

BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

IN THE MATTER OF:

| | |
|------------------------------------|--------------------|
| THE APPEAL BY SOUTHERN | NO. BER 2007-06-AQ |
| MONTANA ELECTRIC REGARDING | NO. BER 2007-07-AQ |
| ITS AIR QUALITY PERMIT NO. 3423-00 | |
| FOR THE HIGHWOOD GENERATION | |
| STATION | |

TRANSCRIPT OF THE PROCEEDINGS
VOL. II

Heard at Montana Department of Environmental Quality
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Helena, Montana

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REPORTED BY: CHERYL ROMSA
 CHERYL ROMSA COURT REPORTING
 P. O. BOX 1278
 HELENA, MONTANA 59624
 (406) 449-6380

A P P E A R A N C E S

1
2
3
4 ON BEHALF OF MONTANA ENVIRONMENTAL INFORMATION
5 CENTER and CITIZENS FOR CLEAN ENERGY:

6 ABIGAIL DILLEN
7 Attorney at Law
8 EARTHJUSTICE
9 209 South Willson Avenue
10 Bozeman, Montana 59715

11 ON BEHALF OF DEPARTMENT OF ENVIRONMENTAL QUALITY:

12 DAVID RUSOFF
13 Assistant Attorney General
14 DEPARTMENT OF ENVIRONMENTAL QUALITY
15 P. O. Box 200901
16 Helena, Montana 59620-0901

17 ON BEHALF OF SOUTHERN MONTANA ELECTRIC GENERATION
18 AND TRANSMISSION COOPERATIVE, INC.:

19 KENNETH A. REICH
20 Attorney at Law
21 WOLF, BLOCK, SCHORR & SOLIS-COHEN, LLP
22 One Boston Place, 40th Floor
23 Boston, Massachusetts 02108
24 MICHAEL McCARTER
25 Attorney at Law
LUXAN & MURFITT PLLP
P. O. Box 1144
Helena, Montana 59624-1144

I N D E X

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WITNESSES

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1 WHEREUPON, the following proceedings were had:

2 CHAIRMAN RUSSELL: I guess you're still under
3 oath, even though someone else swore you in.

4 So let's go ahead.

5 MR. McCARTER: Mr. Chairman, Mike McCarter for
6 SME. What I'd like to do is, we intend to call Mr. Lierow
7 in our case on direct, so what I'd like to do, with the
8 Chairman's permission, is simply clear up the matter of
9 this one exhibit that was offered, MEIC A, and any other
10 matters, I can cover in our direct examination, if that's
11 okay with the Board.

12 JOSEPH LIEROW,
13 a witness, having been previously sworn, testified upon
14 his oath as follows:

15 CROSS-EXAMINATION

16 BY MR. McCARTER:

17 Q. Mr. Lierow, do you have MEIC Exhibit A before
18 you?

19 A. Yes, I do.

20 Q. Okay. And this appears to be an exchange of
21 e-mails between you and Mark Payne; is that correct?

22 A. Yes.

23 Q. Okay. And the first e-mail that begins the
24 sequence is from you to Mr. Payne?

25 A. Yes.

1 Q. And what is the date of that e-mail?

2 A. That is November 2nd, 2006.

3 Q. Okay. In the scheme of permits and draft
4 permits, on that date, what was the status of the permit
5 and the permit application?

6 A. I believe at this time, the draft permit was
7 issued.

8 Q. Okay. And do you recall what the filterable PM
9 limit was in that draft permit?

10 A. 0.012 pounds per million Btu.

11 Q. Okay. What triggered your e-mail?

12 A. Well, the e-mail -- we had a meeting with the
13 Department the previous day, and we had discussed
14 modeling, because we needed a remodel to move the facility
15 off the national landmark. And they requested that we
16 provide some PM2.5 modeling. So I e-mailed Mark
17 requesting some information on PM2.5 emissions for
18 material handling baghouses, which are mainly for coal
19 handling and limestone handling.

20 Q. Okay. Just give a thumbnail sketch of what is
21 involved with modeling and why you do it.

22 A. First, the reason we do it, we need to look at
23 the impacts from the facility and compare them to the
24 ambient standards or the Class 1 and Class 2 PSD
25 increments.

1 And what was the other part of your question?

2 Q. Why do you do it?

3 A. Or some of the material -- And then, basically,
4 we need to quantify emission rates per the emitting units
5 and put them into the model to get an assessment of what
6 the impacts would be on the fence line and outside the
7 fence line.

8 Q. Okay. And you were requesting information with
9 respect to the material handling baghouses. Why were you
10 requesting that information for modeling purposes?

11 A. We didn't have that information at all to -- in
12 our emission inventory.

13 Q. What are the material baghouses -- the material
14 handling baghouses?

15 A. They are baghouses that collect the dust when
16 coal or limestone is being transferred from one conveyor
17 to another or into a silo.

18 Q. So this is a baghouse that is completely separate
19 from the baghouse that's attached to the boiler?

20 MS. DILLEN: Objection, leading.

21 Q. (By Mr. McCarter) Well, explain the difference
22 between the material handling baghouse and the boiler
23 baghouse.

24 A. Well, they are two separate baghouses, I'll
25 clarify that. Typically, a boiler -- I shouldn't say

1 typically, but a boiler could have a baghouse for the
2 exhaust from the boiler, and then typically, you have
3 material handling baghouses to handle all the emissions
4 from transferring of coal or limestone in this -- at a
5 plant like this.

6 Q. Okay. Why didn't you request information for the
7 boiler baghouse?

8 A. Well, we had a pretty good indication of what the
9 PM2.5 emission rate would be based on the condensable
10 emission rate.

11 Q. Was the information you had a separate 2.5 or was
12 it a surrogate 10?

13 A. We ultimately used PM10 as a surrogate, but
14 we had a good indication that condensables were mainly
15 PM2.5.

16 Q. Mr. Payne, in his reply, which is at the top --
17 Firstly, what is the date of that reply?

18 A. It's November 6, 2006.

19 Q. Okay. In the sentence that you were requested to
20 read, it says, "In addition, if PM2.5 regulations come
21 into effect, our solution to comply is to install higher
22 efficiency bags."

23 Do you know what he was talking about when he said "if
24 PM2.5 regulations come into effect"?

25 A. No, I didn't know what he was talking about in

1 this sentence.

2 Q. Okay. With respect to higher efficiency bags, I
3 believe you indicated that the draft permit had a .012
4 limit. Would that have allowed the use of the fiberglass
5 bags or would you have had to use the Teflon-coated bags?

6 A. Are we talking material handling?

7 Q. No. I mean -- Okay.

8 A. The material handling emission rate was .0005.

9 Q. Okay. Did you have any understanding as to what
10 he's talking about in installing higher efficiency bags?

11 A. Not -- not at all, especially in context to my
12 question on material handling.

13 Q. So did this e-mail make any sense to you?

14 A. I didn't understand what he was referring to in
15 that first sentence of that paragraph.

16 Q. Okay. And did it affect anything that you did?

17 A. No, it didn't.

18 Q. Did it affect anything to do with the information
19 that you provided to the Department?

20 A. No, it didn't.

21 MR. McCARTER: That's all I have at this time.

22 MR. RUSOFF: The Department doesn't have any
23 questions of Mr. Lierow.

24 MS. DILLEN: We don't have any further questions
25 of Mr. Lierow at this time.

1 CHAIRMAN RUSSELL: Okay. Thank you. The witness
2 is dismissed, excused.

3 Oh, did you guys want to ask any questions?

4 MR. ROSSBACH: Is he going to be recalled?

5 CHAIRMAN RUSSELL: Yes. He'll be up tomorrow or
6 Thursday morning.

7 MS. SHROPSHIRE: So I can save my questions.

8 CHAIRMAN RUSSELL: All right. So we should
9 probably try to get another witness going or we're going
10 to be in trouble tomorrow.

