In The Matter Of:

Application from NTE Connecticut, LLC

Siting Council Hearing

November 15, 2016

BCT Reporting LLC

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STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Docket No. 470

Application from NTE Connecticut, LLC for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance, and Operation of a 550-Megawatt Dual-Fuel Combined Cycle Electric Generating Facility and Associated Electrical Interconnection Switchyard Located at 180 and 189 Lake Road, Killingly, Connecticut

Siting Council Hearing held at the Connecticut Siting Council, 10 Franklin, Square, New Britain, Connecticut, Tuesday, November 15, 2016, beginning at 11:00 a.m.

H e l d B e f o r e:

ROBIN STEIN, Chairman

A p p e a r a n c e s:

Council Members:

JAMES MURPHY,
Vice Chairman

ROBERT HANNON,
DEEP Designee

LARRY LEVESQUE, ESQ.
PURA Designee

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DANIEL P. LYNCH, JR.
ROBERT SILVESTRI

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A p p e a r a n c e s:(cont'd)

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THE CHAIRMAN: Good morning, ladies and gentlemen. I'd like to call to order this hearing today, Tuesday, November 15, 2016, at 11:00 a.m. My name is Robin Stein. I'm Chairman of the Connecticut Siting Council.

This evidentiary session is a continuation of a hearing held on October 20, 2016; and November 3, 2016. It is held pursuant to the provisions of Title 16 of the Connecticut General Statutes and of the Uniform Administrative Procedure Act upon an application from NTE Connecticut, LLC, for a certificate of environmental compatibility and public need for the construction, maintenance, and operation of a 550-megawatt dual-fuel combined cycle electric generating facility and associated electrical interconnection switchyard to be located at 180 and 189 Lake Road in Killingly, Connecticut. The application was received by the Council on August 17, 2016.

A verbatim transcript will be made of the hearing and deposited with the town clerk's offices in Killingly, Pomfret, and Putnam Town Hall for the convenience of the public.

We will proceed in accordance with

the prepared agenda, copies of which are available by the door.

We have a request from the Sierra Club for supplemental administrative notice items dated November 8, 2016, and the second request from the same Sierra Club for supplemental administrative notice items, dated November 14, 2016.

Our Executive Director Attorney Bachman may wish to comment.

MS. BACHMAN: Thank you, Mr. Chairman.

For both requests the staff recommends approval.

MR. MURPHY: I'll move approval of both requests for supplemental approval of administrative notice.

MR. HANNON: Second.

THE CHAIRMAN: Okay. I have a motion and a second. All those in favor signify by saying aye.

THE COUNCIL: Aye.

THE CHAIRMAN: Opposed, abstention?

(No response.)

THE CHAIRMAN: The motion carries.

I wish to call your attention to those items shown on the hearing program marked as Roman numeral 1D, items 1 through 104.

Does the applicant or any party or intervenor have any objection to the addition of item 28 that the Council has administratively noticed?

(No response.)

THE CHAIRMAN: Hearing and seeing none, it will be entered as part of the record.

And we'll now continue with the appearance of the applicant NTE, Connecticut, LLC, with cross-examination first by staff, Mr. Perrone.

F R E D E R I C K S E L L A R S,
K E V I N F O W L E R,
G E O R G E L O G A N,
L Y N N G R E S O C K,
M A R K M I R A B I T O,
M A S O N S M I T H,
T I M E V E S,
M I C H A E L B R A D L E Y,
G A R Y F U E R S T E N B E R G,
E T H A N P A T E R N O,
C H R I S R E G A,
N O R M T H I B E A U L T,
J A M E S W A L S H,
recalled as witnesses, having been previously sworn, were examined and testified on their oaths as follows:

MR. PERRONE: Thank you, Mr. Chairman.

Ms. Gresock, at the last hearing we were discussing the balloon height relative to the existing and proposed grades. Just as a clarification for the record, the proposed or final grade in the vicinity of the stack would be 315 feet, three one five. Is that correct?

THE WITNESS (Gresock): That is

correct.

MR. PERRONE: And Mr. Paterno, at the last hearing I had asked about how the 500 megawatts KEC would bid into the ROP zone squares up with the megawatt table that we have. And the response was that it would be close to the 493-megawatt summer rating.

Is it fair to say that the megawatt table is approximate, so even though your summer rating is 493, you would still be able to achieve 500?

THE WITNESS (Paterno): Yes, it is.

MR. PERRONE: Regarding the ISO New England regional system plan, my understanding is that it used to be an annual report, but it has recently been changed to a biennial report. So there would not be a new RSP until October 17. So the 2015 RSP still stands. Is that correct?

THE WITNESS (Paterno): I believe that's correct, but subject to check.

MR. PERRONE: And also at the last hearing I had to ask about whether the proposed plant would displace peaking or baseload, or intermediate units.

I believe you had said it would

displace mid-merit and peaking units, but potentially some baseload. In that context does mid-merit mean roughly the same as intermediate?

THE WITNESS (Paterno): Yes. Yes, it does.

MR. PERRONE: Has NTE reviewed the comments from the Department of Energy and Environmental Protection?

THE WITNESS (Mirabito): Yes, we have.

MR. PERRONE: I'd like to go through that so NTE could respond. On page 1 under site description, it notes that there's several small dump sites on the generating facility site.

If the project is approved would these sites be cleaned up?

THE WITNESS (Mirabito): Yes, they would.

MR. PERRONE: Also on page 1 of the DEEP comments, DEEP references stone walls that cross the site and bound the site at Lake Road. If the project is approved, generally would NTE seek to maintain the stone walls where feasible, particularly along Lake Road?

THE WITNESS (Mirabito): Yes, that would be the one.

MR. PERRONE: On page 2 in the air permit issue section, DEEP believes that the improved air quality through KEC's displacement of older, less efficient higher emitting powerplants cannot be known for sure until ISO New England evaluates and selects bids for various electric capacity products for essentially FCA-11.

DEEP notes that a blanket statement asserting improvement in local or regional air quality arising from the operation of the KEC is premature.

Could NTE respond to that assertion?

THE WITNESS (Gresock): It sounded to us like the commenter was confusing capacity with energy dispatch. We have a high degree of confidence in the estimates that have been done and maybe, Ethan would like to talk about the methodology behind that to give a little color around that?

THE WITNESS (Paterno): Sure. So the comment was, the emissions impacts from KEC entering the market? Sorry. I'm not familiar

with the particular question.

MR. BALDWIN: Mr. Perrone, perhaps if you could repeat the question. That would be helpful. Thank you.

MR. PERRONE: Sure. On page 2 under the air permit issues, NTE asserts that the operation of the KCE will lead to improved air quality through displacement of older, less efficient, higher emitting powerplants.

And anyway, DEEP goes on to say that, we do not know this, nor can we know this until ISO New England evaluates and selects bids for various electric capacity products. Could NTE respond to that?

THE WITNESS (Paterno): Yeah. Absolutely, and just building off of Ms. Gresock's comments. You're certainly correct that Killingly displaces the older and deficient plants if it clears the FCA and ultimately goes forward to construction.

To the extent that doesn't happen obviously those things are in question. However PA's analysis projects Killingly to clear FCA-11 and a 6500 BTU per kilowatt hour heat rate to be introduced into the electricity market. And

because of that efficient heat rate our model is projected to displace, or cause less efficient units to run less often, thereby decreasing emissions within the region.

MR. PERRONE: And then moving on to, this is actually the second to last paragraph on page 2 where it discusses NOx emissions. DEEP goes on to say that the air quality benefits claimed to arise from the proposed plant, just as those claimed for other plants, may be considered probable but cannot be postulated with absolute certainty.

Could NTE respond to that in the context of no emissions?

THE WITNESS (Gresock): It's interesting, because in the question as well he states that a future up-wind major source of NOx emission could exist, but also answers the question himself in terms of the fact that such future sources would also be required to obtain offsets.

The offsets are a requirement and an objective of the Clean Air Act. And it's specifically intended to improve air quality, so it's our feeling that it's not an unreasonable

assertion to say that that application and purchase of offsets will do so.

THE CHAIRMAN: We have a follow-up question.

MR. SILVESTRI: Thank you, Mr. Chairman. On the NOx offset it's going to be a 1.2-to-1 ratio. Is that correct?

THE WITNESS (Gresock): That's right.

MR. SILVESTRI: Ballpark, how many NOx offsets are required?

THE WITNESS (Sellars): It's approximately 162 tons.

MR. SILVESTRI: Thank you. Has the source been identified from where the offsets will be obtained?

THE WITNESS (Mirabito): No, we have not yet identified the source, but we have retained a broker who is working with several potential sources.

MR. SILVESTRI: Okay. Thank you, Mr. Chairman.

THE CHAIRMAN: Thank you.

MR. PERRONE: Also on page 2 at the very end it mentions an assumption of a

temperature of minus 10 Fahrenheit, and that that is not a realistic meteorological condition for Connecticut, but a standard modeling assumption to reflect the worst-case scenario.

Does NTE agree with that?

THE WITNESS (Gresock): There are many conservative assumptions that reflect worst-case, including that assumption, yes.

MR. PERRONE: And I understand NTE responded to the DPH comments and is also looking into gray water.

So I'll move on, moving onto page 4 where it gets into the use of ULSD. Specifically would it be feasible for NTE to avoid the use of ULSD during a potentially dry or high water demand season of June 15th through October 15th?

THE WITNESS (Gresock): In fact, even though we had included the condition in the original application we've -- the project has made the commitment that they won't be burning off excess oil in any event. And so we're planning to request to DEEP that we eliminate that condition from their permit application.

MR. PERRONE: And the other part towards the end of that paragraph, would NTE

consult with the Connecticut Water Company regarding water availability before undertaking any ULSD use that is flexible in timing?

THE WITNESS (Mirabito): Yes, of course.

MR. PERRONE: Are most potential ULSD events generally not known in advance?

THE WITNESS (Mirabito): That's correct.

MR. PERRONE: And moving onto the permitting section, there's one on storm water permits and wastewater permits. Would NTE apply for such permits as renewed by DEEP if the project is approved?

THE WITNESS (Gresock): Yes.

MR. PERRONE: Also while we're on the permitting topic, there was testimony that the tree clearing would be all be performed at once, however if the project is approved by the Council and your DEEP general permit requires the phasing of tree clearing, such as not more than five acres at a time, would NTE phase the tree clearing?

THE WITNESS (Gresock): I think the concern with regard to phasing tree clearing is that the project will need to balance potential

seasonal restrictions due to bats.

And to the extent that it can be done without being in conflict with that requirement, it's something the project could consider. I think we'd feel that there's some benefit on a species basis to just completing that work as efficiently as possible.

MR. PERRONE: Turning to page 5 of the comments. In the fuel supply question section, could you tell us a bit more about how the two-day supply of ULSD was determined? I understand it was based on some historical data, but if you could tell us more about how that was determined?

THE WITNESS (Bradley): Certainly. The ULSD was determined based on historical natural gas delivery constraints or curtailments on Algonquin, and that's how that was selected.

MR. PERRONE: I understand that in the case of a plant with interruptible gas service it's possible to project about how many hours per year you would use ULSD.

In this firm gas situation do you have any projections on how many hours per year or every two years you would need?

THE WITNESS (Bradley): We would project on average very few hours per year simply based on historical force majeure or curtailments on Algonquin.

And looking back over the past three to three and a half years, those have been very minimal, just a very minor number of hours.

MR. PERRONE: And also in that section DEEP inquires about additional fuel storage capacity. Could you tell us the pros and cons of having additional ULSD storage beyond the two days?

THE WITNESS (Rega): So yes. I mean, if we increased the additional fuel storage of course it would increase cost, but it also increases or decreases the amount of available space on site.

So you know, we've worked recently to bring in kind of the footprint of that tank and containment area. So it would have a negative impact on that footprint.

MR. PERRONE: And also in the fuel supply question section, DEEP inquired if NTE has secured firm delivery of natural gas for its entire pathway from the source to the plant. Is

that the case?

THE WITNESS (Bradley): Yes, that's correct.

MR. PERRONE: And then at the last hearing I had asked about ranking priority as far as firm gas. And as an example you had mentioned that hospitals were given priority, for example, but aren't those customers of the local distribution company -- were in this case, as far as priority ranking, it would be LDCs versus the firm gas powerplant?

THE WITNESS (Rega): It is our understanding from speaking with Algonquin as they do curtailments on a pro rata basis on their pipe, even the highly sensitive loads that might be behind an LDC still get priority over just a blanket pro rata curtailment.

MR. PERRONE: Moving onto the miscellaneous application commentary and question section at the end of page 5. This is where DEEP inquires about the capacity factor percent operation for the year.

Is there a certain threshold for baseload, like 60 percent capacity factor in the load?

THE WITNESS (Bradley): Generally, yes. Anything below 60 percent capacity factor is considered a baseload resource.

MR. PERRONE: Okay. And DEEP asks about which factors would lead to it being off line 25 to 40 percent of the time. Could you explain that in the context of ISO dispatch?

THE WITNESS (Bradley): Certainly. In ISO dispatch there may very well be periods of time during shoulder months, or during the off-peak hours such as night when the market price of electricity is very low. And then that cost would be below the generating cost of the unit, so therefore it would be off.

The only other reason would be for scheduled maintenance.

THE WITNESS (Paterno): And just to correct one thing Mr. Bradley said, it's above 60 percent operations would be baseload.

MR. PERRONE: And moving onto the last page, page 6. DEEP asks, what is the source of the water vapor and under what conditions/temperature would this visual plume occur?

Is it correct to say that the

source of the water vapor is from the combustion of natural gas that would be emitted from the stack?

THE WITNESS (Gresock): That's correct. As warm stack gases exit during colder winter editions, just like our breath on a cold day is visible, there would be a plume from on the stack as well.

MR. PERRONE: And I understand in the visual analysis report it talks about plume visibility on a colder day. Is the humidity a factor as well?

THE WITNESS (Gresock): Humidity can also be a factor, yes.

MR. PERRONE: And then the second paragraph from the top on page 6 gets into the storm water management plan.

DEEP states that, although some elements of the storm water management plan could be considered under the water quality certification review, the storm water management plan will be principally evaluated pursuant to the general permit. Is that correct?

THE WITNESS (Gresock): That's correct. Our intention, I think, was simply to

focus on the fact that water quality was a consideration in the design.

MR. PERRONE: And the last section is related to noise issues. DEEP believes that the air-cooled condenser fans are the most significant noise source for the existing Lake Road plant. Would the proposed air-cooled condenser fans for the KEC plant be the most significant or dominant source of noise?

THE WITNESS (Gresock): We believe it's a dominant source of noise. We also aren't sure that it would be directly comparable between the two facilities given their differences in design and in layout, but we have acknowledged in the noise assessment that the air-cooled condenser is a significant noise source.

Which is why we have designed it to be as compact as we can and separated it in distance from the nearby residences.

MR. PERRONE: And lastly, DEEP discusses potential noise impacts to the two homes south of the plant site. So looking at the sound analysis report, is it fair to say that post construction those homes would be in the 45 to 50 dBA range?

THE WITNESS (Gresock): That's correct.

MR. PERRONE: And that would be below the 51 dBA nighttime DEEP threshold?

THE WITNESS (Gresock): That's correct.

MR. PERRONE: Thank you. That's all I have.

THE CHAIRMAN: Thank you. We'll now continue with cross-examination from the Council.

Mr. Hannon?

MR. HANNON: Thank you, Mr. Chair.

One of the things I will apologize for is, I was looking at some of the maps which I think came in response to the Town's comments. And unfortunately I left that on my desk yesterday, but I believe it was the Exhibit 5 map, which showed the revised layout on the site. So I'm going to be going between that, volume two of the original application and volume one.

As I sort of closed last time, one of the things I tend to take look at it in pretty close detail is the erosion sedimentation control plans on site. Originally the application was

talking about cutting cut slopes and fill slopes, and they were from 20 feet to 35 feet, with a 3-to-1 slope or less deep.

And in looking at the revised plans it's looks as though almost every single slope out there is a two-to-one slope or steeper. Is that correct?

THE WITNESS (Thibeault): Yes. Yes, that's correct.

MR. HANNON: And I believe getting over to where the crushed stone area for -- over by the retaining wall, that's a one-to-one slope?

THE WITNESS (Thibeault): Correct. The retaining wall has been removed from there. We no longer have a retaining wall in that area.

MR. HANNON: Okay. If I'm reading the plans correctly, I see absolutely no indication whatsoever in there or in the details of anybody proposing to use reversed slope benches. These are slopes that are about 30 feet in height. Is that correct?

THE WITNESS (Thibeault): Correct, and I believe that the erosion control guidelines call for either reverse slopes or adequate measures to protect against erosion of the slopes.

We've got a very sturdy erosion control fabric that we've have specified for all of the slopes, and there is no direct runoff onto the slopes. The only rainfall, or the only rainwater that actually gets on the slopes is what directly falls upon them.

MR. HANNON: Right, but the problem with the erosion control blankets that you're proposing is that they're permanent. The mesh is permanent and that tends to be more of an environmental problem.

So I'm just wondering if people are willing to look at going in and looking at the reverse slope benches and possibly going in with a material that is possibly not going to be permanent, per se.

THE WITNESS (Thibeault): Sure, that could be considered. Absolutely.

MR. HANNON: In terms of, like, some of the information disclosed in volume 2, under section 5, site development recommendations, based on the site walk and then what's in this, under 5.2, it does talk about seepage breakouts and things of that nature.

Has anybody taken a close look at

whether or not any type of sub-drainage is going to be required on any of these slopes? It looks as though there were a number of spots on this property that tend to weep a significant amount of water, and that could theoretically undercut what is being proposed for those embankments.

THE WITNESS (Thibeault): I believe that the weeping, if my recollection is correct, the weeping on the slopes was typically on the toes of the slopes that we're going to be filling to.

Any of the cut slopes that we will be generating would be toward the front of the site where the weeping of the slopes would go on to flatter areas where we have proposed some depressions within the landscape to accept any kind of groundwater flows that might be associated with these.

The slopes around the perimeter of the site to the north and east that we're going to be failing in order to create the plateau for the facility itself will indeed be fill slopes. And we don't anticipate that, for the fill slopes, we're going to be requiring any kind of underpinnings in those areas.

MR. HANNON: I'm assuming, though, that if in the geotechnical review of the final design, assuming it gets that far, then would you be also looking at the possibility of having to armor some of the toe up-slopes, you know, again depending on what's actually out in the field.

And I didn't see anything like that really described in any of the details of the plans?

THE WITNESS (Thibeault): Yes, I believe so. We would certainly take the -- as a you know, further geotechnical results, or looks are taken during the construction phase of the project, or prior to the construction phase, we certainly have to evaluate the conclusions of the geotechnical expert at that time.

MR. HANNON: And then the detail on the catchbasins that are proposed, it looks like they have elbows, but it doesn't look like they're very large.

And I can't tell from the details as to whether or not all of the catchbasins, other than those three Fortinet units that are proposed, have any type of sump. It doesn't look like they have any type of sump either. Do they?

THE WITNESS (Thibeault): We have four-foot sumps in all of them, yes.

MR. HANNON: This is changing gears a little bit, but this goes back to volume 1, page 165 of the application. I'm just curious as to whether or not the applicant has started any dialogue with the Town as to any type of community benefit agreement?

THE WITNESS (Eves): Yes. Yes, we have. We've had some preliminary discussions with the Town, made a presentation to the Town Council. And we're currently working on drafting the community environmental benefits agreement.

MR. HANNON: Do you know if the Town has had a meeting with citizens to determine what they feel is what the financial involvement should be?

THE WITNESS (Eves): No, I'm not aware of that.

MR. HANNON: I think that will cover it for the time being. Thank you.

THE CHAIRMAN: Mr. Silvestri?

MR. SILVESTRI: Thank you, Mr. Chairman.

I need to circle back on a couple

of things that were brought up today just to complete my notes, and I'd like to start with the ULSD tank and related appurtenances to it.

How many unloading stations would there be for trucks for that tank?

THE WITNESS (Rega): We have two unloading stations planned.

MR. SILVESTRI: Two unloading stations. So you could handle two trucks at a time?

THE WITNESS (Rega): That's correct.

MR. SILVESTRI: Ballpark, how much time does it take to unload a truck?

THE WITNESS (Rega): I'd have to get back to you on that. Just a minute.

Jim, do you have the number? Do you remember the loading time? I think we say we could do two trucks an hour.

THE WITNESS (Walsh): Without being -- without checking my math, but it was around 35 minutes per truck. That was giving a certain amount of time for mobilization, hookups.

We would size the unloading pump to meet the unloading requirements to maintain

operations, so we have a variable in the time established to hook up, offload the tank and offload the truck and bring the next truck -- disconnect and bring the next truck in. We have a variable in the sizing of the unloading pump.

MR. SILVESTRI: With the ULSD what's the approximate maximum storage life?

THE WITNESS (Rega): We've heard it, sort of, at least two to three years with proper maintenance and preservatives.

MR. SILVESTRI: What would be the typical preservative that would be used?

THE WITNESS (Rega): They're anti -- basically to keep biological growth from -- I forget, but I mean, corrosion inhibitors. But I don't know the exact chemical that's added, but it keeps biological growth from starting in the tank.

MR. SILVESTRI: Could you get back to us on that?

THE WITNESS (Rega): I certainly could.

MR. SILVESTRI: The other part I would assume, but I'm not sure, but I'll ask the question. Is that recirc'ed constantly, too, in

the tank to keep things moving?

THE WITNESS (Rega): Yeah. I wouldn't say constantly, but certainly there is some recirculation. There's also a process to make sure that all condensation water is taken out of the tank, is because water itself can break down the oil and promote growth of different bacteria in the tank.

MR. SILVESTRI: And with the recirculating that you have and the tank contents itself, were things like VOC emissions taken into account with your facilities, totaled for emissions?

THE WITNESS (Rega): Based on recirculation?

MR. SILVESTRI: Yeah, and any escape of VOCs or any other types of compounds?

THE WITNESS (Sellars): Yes, there's an allowance in the VOC calculation for working losses. That takes that into account.

MR. SILVESTRI: The last question I have on the ULSD. If it does indeed go bad, quote, unquote, and needs to be removed, what type of contingency is there planned for having the good ULSD come in and having the bad ULSD go out?

