In The Matter Of:

Department of Natural Resources & Environmental Control Natural Minor Source Air Permits for Maintenance

> Public Hearing January 10, 2019

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Original File DNREC Hearing Permit for Maintenance 01-10-19.txt Min-U-Script® with Word Index

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL DIVISION OF AIR QUALITY IN RE: Natural Minor Source Air Permits for Maintenance Upgrades of Red Lion and Brookside Energy Centers Division of Air Quality 391 Lukens Drive New Castle, Delaware Thursday, January 10, 2019 6:02 p.m. TRANSCRIPT OF PUBLIC HEARING BEFORE: LISA A. VEST, HEARING OFFICER PRESENT: _ _ _ _ (SEE SIGN-IN SHEET FOR ATTENDEES) WILCOX & FETZER Registered Professional Reporters 1330 King Street Wilmington, Delaware 19801 (302) 655-0477



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1 THE HEARING OFFICER: Good 2 evening. I want to thank everybody for taking their time to come out tonight. 3 The 4 date is Thursday, January 10th, 2019. And we are here this evening to provide a formal 5 6 platform for the Department of Natural 7 Resources and Environmental Control (DNREC) to receive public comment on the Regulation 8 No. 1102 natural minor construction permit 9 10 applications that have been submitted by 11 Bloom Energy, or also known as Diamond State 12 Generating Partners, to replace all fuel cells at their Red Lion site located at 1593 13 14 River Road, in New Castle, Delaware, as well 15 as at their Brookside site, located at 512 16 East Chestnut Hill Road, in Newark, 17 Delaware. 18 For those of you that may not 19 know me, my name is Lisa Vest. And Secretary Garvin has appointed me to serve 20 21 as the hearing officer for tonight's formal proceedings. 22 23 If by chance you've missed it 24 and did not do so when you came in, I would

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1 ask that you would sign the sign-in sheets 2 that we have located in the hallway as you Hopefully you have already done 3 came in. 4 that. There is a spot on the sheet to let us know whether you want to offer comment at 5 6 tonight's hearing. If you do wish to offer 7 comment for the record, those persons will 8 be given an opportunity to do so following 9 the presentations that are going to be given by both the Department and the Applicant. 10 11 When that portion of tonight's proceedings 12 gets here, I will instruct accordingly. Even if you do not wish to offer comment, 13 14 it's important that we have an accurate 15 record of everybody that's here tonight. 16 So, again, if you've missed that somehow, please take the opportunity to sign in. 17 18 Once I get done with these brief 19 introductory remarks, I will be turning the hearing over to Department staff, and for a 20 21 short time, the Applicant. Both are, as I said before, making brief presentations to 22 23 kind of help everybody understand why we're 24 here tonight and what the scope of the



1 hearing is.

-	nearing ib.
2	As mentioned before, the permit
3	applications currently before
4	Secretary Garvin is the reason that we're
5	here tonight. The order of commenters will
6	be taken directly from the sign-in sheets.
7	So, again, please make sure to sign in if
8	you haven't already done so.
9	I have a few remarks with regard
10	to protocol for the proceedings tonight. As
11	is the case for all DNREC hearings, there
12	are formal protocols which must be adhered
13	to.
14	First, consistent with all
15	public hearings held by DNREC, all comments
16	tonight must be limited solely to the
17	subject matter of tonight's hearing, which,
18	again, are the pending Reg No. 1102 air
19	quality permit application submitted to the
20	Department by Bloom Energy. Pursuant to
21	that subject matter, all comments given that
22	are pertinent to these applications will be
23	incorporated into the formal hearing record
24	generated in this matter. As is also
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1	DNREC's policy at these hearings, each
2	person wishing to offer comment is asked to
3	do so in as precise a manner as possible.
4	In order treat everyone equally and fairly
5	tonight, each person will be limited to a
б	total of three minutes of time to offer
7	their comments. To facilitate that protocol
8	and also to ensure fairness with regard to
9	the amount of time each person is given,
10	we're going to have a visual timer in place
11	to help everyone be aware of how much time
12	is left as they're giving their comment.
13	I do want you all to be mindful
14	that if you have already submitted written
15	comment to me or to the Department via
16	email, that information is automatically
17	already in the record.
18	Keeping in mind the time
19	restraints that we are under this evening,
20	it isn't necessary to offer the same comment
21	verbally if you've already given it to me in
22	writing. If you do have any prepared
22	
23	written comments or statements that you've

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1 would ask that when you're recognized, you 2 give that documentation to me. I can mark I can make sure it's put into the 3 it. 4 record right now and then you can use your three minutes that are allotted to give the 5 6 rest of the audience a brief summary of the 7 documents that you've asked to be put into the record. 8 9 If you've come tonight just to 10 kind of hear what other people say and you 11 don't have any prepared comments, that's 12 okay, too, because there is going to be an opportunity to give written comment 13 14 subsequent to the close of tonight's 15 hearing. This three-minute time allotment 16 17 will be strictly enforced to make sure that 18 everyone is treated fairly and we get 19 everybody that wants to speak an opportunity to do so. 20 21 There will be no yielding of time from one commenter to another. Again, 22 23 to ensure fairness and equality for each 24 person.