11 So who is next in order? Is the Department next?

12 MR. RUSOFF: I just wanted to clarify that --

13 MS. DILLEN: We should clarify, we're resting our
14 case-in-chief at this point, and now the Department will
15 carry on with their own witnesses.

16 MR. REICH: Mr. Chair, if I might just clarify
17 what you're expecting. It looks like we are moving
18 hopefully faster than we all anticipated.

19 CHAIRMAN RUSSELL: No, we're anticipating at
20 least this pace, just for clarification.

21 MR. REICH: Well, that's good. We were trying to
22 rev it up as fast as we could.

23 CHAIRMAN RUSSELL: And you're doing a fine job.
24 See, two witnesses down.

25 MR. REICH: So in terms of the witnesses, the

1 Department will call one witness, Mr. Merchant, and then
2 after that, SME will call two witnesses, Mr. Lierow and an
3 expert witness, Mr. McCutchen. It's up to the Board,
4 obviously, how you want to handle the time, but I would
5 expect that between Mr. McCutchen and Mr. Lierow, if we
6 start at 8, I would think we could accomplish that in
7 four-some hours, you know, 12, 1. But, certainly, I don't
8 expect us to have to go into the evening, is what I'm
9 saying.

10 CHAIRMAN RUSSELL: Well, our hope was we'd have
11 some time tomorrow afternoon to deliberate as a board, so
12 if Eric is ready, we're ready.

13 MR. RUSOFF: Thank you, Mr. Chairman. The
14 Department calls Eric Merchant.

15 And if there's no objection, I prefer to examine
16 Mr. Merchant from the seated position. I'm having back
17 trouble today.

18 CHAIRMAN RUSSELL: David, why don't we just pull
19 the mic over.

20 ERIC MERCHANT,
21 a witness, having been first duly sworn, testified upon
22 his oath as follows:

23 DIRECT EXAMINATION

24 BY MR. RUSOFF:

25 Q. Would you please state your name and occupation.

1 A. Mr. Chairman, members of the Board, for the
2 record, my name is Eric Merchant, and I am an air quality
3 specialist with the Montana Department of Environmental
4 Quality's Air Resources Management Bureau.

5 Q. And how long have you been employed with the
6 Department's air quality program?

7 A. Just under nine-and-a-half years.

8 Q. Would you please describe your current position
9 with the Department.

10 A. Currently, I have just taken a new position with
11 the Department. I am in air quality program development
12 in the Air Quality Policy and Planning Section.

13 Q. Would you please describe any previous positions
14 that you've held with the Department.

15 A. Prior to that, up until a couple of months ago,
16 for a period just over nine years, I was in the Air
17 Quality Permitting Section, and within that position -- I
18 had a couple different positions within the Air Quality
19 Permitting Section, beginning with coming in and working
20 with portable-type sources and some other smaller, minor
21 sources. And then over the last several years, I've been
22 working in permitting major sources -- actually, the whole
23 gamut of sources, but primarily in major source
24 permitting.

25 Q. Before you came to work for the Department, did

1 you hold any previous positions in the environmental
2 field?

3 A. Just prior to coming to work for the Montana
4 Department of Environmental Quality, I was an air
5 quality -- I'm sorry, an environmental consultant, working
6 on issues in air, water, waste, all those types of issues.

7 Q. And would you please describe for Board any
8 college education that you've received related to your
9 employment with the Department.

10 A. I have a bachelor of science in biology, a
11 minor in -- and a minor in environmental studies, and then
12 I also have an MPH, a master's in environmental and
13 occupational health.

14 Q. Mr. Merchant, have you taken any training courses
15 related to your employment for the Department that dealt
16 specifically with PSD permitting?

17 A. I've taken many courses dealing with PSD
18 permitting; specifically, some introductory, intermediate,
19 and advanced courses in major new source review or major
20 NSR permitting, along with a gamut of training courses
21 that deals secondarily with BACT determination training,
22 effective permit writing dealing with major source
23 permitting. Just a series of training courses.

24 Q. How frequently have you attended training courses
25 related to air quality permitting?

1 A. I would say, on average, one or two, maybe three
2 courses a year.

3 Q. Do you have any rule development experience
4 related to air quality permitting?

5 A. I do.

6 Q. And could you describe that experience briefly
7 for the Board, please.

8 A. I was -- Based on litigation on another proposed
9 power plant in Montana, I was the lead writer of a rule
10 for presentation to the Board titled the "Montana Top-Down
11 BACT Rule" or "BACT Rule," and we presented that -- we
12 presented that to the Board for an initiation, and it was
13 not adopted by the Board.

14 And in addition to that, I was the lead rule writer on
15 a rule -- well, essentially, modification of our rules to
16 incorporate the federal new resource review reform rules.
17 In that case, Montana ultimately made a determination
18 or sent a determination to the federal EPA indicating that
19 our program was at least as stringent or more stringent
20 than the proposed -- or the new resource review reform
21 package, and so we did not adopt those rules either.

22 And then one other rule that I worked on for adoption
23 by the Board was our initial -- our initial rule
24 development project for registration of minor sources,
25 and, specifically, portable-type sources, registration or

1 general permitting.

2 Q. Who requested development of the draft BACT
3 process rule that you stated that you worked on and
4 presented to the Board?

5 A. The Board requested that that rule be developed
6 and proposed.

7 Q. And then I believe your -- it was your testimony
8 that the Board decided ultimately not to go through with
9 initiation of rulemaking to adopt that rule?

10 A. That's correct.

11 Q. Would you please describe the general process
12 that you follow in reviewing an application for an air
13 quality permit for a major stationary source like a power
14 plant.

15 A. Generally speaking, the applicant would submit --
16 the applicant or their consultant would submit an
17 application for my review as the lead permitter on the
18 project. I would have a period of time in which to
19 determine whether or not that application is complete. In
20 Montana, that's a 30-day period. Typically, you're going
21 to find, with any application, there's going to be
22 deficiencies or additional information that is required.
23 In that case, I would send a letter to the applicant
24 highlighting the information that's necessary to complete
25 the application. I would then receive information back.

1 I would then have another period of time in which to
2 analyze the response to determine whether or not that
3 completes the application.

4 When I deem the application complete, then I have a
5 40-day period in which to issue a draft air quality permit
6 for public comment, and then we follow the process through
7 to a final permit.

8 Q. Did your duties as an air quality permitter for
9 the Department include reviewing air quality permits that
10 other department staff had drafted?

11 A. Yes.

12 Q. In the course of your employment as an air
13 permitter, did you also have occasion to review permits
14 drafted by EPA and other state permitting authorities?

15 A. Yes.

16 Q. Did you regularly review permits issued by EPA in
17 other states?

18 A. Yes.

19 Q. And how many of those permits that you regularly
20 reviewed involved emission controls for PM10?

21 A. Almost all of them. There may be a few
22 exceptions.

23 Q. Mr. Merchant, are you familiar with the
24 Department's air quality permitting rules?

25 A. I've worked very closely with them for over

1 nine years. Yes.

2 Q. Can you state approximately how many air quality
3 permits you've drafted for the Department.

4 A. Approximately 200, a few more than that.

5 Q. And of those approximate 200 permits that you've
6 drafted for the Department, can you state how many of
7 those permits have involved determining BACT for PM10?