THE WITNESS (Rega): Well, we would remove it prior to it going bad. So you know, there would be a program for sampling and that would be done on a regular basis. And before the ULSD ever had a chance to, you know, quote, unquote, go bad, it would have been removed by a contractor and they would resell that product.

MR. SILVESTRI: If I could jump to VOCs, because we hit upon that, volatile organic compounds. If I look at the November 2nd memo from Tetra Tech to James Grillo of Connecticut DEEP, he mentions that Siemens has agreed to lower their emissions guarantee for carbon monoxide emissions when firing ULSD from 2 parts per million by volume corrected to 15 oxygen, to 18, to reflect more closely the best available control technology.

Is that CO or is it VOCs that he's talking about?

THE WITNESS (Sellars): It's CO, and it's 1.8.

MR. SILVESTRI: It is CO? Now when it says, reflect more closely, I take it that's not backed?

THE WITNESS (Sellars): Well, we

believe that previous number was backed and Mr. Grillo pointed to a lower number that had been obtained. We sought to the vendor to see if they could accommodate that lower number, and they agreed.

MR. SILVESTRI: Okay. On VOCs, I noticed that there's a 1 ppm and a 2 ppm limit proposed based on either duct firing at the higher number, or without duct firing at the lower number. Are those the numbers proposed with DEEP at this point?

THE WITNESS (Sellars): That's correct.

MR. SILVESTRI: There's a few units that I'm aware of that have lower VOC numbers. For example, Panda Patriot generating plant has a Mitsubishi combined-cycle power block. And the VOC limits that they have right now are 1 ppm, which is the same without the duct burner, 1.5 with a duct burner. And a couple other powerplants that are going either operational or under construction have limits of .7 and 1.6, respectively.

Can the power block being proposed for this project meet those limits?

THE WITNESS (Sellars): The guarantee currently from Siemens is for the limits that we've proposed for one and two.

MR. SILVESTRI: Which is -- one and two?

THE WITNESS (Sellars): Correct. And there, you know, are some variations between vendors and between projects which is addressed in our backed analysis.

In some instances some of the plants with lower VOC numbers have slightly higher CO numbers, and vice versa. That the 1 ppm without duct burning, and 2 ppm with duct burning does correspond to the most recent permit issued in Connecticut for the Towantic project, as well as the most current application that's ahead of us as well. So we'll see how that application fairs in Mr. Brillo's review.

MR. SILVESTRI: Yeah, I know DEEP has reference to Panda Patriot, which is why I brought it up and asked the question accordingly.

If I could go back to the baseload question that was there. When we mentioned the baseload between 60 and 75 percent, is that for any load that the unit is operating? Or would

that be for full load operation of the unit?

THE WITNESS (Bradley): For a baseload type of resource, the vast majority of the time it's going to be operating at its full output. So that the 60 to 75 percent would take into account the full 100 percent load output, and any time that it was at a partial load.

MR. SILVESTRI: So 550 megawatts and whatever might be below that?

THE WITNESS (Bradley): Yes, sir. That's correct.

MR. SILVESTRI: When you mentioned also that the unit pricing, for example, nighttime economics are down, the unit might come down. So the unit will cycle on and off, I would take it?

THE WITNESS (Bradley): Yes, we would anticipate that it will cycle some.

MR. SILVESTRI: Any anticipation on how many cold and hot startups you might have in a year?

THE WITNESS (Paterno): We have that information. I apologize I don't have it with me, but we're certainly happy to follow up with the Council on that.

THE WITNESS (Sellars): Just one

moment?

THE WITNESS (Paterno): Sorry. Go ahead.

THE WITNESS (Sellars): Yeah, I believe in our air permit application we've allowed for up to 260 starts per year.

MR. SILVESTRI: 260, two six oh?

THE WITNESS (Sellars): Correct.

MR. SILVESTRI: Thank you. Staying on the air side, the modeling that was conducted, did it use urban or rural?

THE WITNESS (Sellars): One moment.

I'm assuming it was rural, but give me one moment to verify.

Yes, that's correct. It was rural dispersion coefficients.

MR. SILVESTRI: Thank you.

In NTE's demographic research into the area is there any indication that residential wood burning for heat is predominant, as opposed to oil or natural gas heating?

THE WITNESS (Sellars): I would only know that anecdotally. I've read some articles indicating that in most rural areas like that, there is a higher degree of wood burning

than other areas of the state.

MR. SILVESTRI: So when we do modeling, modeling really only takes into account large sources of emissions. Is that correct? It wouldn't take into account, say, particular matter from wood burning in the area?

THE WITNESS (Sellars): Well, it does take into account a conservative estimation of the background levels, which are assumed to include all area sources, including wood burning.

MR. SILVESTRI: For background, where is air quality for that area measured?

THE WITNESS (Sellars): There, the monitor that was used was in Hartford -- East Hartford.

MR. SILVESTRI: East Hartford? Thank you.

A couple other questions on air. I'm staying with air. CO2 allowances, what's the number of anticipated allowances that you might need?

THE WITNESS (Sellars): It's approximately 2 million tons per year.

MR. SILVESTRI: That would be obtained through the RGGI market?

THE WITNESS (Sellars): That's correct.

MR. SILVESTRI: Okay. On CO2 there's a number of references that list data in terms of pounds per million BTU. I like to look at things such as pounds per megawatt hour net, and didn't know if you have, say, the maximum allowable CO2 emission rate based on pounds per megawatt emitted.

THE WITNESS (Sellars): It's approximately 816 pounds per megawatt hour.

MR. SILVESTRI: Eight one six?

THE WITNESS (Sellars): Eight one six.

MR. SILVESTRI: Thank you.

Moving into other areas, the de-I system, the deionizing system that's proposed, would that be a permanent installation, or trailer mounted?

THE WITNESS (Rega): It's a combination. There's a permanently installed reversed osmosis system for initial treatment, and then there would be a trailer -- or not necessarily a trailer, but portable based mixed-bed system as well that would be regenerated

off site.

MR. SILVESTRI: And then brought back in again?

THE WITNESS (Rega): And then brought back in again, correct.

MR. SILVESTRI: For firefighting capabilities of the site, I saw water, but didn't know if that was just water. You know, deluge systems or if you're getting into foam or CO2, or halon, or whatever. Could you describe what the facilities are proposed for firefighting capability?

THE WITNESS (Rega): Sure. Yes, it's a combination of all of those things, actually. So we do have a water-based system that that will be provided from the storage in our draw/firewater storage tank. So there will be deluge systems that are water-based.

There will also be CO2 systems that will protect the various components of the combustion turbine. And then there will be foam systems that will protect the ULSD tank and equipment.

MR. SILVESTRI: What would you have to test on some regular basis, annually or

semiannually out of all those systems?

THE WITNESS (Rega): Certainly the -- I know the diesel, the ULSD fire pump is tested on a weekly basis. There is some other testing, you know, operational functional testing of the fire detection and protection systems, but I don't know the exact details or the frequency of that, but I can get back to you on that.

MR. SILVESTRI: Just one other related question. Would you have to actually discharge foam at any point in time to make sure it's working?

THE WITNESS (Rega): No, I don't believe so. I think that's more of a functional test that would occur.

MR. SILVESTRI: On RCRA hazardous wastes, are there any anticipated to be generated?

THE WITNESS (Rega): Any -- I'm sorry what was the question?

MR. SILVESTRI: Any RCRA hazardous waste anticipated to be generated in the operation of the facility?

THE WITNESS (Rega): I'm not familiar with that term?

THE WITNESS (Gresock): There, in

the initial application there are tables, table 2-3 and table 2-4 that list anticipated chemicals. In our experience, facilities like this are typically either very small quantity generators or small quantity generators. There's usually very, very limited use and generation of RCRA wastes.

MR. SILVESTRI: Is there a potential or probability for using renewables on-site to minimize or replace station service from the generating unit?

THE WITNESS (Rega): It's -- using renewables on this site is not something we've explored.

So for the station service, you know, there's a parasitic load that comes off of the generation output of the facility, which is, you know, certainly the most, most reliable, but no -- no other sources of parasitic load generation have been considered.

MR. SILVESTRI: On the site location there, there's a couple drawings, a couple that was that identified sites, alternative sites that are very local to the proposed site. Have other alternative sites been investigated?

For example, have the owners of the

facilities that were identified in NTE's presentation as facilities to be closed, have they been contacted to potentially repower or rebuild on such a facility?

THE WITNESS (Mirabito): We did not speak to any of those particular facility owners, but in general we did consider those types of sites as possibilities when we were doing our early site search.

But as I mentioned last time a lot of times those sites are deemed valuable by the property owner, by the facility owner for redevelopment themselves -- so very rarely available to independent power producers.

MR. SILVESTRI: How about old types of, say, foundry or industrial locations? Did any investigation going into those areas?

THE WITNESS (Mirabito): Not necessarily specifically, but our site search is based on some very basic criteria, including the availability of gas and electric infrastructure.

And so any sites that met that description that were also in proximity to gas and power lines would have been considered.

MR. SILVESTRI: On the gas topic,

on the responses of NTE to Not Another Powerplant's interrogatories page 8 mentions that there are potential alternatives for the delivery of natural gas. Could you elaborate on the potential alternatives?

THE WITNESS (Mirabito): I guess there are alternate lateral routes that were considered. Certainly we selected one that was in the existing right-of-way. There, there were some other routes that were considered for, I think, the Yankee Gas option.

But we also looked at leveraging the existing lateral that goes from Algonquin to the Lake Road generating facility and possibly using right-of-way and then extending from that location down Lake Road to our proposed site.

So there were three or four different routes using some combination of either the Yankee Gas right-of-ways or the Algonquin right-of-ways to deliver gas.

MR. SILVESTRI: But it would be based on the existing right-of-ways. Is that correct?

THE WITNESS (Mirabito): Generally. Those other options, the reason they were deemed

secondary was because the existing right-of-ways didn't go all the way to our proposed location, and that's one of the main reasons that the Yankee Gas lateral was selected as the primary option.

MR. SILVESTRI: You're saying again with the responses on page 9, there's the topic of wastewater interconnections. And it mentioned that there's also potential alternatives to the wastewater aspect.

Could you also elaborate on that part?

THE WITNESS (Mirabito): Yeah. Again, one of the options you would have, and for some reason the connection to the existing sewer system and discharge to the Killingly waste treatment plant wasn't available, would be on-site treatment and discharge to the Quinebaug for -- as one example.

MR. SILVESTRI: Hydrogen, what type of quantity of hydrogen would be stored on-site?

THE WITNESS (Rega): At this point we do not believe that we need any hydrogen on site. At one time there was a possibility for hydrogen cooled generators, but our selected equipment manufacturer Siemens is going with

complete air-cooled generators at this time.

MR. SILVESTRI: Yeah, the related question I was going to ask, which is kind of moot at this point, was pertaining to EPA Section 112-R and the risk management procedures and emergency response.

So hydrogen would be ruled out on that, but would there be any other chemical storage that could trip EPA Section 112-R?

THE WITNESS (Sellars): No, we won't be storing anything on site that would trigger review under 112-R.

MR. SILVESTRI: Thank you.

There has been discussion in different documents on the exhaust plume and I noticed that a response received mentioned that the exhaust gas will contain some amount of water vapor which will exit the stack. However the temperature and velocity of the exhaust gas will adequately disperse the small amount of vapors such that it will not condense on adjacent properties. That's what I've read in the document.

So a follow-up question I have on that is, if it's not going to condense on adjacent

properties, will it condense somewhere else further away?

THE WITNESS (Sellars): The plume water vapor that is in the plume, that condenses under either humid conditions or under cold conditions and would certainly be visible in the atmosphere. But unlike a conventional wet-cooling tower, it's released much higher and is much hotter, so it would never reach the ground and cause fogging or icing on the ground.

MR. SILVESTRI: Would there be some blockage or shadowing that would go along with that plume?

THE WITNESS (Sellars): It would be pretty minimal, if any. It's very much like a, you know, a relatively small cloud. So certainly there could be specific times when the sun might be on a direct angle with a visible plume, but it would be expected to be pretty short lived.

MR. SILVESTRI: If the models that predict this are wrong, how do you correct it?

THE WITNESS (Sellars): There have been literally thousands of facilities that have exhausts that has a visible plume when it is cold, but I'm not aware of any powerplant facility like

this that's ever had the stack plume create a fogging or icing condition.

That's really limited to cooling tower plumes that are much colder, released much closer to the ground and with much greater volume of water.

MR. SILVESTRI: Security for construction activities, what's being proposed for security to the site, access to the site?

THE WITNESS (Rega): The site will be completely closed with a security fence and a security guard and gate.

MR. SILVESTRI: You'd have a guarded gate?

THE WITNESS (Rega): Correct.

MR. SILVESTRI: Identification badges, how would people actually get in? If I drove up, how would you say, no, you can't get in? Or, yes, you could get in?

THE WITNESS (Rega): By the security guard. Employees of the site will certainly be badged. For permitted operation we will have cameras, card-key readers and remote operated gates.

During construction, construction

employees would have badges as well. There will be a security guard there that will allow visitors in as required.

MR. SILVESTRI: So if I understand, once the facility would be completed access will be by remote card key?

THE WITNESS (Rega): That's correct.

MR. SILVESTRI: Okay. Thank you.

Mr. Chairman, I believe that's all I have. Thank you.

THE CHAIRMAN: Thank you.

I have a few questions and then after I get finished we'll see if any other members have any additional questions.

I guess the first one is really just for better understanding. I think in section 5.2.3, the volume 1, you talk about the prevention of significant deterioration, or PSD program.

So exactly how does that review process work? Is that something you can explain in ten words or less?

THE WITNESS (Sellars): Not in ten words or less, Mr. Chairman, but I'll try to be as succinct as possible.

In addition to a new source having to demonstrate that it complies with the health base ambient air quality standard, it also has to demonstrate that it won't contribute to any significant deterioration in air quality that is currently better than the ambient air quality standards.

So when the PSD program went into effect that set a baseline date, and any future project like that proposed will have to model, not only its emissions, but any other source that came online since the PSD program went into effect -- and look at the cumulative emissions of those facilities to ensure that they're below something called a PSD increment.

And these are values that were set by the EPA to represent what constituted any significant deterioration in air quality. So as part of our air permit application we had to do a PSD increment consumption analysis to demonstrate that we did not, in a cumulative fashion, result in a significant degradation in current air quality.

THE CHAIRMAN: Thank you.

Next question, actually from the

State of Connecticut 2014 integrated resource plan, specifically from page 5 of the executive summary. And I guess the first part of the question -- well, the first statement, and I'm quoting is, Connecticut is a net energy exporter.

Do you agree or disagree with that statement?

THE WITNESS (Paterno): We agree with that statement.

THE CHAIRMAN: And then the follow-up to that is -- I think again, I'm quoting from the same source -- consequently increasing in state fossil-fuel fired generation that serves primarily out-of-state load may lock in a level of CO2 emissions that forces Connecticut to reevaluate it's planning to meet longterm economy-wide emission reduction mandates under the Global Warming Solutions Act.

So I guess I'm asking for a comment on that?

THE WITNESS (Paterno): Yes, of course, Mr. Chairman.

I would say from a source basis, so where those emissions originate it's entirely correct. There will be an increase in CO2

emissions originating within the state.

However from a consumption basis, which is looking at where overall electricity is used, I would say that there will be a reduction in regional CO2 emissions under the Global Warming Solutions Act, and as well as how it ties into the RGGI program, which is a CO2 cap and trade program obviously covering the New England states, New York, Maryland and Delaware.

THE CHAIRMAN: Okay. Thank you.

Then I just want to get clarification on the issue of the water, the water need. I take both the health Department, State Health Department and also the DEEP talked about more, I guess, more detailed water supply analysis to account for system demand functional limitations, distribution system, and I guess Connecticut Water Company's existing commitment.

Are you in the process, or are doing that initial analysis? Have you done it? And if you haven't, when will that be available?

THE WITNESS (Mirabito): Yes, we inquired of Connecticut Water on that question once we received the comments from DPH. And what they explained to us is that that analysis was

done early on in our inquiry, which resulted in them making the requirement or the suggestion that we connect the Plainfield system with the Killingly system to ensure that that largest volume would be available to us on those, those rare occasions that ULSD was required. So that was how they explained it to us.

THE CHAIRMAN: And is that taking into consideration the possible impacts of extended drought?

THE WITNESS (Mirabito): And actually I talked to them this week about that follow-up question. And they explained it.

Yes, there's what they call, a safe yield analysis considers those conditions. So when they did that and determined that they did have adequate supply once the two systems were connected, that that considered the drought conditions.

THE CHAIRMAN: Okay. I just have a question on NTE, your overall portfolio. From what I could see it's mainly these same type of electric generating plants. Are there other energy related -- I'm not asking you to -- projects that you run in addition to these types

of dual-fuel energy generating plants?

THE WITNESS (Eves): We have. We have a plant in construction in North Carolina which is a very similar plant, which is gas only. It's served by two gas pipes.

We have another 500-megawatt 101 combined cycle we're working on in Middletown, Ohio, between Cincinnati and Dayton. It's also on two gas pipes, so that's a gas-fueled facility. We have another development in Ohio underway. We have this development. We have another development in North Carolina of gas-fired combined-cycle facilities. And we're currently working on a solar development in North Carolina.

THE CHAIRMAN: Okay. Thank you.

Are you aware -- and I assume you are, but just to check, that the Connecticut renewable portfolios standard requires that 20 percent of generation serving state customers is from renewables by 2020. I think that's, again in the integrated resource plan?

THE WITNESS (Bradley): Yes, sir. We're aware.

THE CHAIRMAN: You're also aware that's one goal that Connecticut is going to be

hard pressed to meet?

THE WITNESS (Bradley): Yes, sir. We have heard that that is correct.

THE CHAIRMAN: And what I found interesting was -- I don't know who made the comment, that the construction and operation of this plant will in fact help support renewables because you'll provide, you know, a steady form of energy where they don't.

But on the other hand, if this project is approved and goes into operation, won't that then require an additional 110, if I've done my math right, megawatts of renewable energy just to keep the 20 percent?

THE WITNESS (Bradley): It's 20 percent of megawatt hour usage. And so I don't believe that Killingly being installed would increase the amount of renewables necessary, because it's just impacting the overall generation mix. And the amount of energy that's served on an annual basis does not change.

So it's still whether Killingly is in the resource mix or whether Killingly is not in the resource mix. 20 percent of the megawatt hours still have to come from renewable, and that

total megawatt hour usage is unchanged.

THE CHAIRMAN: So the fact that we're increasing the amount of megawatt generation from non-renewables or fossil fuels doesn't impact that?

THE WITNESS (Bradley): No, sir, because what I think what you're referring to is the difference between capacity and energy.

The capacity, as we discussed last time, is the amount of generation required to serve the peak demand. And energy, the 20 percent of energy would actually be the energy in all hours. So that's more of a dispatch question than a peak demand question.

THE WITNESS (Paterno): The only thing I would add to that is the RPS standards are looking at energy consumed, so what you and I and everybody else is ultimately using at the end of today. And Killingly is trying to serve that need, but that does not change the formation or the value of that need.

THE CHAIRMAN: Okay. I just want to check, the plant as proposed will be in operation for how long?

THE WITNESS (Eves): We would

expect that that plant could have a life as long as 50 years.

THE CHAIRMAN: Fifty?

THE WITNESS (Eves): Fifty.

THE CHAIRMAN: So a problem I have is when we look at either the public benefit, the public need for this plant, and I look at both the State -- and we talked about this last time. I don't want to belabor it, but we looked at both the State 2014 study and also the Siting Council 2014/2015 forecast.

Even today, and both of those seem to, not imply, but seem to state rather clearly that our energy generating resources will be more than adequate. And we, you know, we discussed that, so I don't want -- but I'm using that sort of as the next step because part of both supply and demand relates to other factors, such as increased use of renewables, efficiency, transmission improvements, a whole host of things.

And my sense is -- and that's why I asked the question of how long do you think this plant will be in operation -- that because of you're sort of basing your analysis really on today. And I understand that today technology,

such as storage, you know, are still not maybe as effective and efficient as they might be.

But if we look at the advances -- and that was just one example -- in all of these areas over the next ten, or I'll give you the benefit of the doubt, the next 20 years, aren't you creating a plant that's going to be obsolete in that period of time, just like coal burning plants are now obsolete?

I mean, I just don't quite -- it just appears to me that from the analysis I've seen you're really not looking into the future. And if we just look at the last ten years in the advances in technology, and I know, you know, nobody has the magic crystal ball, but it would seem to me, one, we're really paused to say that we're going to have a demand and a need for a plant like this?

THE WITNESS (Bradley): I'll address that and then pass it on to Mr. Paterno, I'm sure, to add some things.

But going back to your statement, and I would like to also kind of point out we had an extensive discussion on this last time. So we're not going to go through that at length this

time, but we provided some supplemental responses to question 83 and 84 that I believe was filed today.

MR. BALDWIN: That has not been verified yet, Mr. Chairman, but we can do that. Perhaps we should do that now, if we're going to start talking about it?

THE WITNESS (Bradley): I wasn't going to go into the detail of it. I was just going to make a note that it was -- that it had been provided, but that provides a lot more detail to the discussion last time, and it lays the pieces out.

But in a short answer to your response, it takes a number of years to develop and build a powerplant such as this, up to five years as we go through in the supplemental responses. And retirements occur much quicker than that.

So going back to your thought on the Connecticut IRP, one of the things that we noticed in the Connecticut IRP was that in terms of retirements, the approximately 2,000 megawatts of generation in Connecticut that is expected to retire, by the ISO New England, was not listed in

the IRP. And the IRP had actually made note that if up to 2,000 megawatts retire then that creates a reliability problem for Connecticut, and Connecticut would need resources.

And in that, in terms of doing power studies, two years really with a few months before that's prepared, the study, is a very long time. And in that period of time those retirements are looming. So that is one change there that we would point out and ask to look back at that supplemental response as well for the detail.

The other point there as far as battery storage -- which goes back to the original response to your question -- looking at all the technologies available now to serve this need, a combined-cycle facility like Killingly is certainly the best available technology now and in the foreseeable future.

You mentioned batteries. Looking at the State of Charge report from Massachusetts that I believe the Sierra Club -- is that right, Ken? Placed into their administrative documents today.

That document talks about the

benefits of battery storage as a way to levelize load and generate a much flatter load shape such that fossil generation, such as Killingly with the new gas combined cycle, can operate more efficiently and minimize the ramping, which minimizes energy costs for the public benefit, which minimizes CO2 emissions.

