STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE

December 6, 2018 - 1:27 P.M. DAY 4
49 Donovan Street Concord, New Hampshire
\{Electronically filed with SEC 12/20/18\}
IN RE: SEC DOCKET NO. 2015-04
Application of Public Service
Company of New Hampshire,d/b/a Eversource Energy, for a Certificate of Site and Facility.
(SEC Deliberations)

PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:

Patricia Weathersby
(Presiding Officer)
David Shulock, Esq. Elizabeth Muzzey, Dir. Charles Schmidt, Admin. Christopher Way, Dep.Dir. Michael Fitzgerald Dir Susan Duprey

ALSO PRESENT FOR THE SEC:
Michael J. Iacopino, Esq., Counsel for SEC Iryna Dore, Esq.
(Brennan, Lenehan, Iacopino \& Hickey)
Pamela G. Monroe, SEC Administrator
(No Appearances Taken)
COURT REPORTER: Susan J. Robidas, LCR No. 44
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  |  |  | 2 |
| :---: | :---: | :---: | :---: |
| 1 | I N D E X |  |  |
| 2 |  | PAGE |  |
| 3 | STRAW POLL TAKEN RE: Unreasonable Adverse Effects on Water Quality | 5 |  |
| 4 | TOPIC: WATER QUALITY: Jet Plow Trial Run | 5 |  |
| 5 | DISCUSSION |  |  |
| 6 | STRAW POLL TAKEN RE: Limiting to Single Run | 18 |  |
| 7 |  |  |  |
| 8 | STRAW POLL RETAKEN RE: Unreasonable Adverse Effects on Water Quality | 19 |  |
| 9 |  |  |  |
| 10 | TOPIC: NATURAL ENVIRONMENT by Mr. Fitzgerald | 19 |  |
| 11 |  |  |  |
|  | DISCUSSION | 30 |  |
| 12 | Impacts to Little Bay Crossing | 55 |  |
| 13 | Testing for Pathogens | 61 |  |
| 14 | Durham request for public meeting re: plans | 93 |  |
| 15 | STRAW POLI TAKEN RE. Unreasonable Adverse |  |  |
| 16 | STRAW POLL TAKEN RE: Unreasonable Adverse Effect of the Natural Environment | 99 |  |
| 17 | TOPIC: PUBLIC HEALTH AND SAFETY by Mr. Shulock | 100 |  |
| 18 |  |  |  |
| 19 | EMF | 101 |  |
| 20 | Risk of Collapse of Towers, Poles or Other Supporting Structures | 108 |  |
| 21 | Sound |  |  |
| 22 | Sound | 115 |  |
|  | Decommissioning Plan | 116 |  |
| 23 | Fire Safety Plan | 134 |  |
| 24 |  |  |  |



PROCEEDINGS
PRESIDING OFFICER WEATHERSBY: Good afternoon, everyone. We are going to get started. I apologize for the delay. We had a procedural issue we had to get over, which we have, and so we are going to resume. We're going to take up where we left off the other day. We were talking about water quality and moving into the natural environment. And I think at that time $I$ said we would probably talk about the water, the creatures that live in the bay, before we made a decision on water quality. And as I thought about that some more, I think what I'd like to do is do a poll as to where folks stand now concerning water quality, and then we'll move into natural environment. And, of course, everybody can raise issues to discuss further or change their vote, et cetera. Not binding, but just to kind of see where we are as we close out our discussion on water quality.

Okay. I'm going to poll each member, starting with Mr. Fitzgerald, as to whether you believe this project will cause
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

put a few more of those concerns on the record to see if that might change anybody's mind about giving DES that flexibility.

And the first place that $I$ start is one of the reasons we were created was to make sure there were no undue delays in the construction of these projects. So that's where I start. And then, secondly, I look to the fact that this is a reliability project. The area that this project would serve is currently in an unreliable state. I mean, it was identified as being unreliable as far back as 2012. It's failing the two major criteria for determining the area's reliability, that the area is reliable. I think they said voltage and thermal criteria are both not being met currently. We did have some evidence that they have made some of the other upgrades within the suite of projects and that that has had a positive effect. We've had some evidence that, you know, there's an increase in use of generation behind the meter which may have an effect on growth of the need in the area.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

But I think our best information is that -MS. DUPREY: Can you speak up? MR. SHULOCK: Yeah. I think our best information is that the Seacoast Area is one of the areas within New England that is experiencing measurable growth. I believe Mr . Quinlan testified that it's expected that very soon that area will be utilizing 25 percent of the electricity in their entire service area. So I don't think that we should put the Project in a situation where, if there is a problem with the first trial, jet plow trial, that they have to essentially wait a whole year to do anything. And part of that is because as an organization $I$ don't think that we can respond in time; whereas, if we give DES the discretion about whether a second jet plow trial should take place, they could have a chance at completing that construction within the same construction season. And we have to remember that the construction season is short because they have to pay attention to different populations of animals that live in the bay.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

There are certain times when DES doesn't want them to jet plow to protect fish. There are certain times when they can't jet plow to protect oysters. And so their opportunities are actually quite limited, and I don't think we should put them in a situation where they can't complete in one season. I don't know if that changes anybody's mind.

PRESIDING OFFICER WEATHERSBY: Does anyone care to comment on Mr. Shulock's concern?

MR. FITZGERALD: Sure. I appreciate all of those issues raised here. As I said the other day, and I don't know if I said it very eloquently, but $I$ think the issue of a jet plow trial run has many potential outcomes. For instance, they could go 100 feet and do some monitoring and determine they have a problem. If they do that and stop and they come back, can they start up and complete the trial run? I think there are a lot of things here that, you know, are things we can't foresee. I didn't necessarily foresee until I thought about it the other day the possibility of a
second trial run. As I read Condition 60b, it says installation of submarine cable in Little Bay shall not proceed until authorized by NHDES and the SEC. But it starts with saying, "If the SEC determines that jet plowing should be allowed..." So I guess that presumes that we have to make that decision. And does that decision have to be, yes, it's allowed one time or -- obviously I'm part of the DES. But I believe that the jet plow trial run could result in numerous and varied outcomes, from a range of completely successful to, you know, completely unsuccessful. And how to allow that to be resolved either by discontinuing the trial run and starting it up again later or even -- you know, although $I$ don't envision a second one, I think we sort of have to leave that in DES's hands to say they're not -- to fulfill that last statement in 60B, which is the cable installation should not proceed until DES approves it. Whatever happens between the start of the trial run and the rest of it, you know, unless we are going to reconvene the SEC, reconvene this Commission, I think this is a
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
variable-outcome situation.
PRESIDING OFFICER WEATHERSBY: SO, just as a reminder of where we were with this issue, we had a whole discussion about multiple trial runs, single trial run. We did a straw poll, which was six people in favor of a single trial run. Mr. Shulock was not in favor of a single trial run, limiting that, and today he expanded on his reasons why and wanted to make sure we considered those. So now we've heard from Mr. Fitzgerald concerning this.

Ms. Duprey, you want to speak.
MS. DUPREY: Thank you, Madam Chair. In listening to Mr. Shulock and Mr. Fitzgerald, but in particular Mr. Shulock, I'm reconsidering my position. I would start with the premise that nobody wants there to be more trial runs than absolutely necessary. Nobody. Not DES. Certainly not the Applicant, where it's very expensive. Not any of us, and no one who's involved in this case. And I think that DES is certainly watching over, and I trust them to watch over, the water quality issues. That's what their agency is largely about,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
certainly the wetlands part of it. So I think that in considering this, $I$ would feel comfortable having them resolve the issue as necessary. I do think 60B talks in terms of "a trial run," singular. So I don't know how they perceive what their power is.

But when it was just mentioned that there could be a lot of different outcomes to a trial run, that some people might consider the trial run as over, other people might consider it's at a stage, but further stages have to or could move forward, I don't want us to find that there's some kind of legal impasse or argument over where we are in the trial run and people are going to court to represent their various positions or coming before agencies to represent their various positions and more time is chewed up preventing the matter from being resolved in the same construction season. So, given that, I'm going to reconsider my position. Thank you.

PRESIDING OFFICER WEATHERSBY:
Director Muzzey.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

DIR. MUZZEY: It's interesting to me that during our many days of hearings for this project, the assumption for everyone who testified, asked questions and answered questions, was based on the assumption that there would be one trial run, and it would be 1,000 feet long. And that's been carefully recorded in the record in any number of places. I am assuming there's some degree of flexibility within the trial run of 1,000 feet, that there will be monitoring throughout that process, that adjustments can be made. I think we can specify that it be 1,000 feet if that brings people confidence. But I have concerns about suggesting a number of trial runs. Part of my reasoning for thinking that this project would not have an unreasonable adverse effect to water quality is the assurances that we got from the testimony we heard from a number of people that this was a well-understood, well-used technology in many parts of the country. To suggest that there are problems to the degree that multiple trial runs may be needed, it makes me -- it would make me rethink
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
my finding of unreasonable adverse effect.
I'm also concerned because we have no assurance that if a trial run of 1,000 feet was done and there were problems that needed to be addressed, that those could be resolved within the construction season. If there are problems to that degree that they can't resolve in a single trial run of 1,000 feet, there may be problems that take a lot longer regardless of Site Evaluation Committee review. We're talking about multiple state and federal agencies that may have jurisdiction. And there are many things that are beyond the control of any one of those agencies or the Applicant or the Site Evaluation Committee that could make for a time frame where, if multiple trial runs were necessary -- and when I say that, multiple trial runs beyond the one 1,000-foot trial run -- that would endanger the schedule.

I would also want some additional
information about the possible environmental
effects of multiple trial runs, and I just don't feel that's been vetted through the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
existing record. So $I$ can't endorse changing this condition in a manner that would allow for multiples.

PRESIDING OFFICER WEATHERSBY: Mr. Schmidt.

MR. SCHMIDT: Mr. Shulock brings up a good point about potentially extending or losing a construction season with a negative or difficult test run. And although I do appreciate that, I do think we're working with some experts in the field. Historically, in other situations, a single trial run was performed. I think we need to lean a little bit on that experience of others. But also, I agree with Director Muzzey that to date we've talked about a single trial run. The disruption to the bay, if any or not, that's been the thought process. So I think my position from the other day will stand.

PRESIDING OFFICER WEATHERSBY: I have to say I agree with Mr. Schmidt and Director Muzzey. This whole idea of a second or multiple trial runs came up for the first time in our discussions. Everything that I can
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
recall during testimony, all the exhibits, cross-examination, was that it was a single trial run. Environmental data is all about a single trial run. Everyone was very confident in a single trial run. I think that we don't have enough information concerning the impacts of a second trial run, and I think that in 1,000 feet they can get it right. They should be coming in expecting everything is going to work just the way they had modeled. They may need some tweaking, but $I$ don't sense that there's any apprehension on the Applicant's part for the need for multiple trial runs. I'll stop there. But I'm going to continue my vote for a single trial run.

Anyone else care to speak?
Mr. Way.
MR. WAY: This is a hard decision because I'm agreeing with what I'm hearing on both sides. As has been said, Mr. Shulock I think makes a very compelling case, that at least having the option for multiple runs or more than one run might be something that can be advantageous to the public. I think one
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
thing we all agree upon is having to come back for the Committee for something like that is just a needless delay in these sorts of projects. However, you know, as was said by Director Muzzey, up to this point the one single run was what was before us. That's the conditions that we discussed. That is the plan that was put forth by the Applicant.

And the other thing, too, I also agree this is something that $I$ know $I$ was convinced upon that this is something that is -- that can be done, that has been done very successfully in the past. This is not new technology, that this trial run is something to work out some of the logistical issues: The equipment, the operators, the conditions in the bay. So I have the belief that they can do this successfully in that first run. And I think that's what we should limit it to. So I think that would be my decision, but I certainly respect what was offered.

PRESIDING OFFICER WEATHERSBY: Mr.
Shulock.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. SHULOCK: Okay. So I agree with a couple things. One, I haven't seen a lot of angst on the part of the Applicant; and two, I will -- I have a level of confidence in the expert testimony that we heard that this will be successful. My only point is that I don't think we should straightjacket people with that if there is some problem with that first test run. And I think that we have as much information about a second test run as we do about a first test run, and all that information is that everybody expects it to be successful, right. So, you know, I don't think the fact that we didn't discuss everything in terms of the second test run is fatal because the evidence would be the same for both. The first test run was as much an unknown as the second one would be. So $I$ would still vote to allow DES the discretion to permit a second test run or some additional testing prior to allowing, if needed, rather than coming to the SEC for approval for that.

PRESIDING OFFICER WEATHERSBY: Any other comments on this issue?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
[No verbal response]
PRESIDING OFFICER WEATHERSBY:
Concerning the jet plow trial run, I'm going to do a poll again as to whether you believe there should be a single -- that the trial run should be limited to a single trial run, and then we'll go back to the water quality. But let's revisit our poll concerning a single trial run.

Mr. Fitzgerald.
MR. FITZGERALD: The question is should a second trial run be allowed?

PRESIDING OFFICER WEATHERSBY: NO.
I'm sorry. The question is should we limit the Applicant to a single trial run.

MR. FITZGERALD: No.
MS . DUPREY: No.
MR. WAY: Yes.
MR. SCHMIDT: Yes.
MR. SHULOCK: No.
DIR. MUZZEY: Yes.
PRESIDING OFFICER WEATHERSBY: Yes.
PRESIDING OFFICER WEATHERSBY: Okay.
We'll go back to our original question when we started the day concerning, given everything
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
we've heard about the environmental impacts to water, being of course Little Bay, but also Knights Brook, vernal pools, all the other wetlands, all the other wetlands and water bodies we talked about last time we were here, whether you believe this project will cause undue adverse impact -- I'm sorry -unreasonable adverse effect on water quality.

We'll start again with Mr.
Fitzgerald.
MR. FITZGERALD: No.
MS. DUPREY: No.
MR. WAY: No.
MR. SCHMIDT: No.
MR. SHULOCK: No.
DIR. MUZZEY: No.
PRESIDING OFFICER WEATHERSBY: NO.
Okay. Let's move into the natural environment. Mr. Fitzgerald, would you lead us off with this discussion.

MR. FITZGERALD: Certainly. As with
the other topics under Water Quality, the governing statute here is RSA 162-H:16 IV (c). The site and facility will not have an
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment and public health and safety.

Under the Site Evaluation Committee Rules, $301.03(d)$, each application shall include information: 1) that identifies identification all -- identification of all other federal and state government agencies having permitting or other regulatory authority under federal or state law to regulate any aspect of the construction or operation of the proposed facility and documentation that demonstrates compliance. So this is Item 2: Documentation that demonstrates compliance with the application requirements of all such agencies. And then Site Rule 301.07(a) is regarding air quality; (b) is regarding water quality, and (c) is specific to the natural environment. I'm not going to read it because it's rather lengthy. In general, it provides a description of how the Applicant identified wildlife species, rare plants, natural communities, exemplary
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
natural communities, et cetera, and how they work with the agencies having jurisdiction; identification of significant wildlife species, rare plants, natural communities that may be affected by the construction operation; identification of critical wildlife habitat and habitat resources that may be affected; assessment of potential impacts of the construction and operation on these species, plants, communities, et cetera; description of the measures, plans to avoid, minimize or mitigate potential adverse effects of the construction and operation; and a description of the status of the Applicant's discussions with the New Hampshire Department of Fish \& Game, New Hampshire Natural Heritage Bureau, U.S. Fish and Wildlife, and any other federal or state agencies having permitting or other regulatory authorities. So that's our guiding statute and rule-specific requirements.

PRESIDING OFFICER WEATHERSBY: Mr.
Fitzgerald, I'm going to interrupt you just a
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
second. That was rule 301.14 , Subsection $E$, as in Edward?

MR. FITZGERALD: No, I'm sorry. It's 301.07 (c) 1 through 6.

PRESIDING OFFICER WEATHERSBY: SO 301.07 is the Application requirements for the effects on the environment.

MR. FITZGERALD: No, the Application requirements is $301.03(\mathrm{~d})$, I believe.

PRESIDING OFFICER WEATHERSBY: SO 301.03 is contents of application, and section --

MR. FITZGERALD: (d).
PRESIDING OFFICER WEATHERSBY: -- and
Section (d) concerns permits from federal and state governments, et cetera. And then we go to the next rule, the one you were talking about, 301 --

MR. FITZGERALD: 301.07 (a) is effects on environment. Oh, I'm sorry. I'm sorry. That is the section of what the Application is to require. I have the wrong --

PRESIDING OFFICER WEATHERSBY: SO
301.07(c) again is the Application --
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. FITZGERALD: Yes, Yes, I'm sorry. PRESIDING OFFICER WEATHERSBY: -information concerning effects on environment. And then if you go down to $301.14(b)$ for what we need to consider --

MR. FITZGERALD: 301.14, yes. I'm sorry. My mistake. I copied the wrong page. So that is the reference. And it says in determining whether a -- I'm sorry.

Paragraph (e), in determining whether construction and operation of a proposed energy facility will have an unreasonable adverse effect on the natural environment, including wildlife species, rare plants, rare natural communities, and other exemplary natural communities, the Committee shall consider the significance of the affected resident -- is it necessary to read this or -- we all have the reference; correct?

PRESIDING OFFICER WEATHERSBY: I don't think -- sorry. I don't think we need to read the entire thing. It's rather lengthy.

MR. FITZGERALD: Yeah.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

PRESIDING OFFICER WEATHERSBY: I think that every Subcommittee Member has familiarized themselves with that and knows what we need to consider. I just wanted to thank you for pointing out that that is the rule that governs what we are to consider.

MR. FITZGERALD: Thank you for correcting me.

Okay. So I've... okay. So, relative to natural environment, those are the requirements for us to consider. And then the Applicant filed the report entitled, "Rare, Threatened and Endangered Species and Exemplary Natural Communities," and prefiled testimony from their Environmental Panel. And they identified nine rare, threatened and endangered plant species and six elementary natural communities that are recorded by the New Hampshire National [sic] Heritage Bureau that may occur in the vicinity of the Project.

I also want to recall that, and I won't go over them again, but there are several proposed stipulated facts and
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
stipulated conditions that have been proposed by the Applicant and the Counsel for the Public that cover monitoring and Best Management Practices, et cetera, with these -- I referenced those all the other day relative to the water quality discussion. Very similar, so...

The Applicant has agreed to
implement Best Management Practices, and these -- relative to plants. And again, I'm not going to go into great detail. The Chairwoman and I had a brief discussion earlier, and I'm not going to go into all of the individual species and impacts and so on. I will go through the species that are identified and have been identified as having potential impacts. And again, in most cases the responses are that those impacts will be, A) extremely minimal; B) they are not long-term and/or irreversible; and Best Management Practices will be utilized to avoid, to mitigate -- you know, utilization of the, you know, bridges and not concrete mattresses, but the wooden mattresses to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
avoid impacting these habitats.
And then there's a significant piece, obviously, of the Little Bay crossing which we'll take that up separately.

So, for plants, we had identified impacts on one state-listed plant species, the crested sedge. Again, a number of mitigation conditions have been imposed. There's also a high salt marsh area that will have some impacted areas, the salt marsh system, sparsely vegetated intertidal system and the subtidal system.

Relative to invertebrates, the Applicant asserts that the state endangered ringed boghunter dragonfly was mapped to occur within the Project in Durham, and the only area with potential suitable habitat for these species was surveyed.

Relative to fish, impacted species, potentially impacted species can include the short-nose sturgeon, the Atlantic sturgeon, the American eel, the banded sunfish, the swamp darter.

And as minimization and avoidance
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
measures of the Project's impact on freshwater fisheries, the Applicant has agreed to utilize low impact tree-removal methods, such as hand-cutting. And also, they have agreed to install temporary bridges at both LaRoche Brook -- at LaRoche Brook to allow unimpeded stream passage.

Relative to reptiles, the Eastern hog-nosed snake has been identified as a state endangered species; the Northern black racer is a state endangered -- state threatened species. The Applicant will conduct sites searches and removal of the snakes if they're found to a safe, suitable habitat close to their point of capture. Construction areas that are cleared of snakes will be fenced to prevent their re-entry, and contractors will be trained to recognize certain species.

Blanding's turtle is a state endangered species. And Applicant concluded that it should be assumed that both the Blanding's turtle and the spotted turtle use portions of the Project area, but that the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

BMPs will be appropriate to ensure that they're not impacted.

For birds, the osprey is a species of special concern. Ospreys were recorded nesting in the vicinity of the Project. Site-specific surveys were not conducted; however, they will survey prior to the construction season.

The Applicant will conduct a survey for active raptor nests prior to initiation of work. They will establish appropriate buffer distances for individual nests subject to disturbance, and these individual buffers will be negotiated with regulatory agencies.

The Applicants also have designed the Project to meet requirements of the Avian Line Interaction Committee's bird-safe standards to minimize the possibility of electrocuting all types of raptors.

The Golden-winged warbler is a species of special concern. And the Applicant asserts that the power line corridors potentially provide very good-quality habitat for the species.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Grasshopper sparrow is a state threatened species. Henslow's sparrow was identified as historically present near the Project area in Newington. Least bittern is a species of special concern. The Roseate, R-O-S-E-A-T-E, tern -- this is not my area of expertise, obviously -- is seen regularly in coastal locations in Rye and New Castle. There have been no inland reports of the species. The Sedge wren was historically present near the Project in Durham. No survey was conducted, but it's unlikely that they will be present because of erratic and inconsistent distribution in New England, and no records for it have been identified.