1 Consistent with our policy at our hearings and also consistent with 2 current Delaware law, all persons wishing to 3 4 offer verbal comment at the hearing tonight 5 must be physically present in order to be 6 recognized. Those unable to appear 7 personally tonight may submit their comments in writing subsequent to the hearing, if 8 That being said, any 9 they so wish. 10 commenter who is physically present at 11 tonight's hearing will be permitted to read 12 into the record comments of someone who is absent provided that the commenter who is 13 14 present here tonight fully identifies the 15 absent person by name at the time the 16 comment is being given. If that instance 17 occurs, the speaker who is physically 18 present tonight, still only gets three 19 minutes to comment. No one will be granted an additional three minutes for their own 20 21 views if they take three minutes to give somebody else's views into the record. 22 23 In order to ensure that everyone 24 who wishes to offer comment for the



1 Secretary's consideration is accommodated, the hearing record is going to remain open 2 subsequent to the close of tonight's 3 4 proceedings. DNREC will keep the record open through the close of business, which is 5 4:30 our time, through Friday, January 25th, 6 7 2019. The hearing record being left open for the receipt of comment will ensure that 8 those not physically in attendance at the 9 10 hearing tonight will still be able to 11 provide comment for the record. 12 Also, there may be those who provide comment tonight and then wish to say 13 14 some more after they've been here and 15 they've heard what others say, with the 16 record being kept open an additional 15 17 days, you can supplement any comment that you've either given prior to tonight or 18 maybe add on to what you say tonight. 19 Again, leaving the hearing 20 21 record open through the 25th of this month will ensure that no member of the public was 22 23 prevented in any manner from offering 24 comment on these pending permit applications



1	and that the public has been given ample
2	opportunity to offer comment for inclusion
3	into the record.
4	For clarification purposes,
5	there is only one authenticated record for
6	tonight's hearing, and it is the transcript
7	that will come from the official court
8	reporter. The court reporter is doing a
9	verbatim transcript to memorialize the
10	proceedings tonight. I'd like to remind
11	everyone she can only hear and accurately
12	transcribe one voice at a time. So in order
13	to ensure we have as accurate of a
14	transcript as possible, please remember not
15	to speak while anyone else is speaking and
16	don't call out from the audience for any
17	reason.
18	Members of the news media and
19	others that are here tonight are not
20	prohibited from audio or video recording of
21	the proceedings, but we do ask that you use
22	any equipment that you have in at way that
23	is unobtrusive and would not interfere with
24	the ability of others to hear what is being

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1 said.

2	Whether listening or speaking,
3	we ask that everyone here be respectful and
4	considerate of all comment offered with
5	regard to these permit applications, even
6	though some comment may differ in opinion
7	from your own.
8	Additionally, I would ask that
9	all cellphones be muted so that we don't
10	have ringing during the proceedings. The
11	statutory purpose of tonight's hearing is to
12	allow citizens to offer comment on these
13	permit applications.
14	To give you guys further
15	understanding of how this works. There will
16	be a hearing record generated from this
17	matter. It will consist of the transcript
18	of the verbal comments given tonight, the
19	written comments that have come in, exhibits
20	that may be offered for the Department and
21	eventually a Hearing Officer's report that
22	will be reviewed by the Secretary. The
23	Secretary of DNREC then ultimately issues an
24	order following his review process. That



1	order will contain his decision on the
2	applications and the reasons for the same.
3	Myself and other DNREC staff
4	members are present this evening to
5	facilitate public comment and not to
6	participate in these proceedings in any way.
7	Please note, as is the case and policy with
8	our hearings, there will be no
9	question-and-answer session during the
10	course of tonight.
11	Lastly, it is important to
12	remind the public that no decision has
13	already been made by the Department in this
14	matter nor will any decision be made this
15	evening with regard to these applications.
16	The purpose of tonight's hearing is to
17	provide a formal platform for the public to
18	come and offer comment specifically related
19	to these permit applications and for such
20	comment to be incorporated into the formal
21	hearing record that is generated.
22	Written comment may be received
23	by the Department up through the close of
24	business, as noted before, January 25th,

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1 2019. All comments, whether offered verbally tonight at the hearing or received 2 in writing either via email or U.S. mail by 3 4 4:30 p.m. on January 25th, all bear the same weight and all will be considered equally by 5 the Secretary prior to making a final 6 7 decision in this matter. Again, the ultimate decision 8 with regard to these permitting matters is 9 10 made by Secretary Garvin. We're here 11 tonight in a formal proceeding to act as a mechanism to enable the Department to 12 receive that comment. 13 14 That being said, I will now turn the floor over, I believe -- is the 15 16 Department going first? 17 MS. MARCONI: Bloom Energy. 18 THE HEARING OFFICER: Okay. 19 Proceed. MR. BALLANTINE: Good evening. 20 21 I'm Arnie Ballantine, Vice President -Systems Engineering at Bloom Energy. 22 23 I'm in my fourteenth year with 24 the company. Like many of my colleagues