So the two technologies work together very well. We need the combined-cycle generation, that best available generation technology now and well into the future, but the batteries and things like that do play a very, very important role as well with the renewables.

THE CHAIRMAN: Okay. There's something that really doesn't require technology that probably provides the most bang for the buck, and that's called conservation.

I don't know. For some reason ISO calls it -- I can't remember. They call it supply and others call it demand, but energy conservation and efficiency, which doesn't require looking in too far into the future in technology -- I mean, if resources were put into that I think the demand, and it has already shown -- I used the word "demand," you know, would decline

significantly.

And we might be talking -- and then, of course, I can't resist if we have -- we're having this discussion in a year we might not have to worry about regulations relating to air quality or any of that.

Which is, you know, without evoking too much laughter, when I asked your portfolio question I was wondering if you had any coal-burning plants. Apparently you don't -- because I'm wondering now where all the coal that's about to be mined is going to be sent to be used. But I guess that's really not a question.

THE WITNESS (Mirabito): Yeah, we don't have any coal plants under development.

THE CHAIRMAN: Or it's not in your plan?

THE WITNESS (Mirabito): Or owned, right. And while we're certainly surprised like many about the election last week, we don't feel that it changes the outlook for our project here or in other locations in any way whatsoever.

The fundamental drivers, economic drivers are there. They're really independent of politics and policy. It's a high-efficiency,

low-cost technology that's just part of the evolution of the transmission and electric system.

THE WITNESS (Bradley): And if I may?

To add to Mr. Mirabito's comments and to address the comment you made regarding demand response or demand-side management. One thing that as we reviewed the State of Charge report, that the Sierra Club provided -- made a very interesting finding and something that we have seen as well, that the ratio of peak demand to energy use in Connecticut is becoming more -- or in ISO New England, pardon me, is become more uncorrelated than anywhere else in the country.

Meaning that what demand response is doing is reducing energy usage. So it's flattening the energy curve in each hour, but it also showed in the State of Charge report that it's not having much impact on peak demand. And those two are becoming uncorrelated in ISO New England much differently than anywhere else in the country.

So demand response is doing a very good job across all hours of the year of flattening the load curve and reducing energy

consumption and allowing electric generators such as Killingly to operate more efficiently on a flat energy demand curve, but it's not having much impact on peak demand.

The State of Charge report actually called for a percent and a half growth of peak demand in ISO New England, much higher than the Connecticut IRP, or I think even than ISO New England is calling.

THE CHAIRMAN: But does that then suggest a corollary to that, that there are other parts of the country or other states that have figured out how to better deal with the peak demand, and maybe that's something that Connecticut or ISO New England should look to look to doing?

THE WITNESS (Bradley): Not necessarily, because I think the climate in Connecticut and the actual shape of the load curve from hour to hour is very different all over the country.

So I wouldn't necessarily say that Connecticut should do more, or something different. I think it's just a factor of weather and geography.

Do you want to add anything to that?

THE WITNESS (Paterno): I guess, I would just go back to, Mr. Chairman, you brought up California last time we met, and that's sort of a great example of what the future could look like in a high renewable environment. They have battery storage there and the like.

And the question is, well, how is California dealing with peak demand? And I would say there, there they're still issuing RFPs. These are all source RFPs, which means they're technology agnostic. They're really looking for those facilities to meet system reliability. In this case, peak demand with a least-cost resource.

And within those RFPs, for the most part, they're still selecting gas-fired facilities such as Killingly. They're not doing it with the proclivity that they did in the mid 2000's, because there are other forms of energy and capacity, renewables and energy storage, but they're still selecting these types of facilities.

THE WITNESS (Bradley): And then one to add to the earlier response as well, is aside from the weather and geography differences,

customer makeup is a big portion of it, too.

Some of the other areas of the country where demand response and energy efficiency is reducing peak demand has a tremendous number of industrial facilities as well. So a very large industrial facility such as a steel mill, a paper plant that would use a time-of-use rate and can cut one of their trains, or two of their trains during the time of the summer peak. And these, these other areas are going to be primarily summer peaking.

That has a huge benefit to peak demand and that's -- the ability to do that in the Northeast is not as prevalent.

THE CHAIRMAN: Okay -- now is this specifically on that issue?

MR. SILVESTRI: On that issue.

THE CHAIRMAN: Okay.

MR. SILVESTRI: Thank you, Mr. Chairman.

On the peaking aspect of it I'm a bit confused, because through Connecticut and through ISO a number of peaking units have been installed in the last couple of years. Devon I think has four. New Haven has three, and I know

of a couple other installations.

And my impression is that they were put in specifically for peak demand. Am I wrong on that count?

THE WITNESS (Paterno): No, you're correct. I would say in the case of the Devon facilities, I think they came online about seven or eight years ago under a Connecticut state issued RFP, but the concept is the same. I agree with you.

MR. SILVESTRI: And they're, quote, unquote, cleaner units than the old FT4's that are still out there, the Pratt & Whitney jet engines. So --

THE WITNESS (Paterno): Yeah, you're looking at probably like a 10 to 11-BTU per kilowatt heat rate, yeah.

MR. SILVESTRI: But even with the old FT4's, there's probably about 400 megawatts that are still active in one form or another within Connecticut.

So I'm still confused on that peaking aspect, because I thought we had peaking generation all set up?

THE WITNESS (Paterno): Yeah. And

I think it gets to the point when we talk about the peaking facilities and the need for them. Connecticut may be okay from a state basis.

But again to reiterate our earlier points, that it's part of an interconnected power grid. And on our supplemental response to 83 we talk about some of those concepts, that what happens in the rest of the ISO system has an impact to Connecticut, because it is integrally linked. And kind of like our banking system, you can't pull one piece out without the whole deck of cards falling apart.

MR. SILVESTRI: Thank you, Mr. Chairman.

THE CHAIRMAN: We're going to go around. Some people have asked. Some people haven't had a chance.

MR. MURPHY: I'm all set.

THE CHAIRMAN: Mr. Ashton?

MR. ASHTON: Thank you. I'm sorry I didn't get a chance to start this out.

Just when we're talking about batteries I want to make it clear that Connecticut had a whack at batteries. It had the first battery peaking unit in the world with a

300-kilowatt system located where the Phoenix building is now about the turn of the 1900s. It was too small, too inefficient, too unreliable.

But we do have, and have initiated in Connecticut a major battery, and that's called Northfield Mountain Pump Storage system. Batteries -- I think pump storage is going to be a far better answer than electrochemical batteries of some kind. Unless somebody comes up with a Nobel-Prize winning change, we've been searching for batteries, electrochemical, for as long as I can remember.

But we have a thousand megawatts at Northfield Mountain. We have 600 megawatts at Bear Swamp, which is just to the west of Northfield Mountain. Then there's 20 -- 32 megawatts at Rocky River in New Milford, which was the first pump storage plant in the country, if not the world.

So I think the idea that an electrochemical battery is holding us back is a false notion. I'm testifying a little bit here. I think that clearly there has been in anticipation of this, and the nuclear units were conceived of as a fit with pump storage plants so

they would operate 24/7-365, if they could, and it would use that for pump storage cycling.

So I think that with the combined-cycle plant it's not necessarily that we can't fit that in under the load duration curve. I am concerned that we've got a lot of people taking a poke at this notion of need.

I grew up in an environment where to the best of our ability we looked at all of New England in considering something of the generation requirements. And the upshot of that was that there are -- there were three units at Millstone, Brayton Point, Canal, Pilgrim, Maine Yankee, and somewhere I forget. And they were far bigger units than any one system could justify.

And that is the one advantage that you're looking for, the economies of scale. And you're now looking at political boundaries as to whether we're importing or exporting. Ideally we ought to match load and generation, but that just ain't in the cards, and we're forced.

If we want to take advantage of economics we've got to look at where the sources of supply, i.e. in this case, gas are, and where the transmission facilities are -- and there's two

345-kV lines going by the door -- and where the load is. And at 345, the load, even a hundred miles away, is not that far away.

I do have a few little questions I want to ask. I want to go back to the water issue. I am concerned that we have to make a clear-cut -- have a clear-cut finding that there is adequate water, or likely to be. What assurances has Connecticut Water Company put in writing that if their systems are linked there is adequate -- going to be adequate water, for my first question?

THE WITNESS (Mirabito): They provided us an ability to serve letter. It's in, I think, volume two.

MR. ASHTON: I apologize. I've had a little problem be able to get at some of these things.

THE WITNESS (Mirabito): Yeah, no problem. So they provided what's called, an ability to serve letter outlining exactly what you're asking about.

MR. ASHTON: Will that require a capital contribution from the applicant here?

THE WITNESS (Mirabito): Yes. Yes,

they will be expected to pay for the infrastructure upgrades that they've referenced in their letter.

MR. ASHTON: And is the applicant willing to make that payment?

THE WITNESS (Mirabito): Yes.

MR. ASHTON: Okay. We've had testimony and concern on this Lake Alexander which is a natural lake. It's augmented by a dam, I think, about 15 feet high, if I recall -- is down. And I know people are quite concerned about that. So whatever we do and you do, we can't aggravate that kind of a situation.

Lake Alexander is an industrial pond and it's run as and industrial pond with a little bit of recreational use, somewhat like Lake Candlewood was, but you've got to be careful there.

THE WITNESS (Mirabito): Yeah, and we're concerned with that as well. It's one of the reasons we took a very careful look at the hydrogeological situation related to the Connecticut Water supply.

And we were able to confirm that the wells that serve the systems that will be

providing water to us are separated, hydro-geologically separated from the lake. So our use will not impact the level of that lake.

MR. ASHTON: Am I correct that there was testimony last time that this plant can run with the gas turbine only. It could run as a straight simple single cycle?

THE WITNESS (Rega): Yes, it can. We could bypass a steam turbine. It does not have a bypass stack to completely bypass the boiler, but we can generate steam, but then bypass that steam to the condenser, and keep the steam turbine out of service if we had to.

MR. ASHTON: Okay. So the plant is not designed at this stage for single-cycle use. Is that correct? I'm having a little trouble hearing you. Sorry.

THE WITNESS (Rega): It is designed to run without the steam turbine if it had to. It's a very unlikely scenario, because it just --

MR. ASHTON: I understand.

THE WITNESS (Rega): Yeah, it would not be economical, but if there was some sort of malfunction in the steam turbine, the gas turbine could still operate.

MR. ASHTON: Exactly. That's, you know, bent shafts and stuff like that are not out of the question, nor a split rotor or something like that.

You indicated that the plant is not capable of doing black-start operation. Is that something that is a reasonable alternative? Is that something that ISO may require?

THE WITNESS (Rega): I don't believe that ISO would require it. I'm sure they wouldn't require it. It's of course feasible, we just don't see the need for it. It is a pretty reliable grid, and so generally we put in black-start capabilities in places that don't have reliable grid where you might have to start that unit really to --

MR. ASHTON: At the risk of testifying again, I've had experience with a less than a hundred percent reliability on the southern New England grid. And black-start capability, which you get on some of the small hydro units gratis, is an essential item.

That was a critical key in 1965 to starting up again. We had a bunch of small hydro units that provided cranking power. The units

today are much bigger and I worry that by not having some black-start capability we're asking for trouble. Not a lot, but you have one major system outage and no black-start capability I suspect you're going to be up before the House and Senate investigating committee trying to figure out what happened.

How much is it a problem to provide black-start capability?

THE WITNESS (Rega): I don't know that's is a problem so much, but it is a pretty large generator that would have to be on-site to support the initial parasitic load to get one of these units started.

MR. ASHTON: Are you going to have any on-site parasitic generation?

THE WITNESS (Rega): We -- well, the general parasitic load that happens during normal operation of the plant is provided by the two main generators from the gas turbine and steam turbine. We do have a backup generator, a small backup generator.

MR. ASHTON: How big is that?

THE WITNESS (Rega): It's about 1 megawatt. I don't have the number exactly. I'd

have to look through here, but about 1 megawatt.

MR. ASHTON: And how big a machine do you need for full backup capability?

THE WITNESS (Rega): I'm guessing here between five and ten megawatts, but that's -- I would have to double check that number.

MR. ASHTON: And if you provided that, would ISO give you credit for it? Have they denied any backup generator before?

THE WITNESS (Paterno): I'm not familiar with whether they've denied anybody, but they would have to accept the black-start capabilities and then NTE would be compensated for that and such.

MR. ASHTON: Have you investigated whether or not there would be cranking power for the plant in the immediate vicinity where that could be utilized? Five megawatts, you could run it at 14, as low as 14 kV. You don't need a 345 line to get cranking power in at 5 megawatts.

THE WITNESS (Rega): So the way our design is set up is the same switchyard and transformers that we're using to generate power when we're generating out to the grid are the same that we use to bring power in to start the unit.

So it's so sourced right there through the same electrical system.

MR. ASHTON: Okay. But I'm thinking that suppose the grid is down, what do you do? Wait until the grid comes up, yes?

THE WITNESS (Rega): In this case, yes. We don't expect that to happen, but yes.

MR. ASHTON: One question, is there room on this site for more than one generating unit -- more than one combined-cycle unit? Could you put a pair in?

THE WITNESS (Rega): We could not.

MR. ASHTON: You couldn't?

THE WITNESS (Rega): No.

MR. ASHTON: So this is a one-off type of location?

THE WITNESS (Rega): Yes, that's correct.

MR. ASHTON: A minor point. I had a little panic, a little time of irritation in looking at maps where I couldn't find a date on them and I certainly couldn't find a north arrow. And wherever -- I want you to all raise your hands and take an oath.

Whenever we present a map it's

going to have a north arrow on it, it's going to have a scale on it, and it's going to have a signature on it -- and I'm dead serious. That's terrible.

The Yankee Gas supply, is Yankee going to come in with a -- I'm not sure if it's a 600-pound line there. Is that correct?

THE WITNESS (Bradley): I believe it's approximately 600.

MR. ASHTON: What if they go to FERC to get approval for expansion of that line?

THE WITNESS (Bradley): What we understand from Yankee is that it would be just a state approval for that line since it's just intrastate.

MR. ASHTON: A state approval. Did they say who at the state level would approve it?

THE WITNESS (Bradley): I do not know. Lynn, you may very well have done more on the permitting process.

MR. ASHTON: Well, the reason I'm asking, it's a 50-year-old piece of iron in the ground. And to my mind there ought to be a clear pattern of replacement, rather than just, let's put an extra -- another 12-inch or 6-inch pipe.

It's a six-inch pipe, I think, if I recall.

THE WITNESS (Bradley): Is either a four or a six-inch pipe, yes, sir.

MR. ASHTON: But rather than just simply rely on that for another 50 years, the coatings on gas piping have vastly improved in that 50 year-period. And the cathodic protection has been good, but I would be much happier to see a new pipe go in than I would an old one. Are you going to be paying for that?

THE WITNESS (Bradley): Yes, sir, we'll be paying for the cost of the new lateral per Yankee Gas through a special purpose tariff.

MR. ASHTON: Okay. So that if we put a requirement on to replace it with a new pipe we could also put a requirement on that, that be sized to serve the Yankee load in that area. Is that fair to say?

THE WITNESS (Bradley): I think that's fair to say, and I think Yankee intends to do that. And just for note, they are going to -- the old pipe will be taken out of service when the new pipe is installed.

MR. ASHTON: That's what I want to understand. I want to nail it down. That is

going to be the case?

THE WITNESS (Bradley): Yes, that is the case.

MR. ASHTON: Okay. By the way, I had a little relationship with Yankee at one time.

There's been a lot of yak about natural gas versus fuel oil and reliability. Would you care to elaborate on your choice of natural gas versus fuel oil and reliability?

THE WITNESS (Bradley): Yes, sir.

As we've mentioned, Killingly is a dual-fuel facility and we've contracted for firm natural gas. And so we understand that natural gas is the lowest-cost fossil fuel out there right now, the cleanest.

We went ahead and contracted for the firm fuel supply to have the highest possible reliability, understanding that ISO needs dual-fuel capability from units, because even though natural gas provides an extremely clean low-cost and efficient source of fuel for the vast majority of the year, there may be certain hours where you need that backup of ULSD, thus the reason that Killingly is a dual-fuel unit.

MR. ASHTON: You might ask ISO

which of the fuels have been interrupted it its history.

Is anybody prepared to talk about the electrical aspects at the switch yard?

THE WITNESS (Rega): We could discuss some of those. Of course, the switch yard will ultimately be owned and designed by Eversource, but we have certainly a conceptual idea of what that looks like.

MR. ASHTON: Okay. This site, as designed, in effect has two substations. One is at the plant site, the other one is across the road behind the derelict barn and it's called a switchyard. And they are, I don't know what, less than a thousand feet apart, something in that range.

The thought struck me as to, why not design that switchyard at the plant so that the lines loop in and loop out, and no switchyard across the street. This is unique as far as I know in all plants in Connecticut in that it's got this kind of an arrangement.

And furthermore, the technology at 345, we used to think of it -- I can remember back when we used to use the term, "an acre a breaker."

For each circuit breaker you required an acre of space. Now this was just being smart-alecky of course, as engineers are want to do, but the fact of the matter is that it does take a fair amount of land. And in the public comments there was concern expressed about the switchyard in this location, interfering with the passage, unobstructed passage of Lake Road.

Has anybody looked at putting in a gas insulated substation at the plant site? And if not, why not? It cuts down on the area of work grading and all the rest of it. Middletown Kleen Energy looked at it, and found that they saved a bundle of money on it.

THE WITNESS (Rega): A gas line switchyard is something we haven't spent a lot of time looking at. They're generally considered a bit unusual, and probably because of the high expense. I'd be surprised if it was less expensive.

I'm surprised to hear you say that. It's generally considered a much more expensive design.

MR. ASHTON: It may -- this is in the form of a dialogue here. It may be, but it

would also reduce visibility. Would it not? You don't have a substation on both sides of the fence, so it reduces visibility.

It occupies a smaller site, more or less, adjacent to the powerplant. It gives you a little more freedom of operation. Doesn't it?

THE WITNESS (Rega): Well, we would -- I believe we would still require two switchyards, though. This is fairly common practice these days, and some time ago, you know, I believe it was less common when the transmission owners also had their own generating plants and it connected directly into their own switchyards. These days they prefer to sort of have a single point of interconnection.

And they really prefer us to protect our equipment with our switchyard, and them to protect their equipment with their switchyard.

MR. ASHTON: Can I make a suggestion that you take a look at the Poquonock powerplant and also the Kleen Energy powerplant. Both of those are relatively new. In fact, one building now.

I come from a background of, let's

do it right, to hell with whose feelings are being hurt. And I think that the idea that while we want to have -- step on Eversource's toes by having combined switchyard, is frankly engineering nonsense. You do it right and then you figure out how to do it on the economics.

We for years didn't want to have -- didn't want to share generation. We were all going to keep our own, have our own generation. And lo and behold over 50 years ago we started building units in state which shared capacity among all of the operating utilities.

I mean, I just think you've got to look at this thing, and I want to hear more about this because I think it's very shortsighted in the long pole.

With all of the switchyard on one side of the road it will reduce the clutter. You may even want to put in underground 345-taps off the overhead transmission. I don't know. I'm not going to order anything, but I am strongly urging you to take a hard look at this.

Let's see. I want you to know I have a bias against switchyards that have square corners. They are places for junk, and I can

testify to that point personally.

If you break a 45-degree corner you eliminate the possibility of junk collecting, first of all. You make a smaller footprint, second of all. And third of all, you don't impede your operation. Nobody drives a truck in and then does a right angle bend in that corner. It ain't been done.

Would I be wrong in thinking that the greatest source of noise from the plant would be the air coolers, air handling equipment?

THE WITNESS (Gresock): You're correct, that the air-cooled condenser is one of the major sources of noise.

MR. ASHTON: Okay. As I walked the site and looked at the drawings that you had, my impression was that there is a knob there.

And you were taking the top off that knob to fill in on the northeast side of it towards, I don't know. I forget which wetland it is. Wetland one or two, but so you had a flat site. Is that fair to say?

THE WITNESS (Gresock): Yes.

MR. ASHTON: Okay. Had anybody looked at doing a little less dramatic earthmoving

by building the plant on steps? There's nothing that says you can't do it.

THE WITNESS (Gresock): There is a little bit of tiering that's associated with the most recent design, but the major generating facility and major equipment is all on one grade.

MR. ASHTON: Sure. I don't disagree that you're going to have your turbine generator on a pedestal on a foundation so it's all on one grade. But I'm not sure you need the air coolers at the same grade. Do you?

THE WITNESS (Walsh): The intent was to provide a ring road that allowed access to the entire site, and because it's a dual-fuel site we do have to accommodate the delivery of fuel oil.

We've utilized the ring road as the -- in that process, therefore we kept the grade changes along -- within the ring road to a reasonable limit, which we've deemed to be 3 to 4 percent.

MR. ASHTON: Did anybody even look at the possibility?

THE WITNESS (Walsh): Of tiering the site?

MR. ASHTON: Of stepping the site, building steps into the site so you take advantage of the grade.

It's like building these split-level houses. I get the biggest kick out of them. They're often built on a flat lot, and that's not what they were really designed for. They were designed to take advantage of topography.

And my question is, what can you do to take advantage of topography here which would allow for a reduction in cost, because civil works do cost a lot of money? And perhaps by carefully staging that stepping provide a natural barrier for some noise coming off the site. Did anybody look at that?

THE WITNESS (Gresock): I mean, the engineering team certainly did spend quite a bit of time looking at both grading to optimize cut and full, but also looking at how to position the different elements of the project so that the sound could take advantage of barrier effects from the layout.

THE WITNESS (Walsh): That's correct. The site itself does have a grade to it.

MR. ASHTON: Of course. Damn few sights in Connecticut don't.

THE WITNESS (Walsh): But the ring road itself, back your question of being able to tier the site, because it's an air-cooled condenser we have a large steam duct which resides at grade, which effectively prevents a -- creates a barrier to which the ring road has to go all the way around the outside of the air-cooled condenser. And in order for it to have a use during fuel oil delivery, or just generally traffic patterns, we didn't want to have a severe step.

MR. ASHTON: I understand the argument as far as delivery of fuel goes, but that doesn't cover the whole damn site. You've got to have some places on that site where you just need to get in and do something, like deliver fuel oil. And that can be often positioned with piping so that you take it almost off the main road, if you wanted to.