8 A. Because PM10 is a regulated pollutant, again, I
9 would say most of those permits dealt in some regard -- or
10 dealt with PM10 in some regard. And specifically BACT,
11 with the exception of some amendments, permit amendments
12 that didn't deal with that or modifications that didn't
13 deal with PM10, I would say, again, the majority of those
14 permits had a BACT process for PM10.

15 Q. For those permits that involved BACT for PM10,
16 did you research PM10 emission control technologies for
17 the permits?

18 A. Yes.

19 Q. Can you state approximately how many air quality
20 permits you've reviewed that someone else has drafted,
21 either for the Department or for other permitting
22 authorities.

23 A. It's hard to come up with an approximate number,
24 but I would say at least as many permits as I've written;
25 maybe 200 or more.

1 Q. Have you previously drafted air quality permits
2 for major stationary sources like the SME Highwood
3 Generating Station?

4 A. Yes.

5 Q. Is there any required process for making a BACT
6 determination other than what is specified in Montana's
7 Subchapter 7 and 8 rules regarding BACT?

8 A. No.

9 Q. Are you familiar with the EPA's Draft 1990 New
10 Source Review Manual, a portion of which has been admitted
11 and should be in the Board's binders labeled DEQ and SME
12 Exhibit 1?

13 A. Yes, I am familiar with that manual.

14 Q. Does that manual include a recommended procedure
15 for a permit applicant to conduct a case-by-case BACT
16 analysis?

17 A. Yes, it does.

18 Q. Did SME follow that recommended procedure in the
19 BACT analysis it submitted to the Department for the HGS?

20 A. Yes.

21 Q. In making a BACT determination for a permit
22 application, does the Department rely heavily on the
23 information provided in the application?

24 A. Yes.

25 Q. Why is that?

1 A. It's -- it's important to understand that when
2 the application is submitted, each one of these facilities
3 obviously is its own thing and has its own
4 characteristics, its own proposed specific emitting units,
5 its own -- all of the equipment is very specific to its
6 facility. And the applicant presumably has a significant
7 amount of time in which to prepare that application for a
8 proposed project, and so the applicant -- when we -- And
9 it's also a certified document; therefore, the information
10 is accurate and true.

11 And the Department, again, has a somewhat more limited
12 time frame in dealing with these types of projects to
13 evaluate all of the information, document that
14 information. We do all that we can to verify that the
15 information in the application is true, accurate, and
16 complete. But it's very important that we -- that that
17 application contain the information necessary to write the
18 air quality permit.

19 Q. As an air permitter, did you also conduct
20 independent research regarding the proposed conditions in
21 the permit application?

22 A. Yes.

23 Q. Were you involved in the Department's review of
24 the air quality permit application for the SME Highwood
25 Generating Station or HGS?

1 A. Yes. I was the lead permitter on this project.

2 Q. Did the Department receive a draft application
3 from SME before receiving an actual filed application?

4 A. Yes, we did.

5 Q. Is that a common practice?

6 A. No. That's not a -- it's not a common practice,
7 but it has happened in other cases.

8 Q. Do you know why the Department received a draft
9 application in this case?

10 A. I believe we suggested that they submit an
11 application -- a draft application to us. It would
12 provide us with additional time to review some of the
13 information. These are very complex projects, and the
14 statutory time frames for processing a permit application
15 are very -- are very short when you're considering the
16 amount of information.

17 Q. Did the Department recommend that SME submit
18 additional information that it had not included in its
19 draft application?

20 A. Yes.

21 Q. And after the Department received the filed
22 application, did you request even further additional
23 information from SME?

24 A. Yes.

25 Q. Is that a common practice, for the Department to

1 request additional information after receipt of a filed
2 application?

3 A. Fairly -- Yes, fairly common.

4 Q. Did SME respond to your request for additional
5 information?

6 A. They did.

7 Q. Did other members of the Department's air quality
8 permitting staff also review SME's application?

9 A. Yes.

10 Q. Is that a common department procedure?

11 A. It's a very common procedure, especially for
12 major sources of this kind.

13 Q. Did you issue draft permits for the HGS for
14 internal staff review?

15 A. I did.

16 Q. And did you receive comments from other
17 department staff members on those draft permits?

18 A. Yes.

19 Q. Is that a common department procedure?

20 A. I'm not aware of any permits that go out the door
21 without internal review.

22 Q. Did you consider the comments that you received
23 on your draft permits from other department staff members?

24 A. I did.

25 Q. How would you generally describe the level of

1 review you conducted for SME's permit application?

2 A. This is the highest level of review that a permit
3 application receives. This is a major new source, subject
4 to the standards of major new source review, very complex,
5 lots of information to digest, analyze, and understand.
6 There is no application -- This is the highest level of
7 review that we -- that I conduct.

8 Q. Can you estimate for the Board how much --
9 approximately how much time you spent reviewing SME's
10 permit application and draft application and making the
11 Department's determination.

12 A. I spent about a month reviewing the draft
13 application prior to issuing a deficiency response to them
14 and approximately four months with the filed application
15 prior to issuance of the draft permit, so a total of
16 five months.

17 Q. Can you estimate for the Board how much of this
18 five months you spent reviewing SME's BACT analysis.

19 A. Well, it's important to note, first of all, that
20 five months -- I mean, that's not the only thing I have to
21 do at the office. I mean, I have a workload. And so I
22 would say a significant amount of my time in that
23 five-month period was spent reviewing this application,
24 but, again, I do have a workload that goes along with
25 other things that I do.

1 As far as the BACT analysis, I would say that of the
2 time that I spent in that five months reviewing this
3 application, the majority of that time is spent in review
4 of the BACT analysis and determination.

5 Q. Did you conduct independent research regarding
6 SME's BACT analysis included in its permit application?

7 A. Yes.

8 Q. Did the Department issue a draft permit for the
9 HGS for public comment?

10 A. Yes.

11 Q. Did the Department issue a supplementary draft
12 permit for the HGS for public comment?

13 A. Yes.

14 Q. Do you recall why that was?

15 A. The Department issued a supplemental preliminary
16 determination or draft permit in this case because during
17 the public comment period and prior to issuance of the
18 Department's decision, information came to light regarding
19 additional emitting units that were not analyzed in the
20 initial permit application. And that had not been -- you
21 know, the public had not had an opportunity to look at
22 those emitting units, we didn't have an opportunity to
23 analyze those emitting units, and so we issued a draft
24 permit -- or a supplemental draft permit dealing only with
25 those emitting units. The rest of the draft permit stayed

1 the same.

2 And what those units were, were called refractory
3 brick curing heaters, natural gas-fired units that cure
4 the refractory brick which lines the inside of the boiler.

5 Q. Did the Department hold public hearings on the
6 supplemental draft permit for the HGS?

7 A. Yes.

8 Q. Did the Department receive comments on the draft
9 permits?

10 A. Yes.

11 Q. And during your review of SME's permit
12 application, did you receive any comments from the
13 petitioners in this case?

14 A. I'm sorry, during my review of the application?

15 Q. Of SME's permit application. Did you receive
16 comments from the petitioners in this case?

17 A. We received comments from the petitioners on the
18 draft air quality permit.

19 Q. And did you consider all of the comments that the
20 Department received from the public, including the
21 petitioners?

22 A. Yes.

23 Q. In issuing the department decision on SME's
24 permit application, did the Department grant all of the
25 permit conditions requested by SME in its permit

1 application?

2 A. No.

3 Q. How is the lowest achievable emission rate or
4 LAER applied in air quality permitting?

5 A. LAER is a program -- a permitting program which
6 applies to sources proposing to construct and operate in
7 areas which are out of attainment with the national
8 ambient air quality standards for a given pollutant.

