

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
OF THE STATE OF WYOMING

DEPOSITION OF: STEPHEN D. JENKINS
EXAMINATION DATE: August 13, 2008

IN THE MATTER OF:)
)Docket No. 07-2801
BASIN ELECTRIC POWER)Presiding Officer,
COOPERATIVE, DRY FORK STATION,)F. David Searle
AIR PERMIT CT-4631)

PURSUANT TO NOTICE, the deposition of
STEPHEN D. JENKINS, was taken at 8:06 a.m., on
August 13, 2008, at 555 Seventeenth Street,
Suite 3200, Denver, Colorado 80202, before
Patricia S. Newton, Registered Professional
Reporter and Notary Public in and for the State
of Colorado, said deposition being taken pursuant
to the Wyoming Rules of Civil Procedure.

Patricia S. Newton
Registered Professional Reporter

1 hood groups and environmental groups but not
2 provided testimony on their behalf.

3 Typically --

4 Q Or provide -- I'm sorry, go
5 ahead.

6 A Typically, to discuss IGCC
7 technology, which has been of interest to a wide
8 range of local community, state, national groups.

9 Q Uh-huh. Okay. Do you consider
10 yourself an expert on the BACT analysis process?

11 A No.

12 Q You do not?

13 A No.

14 Q Why not?

15 A That is a specific air-permitting
16 procedure for air permitting. I, myself, don't
17 do air-permit applications. I contribute to the
18 technical pieces and analyses. We have people in
19 our firm that I would call experts in BACT
20 analyses.

21 Q Have you ever written a BACT
22 analysis?

23 A No.

24 Q Have you written a hypothetical
25 BACT analysis?

1 A I have written parts of a
2 hypothetical BACT analysis, but that would not be
3 an official BACT analysis as part of an air
4 permit.

5 Q You said -- I'm sorry. You'll
6 have to remind me of your phrase. You said
7 you're not an expert in performing BACT analyses;
8 is that correct?

9 A Yes.

10 Q Okay. And what sort of back-
11 ground do you think one would need to be an
12 expert in such a thing? I'm sorry.

13 What is it you would lack?

14 A Years of experience doing BACT
15 analyses as part of air-permit applications.

16 Q Uh-huh. What kinds of
17 experience?

18 A In the procedures themselves.

19 Q I'm sorry, I don't know what that
20 means.

21 A The five-step procedure of the
22 BACT analysis.

23 Q Uh-huh.

24 A In our firm, we have people in
25 our air-quality services permitting group that do

1 BACT analyses very frequently and have been doing
2 this for years.

3 Q Have any of them been involved in
4 this case?

5 A Yes.

6 Q Can you tell me who they are?

7 A Robert Pearson was one of the
8 leaders. He leads our air-quality services group
9 here in Denver and was deposed yesterday as part
10 of this case.

11 Q Uh-huh. You feel he's an expert
12 in BACT analysis?

13 A Yes.

14 Q And because he has what
15 experience? I'm sorry.

16 Why do you believe he's an expert?

17 A Because he has done many of the
18 BACT analyses himself over many years and has --
19 he has experience doing those; whereas I would
20 contribute to the technical pieces and the
21 comparisons of different technologies and provide
22 input for Bob Pearson and people like him in
23 doing the air-permit BACT analysis.

24 Q Did he write any of the documents
25 that are either part of --

1 Well, did he write any of your report
2 or any of the attachments to your report?

3 A He did not write my report; he
4 did not contribute to the 2007 Basin Electric
5 report. He may have contributed to the 2005
6 report. I don't know that because I was not
7 employed by CH2M Hill at that time.

8 Q Who else -- who else worked on --
9 well, he did not --

10 Well, did anyone who you would consider
11 an expert on BACT analysis review your report?

12 A Yes: Bob did.

13 Q He did review it?

14 A Uh-huh. He did not contribute to
15 it; he reviewed it.

16 Q Did he offer edits?

17 A Minor typographical at the time.

18 Q "At the time"?

19 A When I wrote the report.

20 Q Did you discuss the report,
21 before you wrote it, with him?

22 A Yes.

23 Q Tell me about those discussions.

24 A We discussed the nature of the
25 issues that were before us in this case, which

1 were the issues I talked about in I think one of
2 your first questions about IGCC being technically
3 infeasible and not commercially available and
4 that it wouldn't be BACT.

