer that
22 question.

23 Q. Number five --

24 MS. FRANZETTI: I'm sorry. Can I

1 ask a follow-up?

2 HEARING OFFICER TIPSORD: Okay.

3 Ms. Franzetti?

4 MS. FRANZETT: I didn't want to
5 interrupt you.

6 Mr. Twait, were there
7 discussions between the Agency and the USEPA
8 regarding the reasoning that you have just
9 testified to about why you maintained the daily
10 max as an acute standard throughout the year and
11 did not go to some sort of seasonally derived
12 standard?

13 THE WITNESS: Yes.

14 MS. FRANZETTI: And can you tell us
15 a bit about the outcome of those discussions?

16 THE WITNESS: I believe that they
17 were satisfied with that answer.

18 BY MR. ETTINGER:

19 Q. I'm sorry. What answer?

20 A. They were -- one of the comments
21 that they had that you are citing to was in
22 reference to our proposal about keeping the daily
23 maximum temperature. In our talk with them, we
24 explained why we kept it, and they seemed to be

1 okay with us keeping it.

2 Q. Okay. Well, did you, to your
3 knowledge, ever look at the risk of the eggs
4 maturing at the wrong time of year as a result of
5 abnormal temperatures developing in the system?

6 A. I did not. However, I would like to
7 also mention there is -- in the math involved, if
8 you are in the wintertime and you increase the
9 heat to the receiving stream to where you are
10 pushing the maximum temperature in the winter,
11 that you are going to have a difficult time
12 meeting the period average, and that was part of
13 our justification to USEPA.

14 Q. I believe I am to number five.

15 And I am going to -- if it's
16 okay with you, Ms. Williams, I am going to go on
17 reading the whole number five rather than breaking
18 it down, and that way he can answer however he
19 sees fit, rather than the asking subparts as
20 subparts?

21 MS. WILLIAMS: Give it a shot and
22 we'll see how it goes.

23 BY MR. ETTINGER:

24 Q. Number five, in USEPA's comments on

1 the October 2007 proposal, public comment number
2 286, USEPA expressed concern that using the MWRD
3 affluent temperatures to establish non-summer
4 thermal criteria for segments upstream of the
5 influence of a wastewater treatment plant could
6 potentially disrupt fish reproduction in those
7 segments.

8 Did IEPA consider revising
9 non-summer thermal criteria for those segments
10 upstream of the influence of wastewater treatment
11 plants?

12 A. The Agency considered it, but
13 decided against it. The Agency believes that due
14 to flow reversals and density currents that it was
15 not appropriate.

16 Q. Tell me about flow reversals.

17 A. It's the Agency's understanding that
18 when there is some flow reversals to Lake Michigan
19 on the Calumet System, that effluent will go
20 upstream, and, therefore, there is not a -- there
21 is not really an upstream in this case.

22 Q. Is that true for the north side
23 plant?

24 A. At the north side plant, we have

1 been told of instances where there is a discharge
2 and they get flow upstream in some instances.

3 Q. And that would also be true for
4 Stickney?

5 A. I'm sure it would, but Stickney one
6 was kind of a moot issue, because there is no
7 upstream, because it's effluent from the north
8 side. That's up stream of them.

9 Q. Did the Agency consider the affect
10 of cooling of water between the Stickney discharge
11 and the Brandon Pool?

12 A. No.

13 Q. About how many miles is there
14 between the Stickney discharge and the Brandon
15 Road lock and dam?

16 A. I don't know exactly, but I would
17 guess 10, maybe 15.

18 Q. And the -- let's just understand
19 where we are here. The Stickney discharge will
20 technically be warmer in the winter than normal
21 ambient water quality because of water
22 temperatures because of the wastewater treatment
23 process?

24 A. The wastewater treatment process

1 doesn't heat the water. The water comes into the
2 plant warmer than the ambient temperature and it
3 stays that way.

4 Q. And so typically, a discharge from
5 wastewater treatment plants is going to be about
6 what in January as opposed to what you would
7 expect?

8 MS. WILLIAMS: I am going to use an
9 exhibit. Will that help?

10 MR. ETTINGER: Sure. Well, I
11 haven't seen it yet. I don't know whether it
12 would help, but I have faith in you.

13 MS. WILLIAMS: Scott, can you
14 explain what this document is I am handing to you?

15 THE WITNESS: That's not the right
16 one.

17 MS. WILLIAMS: Never mind. We don't
18 have a document.

19 THE WITNESS: For January -- and
20 these numbers aren't directly comparable. So I
21 am just trying attempt to answer your question.

22 The 90 percentile in the
23 Cal-Sag Channel is 44 degrees Farenheit. The
24 75th percentile in the effluent is at

1 approximately 54. So in January I am guessing
2 it would be somewhere -- 10 degrees or less.

3 BY MR. ETTINGER:

4 Q. Thank you. That's helpful.

5 A. And as I said, that was the
6 90th percentile verses the 75th percentile. So
7 I don't -- I would expect it to be less than 10
8 degrees.

9 Q. Number six, in USEPA's comments on
10 the October 2007 proposal, PC number 286, USEPA
11 asked IEPA to explain its rationale for Section
12 302.408(a) allowing an increase of 3.6 degrees
13 Fahrenheit above the proposed standards for two
14 percent of the hours in a year.

15 How will this provision effect
16 survival of the representative aquatic species
17 identified for aquatic life in Use A, and aquatic
18 life Use B?

19 A. The Agency does not believe that the
20 excursion hours will impact the aquatic life for
21 either use. Short-term avoidance of warm water is
22 a term that the -- or is a process that fish use
23 and we don't believe that will have a long-term
24 effect.

1 Q. Okay. And where would they -- is
2 there any particular papers or other documents
3 that would be the basis for your believing that
4 they would not have a long-term effect?

5 A. I don't know of any papers. I'm not
6 a thermal expert.

7 Q. Do you know of any studies that the
8 Agency relied on in reaching its conclusions?

9 A. We relied on our expert, Chris
10 Yoder.

11 Q. Okay.

12 MS. FRANZETTI: I'm sorry. If
13 I may, I am going to ask a similar question,
14 Mr. Twait, to the one I did previously, but on
15 this issue now.

16 Did you discuss this excursion
17 hours issue with the USEPA, and if so, can you
18 tell us what was discussed and the outcome of that
19 discussion?

20 THE WITNESS: Yes. We discussed
21 this with USEPA. They are still not satisfied
22 with the use of our excursion hours.

23 MS. FRANZETTI: I'm sorry. I
24 couldn't hear the very end. They are not

1 satisfied --

2 THE WITNESS: They are not satisfied
3 with our use of excursion hours.

4 MS. FRANZETTI: Can you explain a
5 little further what they are not satisfied with?

6 THE WITNESS: They are concerned
7 that our use of -- they are -- yeah. They believe
8 that heating the river by 3.6 degrees Fahrenheit
9 will -- could impact some species that are more
10 sensitive to temperature. It would push it above
11 the UILT or the critical thermal end points.

12 MS. FRANZETTI: Do you recall which
13 species they were concerned about, Mr. Twait?

14 THE WITNESS: I don't remember.

15 MS. FRANZETTI: If I could ask the
16 Agency, if they could --

17 THE WITNESS: I could try to look it
18 up.

19 MS. FRANZETTI: Okay.

20 THE WITNESS: I mean, I won't be
21 able to look it up because I don't have that in
22 front of me, but I might be able to figure it out.

23 MS. FRANZETTI: If you want to take
24 just a minute to see if you can, but otherwise,

1 it would be acceptable if the Agency could just
2 provide us with that information.

3 THE WITNESS: That would probably be
4 better.

5 MS. FRANZETTI: At a later time.

6 THE WITNESS: That would be better.

7 MS. WILLIAMS: We will do our best,
8 but I'm not sure we can speak for USEPA on this
9 matter either. We can just do our best to explain
10 what we understand to be their issues.

11 MS. FRANZETTI: I understand.

12 So is the nature of the issue
13 being discussed with USEPA on excursion hours,
14 is -- let me try and rephrase that.

15 Do you know whether the USEPA
16 agrees with the concept of excursion hours, but
17 just has an issue with the 3.6 degree Fahrenheit
18 delta for the excursion hour provision?

19 THE WITNESS: I couldn't -- I
20 couldn't tell you what their concern was. I
21 mean, I -- when we talked about their concern,
22 they indicated that the temperature was above
23 the thermal end points for survival, and I think
24 that's where their concern lies.

1 MS. FRANZETTI: Can you state why
2 the Agency decided to maintain the -- its
3 recommendation of the 3.6 degree excursion hour
4 range?

5 THE WITNESS: Yeah. We just thought
6 it was appropriate. Our general use standard has
7 something similar, and the secondary contact
8 standard has something similar. And in this case,
9 general use is one percent of the time, and the
10 secondary contact was five percent of the time,
11 and our proposal was for two percent, and we are
12 also in the middle in temperature rise in there
13 also.

14 MS. FRANZETTI: Thank you. No
15 further questions.

16 BY MR. ETTINGER:

17 Q. I am a little uncomfortable with us
18 just talking about USEPA. Were there individuals
19 at USEPA that you met with?

20 A. Yes.

21 Q. And who were they?

22 A. Candice Bauer and Linda Holst.

23 Q. Seven, how is the existing variance
24 held by Midwest Generation regarding the

1 temperature requirements at the I-55 bridge to
2 be handled if the Board's proposed designation
3 and IEPA's proposal regarding criteria for the
4 Upper Dresden Island Pool is adopted?

5 MS. FRANZETTI: I have an objection,
6 just for the record. And to clarify, Midwest Gen
7 does not hold a variance. It holds an adjusted
8 standard, AS 96-10.

9 So if that's what Mr. Ettinger is
10 referring to, it should not accurately be referred
11 to as a variance.

12 BY MR. ETTINGER:

13 Q. Ms. Franzetti, as always, is very
14 helpful. So let me restate the question as it
15 should have been written in the first place.

16 How is the adjusted standard
17 held by Midwest Generation regarding the
18 temperature requirements at the I-55 bridge to be
19 handled in the Board's proposed designation and
20 IEPA's proposal regarding criteria for the Upper
21 Dresden Island Pool is adopted?

22 A. Once the Agency modifies the permit,
23 the water quality standard would have to be met
24 at the edge of the mixing zone, unless they were

1 granted further relief.

2 MS. FRANZETTI: I'm sorry.

3 Mr. Twait, are you -- are you aware that the AS
4 96-10 adjusted standard addresses more than just
5 the thermal numeric standards in the general use
6 thermal water quality standard?

7 THE WITNESS: In what respect?

8 MS. FRANZETTI: Well, that it also
9 covers the narrative provisions of the thermal
10 water quality standard, like the restriction
11 against going more than five degrees above the
12 natural temperature.

13 THE WITNESS: I was not aware of
14 that.

15 MS. FRANZETTI: Okay. Given you
16 were not aware of that, might your answer be
17 different if you had time to consider the full
18 scope of the AS 96-10 standard?

19 THE WITNESS: It's quite possible.

20 MS. FRANZETTI: Mr. Twait, did you
21 also consider -- well, let me back up.

22 Are you aware of just how many
23 Midwest Generation thermal stations -- electric
24 generating stations AS 96-10 applies to?

1 THE WITNESS: I believe it was five.

2 MS. FRANZETTI: Okay. You are
3 correct. But again, to clarify for the record --
4 but since the time AS 96-10 was granted, the
5 Fisk and Crawford stations to which it also
6 applied have closed, right?

7 THE WITNESS: Yes.

8 MS. FRANZETTI: So that today there
9 are three operating stations that it applies to;
10 Will County, Joliet 9 and Joliet 29. Is that
11 consistent with your understanding?

12 THE WITNESS: Yes.

13 MS. FRANZETTI: Now, with respect to
14 Will County, that station does not discharge to
15 the UDIP, correct?

16 THE WITNESS: Correct.

17 MS. FRANZETTI: So Will County right
18 now under these proposed thermal standards would
19 be subject to the UC thermal standards and not the
20 general use thermal standards, right?

21 MR. ETTINGER: I am going to object
22 to that. Mr. Twait is not a lawyer. I am not
23 sure what you are asking him about. If you are
24 asking him to testify that upstream discharges

1 don't have to comply with downstream water quality
2 standards, I think we would have to talk about
3 that.

4 MS. FRANZETTI: I am not asking
5 that, but what I am trying to point out is another
6 problem with the Agency's response here with
7 respect to your question about AS 96-10, when it
8 talks about having to comply at the edge of the
9 mixing zone, the general use standards don't apply
10 in the vicinity of the Will County station's
11 discharge, or at least that's not what is
12 proposed. So Will County, even under what's
13 proposed, does not need to comply at the edge of
14 its mixing zone with the general use thermal
15 standards.

16 MR. ETTINGER: I understand where
17 you are coming from now. There's two questions
18 there.

19 HEARING OFFICER TIPSORD: I think
20 Mr. Twait can answer.

21 THE WITNESS: I think they would
22 have to meet the Use B temperatures outside of
23 their mixing zone for the Will County station.

24 MS. FRANZETTI: Right. And so for

1 purposes of showing compliance with downstream
2 general use standards, at least in particular for
3 the Will County station, there could still be a
4 need to continue the AS 96-10 type of relief,
5 right?

6 THE WITNESS: It's possible.

7 BY MR. ETTINGER:

8 Q. That's at the I-55 bridge?

9 A. Yes.

10 MS. FRANZETTI: No further
11 questions.

12 BY MR. ETTINGER:

13 Q. Number eight. To your knowledge,
14 has the existing variance held by Midwest
15 Generation regarding compliance at the I-55 bridge
16 affected any other discharger to the CAWS or the
17 lower -- Lower DuPage River.

18 HEARING OFFICER TIPSORD: Des
19 Plaines River.

20 MR. ETTINGER: Lower DuPage River.

21 HEARING OFFICER TIPSORD: And
22 adjusted standard, not variance, correct?

23 THE WITNESS: Right.

24 BY MR. ETTINGER:

1 Q. All right. We are going to start
2 over that entirely. Strike eight as written. We
3 are going to ask a much better question.

4 To your knowledge, has the
5 existing adjusted standard held by Midwest Gen
6 regarding compliance at the I-55 bridge affected
7 any other discharger to the Upper Dresden Pool?

8 A. Not that I am aware of.

9 Q. Nine, what was the effect of IEPA
10 using different background temperature data
11 instead of using the temperatures at the Cal-Sag
12 Channel Route 83 to establish period average
13 thermal criteria?

14 A. The proposed monthly average period
15 decreased in some periods and increased in others.

16 Q. And we can determine that by
17 comparing the numbers as written on the proposal?

18 A. Yes.

19 Q. Okay. Ten, are you aware of whether
20 there are native muscles in any of the waters
21 covered by the proposed Subpart D criteria?

22 A. I am not aware of the presence or
23 absence of native muscles.

24 Q. Has the Agency ever looked for them?

1 A. Can we -- we would like Howard to
2 answer. I don't know if he has been sworn in.

3 HEARING OFFICER TIPSORD: Not today,
4 so let's swear him in.

5 (Whereupon, the witness was duly
6 sworn.)

7 MR. ESSIG: Could you repeat your
8 question?

9 MR. ETTINGER: I'm not sure I could.
10 Maybe we better have the -- well, it was the --
11 did the Agency look for them?

12 MR. ESSIG: The Agency has not
13 looked for muscles in large rivers like the Lower
14 Des Plaines River, at least to my knowledge.

15 MR. ETTINGER: Are there muscles in
16 large rivers?

17 MR. ESSIG: There can be, yes, but I
18 am not aware of if they were present or absent in
19 that -- in the Lower Des Plaines River.

20 MR. ETTINGER: And the Agency
21 doesn't look for them in not wadeable waters.

22 MR. ESSIG: Generally, no.

23 BY MR. ETTINGER:

24 Q. Eleven, are you aware of any studies

1 regarding the effects of cyanide on native
2 muscles?

3 A. No.

4 Q. Twelve, are there any specific
5 numeric water column criteria of general
6 applicability that have been developed to protect
7 human health for fish consumption now in any of
8 the Illinois standards?

9 A. Yes.

10 Q. What are they?

11 A. Mercury and benzine.

12 Q. And the mercury number is the
13 0.0012 parts per billion?

14 A. Yes, 12 nanograms per liter.

15 Q. Is that number applicable to any
16 of the waters that we have been talking about
17 in these proceedings?

18 A. The current standard, no, but in our
19 proposal, yes.

20 Q. It will be?

21 A. For mercury.

22 Q. The mercury number will be
23 applicable to the Upper Dresden Pool?

24 A. Yes.

1 Q. Will it be applicable to any of the
2 waters, the A or B waters?

3 A. Yes.

4 MS. WILLIAMS: And that's consistent
5 with our original proposal from 2007, correct?

6 THE WITNESS: Yes.

7 BY MR. ETTINGER:

8 Q. Has the Agency ever looked at
9 selenium?

10 A. Yes.

11 Q. When did you last look at it, and
12 what did you determine about selenium in Illinois
13 fish?

14 A. You know, I don't know the date that
15 we have looked at it. We have had discussions
16 with USEPA. We were not satisfied with their
17 current criteria. We have had issues with it.

18 Q. You are not alone in that.

19 The -- getting back to mercury,
20 are you going to be applying the USEPA fish tissue
21 standard or the Illinois numeric standard that's
22 currently in the rules in the waters in the CAWS?

23 MS. WILLIAMS: What do you mean,
24 apply?

1 BY MR. ETTINGER:

2 Q. That's a good question. In terms of
3 making 303(d) decisions, making other decisions
4 regarding permitting and impairment, will you be
5 looking at the 0.0012 number or the USEPA fish
6 tissue numbers?

7 A. We have not adopted the USEPA fish
8 tissue number. We have -- I have got an -- I have
9 to find it. The Agency will follow its current
10 methodology for analyzing fish tissue, and we
11 have a jointly -- the program fish contaminant
12 monitoring program is jointly administered by the
13 Illinois EPA, Illinois DNR and Illinois DPH.

14 Q. Okay. I guess I will -- I
15 anticipated some of my own questions here.

16 So 13, in USEPA's comments on
17 the October 2007 version of the proposed water
18 quality standards revisions for the Chicago Area
19 Waterway and Lower Des Plaines River, public
20 comment number 286, USEPA references, quote,
21 Numerous published health -- human health criteria
22 recommendations that have been derived to protect
23 human health from the exposure of contaminated
24 fish, (organism only exposure criteria), end

1 quote.

2 Which of these USEPA recommended
3 criteria has IEPA considered adopting for the
4 waters at issue in this case?

5 A. We considered all of the ones that
6 USEPA brought forward; however, the Agency
7 believes these are best dealt with on a statewide
8 basis rather than for just these waters.

9 Q. Does the Agency anticipate having a
10 proposal on a statewide basis to address these
11 human health criteria?

12 A. We have not begun that process.

13 HEARING OFFICER TIPSORD: I'm sorry,
14 Mr. Fort. Do you have a follow-up?

15 MR. FORT: Yes. Jeff Fort, from
16 Dentons US, LLP.

17 Mr. Twait, if there are
18 provisions or standards that you were thinking
19 about on human health criteria, USEPA human health
20 criteria recommendations, which are coming later,
21 why have you included a couple here such as
22 mercury?

23 THE WITNESS: Mercury, we have
24 adopted on a statewide basis already, and benzine,

1 we have adopted on a statewide basis already.

2 MR. FORT: So it's strictly because
3 they have been done statewide that they are being
4 included here in this proceeding?

5 THE WITNESS: Yes. And when I say
6 statewide, I mean it was all the general use
7 waters, which are exclusive of the CAWS waterway.

8 BY MR. ETTINGER:

9 Q. Okay. Well, maybe I will just ask
10 about -- this is a good place to ask about, what
11 is the effect of your changes to proposed Section
12 302.648, determining the human threshold criteria?

13 A. You asked about the changes?

14 Q. Yes. This is -- specifically your
15 proposed regarding procedures for determining
16 water quality criteria, Section 302.648 and 657.

17 A. We are making our derived criteria
18 applicable to these waters, instead of only to
19 general use waters.

20 Q. Okay. Now, as I understand it,
21 you have got two human health based numbers in
22 Illinois, mercury and benzene, and otherwise,
23 you use this derivation process; am I correct?

24 A. Correct.

1 Q. So if someone wanted to discharge
2 another pollutant, which might affect human
3 health, you would use this process to determine
4 what would be an acceptable level; is that
5 correct?

6 A. Yes.

7 Q. And the affect of this change of
8 deleting the term general use here is just to make
9 that process applicable to all of the waters, the
10 A and B waters, as well as the general use waters?

11 A. Yes.

12 MS. FRANZETTI: If I might, just to
13 follow-up.

14 Mr. Twait, the Subpart F,
15 procedures that this Section 302.648 is a part
16 of, those only come into play, though, don't
17 they, if -- in the absence of a general use
18 numeric water quality standard?

19 THE WITNESS: Yes.

20 BY MR. ETTINGER:

21 Q. But we have only got general use
22 numeric water quality standards for mercury and
23 benzine with regard to human health?

24 A. Yes.

1 MS. FRANZETTI: Well, I was going to
2 ask another follow-up, because I am confused and
3 maybe it's I don't correctly understand how
4 Subpart F works.

5 MS. WILLIAMS: If you did, that
6 would be a surprise to us, because just so the
7 Board -- it's very complicated. We didn't bring
8 our expert, but Scott can do the best he can.

9 MS. FRANZETTI: And, Mr. Twait, if
10 you don't know, or if you are not comfortable with
11 answering any of my questions, just say so. Okay.

12 So does -- can Subpart F's
13 procedures be used for any parameter for which
14 there is not a human health based water quality
15 standard?

16 THE WITNESS: Yes, as long as that
17 chemical has toxicity.

18 HEARING OFFICER TIPSORD: Mr. Davis,
19 then did you have a follow-up?

20 MR. DAVIS: I did, and it was
21 actually relating to something you said a bit
22 ago. Alec Davis with the Illinois Environmental
23 Regulatory Group.

24 Actually, it was Mr. Ettinger

1 who brought up the 303(d) decisions in the context
2 of --

3 MS. WILLIAMS: This is not okay,
4 though. We cannot see your face.

5 MS. FRANZETTI: He is the great ox.

6 MR. DAVIS: Yes. With regards to
7 making those 303(d) listing decisions for impaired
8 waters, does the Agency base those decisions on
9 water column data currently? And I guess I am
10 most specifically interested in mercury, but I
11 guess generally as well.

12 THE WITNESS: It's my understanding
13 that the Agency uses fish tissue base, fish tissue
14 for its basis for listing for mercury.

15 MR. DAVIS: And these would be fish
16 that were sampled in the segment for which that
17 determination was going to be made?

18 THE WITNESS: Yes.

19 MR. DAVIS: Thank you.

20 BY MR. ETTINGER:

21 Q. Okay. Well, that heightens the
22 mystery.

23 So the 0.0012 number is the
24 Illinois human health mercury standard. When is

1 it used? What is it used for?

2 A. It is used for permitting purposes
3 mainly.

4 Q. Okay. So you have got the numeric
5 standard for permits and the fish tissue standard
6 for 303(d) listings? I guess that's what throwing
7 people.

8 A. We would probably use the water
9 column data for mercury, if we had it, but I don't
10 think we have done that on a statewide basis to
11 collect low level mercury data.

12 HEARING OFFICER TIPSORD: Mr. Fort?

13 MR. FORT: Excuse me. Just for the
14 correction of the record, I think it's only one
15 zero. It's 0.012 parts per billion or 12 parts
16 per 12 trillion.

17 MS. WILLIAMS: I recommend to
18 everyone to please use 12 nanograms. I think it
19 will be much clearer.

20 BY MR. ETTINGER:

21 Q. That's great. 12 nanograms.

22 Anyway, having worked that out,
23 I am done with that. So too late. You should
24 have broke it in earlier.

1 Now, my question is, does the
2 Agency proposal contain a narrative water quality
3 standard regarding unnatural sludge? I asked that
4 question here as a pre-filed question, but I guess
5 what we are really saying is did you just delete
6 Section 302.403 here as a -- to save paper on
7 this?

8 A. No. 302.403 is still applicable.

9 Q. And the reason it doesn't appear
10 here is just that there is no change to it?

11 A. Correct.

12 Q. Does the Agency proposal for ammonia
13 criteria in Use B waters protect larval fish
14 present in Use B waters from March through
15 October?

16 A. Yes.

17 Q. How does it do that?

18 A. Illinois EPA interprets that the
19 proposed ammonia standard provides sufficient
20 protection for all life stages to allow attainment
21 of the proposed aquatic life use. Specifically,
22 this means enough protection to maintain aquatic
23 life populations predominated by individuals of
24 tolerant types.

1 Q. And that would include larval stages
2 of tolerant types?

3 A. Yes.

4 Q. Okay. Here's the question that
5 Jessica threw in just to show how badly I can
6 pronounce things.

7 Does the Agency proposal
8 incorporate criteria that are at least as
9 protective as the USEPA national criteria
10 recommendations including those for cadmium,
11 chloride, lead, silver, selenium, copper,
12 diazinon, methyl tertiary-butyl ether,
13 nonylphenol and tributyltin?