9 Q. And did LAER apply to particulate emissions from
10 the HGS?

11 A. No.

12 Q. What is the difference between BACT and LAER?

13 A. LAER is -- simply applied, means the lowest
14 emission rate that's being achieved, the lowest achievable
15 emission rate. So that emission rate, that is the lowest
16 that is actually being achieved by a facility in practice.
17 It's not a process.

18 Whereas BACT is a process where you evaluate all of
19 the available controls. You then evaluate technical
20 feasibility of those controls for a specific emitting
21 unit. You then rank the remaining technically feasible
22 control technologies. You then consider other factors,
23 such as environmental, economic, energy impacts. And then
24 you select BACT, typically in a five-step process. So
25 it's a process leading to an emission limitation, whereas

1 LAER is simply what's being achieved, the lowest limit.

2 Q. Must a BACT-determined emission limit be
3 achievable constantly?

4 A. Yes.

5 Q. In making a BACT determination, do you try to
6 determine the lowest emission limit that can be achieved
7 constantly, then?

8 A. Yes.

9 Q. Referring to the document admitted as DEQ and SME
10 Exhibit 4 and, I believe, MEIC C in your exhibit binder,
11 can you identify that document for the Board.

12 A. This is a portion of the application for air
13 quality and operating permit submitted by SME.

14 Q. Okay. And did SME submit a BACT analysis with
15 its application for a permit for the HGS?

16 A. Yes.

17 Q. And did you review that BACT analysis?

18 A. Yes.

19 Q. Did SME's BACT analysis include evaluation of
20 controls for PM10 emissions from the HGS?

21 A. Yes.

22 Q. And did SME's permit application include
23 evaluation of filterable PM10?

24 A. Yes.

25 Q. Did SME's analysis include identification of the

1 control technologies available to control PM10 emissions?

2 A. Yes.

3 Q. Can you point out to the Board where that
4 identification of control technologies is found in SME's
5 BACT analysis.

6 A. If -- if you refer to the second page, actually,
7 of that exhibit, 5-20, in the middle of the page,
8 Section 5.3.2.1, the caption is, "Identify Filterable
9 PM/PM10 Control Technologies." And then they're listed
10 below in bullet points.

11 Q. Did SME's BACT analysis also include an
12 evaluation of the technical feasibility of technologies
13 available to control filterable PM10 emissions?

14 A. Yes, it did. Turning to page 5-23 of that
15 exhibit, again, in the middle of the page,
16 Section 5.3.2.2, captioned "Eliminate Technically
17 Infeasible Filterable PM/PM10 Control Technologies."

18 Q. Did SME's BACT analysis include a ranking of the
19 technically feasible filterable PM10 control technologies
20 by control effectiveness?

21 A. It did. And just down from -- just the next
22 section down, 5.3.2.3, on page 5-23, that ranks the
23 available control technologies and technically feasible
24 control technologies.

25 Q. Did SME's BACT analysis include an evaluation of

1 the cost effectiveness of the technologies available to
2 control filterable PM10 emissions and their energy and
3 environmental impacts?

4 A. Yes. Turning the page to 5-24, under
5 Section 5.3.2.4, captioned "Evaluate Filterable PM/PM10
6 Control Technologies," the middle of the page, again, in
7 bold, "Economic Impacts."

8 Q. What did SME propose to the Department for a
9 filterable PM10 emission limit?

10 A. SME proposed, from the CFB boiler, a filterable
11 PM10 emission limit of 0.015 pounds per million Btu of
12 heat input to the boiler.

13 Q. Okay. And there's some discussion of this
14 already, but based on your review of SME's permit
15 application, did SME inform the Department of facilities
16 that were permitted at a lower filterable PM10 emission
17 limit than the .015 heat input limit proposed by SME?

18 A. Yes.

19 Q. Did you conduct independent research of the
20 filterable PM10 emission limits applicable to similar
21 facilities?

22 A. Yes.

23 Q. Did you find higher limits?

24 A. Yes.

25 Q. And did you find lower limits in your research?

1 A. Yes.

2 Q. Can you describe how SME's proposed limit fell in
3 the range of higher and lower limits for other facilities,
4 that you were aware of.

5 A. Near the top or -- near the top of the controlled
6 facilities, I believe in the application, there were
7 facilities that were achieving lower emission rates, and I
8 think that I may have found one or two others in my own
9 research. However, SME's was generally near the top of
10 the best controls or the best controlled emission rates
11 found in the RACT/BACT/LAER Clearinghouse and other
12 places.

13 Q. Did SME's permit application also include a BACT
14 analysis for condensable PM10?

15 A. Yes.

16 Q. Did SME's BACT analysis include identification of
17 the control technologies available to control condensable
18 PM10 emissions?

19 A. Yes.

20 Q. And can you point to the Board where that
21 identification of control technologies for condensable
22 PM10 is found in the BACT analysis.

23 A. Yeah. If you flip just a couple pages up to
24 5-46, in Section 5.3.6.1, "Step 1 - Identify Control
25 Options for Sulfuric Acid Mist, Acid Gases, Trace Metals,

1 and Condensable PM10."

2 It's important to note here that those pollutants are
3 precursor emissions to condensable PM10.

4 Q. Did the Department's permit include a summary of
5 the Department's evaluation of SME's BACT analysis for
6 particulate matter?

7 A. Yes.

8 Q. And referring to DEQ and SME Exhibit 7, the
9 Department's final permit, can you point out to the Board
10 where the Department's summary of the BACT analysis is
11 found.

12 A. Yes. This exhibit is the Department's final
13 Montana Air Quality Permit, and if you go -- this is --
14 The first 29, I think, or so pages are the permit itself,
15 and if you go past that, you're going to see some
16 attachments, and then the permit analysis starts over at
17 page 1. And then beginning on page 24 of the permit
18 analysis, I have a summary -- in item 2, about the middle
19 of the page, I have a summary of filterable PM emissions.

20 MR. MARBLE: I'm not clear where you are.

21 Q. (By Mr. Rusoff) Could you restate to board
22 members where you're looking --

23 A. Sure.

24 Q. -- for the beginning of the summary of the BACT
25 analysis of filterable emissions.

1 A. Sure.

2 The first 29 pages or so of the document are the
3 permit itself, and then it will start over at 1. Go to
4 page 24 of that portion of the document

5 MR. MARBLE: Thank you.

6 THE WITNESS: Uh-huh.

7 Q. (By Mr. Rusoff) Okay. So did you make a BACT
8 determination for PM10 emissions from the HGS?

9 A. Yes.

10 Q. And where is that determination found in your
11 summary of the BACT analysis for filterable PM emissions?

12 A. If you turn to page 28, there's a filterable PM
13 BACT determination, Section E, and that provides a
14 discussion of the determination for filterable PM
15 emissions.

16 Q. And did you separately evaluate BACT for
17 filterable PM10 and condensable PM10?

18 A. Yes.

19 Q. In their comments to the Department that they
20 submitted on the draft permit, did the petitioners submit
21 any comments concerning the format of the Department's
22 BACT determination?

23 A. No.

24 Q. In the Department's draft and final BACT
25 determination for the HGS, did the Department use a BACT

1 determination for PM10 as a surrogate for a PM2.5 BACT
2 determination?

3 A. Yes.

4 Q. In their comments to the Department concerning
5 the draft permit, did the petitioners submit any comments
6 concerning the Department's --

7 MS. DILLEN: Objection; I believe this is
8 irrelevant. Exhaustion is not a requirement under Montana
9 law, so I'm not sure what this is going to.