Moving on to mammals. The Northern
long-eared bat is a state and federally threatened species. The Applicant conducted ultrasonic acoustic surveys within the proposed limits of work, and the surveys were provided in a report entitled, "Northern Long-eared Bat Acoustic Survey." The survey indicates that the bats were likely present. The survey demonstrates that big brown bats,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Eastern red bats, hoary bats, silver-haired bats, little brown bats, and Eastern small-footed bats were also presented. Some of these are species of concern. They conclude that the effect of construction and operation on this species is so small as to be inconsequential, and they have made commitment to meet the U.S. Fish and Wildlife final guidance for reducing these impacts and covering limited tree removal.

Let's see. So that covers the land and water-associated impacts of the -- the potential impacts of the Project without going into the Little Bay discussions. So I figured I'd stop there and see if there were any questions or issues that need to be addressed before we move into the Little Bay crossing.

PRESIDING OFFICER WEATHERSBY: I would just point out that a number of folks, including Counsel for the Public, had encouraged preconstruction surveys of these various species to be done. Some of the surveys at this point are fairly outdated. And
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

I would note that the Applicant has agreed to re-survey for at least bald eagles, the eelgrass and at least another one. Let's see.

Condition 34. Certified wetlands scientist or similarly qualified professional shall walk the areas of proposed activity and the wetland impact areas in particular prior to construction to survey for any rare, threatened or endangered species, and prior to ground disturbance each day to check timber mats for basking turtles and snakes. DIR. MUZZEY: Could you let us know what your --

PRESIDING OFFICER WEATHERSBY: Sorry.
I was reading from Committee Exhibit 12A No. 34.

DIR. MUZZEY: Thank you.
PRESIDING OFFICER WEATHERSBY: This is the DES February 28th letter.

It might be helpful, too. I know bald eagles were of special concern to a number of people. Maybe have a discussion about specific protections that will be in place for bald eagles.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Mr. Way.
MR. WAY: As I recall, I know there was some concern about aerial surveys had not been done of bald eagle nests. As I recall from the Applicant's briefs, it was determined that that did not need to be done. I think Counsel for the Public had that as a condition request. And I apologize if it wasn't Counsel for the Public. But as I recall, Counsel for the Public had that as a condition request that aerial surveys be conducted. I'm not necessarily sold that that should be done, but I did want to raise that because I know that that was a request that was brought before us not for -- you know, for consideration.

MR. FITZGERALD: I believe there were conditions, suggested conditions for bald eagles. I'm not sure if they were in the DES permit or in the conditions suggested by -agreed to by the CFP and the Applicant.

MR. SCHMIDT: I also believe the
Applicant has agreed to a pre-construction survey of the active nest area. So I'm not with the experts. I'm not sure what could be
gained with an aerial view. But the experts are given -- conducting the survey.

PRESIDING OFFICER WEATHERSBY: As I recall this, Applicant's expert testified that, given the time of year the activity would be happening in the area of the nest, that there wouldn't be any roosting at that time. Perhaps more specifically, the Applicant did submit a plan to Fish \& Game to address bald eagles and the nest that was brought to their attention. I'm just trying to find that plan. But $I$ know that Fish \& Game has concurred with the Applicant's recommendation concerning the bald eagle. If you give me a minute, I should be able to find what was submitted.

MR. FITZGERALD: Is that in the proposed conditions, stipulated proposed conditions? I believe that's where it's at. Does anyone know what document that was?

DIR. MUZZEY: That's Exhibit 194 -193. I'm sorry.

MR. FITZGERALD: Yes.
MR. SCHMIDT: Also, Applicant's
Exhibit 203, there's a statement or a letter
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
from New Hampshire Fish \& Game. In that there's a statement that they do not expect impacts to the nesting bald eagles, provided the Project occurs from September to December. MR. WAY: What exhibit is that? MR. SCHMIDT: Applicant Exhibit 203. MR. WAY: I'm not sure what that... MR. SCHMIDT: This is Page 2 of a letter dated October 16, 2018 to Sarah Allen. PRESIDING OFFICER WEATHERSBY: Applicant's Exhibit 203 is the letter from Fish \& Game.

MR. SCHMIDT: Yes.
DIR. MUZZEY: And this letter from the Fish \& Game specifically addresses the potential effects to bald eagle nests and sturgeon. So it's not the whole realm of natural environmental resources, but those two types in particular.

MR. WAY: I just need to make sure I'm looking at the right thing here. I have two Applicant Exhibit 203s for some reason here. One was a GeoInsight presentation listed on the thumb drive as 203, and then here's the
other one that's 203.
MS. MONROE: They're both marked as
203 also, so we'll have to square that away. MR. SCHMIDT: So this one is the paragraph that is underlined beginning "submarine cable installation" on Page 2.

MR. WAY: Okay. Got it.
PRESIDING OFFICER WEATHERSBY: So in
the letter from Fish \& Game, they're
recommending a couple things: One, that the super canopy pine trees not be cut, and if tree cutting is necessary, that Fish \& Game be contacted for input relative to the important trees and minimization of impacts. Also recommended following industry standard for raptor-safe Best Management Practices to reduce the potential for avian electrocution. So they may be conditions that have been recommended by Fish \& Game that we should consider. Those certainly seem reasonable to me.

MR. FITZGERALD: And I believe those
were -- I referenced the avian electrocution guidelines, or protection from electrocution. Yeah, project lines have been designed to Avian
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Line Interaction Committee's bird-safe standards.

PRESIDING OFFICER WEATHERSBY: I'm sorry, Mr. Fitzgerald. What are you reading from?

MR. FITZGERALD: This was in Applicant's Exhibit 57, Lines 24 and 25, that the Project has been designed to Avian Line Interaction Committee's bird-safe standards. That doesn't cover the construction activities, just the line itself.

MR. WAY: What page are you on?
MR. FITZGERALD: It's Applicant's Exhibit 57 at Pages 24 and 25.

MR. IACOPINO: Everybody remember to speak up. People in the back are having a hard time hearing you.

MR. SHULOCK: Can you repeat that exhibit number?

MR. FITZGERALD: Applicant's 57.
Pages 24 and 25 is the reference. I believe those are actual pages, not electronic.

MR. WAY: So, back to my original
question about the need for aerial surveys.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

I'm not seeing anything in any of the exhibits that incorporate aerial surveys or suggests that there is a need for aerial surveys prior to construction.

PRESIDING OFFICER WEATHERSBY: SO I'm going to direct your attention to Applicant's brief, PDF Page 167. So it's Applicant's post-hearing brief, PDF Page 167; it's actual Page 162. It's the section of the brief where the Applicant is addressing Counsel for the Public's suggested conditions. And in Condition No. 2 concerning pre-construction aerial surveys for active raptor and bald eagle nests, the Applicant agrees that a combination of aerial and ground surveys is an effective monitoring method for pre-construction raptor nests. And it goes on later that Eversource will conduct ground surveys in the right-of-way to determine the presence of raptors that nest within the tree canopy, and also agrees to conduct pre-construction aerial surveys for active raptor and bald eagle nests which may not be visible from within the right-of-way corridor.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. WAY: Sounds good.
MR. FITZGERALD: Madam Chair, also, bald eagles were actually considered as part of the Little Bay crossing which I had not gotten to yet.

It's noted that the Little Bay -that Great Bay hosts more than 500 migrating Canadian geese and black ducks and a hundred other diving and dabbling ducks and shore birds. It goes on. The American bald eagles, which are a state threatened, and osprey, state special concern, are fish-eating birds of prey that breed in Great Bay. The Applicant asserts that the construction will not disturb the eagles during the February to July nesting season, and that most work will be shielded by trees and will be outside the 600-foot buffer that has been recommended by U.S. Fish and Wildlife in its 2007 National Bald Eagle Management Guidelines. The Project has asserted that it will not be in violation of the Bald and Golden Eagle Protection Act. No bald eagles will be harassed or injured.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

As to mitigation and avoidance measures, the Applicant has agreed to conduct a preconstruction survey of active nests by surveying the right-of-way. Fish \& Game has recommended avoiding cutting of super canopy pine trees that are used as a perch for bald eagles and recommends to contact the Department for its input if tree-cutting will have to be conducted within the vicinity of the bald eagle nest. And then the Department recommended the Applicant follow industry standards for raptor-safe Best Management Practices. So I guess the discussion -- the concern that $I$ have is that, having looked at the DES permit which incorporates a number of Fish \& Game, just a quick look, I didn't see anything there. I may have not gotten through it all. But second, I don't see anything in the stipulated conditions either, other than that very general No. 8 that covers the Applicant agrees to all Best Management Practices.

So I guess the question is if it's presumed that the bald eagle Best Management
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Practices are covered under that sufficiently.

DIR. MUZZEY: Fish \& Game's letter in Applicant 203 references a letter dated September 6, 2018 from Normandeau Associates and the Best Management Practices that are noted in that letter. And I'm having a little bit of a tough time finding that letter. Does anybody know what exhibit that is? It was a letter dated September 6, 2018 from Normandeau Associates to Fish \& Game.
(SEC Members reviewing documents.)
PRESIDING OFFICER WEATHERSBY: Maybe you're referring to the Applicant was to or has developed a plan concerning the eagles and the raptors. I'm trying to find it. It may be that that was sent to Fish \& Game. I'm trying to find the exact name of that plan that has been created. If we could find that, we can probably find what they've presented to Fish \& Game.

DIR. MUZZEY: Applicant Exhibit 124, we have a plan with a date on it of September 15, 2017. But that's a year prior to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
this other exchange. And perhaps we don't have the original letter. I'm not sure, but... I don't want send people on a wild goose chase if you can't find that. We should continue on with our deliberations.

MR. FITZGERALD: So I would note that the DES permit, although I don't find a specific reference to bald eagles, Condition No. 32 does reference at least 60 days prior to the start of construction, the Applicant shall notify and coordinate with New Hampshire Natural Heritage Bureau and New Hampshire Fish \& Game, to the satisfaction of those agencies, to establish protocols for encounters with any rare, threatened or endangered species during the Project and shall submit the agreed protocols to NHDES. Applicant shall then implement the approved protocols as a condition of this approval.

MR. IACOPINO: If you look at Exhibit 189, go to electronic Page 14. That is a letter dated September 6, 2018 to Fish \& Game from Sarah Allen, Program Manager for

Normandeau. And I believe it discusses bald
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
eagle, sturgeon updates and specific avoidance and minimization measures.

MR. FITZGERALD: I'm sorry. You said Exhibit 189?

PRESIDING OFFICER WEATHERSBY: 189 and starts on Page 14. Page 15 concerns the bald eagles.

DIR. MUZZEY: Thank you. That's what
I was looking for. One of the reasons $I$ was looking for it is because we know that fairly recently there was a newly recorded bald eagle's nest very near the SRP right-of-way. So my concern was whether or not we had updated information from Fish \& Game that post-dated that discovery. And given that the discovery was in July of 2018, in Applicant Exhibit 208 we do have a letter from Fish \& Game that post-dates that new discovery and comes to an agreement as to how the eagles should be protected. So that reassures me.

I also wanted to mention, because it does seem to be a theme with this proceeding, if we take a look at the conditions in the permit from Environmental
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Services and we take a look at PDF Page 9, Condition 29, we also see the continuing role of an independent environmental monitor in regard to the natural environment. The monitor's task is to assure compliance with the many permit conditions that protect the natural environment both during and after construction activities, one year post-construction corridor monitoring after a full growing season. And then there are more details that follow that as well. So we do know that there are many conditions that are attached to the construction and operation of this proposed project. And the presence of an independent environmental monitor does reassure me that compliance will be carefully and independently monitored and reported to the appropriate agencies.

MR. FITZGERALD: I'd also reference the DES permit at electronic Page 21. These are lists of findings. No. 20, which is the Applicant has coordinated -- this is a finding, not a condition. Applicant has coordinated directly with New Hampshire Fish \& Game
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Department regarding impacts to sensitive species and habitats from the proposed project, and the Applicant will directly coordinate with NH Fish \& Game prior to and during construction to minimize other potential impacts to sensitive species and habitats. Additional coordination, review and approval as required by NHDES permit conditions are intended to address the requirements of ENV-Wt 302.04(a)7. PRESIDING OFFICER WEATHERSBY: Okay. So it sounds like there's a lot of safeguards in place for the bald eagles in particular, that most of the work will be outside the 660-foot protective buffer recommended by the National Bald Eagle Management Guidelines. The only exception to that, both overhead and bay construction, is the relocation of the cable house goes approximately 10 feet into that buffer. But we made time-of-year restrictions for that.

So, concerning the ball eagles, in my opinion, they were fairly well protected. I would just add that extra layer, which is adding Fish \& Game's recommendations of its
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

October 16, 2018 letter, that if -- basically trying not to cut super canopy pine trees. But if it does require tree-cutting, that Fish \& Game be contacted for input concerning the trees and minimization of impacts and that the Applicant follow raptor-safe Best Management Practices which may or may not have already been covered.

Does anyone feel differently or
want to talk any more about bald eagles?
DIR. MUZZEY: So is it your understanding that the raptor and bald eagles Best Management Practices includes the combination of aerial and ground surveys that Eversource has agreed to conduct in its post-hearing memo?

PRESIDING OFFICER WEATHERSBY: I
don't know specifically.
DIR. MUZZEY: Have we closed that
loop? That's what I'm --
PRESIDING OFFICER WEATHERSBY: I
think the Applicant -- so, for conditions concerning the bald eagles, we can add as conditions the suggestions of Fish \& Game as
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
referenced in their October 16, 2018 letter, the conditions that the Applicant has agreed to in their brief, and also, of course, the DES permit requirements.

DIR. MUZZEY: Thank you. That seems thorough.

MR. WAY: I agree with that as well.
MR. SCHMIDT: I agree as well.
PRESIDING OFFICER WEATHERSBY: Would anyone like to talk further about any plants, invertebrates, fish, reptiles, birds or mammals without getting into the impacts of Little Bay crossing which we're going to take up? Would anyone like to comment further or discuss any of this further?

MR. SCHMIDT: Did you say you wanted to keep Little Bay crossing separate?

PRESIDING OFFICER WEATHERSBY: We're going to get into that in a little more detail. Yeah, I would make the comment, when Mr. Fitzgerald was talking about -- I know we're getting into the Little Bay area -- but the salt marsh and the salt marsh system, the subtidal system, et cetera, that
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
there is a salt marsh restoration plan that's been put forward. And DES -- getting into that? Okay. Sounds like a good segue.

MR. FITZGERALD: Okay. I just also want to note that CFP Exhibit 1 has -- it's been indicated to me that it has a list of conditions that the CFP's environmental experts suggested. I don't know whether we had testimony or not or whether those were all incorporated into the CFP's recommended stipulated conditions. I would suspect so, but I don't know. My reference is Counsel for the Public Exhibit 1, Pages 6 to 8.

MR. WAY: And your question is?
MR. FITZGERALD: Well, just that this is a list that Counsel for the Public's experts submitted recommended conditions. So I guess my question is do we --

MR. IACOPINO: I have a list of those if you want me to go through them.

MR. FITZGERALD: A list of what?
MR. IACOPINO: The conditions that
Counsel for the Public proposed.
MR. FITZGERALD: Yes. Well, I've
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
referenced some of them from this, the stipulated conditions. But if there's particular ones that would be helpful here, I think that -- I don't know that $I$ had all of them. I looked at the ones related to environment and water quality.

MR. IACOPINO: I would just draw your attention to Page 68 of Counsel for the Public's brief, where they request that pre-construction surveys should be conducted for all rare, threatened and endangered species that are in the right-of-way or may have habitat within the right-of-way. And they complain that many of the Applicant's consultants original surveys are now more than two years old. The Applicant objects to that. They also asked for -- we just dealt with the raptors.

So the next one is also at Page 68.
Counsel for the Public asked, to the extent construction activities are proposed for winter areas where rare, threatened or endangered snake or turtle hibernacula may be present, the Applicant should be required to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
have environmental monitors perform sweeps -(Court Reporter interrupts.)

MR. IACOPINO: -- remove identified rare, threatened or endangered species and install exclusion fencing. And Applicant objects in part to that. And then -- those are the only the two that I got above and beyond the raptors --
(Court Reporter interrupts.)
MR. IACOPINO: -- re-surveying and sweeps.

DIR. MUZZEY: Mr. Fitzgerald, going back to your question regarding the prefiled testimony in Counsel for the Public's Exhibit 1. It's dated, as we would expect, July 31st, 2017. And since that time within the proceeding, I think a lot of the concerns listed on Pages 6 through 8 have been considered by the agencies involved, and what we are left with are the concerns that Attorney Iacopino just listed: Whether pre-construction surveys should be updated; the aerial survey, which we know has been committed to for bald eagles and raptors; and then the concerns for
winter areas where snakes or turtles may be present.

So I think I would agree with Attorney Iacopino. We're left with those first and third considerations as to whether or not additional conditions may be needed. And in the Applicant's post-hearing memo, November 21, 2018, pages PDF -- well, paper Pages 162 and 63, the Applicant does address those concerns that continued for Counsel for the Public. And if we take a look at 1 and 3, we see that the Applicant does have a slightly different opinion regarding the snake and turtle sweeps and the pre-construction surveys, although they have agreed to the raptor and bald eagle requests by Counsel for the Public.

MR. WAY: What page are you on?
DIR. MUZZEY: I have a paper copy.
So I'm looking at paper Page 162 and 163.
MR. WAY: Okay.
PRESIDING OFFICER WEATHERSBY: With regard to the sweeps, DES, what they're calling the "Revised Final Decision" -- it's Committee
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Exhibit 12D, Condition 34, I've referred to it before -- but it requires a New Hampshire certified wetlands scientist or similarly qualified professional to walk the areas of the proposed activity and the wetland impact areas in particular prior to construction to survey for any rare, threatened or endangered species, and then prior to ground disturbance each day to check timber mats for basking turtles and snakes. So I take that as they're going to -anywhere there's going to be construction, they're going to walk that area and look for any rare, threatened or endangered species, and then prior to ground disturbance each day check for basking turtles and snakes. To me, that's not limited to wetland impact areas. It's qualified professionals are going to walk the areas of proposed activity.

DIR. MUZZEY: We heard testimony as well during the hearings as to how that would work, and it did seem to be a process that was well known within the field and one that, as further described in testimony, seemed to be a thorough attention to the matter.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

PRESIDING OFFICER WEATHERSBY: I am a little confused. I think I may need Mr. Fitzgerald's help. I seem to recall that when folks are walking the corridor looking for endangered turtles, et cetera, that's a "sweep" and not a "survey." Here they're being required to "survey" under Condition 34.

MR. FITZGERALD: Right. My understanding reading the documents is that a "survey" is intended to identify whether species are present or not and that a "sweep" is prior to construction, to go out and look specifically for those ones that have been identified and, you know, as with snakes and turtles and other things, to remove them from the paths of actual construction to a safer location either within or outside the right-of-way.

PRESIDING OFFICER WEATHERSBY: So it seems as though Condition 34, they're actually being asked to survey for rare, threatened endangered species prior to construction. So some I guess would say that has been satisfied by doing it in the past. Maybe perhaps that's
what Counsel for the Public -- I know they want more recent surveys. I have a hard time believing this is a new requirement, to be satisfied by something in the past.

DIR. MUZZEY: Given the wording you just suggested awhile ago while addressing raptors and eagles and the adoption of commitments in this post-hearing memo I think would cover both the concepts of "survey" and "sweep" in combination with the DES conditions.

PRESIDING OFFICER WEATHERSBY: It does go back to the issue, though, of whether a survey that's already been completed can be used to satisfy this Condition 34, even if it's four years old.

DIR. MUZZEY: We could rely on the Department of Environmental Services to make that determination. I have to believe somewhere in the rules, the very comprehensive rules that exist at Environment Services, that there would be a requirement as to how recent surveys have occurred. I'm comfortable with relying on their expertise in this matter.

PRESIDING OFFICER WEATHERSBY: I
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
think to be sure, we can always say the Applicant shall inquire if they're relying on a survey more than one year old or something, relying on a previously done survey and they shall verify with DES if that survey is acceptable to meet Condition 34.

MR. SCHMIDT: I would agree with that. That covers in case there was not specific in the rules.

PRESIDING OFFICER WEATHERSBY: SO, adding a clarification or further condition that if the survey -- if they're relying on a completed survey, the Applicant shall consult with DES to see if that survey is acceptable to DES, or whether DES will require a new survey. That's what -- people think that's a good idea? Anyone disagree or want to talk about it further?

MR. IACOPINO: I have a question. You're talking about just for rare, threatened or endangered species; correct?

PRESIDING OFFICER WEATHERSBY: Yes.
Anything else about plants, invertebrates, fish, reptiles, birds,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
mammals, not including impacts to Little Bay cable crossing on such organisms? Anything else you want to talk about?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: Okay. Let's move on to the impacts of Little Bay Crossing.

MR. FITZGERALD: Okay. The first identified impact is the salt marsh. And the Applicant has identified 1456 square feet of salt marsh that will be temporarily impacted. The Applicant has developed and filed a salt marsh protection and restoration plan, and that plan requires all construction restoration will be performed under the supervision of an engineer and an environmental monitor. So, excavation of the marsh will be limited to only that area necessary for burying the cable. Again, the Applicant has agreed to use mats and specific construction practices, and so they've put necessary monitoring and BMP requirements in as well.