I mean, I understand it means you've got a longer pipe. You've got a bigger pump in possibly, and all of that, but my point is there that should not be an obstacle for overall

improvements in design.

You're going to spend $600 million on this thing, or something in that range. Moving a pipe terminal is not going to break the bank. You know it, and I know it.

So the question again I'm pressing is, what design improvements vis-a-vis topography can you make that will help cut down noise, cut down visibility?

THE WITNESS (Walsh): Specific to lowering the grade beneath the air-cooled condenser?

MR. ASHTON: Well, possibly, yeah. If you were given 10,000 bucks and told by the end of the week, I want a conceptual idea as to how it would work, you could come up with it. I know you could. Engineers like challenges.

THE WITNESS (Gresock): Although one of the reasons the air-cooled condenser is positioned where it is on the site is exactly for that reason, to create as much separation distance from the edge of the property boundary associated with that facility.

Having that as a primary design goal for the layout certainly was a driver behind

the layout.

MR. ASHTON: And I would agree with that. I would agree that probably the north end of the plant, by my north, makes sense. But I'm again squeezing, what can be done to sharpen the pencil?

THE WITNESS (Rega): Yeah. You know, I think there certainly could be cost-saving opportunities there, I think. But from a noise and a visual perspective, as Ms. Gresock mentioned, you know, where the air-cooled condenser is now, it certainly makes sense.

And the elevation it's at makes sense from what Mr. Walsh was talking about, because the traffic in and out of the plant does sort of go through this ring road. And this ring road has to encapsulate the air-cooled condenser. So having a steep dropoff in grade there would make it difficult, if not impossible, for large trucks to drop down and then have to come back up again, too.

MR. ASHTON: I understand the ring road, but I think you understand the ring road is not going to be a substitute for Lake Road. It's a local road for convenience. It's not for

through traffic. In many respects it doesn't go anywhere, except it goes to access the plant.

THE WITNESS (Rega): Correct.

MR. ASHTON: The other, another question that relates to all this is, can you use some of the fill or the cut material, spoil material to create berms which may cut noise anywhere around transformers, and reduce visibility, around switchyards, around the air-cooled handling equipment?

You know, I can't answer it, but I can raise the question.

THE WITNESS (Gresock): So certainly, the consideration of noise in the engineering design involved a lot of thought about where to position elements so that we could take advantage of building shielding.

There are some integrated walls. There are aspects that we've looked at such as the positioning of the ULSD storage tank to make sure that that's maximizing its effect in terms of blocking the sound from the project.

In terms of berms the concern that we had in integrating the possibility of berms was the fact that in order to create a very tall berm

you need to have a fairly wide base and it takes up a lot of space.

MR. ASHTON: I'm good on geometry.

THE WITNESS (Gresock): And this is a site where, you know, we've certainly heard loud and clear from a number of directions that we need to be maintaining as small a footprint as possible.

We need to be maintaining distance as far as we can from nearby residences and distance from the wetlands. And so our concern in terms of using a berm and materials like that was really one of space.

MR. ASHTON: I do understand where you're coming from. Being an engineer I like perfection. I want a perfectly flat site with access unlimited, but I'm a rotten manager in that I don't like that kind of thing because it does not help me with my neighbors. So I want to see a little more imagination from my engineers.

I'm serious.

On the plant itself what kind of siding color and material vis-a-vis -- especially vis-a-vis soundproofing are you proposing?

THE WITNESS (Rega): The major

buildings will have metal siding on them with some amount of sound insulation.

MR. ASHTON: With what?

THE WITNESS (Rega): With some amount of sound insulation.

MR. ASHTON: With some amount of sound insulation?

THE WITNESS (Gresock): I mean, there are specifications, for example, in the noise report that talks about the sound level reductions for the turbine buildings being wall panel STC-44, and then specifying what those model level reductions would result in.

MR. ASHTON: What kind of colors are we talking about? Battleship gray?

THE WITNESS (Rega): We have not selected colors yet, but that's --

MR. ASHTON: Can I make a suggestion? You've done a lot of work with the community in terms of holding meetings. This might be a topic to put into a community meeting and ask them if the plant is built, what kind of color would they like?

And they're not going to come up with orange and black slashes or anything like

that.

THE CHAIRMAN: And it could be handled at the D and M if we get there.

MR. ASHTON: Yeah.

I have a note here that for figures 2-4, 2-5 and 2-6 there's a sparsity of landscaping. The one nice thing about this site is, God, it is a beauty as far as landscaping goes. You can take a hole right out of it and probably not be too visible, but where you are having -- doing a lot of excavating, moving, civil works, some landscaping will work well. And so I'm just making a note that that needs more landscaping.

Oh, chemicals stored on site. The comment was made that there would be no chemicals stored on site. Does that include water treatment, hydrazine, morpholine or anything like that for oxygen scavengers on your water steam generators?

THE WITNESS (Gresock): There will be chemicals stored on site, and there are two tables in the application that identify the chemicals expected during construction and during operation. I think the answers that we were

given -- giving related to chemicals that qualified under 112-R.

MR. ASHTON: Okay. I want to make sure that's clear, because I don't believe you don't have some chemicals on site.

THE WITNESS (Gresock): There are absolutely chemicals, and there's a table that specifies the type, the approximate size and what its use is.

MR. ASHTON: Mr. Chairman, I think that's enough for me for right now.

THE CHAIRMAN: Thank you.

Mr. Hannon, you had a couple of questions?

MR. HANNON: Thank you.

In volume two, behind tab D, on page 25, it says, the plans as presented do not consider on-site vehicle washing. Are you willing to commit to no vehicle washing on-site?

THE WITNESS (Thibeault): Yes.

MR. HANNON: In dealing with some of the erosion control measures that are being proposed, I noticed that you're talking about some areas, a silt fence combined with hay bales.

Some of the research that I've done

identifies both of those activities as low quality in terms of holding back erosion or sedimentation. Whereas silt socks, coil rolls, whatever label you want to put on those, those have a high efficiency of removing sedimentation.

So I'm wondering, are you willing to look at putting in, whether it's the silt socks, the coil rolls, whatever the term is in place of the silt fence and hay bales, especially as it relates to the closer proximity to wetland areas?

THE WITNESS (Thibeault): Yeah. I believe, you know, in conjunction with them they would certainly be appropriate. Because as you had said, the silt socks and so forth are great for removing sediment, but if you've got, you know, larger -- larger quantities or something, you know, like a large bolder or something that comes down and rolls down the slope. The silt fence and hay bales can act as an impediment for those types of things.

Another thing that I think is actually very useful that I see used quite frequently on construction sites are just wood chips from tree-clearing activities where the

branches and so forth are just chipped on site and utilized as berms adjacent to, you know, significant impact areas and even as a ground cover on areas that have been freshly graded because they helped in absorbing rainfall impact, for instance, to alleviate the transport of sediment across the site.

MR. HANNON: And based on the research those tend to be more of a moderate, so they are of a better quality than the hay bales and the silt fence. I've just seen too many scenarios where a silt fence, a hay bale has been used and it does not protect the wetlands. It's problematic.

And if I'm reading the data correctly this site has a lot of fines. And I'm wondering whether or not a lot of those fines in the soil are just going to blow right through any hay bales and silt fence that may be proposed. My guess is they're a lot smaller than the size of the silt fence. So I think that's something that needs to be looked at carefully.

In looking at where the temporary sedimentation basins are, the dry basin, the sedimentation forebay area, the detention pond,

those all are proposed on the downslope side of a two-to-one slope. How do you propose to maintain that?

THE WITNESS (Thibeault): There will be an access drive around the perimeter of the site essentially coming from the -- where the fuel tank is.

There's the basin around that side of the site, I believe it's 2A, where you're going to be able to just access the basin from around the perimeter of the site at the toe of the slope, and not have to go straight down the slope.

MR. HANNON: Is that something new, because I don't believe I've see that on any of the plans?

THE WITNESS (Thibeault): It may have been something that was outlined in a narrative. I think we could certainly show that on the plan --

MR. HANNON: Okay. Because based on what I've seen on the plans there is no access to these basins. And I just want to make sure that that is very clear in terms of being able to get to that, because you're not going to be able to maintain them manually.

There's going to be some type of equipment that has to get down there, so that needs to be very clear.

THE WITNESS (Thibeault): I agree with you.

MR. HANNON: One other question is, can you tell me what that status is of the final report for the environmental justice project?

I think that the -- believe that the last meeting, the public information meeting was July 11th, I believe. Can you tell me what the status is on preparing the final report and getting that into the agency for review and approval?

THE WITNESS (Eves): Yes, that report is just about complete, and we have been talking somewhat with Ms. Pistonne about the right time to submit that. So we would expect to be submitting that report shortly.

MR. HANNON: Thank you.

I have no further questions.

THE CHAIRMAN: Mr. Levesque, any more?

MR. LEVESQUE: No further questions.

THE CHAIRMAN: Mr. Harder?

MR. HARDER: I had a couple.

There's been some discussion today also about the site layout, and I'm wondering because if you look at the site plan it shows some fairly open areas, I guess, on the southern end of the lower left corner if you're facing the property, and also the lower right corner.

I'm wondering, at least as it relates to, you know, the wetland, approximately to wetland, have you looked at, you know, the opposite of, I guess, shifting the location away more toward the southern end into some of those open areas to keep it a little further away from wetlands?

THE WITNESS (Gresock): There has been a lot of work done to look at ways of moving different aspects of the project around the site to try to increase separation from the wetlands.

One of the challenges in that particular area is grade, but there has been in the latest site plan some movement of some of the smaller elements of the project down closer to that area and to the southwestern side of the site.

MR. HARDER: My other question was, I believe the Chairman had asked the question regarding greenhouse gas emissions. And I think you, Mr. Paterno, had made a comment, something to the effect, you know, when you compare, when you consider emissions from a site, but also considered emissions at the point of usage, you know, it's different.

Could you just explain that a little bit more?

THE WITNESS (Paterno): Yeah, sure. And Fred, please feel free to correct me if I get the nomenclature wrong.

But there's generally two different ways to account for emissions. One is generation based. The other one is consumption based. Generation based is from the source, and so it's basically -- imagine Connecticut as an island. We draw a ring around it, and we say, what is the actual physical emissions originating from this ring? That's generation based.

Consumption based looks at more regional impacts of which CO2 really is, you know, obviously it's CO2 emissions and that they don't stay within the ring. They would float across New

England and into New York.

And so when you think about consumption base, really what we're looking at is the total regional emissions as a function of the electrons consumed within Connecticut, realizing those electrons are generated throughout the pool of resources in New England.

Does that make a little more sense?

MR. HARDER: Yeah, it does. I guess the point I was wondering about is, if we're looking at greenhouse gas emissions generally, and not just Connecticut, and not just the region, how is that point, I guess, affected if you consider gas production and overall greenhouse gas emissions from the production of gas?

THE WITNESS (Paterno): So talking about upstream, like physical drilling of the gas and whatnot?

MR. HARDER: Yes, drilling the operation, the whole thing?

THE WITNESS (Paterno): Yeah, certainly. Yeah, I'm not going to sit here and tell you that as you drill and frack for natural gas there isn't greenhouse gas emissions from that.

And I haven't done the analysis, but I would hypothesize that its likely the end-use reductions in CO2 emissions from Killingly generating that electric -- electrically produced, natural gas probably offsets the source emissions, but we haven't done the analysis.

MR. HARDER: The last question. What's the estimated total cost of the facility, I guess, in terms of planning, design and actual construction? That's probably been thrown out. I just don't remember what it is.

THE WITNESS (Mirabito): Yeah, I think we've got it listed towards the front of the volume one of the application, but the total project cost is between 500 and 540 million dollars, depending on whether you include some soft costs like financing, that type of thing.

THE WITNESS (Paterno): Mr. Chairman, if I could just add a couple things? I just want to make a couple of comments off of what Mr. Ashton said, if that's okay?

THE CHAIRMAN: As long as that doesn't turn into a lengthy dialogue.

THE WITNESS (Paterno): It does not indeed, sir. I promise I will not.

THE CHAIRMAN: Because we normally try to break, but I want to break when we're finished with --

THE WITNESS (Paterno): Yeah, I will do it under three minutes now. I promise.

So I believe Mr. Ashton was alluding to, you know, check with the ISO on oil versus gas. Obviously, we've had oil embargoes in the past.

I wasn't alive to see any of those, but obviously the oil embargo in the 1970s was quite impactful to the entire, not only New England, but the entire US. Natural gas is produced domestically and, in fact, we're the world leader in natural gas production. Killingly will primarily use natural gas.

In addition to that, I have to make an apology to Mr. Ashton that we did not put a compass on our figure 1 in the supplemental response to question 83. But in there we're trying to illustrate -- and to Mr. Silvestri's point -- just the interconnected nature of the grid.

And in fact, we did talk about the Northeast Blackout of 1965 and how that was really

the genesis of the ISO New England system that you see today, and we wouldn't have that probably to a large degree absent that blackout in 1965.

MR. ASHTON: That's how I got white hair.

THE WITNESS (Paterno): And then the last, last thing -- and I realize I have one more minute, Mr. Chairman.

I realize you guys have a lot of stuff to plow through and we just gave you this document. It's a lot to read. I would point the Council's attention to pages 6 and 7 where we summarize the definition of need in bullet point formats.

MR. SILVESTRI: Thank you, Mr. Chairman. And I have two quick questions.

What I read is that construction, if approved, would be scheduled for seven days a week. If indeed the project is approved, could that be cut back to, say, five days or even six days a week without impacting your in-service schedule?

THE WITNESS (Rega): Yeah, we're planning on a five-day a week construction schedule.

MR. SILVESTRI: And the last one I had, someone had mentioned the number of the NTE plans that are currently undergoing construction. Once everything is all said and done, who is going to operate them?

THE WITNESS (Eves): NTE will be responsible for the operation of those facilities, so we will have the management staff, staffing and oversight of those facilities. We will hire an on-site day-to-day operator maintenance company, like a North American Energy Services who currently operates roughly 250 plants in the United States.

MR. SILVESTRI: That's all I have, Mr. Chairman.

THE CHAIRMAN: Okay. We're going to break for lunch. We'll resume back in 45 minutes, at 1:45. And we'll be starting the afternoon with the cross-examination of the applicant by the group parties.

Apparently we're going to figure out where you're going to sit after we've eaten, and then have more ability to deal with such mundane things.

Thank you.

(Whereupon, a recess was taken from 1:00 p.m. to 1:45 p.m.)

THE CHAIRMAN: Good afternoon. We're going to continue cross-examination of this. Now we'll go to the group of parties. I understand we're going start with Attorney Berman of the Sierra Club, and I assume the group party?

MR. BERMAN: Thank you, Mr. Chairman.

THE CHAIRMAN: Do you need to verify exhibits, first? Excuse me.

MR. BALDWIN: Just in case it comes up in further cross-examination, Mr. Chairman. I appreciate that.

There are two new exhibits, one is listed in the hearing program as NTE-19, which are the unredacted responses that were provided to the parties and intervenors, except for the Town.

The Town did not wish to sign a nondisclosure agreement. It was not interested in receiving the information, however the materials were provided to the Sierra Club, the Wyndham Land Trust, to NAPP, and to Connecticut Fund for the Environment. Those are listed as NTE Exhibit 19.

And then today, as I think

Mr. Paterno and Mr. Bradley both mentioned in their discussion earlier today, we submitted supplemental responses to the Council's interrogatories 83 and 84, and I'd like to verify those, if we could, Mr. Chairman?

So for Mr. Paterno and Mr. Bradley, did you prepare or assist in the preparation or supervise the preparation of the NTE unredacted responses to NAPP interrogatories 1, 3, 4, 5, 8, 10, and 11; and as well as supplemental responses to the Siting Council's interrogatories 83 and 84? Mr. Bradley?

THE WITNESS (Bradley): Yes, I did.

MR. BALDWIN: Mr. Paterno?

THE WITNESS (Paterno): Yes, I did.

MR. BALDWIN: Do you have any corrections, clarifications or additions to offer to either of those exhibits?

THE WITNESS (Paterno): Yes, the supplemental responses, questions 83 and 84, to make two corrections to the original questions by the Council's 82 and 84, and those corrections are the following.

As it relates to the combined capacity of the Norwalk and Bridgeport Harbor unit

two facilities, in the original question 82 we ascribe 730 megawatts. That has been corrected to 500 megawatts.

The second and last correction is the capacity total of the at-risk retirements in Connecticut; Montville, Middletown, New Haven and Bridgeport Harbor unit three. In the original question 84, that was 2,000 megawatts. That has been corrected in the supplemental response 84 also in supplemental response 83, to 2500 megawatts.

And those are the only two corrections.

MR. BALDWIN: And with those clarifications and corrections, is the information contained in NTE Exhibits 19 and 20 true and accurate to the best of your knowledge? Mr. Bradley?

THE WITNESS (Bradley): Yes, it is.

MR. BALDWIN: Mr. Paterno?

THE WITNESS (Paterno): Yes, it is.

MR. BALDWIN: And do you adopt the information contained in those exhibits as your testimony today? Mr. Bradley?

THE WITNESS (Bradley): Yes, I do.

MR. BALDWIN: Mr. Paterno?
THE WITNESS (Paterno): Yes, I do.
MR. BALDWIN: I offer them as full exhibits, Mr. Chairman.
THE CHAIRMAN: Is there any objection from any of the parties or intervenors to the admission of these?
MR. BERMAN: Just one request for clarification. Since obviously we have had a fairly limited amount of time to review these responses, we would just request confirmation from the Council that we will have the opportunity to do an appropriate cross-examination of those responses at a future hearing date?
THE CHAIRMAN: Yes, you will.
MR. BERMAN: Thank you.
THE CHAIRMAN: So these exhibits are admitted.
Okay. Now Attorney Berman.
MR. BERMAN: All right. Thank you, Mr. Chairman. So my name is Josh Berman. I am an attorney with the Sierra Club. I'm joined at the table by my colleague Jean Zhuang, who is also an attorney at the Sierra Club.
I'm new to this Council, but I am

not new to the State of Connecticut. Jean and I did both all or most of our postsecondary education in Connecticut, and I am from Western Massachusetts. It is a pleasure to be here.

I did have one quick question, a couple quick questions about the filing that was just made today, the supplemental interrogatory responses I just wanted to confirm with NTE.

So nothing in the supplemental interrogatory responses references information that postdates the initial responses to interrogatories number 83 and number 84. Correct?

THE WITNESS (Paterno): I'm not sure I understand the question.

MR. BERMAN: I've had a brief opportunity to review. Nothing in the supplemental responses references information that postdates October 27, 2016. Correct?

THE WITNESS (Paterno): Yeah. No, it does not.

MR. BERMAN: That's correct? So all of the information is information that it could have been provided by NTE in its initial response to the interrogatories on October 27. Correct?

THE WITNESS (Paterno): The supplemental responses 83 and 84 were in response to Council comments in our original meeting.

MR. BERMAN: But not to specific questions, they were responses to comments.

MR. BALDWIN: Is there a question?

MR. BERMAN: No. I just want to ask one question about --

THE WITNESS (Paterno): I'm sorry. I was corrected by my colleague. We do have one additional source. I can turn you to the page, actually, where we reference a November 3, 2016 -- thank you -- radio interview. And that's on page 12 of our supplemental response, number 84.

MR. BERMAN: With Ms. Dykes. Is that correct?

THE WITNESS (Paterno): That is correct. And I apologize for that oversight earlier.

MR. BERMAN: I think it probably makes sense to reserve the cross on these a little to subsequent hearing date to be able to more fully review.

So turning to a question from Ms. Gresock. At the last hearing, Ms. Gresock,

you confirm that Killingly's air permit will not authorize the plant to burn ultralow sulphur diesel, or ULSD on an economic basis. Correct?

THE WITNESS (Gresock): That's correct.

MR. BERMAN: So the plant will be able to burn ULSD only if there is a gas curtailment. Correct?

THE WITNESS (Gresock): We expect that there will be a series of conditions that will be in the air permit, if it is issued, that will provide the bounds within which ULSD will be able to be used.

MR. BERMAN: And do you anticipate that ULSD will be limited to gas curtailments that are experienced by the Killingly facility itself, as in if there is a gas shortage such that interruptible facilities with interruptible contracts are being curtailed, is that a curtailment that would authorize Killingly to, you know, with a firm gas contract, to be able to burn ULSD?

THE WITNESS (Gresock): I'm not sure I completely understand the question, but the intent of the project is that it will burn gas at

any time gas is available to it. ULSD firing is intended strictly as a backup source.

And the intent of the language that we expect DEEP to include in the permit will provide a framework to make sure that it's not an economic decision.

THE WITNESS (Bradley): And to add to Ms. Gresock's discussion, Killingly has contracted for firm natural gas fuel supply. So the term of interruptible would have no bearing on the usage of fuel oil.

MR. BERMAN: Thanks. Okay.

Turning to you, Mr. Paterno, in your appendix to the application, appendix B you stated that capacity resources that clear in the ISO New England forward capacity auction are by definition needed for reliability. Correct?

THE WITNESS (Paterno): That is correct.

MR. BERMAN: And based on the discussion that you had with the Council at the last hearing is that still your position?

THE WITNESS (Paterno): Yes, they are needed. However I would say that is but one component of the need argument for Killingly, and

we address the other components in our supplemental response number 84.

MR. BERMAN: Okay. So it's not true then they are by definition needed for reliability. Correct?

THE WITNESS (Paterno): No, I don't think I said that. In clearing in the FCA, and actually if you look at the FCA-10 press releases it says those capacity resources that have cleared the forward capacity auction are needed for reliability.

So I think as in clearing the FCA you are needed, however there are other components to the need argument as well.

MR. BERMAN: No, I recognize that. When you say, needed for reliability, you specifically are referencing the need for resource adequacy. Correct?

THE WITNESS (Paterno): In that context, yes, that's correct.

MR. BERMAN: Okay. So I may use reliability and resource adequacy interchangeably. I hope that's okay.

Is it your position then that every generation resource that clears in the forward

capacity auction is needed for reliability?

THE WITNESS (Paterno): For resource adequacy in meeting the net install capacity requirement in ISO New England? Yes.

MR. BERMAN: Okay. So the highest bidder that is successful in clearing in the forward capacity auction is needed for reliability then. Correct?

THE WITNESS (Paterno): Yes.