1	with the company, I'm a veteran. I served
2	in the United States Navy aboard the USS
3	Florida. I'm fortunate in my private life
4	to serve in an unpaid capacity on the
5	Utilities Advisory Commission in my hometown
6	and on the Electrical Engineering, Computer
7	Science Advisory Board for Rutgers
8	University. I have a lifelong passion for
9	working to find ways to achieve the highest
10	possible efficiency in power generation and
11	usage, water, heating, transportation, and
12	thus, reducing harmful emissions and the
13	impact of those emissions on the health and
14	wellbeing of our society. For me, this is
15	not a job alone or a paycheck, but a mission
16	and a personal moral obligation.
17	With me tonight, my colleague,
18	Pat McCormick, Vice President - Regulatory
19	for Bloom and our counsel for this matter,
20	Andy Levine. Pat works from our Bloom
21	Manufacturing Center - Delaware, in Newark.
22	A number of our fellow employees
23	who also work in our advance manufacturing
24	facility in Newark have volunteered to be



1 here in the audience tonight out of their 2 passion for our mission. Bloom is proud and grateful to be a growth company and 3 4 corporate citizen in Delaware. Our 5 employees are proud to be part of this 6 community and contribute to Delaware. In October 2018, Bloom applied 7 on behalf of Diamond State Generation 8 Partners, LLC, for the natural minor 9 10 construction permits that are the subject of 11 tonight's hearing. We appreciate the 12 opportunity to participate tonight. The 13 upgrade that prompts the minor permit 14 applications under review will lower already 15 low emissions, consume less natural gas and 16 allow us to take the latest Bloom technology 17 manufactured in Delaware and deploy here for 18 the benefit of the Delaware community. 19 I want to briefly describe the Bloom Energy server and our persistent and 20 21 continuous efforts to advance our fuel cell generation technology. Earlier generations 22 23 of our technology have been reliably in 24 service at the Brookside and Red Lion sites



1 for years now.

2	Shortly after the Brookside site
3	went in service, that facility rode through
4	Hurricane Sandy. In fact, the
5	availability that is, the ability to
6	generate power when it's needed of the
7	Bloom Energy servers at Red Lion and
8	Brookside has been above 99 percent, which
9	is dramatically higher than the availability
10	of other forms of clean energy and well
11	exceeds the typical in-service availability
12	of conventional power plants. We're proud
13	that over the last four generations of Bloom
14	servers, and in fewer than ten years, we've
15	increased the amount of power we can pack
16	into that same space with our product,
17	roughly, fivefold. We've also improved the
18	longevity of our fuel cells by a factor of
19	four.
20	A powerful aspect of modular
21	distributed generation, installations like
22	Brookside or Red Lion, is that these can
23	deliver power to the grid at locations where
24	grid voltage may be most likely to sag or

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1 droop as in brownouts or blackouts. In 2 2018, the United States electrical community authorized a new standard, IEEE 1547, which 3 4 calls on inverters, such as used in Bloom cell generators, to be more vigilant in 5 6 working to hold the grid up during these sag 7 or droop conditions which can lead to a power outage. This upgrade will bring the 8 latest technology, including the IEEE 1547 9 features, and enable Red Lion and Brookside 10 11 sites to provide more value to the grid. 12 I believe DNREC will shortly summarize our permit applications. 13 I would like to highlight a few features of the 14 15 permit applications. 16 We continue to have extremely 17 low emissions at both sites, improving on 18 our best in class emissions profile for Red Lion and Brookside Energy Centers that 19 20 produce always on power. We're always 21 striving to improve, and the proposed upgrade is another step. 22 23 Measured in pounds per hour 24 emitted, which is a metric called for by the



1 permit application, we expect all together approximately 25 percent NOx and VOC 2 emissions, more than 65 percent less carbon 3 4 monoxide, and 16 percent less C02 emissions 5 after the upgrade. Measured by megawatt hours generated, that's all together 20 6 7 percent less NOx and VOCs and 65 percent less carbon monoxide and about 9 percent 8 9 less CO2 after the upgrade. 10 The sites will deliver the same 11 amount of electrical power. They'll just do 12 so using the latest version of Bloom's technology. The applied-for permit is a 13 14 natural minor construction permit, but the 15 upgrade does not involve more space, more 16 sites or even more pads. To be expedient, 17 Bloom will simply place the smaller units 18 onto the existing pads. Bloom will continue to service the energy servers at the sites. 19 And receiving this air permit will enable 20 21 Bloom to move forward with developing this project expeditiously and enable Delawareans 22 23 to realize the benefits. 24 Finally, as we see it, because



1 there is a reduction in emissions while maintaining the same general operations, 2 there's no legal basis for denying the 3 4 permit, and we respectfully request that it 5 be granted promptly. Thank you for your consideration 6 7 and attention. My name is Angela 8 MS. MARCONI: I'm with the Division of Air 9 Marconi. 10 Quality. I'm going to give a short 11 presentation, and I also have some exhibits 12 to enter for the record. They are: The two applications that we received; the legal 13 14 notices for those applications; the hearing 15 request from the Caesar Rodney Institute; 16 all notices of the hearing, including the 17 paper notices and on the online calendar; notices of the hearing which were sent to 18 the company and to the Caesar Rodney 19 Institute; and public comments received to 20 21 date. 22 So we're here today to talk 23 about two applications. They came in for 24 two different facilities, both operated by