14 A. The Agency's position is that the
15 water quality standards that we have proposed are
16 protective for the uses that we have proposed for
17 these waters that are below the Clean Water Act
18 goals.

19 Q. Have you considered whether changes
20 to the cadmium -- I'm sorry -- to the chloride
21 standard might be useful in terms of addressing
22 the problems present in these waters from rock
23 salt?

24 A. USEPA originally had issues with

1 our chloride number, and they still do. And they
2 were suggestive that we should use the national
3 criteria document or the Iowa procedure.

4 However, before we made our filing,
5 they noted that USEPA is coming out or is looking
6 at the chloride standard again, and they told us
7 that even the most recent Iowa derivation would
8 not be approvable. Therefore, the Agency decided
9 to stick with its current proposal.

10 HEARING OFFICER TIPSORD: Mr. Fort?

11 MR. FORT: Yes. Mr. Twait, you have
12 talked about I think at least three different
13 USEPA criteria; the national criteria for
14 chlorides, the Iowa proposal, which I believe is
15 something that was adopted in the state of Iowa
16 in some fashion and then there may be another
17 USEPA chloride criteria document?

18 THE WITNESS: It's not a criteria
19 document. They have -- to my knowledge, they
20 have started looking at new chloride data.

21 MR. FORT: Okay. So just with
22 respect to the USEPA criteria and data on
23 chlorides, have any of these ever been promulgated
24 as a regulation in 40 CFR?

1 THE WITNESS: I don't know.

2 MR. FORT: These are suggestions
3 that are made by USEPA to the states?

4 THE WITNESS: Okay. The national
5 criteria documents are put out as toxicity --
6 based on the toxicity numbers, and they are
7 published and available for public comment.

8 MR. FORT: And these criteria
9 documents are done based upon lab studies?

10 THE WITNESS: Yes.

11 MR. FORT: And they are done based
12 upon intolerant species in those lab studies.

13 THE WITNESS: The studies are --
14 the studies look at all manner of organisms.

15 MR. FORT: Are you aware of any of
16 those studies being done for tolerant species
17 only?

18 THE WITNESS: No. They will use
19 whatever data is available.

20 MR. FORT: Okay. So with respect to
21 habitat, those studies do not take into account
22 the particular habitat of a stream body, correct?

23 THE WITNESS: Correct.

24 MR. FORT: And I believe the Agency

1 has looked at some of these issues, and I will
2 just limit it to chloride, of whether or not there
3 will be an improvement to the number of aquatic
4 species in the Lower Ship Canal, as a result
5 of the adoption of the chloride standard?

6 MS. WILLIAMS: Is there a question
7 there?

8 MR. FORT: I think so.

9 THE WITNESS: I didn't hear it
10 either.

11 MR. FORT: Does the Agency believe
12 that there will be improvement in aquatic fish
13 species in the Lower Ship Canal if the chloride
14 standard that you have proposed is adopted?

15 THE WITNESS: The Agency is under
16 an obligation to adopt protective criteria, and
17 we believe that removing the toxicity of -- or
18 acknowledging the toxicity of chloride is one
19 of the things that we have to do.

20 MR. FORT: Have you done any studies
21 of any chloride toxicity for the Lower Ship Canal
22 due to chlorides, given the tolerant species in
23 that area?

24 THE WITNESS: In addressing the

1 water quality standard that we have proposed?

2 MR. FORT: Or otherwise.

3 THE WITNESS: We looked at whether
4 or not we could eliminate species from the
5 national criteria document and from Iowa's
6 proposal or adopted rules, and we didn't feel
7 that we could remove species from that. We
8 also looked at whether certain species would
9 be viable in the wintertime, and we did not feel
10 that we could make an adjustment based on that.

11 MS. WILLIAMS: Explain what you mean
12 by viable. You look at whether certain species
13 would be viable in the wintertime.

14 THE WITNESS: We looked at whether
15 the species would be present or present in a form
16 like -- such as muscles bury themselves in the mud
17 in the wintertime, and so they are not -- they are
18 not seeing what the water quality is in the
19 receiving stream. And with other organisms,
20 whether they would be present in the wintertime or
21 if they would be in the egg stage.

22 MR. FORT: Is that study reduced to
23 a memorandum or some sort of written document?

24 THE WITNESS: No.

1 MR. FORT: This was a discussion
2 that you had in a meeting or something?

3 THE WITNESS: Yes.

4 MS. WILLIAMS: Sorry. Are you
5 describing the analysis you personally did of the
6 national criteria document?

7 THE WITNESS: Yes. With the caveat
8 that some of the biologists were involved in the
9 decision making.

10 MR. FORT: So there is not a
11 memorandum that reflects this analysis that the
12 Agency did at least with respect to chlorides;
13 am I hearing that correctly?

14 THE WITNESS: Correct.

15 MR. FORT: And the Agency has not
16 done its own investigation as to the presence of
17 these species that are in the national criteria
18 document at least as it applies to the Lower Ship
19 Canal?

20 THE WITNESS: We looked at that.

21 MR. FORT: You looked at what?

22 THE WITNESS: We looked at removing
23 species that we didn't feel would be -- would be
24 present.

1 MR. FORT: And did you remove any?

2 THE WITNESS: We did. I believe
3 that we only felt comfortable removing the muscles
4 and a snail, and I am going from memory on that.

5 MR. FORT: Okay. What happens when
6 you start removing species from the criteria?

7 THE WITNESS: Unless you are
8 removing the four most sensitive species, if you
9 start removing other species, then the number of
10 species that have been evaluated goes down, and
11 when you remove species, sometimes you can remove
12 them to the point that your safety factor
13 increases to the point that the criteria starts
14 moving in the direction where it becomes more
15 protective.

16 MR. FORT: You need to have enough
17 data point in order to reduce your confidence
18 interval to an acceptable space?

19 THE WITNESS: I believe that would
20 be a good way to say it.

21 MR. FORT: Thank you.

22 HEARING OFFICER TIPSORD: Okay.
23 Mr. Ettinger, are you done with your pre-filed
24 questions?

1 MR. ETTINGER: I am done, yes. I am
2 just sitting here listening.

3 HEARING OFFICER TIPSORD: Well, in
4 that case, next is CITGO PPD. So let's take about
5 five minutes while you guys rearrange.

6 Okay. Monica has some
7 follow-up.

8 MS. RIOS: I have a couple of
9 follow-ups.

10 HEARING OFFICER TIPSORD: We will do
11 that first. Okay.

12 MS. RIOS: Monica Rios, ExxonMobil
13 Oil Corporation, and Mr. Twait, I just have a
14 couple of follow-ups regarding your earlier
15 testimony on AS 96-10.

16 You stated EPA was not aware
17 that -- aware of AS 96-10 effecting any other
18 discharges in the UDIP. Can you just explain
19 your basis for that conclusion?

20 THE WITNESS: I believe that of the
21 dischargers downstream, we have given mixing zones
22 to those facilities, and I can't think of any
23 facilities where we didn't give a mixing zone
24 and they had to put in additional treatment.

1 MS. RIOS: And what downstream
2 dischargers did you consider?

3 THE WITNESS: Well, starting to the
4 farthest north, which was downstream of Crawford
5 and Fisk there is Corn Products, CITGO. Coming
6 downstream, I know Stepan has a thermal component,
7 ExxonMobil.

8 MS. RIOS: And, Mr. Twait, this goes
9 way back to the initial set of hearings back in
10 2008 where your testimony was that AS 96-10 would
11 be moot upon adoption of the proposed water
12 quality standards. Has that conclusion changed?

13 THE WITNESS: I think it would be
14 better if I didn't answer that. I will leave it
15 to the lawyers.

16 MR. DIMOND: Tom Dimond on behalf of
17 Stepan Company.

18 Mr. Twait, what mixing zones are
19 you aware of that's been issued for Stepan?

20 THE WITNESS: I am not aware that
21 Stepan has had a mixing zone offhand, but it was
22 my understanding that they had a thermal component
23 to their discharge. I might be mistaken.

24 MR. DIMOND: Okay. And are you

1 aware of a mixing zone being issued for any
2 discharger into the Upper Dresden Island Pool for
3 thermal issues other than Midwest Gen?

4 THE WITNESS: ExxonMobil for sure.

5 MR. DIMOND: That's all I have.

6 HEARING OFFICER TIPSORD: All right.
7 Let's take a five-minute break, and then we will
8 come back and try to at least get through the
9 first section of CITGO's questions before we go to
10 lunch.

11 (Whereupon, a short break was
12 taken.)

13 HEARING OFFICER TIPSORD: I
14 understand ExxonMobil has one more follow-up
15 before we get to Mr. Fort.

16 Ms. Rios, you had another
17 follow-up?

18 MS. RIOS: Mr. Twait, right before
19 the break, you stated that ExxonMobil has a mixing
20 zone. Does ExxonMobil have a defined mixing zone
21 in NPS format?

22 THE WITNESS: I don't know what's in
23 there, what's in the permit. I do know that we
24 have looked at mixing zone studies done by Huff &

1 Huff for the thermal component.

2 MS. RIOS: Do you know if they are
3 granted allowed mixing in their permit?

4 THE WITNESS: I believe it was
5 allowed mixing, and I'm not sure if that's
6 specifically recognized in their permit or not.

7 MS. RIOS: Thank you.

8 HEARING OFFICER TIPSORD: All right.
9 With that, I believe we are ready to proceed with
10 your pre-filed questions.

11 CROSS-EXAMINATION

12 BY MR. FORT:

13 Q. Thank you, Madame Hearing Officer.
14 Good morning or good afternoon now.

15 Madame Hearing Officer, Members
16 of the Board, Board Staff, Agency and other
17 stakeholders here, my name is Jeff Fort with
18 Dentons US, LLP. When this matter started, it
19 was Sonnenschein Nath & Rosenthal and then we
20 became SNR Denton US, LLP and now it's Dentons US,
21 LLP. I am in the same office, same practice, but
22 the names have changed.

23 Mr. Twait, I am here
24 representing CITGO Petroleum Corporation and PDV

1 Midwest Refining, LLC, which I will refer to in
2 my questions as the Lemont refinery.

3 I assume you have had a chance
4 to look at the pre-filed questions before now?

5 A. Yes.

6 Q. Okay. These questions I am focusing
7 on for the location of the Lemont refinery, which
8 is in the Lower Ship Canal near the regulated
9 navigation zone, and for purposes of these
10 questions, that segment of the ship canal will be
11 called the Lower Ship Canal or the MWRDGC and the
12 safety zone.

13 For members of the audience,
14 Ms. Williams and I had a conference this week,
15 and I have agreed to withdraw many of my questions
16 or several of my questions, I guess I should say.
17 So I will read off what I am not going to ask,
18 and if there is something in there that you think
19 is really important, you will have a chance to
20 revive it.

21 So these will include -- I am
22 going to drop one through four, 11 and 12, 15.

23 MS. FRANZETTI: Jeff, can you go a
24 little slower?

1 MR. FORT: Yes, ma'am.

2 One through four, 11 and 12, 15,
3 20 through 24, 27 and 28 and 30.

4 HEARING OFFICER TIPSORD: Look at
5 that. We are halfway through the first group
6 already.

7 BY MR. FORT:

8 Q. I am doing my best.

9 Mr. Twait, you are here to
10 testify on behalf of the Agency, correct?

11 A. Yes.

12 Q. Does the Agency expect to call any
13 other witnesses to provide testimony regarding
14 this docket, Docket D, concerning the proposed
15 water quality standards?

16 A. No. I am the only person testifying
17 on the changes that we have proposed.

18 Q. And you are not expecting that the
19 Agency is going to call somebody else to talk
20 about the proposed water quality standards in this
21 docket?

22 A. If there are -- it is not the
23 Agency's intent. If there is a question that I
24 cannot answer, we can provide an answer to the

1 Board or possibly have somebody else testify.

2 Q. And you have reviewed the Board's
3 first notice of opinion and order in Docket C in
4 which the Board established three different uses
5 for the water bodies affected in Docket D?

6 A. Yes.

7 Q. Okay. Is it correct that even
8 though the Board adopted three different uses
9 for the waterways at issue here in this
10 proceeding, the Agency only proposed one set
11 of water quality standards with the exception
12 of temperature and dissolved oxygen?

13 A. Ammonia is different also.

14 Q. Okay. So except for those three
15 materials, the proposed standards are identical?

16 A. No, not quite.

17 MS. WILLIAMS: Jeff, can you
18 clarify, when you -- are we talking now here about
19 three -- are you asking him to compare general use
20 to A and B and each of -- all, or just A and B,
21 because you are talking about three uses. I think
22 it makes the answer hard.

23 BY MR. FORT:

24 Q. Well, I am as much reacting to how

1 the strikethroughs worked, in that all of the
2 water bodies that used to be secondary contact and
3 indigenous use seemed to have the same criteria.
4 Now, I suppose moving UDIP to general use might
5 change that. So I am welcoming him to explain at
6 least why A and B are the same.

7 MS. WILLIAMS: Okay. I think that
8 will keep it clear for now if we could start with
9 that.

10 BY THE WITNESS:

11 A. With the exception of dissolved
12 oxygen, temperature and ammonia, the standards
13 are more or less the same, the chemical
14 constituent, and part of that happens because
15 of the national criteria document, when you
16 start removing species, they become more
17 stringent, and in some cases, the Agency didn't --
18 didn't believe that some of the most sensitive
19 species wouldn't be there.

20 Q. So I heard two different things
21 there. First, you said that if you removed
22 species, the criteria would get more stringent?

23 A. Sometimes.

24 Q. And that's because of the issue that

1 we talked about before the break of having a
2 smaller population and, therefore, the confidence
3 intervals would get bigger and the acceptable
4 criteria would get lower?

5 A. Correct, the safety factor
6 increases.

7 Q. So do you remember what materials
8 or chemicals you had that observation concerning?

9 A. Cadmium is the big one that comes to
10 mind and copper, we removed -- copper, we removed
11 species that we didn't think would be present.

12 Q. And what was the affect of removing
13 those species for the copper standard?

14 A. The water quality standard became
15 less stringent.

16 Q. So you really have to go through
17 each chemical and look at the species that you
18 expect to be present in a particular water body
19 to know which way the -- the numbers would result?

20 A. Yes.

21 Q. But yet we ended up with the same
22 standards for use A and use B?

23 A. Yes. The Agency, if it was felt
24 that the water could meet the proposed water

1 quality standard, that the Agency didn't need to
2 look at criteria for getting it less protective.

3 Q. What chemicals that -- if you can
4 recall, had that situation where the water in the
5 use B waters -- let's just limit it to the Chicago
6 Sanitarian Ship Canal -- already met the standard
7 that you were proposing?

8 A. The B tech's parameters of fluoride,
9 manganese, the mercury, acute and chronic, nickel,
10 total residual chloride.

11 Q. Those were which?

12 A. Those were ones that we believed
13 would be met in the use B waters.

14 Q. So that means that for all the other
15 chemicals that you were proposing to be included
16 for the ship canal, you did not have evidence that
17 they -- it was being met?

18 A. No. I just gave you a partial list.
19 I would really have to go back and see what we
20 looked at.

21 Q. Okay. And I asked you at least
22 a question before the break with respect to
23 chloride.

24 With respect to all the

1 chemicals, is there any memorandum from within
2 the Agency that reflects your thought processes,
3 your analysis, to get to this conclusion?

4 A. In our statement of reasons. And
5 we explained -- in there we specifically explained
6 where we were varying or changing the national
7 criteria document. So if we made the decision
8 that we can change the national criteria document,
9 we outlined it in the statement of reasons. If we
10 didn't, if we didn't make a change, we just noted
11 that it was exactly the same as the national
12 criteria document.

13 Q. So this was the criteria document
14 we talked about before the break that are in
15 published form, but they have not been adopted as
16 a regulation by the USEPA?

17 MS. WILLIAMS: Objection. That
18 calls for a legal conclusion. I don't think he
19 should be answering.

20 He has testified they have been
21 published in the Federal Register. I don't think
22 it's appropriate to expect a non- -- a lay witness
23 to say whether they are -- what their regulator
24 affect is.

1 BY MR. FORT:

2 Q. Well, let me rephrase the question
3 then.

4 To your knowledge, have they
5 ever been published in 40 CFR as a regulation by
6 USEPA?

7 A. I don't know. I don't have that
8 knowledge.

9 Q. Okay. I would ask the Agency, if
10 you have any such references, that we would
11 appreciate having those.

12 MS. WILLIAMS: Would you like
13 references to the legal affects of national
14 criteria documents on states with regard to
15 the obligations to adopt water quality standards
16 as stringent as them; is that your question?

17 BY MR. FORT:

18 Q. If you want to make that legal
19 argument, that's fine, too, but I am asking for,
20 has USEPA actually promulgated these as a federal
21 regulation?

22 MS. WILLIAMS: We can address those
23 in comments.

24 BY MR. FORT:

1 Q. And what I just note here is that we
2 have in Illinois what are called the bypass rules,
3 where if you have hazardous waste rules, Clean
4 Air Act rules that can go through the Title Seven
5 proceedings before the Board, without going
6 through technical feasibility and economic
7 reasonableness, they are pretty clear, and I
8 think that's sub rosa what may be going on
9 in this situation, so -- okay.

10 Let me get back then. So
11 the answer on number eight, why has the Agency
12 proposed to treat these water segments the same
13 way while recognizing that there are different
14 uses of them? It's because you just go to the
15 national criteria document and you sort from
16 that?

17 A. No. We are protecting for a
18 toxicity affect, and those don't allow a large
19 difference in the water quality standard and
20 as I mentioned before that when you remove
21 some species, it can become more stringent.

22 BOARD MEMBER LIU: Excuse me.
23 May I ask a question along the lines of your
24 earlier discussion? You mentioned that when

1 you removed species in your analysis of copper,
2 that the water quality standard became less
3 stringent?

4 THE WITNESS: Yes.

5 BOARD MEMBER LIU: I ran some
6 numbers for the generic hardness value of 400,
7 and I got more stringent. I was wondering if
8 you could just one run the math on that again.

9 THE WITNESS: Are you comparing
10 our general use standard for what we have
11 proposed for copper?

12 Okay. I will agree that those
13 are more stringent, but those -- but the numbers
14 that are in our proposal are less stringent than
15 the national criteria document. For the national
16 criteria document there were some on it that were
17 very sensitive to copper, and we removed those
18 species.

19 BOARD MEMBER LIU: Thank you.

20 BY MR. FORT:

21 Q. The Agency -- other than describing
22 the process here though, the Agency has not done
23 a -- the general approach that you just described
24 in the statement of reasons. You don't have a

1 technical analysis of what the -- taking a
2 criteria document and for a pollutant, mercury,
3 for example, and going through the process to say
4 what would be protective of the species that are
5 expected to be in a water body that has tolerant
6 species in it in that designated use?

7 A. Yeah. I would agree with that.

8 Q. Are you generally familiar with the
9 water discharges from my client, the Lemont
10 refinery?

11 A. Yes.

12 Q. And just generally, how do you
13 know -- how detailed is your knowledge?

14 A. I know that it's mostly cooling
15 water. There is processed water involved with it,
16 and we have a total dissolved issue -- total
17 dissolved solids issue that we have been working
18 on.

19 Q. Okay. And you are aware that its
20 intake is upstream of its discharge?

21 A. Yes.

22 Q. And that pursuant to its NPDES
23 permit, it discharges into the Lower Ship Canal?

24 A. Yes.

1 Q. And the discharge is at a point
2 immediately upstream of what we have called the
3 black safety zone?

4 A. Yes.

5 Q. And that the discharges within what
6 is called the regulated navigation zone?

7 A. Yes.

8 Q. Okay. I am going to skip 11 and 12
9 and go to 13.

10 So at the point of -- upstream
11 of -- at the beginning of the regulated navigation
12 zone, isn't it true the Lower Ship Canal is what
13 has been called an effluent dominated stream?

14 A. Yes.

15 Q. And do you have information of
16 what portion of the flow on the Lower Ship Canal
17 during normal conditions is for municipal
18 wastewater treatment plants operated by the
19 Metropolitan Water Reclamation District?

20 A. Well, I'm not sure which normal
21 conditions you are talking about, but depending
22 on rainfall events, it's 50 to 75 percent, up
23 to 100 percent of effluent.

24 Q. When is it 100 percent effluent?

1 A. When there is no precipitation, and
2 that might happen in the fall or winter.

3 Q. So under conditions of no
4 precipitation, the flow in the ship canal is
5 virtually entirely from the Reclamation District's
6 wastewater treatment plant?

7 A. Yes.

8 Q. And other times of the year when
9 there is more rain off -- rain water runoff and
10 the like, it might be a lower percentage, as low
11 as 50 percent?

12 A. Yes.

13 Q. Okay. Thank you. So in addition to
14 the treated wastewater from the District, isn't
15 this segment of the Lower Ship Canal also carrying
16 pollutants from storm events?

17 A. Yes.

18 Q. Combined sewer overflows?

19 A. Yes.

20 Q. Storm water follows?

21 A. Yes.

22 Q. And flows from runoff, snow melt
23 conditions?

24 A. Yes.

1 Q. How would you characterize the
2 sediment quality of the Lower Ship Canal both
3 generally and specifically with respect to mercury
4 contamination?

5 A. There has been prior testimony that
6 there was some contaminated sediments and some
7 areas are worse than others.

8 Q. And that contaminated sediments
9 includes mercury?

10 A. I believe that was in the testimony.

11 Q. Does resuspension of contaminated
12 sediments occur?

13 A. Yes.

14 Q. And that's by barge traffic?

15 A. Yes.

16 Q. High flow periods?

17 A. I'm not -- I'm not knowledgeable on
18 when -- if it happens during high flow periods.

19 Q. And what about the process of
20 lowering water levels in the ship canal due to
21 the things that the District needs to do to
22 maintain its commitments?

23 A. I have no knowledge of that.

24 Q. Okay. And you would expect any

1 sediment that's resuspended from whatever cause
2 to be things that get into the Lemont refinery
3 water intake during those conditions?

4 A. If it's resuspended, it will get
5 drawn in with their intake.

6 Q. Do you have any data on the level of
7 contaminants from these sources we just talked
8 about?

9 A. I believe that some data was
10 provided by CITGO, in the record.

11 Q. Thank you. And I think you are
12 right. I am going to skip 20 to 24 and go to 25.

13 Okay. Now, at the present time
14 under the existing regulations for the Lower Ship
15 Canal, the body of water into which the -- strike
16 that.

17 Let me just try again and start
18 over. Under the consistence regulations for the
19 Lower Ship Canal, that is called a secondary
20 contact water?

21 A. We call it a secondary contact
22 water. However, the official language is
23 secondary contact and indigenous aquatic life
24 use.

1 Q. Thank you. You are getting ahead of
2 me here.

3 For purposes of these questions,
4 which would you rather have the questions asked
5 as, secondary contact or as the official title?

6 A. Secondary contact is fine.

7 Q. Thank you. So what are the
8 differences, if any, between these waters that we
9 have called a secondary contact and use B aquatic
10 uses?

11 A. Forty years ago when the Illinois
12 Pollution Control Board designated this stretch,
13 there was only a few species of fish that could
14 live. Over the past 40 years, the water quality
15 and fish populations have improved.

16 Use A and use B are still not able
17 to meet the Clean Water Act goals, but the aquatic
18 life has improved.

19 Q. And this same water body -- I know
20 this is not in this docket -- has been designated
21 as non-recreation, correct?

22 A. Yes, I believe that's correct.

23 Q. And what are the differences then
24 between non-recreation and secondary contact?

1 A. USEPA believes that it is less
2 protective; however, the Agency did not intend
3 that.

4 Q. Okay. So in terms of the uses for
5 the Lower Ship Canal as a secondary contact water,
6 how are they any different today than the uses
7 listed in use B as proposed by the Board?

8 A. It acknowledges fish consumption.
9 That is one of the differences.

10 Q. There is fish consumption in the
11 Lower Ship Canal now?

12 A. Yes. And with these proposed rules,
13 we will be protecting -- protecting for fish
14 consumption.

15 Q. Now, let me focus you in on the
16 regulated navigation zone, which is in the
17 immediate vicinity of the Lemont refinery's intake
18 and its discharge and includes the black safety
19 zone. Is it your testimony that there are -- is
20 fish consumption occurring from fish taken from
21 those waters?

22 A. I don't believe that you can fish
23 in the black safety zone. I'm not sure of the
24 regulated navigation zone, but the fish that

1 can swim to the barrier and then swim back out
2 of the regulated navigation area, or the regulated
3 navigation zone could be up either upstream or
4 downstream of the fish barrier.

5 Q. You think that people are allowed
6 to be fishing in the regulated navigation zone?

7 A. I said that I didn't know, but
8 they could swim out of the regulated navigation
9 zone and be caught either upstream or downstream
10 respectively.

11 Q. Well, let's focus on the upstream
12 part. Are you aware of any fishing that is done
13 in the regulated navigation zone upstream of the
14 electric fish barrier?

15 A. No.

16 Q. And are you aware of the physical
17 conditions alongside of the ship canal through the
18 regulated navigation zone?