MR. BERMAN: And this it's true even if there was another bid that was submitted for a capacity supply obligation at a slightly higher price, and that bid was not selected because there was a slightly lower price bid. But you know, you would still say that the highest bidder that was successful in clearing the auction was needed for reliability?

THE WITNESS (Paterno): I would say that the forward capacity auction in the way it's run is meant to select those resources that meet the highest degree of reliability in a total least-cost manner.

MR. BERMAN: Understood, but in terms of whether or not there are adequate resources in the system, in this theoretical a

slightly higher priced resource that didn't clear, but say, offered the same amount of capacity were to, you know, have been selected instead, you know, that the system would be equally reliable from a resource adequacy perspective. Correct?

THE WITNESS (Paterno): I see what you're saying. Yes, most likely, but I don't know if that would result in the sort of least-cost mechanism that's used in the auction.

MR. BERMAN: Sure. But -- and so I guess, and your opinion then is need a function of not merely level of resources as, you know, compared to projected load, but also a function of cost?

THE WITNESS (Paterno): Yes, that that is the purpose of the downward sloping demand curve in how it procures resources in excess of the net installed capacity requirement, and in recognition that you can get incremental amounts of capacity resources so long as the cost of those resources fit within the forward capacity auction framework.

MR. BERMAN: So you referenced -- I believe in the last hearing you testified that, yeah, if it can do so at a sufficiently low cost

ISO New England will procure additional megawatts in excess of the minimum amount of reserves. That was correct?

THE WITNESS (Paterno): That is correct.

MR. BERMAN: Okay. And when you reference minimum amount of reserves, is that the level of reserves that are needed to meet North American Electric Reliability Corporation standards for reliability?

THE WITNESS (Paterno): In a general sense, yes. In a specific sense to what we're talking about here, that minimum reserves is equal to the net installed capacity requirement, or NICR.

MR. BERMAN: And then NICR is calculated based on a loss of load expectation that is determined by, you know, an acceptable loss of load expectation that is determined by NERC. Is that correct?

THE WITNESS (Paterno): Yes.

MR. BERMAN: Okay. So we cannot know, you're saying, in advance how much capacity is needed until we know the price in which capacity is going to be offered. Is that correct?

THE WITNESS (Paterno): I would say, you know what the minimum amount of capacity is needed because that's the NICR value. And then capacity in excess of that is a function of the forward capacity auction's clearing mechanism.

So you know the minimum amount that you need to operate the system reliability, but that's only the minimum amount. And then at each of the forward capacity auctions to date except for FCA, we've seen resources clear in excess of the minimum amount, realizing that capacity resources in excess of the minimum amount do provide reliability advantages to the system.

MR. BERMAN: So okay. Let's leave that for a second.

So at the previous hearing, Mr. Bradley, I believe you testified that the need for the Killingly facility was demonstrated by several factors. Is that correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: And at least at the previous hearing I believe you cited NTE's projection that the facility will clear in the upcoming forward capacity auction. Second, the

facility's status as a dual-fuel facility, which would promote winter reliability. And third, the facility's ramp rate which would facilitate integration of renewables. Is that correct?

THE WITNESS (Bradley): That's correct, plus emissions reductions, as well was one that was mentioned.

MR. BERMAN: Okay. Anything else that you would add?

THE WITNESS (Bradley): No.

MR. BERMAN: Okay. So NTE's assertion that the facility is going to clear in the upcoming forward capacity auction is based on proprietary analysis that was conducted using the Aurora model. Is that correct?

THE WITNESS (Paterno): That was one of our models. But yes, it's based on proprietary analysis.

MR. BERMAN: Okay. So just to be clear, I plan to take up the basis, on this basis in the closed decision and address NTE's responses to NAPP's interrogatories on this topic which have been designated as confidential.

So the second basis that NTE asserted for -- that the basis of the facility is

necessary is for winter reliability. Correct?

THE WITNESS (Bradley): Yes, winter reliability was stated as a basis.

MR. BERMAN: Okay. And the basis of that contention is that the facility is properly regarded as a dual-fuel facility. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: Okay. And as we just discussed a moment to go, the facility has a firm gas contract. Correct?

THE WITNESS (Bradley): That is correct.

MR. BERMAN: And is having a firm gas contract unusual among natural-gas fired electric generation in New England?

THE WITNESS (Bradley): It is somewhat unusual based on market knowledge and also based on some of the statements that are shown in the Connecticut IRP. The Connecticut IRP as well draws a conclusion that most natural gas-fired powerplants have interruptible fuel supply.

MR. BERMAN: Okay. So it's correct

to say that on most gas generators in New England, weather or not they're gas only or dual fuel, lack firm gas contracts. Is that correct?

THE WITNESS (Bradley): That is correct.

MR. BERMAN: Okay. And in recent experience how frequently have holders of firm gas contracts experienced curtailments?

THE WITNESS (Bradley): It's been our understanding from Algonquin pipeline, from our particular fuel supplier Emera, and from a couple of other power generation facilities, we know they contract for firm natural gas in New England, that there has not been a major curtailment over the past three or so years.

MR. BERMAN: No major curtailments in the past three plus years?

THE WITNESS (Bradley): In the past approximately three years.

MR. BERMAN: Okay. And in recent experience, how frequently have holders of interruptible gas contracts experienced curtailments?

THE WITNESS (Bradley): I'm not -- I don't know the answer to that since we don't --

we did not evaluate interruptible transportation as an option.

MR. BERMAN: Okay. So having a firm gas contract would give the Killingly facility priority in receiving gas over facilities that lack a firm gas contract. Correct?

THE WITNESS (Bradley): That is correct.

MR. BALDWIN: I just want to make sure when you say, facilities, are you talking about electric generating facilities?

MR. BERMAN: I guess any holders of any interruptibles.

THE WITNESS (Bradley): That is a different -- thank you, Ken -- that is a different response. There are situations where entities such as hospitals, temperature sensitive users, folks like that would have priority.

But in terms of industrial or power generation, yes, you're correct.

MR. BERMAN: Thank you. Right. So -- but I think for my purposes Killingly with its firm gas contract would receive natural gas preferentially over natural gas electric generating units that have interruptible gas

contracts. Correct?

THE WITNESS (Bradley): If that interruptible gas was truly being interrupted, yes.

MR. BERMAN: Okay. So Killingly, as we discussed a moment ago Killingly's air permit doesn't authorize it to burn ULSD for economic reasons. Correct?

THE WITNESS (Bradley): That is correct.

MR. BALDWIN: Just for clarification. We have an air permit application. We don't have an air permit at this point.

MR. BERMAN: The anticipated air permit for the facility, as I just discussed with Ms. Gresock, if it went forward based on the terms that are in the draft right now, the facility would not be authorized to burn ULSD for economic purposes. Correct?

THE WITNESS (Gresock): That's correct.

MR. BERMAN: Okay. So the event of a gas shortage in New England that resulted in curtailments only of facilities with interruptible gas contracts, and here I mean, electric

generating units only with interruptible gas contracts, Killingly is not actually functionally a dual-fuel unit. Correct?

THE WITNESS (Bradley): Killingly is absolutely a dual-fuel unit. It can burn either a natural gas or it can burn ULSD.

MR. BERMAN: But in the event that there were a curtailment that was affecting only facilities with interruptible gas supply contracts, Killingly doesn't have the discretion to, quote, unquote, help the system out by burning diesel under those circumstances. Correct?

THE WITNESS (Gresock): There, the language in the application, which is the same as what has been granted on recent projects, does allow under conditions when ISO New England declares an emergency or scarcity condition, or has a condition also that says if the natural gas supply is curtailed by an entity through which gas supply and/or transportation is contracted.

And there's a little bit of flexibility in terms of benefit to the overall system, in terms of how that is interpreted, but the intent behind that is to make sure that the decision is not made on an economic basis, but on

a system reliability and support basis.

THE WITNESS (Bradley): But to take that one step back, actually to your question, if interruptible gas is curtailed, we purchased a firm gas supply contract so that we would have firm gas supply.

So yes, we would support the system, because Killingly would run on natural gas because Killingly has gas available under the firm contract. We -- interruption of interruptible gas has absolutely no bearing on our operation.

THE CHAIRMAN: We have a follow-up question from Mr. Lynch.

MR. LYNCH: Just a clarification on a phrase. You used the term when you're comparing the contract to non-contracted gas supplies, you used the term, if the contract was truly being interrupted. What do you mean by that? Could you clarify that?

THE WITNESS (Bradley): When you referred to the contract, are you referring to our firm?

MR. LYNCH: I mean, the gas supply. Excuse me.

THE WITNESS (Bradley): Sure. The

only way the firm gas supply would be interrupted is if there were pro rata interruptions of other firm transporters on the Algonquin pipeline. Then Emera's supply to Killingly would be interrupted, otherwise there's no reason for interruption.

THE WITNESS (Gresock): And among the conditions we have proposed include, however, if there's a blockage of some kind in the piece of equipment that wouldn't allow the use of natural gas.

MR. BERMAN: What I'm getting at is, I guess I'm trying to understand how having firm gas and being duel fuel are actually additive to reliability.

My question is, if in the event of a gas curtailment of interruptible electric generating units, Killingly would still be receiving gas -- assuming there was sufficient gas for holders of firm gas contracts -- received natural gas, Killingly would still be receiving natural gas and could burn natural gas under those circumstances. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: But the natural gas

facilities whose gas supplies were being interrupted might not be able to burn natural gas during those times. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: And some of those facilities do not have a secondary backup fuel. Correct?

THE WITNESS (Bradley): Yeah, I believe that is correct.

MR. BERMAN: So as a result of the firm gas contract there could be situations in which Killingly receiving gas is actually resulting of curtailment of gas to facilities that lack secondary fuel backup. Correct?

THE WITNESS (Sellars): If I could interject? The first condition is if the ISO declares an emergency pursuant to operating procedures number 4, 7 or 21, or declares a scarcity condition.

If gas-only facilities were to be -- have to be curtailed, and therefore resulting in a liability issue, the ISO could order this facility to operate on oil because it would be allowed to do so under that first

condition of this permit, and then they can free up the gas if they so chose.

THE CHAIRMAN: We have a follow-up.

MR. MURPHY: Let me ask a question. Let's assume ISO has this problem and needs to order you to go to your backup fuel. In your permit how long can this go on?

THE WITNESS (Sellars): As long as the scarcity condition, or they have declared the emergency, but no more than 720 hours.

MR. MURPHY: So you would have an air permit theoretically ad infinitum if ISO says so?

THE WITNESS (Sellars): No, in no instance more than 720 hours.

MR. MURPHY: So it's -- 720 hours is your max?

THE WITNESS (Sellars): Correct, under any circumstances.

THE WITNESS (Bradley): And I would like to go back to your previous statement that Killingly having a firm gas supply actually reduced the system reliability.

I don't believe that you would find anyone in ISO New England, or anyone in the power

industry that would agree that having firm gas at a power generating facility in a region that is constrained for fuel would reduce overall system reliability.

ISO New England is calling for facilities to contract for firm gas. Their pay for performance implementation and the penalties for nonperformance are pushing all units to contract for firm natural gas.

MR. BERMAN: Thank you. And just to be clear, I certainly did not state and testify that the facility would reduce winter reliability. What I'm trying to get at and understand, and I feel like I'm getting to antithetical responses, is in the event of a gas shortage such that facilities that lacked, generating facilities that lacked firm gas contracts would be getting curtailed.

Can the Killingly facility burn ULSD?

THE WITNESS (Bradley): The Killingly -- clarify your question again. I'm not sure I'm following your question.

MR. BERMAN: In the event of a gas shortage in New England such that there was

sufficient gas for all holders of firm gas contracts, but was insufficient gas to supply all of the holders of interruptible gas contracts -- and when I say holders of interruptible gas contracts, I'm specifically referencing electric generating facilities at this point.

Would -- under the proposed future air permit for the facility, would the facility be able to burn ultralow sulfur diesel?

THE WITNESS (Gresock): Yes, the ISO could determine that there were conditions that would require them to direct the facility to do so, not under its own decision.

MR. BERMAN: So in that event where the facility could be receiving gas under its firm gas contract, but isn't, you know, in needing that gas, and is in fact letting that gas go to another gas facility that may or may not have an ultralow sulfur diesel backup -- what I was trying to understand, well, I guess, under what circumstances does the firm gas contract for this facility provide a reliability of benefit to the system?

THE WITNESS (Bradley): And Lynn, I'll let you add on this.

It comes back to the conversation that we've already had, that Killingly with the firm gas supply, you know that the gas is going to be there for the system. The facility -- and this comes back to the four items that you had mentioned -- or you had mentioned three items earlier about the winter reliability. That is also inter-tied with the retirements.

The current retirements are oil-based units predominantly with coal. So therefore you need the Killingly duel fuel of the ULSD capability when firm gas is curtailed.

Whatever I believe -- Lynn, and chime in here. I believe, as Lynn said, the ISO could require Killingly if there was a fuel shortage to burn oil or ULSD, if that's allowed on under our air permit to possibly release that firm gas supply to another generator.

THE WITNESS (Gresock): But all of that said, having a firm gas supply does mean that it's less likely that that would be required. It's less likely that this facility would operate on ULSD unless there was some kind of systemwide reason why the ISO made that determination that it was required.

So you know, I think that the conditions are deliberately written to provide an insurance policy to make sure that ISO can provide power, that they can provide reliable power. But as a practical matter because there is a firm gas contract we don't envision that that would occur with any frequency.

THE WITNESS (Paterno): The only thing I would add is, so the firm gas contract secures your feedstock. Right? You have a line of sight on that feedstock. And there's value to that from ISO New England's perspective because they can look at Killingly and say, okay. I can draw a picture to where it's gas molecules are coming from.

The majority of facilities similar to this in New England, you can't draw that picture. You're looking at interruptible supply which could get cut. Interruptible supply gets cut more often than firm gas, so when we think about the advantages of the duel-fuel capability, it's twofold. One it's that line of sight to that firm feedstock. But two, the ability to switch Killingly over to use ULSD when interruptible supply is cut.

And if you take a look at when will that happen? Well, the way that would happen is if you cut interruptible supply you're putting at risk the ability of those interruptible customers, the powerplants to generate electrons. That could trigger those OP, or operating reserve requirements that Mr. Sellers talked about, in particular on OP-4 of that, and the like.

And allow the ISO the flexibility to manage Killingly as an integral resource to pivot away from its natural gas usage and then rely on ULSD to manage those critical events, if you would.

THE WITNESS (Bradley): Right. And just to summarize that. Killingly with dual fuel for all these reasons provides the ISO with that operational flexibility that even a single-fuel natural gas facility with firm fuel supply would not have, and particularly interruptible. It gives the ISO options to enhance reliability.

MR. BERMAN: Okay. So I'm kind of staying on this duel-fuel topic. Are you aware of how many megawatts of natural gas generation within the existing capacity supply obligations in New England have duel fuel capability?

THE WITNESS (Bradley): I am not aware of the exact number, no. We can -- we can look that number up and get back to you.

MR. BERMAN: So Killingly's duel-fuel capability is one of the primary basis for your assertion of need. Correct?

THE WITNESS (Paterno): It's one of the basis for need, but as Mr. Bradley said, it's a four to a five-point argument.

MR. BERMAN: But you're not aware of how much duel fuel capacity is already in the New England system?

MR. BALDWIN: I think we've already responded that they don't know that answer.

MR. BERMAN: Okay. And you're familiar with ISO New England's 2016 capacity energy loads and transmission report, the self report, correct?

THE WITNESS (Bradley): Correct.

MR. BERMAN: I'm not sure if you have a copy in front of you, but it's one of the administrative notice items that we submitted last week. I wanted to turn to tab 1.4 of the 2016 CELT.

THE WITNESS (Paterno): We don't

have that.

MR. BERMAN: Do you have the copy in front of you.

MR. BALDWIN: We'll pull it up.

THE WITNESS (Paterno): We can share.

MR. BERMAN: So on this side, I guess first of all, so this tab is entitled, summary winter capability by fuel/unit type, (megawatts). Correct?

THE WITNESS (Paterno): Correct.

MR. BERMAN: And can you summarize what information is contained in this, in this tab?

THE WITNESS (Bradley): This tab contains information regarding generating opacity in ISO New England by fuel type.

MR. BERMAN: Okay. And from this tab are you able to identify facilities that have duel gas oil capability?

THE WITNESS (Bradley): Yes, you've highlighted those. And it's approximately 6500 megawatts of the 30,000 megawatts in the system.

MR. BERMAN: Just to confirm?

THE WITNESS (Bradley): In 2015.

MR. BERMAN: In 2015. Let's look at we're now dealing with, let's say, 2020, 2021. Approximately how many megawatts are we looking at there?

THE WITNESS (Bradley): So 4, 5, 6 -- 7,000 out of 31,900.

MR. BERMAN: Okay. So approximately 7,000 megawatts of capacity in the system currently, currently have duel-fuel capability. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: Okay. And more locally the Towantic plant, that will have duel fuel capability. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: And Bridgeport Harbor Station unit five would have duel-fuel capability. Correct?

THE WITNESS (Bradley): I believe so, yes.

MR. BERMAN: In one of the administrative items that you submitted from ISO

New England it indicates that, but will you stipulate that Bridgeport Harbor Station unit five will have duel-fuel capability?

THE WITNESS (Paterno): Yes. The one thing I would note, the self-report is entitled, May, 2016, and then president and CEO of ISO New England then Welie -- I apologize if I get his name wrong -- in a September 28, 2016.

So after the date of the self report he describes the winter reliability system in ISO New England. And in our supplemental response 84 he uses two words in particular that are quite interesting on page 5 of that.

Page 5 of his presentation, page 11 of our supplemental, he uses the word "precarious" in that the system beyond 2019 may become "unsustainable." And I would just like to note that he makes his comments after this publication was released.

MR. BERMAN: Understood. I was using this to establish the approximate number of megawatts, which you have now verified is approximately 7,000. Correct?

THE WITNESS (Bradley): Yes, that's correct.

MR. BERMAN: Okay. And just to finish, locally the Burrillville unit in Rhode Island that cleared in the recent forward capacity auction will also have duel-fuel capability. Correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: Okay. And when the Killingly facility Burns ULSD, what is its rated capacity?

THE WITNESS (Rega): In the wintertime it's approximately 359 megawatts.

MR. BERMAN: Okay. So 359 as a percentage of 7,000 is approximately 5 percent. Correct?

THE WITNESS (Bradley): That's approximately correct.

MR. BERMAN: Okay. And has NTE made any effort to quantify the reliability, the incremental reliability benefit that would be provided by increasing duel-fuel capability in the winter by 5 percent?

THE WITNESS (Paterno): No, we haven't conducted any analyses to quantify that.

MR. BERMAN: So your position, the

basis for your contentions about winter reliability need are qualitative as opposed to quantitative. Correct?

THE WITNESS (Paterno): They're based on comments made by the ISO CEO in talking about winter reliability need reflecting the clear -- facility clearing, reflecting Bridgeport RN unit five clearing, reflecting the Towantic facility.

THE WITNESS (Bradley): And just to add to that, the ISO's studies that are the basis for President, then Welie's comments, and the other, for example, the 2016 state of the grid are based on the ISO's quantitative evaluation as they are responsible for the generation planning and the reliability for the system.

So that's the quantitative basis behind the statement of need for, not just Killingly, but duel fuel powerplants in general in ISO New England.

MR. BERMAN: And ISO New England has taken a number of different steps recently to address its concerns about backup fuel availability. Correct?

THE WITNESS (Paterno): Yeah,

that's correct. It implemented a winter reliability program a couple years ago and that really -- that really being winter issues, is one of the genesis for creating the pay for performance program, which I believe will be implemented in 2018, 2019.

MR. BERMAN: Okay. And that actually was what I was going to ask you about next. So the pay for performance program, can you explain how that will work?

THE WITNESS (Paterno): Yeah, sure thing. Effectively it's a component of the forward capacity auction and the forward capacity market, and it penalizes generators who are unavailable to produce their capacity supply obligations, or CSO during system emergency events, which the technical nomenclature is capacity scarcity conditions under the pay for performance regime.

MR. BERMAN: Okay. And resources that have cleared in the most recent forward capacity auction, FCA-10 have are already accepted capacity supply obligations that will be covered by the new pay for performance rules. Correct?

THE WITNESS (Paterno): Yeah, that

is correct.

MR. BERMAN: Okay. So there are gas-only units that have already capacity supply obligations through 2020 knowing they will be subject to the new pay for performance rules. Correct?

THE WITNESS (Paterno): I don't know if I understood the comment on gas-only units.

MR. BERMAN: I meant, some of the units that have bid in successfully into forward capacity auction number 10 are units that burn natural gas and do not currently have a backup fuel. Correct?

THE WITNESS (Paterno): Yeah, you could certainly infer that by looking at this exhibit here. Yes.

MR. BERMAN: And are you aware of any attempt to quantify how many existing gas -- currently gas-only facilities may add duel-fuel capability in response to ISO New England's upcoming shift to pay for performance which begins in 2019?

THE WITNESS (Bradley): I'm not aware of any, no.

MR. BERMAN: Okay. So at this time NTE doesn't know whether there will actually be more duel-fuel capacity on the system by the time the Killingly energy center would be coming online than there is today. Is that correct?

THE WITNESS (Bradley): Yes, we think that's correct.

MR. BERMAN: Okay. Turning for a second to your third basis for asserting the need for this facility. Do you contend that the facility is needed in that it will be necessary to balance non-dispatchable renewable resources. Is that correct?

THE WITNESS (Bradley): Yes, that's correct.

MR. BERMAN: Okay. And has NTE undertaken any modeling or analysis to quantify the amount of natural gas capacity -- or I guess, I shouldn't even say natural gas -- the amount of flexible fast ramping capacity that would be needed to balance different levels of variable renewable generation on the grid?

THE WITNESS (Paterno): No, we have not taken any quantifiable analysis.

But similar to the argument around

winter reliability, there are studies published by ISO New England, its 2016 regional system outlook as well as the comments made by its President and CEO on September 28th talking about the need for flexible and efficient generation to meet renewable integration, as well as talking about the precarious nature of the winter reliability of the system.

MR. BERMAN: So turning back for a second to what you were just handed, which was tab 1.4 from the 2016 ISO New England CELT -- I guess, this is tab 1.3 from the CELT.

And this tab 1.3 which you were just handed is entitled, summary summer capability by fuel/unit type, (megawatts). Is that correct?