Anyone have any questions with
regards to salt marsh?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
[No verbal response]
MR. FITZGERALD: Microalgae [sic]. The Applicant asserts that a rocky substrate will be replaced at the completion of the Project of the cable installation. Same species of microalgae will re-colonize normally after construction is complete. This is where consideration of concrete mattresses comes into play. And the concrete mattresses have been proposed to be placed where the cable cannot be placed to a depth of three and a half feet. Again, it is indicated that the same species of microalgae that are present on areas where the concrete mattresses will be laid will re-colonize on the concrete mattresses.

MR. WAY: Mr. Fitzgerald, not to correct, overly correct, but when you say "microalgae" I think you mean macro --

MR. FITZGERALD: Macro, yeah.
MR. WAY: I just want to make sure there.

MR. FITZGERALD: Excuse me.
MR. WAY: Thank you.
MR. FITZGERALD: It's a long night.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Thank you.
So next, eelgrass is a
consideration. We have a significant amount of testimony regarding the importance of eelgrass in Great Bay. And it has been impacted in the past and is at this point redeveloping in areas of Great Bay and returning. So that's an important issue. And the Applicant agrees that it is highly unlikely that the Project will cover any established beds of eelgrass and that water-quality monitoring has demonstrated that the plume of deposition of suspended sediments will not reach any established eelgrass beds. The Applicant has agreed to survey for eelgrass and, if it's detected, to work with the regulatory agencies to develop appropriate mitigation. Again, there are BMPs in place, and DES has required the Applicant to conduct an eelgrass survey the summer before construction and approximately one year after work is completed. DES had not received that plan as of the August 31st letter that we received from DES. So we
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
might want to make sure that that's -- you know, that is required to be submitted.

Any questions about eelgrass?
DIR. MUZZEY: I would just note,
since I'm the one who seems to be continuing to bring this up, but that we also have an independent environmental monitor working on these issues that you have mentioned. The monitor's empowered to order corrective actions and/or the temporary cessation of construction activities, which, again, provides some independent reassurance in regard to all these many conditions.

MR. FITZGERALD: Thank you.
PRESIDING OFFICER WEATHERSBY: And
forgive me if you mentioned this, but I also seem to recall that, regarding water quality, when we were talking about eelgrass, that the modeling that was done indicated that the plume sediment wouldn't reach any existing, established eelgrass bed.

MR. FITZGERALD: That's correct.
Yes. Also, obviously the trial run will
confirm that that modeling is appropriate and
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
can be relied upon. So... or not.
With regards to shellfish, obviously we heard a lot about oysters. There's also softshell clams and razor claims. It's estimated that softshell and razor clams will be to some extent impacted by sediments, but that due to the very limited nature of the amount of sediment, that they are expected they will survive. Concrete mattresses could have impacts on shellfish that are in the sediment that will be covered. Applicant has estimated that artificial material may provide suitable substrate for microalgae and oysters actually to grow. So it's -- they could -- they would certainly come back as well. Nearest mapped natural oyster reef is located offshore of the southeastern point of Adams point.

We had a lot of testimony with regards to oyster farms, but this is referencing the natural occurrence. And the Applicant has asserted that if it is associated with the Project, may cause
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
mortality to oysters if it's approximately a half-inch thick. But the testimony suggested that deposition closest to the oyster bed will be on the order of 200 ths of an inch, and therefore the Project should have no discernible effect on the natural oyster beds. There will be plume flow towards Joe King Oyster Cooperative and Fat Dog. The modeling estimates that suspended concentrations will be 10 to 20 milligrams per liter; thus, there will be no impact on oysters at these farms because the concentrations are within the natural sediment exposure.

So the Applicant also argued that
the plume associated with the Project will
not have a negative impact on the oyster
farms because research has demonstrated that
eastern oysters exhibited no discernible
response to a three-week exposure to
concentrations as high as 700 milligrams per
liter, significantly higher orders of
magnitude higher than what are anticipated.
So Applicant has also argued that
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
impacts to farmed oysters through increased exposure that will be disturbed as a result of jet plow will be negligible because they expect that the thickness of the sediment deposited will be less than a tenth of a millimeter thickness contour.

So I think we had a significant amount of testimony and information presented with regard to shellfish. Again, there have been procedures put in place, conditions relative to the DES Shellfish Program coordination. As we heard, certain parts of the bay have been closed. And DES, you know, would coordinate with this work to ensure there were no impacts on oyster farms or shellfish.

So I guess with that, is there any questions with regards to potential impacts on shellfish?

MR. SCHMIDT: I'd like to talk a little bit about some of the testimony we heard at the Newington evening meeting and that the Town of Durham has raised regarding pathogens in the silt and the possibility of stirring
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
them up.
DES hasn't submitted a requirement for testing or monitoring. The Town of Durham has asked for it to be tested for microbial pathogens. I just wanted to open that up to the group to see what the general thought on that was. The individual who testified in Newington introduced himself as a doctor, a medical doctor with expertise in that particular field, as well as combat exposures. But he did seem knowledgeable about this as well. Just want to get a sense of the group.

DIR. MUZZEY: In my notes I also have, and you may have said this, that the oyster farmer from Fat Dog also requested that type of testing be done as well.

MR. SCHMIDT: Right. That's correct.
I happen to have it in my notes as well.
MS. DUPREY: I know nothing about this whatsoever, but $I$ was interested in the fact that DES seems to pay pretty close attention to what goes on with oysters in the bay. We had testimony provided to us saying
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
they were closing down certain beds, I think for a period of two years. I can't remember the period. But for whatever reason, two years sticks out in my mind. I think it was in the northern end of the bay. And so it seemed to me that, given the fact that they're actually active in terms of saying that certain oyster beds in particular areas can't be used, that this must be something that they are regularly involved with. So that, I guess, provided me with a level of comfort with what was in their permit with respect to this. So that's all I had to say.

MR. SCHMIDT: My understanding, that particular issue was raised at the evening meeting. My understanding is there's a different type of testing for things like red tide and so on that causes the closure than this particular element.

MS. DUPREY: So you're saying it's not a focus of what DES normally looks at?

MR. SCHMIDT: That was my
understanding from the testimony.
MR. SHULOCK: I just wanted to point
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
out that the final permit does require tissue sampling of the oysters for deleterious substances. And they're listed. I don't see these substances listed: Chemotherapeutics. I don't know what those are. Metals, lipid content, something called PAHs.

MR. FITZGERALD: Polyaromatic hydrocarbons.

MR. SHULOCK: Pesticides and polychlorinated biphenyls, PCBs. But I don't see these particular organisms being tested for.

MR. WAY: I think that was my understanding, too. There's quite a bit that's being required by the shellfish program. Pretty substantial. But I don't think it's the pathogen testing that others have been asking for, and I think part of that stems from an earlier conversation we had that the bay is an emptying point for treated effluent coming from the treatment plants, a lot of non-point sources that are coming in, and that there's the potential for having pathogens in the column. I guess the questions that I have in
my mind is my understanding is that the type of pathogens we're looking at probably wouldn't have posed a significant risk in the column because of the lifespan and how far they travel. But I don't know enough to make a comment one way or the other. I do think that DES has a pretty good handle on this. I think others testified they have a confidence in the shellfish program. So I think I would defer to DES on this one. But $I$ understand why it's being asked.

MR. SCHMIDT: So do you think it's covered in any existing shellfish monitoring? Is that your understanding? Is that what you were --

MR. WAY: Pathogen testing?
MR. SCHMIDT: Yeah.
MR. WAY: I don't think so. I think what DES has said is that they have not -- they do not think that it's an issue. But obviously DES is giving a lot of effort towards several other testing parameters mentioned by Mr. Shulock.

PRESIDING OFFICER WEATHERSBY: Does
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
anyone have an inkling as to what would be required if testing for the requested pathogens was required? You know, if they're testing for all these other things, can they just run another sample through? You know, how onerous would this -- were we to require additional testing, how onerous it might be. I don't recall testimony on that, and I don't know if anyone has any life experience or can add anything to my question.

MR. SCHMIDT: I don't think it was covered in testimony and I don't have any experience. Excuse me, Mr. Way.

MR. WAY: I was going to say I have some, but I'm not sure I'd want to hazard a guess. I did look through the testimony to try to get a sense about what that would take, and I didn't really -- I didn't see much other than one side wanted it and the other side said it wasn't necessary. And so I think that's where we're at.

MR. FITZGERALD: The DES permit,
Condition 46, required the shellfish program monitoring and reporting requirements. And I'm
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
on electronic Page 13. It's Committee Exhibit 12C. It requires at least two weeks prior to the start of jet plow, Applicant shall notify the shellfish program of the dates and times of all the activities, and it indicates so that NHDES may assess possible changes in water column for fecal coliform concentrations that may warrant temporary closure. I think it's my recollection that some of the testimony indicated that there were concerns, and I believe it was one of the UNH professors, that there were possibly pathogens present that -fecal coliform is an indicator of human waste. And obviously, you know, it may be present in wastewater treatment systems that discharge into the rivers and the bays and therefore may be present in sediments. And if it is, it will -- there are particular protocols that the shellfish program have.

It's my recollection that one of the UNH experts testified that there were other pathogens that were similar, but were not necessarily identified as fecal coliform is. So I believe the shellfish program,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
although $I$ can't put my finger on it, you know, may have considered that. But the requirement here, they had the opportunity to meet and speak with the Durham experts. And they state in this requirement that the blue mussels and American oysters shall be the species to be tested. And they go on to discuss the locations where testing shall occur at constituents, which was mentioned previously by Mr. Shulock, one of which is fecal coliform. And they also specified that the test methods and protocols shall be consistent with methods and protocols specified in the National Shellfish Sanitation Program Guide for Control of Mollusk and Shellfish, 2015 Revision.

So, it seems to me that DES
certainly had an opportunity to consider this to determine whether it was necessary or not, and that although it may have been something of great concern to the experts, that they were relying on these national guidelines and whether -- I don't know if this is new information. We didn't get a lot of
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
background on that, as far as I recall.
PRESIDING OFFICER WEATHERSBY: Mr. Way.

MR. WAY: The point I had made the other day about the DES and the experts from UNH, to your point, Mr. Fitzgerald, that once again, this wasn't done in a vacuum. And they did have an opportunity to meet with DES about the Application. And I'm looking at Exhibit 204, which once again are the notes of that meeting. And my thought was when $I$ went back to this, that pathogen testing would have risen to a level of that discussion. I don't see it having come up in that discussion.

Conservation Law Foundation was also in that meeting as well. And yes, the handwriting is somewhat cryptic. But I'm not seeing it there. So once again, I think as things came up, DES considered this. And I think, once again, the shellfish program has a good handle. So I'll leave it there.

PRESIDING OFFICER WEATHERSBY: SO while we're talking about pathogens, I guess I'll direct your attention to Transcript
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Hearing Day 13. I believe it's the morning. Page 193, but really it goes down 194 and 195. This is when Mr. Jones was -- Mr. Jones and Mr. Dacey were testifying. The issue about pathogens came up and testing for them came up about -- there was a discussion about the fecal coliform. And Mr. Jones's opinion was that testing did not include other pathogens, virus contamination. That's not anything that would be included in a routine microbiological testing, and he proposes the condition that as part of the shellfish monitoring program microbial pathogens testing be done.

MS. DUPREY: I couldn't get a feeling for what all that means. Could you summarize it?

PRESIDING OFFICER WEATHERSBY: I think that he has a concern that the testing that's done on the water for the usual contaminants that are part of the wastewater going into the river and into the bay, that the routine testing of those for those substances, such as fecal coliform, don't include testing for pathogens. And he would like -- and
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
nowhere else in the shellfish testing program are those being asked for. He would like to add the microbial pathogen testing. He's not very specific other than viruses. Mr. Jones's point was that he thought that should be added. I'm not sure how to judge that statement, but that seems to be his position.

DIR. MUZZEY: And looking at that same day of testimony, beginning at the bottom of Page 14, probably with a different person asking Dr. Jones questions, he talks about that as well and mentions that the Great Bay Estuary receives water from seven different rivers that have wastewater treatment facilities. And he talks about the various contaminants that come out of those, as well as impervious surfaces of urban areas, and characterizes them as "bacteria, viruses, parasitic pathogens of humans that end up in the sediment and then become part of the shellfish system as they do their work as filter feeders." And at that point, interestingly he characterizing it both as a public health concern, as well as more of a natural environment concern for the oyster's
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
health, but the public concern being as people eat those oysters.

MR. WAY: As I read this transcript, I think just last week as $I$ was preparing, it doesn't give me any added information on why pathogen testing is needed, really. It sort of said something of what $I$ think was a generally stated concern is that you have treatment plants nearby. And treatment plants have pathogens in the effluent, e. Coli in the effluent, and that could be in the sediment. But I don't think there was much more to offer than that.

When I looked at this transcript, and in particular to the Chair's statement, at the end of this transcript it didn't really give me information. It just said the obvious. And there's no real proof that this is going to be an issue. It seems to be a "what if" at this point without a lot of substantive of why we might require that if DES has already chosen not to require that. So if I'm going to be second-guessing DES in the shellfish program, I think $I$ would need a
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
little bit more than it would be a good idea because it could conceivably be an issue.

MR. SCHMIDT: I think this area is unique being so close to the bay. And that's primarily my concern. It's not, so to speak, organic matter, fecal matter released. It's what other chemicals could have spilled into the bay. And I'm not sure -- not that DES is remiss. I'm just not sure if they're testing for things like that. I get the sense it's off their radar. And I don't think it's remiss or anything. It's just a relatively new concern. We've seen folks being exposed to things that we see 20 years later some of the symptoms. And that's my concern is some of the uses of the bay previously.

MR. WAY: And so to make sure, because $I$ think this is a good discussion for us to have, so when we look at the list of testing parameters, Mr. Shulock, where did you have that before?

MR. SHULOCK: 12D. It's the final permit. It's Committee Exhibit 12D I think or 12A.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. FITZGERALD: It's actually 12C.
DIR. MUZZEY: One is annotated and one is not. One of the reasons why we have so many letters.

MR. SHULOCK: I was looking at 12A.
MR. WAY: All right.
MR. SHULOCK: And it's Condition 46, the constituents that they test for, starting on electronic Page 48, constituents for tissue analysis.

MR. SCHMIDT: Where did you say it began? I'm sorry. What page?

MR. SHULOCK: Electronic Page 14.
MR. WAY: I'm looking at the pesticides, PCBs --

MR. SHULOCK: PAHs --
MR. WAY: Heavy metals.
MR. SHULOCK: -- chemotherapeutics and deleterious substances. I mean, I wouldn't know whether any of these were used at Pease Air Force Base or not or if any are missing from the list.

MR. SCHMIDT: Right. And likewise, I'm not an expert on the details. Certainly
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
these seem to cover a pretty solid foundation. It goes from PCBs to -- well, that's one of the few I recognize.

PRESIDING OFFICER WEATHERSBY: I think the assertion is that pathogens are missing from this list. And I got the sense they're not coming from the former Air Force base, but it's more things that get flushed down the toilet and end up in the water. And I am concerned about that. I don't know if it's a legitimate concern. But obviously, I mean, there's people who are eating these oysters that are filtering all this, and $I$ want to err on the side of safety.

Ms. Duprey.
MS. DUPREY: I was looking at the transcript again, and I'm looking at Page 131. I actually questioned Dr. Jones about the gaps that he saw in the testing. I really hit him right with it. And he basically said we're identifying gaps in what DES permitted. He was, I think, quite clear in his testimony that he had brought this to DES. I said to him, Why didn't you work with these people all the time?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Why didn't you phone them up? If this is so imperative, if this is so important, why wouldn't you get on the phone and call them up? And he said, I work with them and talk with them all the time. I have a continuing conversation about this. So this is not a case of something came up at the last minute and it didn't get ruled upon or it didn't get reviewed by DES. This is a case of our job is to find the gaps. You know, $I$ don't deny that that's, you know, basically what their expert testimony relates to, but that DES didn't agree. So I don't want people to eat unsafe oysters. I don't think anybody wants to risk that happening. At the same time, I don't feel like we should be asking for testing that the expert in the field, which I think we can clearly say DES is the expert in the field, didn't find was necessary to this, with a person who as the expert didn't feel he needed to pick up the phone and call his contact at DES because he talks about this all the time. So it just seems to me that there's a disagreement between the two experts. And the question comes down
to: Do we want to step over DES and order something that they didn't order because it's a risk, in which case we would sort of be saying we put more trust in the testimony of Dr . Jones, or do we leave it with the agency? I guess for me I'm going to leave it with the agency.

MR. FITZGERALD: Madam Chair, also, if I could, looking back at my notes of the testimony when the Durham environmental experts were questioned by the Applicant, I have notes here that they were asked, Were all your concerns regarding pathogens raised in testimony communicated to DES? And I believe their answer was yes. So, you know, it seems to me they had a significant opportunity to present this information and that DES chose not to incorporate that requirement. And it's not -- I don't think that Little Bay is unique. You know, you have effluent from a number of communities that is being discharged into rivers. It's going into the bay. The bay has obviously been impacted by nitrogen and other things and so on. But this is not a new -- you
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
know, DES deals with wastewater going into water bodies all the time. And I would suggest that they have significant experience.

And with regard to Mr. Schmidt's
concerns, I will just assert that the Pease Air Force Base is probably one of the most highly studied sites in the country, in terms of it's a Super Fund site, in terms of its environment and conditions and clean-up. It's been being worked on since the base closed over 20 years ago. And the characterization and information related to that site is overseen and documented by EPA and DES and the Department of Defense. So the constituents, probably the only new issue that they're dealing with, and there's some concerns have been raised, is PFAS compounds, which are a relatively new development. But the rest of these requirements are related to historical activities. And, you know, DES knows, to the best it can be determined, obviously, the history of the base and all of the activities, and it's been characterized and studied for more than 20 years. So I
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
believe DES has a sufficient volume of information to determine what constituents are present there and should be monitored for.

PRESIDING OFFICER WEATHERSBY: Mr. Way.

MR. WAY: I think sort of the last thing I'll say on this topic, actually, when I started out looking at this and considering the condition, $I$ was favorable to the condition because it made sense to me, okay. You know, I mean, pathogens could come from wastewater treatment, from other sources. It's something that could be taken up. So when I was looking at, once again, the transcripts, the DES permit, all these things, $I$ was looking for something that would give me something to really take it across the finish line. And, you know, so when 1 look at transcripts, you know, back on Day 13 from the witness panel of Jones, you know, they, meaning the pathogens, remain viable. And if they're stirred up back into the water column -(Court Reporter interrupts.)
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. WAY: They remain viable. And if they're stirred up back into the water column, oysters and other bi-valve shellfish, they're filter feeders. They take them up. They bring them into their tissue. They're now alive. And people potentially eat them. They can get sick. So there's no time element out there. There's no -- there's nothing that shows under what conditions and for how long something that would show that that's indeed going to be a problem in the soil sampling. And I guess that was what didn't do it for me, in terms of bringing this to a condition $I$ would ask for.

PRESIDING OFFICER WEATHERSBY: I
think you meant to say "water sampling" just now.

MR. WAY: What did I say?
PRESIDING OFFICER WEATHERSBY: YOu said "soil sampling" for the sediment.

MR. WAY: Thank you.
PRESIDING OFFICER WEATHERSBY: One thing as I reviewed all this, everyone here has a concern. We don't want to make people sick. We want to make sure everything's tested that
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
needs to be tested. Listening to you all talking about how rigorous DES is and that it was brought to their attention and yet it's still not included, that's somewhat persuasive for me. And as I review it, what kind of brings it over the line for me as I reviewed it is Mr. Jones does indicate that the FDA also is involved here. And they require the state shellfish program to evaluate the waters where they allow commercial or recreational
shellfishing. This is in Day 13, Afternoon, Page 17. This is when he went on and talked about how they use the dye with the Portsmouth wastewater treatment. I don't know if you remember all that. So the FDA tells the state, you know, these are things you need to test for. And yet, despite all this, it doesn't seem as though it's a concern to -- enough of a concern to FDA or DES to require pathogen testing.

So as much I want to err on the side of safety, it seems as though this has been analyzed and considered, and yet still not being required. So I'm not sure that I
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
can substitute my judgment and require something that may be very onerous. I'm not sure when governmental bodies that are in charge of public health are not so requiring. MR. FITZGERALD: Also like to indicate that CFP's environmental consultants indicated they felt that the Applicant had adequately characterized the potential environmental impacts with the work associated with the installation of the submarine cable and did not bring this issue to light any further as well.

PRESIDING OFFICER WEATHERSBY: Anyone want to talk further about pathogens? Okay. Why don't we take a short break and come back and we'll finish up on Little Bay impacts. About ten minutes.
(Recess was taken at 3:34 p.m. and the hearing resumed at 3:48 p.m..) PRESIDING OFFICER WEATHERSBY: We'll resume our discussion concerning the natural environment. We had been discussing shellfish, including oysters and testing. Is there anything else we want to talk about shellfish,
or shall we move on to benthic infauna, lobsters and horseshoe crabs? Anything else on shellfish?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: Let's move on then, Mr. Fitzgerald.

MR. FITZGERALD: Okay. Our next creatures are benthic infauna, lobsters and horseshoe crabs. The Applicant indicates benthic infauna will be displaced into the water column and that the benthic infauna may be exposed to magnetic fields associated in the Project. And then the Applicant has agreed to conduct benthic infauna community monitoring --
(Court Reporter interrupts.)
MR. FITZGERALD: And the DES informed the Subcommittee that they expected the Applicant to file a revised benthic infauna community monitoring plan on August 28th. I did not research as to whether or not that had been submitted yet.