5 We discussed the need to prepare a
6 hypothetical BACT analysis where one would
7 compare IGCC to PC technology.

8 Q Tell me about those discussions.

9 A That for an air-permit applica-
10 tion, that EPA policy would be that IGCC would
11 not be required to be considered as part of a
12 BACT analysis because it is not an emission-
13 control technology but a power-generation
14 technology.

15 Q Can you tell me --

16 I understand you're saying that was
17 through the outcome of the conversation.

18 A That was the nature of the
19 conversation, and that's what my work was going
20 to be on this project: to help prepare that
21 hypothetical BACT analysis.

22 Q Did -- who --

23 Well, tell me more about those
24 conversations, and along the lines of who said it
25 was technically infeasible, for example.

1 A I did.

2 Q You did. He didn't opine as to
3 that; you're the one who said that?

4 A That's correct.

5 Q And -- well, tell me what his
6 role was, then, in those conversations.

7 A Part of that was in explaining to
8 me the five-step BACT analysis -- or parts of
9 that analysis: the procedures -- and the methods
10 and procedures that I would use in this hypo-
11 thetical BACT analysis to compare these two
12 power-generation technologies.

13 Q Did he discuss the structure of
14 how you would make that argument?

15 A Only that there are five steps,
16 and here are the things that you would use, and
17 here is what we used in the air-permit
18 application for the Dry Fork Station.

19 Q And did you discuss the outcome
20 of each of those steps?

21 A No.

22 Q Well --

23 A That was my job: to then put that
24 hypothetical BACT analysis together.

25 Q Was it your job to decide what

1 questions were asked in each step of the BACT
2 analysis?

3 A The New Source Review Manual lays
4 out what each of those steps are and says, "These
5 are the questions that are to be asked."

6 Q Was it you who read the New
7 Source Review Manual?

8 A Yes.

9 Q Was it you who decided how to
10 approach each of those questions or each of those
11 steps?

12 A Specific to the hypothetical BACT
13 analysis, which, again, is hypothetical, because
14 it's not something that would be required as part
15 of an air-permit application or that EPA would
16 require.

17 Q As I understand, you said you
18 would not be qualified to actually write a BACT
19 analysis; is that right?

20 A For an air-permit application
21 comparing emission-control technologies. This
22 was solely hypothetical.

23 Q There's no other kinds of BACT
24 analysis other than for air permits, are there?

25 A Not that I know of.

1 Q Okay. So you wouldn't be
2 qualified to actually write a BACT analysis for
3 an air permit?

4 A I would contribute to it on a
5 technical basis.

6 Q You could be a contributor.
7 Okay. But you couldn't actually author one?

8 A I could do a hypothetical one,
9 which is what this is, but not part of an air-
10 permit application.

11 Q Why isn't Mr. Pearson listed as
12 an author of your report, given all his extensive
13 input?

14 A He did not write the report.

15 Q Was there anyone else who
16 reviewed your report?

17 A Gary Brown, one of my colleagues
18 at CH2M Hill.

19 Q Do you also consider Mr. Brown an
20 expert on BACT analyses?

21 A He has a great deal of experience
22 in that area. I don't know what his other --
23 what those specific pieces are and how many
24 permits he's written the BACT analyses for.

25 Q Do you know if he's written any?

1 A I don't know that he's authored
2 all of them.

3 Q Well, I asked "any."

4 A I don't know.

5 Q You don't know. All right.

6 Do you know anything about his
7 qualifications?

8 A His qualifications deal with the
9 economic analyses in cost effectiveness of
10 emission-control systems that are part of the
11 BACT analysis.

12 Q Is he a lawyer?

13 A No.

14 Q Did anyone else participate in
15 the drafting or the editing or thinking behind
16 your report?

17 A I had comments from the Holland &
18 Hart attorneys in the nature of typographical
19 errors on my first draft.

20 Q Just your first draft?

21 A They looked at a second one and
22 found a few things that I had missed.

23 Q Tell me about their involvement
24 in the production of the report.

25 A Well, I -- I produced the report.

1 They did that first review, and we had up-front,
2 very general discussions on what it was that I
3 was going to do as part of this hypothetical BACT
4 analysis; and, also, that I was asked to review
5 and comment on Mr. Fowler's report; and that's
6 what I did.