1	Diamond State Generating Partners, or
2	colloquially, I guess, Bloom Energy. They
3	are the Red Lion facility and Brookside.
4	And the addresses were already noted. We
5	received these applications on October 24th.
6	They were publicly noticed on November 11th.
7	And we're here on January 10th for the
8	hearing.
9	Things to note about the
10	facilities is that they are currently
11	existing and operating; the proposed
12	construction would replace the existing
13	units with upgraded units; the emissions
14	will decrease from current levels; and that
15	the overall generation capacity is also
16	proposed to decrease.
17	The emissions from the fuel
18	cells include: nitrogen oxide; carbon
19	monoxide; sulfur dioxide; VOCs, or volatile
20	organize compounds; and carbon monoxide.
21	So this slide just shows what's
22	currently installed at both facilities and
23	what is proposed in the application.
24	Currently installed at Red Lion is 134 units

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1 totalling 27 megawatts. And in the application, it would be reduced to 110 2 3 units with 24.9 megawatts. At Brookside, 4 currently installed is 15 units generating 3 megawatts, and in the application, 13 5 6 units at 2.6 megawatts. 7 I wanted to just explain briefly 8 what it means when you hear something identified as "a natural minor facility." 9 10 Both the Brookside and Red Lion facilities 11 are considered natural minor facilities 12 because their potential to emit is below the major source threshold for New Castle 13 14 County. And the table shows what the major 15 source threshold is. For NOx and VOCs, it's 16 25 tons. Carbon monoxide, sulfur dioxide, 17 PM10 as well as other air pollutants 18 generally is a hundred tons. And hazardous air pollutants would be 10 of any one 19 pollutant or 25 total. So that is why if 20 21 you hear we're here talking about a natural minor, this is what it means. 22 It's the 23 facility status based on the total 24 emissions.



1 This table shows the potential to emit for what's currently installed and 2 3 what's in the application for both 4 facilities. The potential to emit for the pollutants does decrease in both cases for 5 Red Lion and for Brookside. 6 These emissions 7 are calculated based on fuel usage. And natural gas is the fuel that's used in the 8 units. 9 10 So tonight we're at a public 11 hearing. Public comments can be received in 12 writing or in person at the hearing, and then they're entered into the formal record 13 14 and will be responded to as such. The 15 Division of Air Quality (DAQ) will draft a 16 technical response memo to address the 17 comments that are pertinent to air quality considerations related to the proposed 18 changes at the facility. The technical 19 response memo may also recommend issuance of 20 21 a construction permit; and if that is the case, the construction permit would be 22 23 submitted to the Hearing Officer and then 24 the Hearing Officer will draft a report and



1	an order for the Secretary's consideration.
2	A little bit about our
3	permitting. If the Secretary approves the
4	permit, then the Division of Air Quality
5	will issue construction permits that will
6	meet the air quality standards required by
7	federal and Delaware State regulations,
8	permits that are supported by a detailed
9	technical review and that may contain permit
10	conditions that address concerns raised at
11	the public hearing or throughout the public
12	hearing process.
13	If the construction permit is
14	issued, DAQ would conduct a
15	construction-to-operation inspection
16	following completion of construction. And
17	then if the inspection is successful, the
18	company would receive an operating permit.
19	Following that, DAQ performs periodic
20	compliance inspections of facilities.
21	I think it's important in this
22	case to note that if no construction permit
23	is issued, the facilities can continue to
24	operate the existing equipment in accordance

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1 with the existing permits. Some examples of conditions that 2 3 we normally include in permits are: 4 recordkeeping and record retention for a minimum of five years; reporting of all 5 deviations from permitted conditions; and 6 7 additional reporting as required or deemed 8 necessary. DAQ issues permits for the 9 10 construction and operation of equipment 11 which has the potential to discharge air 12 contaminants into the atmosphere. These permits contain operational limits that 13 14 ensure proper operation of the equipment. 15 They do not contain requirements that are 16 not pertinent to air emissions. And that's all I have. 17 Thank 18 you. THE HEARING OFFICER: 19 Thank you, 20 Angela. 21 A little recordkeeping, briefly, before we get to the comment portion. 22 Let 23 the record reflect that the exhibits 24 identified by Department staff are hereby



1 entered into the formal hearing record being 2 generated in this matter. (DNREC Exhibits, previously 3 4 described, received in evidence.) THE HEARING OFFICER: 5 So what 6 we're going to do now is we're going to open 7 the floor to comment. And I just wanted to give a little, brief scenario of what this 8 In order to help the commenter gauge 9 is. their time and how much is left, there is 10 11 going to be three bars. We'll start this 12 visual at the beginning of your three As you talk, the bar will slowly 13 minutes. 14 begin to color in. You will go through the 15 first one. That's the end of one minute. 16 Second bar is yellow. It goes through the The third bar at the bottom 17 second minute. 18 is red. When that bar is fully saturated in red, that is the end of your three minutes. 19 And I would ask then that if you're still 20 21 talking, to kind of just sum it up. And we thank you for your 22 23 comments. They're immediately incorporated into the record because the court reporter 24

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1 is taking down a verbatim transcript, like I 2 said. 3 We want everybody to be mindful 4 and respectful of each other's opinions. And I hope that when your time is up, you'll 5 be respectful and return to your seat. 6 Ιf 7 you're not, I will remind you that your time is up. But we have to keep everybody to 8 three minutes. 9 10 That being said, in no 11 particular order, just going by the sheets, 12 Mr. Stevenson, you are up. And although you have a fine 13 14 last name, I don't think we'll need that 15 spelled just as an apology in advance, if I 16 mess up anybody's name, I'm super sorry, and 17 if I can't read clearly the way you're 18 spelling your last name, I may ask you to spell it for the benefit of the court 19 20 reporter. But you're good. 21 MR. STEVENSON: Okay. I will be the Guinea pig with the new timer. 22 23 THE HEARING OFFICER: You may 24 begin, sir.