Then the Applicant has indicated that the population of lobsters and horseshoe crabs are not available for Little Bay.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Lobsters could be impacted. They burrow into the substrate during the day and could be impacted by the jet plowing. It's concluded, however, that entrainment will unlikely have a significant effect on the population because the volume of water required to jet plow will be very small compared to the volume at Upper Little Bay.

Horseshoe crabs are located along the path of the jet plow and could be displaced -- will be displaced. So the Applicant has indicated that it's unlikely that adult individuals that will be displaced that are buried under a thin layer of sediment will experience more than a very minor impact.

The Applicant has indicated that installation of the cables will temporarily affect bathymetry along 100-foot-wide swath crossing of Little Bay, may cause excess deposition adjacent to cables, and that DES has required the Applicant to obtain approval of the benthic habitat monitoring plan 60 days prior to the start of construction.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

So unless there are any questions, I think that covers the benthic infauna and lobsters and crabs.

PRESIDING OFFICER WEATHERSBY: There is a request by Counsel for the Public that we should take up concerning testing. Let me find that.

MR. FITZGERALD: This is the bathymetric survey issue? The Applicant has agreed to conduct a bathymetric survey immediately following cable installation and a second survey in the spring. If that determines significant changes, the Applicant has agreed it will meet with the agencies and discuss what mitigation may be necessary.

DIR. MUZZEY: ExCuse me, Mr.
Fitzgerald. Where are you reading from, or do you have an exhibit number for us?
A. Appendix -- Applicant's Exhibit 129. This is discussed on Page 11 I believe.

MR. WAY: Page 11 electronic or --
MR. FITZGERALD: No, I believe that's the actual Page 11, bathymetric monitoring.

PRESIDING OFFICER WEATHERSBY: In
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Counsel for the Public's Exhibit 3, this issue was teed up as well. He indicates -- this is Counsel for the Public's expert. He indicates the Applicant proposes to use either the single beam or multi-beam system to obtain bathymetric data following cable installation. The expert believes the use of a multi-beam system will provide a more comprehensive assessment of bottom elevations without interpretation of elevations between survey lines and therefore is more appropriate than a single beam. This is post-construction assessment.

MR. FITZGERALD: The Applicant, in 129, also indicated that they agreed to conduct that survey using either a single beam or multi-beam. So I don't -- it doesn't seem to me that they object to the multi-beam requirement.
(SEC Members reviewing documents.) MR. WAY: Madam Chair, could you read that condition request again?

PRESIDING OFFICER WEATHERSBY: SO this is a suggestion that's in Counsel for the Public Exhibit 3, PDF Page 6, halfway down the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
page, starts at Line 14.
MR. IACOPINO: Dawn, what exhibit is
that that you have up there?
MS. GAGNON: 129 .
MR. IACOPINO: 129?
PRESIDING OFFICER WEATHERSBY: I'm concerned that we haven't really heard testimony on single beam versus multi-beam, other than Counsel for the Public's expert had suggested it. It may be a better way to go, but the record's not very deep.

Mr. Way.
MR. WAY: I agree, except for that one statement. I'm searching through to see what I can find where someone's done a comparison of benefits of multi-beam versus a single one. Unless I'm missing it, I'd like to take a couple more minutes to look.

PRESIDING OFFICER WEATHERSBY: We could always defer to DES to make its decision, and we can ask the Applicant to consult with DES concerning the appropriate method of -MR. FITZGERALD: I was just going to suggest -- I mean, it's stated right here that
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
the Applicant has agreed to use either single or multi -- that we just have a condition that DES shall consult with the Applicant and the CFP to determine which is the more appropriate methodology. But I don't think the Applicant has a -- you know, they've agreed to use either method, so...

DIR. MUZZEY: Yeah, I'm comfortable with leaving that in the hands of Environmental Services to determine what's most appropriate. And we do know that the Applicant will be in conversations with them regarding this, not only perhaps with the methodology, but also what to do if there are changes at the bottom of Little Bay that need to be addressed after years of monitoring.

MR. FITZGERALD: And there is a requirement to submit a revised benthic habitat monitoring plan. So perhaps we just condition that that plan, that in approving that plan, that DES shall consider the Counsel for the Public's desire on this issue.

DIR. MUZZEY: I would be more comfortable with just, rather than having DES
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
consider that, having the Applicant consider it rather than placing that charge on DES.

MR. FITZGERALD: Well, I'm saying the Applicant has to submit that plan to DES for approval. So, however we condition it, it would be that either DES would require them to do it or --

PRESIDING OFFICER WEATHERSBY: HOW about this: If the bathymetric survey following cable installation is going to use anything other than a multi-beam sonar system to match the sediment surface, it shall get approval from DES to do so?

DIR. MUZZEY: Sounds great.
PRESIDING OFFICER WEATHERSBY: Any
further discussion on this?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: Let's move on.

MR. FITZGERALD: Fish. Applicant has indicated that the impact on fish will be temporary and could include, again, alteration of the benthic habitat, increased level of suspended sediments, and mortality of early
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
life stages entrainment in the jet plow's system. So Applicant indicated that early fish life stages associated with entrainment will be insignificant, considering that only approximately .17 to . 27 percent of the total volume in Upper Little Bay will be withdrawn. The cables may emit magnetic fields, and the Applicant has provided information that indicates research on this issue, that magnetic fields emitted from low-voltage AC cables are unlikely to be detected by most fish. Applicant filed a report entitled, "Essential Fish Habitat Assessment" and "Rare, Threatened and Endangered Species and Exemplary Natural Community Report," and "Natural Resource Impact Assessment."

The Essential Fish Habitat
Assessment described habitat requirements and provided a chart, which was in Applicant's Exhibit 131, with a summary of various species, the life stages, where they're found in the water column, the area in which they may be impacted, and whether the impact is temporary or permanent. And the Applicant
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
has asserted that essential fish habitat will be temporarily reduced in areal extent during installation of the cables. Again, they've provided another chart for diadromous species. I'm not a wildlife biology, nor do I play one on TV.

The Applicant argues that the construction's impact on these species may be minimized by restricting underwater construction activities, time-of-year restrictions, and has provided a chart that indicates the types of species and the time-of-year impact, whether the -- what the time-of-year impacts would be so that those could be considered in the Best Management plans.

American eel, juvenile alewife, blueback herring, American shad and rainbow smelt may also be impacted by construction. Again, this would be by encountering the plume from the jet plow. Fish are moving constantly through that area, so studies conducted for other species may indicate that there won't be significant impact here and
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
that most likely the fish will swim away from the area. They'll be disturbed by construction activity, noise, the sediment plume itself and so on.

The Applicant has also agreed to conduct underground cable installation between September 1 and December 31 as mitigation and minimization measures relative to impact on fish.

Birds. I think we've all already jumped ahead relative to bald eagle and other potentially impacted birds. We caught that before we crossed the bay.

So, with that, that concludes our discussion or the impacts on natural environment, and I'm open to any questions or further discussion.

Again, I would also just indicate the CFP's expert did conclude that, for the most part, the Applicant has adequately characterized the potential environmental impacts of the work associated with the installation of the submarine cable in Great Bay. We had some previous discussion about
the Town of Durham's concerns. We didn't get into everything that their experts raised. Chris reviewed that -- Mr. Way -- excuse me -- reviewed that section, and we talked about it to some degree during our discussion on water quality. So I'm not sure that there's a lot more to be discussed there. But I just wanted to mention that that had been reviewed and discussed also.

PRESIDING OFFICER WEATHERSBY: Did anyone have any further comments or questions concerning the impacts of Little Bay cable crossing or really anything else having to do with the natural environment?

MR. IACOPINO: Madam Chair, I'm just going to point out for the Committee, whether you want to consider it or not is up to you, but there was a request from the Town of Durham to establish a process for the submission of public comments in a hearing before the Committee on all plans that are to be produced and to be developed regarding Little Bay. That is objected to by the Applicant. So there was that request for a condition which falls within
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
this area as it deals with Little Bay.
And in addition, and you may have already dealt with this also, another request from Durham is that before a certificate is issued, that the Applicant hire an independent expert to look into HDD and establish a process for a hearing and comments on the results of this review, to which the Applicant objected as well.

PRESIDING OFFICER WEATHERSBY: I think we dealt with the HDD one.

Concerning the public input, do we not have a condition that when plans are submitted to DES, that a copy is filed with the SEC? I thought we had kicked around certainly that concept, at which point it would be public on both DES and on the SEC web site on this project, and people would have a chance to contact DES if they had concerns.

MR. IACOPINO: I think there is already. We already discussed that, and I think $I$ have that on my list for conditions. However, this request involves a subsequent
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
hearing as well to establish a process for the submission of public comments and a hearing before the Committee on plans pertaining to Little Bay. In other words, these plans that aren't complete yet, they need to be. I'm saying there's a request for that condition there. It's up to you if you want to consider it.

PRESIDING OFFICER WEATHERSBY:
Director Muzzey.
DIR. MUZZEY: We are fortunate with this project to have so many concerned residents who live in the project area. And they certainly have voiced important concerns and made suggestions that have been adopted throughout this long proceeding. I do know that we have the authority to delegate to DES the review of the plans that remain to be submitted, as well as to specify any methodologies that they will be recommending in those plans potentially if they feel that changes are needed. I am concerned that we may have issues with undue delay if we continue to provide public hearing opportunities and that
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
type of thing at this point in the Project, although I do understand the frustration. And I have appreciated the comments to date at this point. I'm comfortable with assigning to DES the responsibility to review those plans, reflect on any public comments they receive, and then approve them or suggest changes as needed.

PRESIDING OFFICER WEATHERSBY: Does anyone feel differently than Director Muzzey or care to comment on this further?

MR. SHULOCK: I agree with her.
MR. FITZGERALD: Again, Condition 8 in the proposed stipulated conditions orders that prior to any construction activity, the Applicant shall file with the SEC a copy of all BMPs to be utilized and lists a number of them. And I would note that further down in the conditions, Condition No. 26 orders that once -- these are proposed conditions. I'm sorry. Once construction begins, the Applicant shall weekly file with NHDES, with a copy to SEC, a copy of all weekly compliance monitoring reports by all construction and environmental
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
monitors, and the SEC shall post said reports on its web site. The SEC or any state agency to which the SEC delegates authority shall have continuing jurisdiction to address violations. We could discuss that. But it seems to me -and I leave it up to the Committee whether it's appropriate for the SEC to receive a copy of all these plans. I don't -- I assume they would be submitted as part of the docket, even though the docket may be closed and a certificate is issued. Although I don't know that. But would it be appropriate to have those plans, when we receive them, posted?

PRESIDING OFFICER WEATHERSBY: Yes, we will be posting all the plans we receive, and we will be receiving copies of all the plans.

MR. FITZGERALD: Even after the close of the docket?

PRESIDING OFFICER WEATHERSBY: Oh, yes. Yeah, continually.

MR. FITZGERALD: Okay.
PRESIDING OFFICER WEATHERSBY: And the question is when the plan is proposed, do
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
we have a hearing to consider whether it's an adequate plan. I agree with Director Muzzey that that probably isn't the best course of action, both for delay and for reasons of expertise. I think the decision should be left to New Hampshire DES. And there is an opportunity at DES to comment on those plans, and I'm sure DES will take into account any comments it receives. But $I$ have to kind of trust that process.

MR. FITZGERALD: Go ahead.
DIR. MUZZEY: I can't recall if you mentioned this aspect of stipulated proposed Condition 26. But with the weekly compliance monitoring reports coming in to DES, with a copy to the SEC, and then the SEC shall post these reports on its web site -- so we have the plans. We have weekly monitoring reports. That's a good deal of public information that hopefully the interested public will continue to monitor as well.

PRESIDING OFFICER WEATHERSBY: Any
other comments concerning natural environment?
[No verbal response]
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

PRESIDING OFFICER WEATHERSBY: SO I'm going to poll everyone -- and again, you can change your mind down the road -- on whether you believe this project will have an unreasonable adverse effect on the natural environment, given all of the time-of-year restriction plans, et cetera, et cetera, DES oversight that we've been discussing are all part of the record.

Mr. Fitzgerald.
MR. FITZGERALD: And the question is? PRESIDING OFFICER WEATHERSBY: Do You believe the Seacoast Reliability Project will have an unreasonable adverse effect on the natural environment?

MR. FITZGERALD: No.
MS. DUPREY: No.
MR. WAY: NO.
MR. SCHMIDT: No.
MR. SHULOCK: No.
DIR. MUZZEY: No.
PRESIDING OFFICER WEATHERSBY: NO.
Okay. Let's move on then.
Next subject is Public Health and
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Safety. Mr. Shulock.
MR. SHULOCK: So again we're under
RSA 162-H:16 IV(C). We have to make a determination whether the proposed facility will have an unreasonable adverse effect on public health and safety. Our considerations are listed in Site 301.14(f), Sections 1 and 4, which I'm not going to read verbatim. I'm just going to summarize the requirements in there.

So what we have to consider is
information submitted pursuant 301.08 -that's the application requirements -- and other relevant evidence submitted pursuant to Site 202.24. That's just generally the evidence that the parties put before us to consider; 2) the potential unreasonable adverse effects of construction and operation of the Project on public health and safety; 3) the proximity and use of buildings, property lines and public roads; 4) the risks of collapse of towers, poles and other supporting structures; 5) potential impacts on public health and safety, electric and magnetic fields generated by the proposed
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
facility; and 6) the effectiveness of measures taken or plans to avoid, minimize or mitigate the potential adverse effects. So the application requirements, not surprisingly, require the Applicant to give us information on those considerations plus some additional ones. One is the assessment of operational sound associated with the facility with certain decibel requirements; a decommissioning plan; a plan for fire safety, prepared in consultation with a fire safety expert; a plan for emergency response to the proposed facility; and then again, measures taken or a plan to avoid, minimize, mitigate public health and safety impacts.

So, the first one I'm going to summarize is the evidence on electric and magnetic field. And as a general introduction, I think this is an area where the Applicant has provided the vast majority of the evidence. We don't have a lot of positive evidence to contradict what the Applicant has provided. Certainly some of
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
the intervenors in this case have raised some issues, including the individual intervenors. And I would note that it appears that most of the concerns of the Counsel for the Public, Durham, UNH and Newington have been resolved by a stipulated agreement for conditions for us to consider. So, hopefully this won't be a complicated area for decision.

So, with regard to electric and magnetic fields, the intervenors -- Donna Heald McCosker, Matthew and Amanda Fitch, and Vivian and Jeff Miller -- have all raised concerns about the effects of electromagnetic fields on their health. And Vivian and Jeff Miller have raised concerns regarding their television reception.

So the evidence that we have on that is that the Applicant modeled the levels of electromagnetic fields pre- and post-construction at numerous locations along the route of the Project. Those expected levels from the modeling are listed on Pages 104 to 107 of the original Application, and Pages 25 to 27 of the Amended
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Application. And they can also be found in a report titled, "Electric and Magnetic Fields Summary," which is Applicant's Exhibit 61. In addition, the Applicant retained an expert, Dr. William Bailey of Exponent, Inc., to assess the literature on the impact of electric and magnetic fields on human health. Dr. Bailey opined that, to a degree of scientific certainty, the EMF associated with the operation of the Project will not be harmful to human health and therefore will not result in an unreasonable effect on public health and safety. He based that opinion on the Applicant's modeling and on his assessment of the scientific literature on the subject, which together he believed show that the expected EMF levels are significantly below basic restrictions for public and environmental exposure to EMF fields set forth in the International Committee on Electric and Magnetic Safety, and by the International Commission on NonIonizing Radiation Protection. It was significant to Dr. Bailey that the World

Health Organization has found that current evidence does not confirm the existence of any health consequences for exposure to low-level magnetic field -- electromagnetic fields and that the International Committee on Electromagnetic Safety believed that the evidence of a causal relationship between low-level EMF fields and childhood leukemia was too weak to form a basis for setting health standards.

Dr. Bailey summarized all of that research in a report which was submitted as Applicant's Exhibit 60, and that's titled, "Current Status of Research on Extremely Low-Frequency Electric and Magnetic Fields and Health, Seacoast Reliability Project."

With regard to radio and television interception and interference, the Applicant represented that the proposed line has been designed in a manner consistent with the IEEE "Radio Noise Design Guide for High-Voltage Transmission Lines", that the Project will comply with applicable Federal Communications Commission's rules and regulations. And they
state that while some interference with AM radio may occur, FM radio and television interception or interference generally doesn't occur at voltages lower than 345 kV . Eversource does not expect that FM and television interception and interference are likely to result from the Project. If it does occur, Eversource represents that the source of the interference can be located and remedied. That's Mr. Jarvis's testimony.

The Applicant and Counsel for the Public have stipulated to a number of facts in this regard. They're found in

Exhibit 184, Page 4, Paragraphs 26 to 28. And the Applicant and Counsel for the Public have proposed conditions relating to EMF verification, and those are found in Exhibit 193, Conditions 34 and 35.

Would the Chair like to go through
those conditions?
PRESIDING OFFICER WEATHERSBY: Why don't you read them off so everyone can hear what the proposed conditions are.

MR. SHULOCK: Okay. So, Condition 34
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
is that the Applicant, in consultation with the New Hampshire Public Utilities Commission's Safety Division, shall measure actual electromagnetic fields associated with the operation of the Project, both before and after construction of the Project, during projected peak load, and shall file with the SEC the results of the electromagnetic fields measurements.

Conditions 35. If the results of the electromagnetic fields measurements exceed the guidelines of the International Committee on Electromagnetic Safety, or the International Commission on Non-Ionizing Radiation Protection, the Applicant shall file with the SEC a mitigation plan designed to reduce the levels so that they are lower than the ICES or the ICNIRP guidelines.

MR. WAY: Could I ask a question, Mr .
Shulock? So this is back to the earlier question raised by Mr. Fitzgerald. We've talked at this point about public availability of all the plans. I'm assuming this plan would be part of that as well?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
is risk of collapse of towers, poles or other supporting structures, and the proximity and use of buildings, property lines and public roads.

So the Applicant asserted that it proactively mitigated the risk associated with structural failure of the Project by using good engineering design. The Applicant designed the Project to comply with its own high design standards and with the National Electric Safety Code, specifically standards that address physical loading due to extreme weather events. These standards include the NESC -- National Electric Safety Code Heavy Loading, NESC Extreme Wind requirements, NESC Extreme Ice with Concurrent Wind requirements, and Eversource's Heavy Ice requirements. Eversource also stated that it will also follow recommendations of the American Society of Civil Engineers Manual and Report on Engineering Practice No. 74, Guidelines for Electrical Transmission Line Structural Loadings. Applicant claims that if a structure fails, then the relaying
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
systems will detect faults and de-energize the line. The Applicant's employees will respond promptly to address the reason for any failure and conduct any necessary repairs.

According to the Applicant, poles and wires must be thought of as systems because poles and wires are attached to each other and act upon each other. Wires that are connected to the structures prevent the total collapse of structures. In a catastrophic failure, a failed structure will buckle within its original footprint or be pulled in along the line of the wire, with the point of deformation located above ground line. Poles would seldomly fall about the base and result in a radial zone of impact. Eversource represented that it is highly probable that any and all elements of collapsed towers will remain within the bounds of the right-of-way.

The Applicant will mitigate risks
associated with tower collapse by
implementing inspection and maintenance
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  | 110 |
| :---: | :---: |
| 1 | programs that are currently in place for all |
| 2 | other PSNH projects. There are number of |
| 3 | conditions proposed by Eversource and Counsel |
| 4 | for the Public that relates to construction |
| 5 | safety. These include Exhibit 193 at |
| 6 | Paragraph 2 relating to construction in |
| 7 | accordance with Eversource policies, NESC |
| 8 | requirements and national and regional |
| 9 | reliability standards. They relate to the |
| 10 | filing of a copy of the Best Management |
| 11 | Practices with the SEC, and they relate to |
| 12 | notification of affected host towns and the |
| 13 | SEC Administrator of significant anticipated |
| 14 | changes or events that may impact the public |
| 15 | environmental compliance, or terms and |
| 16 | conditions of the certificate, public |
| 17 | transportation or public safety. |
| 18 | So, does anybody have questions or |
| 19 | comments? |
| 20 | PRESIDING OFFICER WEATHERSBY: Ms. |
| 21 | Duprey. |
| 22 | MS. DUPREY: It seems to me that the |
| 23 | method for the description of how a tower might |
| 24 | collapse is very similar to a |
|  | EC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\} |

> telecommunications tower, the method of construction being that they collapse in on themselves. So I thought -- and these are much shorter than a telecommunications tower, which are generally -- a lattice tower is around 190 feet. And these, I think, are 105 feet on the tallest end, I think, down to 50 to 60 feet on the shorter end. So that makes sense to me. It would seem that if there was a collapse, it would happen within the right-of-way.

> PRESIDING OFFICER WEATHERSBY: I
> think, too, we heard testimony concerning tower collapse, that for transmission lines or electric lines generally, that if there is a problem with the conductors strung between the poles, that they tend to have them fall -- they kind of pull it, and it will collapse in the right-of-way and not just randomly to the left or the right. It will kind of follow that. So that certainly -- and these are subjects that, you know, everyone fears. It's going to fall in my yard. We're going to get radiated from the electric -- but the science of it and the -- and I understand those fears, especially
> \{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
as a parent. But the science of it all and the experience of what has gone before I think really can put a lot of those fears to rest. DIR. MUZZEY: I would agree with that as well. And I wold also note that our review of public -- of potential unreasonable adverse effects on public health and safety cover a whole range of different types of energy projects, whether transmission lines, biomass facilities, wind facilities. And so we do have a longer record with facilities such as transmission lines and this type of project. So there is much more to depend upon than some of the newer technologies that might come before this Committee.