10 MR. RUSOFF: Well, I think the comments that the
11 Department received from the petitioners are very relevant
12 to the ability of the Department to respond and clarify
13 any issues that the public, including the petitioners,
14 might have and to potentially consider a different
15 approach.

16 MS. DILLEN: Well, I'm going to maintain my
17 objection, because if you're going to raise this as an
18 issue now, there was correspondence between my clients and
19 the Department regarding PM10 and PM2.5. And if we need
20 to call a witness to testify to that, that's fine. But
21 since it hasn't been a contested issue, you don't have
22 exhibits on it, and I don't have exhibits on it either.

23 MR. RUSOFF: I guess I would just say that the
24 prehearing memo clearly identifies the Department's
25 reliance on the surrogate policy for PM10 as an issue in

1 this case, and I think that whether the Department
2 received any comments concerning its reliance on that
3 policy is very relevant to the adequacy of the process
4 that the Department followed in making a BACT
5 determination for 2.5.

6 MS. DILLEN: I don't see how that's true, and I
7 just want to clarify that there's no mention in the
8 prehearing memo of my clients' comments in this -- in this
9 regard.

10 MR. RUSOFF: The prehearing memo --

11 MR. ROSSBACH: I move to sustain the objection.

12 MR. RUSOFF: -- is not intended to be an
13 exhaustive statement of every piece of evidence that will
14 be presented in the case.

15 MS. SHROPSHIRE: Second.

16 CHAIRMAN RUSSELL: It's been moved and seconded
17 to sustain the objection. All of those in favor.

18 (Vote.)

19 CHAIRMAN RUSSELL: Opposed.

20 (No response.)

21 Q. (By Mr. Rusoff) Mr. Merchant, at the time you
22 were reviewing SME's permit application, were you aware of
23 any EPA guidance addressing BACT for PM10 in a PSD permit?

24 A. Yes.

25 Q. Referring to the document in the exhibit binder

1 admitted as DEQ and SME Exhibit 2 and MEIC Exhibit L, can
2 you identify that document for the Board, please.

3 A. This document is titled -- the subject line is,
4 "Interim Implementation of New Source Review Requirements
5 for PM2.5," authorized by John S. Seitz, director at that
6 time of the Office of Air Quality Planning and Standards.

7 Q. Okay. And referring, again, to that Seitz memo,
8 just so the Board has an understanding of the contents of
9 that memo, in the first paragraph, would you read the
10 third sentence, starting with the words, "In view of the
11 significant technical difficulties."

12 A. "In view of the significant technical
13 difficulties that now exist with respect to PM2.5
14 monitoring, emissions estimation, and modeling," in
15 parentheses, "described below," "EPA believes that PM10
16 may properly be used as a surrogate for PM2.5 in meeting
17 NSR requirements until these difficulties are resolved."

18 Q. Okay. Moving down on page 1 of that document,
19 would you read the first sentence of the last paragraph on
20 page 1, which begins with the words, "Of specific
21 concern."

22 A. "Of specific concern is the lack of necessary
23 tools to calculate emissions of PM2.5 and related
24 precursors and project ambient air quality impacts so that
25 sources and permitting authorities can adequately meet the

1 NSR requirements for PM2.5."

2 Q. And moving down to the end of that paragraph,
3 would you please read into the record the last sentence,
4 beginning with the words, "Emissions factors."

5 You may have a different version than what I have --

6 A. I do.

7 Q. -- but it's the last sentence in the same
8 paragraph that you were reading from before.

9 A. Okay. "Emissions factors for the fine particles
10 emitted directly by stationary sources and for some
11 important precursors," in parentheses, "ammonia," "are
12 largely unavailable at the present time."

13 Q. Turning to the next page of that document, will
14 you please read the first sentence of the paragraph, which
15 starts out, "For the reasons stated above."

16 A. "For the reasons stated above, EPA believes that
17 it is administratively impracticable at this time to
18 require sources and State permitting authorities to
19 attempt to implement PSD permitting for PM2.5."

20 Q. Could you skip the next sentence and then read
21 the following sentence, which begins, "Until these
22 deficiencies are corrected."

23 A. "Until these deficiencies are corrected, EPA
24 believes that sources should continue to meet PSD and NSR
25 program requirements for controlling PM10 emissions," in

1 parentheses, "and, in the case of PM10 nonattainment
2 areas, offsetting emissions," "and for analyzing impacts
3 on PM10 air quality."

4 Q. And, I'm sorry, I should have asked you at the
5 same time to finish that paragraph by reading the last
6 sentence.

7 A. "Meeting these measures in the interim will serve
8 as a surrogate approach for reducing PM2.5 emissions and
9 protecting air quality."

10 Q. And then finally, would you read the third
11 sentence of the next paragraph, which starts with the
12 words, "When the technical difficulties are resolved."

13 A. "When the technical difficulties are resolved,
14 EPA will amend the PSD regulations under 40 CFR 51.166 and
15 52.21 to establish a PM2.5 significant emissions rate, and
16 EPA will also promulgate other appropriate regulatory
17 measures pertinent to PM2.5 and its precursors."

18 Q. Referring to the document in your binder which
19 has been admitted as DEQ and SME Exhibit 3, can you
20 identify that document for the Board, please.

21 A. This document is a memorandum -- EPA memorandum,
22 and the subject line is titled "Implementation of New
23 Source Requirements in PM-2.5 Nonattainment Areas,"
24 authored by Stephen D. Page, director, and dated
25 April 5th, 2005.

1 Q. Turning your attention to page 4 of that
2 document --

3 CHAIRMAN RUSSELL: Are you going to read a lot of
4 this into the record?

5 MR. ROSSBACH: This is all admitted, David.

6 CHAIRMAN RUSSELL: It's all here.

7 MR. RUSOFF: Well, it was my understanding,
8 Mr. Chairman, members of the Board, that the Board
9 intended to deliberate on this case if there was
10 sufficient time at the conclusion of the evidence. So I'm
11 merely pointing out to the Board the sections of these
12 documents, many of which are fairly lengthy, especially
13 the Federal Register Notices that we're relying on in our
14 case. Otherwise, I'm not sure how that information will
15 be before the Board.

16 CHAIRMAN RUSSELL: Well, the prehearing memo, did
17 it not bring out some of these points, that we were asked
18 to read this morning?

19 MR. RUSOFF: Well, the point of offering this
20 evidence is to point out to the Board the basis for EPA's
21 surrogate policy.

22 CHAIRMAN RUSSELL: Well, let's continue. Let's
23 just not try to read the whole document into the record.

24 Q. (By Mr. Rusoff) Based on that, I won't ask you
25 to point out the pertinent provisions of the Page memo,

1 but can you summarize the comments in the Page memo
2 relevant to PSD permitting for PM2.5.

3 A. In short summary -- I would try to go fast, but
4 the court reporter may not let me.

5 MS. DILLEN: I'm sorry, I don't want to be a fly
6 in the ointment, but I think characterizing a document
7 that speaks for itself -- I'm wondering if there's another
8 way to go about this, but I think having a witness
9 characterize what a document says when we have them here
10 as exhibits is unusual.

11 MR. RUSOFF: And I agree, and my preferred
12 approach would be to have him read the pertinent
13 provisions.

14 MS. ORR: Mr. Chairman.

15 MR. ROSSBACH: The document speaks for itself.

16 MS. ORR: The document speaks for itself. And a
17 recommendation would be that the counsel, in closing
18 argument, if they see a portion of an exhibit or an
19 exhibit that they wish to emphasize for the Board, that
20 they go through the exhibit list and point out what is
21 significant about it. And I think that can be done in
22 closing.