19 A. No.

20 Q. Okay. Okay. I am going to move
21 to 29. With respect to the following statement,
22 after designated uses, states must establish
23 criteria sufficient to protect those uses, which
24 I believe is in many places in USEPA guidance and

1 in the Board's opinion at first notice. Did you
2 consider that before or while you prepared your
3 testimony?

4 A. Yes.

5 Q. And you agree with that statement?

6 A. Yes.

7 Q. And how did you apply that statement
8 to the water quality standards that the Agency is
9 proposing here today?

10 A. I think we have adopted -- we have
11 proposed something that protects the uses that we
12 have proposed.

13 Q. Are they sufficient to protect the
14 uses or is there a big safety factor in it?

15 A. The -- as I have testified before,
16 there is -- they don't have a procedure for
17 determining water quality standards for something
18 other than Clean Water Act goals, but you can
19 remove species, and the Agency has done that in
20 some instances.

21 Q. But a way to do it is to go through
22 it for a particular stream body or stretch of a
23 stream body and look at the species that are
24 present or could be present and from that

1 determine what a protective water quality standard
2 would be, correct?

3 A. Yes.

4 Q. I am going to go to 31. Is there
5 any other canal or river or other body of water
6 which has a black safety zone that you are aware
7 of?

8 A. Not that I am aware of.

9 Q. And that goes for the Illinois,
10 Midwest and United States?

11 A. Yes.

12 Q. And similarly, are you aware of any
13 other canal, river, or other body of water which
14 has a regulated navigation zone?

15 A. No. I am not aware of any.

16 Q. Okay. And that goes nationwide?

17 A. Yes.

18 Q. Okay. Going to 33 then. The
19 statement of reasons filed by the Agency in 2007
20 had multiple attachments and exhibits, some of
21 which included papers and information related to
22 various water quality standards.

23 Does the Agency intend to
24 supplement that list or add more documentation

1 or testimony to support the proposed water quality
2 standards in this document?

3 A. Only my testimony, which was based
4 on the changes that we have made from the original
5 proposal.

6 MS. FRANZETTI: If I may ask a
7 follow-up question?

8 MR. FORT: Go ahead.

9 MS. FRANZETTI: And Mr. Twait, my
10 question is going to go back a couple of questions
11 with respect to your answers generally of using
12 the criteria document stating whether or not a
13 particular species could be eliminated.

14 With respect to these waters,
15 and by these waters I am referring to only those
16 proposed for use A or use B. Those proposed
17 uses have been specifically created for these
18 particular waters, correct?

19 THE WITNESS: Yes.

20 MS. FRANZETTI: So did the -- given
21 that, we are looking at enacting very site
22 specific type uses for these waters. Did the
23 Agency consider that given with respect to
24 particularly use B, and the fact that the Agency

1 has only identified I think it's eight resident
2 aquatic species for use B waters; is that correct?

3 THE WITNESS: For thermal, yes.

4 MS. FRANZETTI: That's for thermal
5 only. For nonthermal, you believe that there are
6 more than eight representative species in these
7 waters?

8 THE WITNESS: I will say there is
9 more than eight species in these waters.
10 Representative aquatic species is something that
11 we have used for the thermal only.

12 MS. FRANZETTI: Okay. What my
13 question is is, take the species that you believe
14 are present in use B waters, is there an
15 alternative of deriving site specific criteria
16 for use B waters based on the limited number of
17 species that are present?

18 THE WITNESS: Well, to answer that,
19 if you took only eight species and you said, we
20 are only going to look at the toxicity of these
21 eight species. If you only have eight species in
22 your calculation, it's going to be more
23 restrictive since there is only eight species.

24 MS. FRANZETTI: Right, but --

1 THE WITNESS: When you get to that
2 few of species, then your multipliers go up.

3 MS. FRANZETTI: So use all the ones
4 that are present. Let's get away from just the
5 eight. I forgot that you just used eight for
6 thermal.

7 So for those species that are
8 present in use B waters, are you saying you run
9 into the same problem with there not being enough
10 data to keep the safety factor lower?

11 THE WITNESS: I will say that that
12 will be some of the time. Maybe not all of the
13 time.

14 MS. FRANZETTI: Okay. Was there any
15 consideration within the Agency as to whether when
16 you are dealing with a water body that had been
17 recognized to be at a use lower than the Clean
18 Water Act goals. Whether you really need this
19 safety factor to be applied in the same way,
20 because you have specifically looked at the waters
21 and identified what species are present.

22 THE WITNESS: The accepted practices
23 don't allow for or don't acknowledge setting water
24 quality standards for less than full support of

1 the Clean Water Act. Specifically for cadmium, we
2 were looking for -- we were looking for ways to
3 apply it in such a manner, and we could not find
4 one that was acceptable to USEPA.

5 MS. FRANZETTI: Did USEPA explain
6 why it felt that although the criteria documents
7 are created or prepared with waters in mind that
8 are capable of meeting the Clean Water Act goals,
9 they could not approve the use of any other
10 alternative approach for lower use waters?

11 THE WITNESS: I don't think that we
12 asked them that specific question.

13 MS. FRANZETTI: Okay. Thank you.

14 BY MR. FORT:

15 Q. Okay. I think we are ready for 34.

16 Mr. Twait, directing your
17 attention to the proposed numerical water quality
18 standards for chlorides, ammonia and mercury, I
19 have three questions.

20 Does the record provide any
21 information, reports studies or testimony for the
22 proposed water quality standard for chlorides?

23 A. In the Agency's original statement
24 of reasons and my previous testimony.

1 Q. There is not a separate technical
2 document or technical report or chlorides?

3 A. No.

4 Q. For the proposed water quality
5 standard for ammonia, are there any additional
6 reports, studies or testimony, other than what
7 appears in attachment KK of the statement of
8 reasons that is in the record?

9 A. What's in the record is the Agency's
10 original statement of reasons and my previous
11 testimony.

12 Q. And for the proposed water quality
13 standard for mercury, are there any additional
14 reports, studies or testimony other than what
15 appears in attachment Y of the record?

16 A. Not other than the Agency's original
17 statement of reasons and my previous testimony.

18 Q. Okay. So with respect to the
19 reports, studies or testimonies for ammonia
20 including attachment KK, did any of those address
21 necessary standards for aquatic life, such as
22 those in secondary contact waters in Illinois or
23 the proposed use B waters? Let's do secondary
24 contact waters first. I'm sorry.

1 A. I think my answer will be the same
2 regardless of the use, but a national criteria
3 document includes all of the appropriate species
4 and it is up to the state to eliminate species
5 that are not appropriate or not present.

6 Q. Okay. And did any of those address
7 necessary standards for aquatic life such as those
8 identified by the Board in Docket C for use B
9 waters?

10 MS. WILLIAMS: I can he just
11 answered for all three.

12 BY MR. FORT:

13 Q. Mr. Twait, is that true?

14 A. That would be my -- the same answer.

15 Q. For A, B and C? C is a little
16 different, because --

17 A. Yeah. C is different. So A and B.

18 Q. Okay. So with respect to C, how do
19 any of those demonstrate that the existing water
20 quality standard for ammonia for the Lower Ship
21 Canal is not protective of the aquatic uses as
22 identified by the Board in Docket C in their first
23 notice opinion?

24 A. The current -- the current standard

1 for secondary contact waters is 0.1 unionized and
2 there have been numerous national criteria
3 documents that indicate that the toxicity of
4 ammonia is greater than the contact secondary
5 contact and indigenous aquatic life use standard.

6 Q. What sort of species are being used
7 for those national criteria documents? Are those
8 intolerant species?

9 A. They are intolerant, tolerant and
10 intermediately tolerant. They look at all the
11 species.

12 Q. And do you have any references for
13 what those national standards or criteria are?

14 MS. WILLIAMS: I believe the
15 reference is in the exhibits, right?

16 BY MR. FORT:

17 Q. So you look at the bibliography for
18 attachment KK?

19 A. You would have to pull out
20 attachment KK and, yes, the bibliographies would
21 be in there.

22 Q. Okay. But you don't know how any of
23 those studies actually demonstrate it for tolerant
24 species?

1 MS. WILLIAMS: Demonstrate what?

2

3 BY MR. FORT:

4 Q. Demonstrate that 0.1 unionized
5 anomia is not protective of tolerant species, if
6 you know?

7 A. Yeah. I will have to say that I
8 don't know.

9 MR. ETTINGER: Can I just clarify?
10 The Illinois ammonia standard, you have already
11 thrown out the salmonids, which are the most
12 sensitive species. So do you know whether there
13 is an another set of fish not present in these
14 waters that could be thrown out that would loosen
15 the standard there?

16 THE WITNESS: I don't know.

17 MR. FORT: Moving on to 36. With
18 respect to the reports, studies and/or testimony
19 relating to the proposed water quality standard
20 for mercury and again, as applied to Lower Ship
21 Canal, did any of those address necessary
22 standards for aquatic life such as those in the
23 Lower Ship Canal?

24 MS. WILLIAMS: Can you clarify? You

1 are saying proposed water quality standard for
2 mercury singular. So there is three of them in
3 the Agency's proposal. Are you taking them as a
4 group or are you --

5 BY MR. FORT:

6 Q. Let's -- thank you. Good
7 clarification. Let's take them as a group,
8 and if we need to break them down, we can
9 break it down?

10 A. I would say the answer is yes.
11 They are necessary to support aquatic life,
12 the acute and chronic standards, anyway, for
13 mercury.

14 Q. Okay. What about the human health
15 standard?

16 A. It is not based on aquatic life.

17 Q. And what is that standard then based
18 on, the assumption that somebody is going to catch
19 a fish out of these waters?

20 A. Yes. It's protection of the
21 consumption of the fish.

22 Q. Okay. That are caught in these
23 waters?

24 A. That are caught in any waters.

1 The human health -- excuse me.
2 The human health criteria is based on eating a
3 certain amount of fish that has a certain
4 concentration of mercury. So it's based on
5 the bioaccumulation of the mercury.

6 Q. Okay. I think you have answered
7 now B, and I think you have also answered C,
8 and number D we have touched on, but do you agree
9 that resuspension of sediment is a significant
10 source of particulate mercury during periods when
11 resuspension occurs in the Lower Ship Canal?

12 A. I don't know if it's significant,
13 but suspended solids are associated with mercury,
14 and if you have a higher suspended solid, then you
15 are most likely going to have a higher mercury
16 concentration.

17 Q. What is the basis for the Agency
18 proposing total mercury for the human health
19 standard as opposed to dissolved mercury?

20 A. The goal of the human health water
21 quality standard is to prevent fish from
22 accumulating excess mercury in order to protect
23 human consumption of fish. Methylmercury is the
24 predominant form of mercury that enters the fish

1 and is stored in the fish tissues. Illinois EPA
2 believes that mercury both in the suspended as
3 well as the dissolved form can become methylated
4 in a water environment and accumulated in fish
5 flesh.

6 Q. That sounds like an expert opinion
7 to me. Is that your view or your opinion or is
8 that a consensus from the Agency?

9 A. That is -- I posed the question to
10 Bob Mosier.

11 Q. So that's Mr. Mosier's view on the
12 biokinetics?

13 A. Yes.

14 Q. So how does a suspended or mercury
15 on a particulate become transformed into a
16 methylmercury and available for fish tissue
17 accumulation?

18 A. I'm definitely not the expert on
19 mercury.

20 Q. If resuspension of sediment is
21 causing total mercury contamination to exceed 12
22 nanograms per liter during periods when the flow
23 is above the harmonic mean, does that mean that no
24 mixing zone would be allowed for mercury and than

1 an effluent limit 12 nanograms per liter would be
2 imposed on all discharges?

3 A. Not necessarily. Mixing zones
4 are heard for mercury and mixing zones in general,
5 are based on a site specific data on a site by
6 site basis. Usually we will give a mixing zone
7 unless it is impaired for that particular
8 substance, and once a stream is impaired, not all
9 of the dischargers will get a limit. We base that
10 limit on reasonable potential of the effluent.

11 Q. So what does that mean when you are
12 talking about a criteria like 12 nanograms per
13 liter or 12 parts per trillion in term of a
14 standard for a discharge?

15 A. Well, as an example, the 12
16 nanograms per liter, since it's a human health
17 standard, it's based on an annual average, and
18 as an example, we looked at MWRD's effluents
19 for their last permit renewal, and they had on
20 numerous samples and their average was less than
21 12 nanograms per liter. So we would not give them
22 permit limits.

23 Q. Because their average on an annual
24 basis was less than 12 nanograms per liter?

1 A. Yes. They were meeting the water
2 quality standard and there was no reason for us to
3 believe that they won't continue to meet that.

4 Q. And what if -- about a downstream
5 discharger who is in an effluent dominated
6 situation with 75 to 100 percent of the upstream
7 flow, what is its flexibility here? I mean, if
8 it's at -- if the level is at 11, does that mean
9 mixing zones are allowed assuming -- yeah.

10 A. The Agency looks at the data on
11 a site by site basis, and so we would have to
12 evaluate whether or not a mixing zone was
13 applicable.

14 MR. ETTINGER: Excuse me. I forgot
15 the term, but do you allow a source water credit?
16 At least in the GLI a discharger -- it's taken
17 into account what their intake is like in
18 determining what their discharge would be. Is
19 that a factor that would come into play here?

20 THE WITNESS: I believe we do have
21 something in our regulations for looking at
22 background concentrations, but they are specific
23 to what you bring into the -- what you bring in
24 from the receiving stream, and it only applies if

1 you are not -- if you are not adding a significant
2 amount or -- other than a minimal amount of that
3 pollutant.

4 So you had a discharger that
5 was taking in 12 and putting out 12 and not adding
6 any of their own, they would probably not be
7 caught by -- they would probably not have a limit.
8 I would believe -- I believe that that condition
9 would apply there.

10 BY MR. FORT:

11 Q. Well, let me follow-up then.

12 If your influent is 11,
13 nanograms per liter, and you are adding two,
14 understanding that the upstream source that
15 doesn't have any existing mercury in the water
16 coming by it could put in 11. You would say
17 that the downstream discharger who is adding two
18 instead of 11 would not have a mixing zone?

19 A. I would say whether 304.103 would
20 apply or not, and that would have to be a decision
21 made by the Agency dependant on the site specific
22 information.

23 Q. And that's the issue of whether or
24 not it's significant or minimal, phrases like

1 that?

2 A. Yes, I will see if I can find --
3 yeah. It says, compliance with the numeric
4 effluent standard is therefore not required
5 when effluent concentrations in excess of the
6 standard result entirely from influent
7 concentration, evaporation and/or the incidental
8 addition of trace materials not utilized or
9 produced in the activity that is the source
10 of the waste.

11 Q. So that sounds to me like if there
12 was 11 in the intake and you added two, that you
13 would not have the mixing zone even though you
14 were extraordinarily small by comparison?

15 A. That's a decision that's made by the
16 permit section. I don't know which part is -- how
17 they would do that.

18 Q. The Agency hasn't proposed to make
19 any adjustments to that mixing zone rule with
20 things like -- for things like mercury?

21 A. No.

22 HEARING OFFICER TIPSORD: Okay.

23 Ms. Franzetti?

24 MS. FRANZETTI: Mr. Twait, you were

1 reading there from 35 Illinois Administrative Code
2 Section 304.103, correct?

3 THE WITNESS: Yes.

4 MS. FRANZETTI: And part 304 is the
5 effluent standards part of the water pollution
6 regulations, correct?

7 THE WITNESS: Yes.

8 MS. FRANZETTI: And even the
9 language you were just reading off refers to
10 numeric effluent standards, right?

11 THE WITNESS: Yes.

12 MS. FRANZETTI: Here is my concern,
13 Mr. Twait is, the water quality standards that we
14 are talking about here, specifically including the
15 mercury standards, they are water quality
16 standards that's in Part 302. Has the Agency
17 previously decided that the intent or the meaning
18 of 304.103 does, in fact, apply to determining
19 compliance with numeric water quality standard in
20 part 302?

21 THE WITNESS: I don't know that I
22 can answer that.

23 MS. FRANZETTI: Okay. Is that
24 something that given the fact that these use B

1 waters are effluent dominated, given the sediments
2 issue and the resuspension of pollutants, that the
3 Agency may consider including as part of these
4 proposed rules?

5 THE WITNESS: I will have to look at
6 that.

7 HEARING OFFICER TIPSORD: Okay.
8 Mr. Dimond?

9 MR. DIMOND: Tom Dimond on behalf of
10 Stepan.

11 Mr. Twait, in one of your
12 answers, you referred to the 12 nanogram per liter
13 standard for mercury as being an annual standard?

14 THE WITNESS: Annual average, yes.

15 MR. DIMOND: Is -- I am looking at
16 Exhibit 481. I guess it's 302.407(f). Is it --
17 I don't see anywhere in that section where it
18 states that the 12 nanograms per liter is an
19 annual average, but is that the Agency's practice
20 and understanding of how that standard is to be
21 applied?

22 THE WITNESS: In part 307.407, (sic)
23 part C, it is basically saying that it shall not
24 be exceeded when the stream flow is at or above

1 harmonic mean, nor shall an annual average based
2 on at least eight samples collected in a matter
3 representative of the sampling period exceed the
4 human health standard except as provided in
5 subsection D, and subsection D talks about mixing.

6 MS. FRANZETTI: I thought you said
7 307.

8 THE WITNESS: No, 302.407.

9 MR. DIMOND: Okay. Okay. 302.407.

10 MS. FRANZETTI: Subparagraph C?

11 THE WITNESS: Yes.

12 MR. DIMOND: Okay. Thank you.

13 BY MR. FORT:

14 Q. Mr. Twait, I think you just read the
15 part or Mr. Dimond read the part that said it's
16 either 12 nanograms per liter on an annual average
17 or when the flow is above the harmonic mean?

18 A. Yes.

19 Q. And when flow is elevated, that's
20 when we have more resuspension likely occurring,
21 more combined sewer overflows, more storm water
22 runoff?

23 A. Possibly.

24 Q. Have you noticed anything in the

1 record of this proceeding that would indicate that
2 that condition does occur at higher flows when it
3 doesn't occur at lower flows, the condition being
4 a level above 12 nanograms per liter?

5 A. I believe CITGO provided some
6 influent data on mercury, and they included stream
7 flows for three of those samples and their highest
8 sample had the highest flow.

9 Q. Okay. And I think there is maybe --
10 you may be looking at the same data that I am
11 thinking about, but there was some data included
12 with Jim Huff's testimony from March of 2009 that
13 showed levels, I believe, over 12 nanograms per
14 liter at a higher stream flow?

15 A. Yes.

16 Q. Assuming that was the case, that
17 would say that you could not have a mixing zone
18 under that kind of high flow condition, correct?

19 A. I think the Agency would look at the
20 data in a whole -- as a whole rather than to base
21 it on one sample.

22 Q. Okay.

23 HEARING OFFICER TIPSORD: And for
24 the record, Mr. Huff's testimony is Exhibit 304.

1 MR. FORT: I think that's the one,
2 yes.

3 HEARING OFFICER TIPSORD: Mr. Davis,
4 did you have a follow-up?

5 MR. DAVIS: I just wanted to clarify
6 that I heard what I thought I heard. In talking
7 about these mixing availability determinations and
8 he said that they would not be available in cases
9 of an impairment, I just wanted to make sure that
10 we were talking about site specific data based
11 determinations and not the 303(d) impairment
12 determinations and if I am mistaken, can you
13 explain how that factors into that?

14 THE WITNESS: I am really sorry to
15 ask you to do this, but could you repeat that?

16 MR. DAVIS: I will try. Unless the
17 reporter got it. That would be easier.

18 (Whereupon, the record was read
19 as requested.)

20 THE WITNESS: Yeah. For
21 impairments, the Agency looks at the data that it
22 has, and people can wish to include their data as
23 long as it's -- has a quality control and meets
24 their quality control assurances, and they list

1 and put things on the 303(d) list, and that's
2 where it becomes impaired. We don't normally
3 look at individual data like that to determine
4 impairment. It would be -- it would have to be
5 quality control and submitted to the Agency.

6 MR. DAVIS: And that's in the
7 context of making the 303(d) determination?

8 THE WITNESS: Yes.

9 MR. DAVIS: And then when it comes
10 to permitting, how does that -- you know, the fact
11 that a segment appears on that list -- impact
12 getting a permit issued that maybe is seeking to
13 have a mixing zone?

14 THE WITNESS: If that particular
15 parameter was listed as impaired, the Agency
16 would typically not give a mixing zone for it.

17 MR. DAVIS: Thank you.

18 BY MR. FORT:

19 Q. Okay. I think I am ready for G.

20 Mr. Twait, we talked earlier
21 about the total mercury HHS score and it has
22 particulate and dissolved elements to it. Has
23 the Agency considered the economic impact of
24 the total HHS standard on existing discharges?

1 A. The Illinois EPA believes that the
2 implementation of the general use mercury human
3 health standard of 12 nanograms per liter over the
4 entire state except for the Chicago UAA waters has
5 not caused excessive economic impact on discharges
6 and that such impact is unlikely in UAA waters
7 that are currently being effected.

8 Q. Doesn't that assume that there is
9 not resuspension of mercury from sediments, such
10 as what we have talked about in the sanitary and
11 ship canal?

12 A. In the general use waters, we have
13 been collecting -- well, the human health standard
14 has been in effect since 1996. Since about 2005,
15 low level mercury data has been available for
16 industries and municipal effluents, and to date
17 there is two industrial and no more than five
18 municipal facilities that have been issued permit
19 limits for mercury of 12 nanograms per liter as an
20 annual average.

21 As of this date, none of the
22 municipal facilities with these limits have
23 complained of hardship for meeting the limits, and
24 one of the two industrial facilities has likewise

1 not complained of economic hardship. The other
2 industrial facility is under a compliance schedule
3 that delays the implementation, and they have
4 found a technology. However, they believe it's
5 too expensive. So as we are aware, there is only
6 one facility that's saying that there is a
7 hardship.

8 Q. Well, if I heard you right, it's
9 like one out of two industrial facilities found
10 there to be an economic effect, correct?

11 A. No. We have looked at -- the data
12 that we have looked at, there is two facilities
13 that we have determined that have a reasonable
14 potential to exceed.

15 Q. Okay.

16 A. And for those two facilities, we
17 have put in a permit limit for mercury of 12
18 nanograms per liter, and one of those two is
19 complaining about having an economic impact.

20 Q. Okay. So 50 percent of those that
21 you have imposed a limit on have complained about
22 the economic effect of that standard?

23 A. That would be accurate.

24 Q. Now, are either of those industrial

1 facilities on an effluent dominated stream whereby
2 they are taking all of their cooling water, intake
3 water, in from a stream that might have a
4 substantial volume of mercury present?

5 A. I don't know what the two facilities
6 are.

7 Q. Okay. And do you know if any of
8 these facilities, the two industrial or the five
9 municipal, are on a water body such as the Chicago
10 sanitary and ship canal that has significant
11 sediment contaminations that gets resuspended
12 during storm events?

13 A. No, I do not.

14 Q. So other than what you just said,
15 the Agency hasn't really considered the economic
16 effect of the total HHS standard?

17 A. I don't believe the economic burden
18 for treatment is effected by which body of water
19 that they are on.

20 Q. Meaning that the treatment costs are
21 the same regardless of whether you have it in your
22 intake or from other process reasons?

23 A. Yes.

24 Q. Okay. But if you have it in your

1 intake, it's going to cost as much just because if
2 somebody upstream is putting it in there or it's
3 accumulated over the last 100 years, for example?

4 A. Yes, possibly.

5 Q. Okay. Wouldn't that economic effect
6 be mitigated by looking at the dissolved form of
7 mercury as opposed to the total, because the total
8 brings in the sediment and particulate
9 resuspension problem?

10 A. The Agency believes that the total
11 is a better parameter to look at rather than
12 dissolved since fish can methylate the mercury.

13 Q. And that's, again, according to your
14 colleague, Mr. Mosier?

15 A. Yes.

16 Q. But in terms of responsibility, if
17 the material is from sediments that have
18 accumulated over a long period of time and it
19 happens to be in your intake, the Agency's
20 position is that it would still have to be treated
21 regardless of the source?

22 MS. WILLIAMS: I don't think that's
23 what he said.

24 THE WITNESS: Not if you are not

1 adding mercury.

2 BY MR. FORT:

3 Q. Well, that gets us back to the
4 conundrum of what is a significant addition, and
5 is a pound a significant addition of mercury?

6 A. Yeah, a pound of mercury is a lot.

7 Q. Got to start somewhere.

8 A. I don't feel comfortable trying to
9 narrow that down. I don't know what the Agency
10 would consider insignificant.

11 Q. Okay. And, of course, the economic
12 burden on the downstream sources would be
13 mitigated or reduced if there were a mixing zone
14 rule or an adjustment was being made to the mixing
15 zone rule for mercury?

16 MS. WILLIAMS: Can you talk about
17 what adjustment you are talking about?

18 BY MR. FORT:

19 Q. Any adjustment.

20 A. Sure.

21 Q. Okay. Without having to worry about
22 quantifying how much of an adjustment and so on,
23 right?

24 A. (Indicating head back and forth.)

1 Q. What would be the impact on
2 biological resources in the Lower Ship Canal if a
3 mixing zone were allowed for point sources when
4 the cause of exceedance of a water quality
5 standard -- here we are talking about total
6 mercury -- were due to non-point sources.