MR. WAY: Mr. Shulock, as you looked at the testimony of the individual intervenors, most of the concern I think was EMF, some sound. I'm trying to remember if there was significant concern about falling in the testimony.

MR. SHULOCK: I didn't see any concern with collapsing towers in the testimony.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. WAY: I seem to recall --
MR. SHULOCK: Donna Heald McCosker was concerned about sound and that she wouldn't be able to sleep. She was also concerned about health effects. The Millers were concerned about health effects and reception. And the Fitches were concerned about health effects. I don't recall seeing among their concerns that towers would collapse.

MR. WAY: I seem to recall Ms. Heald mentioning it, but I'm looking at her testimony now and I'm not seeing that.

MR. SHULOCK: Well, it is possible that she gave that testimony on the stand.

MR. WAY: That's what I -- yes. Good point.

MR. FITZGERALD: Mr. Shulock, the PUC has a safety division also. Do they oversee the area of transmission line safety as well?

MR. SHULOCK: We will respond to safety concerns regarding transmission structures, yes.

MR. FITZGERALD: I mean, it seems to me the casual observer -- I don't think I've
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
ever heard of a transmission line tower collapsing or falling is -- has the -- in your experience, has that been an issue for the PUC? MR. SHULOCK: In my experience, no. But my experience is limited.

MR. FITZGERALD: Yeah.
PRESIDING OFFICER WEATHERSBY: I will say that in other dockets we've seen pictures from other parts of the world and in this country where transmission towers have collapsed.

MR. SHULOCK: You know, I don't doubt that some may have collapsed in hurricane conditions or tornado conditions and things like that, but these standards for heavy loading are for the conditions we experience here in New Hampshire, right. Our loading is basically from snow, ice and wind. And they are designing these towers to the highest requirements that there are for those. So I don't think that our safety division would have a concern at all about the way that these towers have been designed. But understand, I'm not the safety division. But given the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
standards that they're designing them to, I think I can safely make that statement.

MR. FITZGERALD: And I believe there was a number of, as well as construction, there's a significant amount of maintenance requirements that are referenced in many of the documents we've looked at. So I assume that's a large --

MR. SHULOCK: I believe it's their practice to do aerial surveys of all their transmission lines on a periodic basis to identify any problems that might exist.

PRESIDING OFFICER WEATHERSBY: Anything else concerning tower collapse?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: We'll move on to the next topic, sound.

MR. SHULOCK: Yeah. So sound was discussed by Mr. Jarvis. And according to his testimony, Eversource used International Best Practices to model sound impacts at representative sites along the Project route. Based on that modeling, they assert that the Project will not increase sound above the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
present levels, and therefore not by the 10 dBA or more over background noise levels at the property boundary of the site or at the edge of the right-of-way, which is the standard that we have to consider.

The Applicant asserts that the Project will not cause a corona effect that will manifest itself in audible noise, as that usually occurs on lines of 500 kV and above, not usually on 115 kV lines. The worst calculated noise level along the Project route are within EPA guidelines and also meet the World Health Organization's 40 dBA guideline. So Mr. Jarvis asserted that the Project will comply with all relevant federal, state and international guidelines for audible noise.

PRESIDING OFFICER WEATHERSBY: Any questions or comments concerns sound?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: Okay.
We can move on.
MR. SHULOCK: So the next area is the decommissioning plan. In an order we issued on
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

December 29th, 2016, we waived certain filing requirements relating to the hiring of independent experts to develop a decommissioning plan at this time and other requirements, although the order indicated that any certificate that we issue might contain related conditions.

In the supplemental testimony of Bowes and Plante, the Applicant requested related decommissioning-related conditions be placed on the certificate. And since that time, the Applicant has agreed to proposed conditions with the Counsel for the Public. And these are found in Applicant Exhibit 193. They're Conditions 36 and 37.

Condition 36 says, in the event that the Project ceases to be used and useful, the Applicant shall be obligated to decommission the Project in accordance with then-applicable rules of the SEC or successive -- its successor regulatory body. Thirty-seven says that the Applicant shall: 1) submit a report to the Committee every ten years indicating any change in the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
need for the Project to ensure the continued reliability of the regional bulk transmission system; 2) properly notify the Committee of any retirement obligation that arises; and 3) submit to the Committee a decommissioning plan in accordance with then-applicable rules upon any imposition of a decommissioning obligation or prior to the retirement of any part of the Project. These are the same decommissioning requirements that were ordered for the Merrimack Valley Reliability Project. And I would note in there that there are no additional funding requirements for that, other than the FERC accounting requirements.

That's it. So does anybody else have any comments or questions?

MR. FITZGERALD: Just it was mentioned that these are the same requirements for Merrimack Valley. Obviously this project is going through an existing corridor. But it goes through significant areas of cultural and historical concern, as well as historic sites and districts, et cetera. I wasn't concerned
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
with Merrimack Valley, but $I$ don't think that was a major, major issue. I just wondered if the Committee -- if there's anything the Committee needs to consider relative to decommissioning if it became necessary. It seems to me we heard a lot of testimony that these transmission lines don't get decommissioned. They get, you know, maintained, possibly improved or whatever over time. So I think that was the basis of our order not to require a decommissioning plan. But I guess I just wondered about these sensitive areas, if we need to think about anything with relationship to those. And I don't have anything in particular in mind but just wanted to raise the issue.

PRESIDING OFFICER WEATHERSBY: SO I would point out that our rules require certain things in a decommissioning plan, in that the plan -- particularly, the plan has to be prepared by an independent, qualified person with demonstrated knowledge and experience in similar energy projects and cost estimates. I mean, there's a number of other requirements,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
nothing that relates specifically to historic resources. But the person who is preparing the plan would need to be qualified and have demonstrated knowledge concerning decommissioning similar energy projects.

Director Muzzey.
DIR. MUZZEY: I'm looking at our
rules as well in regard to what a
decommissioning plan needs to be for all energy facilities. This is at Site $301.08(d)(2) a, b$, c, d. And thinking about Mr. Fitzgerald's concern regarding the sensitive historical and cultural areas this line travels through, I do think a decommissioning plan as envisioned by this rule would address the concerns typically encountered. Although I will note under (2)d, it specifies all underground infrastructure at depths less than four feet below grade shall be removed from the site, and all underground infrastructure at depths greater than four feet below finished grade shall be abandoned in place. So there could be some archeological concerns at that point. We may be operating in what we would consider disturbed areas already,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
although we would want to see some sort of review by the Division of Historical Resources if they -- of the decommissioning plan at that point.

My concern also is for the concrete mattresses. I think this has come up once or twice before. They are a different type of feature on the Project, at least in my experience that I'm used to considering. And Items A through B don't -- I don't feel really anticipate that type of infrastructure. And I'm just wondering what others on the Committee are thinking, whether we need to address them in any manner or if the condition as currently drafted is sufficient to assume that they will be taken care of in an appropriate way.

PRESIDING OFFICER WEATHERSBY: SO I think you can look at proposed Condition 37 agreed to between Counsel for the Public and the Applicant. The Applicant's decommissioning plan under (iii), the Applicant has to submit the decommissioning plan in accordance with then-applicable rules, upon imposition of a
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
decommissioning obligation or prior to the retirement of any part of the Project. So if they're going to take concrete mattresses out for any reason, whether it's they want to put in new ones or have found a different technology or it's decommissioning, I think this covers it because it is a part of -- the mattresses are part of the Project. If folks feel more comfortable, we can be more specific or disagree with my reading of this.

MS. DUPREY: Could you give us the site again?

PRESIDING OFFICER WEATHERSBY: SO this is proposed Condition 37 found in Applicant's Exhibit 193.
(SEC Members reviewing document.)
DIR. MUZZEY: During the proceeding
we heard that this facility will be in place for some time, that it may never be decommissioned. And if it is decommissioned, it may be in a long time from now, 40, 50, 60 years. And it's difficult to anticipate what the concrete mattresses will have done in the meantime. They're in a very active aquatic
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
environment, and it's difficult to anticipate whether or not it would be, from an environmental perspective, preferable to remove them or to leave them in place. I don't know that we can anticipate that. When I read the last part of Section 37 , my first concern was the Applicant not wanting to retire the concrete mattresses and take them away but rather abandon them in place, because they seem to fall between the lines of infrastructure that's considered in our rules now under the decommissioning plan. And it may be from, an environmental perspective, preferable to abandon them in place. But we don't know that now. Or I don't know that now. I should clarify.

PRESIDING OFFICER WEATHERSBY: Maybe we just add the clause to this that, you know, such plans shall include a provision for the concrete mattresses in case it's not -- in case they do not plan to retire them and perhaps it's not covered by the then-applicable rules. So if we want to be sure the mattresses are addressed, we just say the plan will include a
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
provision for the concrete mattresses, and then applicable agencies will review it and a decision will be made.

Mr. Shulock.
MR. SHULOCK: This may be a question for counsel, but others can feel free to answer. I'm not sure that anywhere in our rules or our statute there's a requirement to decommission. We just have a requirement to review a decommissioning plan, as I understand it. So I don't know who requires decommissioning. I don't know who requires retirement, or whether that's always a voluntary decision. And I'm wondering whether we should require decommissioning and removal at a certain functional point, you know, once the line is no longer necessary to meet the needs and is no longer in use or something like that, rather than risking that the poles and wires will be abandoned in place. As I understand it, the transmission wires over Gundalow Landing -- or the distribution line under Gundalow was there for quite some time after the line was no longer in the use and was
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
finally taken out. But I don't know whether that was voluntary or a requirement. And, you know, I just -- I don't know if this Committee has ever actually required decommissioning after a facility is no longer used and useful.

MR. IACOPINO: I'm aware of no hearing or no application or other consideration by the Committee about having to retire -- having to decommission any existing facility or transmission line. But I think the practical answer to the question is when -- who would require a retirement? Probably the ISO or whoever is operating the grid. And then the question is: If the line is transmission -- if the transmission line is retired, do you require it to be removed? I think that's where you're getting. That's a decision for you all as a committee to make.

MS. DUPREY: Is that something that we need to make now? Is that not something that the SEC could review at the time?

MR. IACOPINO: The stipulation that you're considering does have a requirement of a report every ten years regarding what the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
status is.
MS. DUPREY: Can someone remind me, and I'm sorry if I didn't hear people mention it before, what was waived in the docket with respect to decommissioning?

MR. IACOPINO: The filing of a formal decommissioning plan, which would include both what they anticipate salvage costs to be, how they're going to take -- how they're going to remove the actual infrastructure and things like that are all required in a decommissioning plan.

MS. DUPREY: And how does that relate to this rule?

MR. IACOPINO: How does what relate to the rule?

MS. DUPREY: What we waived. What did we waive? Where in the rule is --

MR. IACOPINO: Well, you waived the filing of a decommissioning plan, so there is no decommissioning plan before you today. For instance, if this was a wind facility, you would probably have a formal decommissioning plan that would have specifications about how
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
the towers would be dismantled, how they would be removed, what would happen with the roadways and things like that. You don't have that in this particular docket because you waived that requirement. What you do have before you is a proposed condition between Counsel for the Public and the Applicant requiring making a decommissioning plan at some point in the future and reports every ten years I believe. Yeah, every ten years reporting on the need for the Project to ensure continued reliability of the system and of any retirement obligations, which I think, as I mentioned before, more likely would come from ISO rather than anywhere else.

MS. DUPREY: Okay, okay.
MR. IACOPINO: And then they would submit the decommission plan.

MS. DUPREY: That's way more information than I'm looking for.

MS . MONROE: Okay.
MS. DUPREY: I'm just trying to find out did we waive the terms of this rule that we're looking at right now, which is 308 --
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
301.08 (d) (2) a through d. Seems to me that must be what we waived.

DIR. MUZZEY: I believe what we waived is the time of when that plan is filed. The plan and its contents remain the same as described in our rules, or in the rules as they exist in the future when the timing kicks in for the decommissioning plan.

MS. DUPREY: Okay. So we didn't waive decommissioning. So back to my original question --

DIR. MUZZEY: No, we waived the timing.

MS. DUPREY: We just waived the timing of it.

DIR. MUZZEY: That's my understanding of it.

MS. DUPREY: Okay. Thank you.
MR. IACOPINO: Normally one is filed at the time the Application is filed.

MR. WAY: So, back to the Chair's
point. And that is my understanding, too.
We're just simply allowing this to come to some point in the future.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

But Condition 37 , where we have ten-year increments of assessment, if we qualify that by adding the concrete mats into that, would that suffice? Do people think that would suffice?

MR. SCHMIDT: I think it would.
PRESIDING OFFICER WEATHERSBY: I have a new concern $I$ didn't have earlier after listening to everybody, and that is, if the line is retired, that the poles remain, how realistic that is. But that certainly isn't something we would wish on the hosting communities. So I'm adding more things to my suggestion. Something to the effect of if a line is retired, that a decommissioning plan should be submitted for the entire project. MS. DUPREY: So there's a difference between decommissioning and removal? Is that what I'm understanding?

MR. SHULOCK: I think that
decommissioning is generally thought of as removal of the equipment.

MS. DUPREY: Well, why doesn't 36 take care of this?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

also waive any requirement for financial assurance?

MR. WAY: At this point. So at this point we wouldn't be requiring financial assurance.

PRESIDING OFFICER WEATHERSBY: What we determined, according to my notes, was back early in the proceeding when we were considering the decommissioning plan, we determined that the Applicant provide at least satisfactory alternative mechanism for recovering the cost of decommissioning if it becomes necessary at some future date under the FERC-approved transmission tariff.

So we did -- didn't make them show they had money reserved because it was -- we considered that most likely the cost of decommissioning would be recovered from the FERC tariff.

MR. WAY: As I recall, I think under the financial discussion we also brought this up as well.

PRESIDING OFFICER WEATHERSBY:
Director Muzzey.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

DIR. MUZZEY: To get back to your question about leaving poles in place, when I look at our rule for what a decommissioning plan needs to include, there's four things. And the two things that address removal of infrastructure are Items $C$ and $D . C$ notes that all transformers shall be transported off site. D notes that all underground infrastructure at depths less than four feet below grade shall be removed from the site, and all underground infrastructure at depths greater than four feet below the finished grade shall be abandoned in place.

So as I read Item D, it seems to address only underground infrastructure. So I'm wondering if others on the Committee read that differently.

PRESIDING OFFICER WEATHERSBY: I think we're overthinking it.

DIR. MUZZEY: Okay.
MR. SHULOCK: $8(\mathrm{c})$ says all overhead power collection conductors and the power poles shall be removed from the site.

DIR. MUZZEY: I think you may be
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  | 133 |
| :---: | :---: |
| 1 | reading something different than me. Can you |
| 2 | tell me what site that is? |
| 3 | PRESIDING OFFICER WEATHERSBY: I |
| 4 | think you're reading the requirements of what |
| 5 | needs to be in the Application for a |
| 6 | decommissioning plan. |
| 7 | MR. SHULOCK: Yes. |
| 8 | PRESIDING OFFICER WEATHERSBY: And |
| 9 | this, what we're asking, is that they abide by |
| 10 | the rules concerning decommissioning plans that |
| 11 | may be there in the future, which $I$ would think |
| 12 | would include that. |
| 13 | Also as a practical point of view, |
| 14 | if they take out the base of the tower that's |
| 15 | underground -- so I think we're overthinking |
| 16 | it a little bit. My personal opinion after |
| 17 | listening to all of us talk is that 36 and 37 |
| 18 | are more than adequate. |
| 19 | MR. SCHMIDT: I think Mr. Shulock is |
| 20 | looking at the wind energy systems portion. |
| 21 | MR. SHULOCK: Sorry. You're right. |
| 22 | I was. |
| 23 | PRESIDING OFFICER WEATHERSBY: You |
| 24 | want to talk any more about decommissioning? |
|  | EC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\} |

Any further comments?
What's our next -- oh, wait, wait.
Ms. Duprey.
MS. DUPREY: I do. Just as a point of order, what else are we going to talk about with respect to decommissioning under the Orderly Development of the Region?

PRESIDING OFFICER WEATHERSBY: I
think it would be the same conversations.
MS. DUPREY: Okay.
PRESIDING OFFICER WEATHERSBY: We'd probably be able to skip that or maybe look at the other comments that look at it from that point of view.

MS. DUPREY: All right. Thank you.
MR. SHULOCK: So the next is a fire safety plan. So, Site 301.08 (d) (3) required Eversource to submit a plan for fire safety prepared by or in consultation with a fire safety expert. In its Application, Eversource asserted there is no need to prepare a plan for fire safety because the right-of-way will not be occupied, and therefore there won't be any personnel to evacuate. They said that during
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
construction and operation of the Project, any workers in the right-of-way will be evacuated and a local fire department will be called. Fires are to be addressed by local fire departments. And Eversource will respond pursuant to its Electric Operations Emergency Response Plan, which they provided as Exhibit 62.

PRESIDING OFFICER WEATHERSBY: Any questions or comments concerning fire safety?
[No verbal response]
PRESIDING OFFICER WEATHERSBY:
Hearing none.
MR. SHULOCK: Okay. So the next is a plan for emergency response to a site. So the Applicant filed Eversource Energy Emergency Response Program, New Hampshire Electric Operations Emergency Plan, dated March 5th, 2015. They provided that as Applicant's Exhibit 62. That emergency response program is designed for response to, quote, emergency events caused by, but not limited to: Severe weather, flooding, civil disturbance, fire, explosion or other major disruption of the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
distribution system, or any other instance for which the incident commander determines that additional assistance or coordination is needed.

Additionally, there is an MOU with Newington that requires Eversource to ensure that access roads to the Project are accessible to emergency vehicles. And that's it. So, essentially, we'd be relying on an established Eversource response program.

PRESIDING OFFICER WEATHERSBY: Any questions or concerns or comments concerning the emergency response plan?
[No verbal response]
MR. SHULOCK: Okay. So those are the specifically called-out issues that we would look at. And then we have the issues that are raised by the evidence itself. And the first is navigation safety.

There were several intervenors who raised concerns that the concrete pads in Little Bay Crossing would pose a hazard to kayakers and boaters. There was also some concern about whether boaters in general
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
would know where the transmission line was in the deeper channel.

And Counsel for the Public's construction experts thought that it might be beneficial to require the Applicant to install sign identification identifying the cable's location in Little Bay.

So the Applicant's evidence came in primarily through Mr. Dodeman. And according to Mr. Dodeman, Applicant submitted as-built plans to the National Oceanic and Atmospheric Administration. That will enable, call it NOAA, to mark the area of the cable and concrete mattresses on navigation charts. If DES and the Coast Guard approve, Eversource will install temporary markers to identify the mattresses pending their identification on the navigation charts. And Eversource will work with the Coast Guard to issue a notice to mariners to make the boating community aware of the construction.

Coordinate with the New Hampshire Division of Ports and Harbors and the New Hampshire

Department of Safety Marine Patrol to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}


Applicant has to coordinate with the Division of Ports and Harbor and Marine Patrol to determine if the mattresses create a navigational hazard; and if so, require compliance with any of theirs requirements. So that's a condition in the DES permit already. MR. SHULOCK: Okay. So the next is aviation safety. And in its Application, Eversource represented that it met with --

PRESIDING OFFICER WEATHERSBY: Oh, actually, before we go there, Mr. Shulock, there was also -- and maybe you touched on this. But we had talked about markings for the cable in the channel to notify boaters where the channel was -- I'm sorry -- where the cable was so they didn't anchor there. I seem to recall discussions about that. It was more than concrete mattresses I thought.

MR. SHULOCK: Right. So the --
PRESIDING OFFICER WEATHERSBY: Did you already --

MR. SHULOCK: Counsel for the Public's expert thought it might be beneficial to install some identification of the cable's
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
location. They will be providing -- I don't think there's any agreement on that, however. But the Applicant has said that they're going to provide as-built plans to NOAA. I think we heard testimony that NOAA will mark on all the navigational charts where they are. I don't know whether NOAA would require signage, but -MR. WAY: I think, as Director Muzzey said, it's the same thing as marking the concrete mattresses. I mean, from my way of looking at it, I would think they want markers in the bay so you're not going to have anchors. But that's just one person's opinion. I think I'd defer to those that know the bay and know the best way to mark.

MS. DUPREY: Do we have the power to request something like that in navigable waters? I'm going to go with "No."

PRESIDING OFFICER WEATHERSBY: I
think I'd leave it to the governing body.
MR. IACOPINO: You certainly have the
authority to order the Applicant to consult with the appropriate agencies.

DIR. MUZZEY: Trying to quickly get
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
to a marine chart in that area. My understanding was that, given this is a designated cable crossing area, that anchoring is only allowed in emergency situations anyway. But I haven't gotten to the chart to prove that's right. It's an old memory of mine. PRESIDING OFFICER WEATHERSBY: I believe the Applicant said they were going to submit all the information to the appropriate bodies to determine whether markers were necessary or appropriate. I would probably stick with that.

MR. FITZGERALD: I think there was also testimony that there was a -- that people navigating on the bay tuned to a specific channel for instructions and information regarding hazards. And $I$ think the only question for us was really the concrete mattresses -- and $I$ think it was the issue, if I recall, was in areas where they were in intertidal areas where they might be covered and uncovered by tides, whether there should be any marking, temporary marking, especially until such sometime as they can be on the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
navigation charts because they would be a new hazard in the bay.

PRESIDING OFFICER WEATHERSBY: We have that Condition 52. I think that deals with that, that they have to coordinate prior to the mattresses going in. They have to coordinate with the appropriate governmental entities.