25



1 MR. STEVENSON: Are both of 2 these on? 3 THE HEARING OFFICER: They 4 should be. My name is David 5 MR. STEVENSON: 6 Stevenson with the Caesar Rodney Institute. 7 I requested this hearing because I believe the permit application is incomplete and 8 should be denied and started over again. 9 10 While the air quality portions 11 of this seem to be complete, there are also 12 concerns about solid waste, HAZMAT, what's coming out of the decoking process. 13 14 In addition to the air quality 15 permit, there needs to be a Coastal Zone 16 permit for these same issues because 17 hazardous waste was never considered in the 18 original permit, as Bloom did not disclose 19 it. New permits need to go through 20 21 the normal review process along with an additional public hearing. 22 So some of the issues in the 23 24 permit application.



1	Number 1. The AQM 3.1
2	submission needs these changes:
3	Line 9.1 states no by-products
4	are produced. That needs to be changed to
5	show the products produced by the
6	desulfurization process.
7	Line 12.13 checks no boxes for
8	pollution controls. It's clear that the
9	desulfurization process is reducing SOX. So
10	that box should be checked. We know that
11	theses hazardous wastes are being completed
12	largely because of a letter from the
13	Environmental Protection Agency September 8,
14	2015. And there are also fines by other
15	states for improper control of hazardous
16	waste. Natural gas contains some sulphur
17	dioxide or sulphur that can interfere with
18	the fuel cell process. So the sulfur is
19	removed, stored in stainless steel
20	canisters, but also contains benzene and
21	hydrosulfide, lead, chromium, arsenic, and
22	other materials that are considered
23	hazardous. So these need to be controlled.
24	So we'd like to see how much



1 hazardous waste material is being produced annually, what's its composition. 2 Will 3 there be warning placards attached to the 4 Bloom boxes for first responders? Will material handlers receive HAZMAT training? 5 Where and how will waste be disposed? 6 7 Also, the solid waste, there's going to be -- if you're going to replace 8 the entire boxes, you're looking at 9 6 million pounds of waste. How is that 10 going to be disposed? A lot of it is also 11 electronic waste. So how is that going to 12 Is it going to be sent to a 13 be disposed? 14 landfill in Delaware, recycled somehow. 15 What's going on with that? There are actual limits in 16 hazardous waste waste that can be removed 17 according to the original Coastal Zone 18 19 permit. So with that, I will sign off 20 21 and say adieu for tonight. 22 THE HEARING OFFICER: Thank you, 23 Mr. Stevenson. 24 And for the record, I have your



1 documentation, which is basically what you 2 summarized. MR. STEVENSON: I added a few 3 4 lines. THE HEARING OFFICER: 5 That's Let the record reflect 6 fine. 7 Mr. Stevenson's documentation is entered into the record formally as Stevenson 8 Exhibit 1. 9 10 (Stevenson Exhibit 1 received in 11 evidence. 12 THE HEARING OFFICER: Thank you, 13 again, Mr. Stevenson. 14 Next up, Amy Roe. 15 MS. ROE: Good evening. My name 16 is Amy Rowe. I live in Newark. It's my 17 privilege to deliver to you a printed copy 18 of the written comments submitted by Lindsay Leveen, who lives in California and unable 19 to appear at this hearing in person. 20 21 Mr. Leveen is an award-winning chemical engineer and journalist. For the sake of 22 23 time, I will summarize Mr. Leveen's 24 testimony.



1 Bloom provides false information 2 on each application and has repeatedly 3 misrepresented greenhouse gas emissions to DNREC since 2012. 4 The way that Bloom has 5 6 calculated CO2 emissions per megawatt hour 7 is not how the US EPA calculates emissions Bloom is therefore 8 for natural gas. underestimating its greenhouse gas emissions 9 10 in a manner that is lower than what the EPA 11 would calculate, and Bloom uses this 12 underestimated figure throughout the 13 application. 14 Bloom also appears to be 15 underestimating the emissions of volatile 16 organic compounds because it relies upon 17 statistically insignificant data points from 18 three tests with widely varying emissions DNREC should disregard any claims 19 levels. by Bloom it will lower emissions. 20 21 Bloom seemingly ignores SO2 emissions in the application, even though 22 23 SO2 is a natural byproduct of its energy 24 production process. This could be



interpreted to mean that Bloom will remove
all of the sulfur from the natural gas via
their desulfurization tanks. Yet Bloom is
silent in the application on the handling of
this waste, and the fate of which should be
described.

7 Blooms uses a capacity factor of 8 100 percent for all the megawatts installed 9 to calculate its natural gas consumption. 10 100 percent capacity factor is not possible 11 in the real world, which raises questions 12 about the actual consumption that the 13 facility will need.

As reported to Delaware's Public Service Commission, Bloom's capacity factor has been low due to their need to "decoke" the units 3 to 4 percent of the time. The process of "decoking" creates air emissions, yet these emissions are not quantified in the air permit application.