7 A. If the human health standard is
8 violated, I don't know if the aquatic life
9 standard will be violated, but if the aquatic life
10 standard is not violated, I don't know that we
11 would have an impact for aquatic life.

12 MR. FORT: Okay. I am done with
13 that set of questions.

14 HEARING OFFICER TIPSORD: Okay. Ms.
15 Rios has some follow-up, and then we will take a
16 break for lunch.

17 MS. RIOS: We have mentioned a few
18 times the term "effluent dominated" and Mr. Twait,
19 would you characterize the Brandon Pool in the
20 UDIP as effluent dominated?

21 THE WITNESS: Possibly.

22 MS. RIOS: And what would make them
23 effluent dominated?

24 THE WITNESS: I don't know what

1 the -- the qualification of whether or not you
2 would have effluent domination or not. It would
3 depend on how much water you are getting from the
4 upper Des Plaines River.

5 MS. RIOS: My next question is on
6 the question of mercury data. Do all dischargers
7 collect low level -- low detection level mercury
8 discharge data?

9 THE WITNESS: All -- all facilities
10 that we have included from 2005 on where we have
11 included a special condition that they need to
12 have mercury samples.

13 MS. RIOS: And do you -- can you
14 explain a little bit more about which particular
15 industries those facilities are from?

16 THE WITNESS: Well, for
17 municipals -- I am going to start with them --
18 it's all major municipal. That's over one million
19 gallons per day, and for industries it is
20 dependent on the permit riders. The permit riders
21 make that decision, and I'm not quite sure how
22 they make that decision, whether it's majors only,
23 or if it's dependent upon the type of discharge.
24 I think it's dependent on the type of discharge

1 along with size.

2 MS. RIOS: Okay. Does a facility
3 that has mercury containing thermometers on site
4 need to sample with low detection limit, mercury,
5 to ensure that there is no impact?

6 THE WITNESS: Yeah. I think that
7 would be a permit rider decision if the facility
8 is a manufacturer of those thermometers, and they
9 have an incidence -- they have a high incidence of
10 breaking them, or if it's another facility that
11 has a high incidence of breaking their
12 thermometers, then that might come into play, but
13 not necessarily.

14 MS. RIOS: Do you typically include
15 those types of questions in the renewal
16 application for permits for those types of
17 permits, NPDES?

18 THE WITNESS: I don't think so.

19 MS. RIOS: Thank you.

20 THE WITNESS: But --

21 HEARING OFFICER TIPSORD: Mr.

22 Dimond -- were you --

23 THE WITNESS: I was going to say
24 that I don't think so, but if they had a facility

1 inspection, and -- and I'm not going to go to the
2 mercury thing or the mercury thermometers. I
3 don't know that they inspect anything like that,
4 but if the inspector goes out and he sees ammonia
5 nitrate piled up on the ground outside where it's
6 exposed to water, that might be a reason for him
7 to say, you know, to the permit -- he might tell
8 the permit section that this is something that
9 needs to be looked at in their next permit, and we
10 might monitor for ammonium nitrate or whatever.

11 HEARING OFFICER TIPSORD: And
12 Mr. Dimond?

13 MR. DIMOND: Tom Dimond on behalf of
14 Stepan. Earlier, Mr. Twait, I believe you
15 indicated that when the Agency makes 303(d)
16 listings for mercury, it's -- it looks at fish
17 tissue samples and not water -- not water
18 column samples. Did I recall that correctly?

19 THE WITNESS: Yes.

20 MR. DIMOND: Why doesn't the --
21 given that the human health standard is the 12
22 nanograms per liter, why doesn't the Agency look
23 at water column samples?

24 THE WITNESS: I don't know that the

1 Agency has a lot of ambient data that's low level
2 mercury. That's one issue. And the other issue
3 is how mercury kind of presents itself by bile
4 accumulating in fish.

5 MR. DIMOND: Well, even if the
6 Agency doesn't have the data, doesn't the Agency
7 have the ability to go out and collect it?

8 THE WITNESS: I believe they do,
9 depending on -- depending on cost.

10 MR. ESSIG: The methodology to do
11 the low level mercury is quite intense. USEPA
12 basically requires two or three people to go out
13 and do this type of sampling, and the Agency just
14 can't do that in the half hour we have.

15 HEARING OFFICER TIPSORD: Mr. Davis.

16 MR. DAVIS: Yeah. Along those same
17 lines, if the Agency did have, say, water column
18 sampling data that conflicted with the fish tissue
19 data, how would it resolve those in order to make
20 its determinations? So if there were test data
21 that was below 12, but fish tissue sampling
22 exceeded.

23 MR. ESSIG: Are you talking about
24 having a water column mercury violation and also

1 having fish contaminants that are above?

2 MR. DAVIS: I am talking about
3 mercury that was below the proposed standard
4 so it would not be violating on that basis.

5 MR. ESSIG: The fish tissue -- if
6 there wasn't a water quality violation, and the
7 aquatic life mercury standard wasn't violated,
8 then mercury would not get listed for
9 non-supportive aquatic life. But if fish
10 contaminants exceeded the mercury, it would be
11 listed for exceeding the fish consumption
12 advisements. But we don't -- but the Agency does
13 not collect any water quality samples for mercury,
14 for low level mercury.

15 MS. WILLIAMS: So do you have a
16 methodology that would tell you what you would do
17 in the hypotheticals described by Mr. Davis right
18 now? Is there a methodology that would describe
19 how to look at that?

20 MR. ESSIG: No.

21 HEARING OFFICER TIPSORD: All right.
22 On that note, we will take 30 minutes for lunch.

23 (Whereupon, a short break was
24 taken.)

1 HEARING OFFICER TIPSORD: I think we
2 are ready to go back on the record and starting
3 with question number 37.

4 BY MR. FORT:

5 Q. Thank you. Mr. Twait, with respect
6 to question 37, the question is with respect to
7 the proposed water quality standard for chlorides
8 in the Lower Ship Canal, why is the standard
9 proposed by chlorides for Use B waters the same as
10 what exists now for general use waters?

11 A. The Agency originally proposed the
12 general use water quality standard of 500
13 milligrams per liter. USEPA was -- indicated to
14 us that that wasn't acceptable. We couldn't
15 justify it, and we considered adopting the
16 national criteria document with adjustments or the
17 Iowa water quality standard with adjustments.
18 However, before we filed with the Board, they
19 indicated that neither of those were going to be
20 completely approvable, and so we just stuck with
21 general use.

22 Q. At the present time, there is no
23 chloride standard for the Lower Ship Canal,
24 correct?

1 A. Correct.

2 Q. To what extent is the proposed
3 standard for chlorides needed?

4 A. To protect aquatic organisms from
5 the toxic effects of chloride.

6 Q. Is it your testimony that the
7 existing 1,500 milligram per liter limit for total
8 dissolved solids is not protective?

9 A. The Agency believes that having a
10 chloride standard and a sulfate standard is a
11 better option than having a TDS standard.

12 Q. And would you agree that that
13 standard for chloride and sulfates should be
14 based -- should be protective of the species that
15 are present in the Lower Ship Canal?

16 A. I would agree with that.

17 Q. I think you have already answered D
18 for me. E asks, Has the Agency determined if the
19 Lower Ship Canal is already violating the proposed
20 standard for chlorides for the Lower Ship Canal or
21 in the upstream portions of the ship canal or even
22 the CAWS?

23 A. Data has been provided by CITGO
24 showing periodic exceedances during snow melts.

1 Some of the other data that's gathered by the
2 Agency has not shown an issue with it, and I think
3 part of that is the frequency of sampling.

4 Q. What do you mean by frequency of
5 sampling?

6 A. The Agency takes samples -- I
7 believe it's one every six weeks so they are not
8 sampling when there is a snow melt kind of by
9 chance.

10 Q. And CITGO, sampling has been on a
11 biweekly basis during the winter months for
12 several years now?

13 A. Yes.

14 Q. And you said that the sources of the
15 cause of that condition are snow melt?

16 A. I believe that's the main source.

17 Q. And it's the carry off of road salt
18 and the like from snow melt?

19 A. Yes.

20 Q. Is there any other cause that you
21 are aware of?

22 A. Not that I am aware of that's a
23 cause of the exceedances.

24 Q. Are most of that chloride levels

1 from the highway deicing practices within the city
2 of Chicago?

3 A. I believe so.

4 Q. Now, during those periods when
5 chlorides are above 500 milligrams per liter in
6 the ship canal -- and let's focus on the Lower
7 Ship Canal, then there would be no mixing zone
8 would be allowed during these periods, correct?

9 A. Phrased this way, I would say I
10 think the Agency would need to go back and look at
11 the data that we have and make an assessment of
12 whether it needs to get onto the 303(d) list and
13 would make it to a mixing zone or not.

14 Q. You would first look at the 303(d)
15 list criteria?

16 A. Yes. Look at the criteria for
17 listing and see if it met the requirements.

18 Q. And if it did not meet the criteria
19 for a listing then there would be a mixing zone?

20 A. I believe so.

21 Q. Has the Agency --

22 HEARING OFFICER TIPSORD: I'm sorry.
23 I guess I am -- I have heard you say this several
24 times, but I just want to ask this to be clear.

1 If the water quality standard is being exceeded,
2 but the stream is not on the 303(d) list, you
3 would allow a mixing zone?

4 THE WITNESS: I think it -- and
5 well, when you say it's exceeding, is there one
6 day that you went out and sampled and found a
7 violation and does that get rid of mixing for the
8 entire year or was this just at one time that you
9 sampled, was that just a blip?

10 HEARING OFFICER TIPSORD: I am
11 saying that if I come to you for a permit and the
12 data you have says that the water quality standard
13 has been exceeded in the stream, but it's not
14 impaired on the 303(d) list, a mixing zone is an
15 option?

16 THE WITNESS: I would say it might
17 be an option. It's just dependent on the
18 frequency of the exceedances.

19 HEARING OFFICER TIPSORD: Thank you.
20 Sorry for interrupting. I just wanted to get that
21 clear.

22 BY MR. FORT:

23 Q. Well, let me try it a little bit
24 further. Let's say that maybe there is two

1 exceedances and one winter season and no
2 exceedances in the next, is that infrequent enough
3 to perhaps allow a mixing zone?

4 A. Perhaps. And I am not going to be
5 the person that makes that decision.

6 MS. FRANZETTI: Who is, Mr. Twait?

7 THE WITNESS: Somebody above me and
8 in management. And I don't know who ultimately
9 will make that decision.

10 Your question was whether or not
11 it makes -- not whether or not it makes the 303(d)
12 list, but whether we grant mixing.

13 BY MR. FORT:

14 Q. Correct.

15 A. And I would say that somebody else
16 is going to have to make that decision.

17 Q. Got it. Well, at this point in
18 time, is there enough data on chloride levels over
19 500 to say that the Water Reclamation District
20 plants might not have a mixing zone, and
21 therefore, have to have a 500 milligram per liter
22 chloride limit, assuming this proposal is adopted?

23 A. I have not seen that data and so I
24 don't want to make a decision.

1 Q. Okay. And I suppose that probably
2 answers the next one. Did the Agency intend to
3 regulate in any way chloride levels and combined
4 sewer overflows?

5 A. The agency has not evaluated that
6 data.

7 Q. Including runoff from snow melt
8 conditions?

9 A. Correct.

10 Q. And again, would you believe that
11 the economic burden would be substantially reduced
12 if the rules on mixing zones with respect to
13 upgrading sources were changed or adjusted?

14 MS. WILLIAMS: Which question are
15 you on?

16 MR. FORT: I am on L.

17 MR. ETTINGER: You said with regard
18 to what kind of sources?

19 MR. FORT: Upgrading sources.

20 MR. ETTINGER: What's an upgrading
21 source?

22 BY MR. FORT:

23 Q. Fair enough. I take the correction
24 to the question. Thank you.

1 Would the economic burden be
2 substantially reduced if the rules on mixing zones
3 were changed or adjusted?

4 A. I would say yes, without knowing how
5 they were changed or adjusted.

6 Q. And I think we have already answered
7 M in one fashion or another, so --

8 MS. FRANZETTI: Mr. Fort, could I --

9 MR. FORT: Sure.

10 MS. FRANZETTI: Mr. Twait, has the
11 Agency considered -- including had any discussions
12 with region five on whether or not where you
13 have a situation like this, where snow melt is the
14 main source of the elevated chlorides in the Lower
15 Ship Canal, whether or not the UAA factor that
16 addresses human caused conditions might apply and
17 might provide any basis to allow site specific
18 standards or longer term variances as a solution?

19 THE WITNESS: They have indicated
20 that there is a procedure for that, but the amount
21 of data that they wanted on the sources is quite
22 significant.

23 MS. FRANZETTI: Can you elaborate on
24 the type of the extent of the data they indicated

1 they would need?

2 THE WITNESS: They would want a TMDL
3 type data acquisition and the sources for Chicago,
4 the surrounding communities, IDOT and how much
5 salt they are putting down on the roads.

6 MS. FRANZETTI: Is there any USEPA
7 guidance documents that they site in support of
8 that position for such an extensive amount of
9 data?

10 THE WITNESS: I am unaware.

11 HEARING OFFICER TIPSORD: Ms. Rios?

12 MS. RIOS: Mr. Twait, you
13 mentioned that deicing within the city of Chicago
14 contributes to chloride exceedances in the Lower
15 Ship Canal. Do deicing practices outside the city
16 of Chicago contribute to chloride issues and other
17 segments of the CAWS in the Lower Des Plaines.

18 THE WITNESS: Yes.

19 HEARING OFFICER TIPSORD: Mr. Fort,
20 back to you.

21 BY MR. FORT:

22 Q. Okay. Moving on to 38 then,
23 Mr. Twait. Turning to proposed temperature
24 water quality standard, didn't the Agency use

1 the temperature during non-summer months in
2 the effluent from the Stickney water treatment
3 plant at one point in time to set the proposed
4 temperature standards in the ship canal, correct?

5 A. Yes.

6 Q. But now you are proposing a
7 different point of reference or not?

8 A. We used a combination approach where
9 we took the ambient data and started with the
10 75th percentile of the ambient data, and then we
11 looked at MWRD's effluent data from all of their
12 plants, and we considered the Calumet/Stickney
13 North Side plant, and we took the 75th percentile
14 of that data set, and then we chose whichever was
15 lower during the non-summer months.

16 Q. Okay.

17 A. And so in the wintertime, we went
18 with MWRD's data, and in the summertime it was --
19 or in the late spring or early fall it was based
20 on the ambient data. For the changes that we
21 have made this time, is we -- we kept the same
22 effluent data, but we moved our stream from the
23 sanitarian ship canal at Route 83 to the
24 Calumet -- or the Cal-Sag Channel Route 83

1 station, but it was less impacted, and we
2 instead of choosing 75th percentile, we chose
3 90th percentile.

4 Q. Okay.

5 MS. WILLIAMS: You know, can I just
6 follow-up a little bit maybe?

7 MR. FORT: Sure.

8 MS. WILLIAMS: And so, Mr. Twait,
9 can you tell us a little bit about what the
10 downside was of using the Route 83 Chicago
11 Sanitarian Ship Canal 75th percentile?

12 THE WITNESS: The Chicago Sanitarian
13 Ship Canal, we used 75th percentile, and during
14 the hearing, five and a half years ago I was asked
15 the question if there was exceedances of our
16 background, and I didn't expect exceedances and --
17 but I promised at that point that I would go back
18 and take a look.

19 MS. WILLIAMS: Does this chart I
20 have handed you reflect that?

21 THE WITNESS: Yes.

22 MS. WILLIAMS: Can you explain it?

23 THE WITNESS: So I went back and
24 looked at the data and compared it to the period

1 average and I highlighted those instances where
2 our background station was exceeding the period
3 average we had chosen.

4 MS. WILLIAMS: At this point I would
5 request that the chart titled Route 83 CSSC be
6 entered as an exhibit.

7 HEARING OFFICER TIPSORD: If there
8 is no objection, we will admit this as
9 Exhibit 484.

10 (No response.)

11 HEARING OFFICER TIPSORD: Seeing
12 none, it's Exhibit 484.

13 (Whereupon, Exhibit No. 484 was
14 admitted into evidence.)

15 MS. FRANZETTI: And I'm sorry. How
16 should we refer to this exhibit?

17 MS. WILLIAMS: No. 484.

18 MS. FRANZETTI: What is it?

19 HEARING OFFICER TIPSORD: Explain
20 what this document is.

21 THE WITNESS: It's the -- it is
22 the -- it is a summarization of the continuous
23 data from Route 83 in the Cal-Sag -- or, I mean,
24 in the Chicago Sanitarian Ship Canal, and over on

1 the left-hand side, I put in the period averages,
2 which are based on the 75th percentile effluent
3 and 75th percentile stream data, and in the body
4 of the group is I have the period average.

5 Like for 1998, the August
6 average was 80.1 degrees, and so you can then
7 compare that to the period -- or I'm sorry.
8 That's not a good example.

9 In 1998, you can see December
10 was 57.2 degrees and the period average that we
11 had calculated of 59.9 and so there wouldn't have
12 been an exceedance that month, but the highlighted
13 ones are the ones that exceeded the period average
14 that we came up with.

15 MS. FRANZETTI: Can I ask a few more
16 questions?

17 HEARING OFFICER TIPSORD: Sure.

18 MS. FRANZETTI: Mr. Twait, you
19 referred to this as continuous temperature data.
20 Would you explain what that -- what you meant by
21 that?

22 THE WITNESS: I believe -- it's been
23 a while since I have done this. I believe there
24 was multiple temperature readings for each day and

1 I took all of them in that period and did an
2 average for that period. So if it was August, I
3 looked at all of the August 1998 data.

4 MS. FRANZETTI: And then you divide
5 by the number of days in the month?

6 THE WITNESS: I took an average, an
7 average of the days.

8 MS. FRANZETTI: So if you had ten
9 data points for August, you just added them up and
10 divided by ten to get the average?

11 THE WITNESS: Yes.

12 MS. FRANZETTI: Okay. With respect
13 to your asterisk there on the period average
14 values, the period average is based on
15 75th percentile stream data and 75th percentile
16 effluent data, and I know you have said that, but
17 it doesn't quite make sense to me.

18 I mean, is it an average of
19 those two data sets?

20 THE WITNESS: No. We took -- we
21 took and looked at the effluent data and the
22 stream data separately, and we took a
23 75th percentile value, and then for the period
24 average that we chose, we chose the lesser of the

1 two.

2 MS. FRANZETTI: Got it.

3 HEARING OFFICER TIPSORD: Are you
4 good?

5 MS. FRANZETTI: That's it.

6 MR. FORT: Okay. I will get back
7 to --

8 HEARING OFFICER TIPSORD: I'm sorry.
9 Mr. Dimond has a follow-up.

10 MR. DIMOND: Tom Dimond for Stepan.

11 So in the period average column,
12 you have said it's the lower of the
13 75th percentile stream data or the 75th percentile
14 effluent data. Which stream data? Is this the
15 stream data from the Cal-Sag and 83 or from --

16 THE WITNESS: No. This -- what I
17 had done is at the time, five and a half years
18 ago, we were looking at our background station as
19 Route 83, the Sanitarian Ship Canal, and over on
20 the left-hand side is the period average we came
21 up with looking at the Sanitarian Ship Canal data
22 and the effluent data.

23 And during the questioning I was
24 asked if there was violations of the data -- the

1 station that we had used, if there was violations
2 of the data, because -- and the way we were
3 looking at it is this is a background station.
4 This is where we are coming up with our period
5 average. We did not expect the 75th percentile to
6 give us exceedances as much as it did. And so
7 that's the reason we went to the 90th percentile.

8 MR. DIMOND: And the 90th percentile
9 on the effluent data.

10 THE WITNESS: We kept with 75th
11 percentile on the effluent data.

12 MR. DIMOND: And 90 percent on the
13 stream data?

14 THE WITNESS: Yes.

15 MR. DIMOND: And so if you do an
16 analysis similar to this using the 90th percentile
17 of Route 83 and Cal-Sag and 75 percentile of the
18 effluent data, do you come up with any exceedances
19 in that analysis?

20 THE WITNESS: When -- when I looked
21 at 90th percentile of Route 83 data when I changed
22 it to the -- for the Chicago Sanitarian Ship Canal
23 and used the 90th percentile, I did not see
24 exceedances at the Sanitarian Ship Canal Route 83

1 station.

2 MR. ETTINGER: Excuse me. I am
3 confused by something, too. You said you used the
4 lower of the two numbers?

5 THE WITNESS: Yes.

6 MR. ETTINGER: On page nine here
7 it says, generally the Agency used the effluent
8 temperature from the MWRD, North Side, Calumet
9 and Stickney plant facilities as the background
10 temperature instead of using temperatures at
11 the Cal-Sag Canal - Route 83 station during
12 periods of the non-summer months when the effluent
13 temperature was higher than the background
14 temperature. Have I got something turned around
15 here?

16 THE WITNESS: I got that turned
17 around. We chose the higher of the two.

18 MR. ETTINGER: So when you worked
19 out your average background temperature, you used
20 the higher of the -- what you call the effluent
21 temperature, which is the Stickney plant effluent
22 or the ambient temperature, which is the Route 83
23 on the Cal-Sag.

24 THE WITNESS: Yes.

1 MR. ETTINGER: Thank you.

2 HEARING OFFICER TIPSORD: Mr. Fort?

3 BY MR. FORT:

4 Q. Okay. Going back to question 38,
5 and I am going to go back to talk about setting
6 background, if you will, for things other than
7 temperature?

8 And this decision about using
9 the 90th percentile from the Stickney plant or the
10 75th percentile from Stickney plant or 90th
11 percentile in the stream, has the Agency
12 considered using that same approach because this
13 is an effluent dominated stream when you get to
14 the Lower Ship Canal for a material like
15 chlorides?

16 A. We have not, and the difference is
17 with the background temperature we are creating
18 where it should be versus with chlorides, we
19 wouldn't want to set the background sample where
20 it's a toxic condition where it would have
21 toxicity.

22 Q. Toxicity to the wide range of
23 tolerant and intolerant species or simply for the
24 species that are indigenous or present in the ship

1 canal, whether it's the upper ship canal or the
2 Lower Ship Canal?

3 A. I don't know if I could say what the
4 difference would be in those.

5 Q. Okay. And the same question with
6 respect to mercury, as using the -- using the
7 presence of mercury in the Stickney plant effluent
8 at whatever confidence interval to set a
9 background condition for the ship canal below the
10 Stickney plant.

11 A. No. I think we have to set the
12 water quality standard that's protective.

13 Q. Protective of the species that are
14 present in that body of water?

15 A. Protective of the people eating the
16 fish.

17 Q. And aren't -- those fish uptake
18 models all depend upon some frequency of consuming
19 fish?

20 A. Yes.

21 Q. And that's -- for the human health
22 piece that's an annual number and not a daily or
23 one meal number, correct?

24 A. Correct.

1 Q. Do you know offhand what the
2 frequency of fishing is in the ship canal during
3 all 12 months of the year?

4 A. No.

5 MS. WILLIAMS: You were already
6 asked that.

7 BY MR. FORT:

8 Q. Okay. Going on to 39, why is the
9 standard for human health criterion proposed to be
10 added to the aquatic toxicity rule 302.410 for
11 discharges to non-recreation waters? So now I am
12 talking about the Lower Ship Canal.

13 A. To protect fish consumption.

14 Q. And how is the proposed amendment to
15 302.410 necessary to protect the uses of the Lower
16 Ship Canal?

17 A. To protect human health via fish
18 consumption.

19 Q. And again we are back to the
20 questions on frequency of fishing and how many
21 fish meals are ingested from this particular
22 segment of the CAWS, correct?

23 A. Yes.

24 Q. All right. I am going to skip over

1 41, 42 and 43. I think we have covered those.
2 And we may have covered the next one, Mr. Twait,
3 but maybe you can crystalize it.

4 No. 44, in light of the factors
5 concerning the Lower Ship Canal being current
6 wastewater, combined sewer overflows, resuspension
7 of sediments, non-point source runoffs such as
8 snow melt conditions -- so in light of those
9 factors and the significant contributions from
10 non-point sources to pollutants in the Lower Ship
11 Canal, why is the Agency not proposing a change to
12 the no mixing zone rule such as what is in the
13 regulations now?

14 A. I don't quite know what changes you
15 are proposing or you are talking about. The
16 Agency can look at a proposal.

17 Q. Okay. So the Agency would be
18 willing to look at a proposal?

19 A. I think the Agency would always be
20 willing to look at a proposal.

21 Q. So I think that covers No. 45 then
22 as well. In reviewing your pre-filed testimony,
23 I see you outlined what was in the proposed water
24 quality standards. I did not see any testimony

1 justifying these proposals based on technical
2 feasibility or economic reasonableness. Is that
3 correct?

4 Did you not try to provide
5 information on technical feasibility or economic
6 reasonableness for the proposed changes?

7 A. Yes. The water quality standards
8 must be protective of the aquatic life use.

9 Q. Okay. Irrespective of technical
10 feasibility or economic reasonableness?

11 A. I would say, yes.

12 Q. Okay. And 47, I think we have
13 covered. I think 48 we have talked about. We
14 have talked about the same for 49. I am going
15 to ask 49.