7 Q When you say "up-front
8 discussions", what did you mean by "up-front"?

9 A When our Denver office asked me
10 to be a part of this process and to serve as an
11 expert witness on these power-generation
12 technologies, I had discussions with the Holland
13 & Hart attorneys on what I was going to do and
14 what my task was, as you would in starting any
15 piece of work: What's your scope? What's your
16 schedule?

17 Q What did they tell you your task
18 was?

19 A To compare IGCC and PC
20 technologies and to create a hypothetical BACT
21 analysis for a hypothetical IGCC power plant.

22 Q And was it their idea to create
23 the hypothetical?

24 A It was something that we both
25 discussed, because I had considered pieces of

1 that on some of the other cases -- for example,
2 with Sevier Power and with Florida Power and
3 Light on the Glades Power Park -- that it wasn't
4 part of an air-permit application; so it would
5 not be an official BACT analysis, particularly
6 because it was for a hypothetical power plant,
7 and the BACT analysis is not to compare power-
8 generation technologies but emission-control
9 technologies.

10 So we had to -- I had to find a way to
11 try and follow the procedures of the BACT
12 analysis for something that it really wasn't made
13 for, which is power-generation technologies.

14 Q Now, you did say you're not an
15 expert in BACT analyses?

16 A Yes.

17 Q Do you think you're an expert
18 enough to be qualified to say that the BACT
19 analysis wasn't built to address questions like
20 that?

21 A When I read the NSR Manual -- and
22 I have read discussions of what's in there and
23 how to do a BACT analysis -- my understanding is
24 that its primary use is to determine an emission
25 limit for each of the pollutants and the

1 technology or technologies that are able to meet
2 that. And there are procedures that you use to
3 determine whether or not they're commercially
4 available, technically feasible, available, and
5 there are a set of different terms and
6 definitions in that analysis.

7 Q I understand, and we'll certainly
8 explore a bunch of those. I have a lot of
9 learning to do. But my question was: Do you
10 consider yourself expert enough and have the
11 requisite training/education to be interpreting
12 the BACT -- or the NSR Manual and opining as to
13 its legal consequence?

14 A Not in a legal consequence.

15 Q Are you expert enough to be
16 saying what the NSR Manual meant to be excluding:
17 certain sorts of analyses, in other words?

18 A I don't understand your question.

19 Q You said your reading of the NSR
20 Manual -- correct me if I'm wrong. I understood
21 you to say that your reading of the NSR Manual
22 indicated that you wouldn't look at other
23 production processes, that it was just about
24 emission controls. Is that correct?

25 A What I said is that it is for

1 determining an emission limit and the emission-
2 control technologies that can be used to meet
3 that, and that there are qualifiers and
4 definitions in there that I read.

5 For example, what it means to be
6 "technically feasible" is fairly clear from the
7 NSR Manual; and it tells you, in specific
8 sections, to be technically feasible, it must do
9 this; to be technically infeasible, it cannot do
10 that. So I read those.

11 So I would say that I was competent
12 enough to understand what was in the NSR Manual
13 and then try and do a hypothetical BACT analysis
14 that -- for comparison of two power-generation
15 technologies.

16 Certainly the BACT procedure is not
17 meant to do that; it is meant to compare
18 emission-control technologies. That's why this
19 was hypothetical.

20 Q You say it wasn't meant to
21 compare the production processes; is that right?

22 A I did not say that.

23 Q I'm sorry. You said it wasn't
24 meant to . . .

25 A Compare different power-

1 generation technologies. It's to compare a means
2 of reducing or controlling emissions. That's why
3 it's under the "air-permitting procedures," not
4 in a "need for power," where a utility would be
5 looking at and evaluating and comparing different
6 methods of producing power.