THE WITNESS (Paterno): That's correct.

MR. BERMAN: Okay. And approximately how many megawatts -- let's look at 2025. In 2025, approximately how many megawatts of combined-cycle generation are identified?

THE WITNESS (Paterno): We will call it 14 and a half, 15 thousand megawatts.

MR. BERMAN: Okay. And approximately how many megawatts of combustion

turbine generation capacity is identified in 2025?

THE WITNESS (Paterno):

3500 megawatts.

MR. BERMAN: And approximately how many megawatts of hydro-pump storage is identified?

THE WITNESS (Paterno): 1750, 2,000, was around there.

MR. BERMAN: So -- and I apologize about asking you guys to do math on your feet. Is it approximately correct that there are about 20 -- that those resources that we just discussed would sum up to about 20,000 megawatts?

THE WITNESS (Bradley): That's approximately correct. I think one thing to note is looking at these resources, though, is particularly in the case of the combined cycles and the gas-oil combined cycles and gas combined cycles.

Many of those are much older vintage machines than Killingly, and don't have the same 29 megawatts per minute ramp as Killingly. And Killingly also has duct burning capability, which is highly flexible operations.

So it's a bit of an

apples-to-oranges comparison here with many of these existing generators to the operating characteristics of a facility like Killingly.

THE WITNESS (Paterno): I add that the majority of these, these being the combined cycles, have a heat rate of approximately 6500 BTUs per kilowatt hour than Killingly does.

MR. BERMAN: On that last point, how is the heat rate relevant to their ability to balance variable renewable resources?

THE WITNESS (Paterno): Yeah, absolutely. It has to do with the emissions that come from that balancing. The lower heat rate, the lower emissions of CO2, NOx and SOx that result from the balancing of those renewables.

MR. BERMAN: So that's a position, that's an argument about emissions, not about ability to balance. Correct?

THE WITNESS (Paterno): I think it's a little of both. It's the ability to balance in a least impactful manner.

MR. BERMAN: But a resource with a higher heat rate that had the same ramp rate as the Killing facility, if such a facility existed, would be equivalently able to balance variable

renewables. Correct?

THE WITNESS (Paterno): From a technical standpoint, yes, you're correct.

MR. BERMAN: Okay. So your contention that 20,000 megawatts of somewhat flexible generation is not sufficient to balance the anticipated renewables on the system is based on your opinion that some of these, or many of these gas combined-cycle facilities are not flexible enough, do not have ramp rates adequate enough to balance renewables.

Is that correct?

THE WITNESS (Bradley): It's based on our opinion, and in that, just as the winter reliability, it's based on the quantitative evaluation that ISO New England has performed.

Just as with the table 1.4 you provided, 1.3 was provided prior to the September 28th presentation by President Van Welie. Where in addition to pointing out unit retirements are a major source of need in New England winter reliability, plus the ability to balance renewables with new flexible generation.

If the existing fleet were capable of doing that, then President Van Welie would not

have mentioned that as one of his three main concerns for ISO New England. So clearly the quantitative analysis that ISO New England has done, as the person who's responsible for the reliable operation of the grid, clearly states that new resources are needed, that the current resources can't accomplish that.

And Ethan, did you want to add something as well?

THE WITNESS (Paterno): The only thing I would say is, if you have his September 20th presentation in front of you, on page 16 he notes, growing levels of reviewable generation will require a flexible -- a fleet of flexible resources to reliably balance the variability of renewable resources.

MR. BERMAN: Right. But that's not the same as the statement that the 20,000 megawatts of combined-cycle combustion turbine and hydro-pump storage resources projected to be on the grid in 2025 is inadequate to balance foreseeable renewables.

Is that correct?

THE WITNESS (Paterno): It's also not a statement that it supports that either.

MR. BERMAN: Right. It's just simply a statement that -- well, I won't characterize the statement.

Mr. Paterno, at the hearing on -- can you hang on for a second?

Mr. Bradley, earlier today you testified in reference to the storage report that the Sierra Club noticed for Massachusetts. You testified that storage can be used to reduce ramping of fossil generators. Is that correct?

THE WITNESS (Bradley): That's correct.

MR. BERMAN: Okay. And do you view that as its only use to the system?

THE WITNESS (Bradley): No, I think it has a number of other uses to the system.

MR. BERMAN: And could some of those uses be helping to integrate variable renewables into the system?

THE WITNESS (Bradley): Yes, battery storage and other storage resources such as pump storage certainly help to integrate. It's only one piece. It's a small piece. Generation resources such, as Killingly or generation resources such as pump storage, as Mr. Ashton

mentioned, are a much larger component.

So battery storage does have a very important place. I think the report that was provided today indicates that, but it's -- it is a very small piece. It's not a major resource at this time.

MR. BERMAN: At this time?

THE WITNESS (Bradley): That's right.

MR. BERMAN: And the report identifies that Massachusetts intends to bring 600 megawatts of storage online by 2025. Correct?

THE WITNESS (Bradley): That's what the report mentions, yes. It's also important to understand in the report, the report also indicates that in order to do that there have to be some major rule changes at ISO. There have to be some changes to price signals for developers to install that battery power in order for the price signal to work for developers.

And it's also very important to understand that based on the report right now only 400 megawatts of battery storage is commercial in the entire US. So the projections for Massachusetts in the report, admittedly so by the

report, are very, very aggressive to what can happen from a number of perspectives.

MR. BERMAN: Sure. But the report expresses a policy preference by the State of Massachusetts to bring 600 megawatts online by 2025. Correct?

THE WITNESS (Bradley): It does state a policy preference, but to note a policy preference and your reliability requirement in need are very different.

MR. BERMAN: Understood. And that there is a process ongoing right now at the ISO to better integrate policy considerations into the ISO's planning. Correct?

THE WITNESS (Bradley): That is correct on a number of areas.

MR. BERMAN: Okay. Put that aside for the moment. So Mr. Paterno, at the last hearing in response to your question from Councilmember Hannon, you testified that in your opinion the market would stop natural gas combined cycle entry before you got into a situation where electricity prices and energy and capacity prices got so low that you would see a nuclear plant such as millstone retired.

Is that correct?

THE WITNESS (Paterno): I don't know if I would use the word "market," but developers would effectively stop before capacity and energy prices got --

MR. BERMAN: Sorry. I was actually quoting your --

THE WITNESS (Paterno): If that's the case, then yes, that's what I said.

MR. BERMAN: And just to be clear, the markets and developers have not -- in New England, have not stopped Pilgrim in Massachusetts from announcing retirement. Correct?

THE WITNESS (Paterno): No, they have not. I would say that the Pilgrim facility is different than millstone in that it's a much smaller facility.

MR. BERMAN: Okay. And just to be clear, the similar market contracts in New York, and there are obviously differences between New York and ISO New England, but similar market contracts in New York have not stopped Ginna and Fitzpatrick from announcing plans to retire. Correct?

THE WITNESS (Paterno): Those plans

have changed given policy initiatives ongoing in New York, but they did announce retirement. But again, I would note those were small facilities, single-reactor facilities like the Pilgrim facility in Massachusetts, as well as Vermont Yankee in Vermont.

MR. BERMAN: So what is the market -- in New York, the State you have just flagged, has recently approved an out of market mechanism for providing zero emission credits to uneconomical nuclear plants.

THE WITNESS (Paterno): Yes.

MR. BERMAN: To ensure their solvency. Correct?

THE WITNESS (Paterno): That's correct.

MR. BERMAN: Okay. So I guess, what is the market mechanism, not the State interceding and creating a new market for zero emission credits, but what is the existing market mechanism that you believe would stop entry from causing a retirement of a plant like millstone?

THE WITNESS (Paterno): There is no technical market mechanism like a day-ahead energy market or a capacity market. That was an opinion

and a view of how low capacity and energy prices would have to go as a result of entry of new facilities in order for a plant like Millstone to retire.

THE WITNESS (Bradley): I'm going to go back to your earlier question prior to this one as well, on the 600 megawatts of battery in Massachusetts and how that fits in with Killingly, because I'm not sure that that was completely clear.

Killingly, as we stated, has a 29 megawatt per minute ramp rate. It is very possible that renewables such as wind and solar could ramp quicker than that. So when you look at it from an ISO perspective batteries discharge very quickly in most cases.

So with a combined cycle like Killingly you've got a very long runtime. With batteries it's a short recharge, short discharge. So if you look at a slope of solar coming off very quickly, which if a cloud comes over it's almost a vertical slope.

So here's the vertical slope. I'm trying to explain this, because I know you can't get the picture on the transcript, but as you've

got a vertical slope of the solar coming off, Killingly ramps up the 29 megawatts a minute.

The benefit of the batteries as discussed in the charts in that Massachusetts report is they fill in this small triangle area between the vertical drop of the solar and the ramp of a facility like Killingly.

So without Killingly, those batteries discharge very quickly and all you've done is if you've moved out the cliff. So those batteries or pump storage hydro, which would have a much longer storage period, they just fill in that small increment as units like Killingly ramp up, because a unit like Killingly can't ramp up instantaneously to perfectly match.

So you've really got a two-pronged reliability here from an operational perspective. The battery fills in the instantaneous drop and comes back while Killingly ramps up at the 29 megawatts a minute. So the two -- and that's very been prevalent through the ISO's comments.

It's was very prevalent here in Ms. Dykes' comments as well, that gas and renewables and storage technologies are all very interrelated. You need all of those to

effectively implement the storage.

MR. BERMAN: But it's true, is it not, that the battery, this 600 megawatts, theoretical 600 megawatts of battery storage could mitigate the need for an extremely fast ramp rate from a gas combined-cycle facility? Correct?

THE WITNESS (Bradley): No, that's not correct, because you still need the fast ramp rate to save the battery charge because if you completely discharge your battery over a slow ramp grade then that resource becomes unavailable.

So you need a very quick ramp rate to maintain as much battery charge as possible because a cloud could very well come over a solar field on the other side of the state and immediately cause that same situation again.

So it's very important in managing the reliability of the system with storage technologies to minimize the discharge of that storage because of a recharge cycle.

MR. BERMAN: So there could be a benefit to a fast ramp rate, but if you had sufficient storage it would not be necessary to have an extremely fast ramp rate in a gas combined-cycle unit. Correct?

THE WITNESS (Bradley): A sufficient storage, you would need multiple hundreds of megawatts of storage for multiple hours to cover that contingency, taking into account recharge cycles on the storage.

MR. BERMAN: Turning to climate impacts for a bit. I hate to say this, but last week's election didn't change the science behind climate change. Did it?

THE CHAIRMAN: What planet are you on?

THE WITNESS (Bradley): I could let Lynn answer that, but I think, no, the science stayed the same.

MR. BERMAN: I guess it might be fair to say that it may have made federal action to address climate change somewhat less likely, at least in the immediate future. Correct?

MR. BALDWIN: Mr. Chairman, I'm a little reluctant to ask my witnesses to speculate about the likelihood of climate change legislation or anything else as it relates to a Trump presidency.

THE CHAIRMAN: I think you're very optimistic to say it's a speculation, given the

people he is already bringing on. But if you want to object, you can object, but let me ask -- so, you're not going to go to far into this and get some of us even more depressed than we already are?

MR. BERMAN: That was not my intention, and that's not necessary. You don't have to answer that question.

THE WITNESS (Bradley): Either way.

THE WITNESS (Paterno): I would be happy to if you wanted us to.

MR. BERMAN: No, we can leave that alone. I do want to ask one more question. It is conceivable in light of last week's election that States like Connecticut have acknowledged the reality of climate change -- there may be an increased focus on those states in achieving their own state specific climate goals. Is that fair?

THE WITNESS (Paterno): I think that's fair. I would say Connecticut is already going a long way in recognizing the climate goals that are core to the State, and that's really twofold. One is the Global Warming Solutions Act, and the second is Connecticut's participation since it's formation in the regional greenhouse

gas initiative.

MR. BERMAN: So Mr. Paterno, was your group responsible for evaluating the Killingly facility's compatibility with Connecticut state climate policies?

THE WITNESS (Paterno): Yes.

MR. BERMAN: Okay. And can you point me to the place in the application that addresses Killingly's compatibility with Connecticut's state climate policy?

THE WITNESS (Paterno): Yes.

So if I can refer you to appendix B, because that's what I have in front of me -- if that's okay?

So in particular, we talk about that one in section 2.5 of the PA report, which is appendix B.

MR. BERMAN: Okay. Is it your position that the project is consistent with Connecticut's climate policy because you believe it will facilitate cost-effective compliance with regional greenhouse gas initiative caps?

THE WITNESS (Paterno): It's our position that as Killingly comes into the market with its low heat rate it will displace or cause

to generate less from older more inefficient facilities and it will reduce regional CO2 NOx and SOx emissions.

MR. BERMAN: And did you conduct any analysis or modeling looking at different possible cap trajectories for RGGI for the decade from 2020 to 2030?

THE WITNESS (Paterno): No, we did not.

MR. BERMAN: Okay. Are you familiar -- and I apologize that this was administratively noticed yesterday. Are you familiar with the scenario analysis in ISO New England's economic studies draft result?

THE WITNESS (Paterno): As you submitted it, yes, I was.

I don't have a copy in front of me.

MR. BERMAN: We have an extra copy. I'm sorry we don't have more.

And just to be clear, we have just printed out two excerpted portions from that. And I recognize it's a 140-slide document, but the two portions that we're going to be handing you, one is a section called background on the scenarios, key drivers of results, resource type dispatch,

cost and locations. And the second section is results and observations, executive summary part two, carbon emissions.

Have you seen these before, again recognizing that these are excerpts from a larger document?

THE WITNESS (Paterno): Again, when you guys submitted this as administrative notice, that was the first time I had seen it.

MR. BERMAN: Oh, I see. Okay. So I guess having had a relatively short amount of time to digest this, you are aware that ISO New England has done some scenario modeling looking at a number of different -- from a number of different perspectives, the consequences on different resource mixes that could backfill retiring generation over the next decade and a half?

THE WITNESS (Paterno): I know that they're looking at various resource mixes across five different scenario cases and evaluating a myriad of different metrics from that, such as reliability, wholesale costs and whatnot.

MR. BERMAN: I understand. And among those scenarios, scenario one, for

instance -- and I will just read it. Generation fleet meeting existing renewable portfolio standards and retired units replaced with natural gas combined cycle units. Now I'm looking at slide 11?

THE WITNESS (Paterno): Yeah.

MR. BERMAN: Whereas scenario two, generation fleet meeting existing RPS and all future needs including retirements met with new renewable/clean energy resources. Correct?

THE WITNESS (Paterno): Correct.

MR. BERMAN: Okay. So between those two scenarios, the primary distinction is whether retiring units are replaced by natural gas combined cycle, or whether they're replaced by renewable or clean energy. Correct?

THE WITNESS (Paterno): Yes, that's correct.

MR. BERMAN: Okay. And if we can turn now to the second set of slides that I handed you, and let's specifically look at slide 108.

Among other things, one of the things that ISO New England looked at in this modeling was how annual systemwide carbon dioxide emissions compared to theoretical future regional

greenhouse gas initiative caps. Correct?

THE WITNESS (Paterno): Based on my initial read, yes, that's correct. However, I would note I have not had time to look through all 140 pages of the document, and this is but an excerpt from that document.

MR. BERMAN: Fair enough. And we can come back to this point when you've had more opportunity to digest it, and my apologies.

But just if we're looking at slide 108, 2030 annual systemwide carbon dioxide emissions substantially exceed RGGI cap -- declining RGGI cap trajectories of 2 and a half and 5 percent if retiring generation is backfilled with natural gas combined-cycle plants. Is that correct?

THE WITNESS (Paterno): I guess I'm a little confused by this chart, because the title says 2030, but the legend says, 2025. So I'm not really sure what to make of it.

MR. BERMAN: Yes, I assumed that was a typographical error on ISO New England's part, because based on the title and based on the distinction from slide 107, which is 2025 annual systemwide CO2 emissions. But I agree, there is

some possible confusion.

And whereas assuming unconstrained transmission interfaces replacing potential future retirements with clean energy and renewable energy, scenario two in 2031, would meet or at least come close to meeting RGGI cap trajectories of declining at 2 and a half percent, or 5 percent. Correct?

THE WITNESS (Paterno): Yeah, that's what it shows. But I'll be honest, this table doesn't make a whole lot of sense to me, because the whole point of the cap and trade program is to induce power generators that emit pollutants, like CO2 in this particular case, to make sure that the regional caps are met.

So my initial view is that this is a one-sided analysis with no corollary impacts to RGGI CO2 allowance pricing, because -- and please Mr. Sellers, feel free to weigh in. I believe what would happen if you violated these caps, let's say, that's only one part of the equation.

If you violate the caps then you would have an upward trajectory in our RGGI allowance prices. And what that would then do is that would increase the dispatch costs of all the

facilities in the market, Killingly included, but as well as -- the less efficient facilities as well. They would then reduce their operations and then that would result in meeting of the cap.

And I would also note that this particular document does not talk about the retail rate impacts from these particular resource plans. All it talks about is wholesale cost impacts and gives no indication at all as to how the renewables in scenarios two and three will enter in the market.

THE WITNESS (Bradley): And to add to Mr. Paterno's comments there as well, as we reviewed this document yesterday in terms of the wholesale cost impacts, this particular study in its entirety only looks at the impact on production cost at this point. It does not take into account the overall impact of capacity in fixed cost.

It's only looking at production costs as a result of these various dispatches in various scenarios. It mentions that in 2017 to get the whole picture of both the fixed and the variable cost benefits here, that ISO is going to have to bring in some outside consultants to

evaluate the wholesale impact, including both capacity and production costs.

So this, even if you look at this particular study it's an ongoing process, but it's just a partial picture at this point in time.

MR. BERMAN: So if I understood Mr. Paterno's point that he made a moment ago, if the RGGI region establishes cap trajectories that look like either the 2 and half percent declining cap, or 5 percent declining cap that are depicted in slides 107 and 108, this would --

Correct me if is I'm mischaracterizing what you just said. This would create a price signal that would incentivize additional, you know, carbon free or very low carbon generation and disincentive higher carbon generation from entering the market?

THE WITNESS (Paterno): I don't know if I would use the word, price signal. I think all I said was -- is that under the RGGI program, the cap and trade program the allowance prices are a reflection of the emission caps.

And as those emission caps tighten, which is contemplated in this scenario -- which is not a law by the way, these are just hypotheticals

introduced here -- that the allowance prices would increase. But all of this is speculative at the end of the day. There's been no decision on what the RGGI program caps are going to look like post their 2020 values.

MR. BERMAN: You know, but are you aware there's an ongoing program review happening in RGGI right now?

THE WITNESS (Paterno): Yes, absolutely.

MR. BERMAN: And among the policy scenarios that have been floated, and again, I recognize there is an upcoming meeting next week, but among the policy standards that have been floated, the states are considering, publicly considering both a 2 and half percent declining cap and a 5 percent declining cap. Correct?

THE WITNESS (Paterno): Yeah, that's correct.

MR. BERMAN: So these are possible future scenarios. Correct?

THE WITNESS (Paterno): Yes.

MR. BERMAN: Okay. And under these scenarios you're saying allowance prices would go up. And this, if allowance prices went up

sufficiently, what would this do in terms of how would that shift the generation mix in New England?

THE WITNESS (Paterno): All hypotheticals at the end of the day, because you really have to run the Aurora model, for instance, to sort of tease out all of those impacts. But as you increase allowance costs, in this particular case CO2, those facilities that emit CO2 would find a reduction in their operations.

However, I would note that Killingly would still provide benefits to the overall regional CO2 emissions, because it would still be operating ahead of older and more inefficient facilities with higher heat rates, higher CO2 emission rates.

MR. BERMAN: All right. Thanks.

So moving from the regional to the state level for a moment, you're aware that Connecticut has both 2020 and 2050 climate goals. Correct?

THE WITNESS (Paterno): I'm assuming you're referring to the Global Warming Solutions Act?

MR. BERMAN: That's correct?

THE WITNESS (Paterno): Yeah.

MR. BERMAN: And has NTE conducted, aside from analyses that you've already referenced about anticipated emission benefits of integrating this facility into the grid, has NTE conducted any analysis specifically looking at the facility's compatibility with Connecticut's state specific climate goals?

THE WITNESS (Paterno): Outside of the analysis we previously discussed, no. But I would say, again to reiterate that analysis it shows regional CO2 reductions as a result of the Killingly facility.

MR. BERMAN: Right. And I believe there was testimony earlier that the facility could be useful for up to 50 years. Is that correct?

THE WITNESS (Paterno): I think they said that was the sort of technical lifespan, that's correct.

MR. BERMAN: And in the application, I believe the application identifies the proposed useful life as being at least 30 years. Is that correct?

THE WITNESS (Eves): Yes, that's

correct. When we do our economic analysis we look at it from a 20-year life. The actual life of the facility is probably, like, 30 years until we have to do some maintenance, upgrades and all that. And with the proper maintenance and upgrades you could probably get out about 50 years out of that facility.

MR. BERMAN: And so the facility would be anticipated to remain online through 2050, assuming 2020 in-service dates. Is that correct?

THE WITNESS (Eves): At least.

MR. BERMAN: Right. And you and the Sierra Club submitted this on November -- I'm sorry, on October 27th. Have you reviewed any of this scenario modeling that was conducted this summer by the Governor's council on climate change analysis data in markets working group?

THE WITNESS (Bradley): I have not, no.

THE WITNESS (Paterno): Not until you submitted it.

MR. BERMAN: So since October 27th, have you reviewed the item?

THE WITNESS (Bradley): At a very

high level.

MR. BALDWIN: Which administrative item?

MR. BERMAN: This is administrative item number two that was submitted on October 27th.

MR. LYNCH: Attorney Berman, can you keep your voice up? It's fading a little bit.

MR. BERMAN: Certainly. Apologies.

So recognizing again that this is, you know, scenario modeling. This is not necessarily reality. The analysis data and metrics working group looked at four, or four or five scenarios for Connecticut's generation mix out to 20 -- or Connecticut's, I guess, economy-wide greenhouse gas generation mix out to 2050. Correct?

THE WITNESS (Paterno): Yeah, that's correct.

MR. BERMAN: Okay. And in all of these scenarios Connecticut achieved long-term 80 percent reductions in greenhouse gas emissions by 2050, but the scenarios differ in whether nuclear plants are relicensed, and if not, what types of resources replace them. Correct?