16 Under what circumstances --
17 do you have, Mr. Twait, any views about any
18 circumstances where it is technically feasible
19 for a discharger to have a no mixing zone rule
20 caused entirely by upstream sources?

21 A. The only thing that I would say
22 is if the water quality standard is exceeded
23 upstream, then it would be difficult to grant
24 a mixing zone.

1 Q. Does the Agency have any information
2 on technical feasibility or economic
3 reasonableness for mercury control when upstream
4 sources caused the Lower Ship Canal at the Lemont
5 refinery intake to exceed the proposed standards?
6 Or do your prior answers also address that?

7 A. I think my prior answer addressed
8 that.

9 Q. Thank you. So we have talked about
10 mercury control. The same consider for chloride
11 control?

12 A. Yes.

13 Q. Why is the Agency proposing the
14 Board adopt a new standard for ammonia nitrogen?
15 And I apologize if you have already answered this,
16 but maybe you can do it again.

17 A. Just to protect aquatic life.

18 Q. And this is, too, focusing on the
19 early stage species?

20 A. For the Lower Ship Canal the Agency
21 is not having extra means of protection for
22 sensitive -- or early life stages.

23 Q. So for the Lower Ship Canal it's for
24 early life stages?

1 A. There is no early life stage
2 provision.

3 Q. Oh, for the Lower Ship Canal?

4 A. Yes.

5 Q. I'm sorry. Maybe I'm not tracking
6 you. And so, therefore, that's why you are
7 adopting -- or proposing the ammonia standard?
8 Or I am missing it?

9 MS. WILLIAMS: Your question to him
10 was if it was based on early life stages. That
11 was your question to him and he said no.

12 MR. FORT: Okay.

13 MS. WILLIAMS: What question are you
14 wanting answered, though? If you are -- are you
15 looking at 52?

16 MR. FORT: Fifty-two, right.

17 MS. WILLIAMS: And he says, protect
18 aquatic life.

19 BY MR. FORT:

20 Q. Well, is there something in the
21 existing standard, existing unionized standard
22 that is not protective?

23 MS. WILLIAMS: Okay.

24 BY THE WITNESS:

1 A. And the existing unionized standard
2 is 40-plus years old, and so we don't think it's
3 protective. It's been updated several times since
4 then.

5 BY MR. FORT:

6 Q. But you are aware that the
7 dischargers into the ship canal have invested
8 millions of dollars to meet the existing ammonia
9 nitrogen standard?

10 A. Yes. I am aware that they have
11 spent millions of dollars, but it was not to
12 comply with the water quality standard. It was to
13 comply with the effluent standard.

14 Q. And the proposed ammonia water
15 quality standards is necessary in your view to
16 protect the early life stages that exist in the
17 Lower Ship Canal?

18 A. We don't have any extra protection
19 for early life stages for the lower sanitarian
20 ship canal. For the aquatic life Use A waters, we
21 have got a provision -- well, let me --

22 MS. WILLIAMS: Do you have a
23 question?

24 MR. FORT: I thought he was going to

1 answer it.

2 MS. WILLIAMS: Well, I directed him
3 that I didn't think a question was pending.

4 MR. FORT: Do you have the last
5 question that I asked?

6 (Whereupon, the record was read
7 as requested.)

8 MR. FORT: I would like to let him
9 answer the rest of the question.

10 THE WITNESS: In Part 302.412, which
11 is the ammonia nitrogen standard, Paragraph E
12 tells when early life stage presence occurs, and
13 it says, all other periods are subject to the
14 early life stage absent period, except those
15 waters listed in 302.235 are not subject to the
16 early life stage present ammonia limits at any
17 time.

18 MR. FORT: Thank you.

19 MR. ETTINGER: I'm sorry. And I
20 just want to clarify this. And I am working off
21 of memory, which is very dangerous.

22 It seems like we changed the
23 ammonia standard about a decade ago.

24 MS. WILLIAMS: Yeah. I don't know.

1 I wasn't here.

2 MR. ETTINGER: I was already an old
3 man, but the -- as I understand, we had an early
4 life stage present standard that we adopted in '96
5 or something, and that's the standard that's
6 applied to the A waters for the time in which
7 early life -- early life stages may be present in
8 the A waters; is that correct?

9 THE WITNESS: That is correct.

10 MR. ETTINGER: So we have got the
11 same general use standard basically for the A
12 waters that we have in the rest of the state.

13 THE WITNESS: I believe that's
14 accurate.

15 MR. ETTINGER: Right. And in the B
16 waters, we have got the early life stage and
17 absent standard, which is applicable to the absent
18 waters in the rest of the state except that in the
19 rest of the state it's seasonal, but here we are
20 saying early life stages are always absent in the
21 B waters; is that correct?

22 A. That is -- it is correct that that's
23 the way the standard is, but we are -- yes, that's
24 correct.

1 MR. ETTINGER: Thank you.

2 MR. FORT: I will skip 55. So
3 moving on to 56, and a series of questions here on
4 applying Subpart F to Use B in Lower Ship Canal
5 through the proposed amendment to 302.410(c) --
6 410. With respect to the proposed amendment to
7 the rule, Substances Toxic to Aquatic Life, and as
8 that proposed standard might apply to the Lower
9 Ship Canal, which is proposed to be a Use B water
10 and had been designated as a non-recreation
11 segment, what is the basis for deleting the
12 existing test of one-half the 96-hour median
13 tolerance limit for native fish or essential fish
14 food organism for 402.410?

15 Why is this existing rule not
16 adequate to protect the species in the aquatic
17 habitat for Use B in the Lower Ship Canal?

18 A. As I testified four and a half years
19 ago, we believe that we have a better method now
20 than the 96-hour median tolerance limit.

21 Q. Okay. With respect to the proposed
22 addition to 302.410(a)(1), what is the basis for
23 applying the acute aquatic toxicity criterion as
24 proposed are not the species to be considered in

1 developing that criterion intolerant species?

2 A. The procedure has flexibility to
3 adjust the species that we look at on a site
4 specific basis.

5 Q. So that in applying this criterion
6 you would select the species that were in the
7 receiving stream, not those that were in the
8 national criterion?

9 A. There is no national criteria for
10 most of these parameters, and so our toxicologist
11 will pull out what data he can -- he can find, and
12 if there is a fish that's not applicable or a
13 macroinvertebrate that's not applicable to these
14 waters, he can choose not to include it.

15 Q. Well, who can choose not to include
16 it, the applicant or the Agency review engineer or
17 toxicologist?

18 A. The toxicologist.

19 Q. Where does the proposal say that? I
20 mean, put aside for the moment of who can do it,
21 but I didn't see anything in the proposal that
22 allowed the flexibility that you have just
23 described, to choose tolerant species instead of
24 intolerant species.

1 A. I don't know that I can point to a
2 section.

3 MS. WILLIAMS: I think we explained
4 earlier when Ms. Franzetti was asking questions
5 that this process is very complicated and Scott
6 will do the best he can to explain how it works.
7 If there needs to be follow-up from Brian Cook,
8 our toxicologist, we will, but, you know, the more
9 specific you ask the questions, the easier that
10 follow-up would be.

11

12 BY MR. FORT:

13 Q. Well, the basic set of questions --
14 and I have the same question really with respect
15 to the varying types of criterion that are talked
16 about; the chronic wild and domestic animal
17 protection, put aside the human threshold criteria
18 for now, but at least --

19 MS. WILLIAMS: I wasn't referring to
20 your pre-filed questions. He has gone over all of
21 those. I am just saying when you said, where does
22 it say that, that was a little general, I think,
23 for us to be able to respond to.

24 BY THE WITNESS:

1 A. I was talking to Brian, and he said
2 he has got the flexibility to do it. I can't pull
3 out the section that he mentions, and I will note
4 also that part of the derived criteria has a
5 mechanism that if it was put into a permit for the
6 first time, that the applicant could appeal to the
7 Pollution Control Board, and that's not a process
8 that's been done before that I know of, but that
9 is an avenue that's available.

10 BY MR. FORT:

11 Q. I realize that, and I am glad that
12 they're -- you can't point to it either, because
13 I couldn't find, what do you do here if you are
14 going through this process? All the reference
15 goes to this regulation that was just applicable
16 to general use waters. It wasn't applicable to
17 waters that had more limited aquatic habitat.

18 So how do you adjust those and
19 where is the guidance to the Agency person, to the
20 Board on an appeal, to the industry, that when you
21 go to this criterion, you are going to be looking
22 at the species that are present in that stream
23 segment, whether it's intolerant or tolerant or
24 intermediate or whatever you want to call it?

1 flexibility, then I think my question is about why
2 using intolerant species for a Use B discharge or
3 a discharge to Use B waters, and why are they
4 necessary to the protect the species, so --

5 MS. WILLIAMS: That's fine.

6 THE WITNESS: We will find that.

7 BY MR. FORT:

8 Q. Okay. Thank you. So I am going to
9 jump to G, which I think is just another way of
10 asking the same question.

11 Doesn't Subpart F use only
12 intolerant species, and you are telling me that
13 you are not limited to using intolerant species
14 and using Subpart F?

15 MS. WILLIAMS: Repeat for him which
16 question you are reading from.

17 BY MR. FORT:

18 Q. It's Sub G.

19 A. All valid data from native genera
20 are expected that are -- let me start over.

21 All valid data from native
22 genera are expected to be used in driving water
23 quality criteria. The data requirements do not
24 specify tolerant or intolerant species to be used.

1 Q. So you would -- the Agency could be
2 using intolerant species even for a discharger
3 into Use B, which we have I think got in
4 agreement, those are a tolerant species that are
5 in Use B?

6 A. I would say that we have got the
7 flexibility not to use it. If that would -- I
8 don't know how else to say that, because if -- it
9 has requirements of how much data is necessary,
10 and as I have said before, sometimes if you don't
11 use enough data, it gets more restrictive, and so
12 I don't want to pin them down and say that we
13 won't use any that's not tolerant, because that
14 would list you to only tolerant species that he
15 can find toxicity data from.

16 So if he can only find one
17 species from -- that is tolerant, that would not
18 be good for driving a water quality criteria.

19 Q. Well, I guess I am asking the other
20 side. If there were enough data from tolerant
21 species, then could you only look at the tolerant
22 species and put aside the intolerant?

23 A. Yes. I will leave that -- I mean,
24 yes, we could do that.

1 Q. Okay.

2 HEARING OFFICER TIPSORD: Okay.

3 Ms. Franzetti, do you have a follow-up?

4 MS. FRANZETTI: I do. Mr. Twait,
5 I think part of the concern about the application
6 of Subpart F procedures for deriving criteria when
7 there is no water quality standard that's been
8 adopted by the Board is that this procedure was
9 adopted solely in the context of general use
10 waters. Would you agree with that?

11 THE WITNESS: It was adopted only
12 for general use waters, yes.

13 MS. FRANZETTI: Right. And I think
14 it was actually back in a rulemaking called R88-21
15 where it came to be. Is that consistent with your
16 recollection?

17 THE WITNESS: I was not with the
18 Agency at that point.

19 MS. FRANZETTI: Oh, all right. So I
20 am a lot older than you. Moving on.

21 And so I think what is of
22 concern to dischargers, is that given the genesis
23 and the vetting of the Subpart F procedural rules,
24 it was solely in the context of general use

1 waters, which, you know, any native fish can be
2 in.

3 Did the Agency in deciding to
4 now include it in this Subdocket D consider and
5 vet the language of it with that in mind that
6 now you are going to be applying it to Use B
7 and Use A type waters that are different use
8 designations from general use, and perhaps some
9 specific amendments to the language might be in
10 order, because now it is being applied to
11 different use waters? Was that type of analysis
12 done?

13 A. As it was written, it was never
14 intended to be a statewide rulemaking. It was
15 always intended that derived criteria would be
16 site specific. So when they look at the water
17 body, they are supposed to look at the native
18 fish.

19 As to your question about
20 whether we can look at adding additional language,
21 I mean, that's something we can do if it would
22 help clarify the thought process or whatnot.

23 MS. FRANZETTI: Okay. Thank you.

24 HEARING OFFICER TIPSORD: Okay.

1 Mr. Dimond?

2 MR. DIMOND: So if you describe
3 Subpart F as being -- deriving site specific
4 water quality standards, if you had one facility
5 in Robinson, Illinois and another one in Galena,
6 Illinois, could they derive different numeric
7 standards for the same parameter based on
8 differences in the aquatic life that they are
9 protecting in those two locations?

10 THE WITNESS: Yes.

11 MR. DIMOND: Is there any -- does
12 Illinois EPA apply any guidance or standard that
13 limits its discretion as to how it determines what
14 aquatic life are to be protected in those two
15 different instances?

16 THE WITNESS: I don't know that we
17 have got any guidance to limit ourselves.

18 MR. DIMOND: Is there any USEPA
19 guidance that you would follow in applying Subpart
20 F?

21 THE WITNESS: Yeah, I'm not sure.

22 HEARING OFFICER TIPSORD: Okay.

23 Mr. Fort?

24 BY MR. FORT:

1 Q. Okay. Thank you. I am almost done
2 with this, but looking at the justification for
3 adding these criteria to the aquatic toxicity
4 rule, this is being done based upon making this
5 rule look like the rest of the water quality
6 standards in Illinois and not based upon an
7 analysis of technical feasibility or economic
8 reasonableness?

9 MS. WILLIAMS: Which one are you
10 reading?

11

12 BY MR. FORT:

13 Q. H.

14 A. I would say you are mostly correct,
15 except that we are not doing it just so that we
16 can have one statewide method. We -- the Agency
17 believes that this is a better method. So it's
18 not -- we are not just trying to get to a
19 statewide method. We are trying to get to the
20 better method.

21 Q. But in doing this better method, you
22 are not putting forward the technical feasibility
23 of the method?

24 A. No.

1 Q. Or the economic reasonableness of
2 it?

3 A. No.

4 Q. Okay. And I would assume that since
5 it's a better method that Subpart F might be
6 applied to any discharger including the Water
7 Reclamation District?

8 A. Yes.

9 Q. Okay. Fifty-seven. Questions with
10 respect to these proposed water quality standards
11 and the context of the regulated navigation zone.
12 Does the Agency wish to improve the aquatic
13 habitat in the regulated navigation zone?

14 A. No.

15 Q. Is such a measure prudent in light
16 of the electric fish barrier now being used to
17 prohibit the migration of invasive species?

18 A. I wouldn't do it.

19 Q. Does the Agency oppose the use of
20 invasive species barriers in the lower ship
21 canal?

22 A. No.

23 Q. Has the Agency considered the impact
24 of the proposed water quality standards on the

1 Lemont refinery -- just the Lemont refinery.

2 A. No.

3 Q. All right. With respect to the
4 Lower Ship Canal and Use B waters, would the
5 agency be willing to consider: A, leaving in
6 place the existing water quality standards for
7 mercury and the ammonia nitrogen for secondary
8 contact waters or, say, the Lower Ship Canal?

9 A. I don't believe the Agency would
10 consider that.

11 Q. Retaining the existing Rule 302.410
12 without the additions proposed?

13 A. No, I don't believe we would.

14 Q. Or C, establishing a new provision
15 for mixing zone rules with respect to the Lower
16 Ship Canal for chlorides and mercury as pollutants
17 created by sediments and snow belt runoff
18 conditions from upstream point and non-point
19 sources?

20 A. You would have to clarify your
21 question to be specific, because I can't answer
22 something that we haven't seen.

23 Q. Okay. I think earlier you said you
24 would be willing to consider it, but you needed a

1 specific proposal?

2 A. Yes.

3 MR. FORT: Thank you. Thank you.

4 HEARING OFFICER TIPSORD: All right.
5 Let's go ahead then have -- okay. Mr. Read has
6 got a question.

7 MR. READ: Matt Read on behalf of
8 Ingredion. I just want to make sure I understand
9 Exhibit 484. This is the temperature chart. If
10 we stayed at the sanitarian ship canal here with
11 these number for these different years and we
12 inserted the new period averages wouldn't we see
13 more highlighted areas on this chart?

14 THE WITNESS: It's possible, yes,
15 because some of the months went down.

16 MR. READ: So you would see
17 exceedances at this location, but you are just
18 changing the background to --

19 THE WITNESS: Based on -- yes, we
20 would see -- and this data, of course, is 1998
21 through 2007.

22 MS. WILLIAMS: We have another
23 chart, if you want.

24 HEARING OFFICER TIPSORD: You just

1 want to be the one to get us to 500.

2 MS. WILLIAMS: No way. Scott, can
3 you explain what this document is that I just
4 handed you.

5 THE WITNESS: Yes. This is, I
6 believe, eight stations that had monitoring data
7 from 1998 through 2007, and what I did was break
8 it down to every period for the years listed,
9 and then over on the left-hand side I put in the
10 proposed period average.

11 MS. WILLIAMS: So if someone wanted
12 to compare the data that's available for those
13 years to the new proposal, they could do that
14 themselves with these numbers?

15 THE WITNESS: Yes.

16 MS. WILLIAMS: At this time, I would
17 like to move to enter this chart with the heading
18 Romeoville Road, CSSC into evidence.

19 HEARING OFFICER TIPSORD: If there
20 is no objection, we will Romeoville Road, CSSC,
21 which is a multipage document as Exhibit 485.

22 (Whereupon, Exhibit No. 485 was
23 admitted into evidence.)

24 HEARING OFFICER TIPSORD: Seeing

1 none, it's Exhibit 485.

2 MS. FRANZETTI: Could I ask just a
3 few follow-up questions on Exhibit 485 so that as
4 we look through it we have a better understanding
5 of what we are looking at.

6 So, Mr. Twait, each page of
7 Exhibit 485 represents thermal data from a
8 different monitoring station in the ship canal?

9 THE WITNESS: It's throughout the
10 whole -- the system.

11 MS. FRANZETTI: Okay. So let's
12 just -- can we go through and identify what each
13 one is?

14 THE WITNESS: Sure.

15 MS. FRANZETTI: So the first page,
16 would you identify what that -- where that station
17 is?

18 THE WITNESS: It's the Chicago
19 Sanitarian Ship Canal at Romeoville Road.

20 MS. FRANZETTI: And then turning to
21 the second page.

22 THE WITNESS: It's Chicago
23 Sanitarian Ship Canal River Mile 302.6.

24 MS. FRANZETTI: Could I ask you a

1 quick question on that? Are we moving steadily
2 downstream or upstream or no, are they not -- is
3 it not in that type of geographical order?

4 THE WITNESS: It's generally in that
5 direction, I believe, but it gets complicated with
6 putting the Cal-Sag Channel in there.

7 MS. FRANZETTI: Okay. But
8 Romeoville Road is upstream of River Mile 302.6?

9 THE WITNESS: I believe that's the
10 case.

11 MS. FRANZETTI: Okay. Let's go to
12 the third page, and I think that's where we get
13 off of the ship canal, correct?

14 THE WITNESS: Yes. It's the Cal-Sag
15 Channel at Route 83.

16 MS. FRANZETTI: And that is the
17 background station that is now being used for
18 deriving some of the thermal water quality
19 standards proposed by the Agency for Use A and Use
20 B?

21 THE WITNESS: Yes.

22 MS. FRANZETTI: The next page, B&O
23 Central Railroad?

24 THE WITNESS: That's on the Chicago

1 Sanitarian Ship Canal.

2 MS. FRANZETTI: And are we further
3 downstream than the River Mile 302.6 for that
4 station?

5 THE WITNESS: I don't know the
6 answer to that. I know for sure they are not in
7 order. I'm sorry about that.

8 MS. FRANZETTI: I just -- what I was
9 trying to check, too, was that these are commonly
10 used titles for known monitoring stations; is that
11 correct?

12 THE WITNESS: Yes, I believe so.

13 MS. FRANZETTI: Okay. So we should
14 be able to figure out where these stations are
15 from these titles?

16 THE WITNESS: I think you can. If
17 you can't, please give me a call.

18 Let's walk through the rest of
19 them, because there is one more.

20 MS. FRANZETTI: Yeah, go ahead.

21 THE WITNESS: It's the Chicago
22 Sanitarian Ship Canal at Lockport, and the next
23 one is Jefferson Street. That's in Brandon Pool.
24 So that's on the Des Plaines River and Chicago

1 Sanitarian Ship Canal, Route 83, and the Chicago
2 Sanitarian Ship Canal at Cicero.

3 MS. FRANZETTI: Okay. Mr. Twait,
4 would you go back to that Route 83 Chicago
5 Sanitarian Ship Canal. That's the same station
6 that Exhibit 484 also deals with, correct?

7 THE WITNESS: It is the same
8 station, yes.

9 MS. FRANZETTI: But it's not the
10 same data, because Exhibit 485 is using either the
11 90th percentile stream data or the 75th percentile
12 effluent data and Exhibit 484 was using the
13 75th percentile of both?

14 THE WITNESS: Correct.

15 MS. FRANZETTI: Bear with me for
16 just a moment.

17 MR. READ: But the data points in
18 the chart --

19 HEARING OFFICER TIPSORD: Excuse me.
20 You have to identify yourself or she can't take it
21 down.

22 THE WITNESS: I want to clarify one
23 thing. The data in the chart is the same. It's
24 only the proposed period average that changed

1 between those two charts. So the data stayed the
2 same.

3 MS. FRANZETTI: Thank you. That's
4 what I meant.

5 HEARING OFFICER TIPSORD: Go ahead,
6 Mr. Read.

7 MR. READ: That say my question.

8 MS. FRANZETTI: And Mr. Twait, why
9 did you think putting this particular thermal data
10 into this exhibit would be helpful to us? What
11 are we supposed to glean from this once we have
12 had a chance to study it?

13 THE WITNESS: Yeah. I don't know
14 that I could get anything specific out of it. I
15 mean, if -- because things have changed since
16 2007, but this is the data. I have put it all
17 together. When -- when you asked about the --
18 the -- whether we compared it to the ambient data
19 that we got, and so I just thought it would be
20 useful for somebody that's close to one of these
21 stations possibly, but as I mentioned, things have
22 changed since 2007.

23 MS. FRANZETTI: Okay. So this was
24 what you did originally back before the rules were

1 even filed to --

2 THE WITNESS: No.

3 MS. FRANZETTI: Go ahead.

4 THE WITNESS: I did this in response
5 to your questions at that first set of hearings,
6 whether we had looked at the actual period
7 averages for these stations.

8 MS. FRANZETTI: Okay. So to
9 determine whether or not the period averages that
10 the Agency originally proposed would be complied
11 with?

12 THE WITNESS: Yes.

13 MS. FRANZETTI: On a consistent
14 basis?

15 THE WITNESS: Yes.

16 MS. FRANZETTI: Okay. I think I
17 will stop there.

18 HEARING OFFICER TIPSORD: All right.
19 Then we are ready to go with the -- wait. Sorry,
20 Mr. Read you had another question.

21 MR. READ: Matt Read from Ingredion.

22 Does this temperature, is that
23 the same data that's summarized in the temperature
24 criteria options report?

1 MS. WILLIAMS: Can you reference the
2 exhibit or attachment number?

3 HEARING OFFICER TIPSORD: It's
4 Exhibit 15.

5 THE WITNESS: Which was an
6 attachment to Mr. Yoder's testimony that we gave a
7 specific number to because we referred to it so
8 often.

9 HEARING OFFICER TIPSORD: Okay.

10 THE WITNESS: The data in -- the
11 data that Chris relied on was 1998 to 2004, and so
12 this has the same starting point, but the data was
13 through 2007 for some of them, yes. Some of the
14 data -- at least one of the sampling stations --
15 actually, a couple of the sampling stations quit
16 monitoring after 2004.

17 MR. READ: Thank you.

18 HEARING OFFICER TIPSORD: Let's go
19 ahead then and have the Agency come up. While we
20 are doing that, I want to -- I'm sorry. The
21 District. I was thinking the Agency because, are
22 you able to tell us availability for our hearing,
23 for another hearing?

24

1 (Whereupon, a discussion was had
2 off the record.)

3 HEARING OFFICER TIPSORD: Fredric
4 Andes.

5 CROSS-EXAMINATION

6 BY MR. ANDES:

7 Q. Thank you. Good afternoon,
8 Mr. Twait. I have a few questions for you from
9 the Metropolitan Water Reclamation District of
10 Greater Chicago, and we will start with the number
11 one.

12 Proposed sections 302.408(b) and
13 (c), include periods that range from 15 to 31
14 days. Was the length of each period considered
15 in calculating the corresponding period average
16 temperature value? If so, how?

17 A. The Agency used the data during the
18 period to determine the period average. So if the
19 period was 15 days, the Agency used that 15-day
20 period for the 75th percentile or the
21 90th percentile for calculating the period
22 average, and we used that over a several-year
23 period.

24 Q. Thank you. What was the basis for

1 the Agency's agreement with USEPA to use the
2 Cal-Sag Channel Route 83 as representative of the
3 background temperature of the system?

4 A. They believed, and we agreed with
5 them, that it was a less impacted site from
6 thermal sources.

7 Q. Less impacted than the sanitarian
8 ship canal, Route 83 station?

9 A. Yes.

10 Q. Now, you indicated in your testimony
11 that the Agency did not expect that the period
12 average would be violated at the Chicago
13 sanitarian ship canal, and that the Agency has
14 proposed using the 90th percentile of the
15 temperature from the background station as a
16 period average.