Any more conversation concerning navigation safety?

What's the next, aviation?
MR. SHULOCK: Aviation safety. So in its Application, Eversource represented that it met with the FAA, and the FAA and Air National Guard and Pease Development Authority reviewed the Project. Eversource represented that the Project will meet all FAA requirements and will not interfere with any local or federal aviation regulations. In addition, the FAA has issued a determination of no hazard to air navigation.

The Applicant and Counsel for the
Public have entered into a factual
stipulation that basically follows what I
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
just said. And that's found at Applicant 184, Paragraph 31. Applicant and Counsel for the Public have also entered into a stipulated condition that the Project shall resubmit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Federal Aviation Administration at least 45 days before commencing construction to address any changes that have been made to the original design.

Any questions or concerns on this? [No verbal response]

MR. SHULOCK: Okay. So the next area is traffic safety. So the Applicant retained Lynn Frazier, or Lynn Farrington Frazier I guess. She's a civil highway engineer and licensed professional traffic operations engineer to review the traffic impacts occasioned by the construction of the Project. DOT's permits will require the Applicant to develop and follow traffic control plans Consistent with the Manual of Uniform Traffic Control Devices that will be approved by a certified traffic operations engineer. The
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
traffic control plans were filed with DOT, and DOT didn't raise any concerns about their adequacy.

Ms. Frazier opined that the traffic management components of the Project will provide appropriate mitigation of temporary impacts to traffic to ensure that there will be no unreasonable adverse effects on public safety along public highways and local streets and that the Project will not have and unreasonable adverse effect on public safety along public highways and local streets.

With regard to access of emergency vehicles for UNH facilities, Mr. Bowes and Mr. Plante testified that emergency vehicles will be able to access all UNH facilities during construction of the Project and that roads will have at least one lane open with traffic control and/or police detail. In the case of a road closure, temporary access roads will be constructed or detours will be established. Any changes will be communicated to emergency officials. Mr.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Bowes and Mr. Plante stated that the Applicant will ensure that emergency access will be maintained for all roads during construction of the Project. And the Applicant has entered into a Memorandum of Understanding with Newington and Durham that govern the use of -- or at least touch on the use of town roads for oversize and overweight equipment, the repair of roads and use of traffic control plans.

Eversource and Counsel for the Public suggest two conditions that would require Eversource to adopt safety measures, including traffic officers and flaggers to mitigate any temporary traffic impacts due to construction of the Project and traffic controls that will be conducted in accordance with DOT policies, including the 2009 edition of the Manual of Uniform Traffic Control Devices. And a similar provision appears in the MOU between the Applicant and Durham. MR. WAY: I seem to recall Ms.

Frazier had a number of conditions in her testimony and in her supplemental, and I'm just
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
wondering, because you had listed off several conditions, did you take into account -MR. SHULOCK: I did not go back and align those up.

MR. WAY: I'm pulling it up now. So, the conditions she wanted us to consider: Mall parking lot, police detail, flagger -- I think you mentioned that -- reducing to the extent practicable number of oversized loads, such as drilling rigs and cranes on New Hampshire roads. And what I'm looking at is Applicant Exhibit 141. I'm on PDF Page 4. Give everybody a moment to look at that if you want. Three: When the overhead right-of-way is being accessed by construction vehicles from municipal roads, police detail or flagger once again; cease construction activities at the campus during graduation weekend -- I think that would be a good idea -- ensure compliant pedestrian detour signing --

MR. FITZGERALD: Are you on Page 4
or --
MR. WAY: I'm now on electronic
Page 5, the very top.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

If a roadwork area must remain while crews and traffic control are not present in the area, steel plates should be placed on town roads, and recommend that the Project team continue its outreach with businesses. I don't know if there's anything there we need to put in as a condition.

MS. DUPREY: I actually looked at the same things, except for the steel plating, and compared them to the MOUs, including the graduation weekend, and they are in the MOUs. I do think that one thing we could order is, to say to the extent any of these conditions aren't covered with the MOU, that they're so ordered. But again, except for the steel plating, I think they're in there and so I think some general statement like that would cover it.

MR. WAY: I think that's appropriate.
PRESIDING OFFICER WEATHERSBY: I
think it would be a good idea, too, because there's also Madbury and Portsmouth. And Newington has a different MOU. The terms may be a little bit different. So I think
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  | 148 |
| :---: | :---: |
| 1 | extending these conditions as appropriate to |
| 2 | all towns would be helpful. |
| 3 | MR. SHULOCK: I agree. |
| 4 | DIR. MUZZEY: I agree as well. |
| 5 | MR. SCHMIDT: I agree. |
| 6 | PRESIDING OFFICER WEATHERSBY: I'm |
| 7 | sensing consensus on that. Do you have more on |
| 8 | road issues? |
| 9 | MR. SHULOCK: No. |
| 10 | PRESIDING OFFICER WEATHERSBY: So I |
| 11 | would just like to point out that we have a |
| 12 | number of stipulated proposed conditions |
| 13 | concerning all these road issues, some of which |
| 14 | Mr. Shulock touched on, like the Manual of |
| 15 | Uniform Traffic Control Devices, et cetera -- |
| 16 | MR. WAY: Where are you looking? |
| 17 | PRESIDING OFFICER WEATHERSBY: So, |
| 18 | Exhibit 193, Conditions 1 through 16. |
| 19 | MS. DUPREY: And Madam Chair, really |
| 20 | 17 and 18 bear on it as well with the |
| 21 | mitigation dispute process. |
| 22 | PRESIDING OFFICER WEATHERSBY: Yes. |
| 23 | MS. DUPREY: And 21? |
| 24 | PRESIDING OFFICER WEATHERSBY: Do we |
|  | C 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\} |

want to go through each of these conditions to see if it's something you'd like to adopt? I don't want to take up too much time, but it seems as though if we're going to adopt them, we should at least raise it.

Okay. So the first one, the
Applicant shall construct the Project in accordance with good utility practice in a manner to best accommodate the public and to avoid interference with existing utility facilities as required, blah, blah, blah. That seems like a good idea. Anyone feel otherwise?

DIR. MUZZEY: Why don't you just keep going and we'll --

PRESIDING OFFICER WEATHERSBY: If you
object or want to talk about it -- keep going.
No. 2, the Project shall be
constructed in accordance with all Eversource policies, National Electric Safety Code, requirements for transmission lines, and national and regional reliability standards. The Applicant -- No. 3. The

Applicant shall implement safety measures,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
including traffic officers and flaggers, to mitigate any temporary traffic impacts due to construction of the Project.

No. 4, the Applicant shall
construct the Project in accordance with the New Hampshire Department of Transportation Utility Accommodation Manual.

No. 5, the Applicant shall
implement traffic controls to ensure the materials are delivered safely to the site, and such traffic controls shall be conducted in accordance with New Hampshire DOT policies, including the 2009 edition of the Manual on Uniform Traffic Control Devices.

No. 6, the Applicant shall require construction contractors and field personnel to be trained in Safety/Occupational Safety And Health Administration, basic first aid/ cardiopulmonary resuscitation, environmental compliance and other relevant topics. In addition, the Applicant shall provide Project-specific training.

No. 7, the Project shall resubmit
FAA Form 7460-1, Notice of Proposed
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Construction or Alteration, to the FAA at least 45 days before commencing construction to address any changes that have been made to the original design.

MR. FITZGERALD: Madam Chair, if I could go back to 5, I think it was -- oh, No. 6, Applicant shall require construction contractors to be trained in Safety/Occupational Safety Health Administration, basic first aid, et cetera. I believe there was a reference to OSHA hazardous waste operations, HAZWOPER training, for encountering hazardous waste. Does anyone -is that condition covered in another --

DIR. MUZZEY: Isn't that part of the DES permitting?

MR. SHULOCK: That's part of I think what they're going to do with the groundwater management plan.

MR. FITZGERALD: So it may be part of the soil and groundwater management plan. Any worker that directly handles contaminated or potentially contaminated soil water should have OSHA haz waste -- I mean, this generally refers
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
to OSHA, so that may cover it as well. I'm sorry. I'm getting tired.

MR. SHULOCK: So I think we've covered the area of contractor safety which was two down.

PRESIDING OFFICER WEATHERSBY: LOok at that. Going back to the conditions, I guess there's definitely a lot of overlap here.

No. 8, prior to any construction activity, the Applicant shall file with the New Hampshire Site Evaluation Committee a copy of all Best Management Practices to be utilized with the Project for all construction activity, to the extent they have not already been provided to the SEC, including, without limitation, BMPs for entering and exiting the right-of-way or construction site; sweeping paved roads and access points; BMPs related to the Applicant's stormwater pollution prevention plan; BMPs for specific locations, such as steep slopes near water bodies; BMPs for submarine shoreland cable installation; BMPs for work near archeological historic sites.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  | 153 |
| :---: | :---: |
| 1 | During construction, the Applicant shall |
| 2 | adhere to BMPs consistent with all state and |
| 3 | federal permit requirements. |
| 4 | MS. DUPREY: Madam Chair, can I just |
| 5 | suggest that while you're reading these |
| 6 | conditions, it's taking us a long time to do |
| 7 | that, that this is the very area I'm going to |
| 8 | be addressing first in the orderly development. |
| 9 | And so people might think of these conditions |
| 10 | through that lens as well so that we don't have |
| 11 | to reread them all over again tomorrow or |
| 12 | tonight or whatever. |
| 13 | PRESIDING OFFICER WEATHERSBY: Do you |
| 14 | think it would be better to wait and discuss |
| 15 | these then? |
| 16 | MS. DUPREY: I think it doesn't |
| 17 | matter when we do it. I just don't think we |
| 18 | should do it twice. |
| 19 | PRESIDING OFFICER WEATHERSBY: So |
| 20 | this is travel safety and construction safety. |
| 21 | I suppose we should just keep going. I don't |
| 22 | like reading these -- |
| 23 | MR. WAY: Plow on. |
| 24 | MR. SCHMIDT: Madam Chair, relative |

to No. 8, though, $I$ don't see any reference to submissions to the specific state agencies. Is that all covered elsewhere? Like BMPs from the environmental end, is that required in the DES --

MR. FITZGERALD: I believe those are in the DES permit.

MR. SCHMIDT: And then archeological and historic sites to DHR?

DIR. MUZZEY: We did come up with a condition addressing that. Thanks.

PRESIDING OFFICER WEATHERSBY: SO I think it's covered. We could amend it so that prior to any construction activity the Applicant will file with the SEC and any relevant state agency.

MR. SCHMIDT: Sure, that would be fine.

PRESIDING OFFICER WEATHERSBY: Shaking of heads "Yes" ?

DIR. MUZZEY: Sure.
PRESIDING OFFICER WEATHERSBY: SO we're going to amend Condition 8 to be sure, in case we miss something, this deals with the
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
purview of the state agency, that it would be filed with that entity as well. Does anyone disagree with that change in the condition?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: NO. 9 the Applicant shall comply with all terms and conditions of the Memorandum of Understanding entered into between the Applicant and host communities or other entities. I want to have a review of those at some point. For now, let's leave that one.

No. 10, to the extent the Applicant requires the use of local roads for deliveries of heavy equipment and/or materials that exceed the weight limits of locally maintained roads, the Applicant shall comply with the specific terms and conditions of any Memorandum of Understanding with the host municipality. To the extent the MOUs do not cover oversize and overweight equipment and deliveries, the Applicant shall work with the local town or city to reach an agreement on the use of local roads. If an agreement cannot be reached, the Applicant and the town
or city shall resolve any such issues with the SEC Administrator. Again, I would just note that Portsmouth and Madbury don't have MOUs. But it seems as though the second half of this No. 10 would apply to them.

No. 11, again, to the extent not already addressed by a Memorandum of Understanding, the Applicant shall coordinate with the municipal engineer, road agent or other authorized municipal officer for any municipality through which the Project will pass in order for the Applicant to comply to the extent possible with existing municipal construction rules and regulations. Such coordination shall include the provision of any information necessary for the municipality to assess compliance, but shall not require the Applicant to apply for or obtain local permits. If it is not practicable for the Applicant to comply with such municipal rules and regulations, the Applicant shall work with the municipal officials to reach an agreement. In the event a dispute arises as to the Applicant's
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
compliance with any rule or regulation that the Applicants are unable to resolve directly with the municipal officials, the Applicant and/or the municipality may refer the matter in writing to the SEC Administrator for resolution.

So that kind of gets back to who controls local roads where DOT is not supervising road crossings on town roads. Does anyone want to comment at all on Condition 11, as to whether it addresses everything that needs to be addressed concerning local road crossings?

MR. SHULOCK: So the Applicant has made an argument that our authority preempts local authority with regard to roads, municipal road crossings. Counsel for the Public has stated that we need to decide that issue before we grant that request, but then it's come to agreement on a stipulation with the Applicant, which I believe you just read. And the Applicant proposes that the Subcommittee approve the crossings of locally maintained roads, subject to the Applicant complying with
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

DOT standard specifications for road and bridge construction and the provisions, instructions and regulations set forth in DOT standard excavation permit. And then they agreed to comply with the Memorandum of Understanding that they've entered into with the towns with regard to the construction of those roads. So I think it's probably all covered.

MS. DUPREY: Where was that language?
MR. SHULOCK: About the Applicant's commitment, requesting commitment?

MS. DUPREY: The one that you just read.

MR. SHULOCK: It is on Page 123, the written page of the Applicant's post-hearing brief.

Eversource proposes that the Subcommittee approve the crossings of locally maintained roads, subject to the Applicant complying with DOT standards, specifications for road and bridge construction and the provisions, instructions and regulations set forth in the DOT standard excavation permit. And then in addition, they've entered into
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MOUs with the towns that bear on road construction, and they would comply with those.

MR. SCHMIDT: So, to clarify -- I
don't have those at my fingertips -- are they expecting DOT to issue an encroachment permit on the local road?

MR. SHULOCK: I don't believe that's what they're asking for. They say they would comply with the standards. I don't know who would be the judge of that but --

MR. SCHMIDT: Right. The DOT certainly wouldn't have authority over local municipal roads.

PRESIDING OFFICER WEATHERSBY: So as I understand it, the Applicant is agreeing, with regard to local roads that they will cross or impact in any other way, that they will conduct all their work in conformance with all DOT standards, but oversight will be from a different entity.

MR. SHULOCK: And I'd be hard-pressed to find it and to give a cite to the record. But I believe they also said that they would be
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
constructing in conformity with the National Electric Safety Code and all the other codes that would apply to the Project.

PRESIDING OFFICER WEATHERSBY: And in Condition 11, if we impose it, they're agreeing they'll be required to comply with all municipal rules and regulations, which every town I'm pretty sure has conditions about how roads should be built, you know, thickness of the pavement and the gravel underneath, et cetera, road construction standards. So they would attempt to meet those, work with the officials to reach an agreement about it. If a dispute arises, they would come to the SEC.

It does put the SEC in the role of oversight for local roads, which isn't ideal. Ms. Monroe has yet another hat to wear. But I'm not sure what the alternative is. Certainly the SEC could hire a person, an engineer or someone who would work on behalf of the SEC to make sure there's compliance with all applicable standards concerning local roads.

MR. IACOPINO: The only legal thing I
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
would suggest is if you're inclined to do that, you also specifically give Ms. Monroe the authority to hire such an expert and to assess the cost against the Applicant.

MR. WAY: I think that's where I would come down, because given the size of the Project and the hope that we're not going to hit a multitude of issues, I would opt to give Pam some authority to address it.

MR. FITZGERALD: Madam Chair, there's a Condition 21 below that $I$ wonder, it talks about a dispute resolution administrator. But it seems specifically relative to property: Loss of business or income, diminution of value of property, et cetera. I'm wondering if it would be appropriate to broaden that somewhat to, you know, have a dispute resolution administrator for the Project, given the huge concerns that have been raised in so many areas, historical, aesthetics and so on.

PRESIDING OFFICER WEATHERSBY: SO I think that that's contemplated in Condition 21. It encompasses any damage to property or loss of business. And I would say that loss of
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
income, et cetera, I would say that would include damage to a local road that isn't resolved or to a historic site which are, of course, owned by somebody. So if things don't -- if things go awry, there's a whole process to address that. I see that process as different than who's really going to be the road agent. And it seems as though for local -- for state roads, which would be Route 4, Spaulding Turnpike, the access roads, that would be DOT. But for local roads, it seems as though we need to vest the monitoring authority with the SEC Administrator, but empower her to hire an engineer or other qualified official to assist with that process and to have the Applicant pay for the cost of that person.

MS. DUPREY: Are we asking for this engineer in the case there are issues or just to be on Staff? I guess what are we asking this person to do?

PRESIDING OFFICER WEATHERSBY: What's role the DOT would have concerning this project, Mr. Schmidt?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

MR. SCHMIDT: The role the DOT would have, jurisdiction over state routes to enforce -- to issue the permits, to enforce the requirements in accordance with the utility manual. I'm not sure if that's clear enough. DIR. MUZZEY: I see this as a little different because it seems to offer a little bit more wiggle room as to compliance. My experience with the Department of Transportation is the DOT instructs people what to do and people do it. This seems to anticipate that if it's not practicable for the Applicant to comply with municipal rules and regulations, the Applicant shall work with municipal officials to reach agreement. In the event that they can't do that and some sort of dispute arises between municipal officials and the Applicant's compliance with rules and regulations, then we -- then this anticipates that the SEC Administrator will resolve the issue.

PRESIDING OFFICER WEATHERSBY: I think our condition goes beyond what's in 11, in that, first, they've agreed elsewhere to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
issues and may charge the Applicant for all costs and expenses incurred by said consultant.

MR. WAY: I'm trying to think back to your first sentence. Is she required to hire someone, or if it's a matter we could -- she could handle it herself --

MR. IACOPINO: No. If she can handle it herself, she -- it's her discretion.

MR. WAY: Very good.
MR. IACOPINO: The word "may" is in the first sentence.

MR. WAY: All right. Thank you.
DIR. MUZZEY: I would agree with adding that sentence to the end of both 10 and 11.

PRESIDING OFFICER WEATHERSBY: Is there general agreement concerning local road issues?
[No verbal response]
All right. Let's move on through the proposed conditions regarding traffic and other safety issues.

No. 12, to the extent not already addressed by a Memorandum of Understanding,
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
the Applicant shall coordinate with all host municipalities to restore all municipal roads that are damaged by construction of the Project to the same or better condition, subject to the review of the municipal engineer, road agent or other authorized municipal officer. In the event a dispute arises as to the Applicant's compliance with this condition, the municipality may refer the matter in writing to the SEC Administrator for resolution.

MR. WAY: Is that the same condition? MR. IACOPINO: My legal
recommendation is, if you are going to have the matter referred to her, you add the same proviso at the end of Condition No. 12.

MR. SHULOCK: So can we do that generally for all conditions/requirements that refer to the SEC Administrator?

MR. IACOPINO: We can.
MR. SHULOCK: It's just like a belts and suspenders?

MR. IACOPINO: Yes.
MS. DUPREY: So if we do that, we
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
don't have to add it to each specific one; right? We could add it as a general condition. MR. IACOPINO: Yes.

PRESIDING OFFICER WEATHERSBY: Okay.
No. 13. The Applicant shall
provide each host town and the Administrator of the SEC with copies of the Applicant's proposed construction plans, blasting plans, schedule and other public information to be made available to the public.

DIR. MUZZEY: And I would just add here that Newington has amended its MOU to further address the potential of blasting and potential effects of blasting.

MR. SHULOCK: Great. Now we've touched on the blasting and we've touched on economics and the effect on town infrastructure. This is good. We should keep going.

DIR. MUZZEY: We're making good progress.

PRESIDING OFFICER WEATHERSBY: Very
efficient at this hour.
MR. SHULOCK: Crossing things off my
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
list.
PRESIDING OFFICER WEATHERSBY: No. 14 construction plans, schedule and other information provided to each host town and Administrator of the SEC shall be updated at least monthly, or sooner if necessary, to reflect changes in the Project schedule or other changes during construction.

No. 15, in the event of significant unanticipated changes or events during construction that may impact the public, the environment, compliance with the terms and conditions of the certificate, public transportation or public safety, the Applicant shall notify the board of selectmen or town council of all affected host towns or their respective designee and the Administrator of the SEC in writing as soon as possible, but no later than seven days after the occurrence.

Mr. Shulock, in the emergency plan, obviously if there's an event of construction that affects public safety, et cetera, I'm guessing there's requirements to deal with
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
that prior to the seven-day time frame.
And the same, Mr. Fitzgerald, I'm guessing, for DES. If there's a spill or some environmental issue, there's also probably immediate reporting requirements?

MR. FITZGERALD: Yes, there's certainly statutory and regulatory requirements.

MR. SHULOCK: The question again?
PRESIDING OFFICER WEATHERSBY: SO as
I was reading No. 15, a significant, unanticipated change or event that can affect the public, the environment, transportation, public safety, they've got seven days to put a letter in the mail. And I'm just wondering -actually, it's as soon as possible, but no later than seven days. So maybe that's enough.

MR. SHULOCK: I don't think I can recite the different time frames that they have to report to us for incidents. But most of those incident reporting time lines are rather short, and are shorter for the incidents that are more severe.

PRESIDING OFFICER WEATHERSBY: Okay.

Then moving on.
No. 16. Here we go. In the event of emergency conditions which may impact public safety, the Applicant shall notify the host town's appropriate officials and the Administrator of the SEC immediately.

Those were the construction traffic safety-related items. There are some others in 17 and 18 concerning what happens if things don't go so well. Actually, 17 is more concerning notification. So I think we can address those at another time.