7 Q But you do consider yourself,
8 apparently, expert enough to say what the BACT
9 analysis is meant to do?

10 A I didn't say that.

11 Q Well, you just opined on what it
12 was meant to do, did you not?

13 A I said I was competent enough to
14 read it and understand it and use the definitions
15 in there in my comparisons.

16 Q I apologize. I thought I was
17 hearing you to say and opine as to what the BACT
18 analysis was meant and not meant to do. And I
19 believe you said it was not meant to compare --
20 did you say power-generation technologies?

21 A Correct.

22 Q So you did say that: That's what
23 it's not meant to do?

24 A That's what I said.

25 Q And you feel that you have the

1 expertise to opine as to what it's not meant to
2 do in that regard?

3 A I am competent enough to read the
4 introduction and first few pages of that NSR
5 Manual, which clearly say, "This is what this is
6 supposed to be used for."

7 Q I understand you're being
8 careful. I'm not questioning your literacy.

9 You talked about what the BACT analysis
10 is meant to do.

11 A Uh-huh.

12 Q I've asked you if you feel that
13 you are qualified, as a nonexpert in BACT
14 analysis, to give an expert opinion on what the
15 BACT process is meant to do.

16 A No, and I don't think it takes an
17 expert to read that part of the NSR Manual and to
18 understand what its purpose is. No different
19 than what Mr. Fowler put in one of his reports
20 which, if I may paraphrase as best as I can, that
21 the BACT analysis is for the purpose of
22 determining an emission limit and the control
23 technologies that are used to meet that limit.

24 So I would think that I understand that
25 as well as he does.

1 Q That may or may not be.

2 But my question was whether you think
3 it requires any particular expertise to render an
4 opinion about what a BACT analysis is meant to do
5 and whether you have that expertise.

6 A I don't think expertise or being
7 an expert is required to understand the words in
8 the NSR Manual. And at least two of us agree on
9 that meaning: I said it and Mr. Fowler said it
10 in one of his reports or responses.

11 Q Did I understand you to say that
12 you never prepared a BACT analysis?

13 A That's correct. And I did say
14 that I have contributed to them.

15 Q Yes. And have you ever prepared
16 a BACT analysis that you thought was appropriate
17 for submittal to a regulatory body?

18 A Well, I said I have not prepared
19 a full BACT analysis.

20 Q I take it, then, that you've
21 never prepared a BACT analysis that compared
22 pulverized coal and IGCC technologies?

23 A Not as part of an air-permit
24 application.

25 Q Where did you prepare a BACT

1 A Preliminary -- or a draft permit,
2 which may include that preliminary BACT determi-
3 nation by the agency.

4 Q And then there's public review?

5 A Yes.

6 Q Can you describe that?

7 A Well, the agency puts out a
8 public notice that says, "This draft permit is
9 available," and depending on the state, there are
10 regulatory procedures on how they do that and how
11 many days are available and how to contact the
12 agency, how to submit comments.

13 And then the agency schedules or
14 doesn't schedule a hearing -- a public hearing,
15 depending of the nature of comments. And then
16 it's their job to take any and all comments into
17 consideration and issue a final permit.

18 Q Do you know if Wyoming has a
19 public review and comment provision?

20 A I think they do. I don't know
21 why it would be any different from any other
22 state.

23 Q Is it your understanding that
24 it's required by the Clean Air Act or --

25 A That's my understanding, and also

1 by specific state laws.

2 Q What do you think of -- I'm
3 sorry.

4 A Go ahead.

5 Q What do you think the purpose of
6 that public review is?

7 A To allow the public to review the
8 draft permit and the documents that were filed in
9 the application, any questions that the applicant
10 had of the agency or the agency had of the
11 applicant, to review the materials that are in
12 the record.

13 Q Why would that be important --

14 A Because --

15 Q -- or worthwhile?

16 A -- the public has a right to
17 know.

18 Q And then there's an opportunity
19 for public comment; is that right?

20 A Yes, I think I said that.

21 Q And why would that be?

22 That doesn't contribute to the public's
23 right to know. Why is that worthwhile?

24 A There may be some pieces of the
25 project that the public does not understand: Why

1 are they doing this? What are the impacts going
2 to be?