17 Does the choice of the
18 90th percentile indicate that the Agency
19 anticipates that the period average temperature
20 value will be exceeded approximately 10 percent
21 of the time based on historical data? And if so,
22 how does the Agency consider those period average
23 temperature values to be attainable in the system?

24 A. The Agency does not think that it

1 will be exceeded 10 percent of the time on an
2 average basis.

3 Q. Do you have a sense of how often it
4 will be exceeded?

5 A. No.

6 Q. Let me turn your attention to -- in
7 the exhibit that was just introduced of data from
8 various stations, the B&O Central Railroad page.

9 Let me highlight for you some
10 particular data points, and just ask you to
11 confirm whether these would be in excess of the
12 proposed period average water quality standard.
13 The 2000 -- year 2000 data point for March, 58.6
14 would be over the standard of 54.4, correct?

15 A. Yes.

16 Q. 2004 data point for March of 55.4
17 would also be over the standard?

18 A. That would be equal to the standard.

19 Q. I'm sorry it's 55.4, and the
20 standard is 54.4?

21 A. You are right. It would be over.

22 Q. The number for 2006 of 54.9?

23 A. Yes.

24 Q. Over the standard?

1 A. And I want to point out that this
2 data between 1998 and 2007 has -- things have
3 changed since then; such as, the closing down of
4 Fisk and Crawford, and offhand, I don't know
5 exactly where the B&O Central Railroad is.

6 MS. FRANZETTI: If I can, Fred, but
7 Mr. Twait, Frisk and Crawford were also operating
8 during the years in March where the numbers are
9 lower. So how does that -- how is it explained
10 that it makes a difference here whether Fisk and
11 Crawford are operating or not?

12 THE WITNESS: Like I said, I don't
13 know exactly where the B&O Central Railroad is.

14 MR. ANDES: If I can get a
15 clarification, we can swear in a witness who might
16 be able to tell you where that particular
17 monitoring station is.

18 MS. WASIK: My name is Jennifer
19 Wasik. I am a biologist with the Water
20 Reclamation District.

21 THE COURT REPORTER: How do you
22 spell your last name?

23 MS. WASIK: W-A-S-I-K.

24

1 (Whereupon, the witness was duly
2 sworn.)

3 MS. WASIK: B&O Railroad is one of
4 our continuous water quality monitoring stations
5 that's downstream of Harlem Avenue. So it's
6 downstream of our Stickney plant. I'm not exactly
7 sure the distance, but it's close in proximity to
8 downstream of our Stickney plant.

9 MR. ANDES: Do we know where that
10 is in relation to the Fisk and Crawford plants?
11 I am assuming that would be the question that
12 Ms. Franzetti would be asking.

13 MS. FRANZETTI: Oh, I know where
14 they are in regards to your Stickney plant. I
15 know the answer.

16 HEARING OFFICER TIPSORD: Could we
17 share that answer, Ms. Wasik?

18 MS. WASIK: I believe the B&O
19 Railroad site is downstream of the Fisk and
20 Crawford plants.

21 BY MR. ANDES:

22 Q. Mr. Twait, based on the data here --
23 and we could go through a number of other data
24 points on this page and probably other pages where

1 there are data points that are above the period
2 average standards, and this is the data set you
3 all relied on in terms of developing the
4 standards, correct?

5 A. What we relied on in developing the
6 standard is the data from the Cal-Sag Channel,
7 Route 83 station.

8 Q. But one of the determinants of the
9 standard, as you laid out earlier, was you wanted
10 to make sure that the standard did not cause the
11 background areas to be in noncompliance?

12 A. What I didn't want to be in
13 noncompliance was the background station that we
14 chose and the number that we chose. We were
15 trying to come up with a number that would be --
16 that would make that particular station the
17 background station, and make it compliant with the
18 water quality standards.

19 Q. So as to these stations, did you
20 assess the extent of compliance with the proposed
21 period average standards for the other stations?

22 A. In using this data, it would only
23 tell you that if we had these particular
24 standards, they would have been in violation.

1 Q. The -- if future temperature data
2 are consistent with the historical data used to
3 establish the proposed period average temperature
4 values, how will the Agencies address exceedances
5 that will be expected to occur at least 10 percent
6 of the time even at the less impacted Route 83
7 station?

8 A. The Agency does not believe it's
9 going to be exceeded 10 percent of the time.

10 Q. But the Agency based the standards
11 on the 90th percentile. Doesn't that assume that
12 there are some data points that do not meet the
13 standard?

14 A. We based the standard -- we took 90
15 percentile of all of the individual numbers to
16 come up with an average number that shouldn't be
17 exceeded. If you had 100 numbers -- and I know
18 this is never going to happen, but they went
19 sequentially from 1 to 100, the 90th percentile on
20 that individual data would be 90, and 10 percent
21 would exceed it.

22 But if you take that 90 and make
23 that your average value in the receiving stream as
24 your water quality standard, your average of all

1 of the other data is 50. Do you --

2 Q. Your average of all of the other --

3 A. Average of the numbers one through
4 100, your average is 50. So that you would
5 compare the average of your data to the
6 90th percentile.

7 Q. So you believe that the average
8 values in the system will not exceed that
9 90th percentile?

10 A. We believe that the -- for the
11 background station, we believe that the average
12 value will not exceed the 90th percentile 10
13 percent of the time. It might exceed it, but not
14 10 percent of the time.

15 Q. But you don't know what the
16 percentage would be?

17 A. No.

18 Q. And if those exceedances happen,
19 which are then planned into the regulations, would
20 the Agency impose additional and more stringent
21 temperature limits and permits in order to address
22 those exceedances?

23 A. The Agency would have to look at
24 that.

1 Q. So the Agency could impose more
2 stringent limits based on exceedances that were
3 part of the design of the standards?

4 A. I don't think the -- we are
5 designing for exceedances of the period average.

6 Q. But the Agency can't guarantee that
7 even at the background station there will be no
8 exceedances, correct?

9 A. I can't guarantee it.

10 Q. Will the Agency develop a total
11 maximum daily load to address those exceedances
12 that occur some percent of the time?

13 A. Is it possible to? Is that the
14 question?

15 Q. Does the Agency think that it would
16 be required to develop a total maximum daily load
17 to address those exceedances?

18 A. Yeah. There is -- to get on the --
19 first, it would have to get on the list as being
20 impaired, and then the Agency would take a look at
21 the data and determine if it should be on the
22 list, but there is things in between here and
23 there that would have to be considered; such as,
24 whether or not the thermal discharger is directly

1 upstream.

2 Q. But in determining whether there is
3 an impairment, and if, say, temperatures were
4 exceeding the period average temperature values
5 five percent of the time, would the Agency believe
6 that it has an obligation to identify that water
7 is impaired?

8 A. Just off the top of my head, I don't
9 know what the methodology is for listing a thermal
10 impairment.

11 Q. Okay. Let's move to the next
12 question.

13 How does the Agency expect the
14 existing dischargers to produce current effluent
15 temperatures sufficient to achieve the proposed
16 period average temperature values 100 percent of
17 the time? And that's at all stations.

18 A. We will note that mixing zones are
19 available, but I don't know how we can guarantee
20 that there will be 100 percent compliance.

21 Q. And are mixing zones available if
22 the waters have been determined to be impaired,
23 because they are not meeting the period average
24 values 100 percent of the time?

1 MS. WILLIAMS: What do you mean by
2 100 percent of the time in this context of period
3 average?

4 MR. ANDES: Well, say that the --
5 five percent of the time, five percent of the
6 months.

7 MS. WILLIAMS: Five percent of the
8 months; is that what you are saying?

9 BY MR. ANDES:

10 Q. That the water is exceeding the
11 standard, and the Agency, say, lists that water as
12 impaired, would mixing zones be available?

13 A. I think that would be on a site by
14 site analysis, and we would have to look at
15 upstream to see why it's not being met upstream.

16 Q. And is there a place where that
17 policy is set forth in writing in terms of how
18 that site specific analysis would be done?

19 A. No.

20 Q. Next question. You indicated that
21 to the Agency's knowledge the system has not had
22 trouble with fish kills due to cold shock. If
23 that's the case, what is the basis for the
24 Agency's proposal of a new narrative standard for

1 cold shock?

2 A. It was based on comments from USEPA.
3 They thought a cold shock provision was necessary.

4 Q. And what's your understanding of why
5 it's necessary?

6 A. They just believe that a cold shock
7 provision such as Wisconsin had would make our
8 water quality standards acceptable.

9 Q. But Illinois EPA itself in
10 developing the proposal did not believe that that
11 type of narrative was necessary, correct?

12 A. We don't have knowledge of cold
13 shock happening in this system with fish kills.

14 Q. So the answer is no?

15 A. Yes. The answer is no.

16 Q. You indicated that the Agency
17 intends to interpret the standard in a similar
18 manner as explained by Wisconsin in development of
19 its code shock standard. What is your
20 understanding of how Wisconsin interprets its cold
21 shock standard?

22 MS. WILLIAMS: We are going to use
23 an exhibit for this, if that's helpful.

24 MR. ANDES: I had a feeling.

1 MS. WILLIAMS: Scott, can you -- I
2 handed you a document entitled, "Information on
3 Wisconsin Cold Shock Standard Provided By USEPA
4 7/17/12." Can you describe what this document
5 contains?

6 THE WITNESS: This is Wisconsin's
7 narrative provisions to prevent cold shock and
8 their rationale.

9 MS. WILLIAMS: And is this what you
10 relied on in describing how Wisconsin interprets
11 their standard?

12 THE WITNESS: Yes.

13 MS. WILLIAMS: Why don't you kind of
14 read for us the paragraph under Subpart B that
15 says "cold shock standard," at least the beginning
16 of that.

17 THE WITNESS: This is a narrative
18 standard intended to prevent cold shock impacts to
19 fish and other aquatic life communities. Cold
20 shock is the exposure of organisms to a rapid
21 decrease in temperature in a sustained exposure to
22 low temperature that induces abnormal physical
23 or -- behavioral or physical performance and often
24 leads to death. Heated discharge to a confined,

1 narrow and small areas during cold months present
2 the greatest risk.

3 An example is a heated discharge
4 to a long, narrow channel during winter. Another
5 example would be a heated discharge to an enclosed
6 harbor during January.

7 BY MR. ANDES:

8 Q. And this is --

9 A. Let me read the rest of that for
10 you.

11 Operational changes to heated
12 discharges in high risk environments should be --
13 should estimate the potential for cold shock.
14 Examples of such operational change include power
15 plant shutdowns for maintenance and decreases in
16 heated effluent from manufacturing facilities
17 during lull periods.

18 Emergency shutdowns are not held
19 to this standard. However, all efforts shall be
20 made through general operational planning to avoid
21 an emergency action that would cause cold shock.

22 MS. WILLIAMS: Thank you. I would
23 like to ask now that this exhibit be entered into
24 the record.

1 HEARING OFFICER TIPSORD: If there
2 is no objection, we will admit Information on
3 Wisconsin Cold Shock Standard Provided by USEPA
4 7/17/2012 as Exhibit 486.

5 (Whereupon, Exhibit No. 486 was
6 admitted into evidence.)

7 HEARING OFFICER TIPSORD: Seeing
8 none, it's Exhibit 486.

9 BY MR. ANDES:

10 Q. So, Mr. Twait, this information was
11 provided to you by USEPA staff?

12 A. Yes.

13 Q. And have you had any contacts with
14 the Wisconsin Department of Natural Resources on
15 this issue?

16 A. No.

17 Q. So do you have any idea of how this
18 language has been implemented in Wisconsin?

19 A. No, not other than it doesn't apply
20 to emergency shutdowns.

21 Q. Okay. Has the Agency, Illinois EPA,
22 given any thought to how this standard would
23 specifically be implemented in any particular
24 situation?

1 A. In what respect?

2 Q. What kind of new requirements could
3 be imposed on dischargers pursuant to this new
4 standard?

5 A. We would anticipate using similar
6 language to what we have proposed as the water
7 quality standard as a special condition, and
8 basically it tells them that it -- they need to
9 operate their plant to prevent cold shock.

10 Q. And could they be found in violation
11 of their permit if the Agency later determines
12 that there was a cold shock impact?

13 A. If they kill fish, and from their
14 operation, I would say yes.

15 Q. Does the standard indicate that
16 killing fish is necessary in order to be held in
17 violation of the standard?

18 A. It says, to protect fish and aquatic
19 life uses from deleterious effects of cold shock.

20 Q. So how do you define deleterious
21 effects?

22 A. Behavioral or physiological
23 performance which often leads to death.

24 Q. So the standard could be violated

1 even if death is not the result, correct, just
2 based on a behavioral change?

3 A. I suppose technically.

4 Q. Or legally?

5 A. Or legally.

6 Q. So how does the Agency intend to let
7 dischargers know the standard by which to control
8 their conduct in not violating the standard?

9 A. I don't know that the Agency could
10 tell them a -- an amount that would be safe,
11 because if we had that information, then we would
12 just provide that into the standard. If we knew
13 that changing it by two degrees would be
14 sufficient, sufficient protection, then we could
15 do that. I will note that if you operate your
16 facility and it ends up killing fish, that's going
17 to be problematic whether the Agency says it's --
18 whether it's determined it's from cold shock or
19 something else that you did.

20 Q. So wouldn't that already violate a
21 permit condition if your discharge led to killing
22 a fish?

23 A. I would think so.

24 Q. So this provision then isn't

1 necessary to deal with killing fish?

2 A. It might violate the act, but it
3 might not violate the permit condition.

4 Q. So if you are killing fish but not
5 due to cold shock, you are not necessarily
6 violating your permit?

7 A. It depends on the -- what your
8 permit says.

9 Q. Has the Agency assessed the extent
10 to which fish kill incidents caused by discharges
11 would violate permit terms?

12 A. Yeah. I don't know the -- that the
13 Agency looked at that.

14 HEARING OFFICER TIPSORD: Mr. Dimond
15 has a follow-up.

16 MR. DIMOND: Mr. Twait, Exhibit 486
17 has a date on it of July 17th, 2012. Is that
18 approximately when USEPA provided this document to
19 IEPA?

20 THE WITNESS: I believe so.

21 MR. DIMOND: Is that -- using that
22 as the date, was that the first time that USEPA
23 brought up the idea of this cold shock provision
24 to IEPA?

1 THE WITNESS: Yeah. I believe it
2 was in the letter that USEPA provided to the
3 Pollution Control Board. You cited the letter.
4 Was it 286 or maybe -- public comment number 286?

5 MR. DIMOND: Yeah. Just remind us.
6 What was the date of that, if you have it?

7 HEARING OFFICER TIPSORD: It was
8 filed with the Board on March 26th, 2010, and the
9 date of the EPA letter was January 29th, 2010.

10 MR. DIMOND: Did EPA explain why
11 they had not raised this issue earlier?

12 THE WITNESS: I think this was the
13 first time that they put everything in writing.

14 MR. DIMOND: How long, to your
15 knowledge, has Wisconsin had this cold shock
16 provision that was the basis for USEPA's request
17 to Illinois?

18 THE WITNESS: I don't know.

19 HEARING OFFICER TIPSORD: And just
20 to clarify, cold shock -- and I admit I went back
21 to five and a half years ago and read some of the
22 transcripts, Mr. Twait. And my recall is -- and I
23 actually have the pages here. We had some
24 discussion on March 11th, 2008 starting at page

1 236 of the transcript about cold shock, and there
2 is no cold shock provision in the general use
3 water quality standards; is that correct?

4 THE WITNESS: That is correct.

5 HEARING OFFICER TIPSORD: So you
6 would be -- so the cold shock would only apply to
7 the CAWS and the Lower Des Plaines River under
8 this proposal, correct?

9 THE WITNESS: Yes, that's correct.
10 However, I will -- I think we found the effective
11 date is October 1st, 2010.

12 HEARING OFFICER TIPSORD: Of the
13 Wisconsin --

14 THE WITNESS: Of the Wisconsin cold
15 shock standards.

16 BY MR. ANDES:

17 Q. But you are not aware, correct, of
18 how that has been implemented in Wisconsin?

19 A. No. When I talked about how it's
20 implemented in Wisconsin, I was specifically
21 referring to emergency shutdowns are not
22 applicable or are not held to the standard.

23 HEARING OFFICER TIPSORD:

24 Mr. Ettinger, did you have a question?

1 MR. ETTINGER: I just -- are you --
2 have any awareness of the order of magnitude of
3 the temperature drop that has to occur for there
4 to be cold shock?

5 THE WITNESS: No, I can't state it
6 to you.

7 MR. ETTINGER: Would it surprise you
8 that it has to be considerably greater than five
9 degrees Fahrenheit?

10 MR. ANDES: Is that testimony on
11 facts?

12 HEARING OFFICER TIPSORD: Yeah, it's
13 a question. Yeah, it's a question, put in the
14 form of a question.

15 THE WITNESS: It would not surprise
16 me.

17 MR. ETTINGER: Would a five-degree
18 delta T standard that applies to all the general
19 use waters in Illinois be sufficient to protect
20 against cold shock, to your knowledge?

21 THE WITNESS: I don't know.
22 Possibly.

23 MR. ETTINGER: Have you ever read a
24 study by Brungs and Jones?

1 THE WITNESS: I have heard the name,
2 but I have not read the study.

3 HEARING OFFICER TIPSORD: Could you
4 provide that study for us, Mr. Ettinger?

5 THE WITNESS: I think it's already
6 in the record.

7 MR. ETTINGER: I'm pretty sure it's
8 in the record.

9 MS. FRANZETTI: Okay. Just so you
10 have a sense, it's not tiny. This is, I think,
11 what Albert is talking about.

12 MR. ETTINGER: Actually, there is
13 a -- Brungs and Jones the study I know is cited in
14 a document that I introduced that was written by
15 Commonwealth Edison or Midwest Generation and
16 there was a discussion of cold shock in that.
17 Also, there was considerable discussion of this by
18 Dr. Thomas when he testified cleaning up dead fish
19 outside of a power plant, but maybe we should go
20 on. I think the practical matter of this topic
21 has received much more attention than it deserves.

22 MR. ANDES: As long as that's in the
23 record.

24 THE WITNESS: And I would also like

1 to note that the Agency doesn't believe that we
2 have had issues with cold shock in this system,
3 and we didn't see a downside to including it.

4 BY MR. ANDES:

5 Q. Mr. Twait, in the document that we
6 received -- that you received from USEPA, it
7 indicates that best professional judgment should
8 be used to address rate of temperature change
9 issues. Can you give us any guidance as to the
10 Agency's understanding of what best professional
11 judgment means in this context?

12 A. No, I can't.

13 Q. But this language would under the
14 proposal be inserted into permits and discharges
15 would be subject to liability if they violated the
16 standard, correct?

17 MS. WILLIAMS: Which language are
18 you talking about, Fred?

19 MR. ANDES: The narrative standard
20 on cold shock.

21 MS. WILLIAMS: I just wanted to
22 maybe clarify for the record there is two sections
23 here on this page, 102.28, cold shock standard and
24 102.29, rate of temperature change. We haven't

1 proposed both of them for inclusion. So to the
2 extent you are asking him questions about the
3 second piece, it's not part of our proposal.

4 MR. ANDES: The part that is in the
5 Agency's proposal is the first part, correct?

6 MS. WILLIAMS: Correct.

7 BY MR. ANDES:

8 Q. Thank you.

9 Does the Agency expect that the
10 proposed new narrative standard for cold shock
11 would result in a new condition being imposed in
12 dischargers' permits; would that be adding the
13 narrative standard into the permits or something
14 else?

15 MS. WILLIAMS: He already answered
16 that.

17 BY THE WITNESS:

18 A. Yes. I believe we had that as a
19 special condition, if necessary.

20 BY MR. ANDES:

21 Q. Does the Agency expect that the new
22 narrative standard would result in waters being
23 designated as impaired?

24 A. I'm not sure how fish kills get

1 listed on the 303(d) list and what causes that to
2 happen.

3 MS. WILLIAMS: We are just trying to
4 put our heads together. Maybe Howard can explain
5 what he does know about this.

6 MR. ESSIG: We have had fish kills
7 identified on the 303(d) list as being a cause
8 of -- a cause and it was basically from an ethanol
9 spill or some other substance spill. I am not
10 aware of anything with a -- either cold shock or
11 any other thermal issue with that.

12 BY MR. ANDES:

13 Q. But since you haven't had a
14 narrative standard for cold shock before, now that
15 you would have one and if you determined that it
16 was violated, would that not lead to an impairment
17 listing?

18 A. Yes.

19 MR. ANDES: Thank you. I have a
20 table I would like to provide Mr. Twait to read
21 and ask him some questions.

22 MS. FRANZETTI: Fred, would you mind
23 while you are giving that to him if I asked
24 questions?

1 MR. ANDES: Go ahead.

2 MS. FRANZETTI: Mr. Twait, you
3 pretty clearly said, that this new cold shock
4 proposed provision is because USEPA said one was
5 necessary to make whatever came out of this
6 rulemaking acceptable to USEPA with regards to
7 thermal standards; is that a fair summary?

8 THE WITNESS: Yes.

9 MS. FRANZETTI: And that the Agency
10 did not think such a provision was necessary given
11 you have got no evidence of cold shock,
12 particularly in the waters that are the subject of
13 this proceeding, correct?

14 THE WITNESS: I would say that's a
15 fair statement.

16 MS. FRANZETTI: Okay. So here is my
17 concern. You just said a few minutes ago that
18 this new cold shock provision will only lead to
19 special conditions in a permit, if necessary.

20 So if the Agency doesn't even
21 think the provision is necessary, when would it
22 ever be necessary to put a cold shock special
23 condition in any of the dischargers to these
24 waters permits?

1 THE WITNESS: Yeah, I don't know
2 when we would put it in there and when we
3 wouldn't.

4 MS. FRANZETTI: Okay. But would you
5 agree that it -- it may be a concern of
6 dischargers that since the USEPA may review their
7 NPDES permits when they come up for renewal and
8 are proposed to be issued by the Agency, that what
9 we may be faced with is once again USEPA deciding
10 such a special condition is necessary, and ought
11 to be included in a particular permit, correct?

12 THE WITNESS: I could see that
13 happening, yes.

14 MS. FRANZETTI: Because of their
15 original view that even though we have never had a
16 cold shock incident on this waterway that anybody
17 can remember, it's still necessary to have a
18 provision to protect against it?

19 THE WITNESS: I can see where that's
20 problematic.

21 MS. FRANZETTI: Thank you.

22 MR. ANDES: Mr. Twait -- do we want
23 to have this introduced?

24 HEARING OFFICER TIPSORD: Yeah, if

1 there is no objection we will -- the Metropolitan
2 Water Reclamation District of Greater Chicago
3 Waterway Compliance With Proposed IEPA Temperature
4 Standards Using 2007 through 2012 Hourly
5 Temperature Monitoring Data as Exhibit 487.

6 (Whereupon, Exhibit No. 487 was
7 marked for identification.)

8 HEARING OFFICER TIPSORD: Seeing
9 none, it's Exhibit 487.

10 MR. ANDES: Mr. Twait, as indicated,
11 the table is based on MWRD data and shows for the
12 years 2007 to 2012 the percent compliance with
13 proposed standards at various monitoring stations.

14 MS. WILLIAMS: Can I ask you to
15 clarify this exhibit real quick?

16 MR. ANDES: Sure.

17 MS. WILLIAMS: What are you talking
18 about when you say a daily limit? What is a
19 daily? I don't think we have a daily limit -- or
20 as opposed to the max. I would call them both the
21 same thing, I guess.

22 MS. WASIK: I think that's actually
23 supposed to read period limit.

24 MR. ANDES: Daily limit should be

1 period average.

2 MS. WILLIAMS: Okay. And so are we
3 clear, this wasn't done on a daily average basis,
4 though, right? You would have done it based on
5 looking at the monthly or period average?

6 MS. WASIK: I believe so, yeah.
7 This was done by our biostatistician and as for a
8 periodic average, I think that that was just a
9 misprint, but I will make sure.

10 MS. WILLIAMS: Thank you.

11 BY MR. ANDES:

12 Q. So my question really deals with the
13 difference between the first two stations, one
14 upstream of the North Side plant, and one
15 downstream of the North Side plant and then the
16 same comparison for the Calumet and Stickney
17 plants. If we can start with the two stations
18 near North Side, Main Street upstream and Foster
19 Avenue downstream, when you look at those data,
20 particularly in terms of percent compliance, is it
21 accurate to say that the percent compliance for
22 those two stations is pretty comparable?

23 A. Yeah, I think so.

24 Q. When you look at the CNW, Indiana

1 Railroad and Halsted Street stations, which are
2 upstream and then downstream of the Calumet plant,
3 is it fair to say that those values also are
4 pretty comparable upstream versus downstream?

5 A. I would say they are comparable.

6 Q. And then finally, as to Cicero,
7 which is upstream of Stickney, of the Stickney
8 plant, and then the B&O Central Railroad, which is
9 downstream of the Stickney plant, is it fair to
10 say that the percent compliance is actually
11 significantly higher downstream of the Stickney
12 plant than upstream?