Is there anything else concerning traffic safety?

MR. SHULOCK: Well, if you consider construction and crossings of state-maintained highways a safety issue, which we probably should, then $I$ think it bears a little bit of review. And excuse me if I get more tongue-tied than usual in this section because my computer printer malfunctioned and it's just a mess.

Okay. So Ms. Frazier testified that the following DOT permits would be
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
required: That's a use and occupancy agreement, an excavation/trenching permit, a turnpike encroachment permit, an application for driveway permit and permission for aerial crossing. I think as of the time the brief was filed by the Applicant, DOT had not issued any of its final permits and conditions. The Applicant has requested that we delegate authority to DOT to issue those permits and that the certificate be conditioned upon their issuance. And I think that's really it for DOT. I mean, normally they give some of the those certificates after it's constructed, right, because they review some of those afterwards.

MR. SCHMIDT: The initial permits are normally given in advance. But they may be modified upon final completion, you know, an as-built type situation.

MR. SHULOCK: Okay.
PRESIDING OFFICER WEATHERSBY: Mr.
Schmidt, we don't have construction plans for the Project yet. Does DOT need to have construction plans before they issue a permit?
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

What's the process there?
MR. SCHMIDT: Yeah, they'll need to see details of the proposal before a permit can be executed. There are times that we've done a letter of cooperation, but we have not actually approved any crossings or anything like that without any details.

PRESIDING OFFICER WEATHERSBY: Thank you.

MR. SHULOCK: And then for municipal crossings, $I$ think the Applicant stated that those design drawings are 80 percent complete, which is a pretty high level of detail for this point in the Project. And they have provided drawings to all host communities for their review and comment. They provided host communities with copies of Appendix 18 and 18A, which are Exhibits 39 and 93 which contain design details for local road crossings and installations in local roads. They state that the proposed overhead design meets the requirements of the National Electric Safety Code, meets all local and state clearance requirements, and that they will prepare full
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
traffic control plans consistent with the Manual on Uniform Traffic Control Devices. And they've entered into MOUs with Newington and Durham and the proposed condition that we looked at with the Counsel for the Public. So then there are crossings of state lands and waters, and we've already discussed those because those were the PUC permits where we decided not to require the Applicant to provide additional detail about the concrete mattresses to the PUC.

I don't think we discussed
blasting, although we read the stipulation, or the stipulated condition. Am I right?

PRESIDING OFFICER WEATHERSBY: YOU didn't get into any of the conditions in the MOUs concerning blasting. I think at this point in the day, we can take those up when we talk about orderly development.

MR. SHULOCK: I think with regard to safety and blasting, let me summarize that. We have ten minutes. I think if do the safety for blasting and then go back to the contractor safety, which is very short, then we've covered
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
public health and safety.
PRESIDING OFFICER WEATHERSBY: Great. MR. SHULOCK: Okay. So with regard to blasting, Mr. Plante testified that it was anticipated that blasting will be required only for the installation of the underground cable under Main Street in Durham. Now, they could be couldn't sure of that, but that's their expectation. They agreed to conduct pre-blasting and post-blasting surveys and compensate for damages that may be caused by blasting. They've entered into MOUs with Newington and Durham that cover blasting within those towns. Mr. Hebert represented that that town's agreement on blasting resolved all of the issues that he had previously raised in his testimony about blasting. That MOU has provisions dealing with the transportation, handling and storage of explosives, application to the fire chief for permission to a blast, and appeal path culminates in review by the SEC Administrator and notification to abutters.

The Durham MOU requires the
Applicant to hire a licensed blasting
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
contractor to provide an approved site plan, contractor's license, certificate of insurance, vehicle trip sheet and material inventory to the Durham Fire Department, and to advise the police and fire department prior to each blast.

The UNH MOU requires the Applicant to retain a licensed blasting contractor to perform required blasting. And Eversource has agreed to provide the University with a blasting plan that has vibration monitoring. So that's it for blasting. Unless we actually want to go through the town MOUs and the UNH MOUs.

PRESIDING OFFICER WEATHERSBY: Let's save that for when we go through the municipalities and then go through the MOUs.

MR. SHULOCK: Okay.
PRESIDING OFFICER WEATHERSBY: Does
anyone have any comments concerning blasting safety?

MR. FITZGERALD: I'd just note that the Town of Newington, there's a lot of discussion about any disputes regarding
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
blasting. And again it refers it to the SEC Administrator finally. So is that covered in the other section?

PRESIDING OFFICER WEATHERSBY:
Director Muzzey.
DIR. MUZZEY: Well, my understanding is that we're going to have a general condition that allows the SEC Administrator to hire an expert as needed in order to complete any of the responsibilities assigned.

MR. FITZGERALD: With regards to all of these issues, environment -- yeah, okay.

MR. IACOPINO: Can I just ask a question? Where are you referencing that the Administrator will be called upon to do the blasting --

MR. SHULOCK: Newington MOU.
MR. FITZGERALD: Newington 2-2, Board of Engineers decision may be appealed with the Administrator of the Committee. There's an appeal process here that says Newington -- the application for blasting will be filed with the Newington Fire chief. The fire chief's decision may be appealed with the Town of
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

Newington Board of Fire Engineers; the Board of Engineers decision may be appealed with the Administrator of the Committee. That's all referenced in Newington 2-2.

MR. SHULOCK: If you look at the Durham MOU, which is Exhibit 250, any dispute under the agreement would go to the SEC Administrator for resolution. So any of the blasting disputes would go there as well. I'm assuming there's a similar provision in UNH.

PRESIDING OFFICER WEATHERSBY: Okay. So right now that's what the MOUs say.

MR. SCHMIDT: May I?
PRESIDING OFFICER WEATHERSBY: Yes, Mr. Schmidt.

MR. SCHMIDT: I have a question. The MOU is signed. Can we modify the contents of that with conditions?

PRESIDING OFFICER WEATHERSBY: We can't modify. As $I$ understand it, we can't modify the MOU. But we don't need to make compliance with every section of it a condition of the certificate. So if there's a section that we say don't like, the agreement would
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
still exist between the parties, but it would not be a condition of the certificate.

Is that correct, Mr. Iacopino?
MR. IACOPINO: Yes. You are being asked to approve the MOUs as part of conditions on the certificate. You could reject the MOU in full if you'd like. If you have adequate evidence in the record, you can change the conditions. That is within your authority.

PRESIDING OFFICER WEATHERSBY: We also might want to have something in a condition that, if there's a conflict between something that we -- a condition we had made and a condition in the MOU that we are not aware of but that the SEC method is -- will win out.

MR. SCHMIDT: So my question specifically is: Where it says that any decision by the town Board of Fire Engineers may be appealed to the SEC Administrator, it might be more appropriate to have them appeal to the state fire marshal. And I'm wondering how we should address that.

MR. IACOPINO: Actually, I'm going to
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
look into the Department of Safety rules regarding blasting this evening, and maybe tomorrow when we talk about orderly development we may address that.

If you note at the bottom, there is a reference to Safety Rule 1600. We have had in other cases blasting problems. And in my experience, it has been the Department of Safety that has dealt with those issues.

MR. SCHMIDT: Right. That's who I meant by the fire marshal's office is through the Department of Safety.

MR. IACOPINO: Well, actually, there's a division in the state police that deals with blasting, or at least there was back when we had an issue with the Groton Wind Project.

MR. SCHMIDT: Very good. Thank you. PRESIDING OFFICER WEATHERSBY: All right. So we'll take up the specific provisions tomorrow when we know a little bit more about blasting protocols and where the rules lie.

Mr. Shulock, do you have anything
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
else concerning blasting or contractor safety?

MR. SHULOCK: Just contractor safety.
Okay. So there wasn't a lot of evidence on that issue. But Bowes and Plante testified that a site-specific health and safety plan will be developed and will dictate proper personal protective equipment to be utilized by workers, such as long-sleeved shirts, glasses, safety shoes and chemical-resistant gloves.

And then because of the PFOA and PFOS issues in the groundwater, a soil and groundwater management plan had to be developed. And that plan will be reviewed and approved by DES prior to construction and will require contractors to develop a site-specific health and safety plan, that any workers directly handling contaminated or potentially contaminated soil or water are to have OSHA hazardous waste operations emergency response 40-hour training in accordance with standard 1910.120(e). And then, of course, the Applicant and Counsel
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
for the Public entered into a stipulated condition that we've just discussed.

PRESIDING OFFICER WEATHERSBY: Any comments or concerns regarding blasting or contractor safety?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: I
think the only other issue to touch on is just to note under the section that we've had an extended conversation concerning oysters and shellfish consumption and the possible effects on health that we're not going to reiterate here, but that we've already had that discussion and reached some conclusions there.

So, recognizing we need to just get a little more detail other than just blasting regulations, but knowing that some regulations are there and that there's provisions in the MOU and in these conditions, $I$ don't think it's necessary to delay a straw vote on whether the project creates an unreasonable adverse effect on public health and safety. Would anyone like to delay the vote until we learn more about
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
to go through the MOUs? There are several of them. They're about ten pages each. And I don't know if you want me to give an overview of them or if you want me to read them or what it is that -- I would suggest that people read them tonight so that they have a familiarity with them. And I can give the referenced exhibits if that would be helpful. But I just -- I don't want to take more time than is necessary, but $I$ want to be as thorough as people desire. And I'd also like to understand how much more you want to go over with respect to construction and those specific stipulations, the conditions, the stipulated conditions.

PRESIDING OFFICER WEATHERSBY:
Personally, I think your approach is a good one, in that we all take a look at those tonight and flag any issues we have with content or wording. With the MOUs, if we are going to add as a condition to any approval of this application that they must adhere to the MOUs, there may be some things we want to carve out or alter. So if everyone reads those
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
tonight and we can just have a more general discussion about them rather than going word by word through them, I think that's a better use of everyone's time.

MS. DUPREY: Okay. Just as a quick for people, the Newington MOU is at Applicant's Exhibit 168. There's also a blasting addendum to it, an amendment to it, at Newington 2-2 was it? The UNH --

DIR. MUZZEY: Could you repeat the
Newington reference, please?
MS. DUPREY: Yes. It's Applicant's Exhibit 168 plus Newington 2-2.

The UNH MOU is Applicant's
Exhibit 267.
The Durham MOU is Applicant's Exhibit 270. There's also an MOU with the Rockingham County Conservation Commission. There's been an MOU with the DHR --

MR. FITZGERALD: Do you have a number on that Rockingham?

MS. DUPREY: I don't have that. If I can look at my exhibit list, I can probably come up with it pretty quickly.
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}

|  | 185 |
| :---: | :---: |
| 1 | There's also the DHR MOU. I think |
| 2 | that's the majority of it. |
| 3 | The Rockingham MOU relates to soils |
| 4 | removal on the Frink Farm. And then there |
| 5 | are all the letters with everybody. But |
| 6 | they're fairly short. I feel like I can |
| 7 | summarize those. But I could also give you |
| 8 | citations to them, too, if people prefer |
| 9 | that. |
| 10 | And one more thing that 1 think |
| 11 | would be useful for people to look at is, and |
| 12 | I'm just scrambling around trying to find it, |
| 13 | is the dispute resolution process that's been |
| 14 | agreed to, and it's at Applicant's Exhibit |
| 15 | 268. |
| 16 | MR. FITZGERALD: Madam Chair, also, I |
| 17 | don't need this discussion tonight, but if we |
| 18 | can at some point get some understanding. We |
| 19 | have all these MOUs and MOAs, and it's been |
| 20 | expressed that we can make revisions. So $I$ |
| 21 | want to understand the legal step in it. If |
| 22 | two entities have entered into an MOU or an |
| 23 | MOA, and then we say it's not a condition, |
| 24 | what's the status legally of -- they've entered |
|  | EC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\} |

into an agreement.
PRESIDING OFFICER WEATHERSBY: SO I think Mr. Iacopino addressed that a moment ago. Would you like to address it again?

MR. IACOPINO: Sure. They may have entered into an agreement that may bind them to each other, but the Applicant's first obligation is to comply with the conditions of the certificate. So whatever the private contractual matter between the Applicant and the town is, if you want a different condition, the Applicant's got to comply with that condition. And that's the requirement. They'll have to work it out with the town. If it's something that --
(Court Reporter interrupts.)
MR. IACOPINO: As a practical matter, we rarely make a change that makes that big of a difference in the relationship between the town and the Applicant.

MR. FITZGERALD: I was just going to say it would seem to me that that would not be something we would take lightly.

MR. IACOPINO: That's true. It
\{SEC 2015-04\} [DELIBERATIONS-DAY 4] \{12-06-18\}
doesn't happen much. But you certainly have the authority to do so.

PRESIDING OFFICER WEATHERSBY: We
also -- I think in the few instances I've seen it is when the SEC has gone beyond what's there. So compliance can be made with both entities.

Okay. Anything else for tonight?
[No verbal response]
PRESIDING OFFICER WEATHERSBY: All
right. We are adjourned and we'll see everyone tomorrow morning at 9:00. Thank you.
(Whereupon the Day 5
was adjourned at 6:10
p.m., and the hearing will resume on December 7, 2018
commencing at 9:00 a.m.)


| [ | $\begin{array}{\|c} \mathbf{2 9 : 1 9 , 2 2} \\ \text { across (1) } \\ 79: 18 \end{array}$ | $\begin{array}{\|c} \mathbf{1 7 9 : 4 ; 1 8 6 : 4} \\ \text { addressed (9) } \\ 13: 5 ; 30: 17 ; 88: 15 ; \end{array}$ | 20:1;161:20 affect (2) 84:19;169:12 | $\begin{aligned} & \text { 155:22,23;156:23; } \\ & \text { 157:20;160:13; } \\ & \text { 163:15;165:17; } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| [No (17) | Act (2) | 3:24;135:4;156:7; | affected (6) | 71:2;174:15;177:7, |
| $18: 1 ; 55: 4 ; 56: 1$ | $\begin{aligned} & \text { 38:23;109:9 } \\ & \text { action (1) } \end{aligned}$ | $\begin{aligned} & 157: 12 ; 165: 24 ; 186: 3 \\ & \text { addresses (2) } \end{aligned}$ | $\begin{aligned} & 21: 5,8 ; 23: 18 \\ & \text { 107:23;110:12; } \end{aligned}$ | $\begin{aligned} & \text { 24;186:1,6 } \\ & \text { agrees (4) } \end{aligned}$ |
| 107:13;115:15; | $98: 4$ | $34: 15 ; 157: 11$ | $168: 16$ | $37: 14,20 ; 39: 21$ |
| $116: 20 ; 135: 11$ | actions (1) | addressing (4) | affects (1) | $57: 9$ |
| $136: 14 ; 143: 12$ | 58:9 | 37:10;53:6;153:8 | 168:23 | ahead (2) |
| 155:4;165:19;181:6; | ac | 54: | afternoon ( | 92:11;98:11 |
| 182:2;187:9 | 10;32:23;37:13, | adequacy (1) |  | aid (1) |
| [sic] (2) | 22;39:3;63:7;122:24 | 144:3 | afterwards (1) | 151:10 |
| 24:19;56:2 | activities (9) | adequate (3) | 171: | aid/ (1) |
| A | 7:5;78:20,23; | adequately (2) | 9:15;18 | air (7) |
|  | 146:17 |  | 22:24;24:23;25:10, | 20:2,18;74:21 |
| abandon (2) | activity (9) | adher | 6:7;55:19;56:12; | 75:7;78:6;142:14,20 |
| $123: 9,14$ | $31: 6 ; 33: 5 ; 51: 5,18$ | $153: 2 ; 183: 2$ | $57: 18 ; 58: 11 ; 61: 9$ | alewife (1) |
| abandoned (3) | $92: 3 ; 96: 15 ; 152: 10,$ | adjacent (2) | $69: 7,10,18,20 ; 75: 17$ | $91: 17$ |
| $120: 21 ; 124: 20$ | $14 ; 154: 14$ | 84:21;107:20 | 79:15;86:21;89:22; | align (1) |
| $132: 12$ | actual | adjourned (2) | 91:3,20;92:18;96:13; | 146:4 |
| abide (2) | 5:20,20,23;36:22 | 187:11,14 | 99:2;100:2;101:14; | alive (1) |
| 133:9;16 | $37: 8 ; 52: 16 ; 85: 23$ $106 \cdot 3 \cdot 126 \cdot 10$ | adjustments (1) | $122: 12 ; 130: 3 ;$ $146 \cdot 17 \cdot 147 \cdot 15$ | $80: 5$ |
| able (5) | $\begin{aligned} & \text { 106:3;126:10 } \\ & \text { actually (18) } \end{aligned}$ | 12:12 <br> Adminis | $\begin{aligned} & 146: 17 ; 147: 15 ; \\ & 153: 11 ; 156: 2,6 ; \end{aligned}$ | $\begin{array}{\|c} \text { Allen (2) } \\ 34: 9 ; 41: \end{array}$ |
| $\begin{aligned} & 5: 15 ; 33: 15 ; 113 \\ & 134: 12 ; 144: 17 \end{aligned}$ | $8: 5 ; 38: 3 ; 52: 20$ | 137:12;143: | 169:9;176:1;186: | allow (6) |
| above (4) | 59:15;63:6;74:1 | 150:18;151:10 | against (1) | 5:19;9:13;14: |
| 49:7;109: | $\begin{aligned} & 75: 18 ; 79: 8 ; 125: 4 ; \\ & 130: 2 ; 139: 11 ; 147: 8 \end{aligned}$ | Administrator (23) | $161: 4$ <br> agencies (16) | 17:19;27:7;81:10 <br> allowed (4) |
| 115:24;116:10 | $\begin{aligned} & \text { 130:2;139:11;147:8; } \\ & \text { 169:16;170:10; } \end{aligned}$ | $\begin{aligned} & \text { 110:13;156:2; } \\ & \text { 157:5;161:12,18; } \end{aligned}$ | $\begin{aligned} & \text { agencies (16) } \\ & 11: 17 ; 13: 12,15 ; \end{aligned}$ | allowed (4) <br> 9:6,8;18:11;141:4 |
| absolutely (1) 10:18 | $\begin{aligned} & \text { 169:16;170:10; } \\ & \text { 172:5;175:13; } \end{aligned}$ | $\begin{aligned} & \text { 157:5;161:12,18; } \\ & 162: 13 ; 163: 20 ; \end{aligned}$ | $\begin{aligned} & 11: 17 ; 13: 12,15 ; \\ & 20: 9,17 ; 21: 2,19 \end{aligned}$ | allowing (2) |
| abutters (1) | 178:24;179:13 | 164:3,22;166:11,19; | $8: 14 ; 41: 13 ; 43: 18$ | 17:21;128:2 |
| 174:22 | Adams (1) | 167:6;168:5,18; | 49:19;57:17;85:14; | allows (1) |
| AC (1) | 59:1 | 170:6;174:22;176:2, | 124:2;140:23;154: | 176:8 |
| 90:10 | add (11) | , 15,20;177:3,8; | agen | along (8) |
| acceptable (2) | $\begin{aligned} & 44: 23 ; 45: 23 ; 66: 9 \\ & 71: 3 ; 123: 18 ; 164: 21 \end{aligned}$ | $178: 20$ | 10:24;77:5,7;97:2 $154 \cdot 16 \cdot 155 \cdot 1$ | 4:9,19;102:20; |
| 54:6,14 | $\begin{aligned} & 71: 3 ; 123: 18 ; 164: 21 ; \\ & 166: 15 ; 167: 1,2,11 \end{aligned}$ | $\begin{array}{\|c\|} \hline \text { adopt (3) } \\ 145: 13 ; 149: 2, \end{array}$ | $\begin{aligned} & \text { 154:16;155:1 } \\ & \text { agent (3) } \end{aligned}$ | $\begin{aligned} & 109: 14 ; 115: 22 ; \\ & 116: 11 ; 144: 9,12 \end{aligned}$ |
| access (7) <br> 136:7;14 | $183: 21$ | adopted (1) | 156:9;162:8;166:6 | alter (1) |
| 21;145:2;152:19; | added | 95:15 | ago (3) | 183:24 |
| 162:10 | 1:5;72: | ado | :6;78:11;186:3 | alteration |
| accessed (1) | ad |  | agr | 9:22;143:6;151 |
| 146:15 |  |  | 14:15,21;16:1, <br> 17:1;46:7,8:50:3 | alternative (2) <br> 131:11:160: |
| accessible (1) | $44: 24 ; 54: 11 ; 129: 3,$ | advance | $: 7 ; 76: 12 ; 87: 13$ | Ithough (12) |
| accommod | 13;165:14 | 171:17 | 96:12;98:2;112:4; | 9:16;14:9;41 |
| 149:9 | addition (5) | advantageous (1) | 138:11;148:3,4,5; | 50:15;68:1,20;96:2; |
| Accommodation (1) | $\begin{aligned} & 94: 2 ; 103: 4 ; 142: 19 ; \\ & 150: 21: 158: 24 \end{aligned}$ | 15:24 <br> adverse (18) | 164:11;165:13 agreed (29) | $\begin{aligned} & 97: 11 ; 117: 5 ; 120: 16 \text {; } \\ & 121: 1 ; 173: 13 \end{aligned}$ |
| 150:7 accordance (11) | additional (9) | $\begin{array}{\|l} \text { adverse (18) } \\ 5: 1 ; 12: 17 ; 13: 1 ; \end{array}$ | $\begin{aligned} & \text { agreed (29) } \\ & 25: 8 ; 27: 3,5 ; 31: 1 ; \end{aligned}$ | always (3) |
| accordance (11) 110:7;117:19; | $\begin{array}{\|l\|} \hline \text { additional (9) } \\ 13: 21 ; 17: 20 ; 44: 6 \end{array}$ | $\begin{aligned} & 5: 1 ; 12: 17 ; 13: 1 ; \\ & \text { 19:7,8;20:1;21:12; } \end{aligned}$ | $\begin{aligned} & 25: 8 ; 27: 3,5 ; 31: 1 ; \\ & 32: 20,22 ; 39: 2 ; 41: 16 \end{aligned}$ | always (3) $54: 1 ; 87: 20 ; 124: 13$ |
| $\begin{aligned} & 118: 6 ; 121: 23 ; \\ & 118: 19 ; \end{aligned}$ | 50:6;66:6;101:7; | 23:13;99:5,14;100:5, | 45:15;46:2;50:16; | Amanda (1) |
| 145:17;149:8,19; | 118:13;136:3;173:10 | 17,101:3;112:6; | 55:19;57:15;83:13; | 102:11 |
| 150:5,12;163:4; | Additionally (1) | 144:8,11;181:22 | 85:10,14;86:14;88:1, | amend (2) |
| 180:23 | 136:5 | 182: | ;107:15,18; | 154:13,23 |
| According (4) | address (20) | advise (1) | 117:12;121:20; | Amended (2) |
| 109:6;115:19; | 33:9;44:9;50 97-4•108:12 | 175:5 | 158:4;163:24;174:9; | 102:24;167:12 |
| 131:7;137:9 | $97: 4 ; 108: 12 ; 109: 3$ 120:15;121:14; | aeria | ag | amendment 184:8 |
| account (2) | 120:15;121:14; | $\begin{aligned} & 32: 3,11 ; 33: 1 ; \\ & 36: 24 ; 37: 2,3,13,15, \end{aligned}$ | $\begin{array}{\|l} \text { agreeing (3) } \\ 15: 19 ; 159: 16 ; \end{array}$ | 184:8 American (6) |
| accountin | 151:3;161:9;162:6; | 21;45:14;49:22; | 16 | 26:22;38:10;68:6; |
| $118: 14$ | 164:9,167:13; | 115:10;171:4 | agreement (16) | 91:17,18;108:20 |
| acoustic (2) | 170:12;178:23; | aesthetics (2) | 42:19;102:6;140:2; | among (1) |