THE WITNESS (Paterno): Yes, that's correct.

MR. BERMAN: And in scenario two, which is the most gas heavy scenario, all of the retiring nuclear plants are replaced with natural gas. Is that correct?

THE WITNESS (Paterno): That's correct.

MR. BERMAN: Okay. And if you turn to slide 23, scenario 2, and again, recognizing you will be eyeballing it, but can you estimate the approximate generation from natural gas in 2050 in Connecticut?

THE WITNESS (Paterno): About 7500 megawatts -- megawatt hours, thousand megawatt hours, sorry.

MR. BERMAN: And again, that blue above it, I believe, is hydro. So let's say?

THE WITNESS (Paterno): Between 5,000 and 7500. I'm a little colorblind, and I'm trying to figure that out.

MR. BERMAN: Apologies. And in the other scenarios nuclear facilities are either retained or largely replaced with renewables. Is that correct?

THE WITNESS (Paterno): That's correct.

MR. BERMAN: And just real quick for these -- and again, this would be looking at slides 17, 20, 26 and 29. Can you estimate the approximate generation for natural gas in Connecticut in 2050 under those scenarios?

THE WITNESS (Paterno): Sorry what scenarios were those -- or what slides?

MR. BERMAN: Sorry, it's 17, 20, 26 and 29.

THE WITNESS (Paterno): Seventeen was one as well. Okay. So 17, 2 gigs. There are 2,000 megawatt hours approximately. I'm having a hard time reading slide 20 as to whether that's the same or less.

MR. BALDWIN: Mr. Chairman, I think the slides speak for themselves. I'm not sure why we need the witnesses to try and decipher where the lines come in.

THE WITNESS (Bradley): I do have one fundamental question on the slides, though.

Looking at the slides, let's just take scenario four for example, not knowing the exact assumptions in scenario four, but for this

particular question I don't think it matters. Scenario four shows in 2050 a very small percentage of the generation total megawatt hours generated coming from natural gas.

But the thing that I find very curious about this slide, and all of the slides, is it shows approximately 50 percent of the megawatt hours in the state coming from solar, which given that solar in Connecticut on a best-case scenario only has a 25 percent functional capacity factor simply because of the solar resource --

It's very hard for me as someone as who's been in the energy industry for 30 years to understand how you get 50 percent of your total energy supply from a resource that only has a functional annual load factor of 25 percent in the state.

So I think there's -- either there's something with the assumptions in this study that we are all, kind of as a group, not knowing, or there's some very, very aggressive assumptions being made.

Do you want to add to that?

THE WITNESS (Paterno): No, I was

never good at calculus, so I can't do the math as to what the capacity rating of that amount of solar is, but it is not an inconsequential number at all.

And I would also note that they're looking at CO2 emissions on a generation weighted basis as well. And another way to measure this is on a consumption basis.

THE WITNESS (Bradley): And just to conclude that, which goes back to the battery conversation that we had, in order to get 50 percent of your annual energy from solar there would have to be a tremendous amount of storage resource shown somewhere here, because that 25 percent solar viable capacity factor is all going to happen at one time.

So you've got to store 25 percent of your annual energy somehow, and there is no storage resource listed here. No, there is not. Demand response is the very small red sliver. So there's some -- either we better need to better understand the assumptions here, or there's some very serious concerns with these assumptions.

THE WITNESS (Paterno): Interesting also that you don't see demand response in the

earlier years of the study. Just sort of the tail-end of there. We know that demand response does participate in the market.

MR. BERMAN: So just for purposes of comparison, the anticipated capacity factor, what is the anticipated capacity factor for the Killingly facility?

THE WITNESS (Paterno):

Approximately 60 percent.

MR. BERMAN: Okay. And at a 60 percent capacity factor, and again apologies for asking you to do math, but approximately how many million megawatt hours would the facility generate each year?

THE WITNESS (Paterno): That, I would need a calculator for.

THE WITNESS (Bradley): I have one. Thanks to Apple my Hewlett-Packard with reversed Polish notation is now an iPhone. So what do we want to assume for output?

THE WITNESS (Paterno): 500 megawatts.

THE WITNESS (Bradley):

500 megawatts times .6, times 8760, is 2.6 million-megawatt hours.

MR. BERMAN: So at its anticipated capacity factor, the Killingly facility by itself would emit approximately the same number of megawatts of -- I'm sorry. The same number of megawatt hours of generation as the analysis data and metrics working group has calculated is compatible with the four of the five scenarios that are modeled in 2050. Is that correct?

THE WITNESS (Paterno): I don't think anybody on this panel is thinking that the Killingly Energy Center is going to operate at a 60 percent capacity factor in 2050.

So that 60 percent capacity factor covers the study period contemplated in the application at least as it relates to the PA analysis for the first five years of operations. We would expect that that capacity factor will decrease over time.

MR. BERMAN: And so 20 years out, what do you anticipate the capacity factor for the facility would be?

THE WITNESS (Paterno): I haven't run the analysis, but I would say it would be less than the 60 percent, and it would go even further less another 20 years out. It would go even

further less another ten years out.

MR. BERMAN: So the already two similar facilities to Killingly that are currently moving forward and have cleared in the ISO New England forward capacity auctions, that would be located in Connecticut. Correct?

THE WITNESS (Paterno): What facilities are you referring to?

MR. BERMAN: The Towantic and Bridgeport harbor five facilities?

THE WITNESS (Paterno): Yes, that's correct.

MR. BERMAN: And are the capacity factor projections for those facilities, would you anticipate that they're similar to the Killingly facilities?

THE WITNESS (Paterno): Without knowing the details of those plants, that would be highly speculative to say whether they would be higher or lower than Killingly. All we can say is that it probably would be within the range of Killingly.

MR. BERMAN: So there are already two facilities moving forward that would be natural gas combined-cycle facilities generating

in the same range of megawatt hours as the Killingly facility. Correct?

THE WITNESS (Paterno): Again, without doing the analysis it would be tough to say. But in a antithetical, yes.

MR. BERMAN: So I guess what I'm trying to understand is, how is adding a third natural gas combined-cycle facility in Connecticut at this time, given that scenario modeling, that 30 to 50-year facility at a time, when scenario modeling is suggesting you can have a pretty extremely limited amount of natural gas generation in the state in 2050, how is that consistent with Connecticut's 2050 climate goals?

THE WITNESS (Paterno): It's boils down to some comments that I responded to from Mr. Harder. And it's generation based calculation versus consumption based calculation. And on a consumption basis, on the electrons consumed by the Connecticut ratepayers, it decreases regional CO2 emissions.

It's not dissimilar to when you think of an RPS target, and in particular the ability of the State of Connecticut to meet it's 20 percent class one target.

We all know that the majority of the facilities that Connecticut uses to satisfy that target don't originate in Connecticut, however they're counted towards that target. So when we think about CO2 emissions, and it's in a similar framework again, it has to do with the electrons consumed in meeting those goals.

MR. BERMAN: And you're aware that other, all of the other New England states have 2050 climate targets that are comparable to those of Connecticut. Correct?

THE WITNESS (Paterno): I believe so.

MR. BERMAN: Okay. So if they were to do scenario modeling to try to anticipate meeting 80 percent by a 2050 climate goal, might those scenarios look somewhat similar to the ones that Connecticut DEEP put forward?

THE WITNESS (Paterno): It could. I would say that it really depends. As Mr. Bradley pointed out, there's a tremendous amount of solar assumed in the 2030 timeframe that reduces the need and the production of the electricity generation from gas fired.

So if we're playing a hypothetical,

if we think about what Massachusetts or Rhode Island can do, it really depends on how they would do their analysis.

THE WITNESS (Bradley): For example, to add to Mr. Paterno's comments here, just looking at scenario three. Scenario three shows a much more realistic generation profile for solar in terms of megawatt hours.

It still, however, is showing natural gas very low, but I think as well that's a very difficult scenario to get your arms around because that particular scenario is showing a tremendous amount of new hydro. And we know that hydro in itself is very, very difficult to permit and very unlikely as well.

So a number of these scenarios use assumptions that I think could easily, in the realm of what you would consider standard thinking in what is possible to do, as far as unit operation and what units are economically viable versus not viable in terms of technologies, there are a lot of assumptions in here that I think before we can do a lot of analysis on this report or use it for an example, we really need get to the bottom of it. Because they seem fairly

unrealistic, I think.

MR. BERMAN: Okay. Accepting that, looking at these scenarios kind of in aggregate, and I'm recognizing the things that you've pointed out about them, is it fair to say that the scenarios that have been modeled so far by the Connecticut Governor's council on climate change analysis data and metrics working group suggests that there may need to be a fairly radical reshaping of our electric generation mix in order to meet 80 percent by 20 -- the climate goals, especially if those goals are -- if those are the same goals that all of the other states in the region have?

So we can't simply -- it's not Connecticut doing this in isolation, but it's in fact all of the states striving towards the same collective regionwide goal?

THE WITNESS (Bradley): I believe the technical answer to your question as asked is, yes. However, that is a yes based on a set of assumptions here that, I think we've all discussed, are very, very highly unlikely.

MR. BERMAN: Turning for a second from this facility, are you aware that the

Massachusetts Department of Environmental Protection recently proposed facility specific greenhouse gas emission limits for both new and existing electric generating facilities in the state?

THE WITNESS (Sellars): I am. What they have proposed is basically an incorporation of the declining emission cap in each new facility's air permit.

MR. BERMAN: So would it be correct to say that under these proposed regulations the electric generating units in the state would, for each generating unit, and again, subject to being able to exchange credits, these units would have to ratchet down their emissions by 2 and a half percent a year through 2050?

THE WITNESS (Sellars): That's the proposed regulation, but it's up for public comment right now.

MR. BERMAN: Right. Understood. If Connecticut were to impose declining greenhouse gas emissions caps similar to those that are being proposed in Massachusetts would NTE move forward with the facility?

MR. BALDWIN: Mr. Chairman, it

calls for speculation on something that we don't know what will happen. I'm a little concerned about the form of the question. You want to rephrase that?

THE CHAIRMAN: But it's based on --

MR. BERMAN: I mean, I would argue it's not an entirely hypothetical question. Connecticut has the same climate goals as Massachusetts. Massachusetts is now actually moving forward with effectuating that through a proposed regulation.

My question is, if the same regulation were adopted in Connecticut that Massachusetts is currently proposing, which would require this facility to rachet down its emissions 2 and a half percent each year for 30 years, would the facility, you know, would NTE move forward with this facility?

THE WITNESS (Sellars): I can't speak for what NTE's plans are, but I do have clients in Massachusetts who are in the air-permitting process right now, who are accepting air permits with those declining emissions caps and have every intention of moving forward with their facilities.

THE CHAIRMAN: That's the best answer you can get.

MR. BERMAN: I think it is. I think I will leave it there for now and, you know, as I flagged it, the number of questions we have I think need to be covered during the confidential session, which I understand will be taking place next month.

THE CHAIRMAN: That's correct.

Attorney Bashaw is coming up next.

MR. BALDWIN: Mr. Chairman, could we take five minutes? We might not want to get too far away from the tables.

THE CHAIRMAN: We'll take five minutes.

(Whereupon, a recess was taken from 3:14 p.m. to 3:22 p.m.)

THE CHAIRMAN: Okay. We're going to get started again.

Just to let people know we're going to go until 4:15. We're going to lose half of the members, including myself, but rest assured that this will not be your last, our last opportunity -- either this year or next.

MR. BALDWIN: Mr. Chairman, if I

could just before Mr. Bashaw begins? During the break the folks at NTE scolded me, and they did want to respond to the last question from Attorney Berman.

So we don't rely on the speculation of Mr. Sellers and his other clients, I would ask that Mr. Eves respond directly to Mr. Berman's question about NTE's intent as it relates to those standards.

THE WITNESS (Eves): And I will just say that although that 2 and a half percent declining emissions cap is somewhat speculative in Massachusetts right now, if Connecticut DEP were to impose such a declining cap on this project we would continue to move forward with the project.

THE CHAIRMAN: Okay. That answers that, and now we'll go to Attorney Bashaw.

MR. BASHAW: Thank you, Mr. Chairman.

My name is John Bashaw. I'm an attorney with Reid & Riege in Hartford. And I am here representing the groups Not Another Power Plant, and the Wyndham Land Trust.

I think my first question, or series of questions will be directed to Mr. Eves

based upon the testimony provided at the November 3rd hearing, but if I'm mistaken I'm sure you'll redirect me to the proper person.

Mr. Eves, you're familiar with the Environmental Justice Act. Correct?

THE WITNESS (Eves): Yes. Yes, sir.

MR. BASHAW: And you're probably also aware that under that act, that the Town of Killingly is an environmental justice community?

THE WITNESS (Eves): Yes.

MR. BASHAW: And do you know what that means?

THE WITNESS (Eves): Yes, I do.

MR. BASHAW: And what does that mean?

THE WITNESS (Eves): That it's a distressed community as defined.

MR. BASHAW: And as a distressed community defined in that act, under the Environmental Justice Act, what obligations, if any, does NTE have with respect to that community?

THE WITNESS (Eves): We have additional outreach requirements under that, under that act to make sure that we are providing

information to the community to get them to -- provide information on what we're proposing and to have them engaged in the process.

MR. BASHAW: And subject to you or your counsel checking me on this, the term I believe that they use is, meaningful public participation?

THE WITNESS (Eves): That's correct.

MR. BASHAW: And in fact, NTE in this, in this particular matter indeed filed and prepared an environmental justice plan that was approved by the Connecticut DEP. Correct?

THE WITNESS (Eves): That's correct.

MR. BASHAW: And that's the plan, I think, in questioning later today somebody asked when that, the final report of that would be available. And I think the response was, soon?

THE WITNESS (Eves): Correct.

MR. BASHAW: And that plan is an exhibit, I believe. I think it's NTE Exhibit 6, just for information purposes.

In section 1.3 of that plan, and again, subject to you reviewing it and correcting

me, I'm simply going to quote language that says, one of the goals the NTE plan, the environmental justice plan is to inform, engage and soliciting input from the local community. And again, subject to correcting me, that's in section 1.3 of your plan?

THE WITNESS (Eves): I'm sorry. Can you repeat that to me?

MR. BASHAW: Yes, I certainly can. To inform, engage and solicit input from the local community.

THE WITNESS (Eves): Oh, right. Right.

MR. BASHAW: And in section 1.2 of the application, pages 5 to 6, NTE actually describes what it did to implement the environmental justice plan. And it notes that the last public meeting prior to submitting the application on August 17, 2016, that the last public meeting was conducted on July 11, 2016. Does that seem correct to you?

THE WITNESS (Eves): That is correct.

MR. BASHAW: And there actually was also a presentation to the Killingly Zoning and

Wetlands, both the combination of zoning and wetlands on July 19th?

THE WITNESS (Eves): Yes, that was a public meeting, and it was a special meeting of the two commissions together.

MR. BASHAW: Now really the purposes of my questions are to get some clarification more than anything else from you, if I could.

During your testimony on November 3rd, do you recall being asked by the Council to respond to NAPP prefiled testimony of Carolyn Johnston where she stated that the report submitted to the public as part of the Environmental Justice Act obligations were not the same as the report submitted with the NTE application on August 17th to the Siting Council? Do you recall that?

THE WITNESS (Eves): Yes, I do recall that. And I recall my response was, that that was incorrect.

MR. BASHAW: That's correct. In fact, what you said exactly was, that's not correct. The reports that we made available on our website and locally on the library in the town

hall are the same reports that we attached to our application. Is that fair?

THE WITNESS (Eves): Yes.

MR. BASHAW: And again, the last public hearing was July 11th?

THE WITNESS (Eves): We had an additional public meeting on August 19th.

MR. BASHAW: After the application was filed?

THE WITNESS (Eves): I'm sorry. October 19th, after the application was in.

MR. BASHAW: That's all after. But prior to the application being submitted, the last public meeting was July 11th?

THE WITNESS (Eves): Correct, not including all of the public commission meetings and town council meetings.

MR. BASHAW: Understood. I'm talking about meetings for the general public, because that is the purpose of the Environmental Justice Act, is to allow the general public to be involved, not just the local commissions. Correct?

THE WITNESS (Eves): Correct.

MR. BASHAW: If you could just bear

with me. If you take, in your application, if you could grab ahold of it, just Exhibit D. And we're not going to spend much time dwelling on these exhibits. We're just going to look at the first page.

Okay. Just in general, what's the date of that report?

THE WITNESS (Eves): August 2016.

MR. BASHAW: So the date of that report is after July 11, 2016?

THE WITNESS (Eves): That's correct.

MR. BASHAW: So this report is not the same report that was filed as of July 11, 2016?

THE WITNESS (Eves): This is the same report that was submitted with our application.

MR. BASHAW: But again, it could not be the same report that was submitted as of July 11, 2016?

THE WITNESS (Eves): This report was updated from the report in July.

MR. BASHAW: Can you take a look at Exhibit E, please? I'm going to ask you the same

series of questions. The date on the cover of that report?

THE WITNESS (Eves): Right. And I'll tell you what? I mean, we prepared, you know, and it takes a while to put these reports together. It takes a while to do this development activity.

As we do, NTE, we take a serious view on involving the communities. You know, we have open houses and community involvement through the process whether we're part of an environmental justice community or not. We provide information as it becomes available. We prepare these reports.

I mean, we get input from these public meetings. We do additional work with our engineers and our consultants, which cause these reports to be updated. When we had our meeting on July 11th we had provided the reports as they filed, in the condition they were in at that time. As we looked forward to listening to that input and preparing additional reports to append to our application we of course updated these reports.

MR. BASHAW: Okay. And I'm really not casting any aspersions on what your intentions

are. It just was a very simple request. What's the date of that report? It's a nice speech, but what was the question. So the date is August 2016.

THE WITNESS (Eves): That's right.

MR. BASHAW: Okay. And that's after July 11th.

THE WITNESS (Eves): After July 11th. Yes, sir.

MR. BASHAW: Thank you. And another simple question. The ecological assessment report in Exhibit F, also is dated?

THE WITNESS (Eves): August of '16 which is after July 11th.

MR. BASHAW: So these reports have been, as you put it, updated since July 11th?

THE WITNESS (Eves): Correct.

MR. BASHAW: And this is subject to checking if you want. I don't need to go through every single one, but I will note also the electromagnetic field assessment, which is your Exhibit M, as well as the National Register of Historic Places eligibility report exhibit N are also dated August of 2016, after the July final public hearing date on environmental justice.

THE WITNESS (Eves): Correct. And I think if you dug deeper you would find the geotech report in that basket as well. But also the historic preservation report was completed -- I'm not sure -- probably prior to July 11th, but because of the sensitive nature of the historic, you know, the historic information that's included in that report we were unable to release that report to the public until SHPO gave us the approval.

MR. BASHAW: Okay. That's it on the Environmental Justice Act questions.

MR. ASHTON: Mr. Chairman, may I just ask a follow-on question? Insofar as these various reports had an addition that was July 11th, and then another one followed up in August, what was the nature of the changes that occurred from July 11th until August?

I mean, was it a change in the spelling of a word, or was it a total rewrite of the ground conditions at the site, or what? What was the nature of that?

THE WITNESS (Gresock): Many of those reports had not yet been published at that point, and we're relying on fieldwork and analysis

that was ongoing up until the time the application was submitted.

So in those instances the public was provided the reports as a part of the application for those particular technical components. There may well have been some others that were updated. I'm not sure. Tim?

THE WITNESS (Eves): Right.

MR. ASHTON: Are you saying that you used for the July edition the best material available, and then you updated that as additional information came in from the field?

THE WITNESS (Eves): Yes. Yes, sir. I would say they were substantially complete on July 11th.

MR. BASHAW: And if I could do a followup to the Council's question? It was the best information available at that time as of July 11th. Correct?

THE WITNESS (Gresock): Yes, we provided responses and information about the project based upon the information we had available at the time.

In some instances technical work or field activities were still ongoing to complete

that. That wouldn't have substantially changed the conclusions or the basic information being represented, but it wasn't yet time to have a public report.

MR. BASHAW: Okay. A couple of questions now relating to zoning. And again, I don't know who would be the correct person, but I'll ask the question and you all can decide who is the appropriate person to respond.

I'm just going to refer to page 123 of the application, figure 7.4.

Now in the application, in your section seven where you discuss planning and zoning, is it fair for me to say that it was extremely important to you that the proposed facility be located -- I don't have the exact term, but I think what you had all called an area that was proposed for potential industrial use in the future?

THE WITNESS (Mirabito): Yes, that's correct.

MR. BASHAW: But if you look at Exhibit 7.4 in the application, and I believe that this shows -- it's titled, future land use. It seems to show to me that only the generating site

is indeed within that industrial proposed zone. Correct?

THE WITNESS (Mirabito): That's correct. Yeah, we recognize that, but we also recognize that that other parcel, the switchyard parcel is immediately adjacent to the transmission line across the street from the primary site, basically contiguous with the proposed area of industrial development.

MR. BASHAW: But not in an industrial zone?

THE CHAIRMAN: Could I ask you a question. What does proposed zone mean?

MR. BASHAW: A proposed zone, according to the application, the Town of Killingly -- well, I'll answer it. And then I'll pass it off to one the applicants. I'll let them answer it.

THE CHAIRMAN: I mean, I've only heard that if someone is actually in a formal application proposing it. Unless it's something in your conservation and development plan?

MR. BASHAW: That's exactly right.

THE WITNESS (Mirabito): There's a map, the Killingly's 2010 plan of conservation and

development that shows areas around the existing industrial park that are proposed for alternate zoning designations. In this case, the primary parcel being designated for industrial use.

THE CHAIRMAN: That helps. Thank you.

MR. BASHAW: And I think the testimony again, subject to me being corrected, is the generating facility is located in that area designated for future industrial use. This switchyard site is not.

The switchyard site is located within an area that's still designated as rural residential?

THE WITNESS (Mirabito): Although contiguous with the proposed area of expansion.

MR. BASHAW: Correct, across the road, yes.

THE WITNESS (Mirabito): Next to the transmission line.

MR. BASHAW: And in fact, the proposed facility, based upon current uses in the area, that the current facility will not in fact be constructed adjacent to any industrial land at all. Will it, directly adjacent to it?

MR. BALDWIN: Are we basing that on current zoning?

MR. BASHAW: Yes, current.