23 MR. RUSOFF: We could try to do that. I guess my
24 concern would be we have 15 minutes each for a closing
25 argument, and there are numerous documents, many of which

1 are fairly lengthy, in the record. And if the Board is to
2 deliberate upon our closing arguments -- Again, my concern
3 is just to inform the Board of the relevant portions of
4 these documents, many of which, again, are quite lengthy.
5 But we'll proceed in any manner that --

6 CHAIRMAN RUSSELL: But you also -- in your
7 prehearing memorandum, these points are also brought out
8 in this document. So if we're going to do this, let's
9 summarize and keep moving. But we've already stipulated
10 to this, we're moving, we're trying to get this thing --
11 And I understand and appreciate your points, but we also
12 had this in our -- this was also discussed in the motions
13 for summary judgment. I mean, we're all here and we've
14 heard it.

15 MR. RUSOFF: That's correct.

16 I just want to make sure that the information is
17 evidence in the case, because the portions of the
18 prehearing memo outside of the agreed facts are not
19 evidence in the case.

20 MR. ROSSBACH: But the document is evidence in
21 the case.

22 MR. RUSOFF: I agree.

23 MR. REICH: Mr. Chair, I think we can assist the
24 Board by simply pointing out, either now or at the end of
25 the case, specific paragraphs and things and the Board can

1 look at it if they need to.

2 CHAIRMAN RUSSELL: Well, by the time -- since
3 we've argued this, he could have probably read those
4 pertinent highlighted points. So let's keep moving.

5 MR. RUSOFF: And I don't think I'm going to take
6 any longer with our one witness than the other parties are
7 going to take with their witnesses. It's my intent to
8 proceed as -- to go fast.

9 Q. (By Mr. Rusoff) Mr. Merchant, were you aware of
10 the Seitz and Page memos when you reviewed SME's permit
11 application?

12 A. Yes.

13 Q. And did you rely on those memos in evaluating
14 BACT for the HGS?

15 A. Yes.

16 Q. How did you rely on them?

17 A. I relied on them in conducting -- or reviewing a
18 BACT analysis and a determination for PM10 as a surrogate
19 for PM2.5.

20 Q. Are you familiar with the EPA's permit for the
21 Deseret facility which the EPA issued after the Department
22 issued its final permit on the HGS?

23 A. Yes.

24 Q. Did EPA include a PM2.5 specific emission limit
25 in that permit?

1 A. No.

2 Q. And how do the limits imposed on the Deseret CFB
3 boiler compare to the limits the Department determined to
4 constitute for BACT for the HGS?

5 A. The filterable PM10 limit in the Deseret permit
6 is the same as the filterable PM10 limit imposed on SME in
7 their final air quality permit, and the filterable plus
8 condensable PM10 limit in the Deseret permit is a higher
9 limit than that imposed on SME in their air quality
10 permit.

11 Q. In making a BACT determination, is it necessary
12 to know the predicted uncontrolled emissions of the
13 pollutant in question?

14 A. Yes.

15 Q. Why is that?

16 A. The entire analysis is based on the reduction of
17 the pollutant in question; that is, what are the available
18 control technologies to reduce that pollutant. You need
19 to know what's going into the control technology to
20 determine what's -- you know, what the percent reduction
21 is, what the cost-effective value is in dollars per ton.
22 Those are just a couple of examples. But it's absolutely
23 imperative that you understand what the uncontrolled
24 emission rate is in order to evaluate the top controls.

25 Q. And how are predicted uncontrolled emissions

1 determined for a proposed new coal-fired boiler that
2 hasn't been constructed yet?

3 A. You would use what is generally termed an
4 emission factor, an uncontrolled emission factor, which is
5 going to be, for a project like this, based on the fuel,
6 the unit combusting the fuel, several different factors --
7 many different factors.

8 Q. Okay. And at the time you made a BACT
9 determination for the HGS, did you have emission factor
10 information regarding predicted PM2.5 uncontrolled
11 emissions from the CFB boiler?

12 A. No.

13 Q. Do you know why that was?

14 A. To the best of my knowledge and understanding --
15 First and foremost, I should say those emissions were not
16 estimated in the application. And to the best of my
17 knowledge, those emissions factors, to determine what
18 uncontrolled emissions are, are not available.

19 Q. In your experience as an air quality permitter,
20 where would emission factor information for a CFB boiler
21 normally be found?

22 A. There are various published databases, a
23 compilation of air pollution factors. For example, EPA's
24 AP-42 Compilation of Air Pollutant Emission Factors
25 provides emission factors for stationary sources on

1 controlled, uncontrolled. There are other databases with
2 published information. You might find them from similar
3 source testing, you might find them from a vendor, you
4 might -- There are a number of sources you can find those.

5 Q. So during your review of SME's permit
6 application, did you conduct any research to determine
7 whether emission factors were available for PM2.5
8 emissions from the CFB boiler?

9 A. I did.

10 Q. What did you find?

11 A. I was unable to find any emission factors for
12 PM2.5 from a CFB boiler.

13 Q. Referring back to the Deseret permit documents
14 included in the exhibit binders, can you tell from this --
15 from those documents whether EPA used a BACT determination
16 for PM10 as a surrogate for PM2.5 in the Deseret permit?

17 A. What item number are they in the exhibits?

18 Q. Referring to DEQ and SME Exhibit 12.

19 A. I probably didn't need to refer to the actual
20 exhibit.

21 They did conduct -- or did analyze a BACT analysis
22 for -- What was the question?

23 Q. I just was asking whether or not you could
24 determine from that document whether the EPA, like the
25 Department, used a BACT determination for PM10 as a

1 surrogate for a BACT determination for PM2.5.

2 A. Yes, they did.

3 Q. Referring to the document admitted as DEQ and SME
4 Exhibit 14, can you identify that document for the Board.

5 A. This is an EPA Federal Register Notice dated
6 Friday, September 21st, 2007, titled "Prevention of
7 Significant Deterioration for Particulate Matter Less Than
8 2.5 Micrometers - Increments, Significant Impact Levels
9 and Significant Monitoring Concentration; Proposed Rule."

10 CHAIRMAN RUSSELL: What exhibit is this?

11 MR. REICH: 14.

12 CHAIRMAN RUSSELL: 14.

13 Q. (By Mr. Rusoff) And can you -- You identified
14 the document. Can you just briefly explain to the Board
15 members what that document represents, what it's intended
16 to do.

17 A. It's a proposed rule providing information on how
18 to -- in the context of new source review PSD
19 permitting --

20 MS. DILLEN: Again, I'm going to object; I think
21 that the document does speak for itself.

22 CHAIRMAN RUSSELL: Well, describe the document,
23 let's not recite it.

24 MS. DILLEN: Well, with all due respect,
25 Mr. Chair, members of the Board, to the extent that

1 Mr. Merchant is being asked to characterize a document
2 which is there for you to see, I would -- I do find that
3 objectionable to the extent that it mischaracterizes the
4 document.

5 MR. RUSOFF: And I can ask a more specific
6 question. It probably wasn't a very good question.

7 CHAIRMAN RUSSELL: Try again.

8 Q. (By Mr. Rusoff) Mr. Merchant, does this notice
9 of proposed rulemaking relate to PSD -- proposed PSD
10 regulations for PM2.5?

11 A. Yes.

12 Q. And I won't ask you to recite the exact language
13 out of the document, but does that document include any
14 statements concerning the status of EPA's surrogate
15 policy?