The amount of waste generated is limited by its Coastal Zone Act permit. How will the waste products generated by Bloom be categorized by DNREC and how can this be

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1 done by violating their Coastal Zone Act 2 permit? We ask DNREC to do the 3 4 following: Require Bloom to provide 5 accurate and statistically meaningful data 6 7 on air emissions. Require Bloom to provide a 8 detailed demolition plan with full 9 10 disclosure of the mass of solid waste and 11 the method of disposing of the solid waste. 12 Require Bloom to provide public assurance that they will not claim 13 14 investment tax credits for this maintenance. 15 Require Bloom to provide details of their agreement with Credit Suisse on how 16 funds will be disbursed. 17 18 And require Bloom to justify why 19 they are installing fewer megawatts of nameplate capacity for this upgrade than 20 21 were installed in 2012. 22 Thank you for the opportunity to 23 speak. As noted, I have a written copy of 24 Mr. Leveen's full testimony for the hearing



1 record. 2 THE HEARING OFFICER: Thank you. 3 Thank you, Amy. 4 Again, for the record, the documentation provided to me just now by 5 Ms. Roe is hereby entered into the hearing 6 7 record as Roe Exhibit 1. (Roe Exhibit 1 received in 8 9 evidence.) 10 THE HEARING OFFICER: Thank you. 11 Next up, Britni Kriner. 12 MS. KRINER: Good evening. Ι had the opportunity to start with Bloom in 13 October of 2014, and this is my first 14 15 experience in the manufacturing industry. 16 Being I had absolutely no experience, I 17 pushed myself to learn everything I could to show that I would be a valuable asset. 18 Manv growth opportunities presented themselves to 19 me in different ways. For instance, Bloom 20 21 offers its employees for professional growth computer and Microsoft Office training, 22 23 clean, modern manufacturing, mechanical and electrical assembly training, metal work and 24



1 welding. Bloom has given me the opportunity to advance my career through training and 2 3 development, having become more versatile 4 and earning two promotions as a result. In 2016, I joined the Bloom 5 6 women's leadership initiative with the 7 mission to support empowering women in a male-dominated industry while preparing 8 employees for professional growth. 9 This 10 opportunity has challenged me to be more 11 confident in myself, public speaking 12 included. To say Bloom is involved in the 13 14 community is an understatement. Every year 15 we host a blood drive for our employees. We 16 donate foods and vegetables to the Delaware 17 Food Bank. We conduct CPR programs. We 18 invite schools to our facility to educate students about STEM and have them be a part 19 of hands-on STEM activities. 20 These are a 21 just a few examples. Working for Bloom is important 22 23 to me and family. I have two beautiful 24 children. My son, Robbie, is 2-years old,



1 and my daughter Lexy is 10-years old. As a single mother, it is important to me to live 2 in an environment with clean air. 3 My son 4 was born at Christiana Hospital premature, coming seven weeks early, and he can get 5 6 very sick very easily. He's been diagnosed 7 twice already within the past six months with respiratory syncytial virus, also known 8 At the age of only 2-years old, my 9 as RSV. 10 son has two inhalers for asthma, and he has 11 to take breaks between playing to receive 12 this medicine to be able to continue his activities in a normal fashion. 13 Knowing 14 that he can grow up and say, hey, my mom 15 made a difference or that Bloom is 16 positively influencing the future not just 17 for us, for our children, is important to 18 me. 19 Lastly, I've made so many amazing relationships at my company, 20 21 including friends and mentors, most being in It is this simple. 22 this room. The people 23 are caring, professional, and they are 24 leaders that I look up to. Being a part of


1 the amazing technology is another reason. We are the leading fuel cell 2 3 manufacturer in the world providing clean 4 ecological energy to our customers. This is 5 important for you, our friends, our family, our children so that we can all move forward 6 7 in creating a cleaner environment. And 8 Bloom is absolutely the way to go. You have seen the face of Bloom Energy as we are all 9 10 here on our own time investing in what we 11 believe to be the future. Please approve 12 the permit and join us in the new innovative 13 world Bloom is creating. Be the example. 14 Thank you. 15 THE HEARING OFFICER: Thank you, 16 Ms. Kriner. John Nichols. 17 18 MR. NICHOLS: My name is John I live in Middletown, Delaware. 19 Nichols. Like Mr. Stevenson, I request the Coastal 20 21 Zone permit application be made part of the record. 22 23 And I'd like the Department to 24 inquire of Bloom Energy what the following



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1 words mean: replacement, and repair, and These are three words that have 2 upgrade. been used to refer to the proposed project. 3 4 Each one has a specific meaning. And it's important that Bloom identify exactly what 5 it is that they're doing, whether replacing, 6 7 repairing or upgrading. These definitions would determine whether or not the proposed 8 project would qualify for a 30 percent 9 10 investment tax credit. That's a very 11 expensive proposition if they do qualify for 12 that, costing millions of dollars. A new word that was introduced 13 14 tonight to my lexicon is "natural minor 15 facility." I'm not familiar with that. 16 That could be a DNREC word, but it's not 17 covered under the Uniform Development Code 18 of New Castle County. 19 New Castle County issued permit, the fellow's name, Ken Barry or Ari, to 20 21 allow Bloom to site and protect the Delaware But it's pretty clear under 22 Coastal Zone. the Uniform Development Code you may not 23 24 site a major utility in S zoning