THE WITNESS (Eves): I would say you're correct. We are not directly adjacent to any industrials because there's a transmission line corridor in between the facilities we're looking at in the industrial facilities.

MR. BASHAW: Well, let me ask you about that transmission corridor. Doesn't that transmission corridor also cross -- and this is property directly to the east, I believe. Is that east?

It's northeast, that that land itself is not industrial land. It's like a 46-acre parcel?

THE WITNESS (Mirabito): Yeah, that's correct.

MR. BASHAW: Okay. So when you say in your application -- this is on page 125, section 7.1.5.1, that KEC is proposed to be located along Lake Road immediately west of the Killingly Industrial Park and other industrial development.

As it exists today, that statement

is not correct?

THE WITNESS (Mirabito): What was the page reference again?

MR. BASHAW: Yeah, I apologize. I moved fast. Page 125, section 7.1.5.1, it's the first line.

THE WITNESS (Mirabito): Yes, that's what it reads.

MR. BASHAW: And that's not correct?

THE WITNESS (Mirabito): It's immediately west. We don't say immediately adjacent.

MR. BASHAW: Okay. So it's a 46-acre parcel in between the industrial land and the proposed facility. Correct?

THE WITNESS (Mirabito): Correct.

MR. BASHAW: Okay. And the KEC parcel, the proposed parcel, or parcel, however you want to refer to it, is also currently in a rural development district. Correct?

THE WITNESS (Mirabito): Give me the question again? I'm sorry.

MR. BASHAW: Sure. The proposed location of the facility is currently zoned rural

development?

THE WITNESS (Mirabito): Correct.

MR. BASHAW: And do you know what a rural development district is?

THE WITNESS (Mirabito): I've got a general understanding, yes.

MR. BASHAW: You actually have a bulk filed exhibit which is the zoning ordinance. I'm not going to require that you pull that out.

Do you have it? That would be great. If you could look at section 410, 1-B?

THE WITNESS (Mirabito): You said, 410?

MR. BASHAW: Yes, please.

THE WITNESS (Mirabito): Okay. We're there.

MR. BASHAW: If you could just basically just look at section 410.1 and just read for the Council what it says a rural development district is as far as permitted uses. If you could just read that section? It's short.

MR. BALDWIN: Mr. Chairman, well, we can do that, certainly. But these are materials that are in the application, and in memory of Professor Tate the applications and the

application zoning regulations speak for themself.

MR. BASHAW: But I can ask it as a bunch of other questions that may take a little bit longer, but we can get to it another way.

THE CHAIRMAN: Okay.

MR. BASHAW: If you look at section 410.1, would you say that the -- maybe we could do this maybe quicker. Just short-circuit this.

In section 410.10 would you agree with me that the KEC facility does not meet any of the permitted uses for a rural development district?

MR. ASHTON: As written.

THE WITNESS (Gresock): We state right in the application in section 7.1.4.2 that the site as a rural development district has permitted uses that include low-density residential development, agriculture and specified non-intensive uses.

MR. BASHAW: So that's a yes, it doesn't meet -- the KEC plant doesn't meet any of the uses, permitted uses for a rural development district?

THE WITNESS (Gresock): That's right.

MR. BASHAW: Okay. And the reason why the rural development district was created is as stated in section 410.1, because the districts present physical obstacles to development such as slopes, wetlands and soils with limited capability for accepting on-site sewage disposal. And that these physical restrictions make it necessary to limit permitted uses to low-density residential development, agriculture and other specified non-intensive uses.

Have I stated that correctly?

THE WITNESS (Mirabito): Yes, that's the way it reads. Although I would point out that we've managed to deal with these obstacles as part of our site plan and design. And I would also point out that that 2010 plan of conservation and development recognized that this parcel and some other parcels in the area were appropriate for -- targeted for future industrial development.

MR. BASHAW: And in fact, once this is committed to industrial development, as you've just described it, it's still going to be surrounded by rural development zones. Correct? And you can look at a map -- if it will help you,

map 7 -- figure 7-3 in your application on page 122.

THE WITNESS (Mirabito): Could you repeat the question?

MR. BASHAW: Sure. And this industrial development, as you've described it, will nevertheless be surrounded by a rural development zone that will consist of low-density residential development, agriculture and other specified non-intensive uses as permitted by that district. Correct?

THE WITNESS (Mirabito): Except for the transmission corridor that runs through that area as well as the Rite-Aid industrial area that's immediately on the opposite side of the transmission line, just to the east.

MR. BASHAW: Yeah, that's also in a different district. If you look at map 7 -- figure 7-3, where is that located?

THE WITNESS (Mirabito): The yellow area immediately to the right of it.

MR. BASHAW: That's the industrial area?

THE WITNESS (Mirabito): Correct, that's the Rite-Aid facility.

MR. BASHAW: Okay. I'm not talking about the industrial. I'm talking about the rural development district that was surrounding KEC --

THE WITNESS (Mirabito): Right, and I was answering your question more generally. Generally yes, but you've got a transmission line running through the corridor --

MR. BASHAW: I will get to that.

THE WITNESS (Mirabito): You've got a Rite-Aid industrial facility immediately on the opposite side of that.

MR. BASHAW: And not only will this be, as I've described it in this rural development district, it will be bordered on one side by Wyndham Land Trust land. Correct?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: All right. And the Quinebaug River on one side of it as well. Correct?

THE WITNESS (Mirabito): The site is not immediately adjacent to the Quinebaug River.

MR. BASHAW: That's right. There's a bit of a divide, but it will be --

THE WITNESS (Mirabito): In proximity.

MR. BASHAW: And in between the river and the facility is what? Open land? Forested land?

THE WITNESS (Mirabito): The Wyndham Land Trust area, yes.

MR. BASHAW: So in light of this little conversation that we've had, is it still your contention in 7.1.5.1 that the KEC facility is, or will be -- and this is the very last clause of that paragraph -- that KEC will be compatible with surrounding land uses?

THE WITNESS (Mirabito): Yes, we still believe that statement.

MR. BASHAW: You still believe that with the Wyndham Land Trust on all sides? Okay. I'll leave it at that.

THE WITNESS (Mirabito): Yeah, taken into account the buffers that we're going to maintain, there there's going to be about 20 acres at the backside of the site between the developed part of the parcel and that Wyndham Land Trust, as well as buffers on the majority of the balance of the property.

MR. BASHAW: Okay. I'll leave it at that.

It's obvious to all that the generating facility cannot operate without a source of natural gas. Correct?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: And KEC is proposing to utilize the 2.8-mile long natural gas right-of-way from the Algonquin mainline to Lake Road. Correct?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: And I think we had this discussion earlier on, but one of the Council members had mentioned that based upon the application this pipeline has existed for at least 50 years. Correct?

THE WITNESS (Bradley): Yes, that's correct.

MR. BASHAW: But it's clear you have no intention of using this 50-year-old pipeline?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: And while you've looked at alternatives, you've determined that you cannot use this existing gas line -- strike that. Sorry.

In figure 1, on page 168, please, of the application.

THE WITNESS (Mirabito): Yeah, we're there.

MR. BASHAW: That identifies the pipeline path as a yellow line. Correct?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: Do other customers currently use the gas in that existing line?

THE WITNESS (Mirabito): Yes.

MR. BASHAW: And I believe that your proposal, or that your proposal as to be implemented by Yankee is to replace -- put in a full new replacement line. Correct?

THE WITNESS (Mirabito): Yes, that's correct. They will install a new line adjacent to the existing line. What we don't know yet is whether they'll remove the old line or not.

MR. BASHAW: And as part of doing that work your application indicates that some

clearing of land will be required. Correct?
THE WITNESS (Gresock): The -- what we've been told by Yankee Gas is that they will work within the existing right-of-way.
MR. BASHAW: Has Yankee Gas provided to you any design studies for the pipeline that they're going to put in?
THE WITNESS (Mirabito): They have not yet provided a design study, but we have engaged them in that scope.
MR. BASHAW: You've had discussions?
THE WITNESS (Mirabito): Absolutely.
MR. BASHAW: But you have not seen any plans, drawings, descriptions of methods, anything of that nature?
THE WITNESS (Mirabito): No.
MR. BASHAW: I'm sorry. I may have asked this question. In some clearing of land -- well, I think I did ask this -- some clearing of land will be required in order to install the pipeline?
THE WITNESS (Gresock): We're not expecting significant clearing of land since they're working within the existing right-of-way.

THE WITNESS (Bradley): And to clarify to your previous question, we have not seen written engineering studies from Yankee, but Yankee has been out. They have looked at the corridor as part of their original work back to NTE. They went out and looked at the corridor, evaluated what they have there.

And have -- they do this on a regular basis day in and day out, so they have a very good idea of what's necessary to lay that new pipe in a corridor.

MR. BASHAW: And I know, Mr. Bradley, you were here on the first day of the hearing when you heard the Council's actions on the motions to dismiss where they said that these interconnections will be considered as part of this application.

Do you recall that?

MR. BALDWIN: My recollection, Mr. Chairman, was that the discussion was that these interconnections, while a part of the discussions of this application, would be the subject of a separate application by Yankee Gas.

THE CHAIRMAN: That's correct.

MR. BASHAW: Well, the ruling is

what it is. So I guess my ultimate question is, Yankee Gas, as far as you know, has not performed any wetland studies on the impacts of putting in this gas pipeline? As far as you know?

THE WITNESS (Mirabito): Correct.

MR. BASHAW: No studies of species of invertebrates or spring salamanders or whatever it might be, as far as you know?

THE WITNESS (Mirabito): Correct.

MR. BASHAW: They have not conducted any noise studies?

THE WITNESS (Mirabito): Not that we're aware of.

MR. BASHAW: Any visibility studies?

THE WITNESS (Mirabito): I'm not sure where that would be required.

MR. BASHAW: I'm not going down to the laundry list, but is it fair to say that with respect to this gas pipeline, other than what Yankee Gas has told you they are thinking of doing, there's no evidence in this record before this commission for this commission to determine what impacts this gas pipe -- installation of this gas pipeline will have to on the wetlands, open

space, state park and land trust lands and the Quinebaug River?

MR. BALDWIN: I'll object to the question, because I think that the Council has already determined that it will review those impacts at a future time in an application filed by the appropriate party, in this case, Yankee Gas.

THE CHAIRMAN: And that is correct.

MR. BASHAW: So I guess, may I ask a point of clarification then, of the Council? Then the Council is not looking at any of the environmental impacts of the gas connection, just so I can be clear? Because then I'll move on if the Council is not going to be doing that.

THE CHAIRMAN: I'll ask Attorney Bachman to clarify that.

MS. BACHMAN: Thank you, Mr. Chairman.

The ruling on the request for clarification was that we would explore the feasibility of the interconnection, but I think throughout the proceeding we have had discussions that the pipeline would be the subject of a petition from Yankee Gas if this application is

approved. And that a petition for the switchyard would be submitted by Eversource, again if this application were approved.

However, they're not even sure if we're going to approve the application, or we may modify it. We may move it. We may be taking components and put them in different areas. I know Mr. Ashton was trying to discuss different design configurations.

So it's all somewhat premature to discuss the actual route of the gas lateral, or for the switchyard, you know, designs. Now we're discussing the possibility of the gas insulated substation on the actual generating facility site.

So although, you know, you're not prohibited from asking questions about environmental impact, I think that's the understanding that we have, is that it would be -- those petitions would be filed by the entities over which they have contracts. But right now it's a little premature not knowing whether we may decide to modify the facility or approve it at all.

MR. BASHAW: My next set of questions are going to be related to noise

impacts. I don't know who was the person to address the questions to?

THE WITNESS (Mirabito): Start with Ms. Gresock?

MR. BASHAW: Okay. My eyes are not what they used to be.

Thank you. Thank you, Kevin. And Kevin, I'll be focusing on Exhibit L in the application.

Now Kevin, you've have heard some earlier discussion that the NTE facility and the KEC facility -- I use that term interchangeably -- is going to be an industrial use in the area that's zoned for rural development. Correct?

THE WITNESS (Fowler): Correct.

MR. BASHAW: And uses that are going to surround that facility once it's operating will continue to be in a rural development zone. Correct?

THE WITNESS (Fowler): Correct, yeah.

MR. BASHAW: And the noise regulations that apply here are based on the zoning classification, and then also on the use. Let's just do it this way. Why don't you explain

it to me?

THE WITNESS (Gresock): Yeah, I mean, the State and the local noise requirements differ a little bit, but they fundamentally have a classification of the emitter and a classification of the receiver sound.

This project as an industrial emitter is being evaluated in accordance with being required to meet the class A, which is residential standards at its property boundaries. And the project is holding itself to the standard of meeting the class A nighttime requirement which is 51 dBAs at the project property boundary.

MR. BASHAW: For an industrial emitter, though?

THE WITNESS (Gresock): For an industrial emitter. Should the commission approve this project, although the zoning would not change, the formal land use of this site would change to be an industrial site. And therefore that was considered the appropriate metric to use.

MR. BASHAW: Correct. If this facility is approved you will have industrial use placed within a rural development zone?

THE WITNESS (Gresock): And the

standards that have been assessed reflect that.

MR. BASHAW: Right. And your analysis and application has been to apply the industrial emitter, as opposed to a residential area?

THE WITNESS (Gresock): Right. This is not a residential emitter.

MR. BASHAW: I'm going to go over some of the analysis that you've performed. It looks like you selected five monitoring locations, then one, what I will call, a 24-hour location?

THE WITNESS (Fowler): Correct.

MR. BASHAW: Any reason why you picked 5 locations, as opposed to 10 or 15?

THE WITNESS (Fowler): The purpose was to take measurements along the property line. That's where we were going to determine compliance.

MR. BASHAW: So for a 63-acre parcel, 5 points along the border of such a facility is deemed to be sufficient?

THE WITNESS (Fowler): That's pretty typical, yes.

MR. BASHAW: Is there any standard that one applies for how they select the number of

sampling points?

THE WITNESS (Fowler): Usually we look at how many receptors are within the adjacent area of the property.

MR. BASHAW: If you look at your figure 1, in Exhibit L. Got it?

THE WITNESS (Fowler): Uh-huh.

MR. BASHAW: It looks like two of the sampling points are not on the property boundary. Is there a particular reason for that?

THE WITNESS (Fowler): Just from access to the location.

THE WITNESS (Gresock): The intent is to, from publicly accessible locations, try to gain a sense of the ambient sound conditions in the immediate surroundings. Because the standard is a project sound level impact only, the ambient measurements that are taken are really just for informational context only.

MR. BASHAW: But for regulatory purposes, isn't sound determined at the property line?

THE WITNESS (Gresock): The project sound at the edge of the property line, and there are some uses for the ambient measures in terms of

classifying the area under the rules.

MR. BASHAW: But for regulatory purposes it's measured at the property line?

THE WITNESS (Gresock): The project sound is measured at the property line.

MR. BASHAW: And two of the sampling points that you used for your actual measurements and for your modeling, which is to model the property line, are not on the property line?

THE WITNESS (Fowler): Correct. The model, though, was -- if you look at our --

THE WITNESS (Gresock): We should look at the updated filing for the most recent modeling which would be Exhibit 17.

Yeah, sorry. In 15, an attachment to the response to the regulate and restrict orders, there was an updated acoustical modeling memo in there that shows a figure, a revised figure 7-5, which is the most current and probably the one we should look at.

MR. BASHAW: I don't have that in front of me, but does that show that the sampling points have been moved -- or I shouldn't say, have been moved. Have they?

THE WITNESS (Gresock): No, the sampling points have not been moved, but in that particular modeling, or depiction of the modeling results, those slight revisions to the site plan are encompassed.

THE WITNESS (Fowler): And in the plot there is a 51 dB contour plot for the project that shows that's all within the project boundary line.

MR. BASHAW: Bear with me.

I'm trying to do to a line of questioning that I could get through within the next few minutes. I apologize. I'm going to just switch gears, because this will take a little bit longer than the time that we've got.

THE WITNESS (Fowler): Okay.

MR. BASHAW: But I can do this quickly. With respect to the -- I'm going to shift gears just to the water interconnection for a moment.

And as with the natural gas, it's obvious you can't operate without a source of water from somewhere. Correct?

THE WITNESS (Mirabito): That's correct.

MR. BASHAW: All right. And for purposes of the application you have chosen an interconnection with the Connecticut Water Company system. Correct?

THE WITNESS (Mirabito): Correct.

MR. BASHAW: You had mentioned a Connecticut Water Company analysis that was performed regarding their ability to find that source of water. Did you recall that?

THE WITNESS (Mirabito): I do. They told us about that analysis. We haven't seen it.

MR. BASHAW: Well, that was my next question. You have not even seen this analysis?

THE WITNESS (Mirabito): No, we saw the results which were the ability to serve letter inside our application.

MR. BASHAW: In response to the DPH letter, which does request an analysis of need, will you or Connecticut Water Company be providing the Department of Public Health with that analysis?

THE WITNESS (Mirabito): We asked Connecticut Water about that, and they explained that they had done that analysis and concluded

that the interconnection was required. So they weren't sure why the analysis itself needed to be seen.

MR. BASHAW: I think the answer -- well, I can't speak for the Council, but I think the answer might be evident, that it's looking to take 400,000 gallons of water -- up to 400,000 gallons of water.

MR. BALDWIN: Objection.

MR. BASHAW: I would make a request, at least request through the Council that that information, that analysis be provided so the Council and all of us can actually see it.

THE CHAIRMAN: I mean, both the Public Health -- I'm surprised at -- I also was at this response. I'm not blaming the applicant, but both the Department of Public Health and DEEP have asked for the analysis. So just to get a letter saying everything is okay, I'm disturbed by that, too. So maybe you should try a little harder to get the analysis.

I would think you would want to see the analysis.

MR. BASHAW: And other than the Connecticut Water Company analysis, you folks have

not conducted any kind of an independent study regarding -- strike the question.

Other that what you've discussed with Connecticut Water Company, NTE has not performed any design or engineering studies concerning the construction of the infrastructure required to get the water to the KEC facility?

THE WITNESS (Mirabito): Repeat the question in terms of exactly what you're asking?

MR. BASHAW: Happy to. Has KEC performed any engineering studies of its own regarding the infrastructure that will be required to get the water from the Connecticut Water Company system to the KEC plant?

THE WITNESS (Mirabito): No, we have not performed any of our own studies, but we are under contract with Connecticut Water. They're doing those studies now, really the design of that infrastructure.

MR. BASHAW: I have a couple other lines of questioning that will probably take 15, 20 minutes each. I don't know what the Council would like me to do.

THE CHAIRMAN: So this sounds like a good time to end.

MR. LOONEY: If I may?

John Looney on behalf of the Connecticut Fund for the Environment. I seek a point of clarification.

In the transcript on page 156 of the hearing we had November 3rd, in response to CFE's motion to dismiss on the grounds the application was incomplete and improperly segmented in the project --

Attorney Bachman says, thank you, Mr. Chairman. Staff recommends that the Connecticut Fund for the Environment's motion to dismiss be denied on the basis this Council deemed the application complete on September 15, 2016. And the feasibility of all the Internet connections, the gas pipeline, the water connection and the transmission line interconnection will be explored during these proceedings.

Do I understand the ruling today in regards to Mr. Bashaw's questioning, is that is not the ruling of the Council?

THE CHAIRMAN: We are having some discussion of these. Today we don't have the final information. We've explained, at least in

the case of the gas pipeline, that would be -- details will be subject to us in a separate petition before this if -- and I state if, if this particular application before us is approved.

MR. LOONEY: So are you saying that it's a modification of the original order? Because this was moved and seconded by the Council. And Mr. Bashaw was -- there was an objection to questions along those lines from Mr. Bashaw.

Does that apply to Connecticut Fund for the Environment as well?

MS. BACHMAN: Attorney Looney, we discussed the possibility, or the feasibility of the interconnections. We've talked about it in the past hearing on November 3rd. We talked about it this afternoon, earlier this morning.

As I told Attorney Bashaw, he's not prohibited from asking questions about any of the interconnections or the feasibility thereof, but again, until their certificate is issued the final design plans for any of those interconnections wouldn't be submitted by the certificate holder. They would be submitted by Eversource for the switchyard and Yankee Gas for the gas line.

MR. LOONEY: Let me just say that that interpretation differs from the ruling I heard on November 3rd, and the ruling that's described in the transcript.

MS. BACHMAN: Well, I told Attorney Bashaw he's not prohibited from asking questions. And we are here to discuss the feasibility, or perhaps the different routing of those potential interconnections, which I think this Council has already asked several questions related to that.

So certainly no one else is prohibited from asking questions.

MR. LOONEY: Thank you.

THE CHAIRMAN: Okay. So the Council announces that we will continue the evidentiary hearing at the same location, 10 Franklin Square in New Britain, Thursday, December 15th, 2016, at 11 a.m., again in this Hearing Room 1.

And please note that a closed proceeding will be held at 2:00 p.m., on December 15, 2016, again in this Hearing Room 1 for parties who have executed a nondisclosure agreement pursuant to the protective order issued on November 1, 2016, to cross examine NTE on the

responses to NAPP's interrogatories one, three, four, five, eight, ten and eleven, consistent with the Council's response to question four of that NAPP's request for clarification dated October 31, 2016.

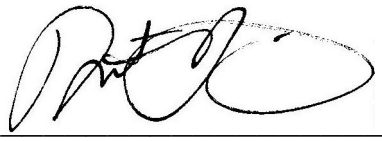
Please note that anyone who has not become a party or intervener, but who desires to make his or her views known to the Council, may file written statements with the Council until the record closes. Copies, again, of the transcript of the hearing will be filed at the town clerk's offices in Killingly, Putnam and Pomfret.

And I hereby declare this portion of the hearing closed. And thank you all for your participation, and drive home safely.

(Whereupon, the witnesses were excused and the above proceedings were concluded at 4:15 p.m.)

CERTIFICATE

I hereby certify that the foregoing 225 pages are a complete and accurate computer-aided transcription of my original verbatim notes taken of the Siting Council Hearing in Re: Docket No. 470, Application from NTE Connecticut, LLC for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance, and Operation of a 550-Megawatt Dual-Fuel Combined Cycle Electric Generating Facility and Associated Electrical Interconnection Switchyard Located at 180 and 189 Lake Road, Killingly, Connecticut, which was held before ROBIN STEIN, Chairman, at the 10 Franklin Square, New Britain, Connecticut, Tuesday, November 15, 2016.



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WITNESSES