16 A. It does.

17 Q. And does that document indicate that states may
18 continue to rely on that surrogate policy?

19 A. Yes.

20 MR. RUSOFF: I'm trying to eliminate some of my
21 questions to save some time here, that's why I'm pausing.

22 Q. (By Mr. Rusoff) Is BACT an emission limitation?

23 A. BACT manifests as an emission limitation.

24 However, just as important as that emission limitation is
25 the process conducted to achieve -- or to determine that

1 emission limitation.

2 Q. Is a control technology typically associated with
3 a BACT emission limit?

4 A. Yes.

5 Q. And why is that?

6 A. It's important to include a condition requiring
7 the specific control technology analyzed as BACT through
8 the BACT process because that control technology is
9 followed through the five-step process in determining what
10 the emission limit is; what is the appropriate maximum
11 achievable reduction associated with that technology
12 deemed the top control considering all aspects,
13 environmental, economic impacts, costs, other aspects of
14 the process. So it's very important that that emission
15 control technology be included as a condition in the
16 permit as well as the emission limitation itself.

17 Q. What control technologies did you review in
18 making the Department's BACT determination for filterable
19 PM10?

20 A. Wet scrubbing devices, electrostatic
21 precipitators, wet and dry, and fabric filter baghouses.

22 Q. Did you say you reviewed wet ESP?

23 A. Yes.

24 Q. And is that shown expressly in your BACT
25 determination?

1 A. Yes.

2 Q. Did SME's permit application include information
3 regarding uncontrolled PM10 emissions from the HGS?

4 A. Yes.

5 Q. And how does a fabric filter baghouse rank in
6 terms of control efficiency for PM10 in relation to the
7 other available control technologies you reviewed for
8 filterable PM10?

9 A. Based on the information in the application and
10 my independent research, the fabric filter baghouse, in
11 this case, a Teflon-coated baghouse, constitutes the top
12 technology from a control efficiency standpoint.

13 Q. And in your approximate nine years of experience
14 in air quality permitting, have you regularly reviewed
15 information concerning the relative control efficiencies
16 of available particulate control technologies?

17 A. Yes.

18 Q. Is there an advantage to Teflon-coated bags over
19 uncoated fiberglass bags for a fabric filter baghouse in
20 terms of control efficiency?

21 A. In this case, and based on the information
22 provided in the application, the Teflon-coated bag had a
23 99.85 percent control efficiency associated with it,
24 whereas the fabric -- the fiberglass fabric filter
25 baghouse had a 99.81 percent control efficiency associated

1 with that control.

2 Q. What was SME's conclusion in its permit
3 application regarding Teflon-coated bags?

4 A. SME concluded that Teflon -- while they were the
5 top control technology, the Teflon-coated bags were not
6 cost effective, and therefore, they proposed an emission
7 limit associated with the lower or not quite as good
8 control technology, the fabric filter.

9 Q. In your evaluation of SME's application, did you
10 agree with SME that Teflon-coated bags were not cost
11 effective for the HGS?

12 A. I did not.

13 Q. And ultimately, what control technology did you
14 determine to be BACT for filterable PM10?

15 A. The fabric filter baghouse.

16 Q. And why did you determine BACT to be a fabric
17 filter baghouse for the HGS?

18 A. Because it represented the top control -- the top
19 available control for controlling PM10 emissions.

20 Q. I don't know that you need to actually look at
21 the document, but referring to DEQ and SME Exhibit 12,
22 which has been admitted, which is the final statement of
23 basis for EPA's Deseret permit, did EPA rank the control
24 efficiencies of fabric filter baghouses and wet ESPs for
25 the Deseret CFB boiler?

1 A. Yes.

2 Q. And what do you recall EPA's conclusion was?

3 A. EPA ranked the fabric filter as the top control
4 for the available control technologies.

5 Q. Over wet ESP?

6 A. Over wet ESP, yes.

7 Q. Okay. Based on your evaluation, did you agree
8 with SME's proposed BACT limit of .015 pounds per million
9 Btu?

10 A. No.

11 Q. And I believe there's been testimony in the case
12 already that your determination of BACT for filterable
13 PM10 was .012 pounds per million Btu; is that correct?

14 A. That's correct.

15 Q. In making that BACT determination of .012 pounds
16 per million Btu, did you factor in the limits that you
17 were aware of for other similar facilities?

18 A. I did.

19 Q. And how did you consider those other limits?

20 A. Let me just try to explain the process -- It's
21 probably going to be in better context if I explain the
22 process itself.

23 In going through a BACT analysis -- in reviewing a
24 BACT analysis and making a determination, we, again, look
25 at all the available controls, eliminate the technically

1 infeasible control options, rank the remaining technically
2 feasible options, and then consider environmental,
3 economic, and other costs, energy costs, energy concerns,
4 those kinds of things, and then we select BACT. In this
5 case, the top control was deemed the fabric filter
6 baghouse, Teflon coated, at 99.85 percent control from an
7 uncontrolled emission factor specific to this boiler and
8 the coal source.

9 And so I went through that process, determined that a
10 99.85 percent reduction from this top control technology
11 will result in 0.012 pounds per million Btu. I then took
12 that number, analyzed the available information for other
13 similar facilities, a few of which, again, were slightly
14 lower than that, but, in general, this was -- my
15 consideration in general was this was definitely within
16 the range of the permitted and recently permitted similar
17 sources. And, actually, it was near the top of those
18 control technologies in limiting the emission rate of
19 PM10.

20 Again, consideration for those other control
21 technologies, but BACT is not the lowest achievable
22 emission rate.

23 Q. Are there operating variables that may differ
24 from one facility to another that are relevant to a BACT
25 determination?

1 A. Many. Yes.

2 Q. Can you just briefly describe some of those
3 variables.

4 A. Different-sized boilers, different fuel sources,
5 different plant configure -- I mean, there are a myriad of
6 different factors that can impact the emissions from a
7 given source. That's why BACT is conducted on a
8 case-by-case basis specific to the proposed project.

9 Q. In your years of experience as an air quality
10 permitter, was it common for you to find a range of
11 emission limits for similar permitted facilities?

12 A. Yes.

13 Q. So can you just briefly summarize the basis for
14 your determination that .012 pounds per million Btu
15 constituted BACT for filterable PM10 emissions from the
16 HGS.

17 A. In summary, it represents a 99.85 percent
18 reduction from the uncontrolled emission rate specific to
19 this project, and that is the top control efficiency
20 associated with the available controls.

21 Q. Does a fabric filter baghouse control PM10 as
22 well as particulate larger than PM10?

23 A. Yes.

24 Q. Does it also provide control for PM2.5?

25 A. Yes. Filterable PM2.5, yes.

1 Q. Would requiring a wet ESP downstream of a fabric
2 filter baghouse be similar to requiring installation of
3 more than one fabric filter baghouse?

4 A. Yes.

5 Q. Have you ever seen that required in a BACT
6 determination?

7 A. I have not.

8 Q. And does a fabric filter baghouse provide
9 co-benefit control of other pollutants besides filterable
10 particulate?

11 A. Yes, it does.

12 Q. I think some potential impacts from a wet ESP
13 have been described already, but can you describe the
14 potential problems with requiring a wet ESP as BACT for
15 the HGS.

16 A. I would just generally state that, you know,
17 you're not going to get -- one of the problems is you're
18 not going to get the co-benefit control that you would get
19 with a fabric filter baghouse through buildup of a filter
20 cake. You're going to get additional SO₂ control, but
21 you're not going to get that with the wet ESP. And with
22 the wet ESP, you're going to have an additional waste
23 stream, wet waste stream to deal with. So that would be
24 my general summary of the differences and issues.