3 Not everyone understands a CALPUFF
4 modeling procedure and the results, and someone
5 may have the simple question: What's it going to
6 do to the air around my house? And that allows
7 the agency to answer the question, "The analyses
8 show that there are no primary or secondary air-
9 quality standards that are being violated."

10 Q Maybe during a break you can tell
11 me who can explain CALPUFF modeling to me, by the
12 way. I would find that very useful.

13 A Hopefully, the person to your
14 right.

15 Q Perfect. Well, we haven't talked
16 about that one yet.

17 So the public comment period is, you
18 think, a useful opportunity for the public to ask
19 questions and have its misunderstandings
20 clarified?

21 A Yes, and questions answered.

22 Q And questions answered.
23 How about suggestions made or views
24 felt?

25 A Anyone can suggest or have their

1 views or opinions stated in a letter and
2 submitted to the agency. Then it's -- the agency
3 makes the final determination and issues the
4 permit.

5 Q But you would agree, that's an
6 important part of the process, wouldn't you?

7 A It's part of the process.

8 Q Have you ever seen a regulatory
9 make any changes in response to public comment?

10 A Yes.

11 Q Changes for the better?

12 A "Better" meaning?

13 Q Improvements.

14 A Improvements of what kind?

15 Q Well, you've been following these
16 closer than I, so -- they've made changes.

17 A Yes.

18 Q Tell me about some of those
19 changes.

20 A I have seen changes in emission
21 limits; I have seen changes in emission-control
22 technologies that are used and the requirements
23 for them. That's the typical nature of things
24 that change during -- well, between the draft
25 permit and the final permit.

1 Q Did you think that those were
2 changes for the better?

3 A Typically, yes, if they can be
4 met.

5 Q So do you think that the public
6 process, the public-comment aspect of this,
7 improves the BACT analysis -- or the permitting
8 process?

9 A I think it's a valuable part of
10 the process.

11 Q Would you support eliminating
12 that part of the process?

13 A No.

14 Q Because it's valuable?

15 A Yes.

16 MR. ANGELL: All righty. I'd
17 like to take a break now for a few minutes.
18 Would that be okay? It's a good breaking point.
19 (Recess from 10:16 to 10:25 a.m.)

20 Q (BY MR. ANGELL) Just real
21 quickly, I want to return to a question I asked
22 earlier about what documents you looked at as
23 background to guide your analysis.

24 A Yes. And I did check on that EPA
25 policy letter --

1 Q Uh-huh.

2 A -- as you asked; and it was dated
3 December 13, 2005 --

4 Q 12/13/05?

5 A -- from Steven Paige of the EPA.

6 Q Okay.

7 A I think I said "2006," but I got
8 the "December" right.

9 Q Okay. Half credit. All righty.
10 Did you look at any Wyoming-specific
11 documents to guide your analysis?

12 A No.

13 Q So as far as you know, there's no
14 state interpretive -- state documents that alter
15 the NSR Manual guidance or --

16 A I don't know of any.

17 Q You didn't use any?

18 A Correct.

19 Q And you don't know of any?

20 A Correct.

21 Q All right. Let's look at -- I'd
22 like you to generally describe these production
23 processes for me. And so let's look first at
24 pulverized coal. And there's Exhibit 2 at page
25 12 to your report that I believe had a block

1 where the energy is coming from that heats the
2 steam that turns the turbine --

3 A Uh-huh.

4 Q -- right?

5 -- that is all originating in the coal?
6 Coal is the source of the energy here?

7 A Basically.

8 Q "Basically" or "yes"?

9 A "Basically." And then we add the
10 water and the oxygen. Those provide part of that
11 heating value in the syngas. Because the coal is
12 the feedstock; oxygen is the feedstock; water is
13 a feedstock going into the gasifier. Then they
14 are converted to other chemicals.

15 Q In the PC plant, there's ambient
16 oxygen, right?

17 A Yes.

18 Q That aids the production of the
19 heat, correct?

20 A Yes. You add as much oxygen as
21 you can in the form of air to make sure you burn
22 all of the coal to CO₂. You use excess oxygen,
23 excess air.