13 A. Yes.

14 MR. ANDES: Thank you. That's all
15 the questions I have.

16 HEARING OFFICER TIPSORD:

17 Mr. Dimond, did you have a follow-up?

18 MR. DIMOND: Mr. Twait, earlier
19 today didn't you testify that sometimes we have
20 flow reversal in the Sanitarian Ship Canal and
21 other segments of these waterways?

22 THE WITNESS: Yes, I believe there
23 are periodic flow reversals.

24 MR. DIMOND: Couldn't that impact

1 your assessment of what these data mean?

2 THE WITNESS: In what respect?

3 MR. DIMOND: How do you know that
4 the -- how do you know that the percent compliance
5 reflected in 487 at Cicero Avenue isn't impacted
6 by the discharge from the Metropolitan Water
7 Reclamation District Stickney plant?

8 THE WITNESS: I don't know whether
9 it is or not. There is -- if I could ask you to
10 clarify, because with the period average, there
11 are only -- there is only 17 different periods in
12 2007. So if you had one period that exceeded the
13 average, you would have about a 95 percent
14 compliance. So I am not quite sure how you are
15 getting 99.8 percent compliance with a period
16 average.

17 MR. DIMOND: And just to be clear --

18 MS. WILLIAMS: It doesn't seem like
19 this was done -- done as you explained that it was
20 done.

21 MR. DIMOND: Just to be clear,
22 Mr. Twait, you are not asking for me to explain
23 this, right?

24 THE WITNESS: No. I am asking Fred

1 so that I can understand this better.

2 MR. ANDES: You can ask Ms. Wasik.

3 MS. WILLIAMS: No, I don't think we
4 can. She didn't do it either.

5 HEARING OFFICER TIPSORD: She asked
6 that it be done.

7 MS. WILLIAMS: I know.

8 HEARING OFFICER TIPSORD: And has
9 been testifying as to what it means. So if you
10 have a question about the chart, she is the person
11 to ask.

12 MS. WASIK: Yeah, in just taking a
13 look, I understand what you mean. I wonder if
14 maybe this was done incorrectly. I will have to
15 check with the person we had do this, but now that
16 I am looking at it, I understand what you mean.

17 MS. WILLIAMS: Can you explain
18 how -- you know, what we think might have been
19 maybe misunderstood about the standard in
20 developing this chart or what could possibly have
21 been done incorrectly?

22 THE WITNESS: I think maybe if they
23 looked at what was their daily maximum temperature
24 for each period would be a possibility, rather

1 than looking at the period average, but I don't
2 know.

3 MS. WILLIAMS: And so is it
4 correct -- just to help the Board understand, the
5 period average could only be violated how often in
6 one period?

7 THE WITNESS: Yeah. There is -- for
8 each period, which is between 15 and 31 days -- we
9 have 17 periods through the year. So all of
10 January you have an average that you must meet of
11 54.3 degrees. So if you violated that average,
12 then you would be complying about 95 percent of
13 the time.

14 MR. ETTINGER: Now, can I just
15 clarify that? When you say you violated, it's
16 actually the water quality that violates. We are
17 not actually talking about any particular
18 discharger violating at this point? We are
19 talking about --

20 THE WITNESS: The receiving stream
21 would have been violating.

22 MR. ETTINGER: Right. And we are
23 not going to arrest the Des Plaines River for
24 going over its temperature limit. So we don't

1 know what the regulatory consequences are of this
2 violation?

3 THE WITNESS: Correct.

4 BY MR. ANDES:

5 Q. I can certainly review the table and
6 resubmit it with revised corrected numbers, but I
7 want to direct you back, Mr. Twait, to the main
8 question I had, particularly with regards to
9 Cicero and B&O Central upstream and downstream of
10 Stickney, even just looking at the maximum limit,
11 the percent of compliance is higher downstream of
12 Stickney than it is upstream, correct?

13 A. Yes.

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

16 HEARING OFFICER TIPSORD: Ms. Rios,
17 did you have a follow-up?

18 MS. RIOS: I have a few follow-up
19 questions regarding the cold shock discussion.
20 You stated that the IEPA is not aware of cold
21 shock issues in the system. Do you know whether
22 in Wisconsin the cold shock standards' focus are
23 directed towards a specific industry, such as
24 BTUs, or anything like that?

1 THE WITNESS: No. I don't know the
2 answer to that.

3 MS. RIOS: And has Illinois EPA
4 informed USEPA that there have been no recorded
5 fish kills linked to cold shock in the segment?

6 THE WITNESS: Yes. We provided
7 that.

8 HEARING OFFICER TIPSORD: Midwest
9 generation is up next. Let's take a break.

10 (Whereupon, a short break was
11 taken.)

12 HEARING OFFICER TIPSORD: Let's
13 begin then with Midwest Generation's questions.

14 CROSS-EXAMINATION

15 BY MS. FRANZETTI:

16 Q. Thank you, Ms. Tipsord. For the
17 record, my name is Susan Franzetti. I am counsel
18 for Midwest Generation, and I am with the law firm
19 of Nijman Franzetti, LLP, and sitting to my
20 immediate right is one of Midwest Generation's
21 experts, Mr. Greg Seegert, who has previously
22 testified in this proceeding.

23 Mr. Twait, do you have a copy of
24 my pre-filed questions in front of you?

1 A. Yes, I do.

2 Q. All right. Let's start at the top.

3 MS. WILLIAMS: Excuse me. Before
4 you start at the top, did you plan to replace your
5 pre-filed questions in the record where you had
6 some mistakes, or were you just going to read
7 them? Do you remember how there were some
8 questions that were cut off?

9 MS. FRANZETTI: I believe my
10 administrative assistant already provided the
11 Board with a corrected copy and sent it out to all
12 counsel. It was just in a couple of spots. So I
13 am going to read the questions anyway.

14 MS. WILLIAMS: We just got an e-mail
15 from you, right?

16 MS. FRANZETTI: Right. Well, you
17 definitely got an e-mail from me subsequent to
18 that. The corrected version was substituted.

19 MS. WILLIAMS: Okay. I didn't see a
20 corrected version.

21 MS. FRANZETTI: Subsequent to that a
22 corrected version was substituted.

23 HEARING OFFICER TIPSORD: Go ahead.

24 BY MS. FRANZETTI:

1 Q. All right. Starting with question
2 one on thermal background temperatures, on page
3 eight of your pre-filed testimony you state that
4 quote, USEPA commented that they believed that the
5 background station that the Agency picked, Chicago
6 Sanitary and Ship Canal, Route 83 was not
7 representative of the background temperature of
8 the system. In discussions with USEPA, the Agency
9 agreed to use the less impacted station, Cal-Sag
10 Channel, Route 83.

11 My question went on to ask you,
12 based on the discussions with the USEPA referenced
13 in this portion of your testimony, please explain
14 the reasons it was concluded that the Cal-Sag
15 Channel Route 83 was a less impacted station than
16 the Chicago Sanitary and Ship Canal, Route 83
17 station.

18 A. It was based solely on -- well, it
19 was based on no heat source being upstream of the
20 Cal-Sag, Route 83 station.

21 Q. Whereas, there were heat sources
22 upstream of the Ship Canal, Route 83 station?

23 A. Yes. Crawford and Fisk were
24 operating and they are 10 to 15 miles upstream and

1 that's just a guess.

2 Q. And even though -- even though they
3 are not operating today, they only ceased
4 operation in late 2012. So would it be difficult
5 to go back to that station now as you would not
6 have many data points?

7 A. Well, yeah, we would only have one
8 year of data.

9 Q. Moving on to question two.
10 Did the Agency consider whether
11 the closure of the Fisk and Crawford station has
12 any affect upon the selection of the Cal-Sag
13 Channel, Route 83 as the closest less impacted
14 station? We may have just dealt with that.

15 A. The Agency didn't look at a new set
16 of data, and it would only be less than a year.

17 Q. And you think that would be
18 inadequate?

19 A. I think so. Especially -- I mean,
20 yes.

21 Q. By any chance, did you discuss that
22 with USEPA region five as to whether now they
23 would want you to go back to the Ship Canal and
24 Route 83 station because Fisk and Crawford have

1 closed?

2 A. We have not discussed that.

3 Q. Moving to question three. On page
4 eight of your pre-filed written testimony, you
5 state that, quote, the evaluation of the data
6 revealed that the use of the 75th percentile data
7 for the period average resulted in violations of
8 the data from the background station. Therefore,
9 the Agency has proposed using the 90th percentile
10 of the temperature from the background station as
11 the period average.

12 I know that you have today
13 handed out Exhibit 485 that does contain at least
14 some data on the Cal-Sag and Route 83 background
15 station, but just so the record is clear, what is
16 the data? And I am going to the pre-filed
17 question subparagraph A. What is "the data,"
18 including the time period represented by that
19 data, which you are referring to in your statement
20 that using the 75 percentile data for the period
21 average resulted in violations of the data from
22 the background station?

23 A. It is appendix two of Chris Yoder's
24 temperature criteria options for the Lower Des

1 Plaines River, and the date of the data is 1998
2 through 2004.

3 Q. Okay.

4 HEARING OFFICER TIPSORD: Just to
5 clarify, that data is in Exhibit 15.

6 MS. WILLIAMS: Correct.

7 BY MS. FRANZETTI:

8 Q. Moving on to B. I don't think you
9 have testified about this today. During your
10 March 11th, 2008 UAA rulemaking hearing testimony
11 you testified that you had not broken out the
12 MWRDGC data into the periods covered by the
13 proposed period average thermal standards to
14 review whether or not there would be compliance
15 with the proposed period averages that were based
16 on the 75th percentile data, and have you since
17 done this type of review of the data, and if so,
18 what did it show?

19 A. Are you asking -- are you asking
20 about their effluent data or their stream data?

21 Q. Well, I am asking about the data
22 that you used in order to come up with the period
23 averages.

24 A. Okay. Yes, we did look at that and

1 we did note that there were violations, and
2 that's -- the summary is on Exhibit 484.

3 Q. Well, but that was for the --
4 previously -- excuse me. Exhibit 484, that was
5 for the previously proposed period average values,
6 wasn't it?

7 MS. WILLIAMS: And that's what he is
8 answering in your question B about his 2008
9 testimony.

10 BY MS. FRANZETTI:

11 Q. Okay. I see how you interpreted it.
12 All right. I understand.

13 Have you taken that data and
14 looked at it based on now your proposed period
15 average values?

16 A. When we used the 90th percentile of
17 the Cal-Sag Channel station at Route 83, using the
18 90th percentile we did not see violations based on
19 the period average.

20 Q. And is that the information that I
21 now have in Exhibit 485 in part? I have more than
22 that in 485.

23 A. Yes, that station is in there.

24 Q. Okay. Moving on to C. During your

1 March 11th, 2008 UAA rulemaking hearing testimony
2 you testified that you did not know how much the
3 temperature of the District's discharges varied
4 from year to year. Have you since reviewed the
5 District's data to determine the extent of thermal
6 variation, and if so, please describes the results
7 of your review.

8 A. I have not.

9 Q. Again, referring to your pre-filed
10 testimony and moving on to Subparagraph D. You
11 used the phrase, "resulted in violations of the
12 data from the background station." Just please
13 explain what you mean by the phrase "violations of
14 the data."

15 A. What I was trying to imply there is
16 we took the 75th percentile and compared it
17 against the background station's monthly averages.

18 Q. So it does not in any way involve
19 looking at any other dischargers' thermal
20 discharges, what the temperatures are and whether
21 you think they will be in compliance?

22 A. No. We were looking at compliance
23 of the site that we chose as background.

24 Q. Moving on to question four, on pages

1 eight to nine of your pre-filed testimony, you
2 state that quote, the thermal standards for the
3 monthly average for the non-summer months is based
4 on the least restrictive of the 75th percentile of
5 the temperatures from the MWRDGC effluent and the
6 90th percentile of the temperature from the
7 Cal-Sag Channel Route 83 station.

8 Consequently, the Agency used
9 the effluent temperature from the MWRDGC's North
10 Side, Calumet and Stickney facilities as the
11 background temperature instead of using
12 temperatures of the Cal-Sag Canal Route 83 station
13 during the periods of the non-summer months when
14 the effluent temperature was higher than the
15 background temperature.

16 Have we earlier today
17 established that that was a misstatement, or was
18 that a different part of your pre-filed testimony
19 I am thinking about, in Albert's questioning?

20 A. No, I think the way it's written
21 here is correct.

22 Q. That is correct?

23 A. I had just misspoken earlier.

24 Q. Okay. These periods were January,

1 February, September 16 to 30, October, November
2 and December, end quote.

3 The question is, was the purpose
4 of using the MWRDGC's effluent temperature as the
5 background temperature on which to establish the
6 proposed thermal period average temperatures
7 during these non-summer month periods instead of
8 using the Cal-Sag Channel, Route 83 station
9 temperatures to avoid proposing period average
10 standards that the District's discharges would
11 likely violate during these non-summer month
12 periods?

13 A. We believe in this system that the
14 effluent is the true background of this system.
15 At times they are 100 percent of the flow.

16 MR. ETTINGER: So was that yes?

17 THE WITNESS: Yes. I'm sorry.

18 That's a no.

19 We believe that they are the
20 true background. We didn't -- we believe they are
21 the true background of this system.

22 BY MS. FRANZETTI:

23 Q. Okay. Now, if you believe the
24 District's discharge is the true background for

1 the system, then why don't you use the District's
2 thermal effluent data year round?

3 A. Basically during the late spring and
4 early fall, the District's effluent is traveling
5 underground, and it gets influenced by the
6 temperature of the ground, and so it's cooler than
7 the rest of the stream. So we thought we came up
8 with the -- a good way to get to a background.

9 Q. Okay. Maybe I am having a problem,
10 because I can't keep it straight in my head when
11 you are using the District's temperature data as
12 background and when you are not.

13 You are using the District's
14 data January, February. So that -- am I correct?

15 A. Yes.

16 Q. Okay. Those are winter months?

17 A. Yes.

18 Q. Not really late spring and early
19 fall, right?

20 A. Yes.

21 Q. Okay. So I understand you are
22 saying September 16 to 30, October, November --
23 well, wait. Let's stop. Let me stop. I'm sorry.

24 You just told me that the

1 District's influent to their plant in the late
2 spring and early fall, because it passes through
3 the ground --

4 A. It's getting cooled off.

5 Q. It's cooler, okay.

6 And so you don't want to use the
7 District's effluent during those times, because
8 it's being artificially cooled? I'm not
9 following, Mr. Twait. I'm sorry.

10 A. I think that's exactly it. It's
11 being artificially cooled by the ground, and
12 during the wintertime it's being artificially
13 warmed up by the ground.

14 Q. Okay.

15 MR. DIMOND: Just a question for
16 clarification.

17 Mr. Twait, are you saying that
18 it's the influent or the effluent that's traveling
19 through the ground and either being warmed or
20 cooled?

21 THE WITNESS: It's the influent to
22 the treatment plant that's being either warmed or
23 cooled by the ground, but it's the temperature of
24 the effluent that we relied on for setting the

1 standard.

2 MR. DIMOND: Okay.

3 MR. ETTINGER: Just to simplify
4 here, without regard to what the cause is of the
5 temperature of the effluent, isn't sewage
6 treatment discharge typically warmer than what you
7 would otherwise expect in the winter and cooler
8 than what you would otherwise expect in the
9 summer?

10 THE WITNESS: It's cooler than --
11 it's warmer during the winter from the ambient
12 temperature and cooler in the summer.

13 MR. ETTINGER: Thank you.

14 BY MS. FRANZETTI:

15 Q. Here's what I am struggling with,
16 Mr. Twait. If the Agency believes that in this
17 system the District's effluent is the true
18 background, then isn't it the true background any
19 time of the year, regardless of whether it may be
20 a little warmer in winter than in summer, than in
21 a natural waterway where you would never say that
22 a municipal plant's discharge is the true
23 background?

24 Isn't it -- if it's the true

1 background, it's really always the true background
2 here, because it's always at least 50 percent or
3 more of the flow?

4 A. I don't know how to answer that
5 other than to tell you what we did, and I have
6 explained that, so, yeah. I don't know how to
7 answer that.

8 Q. All right. Can you tell me whether
9 this is one of those issues where you are trying
10 to address a USEPA concern?

11 MS. WILLIAMS: Why don't you explain
12 what would happen if you -- to the proposed
13 standard if we do what Ms. Franzetti is asking.

14 THE WITNESS: Well, nothing would
15 change in January or February. March would be 54
16 degrees instead of 54.4, April 1st through 15th
17 would be 57 degrees instead of 58.9, late April
18 would be 60.8 degrees instead of 62.9 and the
19 first part of May would be 63 degrees, 63.3
20 degrees instead of 68.1. May -- late May would be
21 65.9 degrees instead of 70.4, and the first part
22 of June would be -- instead of -- it would be 72.5
23 instead of 75.5, and then the rest of the months
24 would be the same.

1 So it changes March, April, May
2 and the first part of June.

3 BY MS. FRANZETTI:

4 Q. I understand what you are saying,
5 but I think I still have a question pending as to
6 whether the hybrid approach is based on addressing
7 a USEPA concern.

8 A. No, I don't think they had the
9 concern at first. I think the District has
10 pointed out that our original proposal would have
11 them violating the standard in the winter months,
12 and that's when the Agency started looking into it
13 further.

14 Q. Okay.

15 MR. ETTINGER: Once again, I'm
16 sorry. Doesn't your approach always make it
17 easier for dischargers who are discharging heated
18 effluent to avoid violating the standard than they
19 would otherwise?

20 THE WITNESS: Our approach picks the
21 higher number of the two, yes.

22 MR. ETTINGER: So, in fact, using
23 the hybrid approach favors dischargers?

24 THE WITNESS: Yes.

1 MR. DIMOND: I am going to object.
2 Compared to what? If you use -- if you continued
3 to use the higher of the MWRD effluent, and the
4 Chicago Sanitarian Ship Canal and Route 83, would
5 not those numbers be a little bit higher than the
6 numbers you get by using the Cal-Sag Channel and
7 Route 83?

8 THE WITNESS: Not all the time.

9 MR. DIMOND: But in a number of
10 periods the number would be higher, correct?

11 THE WITNESS: Yes.

12 MR. DIMOND: Thank you.

13 BY MS. FRANZETTI:

14 Q. I am moving on to 4B.

15 Please explain how this approach
16 of using a municipal discharger's effluent
17 temperatures in setting thermal water quality
18 standards is consistent with the Clean Water Act.

19 A. The Clean Water Act requires us to
20 adopt a protective standard, and we believe we
21 have done that.

22 Q. Is that in part because given that
23 it is an effluent dominated stream, the fish are
24 going to have to acclimate to the nature of those

1 effluent dominated -- the temperature of those
2 effluent dominated waters?

3 A. I think that the fish are going to
4 be subject to those, yes.

5 Q. Moving on to C, please explain your
6 basis for interpreting the Clean Water Act's
7 provisions to -- well, I think you have answered
8 this, actually. I am going to stop and -- I'm
9 sorry. I'm sorry. Let me begin again.

10 Please explain your basis for
11 interpreting the Clean Water Act's provisions to
12 allow a municipal discharger's effluent
13 temperatures to serve as the background
14 temperature for purposes of establishing thermal
15 water quality standards, but does not allow the
16 same approach for an industrial discharger's
17 thermal discharges.

18 A. Because they are not -- the
19 municipal discharger is not inducing a thermal
20 component.

21 Q. Can you explain what you mean by
22 that?

23 A. They are not heating up the water on
24 purpose.

1 MR. ANDES: Can I ask a follow-up?

2 MS. FRANZETTI: Yes.

3 MR. ANDES: Mr. Twait, is it also
4 based on the fact that here the municipal
5 discharger's effluent, in essence, is the
6 background?

7 THE WITNESS: We believe so.

8 BY MS. FRANZETTI:

9 Q. Was that true of the Fisk and
10 Crawford stations when they were discharging
11 upstream of the District's Stickney plant?

12 A. They were also downstream of the
13 North Side plant. That's where the water was
14 coming from, if I am correct.

15 Q. Excuse me. My pen has decided to --
16 I am going to skip D, because I do think you have
17 answered that question. Moving on to five.

18 Please explain the difference in
19 the percentage of flow in the Chicago Sanitarian
20 Ship Canal represented by the District's Stickney
21 plant discharge between the summer months and the
22 non-summer months as those terms are used in your
23 written testimony and the Agency's proposed
24 thermal standards.

1 A. I don't have that type of flow
2 breakdown.

3 Q. Moving on to question six. Please
4 explain how the Agency arrived at the thermal
5 proposal -- hang on a second. If I can just take
6 a minute to read this, because I think I am back
7 into an area where these questions may have been
8 mostly asked.

9 I am going to skip A. I think
10 you have answered that in your prior testimony,
11 but let me ask you B. Please explain why the
12 90th percentile rather than a higher percentile
13 for the Cal-Sag Channel Route 83 station was used
14 for your proposed period average standards?

15 A. We were trying to come up with an
16 average for the water quality standard, and after
17 someone noted that 75th would be problematic, we
18 went back and tried the next percentile that was
19 available in the data set, which was
20 90th percentile, and that made it so there was no
21 violations in our background station, and we
22 stopped there.

23 Q. Okay. So that was really the goal.
24 Get to a number -- get to a percentile of the data

1 where you eliminated any exceedances of your
2 period average standards at the background
3 station?

4 A. Yes. And I will also mention that
5 we didn't just look at average. The Yoder
6 document also had some outlier cutoffs, the
7 75th plus 1.5 times the IQR, which is
8 interquartile ratio or 75th percentile plus 2.5
9 times the interquartile ratio, and the Agency
10 thought that the 90th was probably the better
11 choice.

12 Q. Than those alternatives that
13 Mr. Yoder mentioned?

14 A. Yes. And they were just in his
15 chart. I don't know that he put them there for --
16 for a period average.

17 Q. I am going to ask you, 6C, is there
18 precedent from other states or in USEPA guidance
19 documents to support the use of either of these
20 percentiles, the 75th or the 90th?

21 A. Not that I am aware of.

22 Q. Moving on to question seven. I
23 think you have answered seven. I am going to skip
24 seven.

1 Question eight, in his
2 January 31st, 2008 hearing testimony, the Agency's
3 expert, Chris Yoder, testified, there are no
4 biological data assessments that suggest that
5 maintaining the normal seasonal cycle requires
6 achieving background temps uninfluenced by man,
7 January 31st, 2008, hearing transcript at page
8 126.

9 What evidence is the Agency
10 relying on for its position that higher
11 temperatures than those proposed for the period
12 averages during the non-summer months would
13 inhibit gametogenesis or other functions of
14 species likely to be resident during those
15 periods?

16 A. The Agency did not look at any
17 biological data. By choosing a background
18 temperature, it is following Chris Yoder's
19 methodology.

20 Q. So this proposal really hinges on
21 Mr. Yoder's methodology?

22 A. Yes.

23 Q. What is puzzling about that is that
24 Mr. Yoder himself testified that there is no

1 biological data assessments that suggest that
2 maintaining this quote, unquote, normal seasonal
3 cycle uninfluenced by man, particularly in a
4 pretty much manmade canal is necessary. I am --

5 MS. WILLIAMS: So, wait. Are you
6 saying that --

7 MR. ETTINGER: Do you want to try
8 and pretend to make that into a question?

9 MS. WILLIAMS: I don't think
10 that's -- yeah.

11 BY MS. FRANZETTI:

12 Q. But we are -- I will try and make it
13 a question.

14 Does it cause you any concern
15 that the man who is the proponent of this approach
16 that you have to maintain this seasonal type cycle
17 is admitting that there is no biological data to
18 support that approach, the need for that approach?

19 A. Well, I am not sure what Chris was
20 saying here, but we are not going to find in these
21 waters a temperature that's uninfluenced by man,
22 and I mean, we could take the background station
23 as like the little Calumet River, but that's
24 influenced by man also. So that's not even a good

1 idea, but Chris's methodology was to use a
2 background temperature, and that's what we have
3 done here.

4 Q. I understand that that was
5 Mr. Yoder's methodology, but did the Agency give
6 consideration to the fact that with the kinds of
7 species you have got in these waters or likely to
8 be present in these waters, particularly I am
9 talking about Use B, that with those types of
10 species they don't need this seasonal cycle of
11 temperatures in order to protect them as to
12 functions like gametogenesis?

13 A. I am not a biologist. So I don't
14 really know the limits of what he was talking
15 about here.

16 Q. Okay. Question nine, is it correct
17 that the background temperatures at the Cal-Sag
18 Channel Route 83 and the District's effluent
19 temperatures are the sole basis for determining
20 the proposed period average thermal standards and
21 that the proposed period average standards are not
22 based on the use of either laboratory or field
23 derived thermal effects end points for aquatic
24 species?

1 A. That is true for the non-summer
2 months.

3 Q. And for the summer months, what is
4 true is you have just knocked down the period
5 average -- I mean, the daily maximum limit by two
6 degrees, correct?

7 A. To achieve the period average, yes,
8 two degrees Celsius.

9 Q. And again, that's not based on field
10 derived thermal effects end points for aquatic
11 species, is it, that two degrees from field data
12 you have collected?