25 Q. In your review of particulate control BACT

1 information over your nine years as an air permitter, have
2 you ever seen reference to a membrane technology being
3 required as BACT?

4 A. I have not.

5 Q. After submitting its permit application, did SME
6 continue to propose a higher filterable PM10 limit than
7 .012?

8 A. Yes.

9 Q. And is that shown in any of the documents that
10 are in the board members' exhibit packet?

11 A. I believe it is.

12 Q. I'll ask a more specific question.

13 Referring to DEQ and SME Exhibit 16, can you identify
14 that document for the Board.

15 A. Yes. These are comments submitted by
16 Bison Engineering on behalf of SME on the Department's
17 draft air quality permit.

18 Q. And in that letter, did SME ask the Department to
19 eliminate a separate filterable PM10 limit?

20 A. Yes, it did.

21 Q. And did the Department grant that request?

22 A. No.

23 Q. Can you refer the Board to the page in DEQ and
24 SME Exhibit 16 that you're referring to in reference to
25 the request to eliminate the separate filterable PM10

1 limit.

2 A. I'm referring to page 2 of this exhibit, at the
3 bottom, item 8, captioned as "Air Quality Permit
4 Section II.C.4."

5 MR. RUSOFF: And I just have a few more
6 questions.

7 Q. (By Mr. Rusoff) What was your BACT determination
8 for condensable PM10?

9 A. The BACT determination for condensable PM10 was
10 actually expressed as a total PM10 limit, which included
11 the filterable PM10 limit of 0.012 pounds per million Btu
12 and then a condensable fraction of 0.014, for a total PM10
13 limit, filterable plus condensable, of 0.026 pounds per
14 million Btu of heat input to the boiler.

15 Q. And what was the basis for the .014 limit for
16 condensable PM10?

17 A. The basis was that the 0.014 pounds per million
18 Btu condensable fraction is made up of the precursor
19 condensable PM10 emissions that are expected from the
20 boiler after control.

21 Q. Are there control technologies specifically
22 designed to control condensable particulate emissions?

23 A. Not directly. They are controlled through the
24 control of precursor emissions, including sulfuric acid
25 mist -- generally, or primarily including sulfuric acid

1 mist, acid gases, HCL and HF, trace metals, and other
2 constituents -- or precursor constituents.

3 Q. And what control technologies did you review in
4 making the Department's BACT determination for condensable
5 PM10?

6 A. Generally, the available control technologies for
7 these precursor emissions or condensable PM10 emissions
8 are those available control technologies for SO2 and
9 filterable PM10 emissions. So we, in this case,
10 analyzed -- and I think I'll get this without referring,
11 if I lose track -- wet and dry flue gas desulfurization
12 units or FGDs in combination with a fabric filter baghouse
13 or a wet ESP, a dry ESP. We analyzed a number of
14 controls. Again, these were the controls that were
15 generally -- or that were available for SO2 and filterable
16 PM, and they act as a co-benefit control to condensable PM
17 precursor emissions.

18 Q. So can you briefly summarize for the Board how
19 you analyzed control of condensable PM10.

20 A. Generally -- or in summary, what we did was we
21 analyzed the available controls for condensable PM.
22 Again, these were the controls that were available for SO2
23 and filterable PM. And we determined that the top
24 controls for the condensable PM precursors were, in fact,
25 the top controls for SO2 and filterable PM, which had

1 already been deemed BACT for those specific pollutants.
2 Therefore, we're getting co-benefit control for the
3 condensable PM10 emissions.

4 Q. At some point in your review of SME's
5 application, did SME ask the Department to omit any
6 emission limit for condensable PM10 -- to omit any
7 emission limit for condensable PM10 from the permit; do
8 you recall that?

9 A. I do recall that. I think that -- It's
10 understood at this point, and I've even seen, I guess --
11 I've seen some EPA correspondence as well that says
12 condensable PM limits should not be included in permits
13 until such time as some of these issues have been taken
14 care of that we've talked about this evening. And based
15 on that, I believe that was the basis for SME requesting
16 that permit limit be removed.

17 Q. Did the Department eliminate a condensable PM10
18 limit from the final permit?

19 A. No.

20 Q. You don't need to look at the document, I don't
21 think, but referring to the Deseret permit shown in DEQ
22 and SME Exhibit 11, are there any provisions in that
23 permit that provide for potential upward adjustment of the
24 total PM limit of .030 pounds per million Btu?

25 A. Yes. The Deseret permit provides or includes a

1 condensable -- or a total PM10 limit, filterable and
2 condensable, of 0.03 pounds per million Btu, with the
3 provision that the affected facility has a period of time
4 to optimize, and if they do not realize that limit, that
5 that limit can be increased to 0.045 pounds per million
6 Btu as a ceiling, the maximum limit.

7 Q. Did the Department include in the permit for the
8 HGS any provisions allowing for potential upward
9 adjustment of the total limit of .026 for the HGS?

10 A. No, we did not.

11 Q. And I just have one final question. Were the
12 filterable PM10 and condensable PM10 emission limits you
13 found to constitute BACT for the HGS the lowest limits you
14 believe the HGS reasonably could be expected to
15 consistently achieve?

16 A. Yes, based on the project's specific information,
17 I believe that those limits constitute BACT, which must be
18 achievable on a constant basis.

19 Q. I just have one -- I've been asked to ask one
20 short question. You referred to your determination that a
21 fabric filter baghouse constituted BACT for filterable
22 PM10. How does the Teflon bags that you analyzed relate
23 to that BACT determination?

24 A. The Teflon bags constituted the highest or the --
25 the best or top control at 99.85 percent control, and

1 the .012 pounds per million Btu limit is directly related
2 to that 99.85 percent control efficiency. I didn't
3 specify a Teflon bag in the condition because, you know,
4 there could feasibly be some technology that didn't -- you
5 know, they may install a bag that they're able to achieve
6 that limit that, you know, used some other product other
7 than a Teflon coating, and I didn't want to limit
8 them to -- I knew that fabric filtration was a top
9 control. I saw that there was a bag in the analysis able
10 to achieve that limit of 0.012 pounds per million Btu,
11 and, in fact, it was based on that, but I didn't want to
12 limit them to the Teflon product itself, and therefore, I
13 required a fabric filter baghouse.

14 MR. RUSOFF: Thank you. I don't have any further
15 questions on direct for the witness.

16 MS. DILLEN: Mr. Chair, members of the Board, I
17 can represent that I do not have an extensive cross that
18 I'll need to do for Mr. Merchant. But in the interest of
19 going fast and the hour and when we had lunch and my
20 fatigue and, I suspect, yours, I propose that we take up a
21 cross in the morning. And I will make you a deal, I
22 promise that it will be expeditious.

23 CHAIRMAN RUSSELL: I look around at the board
24 members and I think it's time to recess. So we'll take
25 this up at 8 o'clock in the morning or soon thereafter.

1 But let's try to get started at 8. And if we stick to the
2 four hours and we're done with Eric in an hour, that will
3 be just fine.

4 All right. We'll see you in the morning.

5 (The proceedings were adjourned at 6:32 p.m.)

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COURT REPORTER'S CERTIFICATE

STATE OF MONTANA)

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COUNTY OF LEWIS AND CLARK)

I, CHERYL ROMSA, Court Reporter, Notary Public in
and for the County of Lewis and Clark, State of Montana,
do hereby certify:

That the foregoing proceedings were reported by
me in shorthand and later transcribed into typewriting;
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IN WITNESS WHEREOF, I have hereunto set my hand
and affixed my notarial seal this 29th day of January
2008.

CHERYL A. ROMSA
Court Reporter - Notary Public
My Commission Expires 8/4/2011