1 classification. To the best of my knowledge, that zoning classification still 2 3 exists. 4 UDC, Uniform Development Code, "Any facility for goes on to specify that: 5 the regional generation, transmission, 6 distribution, treatment, disposal or storage 7 of power, water, sanitary sewer, waste 8 management is not permitted." These are UD 9 10 Section 40.03.110, UD Sections 40.33.270 F 11 and G. 12 I don't know how they got their permit in the first place, but they're 13 14 asking that this application be approved 15 under the same ruling that I believe was 16 incorrectly made by New Castle County. 17 The last point I want to make. 18 I'll be brief. Bloom is a generator, known generator of hazardous waste. 19 T'm introducing into the public record two 20 21 manifests. Excuse me. 22 THE HEARING OFFICER: Thank you. 23 MR. NICHOLS: Mm-hmm. Two 24 manifests, the only two that I've been able



1 to acquire, that indicate they do transport hazardous solid waste. 2 As Mr. Stevenson indicated, in their Coastal Zone 3 4 application, which will be part of the public record, they indicated they do not 5 6 generate hazardous waste. That seems to be 7 demonstrably false. Furthermore, I tried to acquire 8 additional permits beyond those that are 9 10 listed there, and I believe that date is 11 2016. 12 And I have another email from Marjorie Crofts. 13 She's no longer with She was a director of the Division 14 DNREC. of Hazardous Solid Waste. And she tells me 15 in her email dated April 30th Bloom Energy 16 17 did not issue any more manifests for 2017 18 and 2018, which is why there were no responsive documents to my FOIA. 19 That is for the transportation of hazardous solid 20 21 waste. That's from Marjorie. This is also part of the public record. 22 23 And if I may, because I sort of 24 had to give up time to hand up those



1 documents, last view. Ten seconds. Secretary Garvin indicated in a 2 November 21st interview with Delaware Online 3 4 that Bloom was issuing the manifests that were necessary in order to transport 5 hazardous waste interstate/intrastate. 6 That 7 is the November 21 article from the News 8 Journal. That directly contradicts Mrs. Crofts' email to me that says that they 9 don't issue manifests any longer. 10 Thank you 11 very much. 12 THE HEARING OFFICER: Thank you, Mr. Nichols. 13 14 For the record, the two 15 manifests that you've provided are hereby 16 entered into the hearing record as Nichols 17 Exhibit 1. The photocopy of the email that you referenced will be Nichols Exhibit 2. 18 And the article printed off of Delaware 19 Online will be Nichols Exhibit 3. 20 21 (Nichols Exhibits 1, 2 and 3 received in evidence.) 22 23 THE HEARING OFFICER: And thank 24 you, again, Mr. Nichols.



1 MR. NICHOLS: Thank you. THE HEARING OFFICER: T think 2 3 I'm saying the name right. Wayne Mulford. 4 MR. MULFORD: Madam, I will defer to someone else if they want to go. 5 6 I'll go after them. 7 THE HEARING OFFICER: Okay. Clint Laird. 8 My name is Clint 9 MR. LAIRD: 10 Laird. For the record, the decoking process 11 that was referred to earlier has been 12 changed. After DNREC was made aware of the decoking process, which they were not aware 13 14 of, the decoking process was changed to be 15 called "process improvements," which is a much better term, of course. 16 We believe that Bloom's waste is 17 18 being transported out of state, which is against the law of Delaware. We know that 19 they're -- we think they send to landfills, 20 21 other places in other states and determined to be hazardous waste when they arrive. 22 So 23 what Mr. Nichols just said is 24 demonstratable.



1 The original tariff discussions on the Bloom boxes said they were to be 2 3 upgraded every three to five years with new 4 fuel cell stacks rather than being replaced. We note Delmarva Power monthly reports to 5 6 the PSC will show the original Bloom boxes 7 are producing power at the rate of about 8 227,000 megawatts hours a year, which is under 1 percent less than in 2014 when the 9 10 Bloom boxes were new. 11 We'd like to know why the old 12 boxes are being completely replaced with new They'll cost hundreds of millions of 13 boxes. 14 dollars. And it just doesn't make any sense 15 for this replacement. 16 Of course, we talked about the ITC. 17 And that's about it. I would like to make another 18 19 spontaneous comment. 20 I don't mean to personalize 21 this, but I want to introduce a term called "cost for Britini." Now, I enjoyed hearing 22 23 what Britini said in her remarks. And the 24 cost for Britini have been gothic, hundreds

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1 of millions of dollars for Delawareans. And 2 she has a job. And I'm happy. I'm happy 3 they've trained her to do public speaking. 4 And I'm delighted that she's doing well. But the cost for Britini is unreasonable. 5 And I think that needs to be looked at. 6 7 Bloom promised 900 jobs. They delivered 300. Something like that. 8 Less than a third. We believe those jobs were 9 10 shipped off to India where they created two 11 plants after the Delaware facility was made. 12 So I think that ought to be looked into 13 also. Thank you. 14 THE HEARING OFFICER: Thank you, 15 Mr. Laird. 16 Mr. Mulford. 17 MR. MULFORD: Thank you. Good 18 evening. My name is Wayne Mulford. Thank you for the opportunity to speak here 19 tonight. 20 21 I've worked for Bloom Energy for five years now as a Solid Fuel Cell and 22 23 Stack Column Manufacturer Manager. 24 In 2001, I settled in Northern