24 In the gasifier, you use very little.
25 You start it; you do not want combustion to

1 A The same basic process but a very
2 different role.

3 Q What's the different role?

4 A The primary part of power genera-
5 tion in an IGCC plant is from the gas turbines.

6 Q Are there percentages, by the
7 way?

8 A Typical percentages would be --
9 about 60 to 70 percent of the power output of an
10 IGCC plant is from the gas turbines and the
11 balance from the steam turbines; whereas in a
12 PC plant, you depend on 100 percent of the power
13 coming from the steam turbine, which contributes
14 to its availability too.

15 Q So 60/40, 70/30, that's the kind
16 of proportions we're talking about?

17 A Typical in today's IGCC reference
18 plant.

19 Q Just one last question about this
20 diagram, I think: So if I'm understanding,
21 you're getting energy. After the sulfur
22 recovery, you're running it into the gas -- the
23 super-heated syngas. You ignite it, run it
24 through the gas turbine to get electricity there?

25 A The syngas is hot but it is not

1 inside the gasifier in that temperature range
2 that I talked about before. It's hot and glowing
3 as part of that chemical reaction. The ash is
4 hot and molten, as I described before.

5 Q So there is some combustion
6 occurring inside of there?

7 A Yes, inadvertently. But then it
8 gets reversed.

9 Q All right. Let's turn back to --
10 I believe it's page 9 here in your report.

11 A Of my report?

12 Q Your most recent report.

13 A The hypothetical analysis.

14 Q You said that -- I don't see the
15 quote I was looking for here, but I believe
16 you've already testified that IGCC need not be
17 considered because the BACT process is not meant
18 to consider, I believe you said, power-generation
19 technologies but only emission technologies. Is
20 that what you said?

21 A What I said was, the BACT
22 analysis is for the purpose of selecting the
23 emission limit and then the technologies to
24 control those to that -- those limits.

25 Q And you gave examples of

1 Q Because your experience is that
2 when folks respond to RFPs on fantastically
3 complicated projects like power plants, they put
4 forward a series of guarantees, and there's no
5 negotiation back and forth of what those
6 guarantees might be?

7 A There is negotiation, and you
8 have to have something to start from. This had
9 nothing to start from. These are simple state-
10 ments to try and keep people in a discussion.
11 But they offered nothing.

12 Q Okay.

13 A They never said that they could
14 even build or design an IGCC plant.

15 Q Is that true? I haven't seen
16 these responses, of course, but we can find that
17 out, I suppose.

18 A Uh-huh. It was a lackluster
19 response by the industry.

20 Q All right. Let's talk about the
21 size of the project. The original RFP was for
22 250 megawatts. It changed after that. Do you
23 know why?

24 A The need for power showed that
25 the net output of the plant needed to be higher.

1 Q All right. There was no new RFP
2 sent out for the larger facility, as far as you
3 know; is that correct?

4 A That's correct, as far as I know.

5 Q So no folks were given the chance
6 even to decide whether they could build the
7 project?

8 A It was too late.

9 Q Why too late?

10 A Because in your need for power,
11 you determine how much power you need and when
12 you need it.

13 They had a schedule to meet, and Basin
14 Electric's customers need this power plant by a
15 certain time. You need that power. That's part
16 of the planning and modeling that you do.

17 So you don't stop midway and say,
18 "Well, why don't we just start over." If you
19 start over, then you don't meet that schedule and
20 you don't have the power that you need available
21 for your customers. That's part of resource
22 planning that a utility does.

23 Q Is there any way to know what
24 they would have received in response to such an
25 RFP?

1 A Not without one.

2 Q So, no?

3 A No.

4 Q No way of knowing?

5 A It could have gone out for bid
6 for 385 megawatts of wind turbines, but it was
7 too late for that too.

8 Q That's right. But no way to know
9 what any of the IGCC providers might have
10 responded with to an 385-megawatt RFP?

11 A That's correct.

12 Q So we don't know. If they would
13 have been offered guarantees, don't know?

14 A Don't know; unlikely.

15 Q Don't know?

16 A Don't know.

17 Q All right. Is it possible to
18 customize projects to size with IGCC?

19 A No.

20 Q It's not?

21 A No.

22 Q It's not possible to come up with
23 an IGCC plant that would be at or close to 385
24 megawatts?

25 A No.