13 A. I'm not quite sure how Chris decided
14 on the two degrees Celsius.

15 Q. So, once again, the two degrees
16 Celsius approach to setting the summer month
17 period averages, that, again, is solely
18 Mr. Yoder's methodology is how the Agency came to
19 propose those numbers?

20 A. Yes.

21 Q. 9A, has the Agency compared its
22 proposed period average standards to any
23 laboratory or field derived thermal effect studies
24 for the types of aquatic species that Use A or Use

1 B use designations are intended to protect to
2 consider whether or not the proposed period
3 averages may be more stringent than necessary to
4 protect the species present or expected to be
5 present in Use A and Use B designated waters?

6 MS. WILLIAMS: And you are asking
7 this about the non-summer?

8 BY MS. FRANZETTI:

9 Q. Yes.

10 A. No.

11 Q. Given the way the summer months were
12 derived, same question with respect to the summer
13 months.

14 A. I can't answer that.

15 Q. Okay.

16 A. Because I don't know.

17 Q. Okay. So with respect to 9B where I
18 was giving an example of the type of comparison
19 that might be made to data or studies regarding
20 temperature or end points for growth; such as, the
21 mean weekly average temperature for growth that
22 Mr. Yoder testified about in this rulemaking as a
23 reasonable temperature which allows species to
24 still be able to grow and thrive, you haven't

1 compared your proposed period averages to any data
2 studying what that particular growth end point is
3 for the type of species that are present in Use A
4 and Use B waters?

5 A. He does report an M watt for growth,
6 although, I don't know that the Agency went back
7 and made the comparison.

8 Q. Moving on then to the next series of
9 questions. They are on the thermal period average
10 standards. Okay. I'm sorry. I am just pausing
11 to read it to make sure you haven't answered it
12 already, and I don't think you have on this on
13 10B. 10A, Ms. Williams, am I correct that the
14 Agency has corrected that with its errata sheet
15 that it introduced into the record this morning
16 and now both Sections 302.408(b) and 302.408(c)
17 will be deleting the phrase "on an average basis"?

18 MS. WILLIAMS: That's what we have
19 in Exhibit 482, correct.

20 BY MS. FRANZETTI:

21 Q. Thank you. But moving on to B, what
22 was the intended meaning of the now proposed for
23 removal language "on an average basis"?

24 A. I think that it was just extraneous

1 language.

2 Q. Okay. So upon reflection --

3 A. You've got to meet the average on an
4 average basis, and I think there is -- I mean, if
5 you are meeting the average, then it's already on
6 an average basis.

7 Q. Okay. You know what, let's move on
8 to the next question, because then I think it
9 starts to get to the point that I am trying to
10 understand how the period average will actually be
11 applied by a discharger or how a discharger will
12 determine compliance with a period average. So
13 moving to 10C. Without the proposed phrase,
14 quote, on an average basis, the language of
15 Sections 302.408(b) and (c) would provide that the
16 ambient water temperature in the subject aquatic
17 life Use A and B waters, quote, shall not exceed
18 the period average limits in the following table
19 during any period, end quote.

20 Is it the intent of this
21 language that where the period average is exceeded
22 during any time in the period covered in the
23 table, it would constitute a violation? So for
24 example, taking the month of January where the

1 proposed period average is 54.3 degrees for the
2 entire month, if as of January 15 a thermal
3 discharger's average effluent discharge
4 temperature is 55 degrees Fahrenheit, i.e., a
5 little higher than the period average of 54.3, is
6 that discharger in violation of the period average
7 water quality standard, or do you need to wait up
8 until January 31st to calculate the discharger's
9 average effluent discharge temperature for the
10 entire month of January in order to determine if a
11 violation of the January period average has, in
12 fact, occurred?

13 THE WITNESS: I believe you would
14 have to wait until that month has ended to see the
15 period average.

16 MR. ETTINGER: Well, and I am going
17 to object or clarify again. She is talking about
18 a water quality standard and a permit, and we
19 don't know what the permit will say vis-à-vis the
20 water quality standard. So whether or not that
21 discharger violated or not, we don't know until we
22 see the permit.

23 THE WITNESS: That would be true.

24 BY MS. FRANZETTI:

1 Q. That would be true if there is --
2 well, let me back up.

3 Aren't dischargers that have a
4 reasonable potential to exceed the period average
5 water quality standards going to likely get an
6 effluent limit in their NPDES permit?

7 A. Yes, and that will usually apply at
8 the edge of the mixing zone.

9 Q. If there is a mixing zone?

10 A. If there is a mixing zone.

11 Q. Okay. And that's fine. And we can
12 make that assumption here, that there is a mixing
13 zone.

14 But Mr. Ettinger's question
15 seems to imply that an individual discharger for
16 NPDES permit purposes isn't going to have to be
17 concerned about period average water quality
18 standard. Is that your view?

19 A. I would think that they would have
20 to wait until the end of the month to see if there
21 was a violation, to see if they met the average
22 temperature at the compliance site.

23 Q. Okay. I think you have answered my
24 question.

1 The discharger with a reasonable
2 potential to exceed a period average is going to
3 have some sort of period average number in their
4 permit that they have got to meet each month?

5 A. Yes.

6 Q. Okay. Okay. Moving on to 11. I
7 don't think you have answered this question today.

8 With regard to a thermal
9 discharger's efforts to comply with the period
10 average standards, does the Agency appreciate that
11 because the discharger cannot predict or control
12 the temperature of the receiving water upstream of
13 its intake, that the use of period averages,
14 particularly period averages that cover an entire
15 month, may require a discharger to reduce the
16 temperature of its discharge to several degrees
17 below the period average to insure that as the
18 month continues if receiving water temperatures
19 rise it can still remain in compliance?

20 A. Yes. The Agency appreciates the
21 complexity that it involves.

22 Q. Has the -- well, let me stick with
23 the questions here.

24 Moving on to A; given the

1 difficulties in accounting for changes in the
2 river temperature as a given month continues,
3 would the Agency consider including in the period
4 average standard an excursion hour concept that
5 would provide some protection for thermal
6 dischargers who use the receiving water as their
7 intake water when there is a significant change in
8 the temperature of the receiving water in the
9 second half of a month versus the first half of a
10 month?

11 A. I'm not quite sure how that would
12 work, because then you are talking about a monthly
13 excursion, rather than an hourly excursion for
14 like the daily max, but I am sure that the Agency
15 would consider it if it was brought forward.

16 Q. Now, believe me, I appreciate that
17 it is hard to figure out how to apply that, but it
18 also seems unreasonable. Again, we are in a
19 waterway here where locks and dams are
20 artificially controlling the flow. You can get
21 bathtub like conditions between the dams for
22 periods of time when there is really no new flow,
23 and then if you get hot days towards the end of
24 the month, we have seen that a little bit already

1 this year, and you can really get big differences
2 in temperature between early in the month and
3 later in a given month, and I think most of the
4 dischargers here who have any thermal concerns
5 don't really have the ability to cool their
6 discharges, the temperature of their discharges.

7 And so all of a sudden things
8 jump up in the last few days and you can slightly
9 exceed a period average. Do you have any opinion
10 as to whether that type of scenario is not
11 something that will likely have any significantly
12 adverse effect on the aquatic life?

13 MS. WILLIAMS: I don't understand
14 what you would be asking as far as that. Are you
15 saying the whole month would be out, or you would
16 take out -- I don't think it's making sense to me
17 what the question is that you are asking us to
18 consider having an impact.

19 BY MS. FRANZETTI:

20 Q. Forget the use of excursion hours.
21 It was just -- a concept. It's the idea that you
22 get, a little bit of leeway because it is so tough
23 to operate, to meet this new concept of period
24 average and hence in this artificially controlled

1 waterway that there could be some leeway for when
2 you get these somewhat higher temperatures towards
3 the end of the month that could put someone over
4 the period average?

5 A. Yeah. I don't know how much of an
6 impact it would be on the aquatic life. It's
7 something that we can look at to see if we can
8 resolve it in any way.

9 Q. Mr. Twait, can I ask you just
10 generally, have -- we haven't really talked about
11 this since 2008. In the course of the last
12 five-ish years, has the Agency been able to gather
13 any additional information, such as from other
14 states, about period average thermal standards,
15 whether it's Wisconsin, whether it's any others,
16 have you benefitted at all from some perhaps added
17 experience of other regulators with these thermal
18 period average concepts?

19 A. We have not.

20 Q. Is your sense that it's not
21 something that really is out there in other
22 states' regulations as of today?

23 A. I think it's probably something that
24 we can look at.

1 MR. DIMOND: What was the answer?

2 THE WITNESS: I think it's something
3 that we can look at.

4 BY MS. FRANZETTI:

5 Q. Okay. Moving on to question 12.
6 How will a discharger be required to monitor for
7 compliance with the period average thermal
8 standards and use that monitoring data to
9 determine compliance? For example, does the
10 Agency intend to require continuous daily or less
11 frequent monitoring and depending upon which
12 frequency of monitoring is required, please
13 explain how that data is to be used to calculate
14 the average thermal discharge temperature for
15 purposes of determining compliance with the period
16 average.

17 A. The permit section will determine
18 the frequency of monitoring, as they do with all
19 permits, and all data that is collected should be
20 used in the average.

21 Q. Assume that the permit section
22 requires a continuous thermal monitor be placed on
23 the discharge, the outfall, to monitor
24 temperature. Then do you compute a daily average

1 from one day's worth of reading's or do you just
2 add them all up over the course of the month and
3 divide by something? Do you have any -- has this
4 been talked about? Do you have any sense?

5 A. We haven't really talked about it.
6 Although, I would sense that the Agency would
7 probably just require all data that's collected to
8 be used in the average; such as, using continuous
9 data is once every 15 minutes rather than every
10 second, you come up with the temperature, and so I
11 mean, that's 96 temperatures a day. So I think
12 they would just average over the one-month period.

13 Q. So if there were 30 days in the
14 month, 30 times 96 would be your -- the value you
15 would divide your total temperatures by?

16 A. Yes. And it would work out the same
17 way if you took an average each day, and then took
18 an average of the averages. As long as you are
19 talking about the same number of samples each day,
20 it would work out the same.

21 Q. Moving on to section three of my
22 questions, daily maximum standards. Question 13
23 is Mr. Yoder's January -- excuse me. Let me start
24 again.

1 In Mr. Yoder's January 31st,
2 2008 hearing testimony, he testified that the
3 choice of whether to apply a daily maximum thermal
4 standard as an instantaneous maximum never to be
5 exceeded or instead as a daily average value, is
6 up to the people that convert these into
7 standards. That was January 31st 2008, the
8 hearing transcript at page 105.

9 Did the Agency consider
10 proposing daily maximum average values instead of
11 instantaneous daily maximum standards? And if so,
12 please describe how the Agency considered this
13 issue.

14 A. The Agency did not consider it. We
15 didn't see how it would work with excursion hours.
16 However, if excursion hours weren't part of the
17 standard, it might be acceptable.

18 Q. Okay. Moving on to section four,
19 thermal excursion hours. Question 14, Section
20 302.408(a) provides for both excursion hours up to
21 two percent of the hours in a 12-month period
22 ending with any month, any maximum exceedance
23 during those excursion hours if not more than two
24 degrees Celsius or 3.6 degrees Fahrenheit.

1 Is it intended that the
2 excursion hour provision apply to both period
3 average standards and the daily maximum standards
4 or to only the daily maximum standards?

5 A. It applies to the daily maximum
6 only.

7 Q. So there are no excursion hours for
8 the period averages?

9 A. The Agency wasn't clear how that
10 would work to have excursion hours as part of the
11 period average.

12 Q. Is that another way of saying that
13 if someone came up with an approach that seemed
14 logical and appropriate to you, to the Agency, the
15 Agency would be willing to consider it, because it
16 just wasn't able to come up with any approach?

17 A. I would say that's fair. We would
18 have to make sure that it was acceptable to USEPA,
19 but we would consider it.

20 Q. You know, I understand that USEPA
21 has review and approval authority under the Clean
22 Water Act of state's water quality standards, but
23 that's supposed to be in terms of determining is
24 it consistent with the Clean Water Act and its

1 regulations. On something like cold shock, which
2 we were discussing earlier, clearly something the
3 USEPA is pushing you all to do, have they shown
4 you where in the Clean Water Act or its
5 implementing regulations you have to have a cold
6 shock provision for waters like these or otherwise
7 you are -- your standards are inconsistent with
8 the Clean Water Act and its regulations?

9 A. I have not seen such a cite.

10 Q. I am on the cold shock section of my
11 questions, but I am kind of thinking at least some
12 of them must have been answered and so bear with
13 me.

14 Let me slightly change 15A. You
15 discussed cold shock with the USEPA. You tell
16 them, we have never seen it happen in this -- to
17 our knowledge, there has never been harm to fish
18 caused -- due to what everyone understands to be
19 cold shock, sudden drop in temperature of the
20 receiving water. What do they say back to you,
21 given that -- given that evidence or lack of
22 evidence that any cold shock provision is
23 necessary, what do they say is why it is necessary
24 in order for them to approve your thermal

1 standards?

2 MR. ETTINGER: I would like to
3 object. What did they say, or what do they say,
4 are you --

5 BY MS. FRANZETTI:

6 Q. What did they say, if they said
7 anything?

8 A. I think their response was, then
9 there is no reason not to include it.

10 Q. Okay.

11 MR. ETTINGER: Let me ask a
12 question. Has the Illinois Environmental
13 Protection Agency ever set up a program to monitor
14 for fish kills below power plants in the winter?

15 THE WITNESS: Not that I am aware
16 of.

17 MR. ETTINGER: Do you know for a
18 fact that there have never been fish kills below
19 the Quad Cities Nuclear Power Plant or Dresden or
20 any of the other power plants in this state during
21 the winter caused by cold shock?

22 THE WITNESS: Well, I do know that
23 there have been cold shock kills of fish, but they
24 typically happen in lakes such as Clinton Lake,

1 and I can't say that it's never occurred in the
2 state in a river system. I am just not aware of
3 any.

4 BY MS. FRANZETTI:

5 Q. Thank you. And the examples
6 Mr. Ettinger was giving, Dresden, for example,
7 that's a nuclear power station, isn't it?

8 A. Yes.

9 Q. And the three Midwest Gen power
10 stations on this waterway, none of them are
11 nuclear stations, are they?

12 A. No.

13 Q. In fact, even when Mr. Thomas, who I
14 think was Mr. Ettinger's witness, testified a few
15 years ago about his concern about cold shock, the
16 only examples, I believe, that he gave were
17 nuclear power stations causing cold shock. Do you
18 recall that, too?

19 A. I don't recall that.

20 Q. Okay. I am going to ask 16. I
21 don't think we have touched on that. Isn't the
22 risk of cold shock limited to the colder periods
23 of the year?

24 A. Yes.

1 Q. So did the Agency consider limiting
2 the application of the proposed cold shock rule to
3 the colder months of the year?

4 A. We did not. Facilities can operate
5 to avoid fish kills from cold shock during the
6 winter, however, during the summer there is
7 nothing that they would need to do to operate
8 differently that I know of.

9 Q. Moving to question 17. In the
10 winter months of January, February and March, if a
11 discharger maintains compliance with both the
12 daily maximum standard that is 93.3 degrees
13 Farenheit on a given day, but then drops its
14 discharge temperature below the approximately 53
15 or 54 degree period average thermal standard the
16 next day so it can maintain compliance with the
17 period average, is that discharger protected from
18 being in violation of the cold shock rule provided
19 that it maintains compliance with both the daily
20 max standard and the period average standard?

21 A. No, I don't believe so. If they
22 shut down in such a manner, non-emergency, if they
23 cause a fish kill they would be in violation.

24 MR. ETTINGER: Did I hear that

1 question? You are going from 90 to 56 in one day?

2 MS. FRANZETTI: Not in the same day,
3 but in close proximity to each other, and you are
4 doing it because you are trying to get back to the
5 period average --

6 MR. ETTINGER: If I understand your
7 question, you have heated the entire river up to
8 90 and you have managed to shut down the plant and
9 had it drop to 56 in a day?

10 MS. FRANZETTI: Albert, you are
11 still assuming that that's what's going to
12 determine whether you are in compliance. We have
13 already had testimony that this cold shock thing
14 could lead to procedures, special conditions in
15 one's permit that are going to add a layer of
16 additional compliance obligations.

17 MR. ETTINGER: I was just attempting
18 to understand your hypothetical.

19 BY MS. FRANZETTI:

20 Q. Well, I think you have understood
21 it.

22 Question 18, has the Agency put
23 some thought into how a thermal discharger is
24 going to control the water temperatures of its

1 discharge, quote, in a manner to protect fish and
2 aquatic life uses from the deleterious effects of
3 a cold shock?

4 A. I think they would need to change
5 the temperature slowly rather than just deciding
6 to shut it off one day, and as you have mentioned
7 before, nuclear facilities have that ability just
8 to shut down or relative quickly. I don't know if
9 coal power plant facilities have that ability to
10 shut off quickly.

11 Q. What does the language "deleterious
12 effects" of a cold shock mean?

13 A. I think the Agency would look at
14 that as a death of aquatic life.

15 Q. What -- 19A, what is the difference
16 between deleterious effects on fish versus on
17 aquatic life uses as also referenced in the
18 proposed language, or was this addressed in your
19 errata sheet?

20 MS. WILLIAMS: We have deleted uses.
21 It just says fish and aquatic life.

22 BY MS. FRANZETTI:

23 Q. 19B, what criteria will be used to
24 determine whether a discharger failed to control

1 its discharge so as to prevent the "deleterious
2 effects" of cold shock?

3 A. The Agency has intended for it to be
4 a fish kill other than an emergency event.

5 Q. Why did the Agency choose not to
6 provide a description or definition of the term
7 "deleterious effects"?

8 A. We modeled it after Wisconsin, and
9 we were not able to find a definition. It didn't
10 look like they defined it.

11 Q. I am going to modify 20 a bit,
12 because I think you have answered parts of it.

13 Mr. Twait, am I correct in
14 understanding that the suggestion of following
15 Wisconsin's approach came from region five,
16 correct?

17 A. Yes.

18 Q. Did region five mention whether
19 there were any other states that have promulgated
20 a cold shock provision in their thermal water
21 quality standards?

22 A. I don't -- I don't believe they
23 mentioned one way or the other.

24 Q. Did they happen to mention whether

1 they told Wisconsin just like they are telling you
2 that they needed to have a cold shock provision in
3 their thermal standards in order to get them
4 approved?

5 A. I do not know.

6 Q. You haven't talked to Wisconsin and
7 asked them that question?

8 A. No.

9 Q. Okay. Has the Agency, Illinois
10 EPA -- has anyone at the Agency tried to determine
11 whether any other states have a cold shock
12 provision?

13 A. We have not.

14 Q. My question 20A dealt with how
15 Wisconsin interprets its cold shock standard, and
16 am I correct counsel, that your exhibit --

17 HEARING OFFICER TIPSORD: 486.

18 BY MS. FRANZETTI:

19 Q. Whatever Ms. Tipsord just said, is
20 the response to that question?

21 MS. WILLIAMS: Exactly.

22 BY THE WITNESS:

23 A. Ah-huh.

24 BY MS. FRANZETTI:

1 Q. Exhibit 486, okay. I think you have
2 already answered 20B.

3 21A, the -- your proposed rules
4 don't define cold shock. Why does the Agency
5 believe that a definition of cold shock is not
6 necessary?

7 A. The Agency doesn't oppose defining
8 cold shock, but believes that our testimony can
9 define it.

10 Q. And 22, in the USEPA's 1992 report
11 entitled, quote, Review of Water Quality Standards
12 Permit Limitations and Variances For Thermal
13 Discharges At Power Plants, end quote, it was
14 concluded that, quote, guidance also needs to be
15 developed on cold shock, especially for older peak
16 power facilities which operate part-time. Cold
17 shock guidance may include parameters for
18 controlled temperature decreases during unit
19 shutdowns and control mechanisms to restrict fish
20 from the discharge channel, end quote.

21 Does the Agency agree that since
22 1992 the USEPA has not developed any guidance on
23 cold shock?

24 A. I don't know of any.

1 Q. 22A, during its discussions with
2 region five concerning the region's belief that a
3 cold shock provision should be included in the
4 Agency's proposed thermal water quality standards,
5 was there any discussion regarding postponing the
6 adoption of cold shock regulations until the USEPA
7 has issued guidance on cold shock as recommended
8 in its 1992 report?

9 A. No.

10 Q. 23, did you consider the alternative
11 of providing in the proposed rule for a maximum
12 allowable temperature difference between the
13 temperature of a discharger's effluent and the
14 temperature of the receiving water as a means of
15 prohibiting cold shock instead of the narrative
16 provision proposed by the Agency?

17 A. No. We didn't know of any specific
18 number that would prevent cold shock.

19 Q. Did you ask the USEPA if they did?

20 A. I don't know if we asked them that
21 specific question.

22 Q. Question 24, does the Agency agree
23 that the likelihood of cold shock is given by site
24 specific considerations such as the type of

1 facility discharging the thermal effluent and the
2 nature of the receiving water body?

3 A. I would agree with that.

4 Q. So if so, would the Agency consider
5 revising the proposed cold shock provision to
6 apply only when an evaluation of the discharger
7 and discharge conditions indicate that there is a
8 likelihood for cold shock occurring?

9 A. I don't know how the Agency or the
10 discharger would make that determination, but the
11 Agency is open to modifying the language.

12 Q. Or alternatively, would the Agency
13 consider revising the proposed cold shock
14 provision to provide that the Agency has the
15 authority to include in NPDES permits provisions
16 for protecting against cold shock when appropriate
17 based on site specific conditions?

18 A. I think the Agency would be open to
19 the language.

20 Q. Okay. Question 25, on page 10 of
21 your pre-filed written testimony you state that,
22 quote, this standard is not intended to be applied
23 to emergency shutdowns. However, all efforts
24 should be made through general operational

1 planning to avoid an emergency action that would
2 cause cold shock, end quote.

3 If this standard is not intended
4 to be applied to emergency shutdowns, is the
5 Agency amenable to including language in the
6 standard which expressly states that it does not
7 apply to emergency shutdowns?

8 A. I don't think the Agency would be
9 opposed. Originally, we had it in the proposed
10 language. USEPA made a comment that they thought
11 it was implementation and not a standard, and I
12 don't know if they were opposed to it or just
13 mentioning that it was implementation and not a
14 standard.

15 Q. Okay. So region -- so if I
16 understand your answer correctly, you actually had
17 language in a prior version of this cold shock
18 provision that said it didn't apply during
19 emergency shutdown situations?

20 A. Yes.

21 Q. And region five commented, that
22 sounds to us more like an implementation issue and
23 not a standards issue?

24 A. Yes. And that's why we included it

1 in my pre-filed testimony.

2 Q. Got it. But I'm not sure I
3 understand what region five is saying.

4 MS. WILLIAMS: Objection.

5 BY MS. FRANZETTI:

6 Q. On a lot of grounds. Can you
7 explain to me what they mean by, it's an
8 implementation issue? By who, the Agency or the
9 discharger?

10 A. By the Agency. It would be
11 something akin to Agency rules on how we are going
12 to enforce the water quality standard.

13 Q. All right. So region five says to
14 you, it shouldn't be in the proposed regulation.
15 You should, in turn, issue procedures or guidance
16 by the Illinois EPA that says this rule won't be
17 applied to emergency shutdowns?

18 A. I think they just made the comment
19 that it was wasn't a water quality standard. It
20 was -- it was implementation.

21 Q. Okay.

22 A. And I don't think they explained it
23 any more than that.

24 HEARING OFFICER TIPSORD: Ms. Rios,

1 did you have a follow-up?

2 MS. RIOS: Yes. Would the Agency
3 consider establishing a BTU threshold above which
4 the cold shock standard would apply?

5 THE WITNESS: I don't know what that
6 BTU threshold would be, but I mean, we could look
7 at something if it was drafted.

8 MS. RIOS: So you haven't had any
9 discussions with region five on that type of
10 issue?

11 THE WITNESS: No. And the smaller
12 the BTU facility, the less chance that there is
13 going to be a fish kill issue to begin with.

14 MS. FRANZETTI: All right. I think
15 this is a good breaking point.

16 HEARING OFFICER TIPSORD: I think
17 so, too. I don't think we can get through in
18 about 15 minutes.

19 So thank you all. We will have
20 a prehearing conference to set the next day of
21 hearing, and we will start with Midwest Generation
22 at that point. Thank you. We are adjourned.

23 (END OF PROCEEDINGS.)

24

1 I, KARI WIEDENHAUPT, do hereby certify that
2 the foregoing was reported by stenographic and
3 mechanical means, which matter was held on the
4 date, and at the time and place set out on the
5 title page hereof and that the foregoing
6 constitutes a true and accurate transcript of
7 same.

8 I further certify that I am not related to
9 any of the parties, nor am I an employee of or
10 related to any of the attorneys representing the
11 parties, and I have no financial interest in the
12 outcome of this matter.

13 I have hereunder subscribed my hand on the
14 8th day of August 2013.

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KARI WIEDENHAUPT, CSR

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