1 Delaware after returning to the United 2 States upon my retirement from the U.S. Army after 21 years. All in, I've worked on 3 4 behalf of the U.S. Government for 25 years in various capacities. 5 And I can tell you 6 firsthand the need for new types of energy 7 technologies is paramount to our future. 8 I have two sons and a daughter. My oldest son currently serves as a 9 10 policeman for New Castle County. Μv 11 youngest son works for Jet and has been recently accepted in the next Homeland 12 13 Security academy class. 14 My daughter, 12, attends Tally Middle school and is in the IB and Avid 15 16 Program. She is a passionate softball 17 player for both Claymont and Brandywine 18 softball. My wife, an OR nurse, works at 19 Alfred I. duPont Children's Hospital. She and I are both very active in our daughter's 20 21 school activities as well as within our church at St. David's. We are active 22 23 members of the Delaware German Club where we 24 organize and help run the Oktoberfest each



1 year.

	-
2	I am a member of Post 10
3	American Legion and Post 475 of the VFW in
4	Newark, Delaware, and I am proud to help
5	lead Bloom's support for veteran communities
б	both internally and externally.
7	When returning back to the
8	United States, I found it hard to find a job
9	here in Delaware, as I suspect other people
10	were during that time period. I found the
11	need to go back to school to refresh my
12	engineering degree and enroll in a second
13	master's program. As the economy began to
14	improve, I was offered five positions, one
15	of them being for Bloom.
16	I chose Bloom because of their
17	mission statement. And also Bloom is the
18	only company that truly sees its employees
19	as its greatest resource, and veterans were
20	not only welcome, but sought after.
21	I also choose Bloom because of
22	the unique product. I wanted to be part of
23	a company that works to improve our
24	environment and equally important, the

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1 energy security of the United States. 2 During my tenure with Bloom, I 3 have had an opportunity to build a 4 manufacturing team that, as of today, 25 percent are veterans, two of which are 5 6 active currently in the Delaware National 7 Guard. So to summarize. The national 8 community is important to me as well as the 9 10 local Delaware community. My family, much 11 like Bloom, leads by setting an example for 12 others. It is disheartening to see the 13 opponents of this permit because they appear 14 to have a political axe to grind, but what 15 is really being done is an attack on me and my fellow coworkers. 16 17 Clean air is vital to my family 18 and vital to our society. Advanced technologies like Bloom's fuel cells have 19 the potential to help secure the U.S. 20 21 energy's independence. Delaware being The First State should be proud of the project, 22 23 a project which serves as a national example 24 of how advanced energy technologies can be



1 applied. Upgrading to an even more efficient system with less carbon footprint 2 3 And doing that with systems makes sense. 4 manufactured right here in Newark, Delaware, by Delawareans, you should be proud of. 5 Please pass the permit. 6 Thank 7 you. 8 THE HEARING OFFICER: Thank you, Mr. Mulford. 9 10 I've gone through the Okay. 11 list of people that indicated a desire to 12 speak by saying yes initially. Is there anyone other than those who have spoken 13 14 already that maybe their no has changed to 15 yes, and they'd like to offer comment? 16 Okav. Let the record reflect that that is not the case. 17 18 As I said at the beginning of 19 the proceedings tonight, the Department wants to know and wants to be able to 20 21 receive any comments that may wish to be offered by the public regarding this matter 22 23 regardless what opinion those comments have. 24 That being said, the record will remain open

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1 for receipt of comment through close of business, which is 4:30 Delaware time on 2 3 Friday, January 25th, 2019. 4 If you would like to have my email address, I have business cards up 5 You may feel free to come and get 6 here. You can also feel free to contact the 7 one. Department if you would like to see 8 9 anything, perhaps a copy of the presentation 10 that they did tonight. And maybe, you know, 11 in a couple days, you might formulate some That's fine, as long as they are 12 comments. received on or before close of business on 13 14 January 25th. They all bear the same 15 They're just as important to the weight. 16 Department as if they've been given tonight 17 verbally. And we'd love to hear from you if 18 that's the case. 19 There being no additional comments wishing to be given right now, 20 21 we're going to go ahead and conclude the proceedings. I want to thank everybody for 22 23 coming out this evening. The hearing is 24 adjourned.





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1 2 State of Delaware)) New Castle County 3) 4 CERTIFICATE OF REPORTER 5 I, Lucinda M. Reeder, Registered Diplomate Reporter, Certified Real-time 6 Reporter and Notary Public, do hereby certify that the foregoing record is a true 7 and accurate transcript of my stenographic notes taken on January 10, 2019 in the 8 above-captioned matter. 9 IN WITNESS WHEREOF, I have hereunto 10 set my hand and seal this 20th day of January 2019 at Wilmington, Delaware. 11 prinds theeder 12 13 Lucinda M. Reeder, RDR, CRR 14 15 16 17 18 19 20 21 22 23 24



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16 (1)	25th (6)	6 (1)	
17:4	8:6,21 11:24 12:4	28:10	
2	48:3,14	6:50 (1)	
<i>2</i>	27 (1)	49:3	
2 (2)	20:1	65 (2)	
4 (4)	2-years (2)		