113:8
amount (4)
57:3;59:8;61:8;
115:5
analysis (1)
74:10
analyzed (1)
81:23
anchor (1) 139:16
anchoring (1) 141:3
anchors (1) 140:12
and/or (5) 25:20;58:10; 144:20;155:14;157:4
angst (1) 17:3
animals (1) 7:24
annotated (1) 74:2
answered (1) 12:4
anticipate (6) 121:11;122:22; 123:1,5;126:8; 163:12
anticipated (3) 60:23;110:13; 174:5
anticipates (1) 163:19
apologize (2) 4:4;32:8
appeal (3) 174:21;176:21; 178:21
appealed (4) 176:19,24;177:2; 178:20
appears (2) 102:3;145:20
Appendix (2) 85:19;172:17
applicable (3) 104:23;124:2; 160:22
Applicant (182) 10:19;13:15;16:8; 17:3;18:14;20:23; 24:12;25:2,8;26:14; 27:2,12,21;28:9,22; 29:18;31:1;32:20,22; 33:8;34:6,22;37:10, 14;38:14;39:2,11,21; 40:4,14,22;41:10,17; 42:16;43:22,23;44:3; 45:6,22;46:2;48:16, 24;49:5;50:9,12; 54:2,13;55:10,12,19; 56:3;57:9,15,20;

59:12,23;60:15,24; 67:3;77:11;82:7; 83:9,13,18,22;84:12, 17,22;85:9,13;86:4, 13;87:21;88:1,3,5,11;
89:1,4,20;90:2,8,12, 24;91:7;92:5,20; 93:23;94:5,9;96:16, 21;101:5,21,24; 102:18;103:4; 104:18;105:11,15;
106:1,15;107:15; 108:5,8,23;109:6,22; 116:6;117:9,12,14, 18,22;121:21,22;
123:7;127:7;131:10; 135:16;137:5,10; 139:1;140:3,22; 141:8;142:22;143:1, 2,14,20;145:2,5,21; 146:11;149:7,23,24;
150:4,8,15,21;151:7;
152:10;153:1;
154:15;155:6,8,12,
16,21,24;156:8,12,
18,20,22;157:3,14,
20,22,24;158:19; 159:16;161:4;
162:16;163:13,14;
165:1;166:1;167:5;
168:15;170:4;171:6,
8;172:11;173:10;
174:24;175:7;
180:24;186:10,20
Applicants (2)
28:15;157:2
Applicant's (39)
15:12;21:15;32:5; 33:4,13,23;34:11;
36:7,13,20;37:6,7;
48:14;50:7;85:19;
90:19;103:3,14;
104:13;109:2;
121:21;122:15;
135:19;137:8;
152:20;156:24;
158:10,15;163:18;
164:20;166:8;167:7;
184:6,12,14,16;
185:14;186:7,12
application (22)
20:6,16;22:6,8,11,
21,24;69:9;100:12;
101:4;102:23;103:1;
125:7;128:20;133:5;
134:20;139:8;
142:13;171:3;
174:19;176:22;
183:22
apply (3)
156:5,18;160:3
appreciate (2)
8:12;14:10
appreciated (1) 96:3
apprehension (1) 15:12
approach (1) 183:17
appropriate (23)
28:1,11;43:18; 57:18;58:24;86:11; 87:22;88:4,10;97:7, 12;121:17;138:20; 140:23;141:9,11; 142:7;144:6;147:19; 148:1;161:16;170:5; 178:21
appropriately (1) 182:23
approval (7) 17:22;41:19;44:7; 84:22;89:5,13; 183:21
approve (5)
96:7;137:15; 157:23;158:18;178:5
approved (5) 41:18;143:23; 172:6;175:1;180:16
approves (1) 9:21
approving (1) 88:20
approximately (4) 44:18;57:21;60:1; 90:5
aquatic (1) 122:24
archeological (3) 120:22;152:24; 154:8
area (34) 6:10,15,24;7:4,8,9; 26:9,17;27:24;29:4, 6;32:23;33:6;46:23; 51:12;55:18;73:3; 90:22;91:22;92:2; 94:1;95:13;101:20; 102:8;113:19; 116:23;137:13; 141:1,3;143:13; 147:1,3;152:4;153:7
areal (1) 91:2
areas (22) 7:5;26:10;27:16; 31:6,7;48:22;50:1; 51:4,5,16,18;56:13; 57:7;63:8;71:17; 118:22;119:13; 120:13,24;141:20,21; 161:20
area's (1) 6:14
argued (2)

60:15,24
argues (1) 91:7
argument (2) 11:14;157:15
arises (5) 118:4;156:24; 160:14;163:17;166:8
around (3) 94:15;111:5; 185:12
artificial (1) 59:13
as-built (3) 137:10;140:4; 171:19
$\operatorname{aspect}(2)$ 20:12;98:13
assert (2) 78:5;115:23
asserted (6) 38:22;59:23;91:1; 108:5;116:14;134:21
assertion (1) 75:5
asserts (5) 26:14;28:22;38:14; 56:3;116:6
assess (4) 67:6;103:6;156:17; 161:3
assessment (9) 21:8;86:8,12; 90:13,16,18;101:8; 103:15;129:2
assigned (1) 176:10
assigning (1) 96:4
assist (3) 162:15;164:23,24
assistance (1) 136:3
associated (11) 59:24;60:16;82:9; 83:12;90:3;92:22; 101:8;103:9;106:4; 108:6;109:23
Associates (2) 40:5,11
assume (3) 97:8;115:7;121:16
assumed (1) 27:22
assuming (3) 12:9;106:23; 177:10
assumption (2) 12:3,5
assurance (3) 13:3;131:2,5
assurances (1) 12:18
assure (1) 43:5
Atlantic (1) 26:21
Atmospheric (1) 137:11
attached (2) 43:13;109:8
attempt (1) 160:12
attention (8) 7:23;33:10;37:6; 48:8;51:24;62:23; 69:24;81:3
Attorney (3) 49:20;50:4;164:16
audible (2) 116:8,17
August (2) 57:23;83:19
authorities (1) 21:20
authority (15) 20:11;95:17;97:3; 140:22;142:15; 157:15,16;159:13; 161:3,9;162:13; 164:8;171:9;178:9; 187:2
authorize (1) 164:3
authorized (4) 9:3;156:10;164:22; 166:6
availability (1) 106:22
available (3) 83:24;107:4; 167:10
Avian (5) 28:16;35:17,22,24; 36:8
aviation (5) 139:8;142:11,12, 19;143:7
avoid (6) 21:12;25:22;26:1; 101:2,15;149:10
avoidance (3) 26:24;39:1;42:1
avoiding (1) 39:5
aware (3) 125:6;137:21; 178:15
away (3) 35:3;92:1;123:8
awhile (1) 53:6
awry (1) 162:5
B
back (29)
6:13;8:19;16:1;
18:7,23;36:16,23;
49:13;53:12;59:16;
69:11;77:9;79:20,22;
80:2;82:16;106:20;
128:10,21;131:7;
132:1;146:3;151:6;
152:7;157:7;165:3;
173:23;179:15;
182:17
background (2)
69:1;116:2
bacteria (1)
71:18
Bailey (4)
103:5,8,24;104:11
bald (31)
31:2,21,24;32:4,
17;33:9,13;34:3,16;
37:13,22;38:3,10,20,
23,24;39:6,10,24; 41:8,24;42:7,11; 44:12,15;45:10,12, 23;49:23;50:16; 92:11
ball (1)
44:21
banded (1)
26:22
Base (7)
74:21;75:8;78:6, 10,22;109:17;133:14
based (3)
12:5;103:13;
115:23
basic (3)
103:18;150:18; 151:10
basically (5)
45:1;75:20;76:11; 114:18;142:24
basis (3)
104:9;115:11; 119:10
basking (3)
31:11;51:9,15
bat (2)
29:17,22
bathymetric (5) 85:9,10,23;86:5; 89:9
bathymetry (1) 84:19
bats (7)
29:23,24;30:1,1,2, 2,3
bay (51)
4:12;7:24;9:3;
14:17;16:17;19:2;

26:3;30:14,17;38:4,6,
7,14;44:16;46:12,17,
22;55:1,6;57:5,7;
61:13;62:24;63:5;
64:19;70:21;71:12;
73:4,8,16;77:19,22,
22;82:16;83:24;84:8,
20;88:15;90:6;92:13,
24;93:12,22;94:1;
95:4;136:22;137:7;
140:12,14;141:15;
142:2
bays (1)
67:16
beam (4)
86:5,11,15;87:8
bear (2)
148:20;159:1
bears (1) 170:18
became (1) 119:5
become (1) 71:20
becomes (1) 131:13
bed (2) 58:21;60:3
beds (5) 57:11,15;60:7; 63:1,8
began (1) 74:12
beginning (2) 35:5;71:9
begins (1) 96:21
behalf (1) 160:20
behind (1) 6:23
belief (1) 16:17
believes (1) 86:7
believing (1) 53:3
below (6) 103:18;120:18,21; 132:9,12;161:11
belts (1) 166:21
beneficial (2) 137:5;139:23
benefits (1) 87:16
benthic (10) 83:1,8,10,11,14,18; 84:23;85:2;88:18; 89:23
best (20) 7:1,3;25:3,9,20; 35:16;39:12,21,24;

40:6;45:6,13;78:21; 91:15;98:3;110:10; 115:20;140:15; 149:9;152:12
better (4)
87:10;153:14;
166:4;184:3
beyond (6)
13:14,19;49:7;
163:23;164:5;187:5
big (2)
29:24;186:18
bind (1) 186:6
binding (1) 4:19
biology (1) 91:5
biomass (1) 112:9
biphenyls (1) 64:10
birds (7) 28:3;38:10,13; 46:11;54:24;92:10, 12
bird-safe (3) 28:17;36:1,9
bit (10) 14:14;40:8;61:21; 64:14;73:1;133:16; 147:24;163:8; 170:18;179:21
bittern (1) 29:4
bi-valve (1) 80:3
black (2) 27:10;38:8
blah (3) 149:11,11,11
Blanding's (2) 27:20,23
blast (2) 174:20;175:6
blasting (33) 167:8,13,14,16; 173:13,17,21,23; 174:4,5,12,13,15,17, 24;175:8,9,11,12,20; 176:1,16,22;177:9; 179:2,7,15,22;180:1; 181:4,16;182:1; 184:7
blue (1) 68:5
blueback (1) 91:18
BMP (1) 55:21
BMPs (10) 28:1;57:19;96:17; 152:16,19,21,22,23;

| $153: 2 ; 154: 3$ | buffer (4) |
| :---: | :--- |
| board (6) | $28: 12 ; 38: 18 ; 44: 14$, |
| $5: 19 ; 168: 15 ;$ | 19 |
| $176: 18 ; 177: 1,1 ;$ | buffers (1) |
| $178: 19$ | $28: 13$ |
| boaters (3) | buildings (2) |
| $136: 23,24 ; 139: 14$ | $100: 19 ; 108: 3$ |
| boating (1) | built (1) |
| $137: 20$ | $160: 9$ |
| bodies (5) | bulk (1) |
| $19: 5 ; 78: 2 ; 82: 3 ;$ | $118: 2$ |
| $141: 10 ; 152: 22$ | Bureau (3) |
| body (2) | $21: 17 ; 24: 19 ; 41: 12$ |
| $117: 21 ; 140: 20$ | buried (1) |
| boghunter (1) | $84: 14$ |
| $26: 15$ | burrow (1) |
| both $(\mathbf{1 6 )}$ | $84: 1$ |
| $6: 17 ; 15: 20 ; 17: 16 ;$ | burying (1) |
| $27: 6,22 ; 35: 2 ; 43: 7 ;$ | $55: 18$ |
| $44: 16 ; 53: 9 ; 71: 22 ;$ | business (2) |
| $94: 17 ; 98: 4 ; 106: 5 ;$ | $161: 14,24$ |
| $126: 7 ; 165: 14 ; 187: 6$ | businesses (1) |
| bottom (4) | $147: 6$ |
| $71: 9 ; 86: 9 ; 88: 14 ;$ |  |
| $179: 5$ |  |

cable (21) 9:2,20;35:6;44:17; 55:2,18;56:5,10; 82:10;85:11;86:6; 89:10;92:6,23;93:12; 137:13;139:14,15; 141:3;152:23;174:6
cables (5)
84:18,21;90:7,10; 91:3
cable's (2) 137:7;139:24
calculated (1) 116:11
call (4)
76:3,21;130:17; 137:12
called (3) 64:6;135:3;176:15
called-out (1) 136:16
calling (1) 50:23
came (6) 14:23;69:19;70:5, 5;76:7;137:8
campus (1) 146:18
can (60)
4:17;7:2,16;8:20; 12:12,13;14:24;15:8, 23;16:12,18;26:20; 36:18;40:19;45:23; 53:13;54:1;59:1; 66:4,9;76:17;78:21; 80:6;82:1;87:15,21; 99:2;103:1;105:9,22;

| 112:3;115:2;116:22; | 111:20;129:11; | 71:17 | clearly (1) | 65:6;96:11;98:7; |
| :---: | :---: | :---: | :---: | :---: |
| 121:19;122:9;123:5; | 140:21;159:13; | characterizing (1) | 76:17 | 107:11;157:10; |
| 124:6;126:2;133:1; | 160:19;169:7;187:1 | 1:22 | close (5) | 172:16 |
| 141:24;153:4;165:7; | certainty (1) | charge (3) | 4:20;27:15;62:22 | comments (19) |
| 166:17,20;169:12,18; | 103:9 | 82:4;89:2;165 | 3:4;97:18 | 17:24;93:11,20 |
| 170:12;172:3; | certificate (12) | chart (5) | closed (4) | 94:8;95:2;96:3,6; |
| 173:18;176:13 | 94:4;97:11;110:16 | 90:19;91:4,11 | 45:19;61:13;78:11; | 98:9,23;107:9; |
| 177:17;178:8;183:7; | 117:6,11;168:13 | 141:1,5 | 97:10 | 110:19;116:19; |
| 184:1,23,23;185:6, | 171:10;175:2; | charts (4) | closest | 118:17;134:1,13; |
| 18,20;187:6 | 177:23;178:2,6 | 137:14,18;140:6; | 0 | 35:10;136:12; |
| Canadian (1) | 186:9 | 142:1 | closing (1) | 175:20;181:4 |
| 38:8 | certificates (1) | chase (1) | 63:1 | commercial (1) |
| canopy (4) | 171:13 | 41:3 | closure (3) | 81:10 |
| 35:11;37:20;39 | Certified (3) | check (3) | 63:18;67:8;144:21 | Commission (4) |
| 45:2 | 31:4;51:3;143 | 31:10;51:9,1 | Coast (3) | 9:24;103:22; |
| capture (1) | cessation (1) | chemical-resistant (1) | 137:15,19;138:14 | 106:14;184:18 |
| 27:15 | 58:10 | 180:11 | coastal (1) | Commission's (2) |
| cardiopulmonary (1) | cetera (16) | chemicals (1) | 29:8 | 104:24;106:2 |
| 150:19 | 4:19;21:1,11; | 73:7 | Code (5) | commitment (3) |
| care (5) | 22:16;25:4;46: | Chemotherapeutics (2) | 108:11,14;149:2 | 30:8;158:11,11 |
| 8:10,15:16;96:11; | 52:5;99:7,7;118:2 | 64:4;74:18 | 160:2;172:23 | commitments (1) |
| 121:17;129:24 | 148:15;151:10; | chewed (1) | codes (1) | 53:8 |
| carefully (2) | 160:11;161:15; | 11:18 | 160:2 | committed (1) |
| 12:7;43:16 | 162:1;168:23 | chief (2) | Coli (1) | 49:23 |
| carve (1) | CFP (3) | 174:20;176:23 | 72:10 | Committee (31) |
| 183:23 | 32:20;47:5;88:4 | chief's (1) | coliform (6) | 13:11,16;16:2; |
| case (12) | CFP's (4) | 176:23 | 67:7,13,23;68:1 | 20:5;23:16;31:15; |
| 10:21;15:21;54:8; | 47:7,10;82:6 | childhood | 70:7,23 | 50:24;67:1;73:23; |
| 76:6,9;77:3;102:1; | Chair (14) | 104:8 | collapse (11) | 93:16,21;95:3;97:6; |
| 123:20,20;144:21; | 10:13;38:2;77:8 | chose (1) | 100:21;108:1 | 103:21;104:5; |
| 154:24;162:19 | 86:20;93:15;105:19; | 77:17 | 109:11,23;110:24 | 106:13;112:15; |
| cases (2) | 107:1;148:19;151:5; | chosen (1) | 111:2,9,13,17;113:9; | 117:23;118:3,5; |
| 25:17;179:7 | 153:4,24;161:10; | 72:22 | 115:14 | 119:3,4;121:13; |
| Castle (1) | 182:21;185:16 | Chris (1) | collapsed (3) | 125:3,8,18;130:7; |
| 29:8 | Chairperson (1) | 93:3 | 109:20;114:11,13 | 132:16;152:11; |
| casual (1) | 164:7 | citations (1) | collapsing (2) | 176:20;177:3 |
| 113:24 | Chair's | 185:8 | 112:23;114:2 | Committee's (3) |
| catastrophic (1) | 72:15;128:21 | cite (1) | collection (1) | 28:17;36:1,9 |
| 109:12 | Chairwoman (1) | 159:23 | 132:22 | communicated (2) |
| caught (1) | 25:12 | city (2) | column (7) | 77:14;144:24 |
| 92:12 | chance (2) | 155:22;156: | 64:24;65:3;67:7; | Communications (1) |
| causal (1) | 7:19;94:19 | Civil (3) | 79:23;80:2;83:11 | 104:23 |
| 104:7 | change (8) | 108:20;135:23; | 90:22 | communities (13) |
| cause (5) | 4:18;6:2;99:3; | 143:16 | combat (1) | 20:24;21:1,4,10; |
| 4:24;19:6;59:2 | 117:24;155:3; | claims (2) | 62:10 | 23:15,16;24:14,18; |
| 84:20;116:7 | 169:12;178:8;186:18 | 59:5;108:2 | combination (3) | 77:21;129:13;155:9; |
| caused (2) | changes (13) | clams (2) | 37:14;45:14;53:10 | 172:15,17 |
| 135:22;174:11 | 8:8;67:6;85:13 | 59:4,6 | comfort (1) | community (4) |
| causes (1) | 88:14;95:22;96:7 | clarification (1) | 63:11 | 83:14,19;90:15; |
| 63:18 | 110:14;143:9; | 54:11 | comfortable (6) | 137:21 |
| cease (1) | 144:23;151:3;168:7, | clarify (2) | 11:3;53:22;88:8 | compared (2) |
| 146:17 | 8,10 | 123:16;159 | 24;96:4;122:9 | 84:7;147:10 |
| ceases (1) | changing (1) | clause (1) | coming (8) | comparison (1) |
| 117:17 | 14:1 | 123:18 | 5:16;11:16;15:9 | 87:16 |
| certain (10) | channel (4) | clean-up | 17:21;64:20,22;75:7; | compelling (1) |
| 8:1,3;27:19;61:12; | 137:2;139:14,15; | 78:9 | 98:15 | 15:21 |
| 63:1,7;101:9;117:1; | 141:16 | clear (3) | commander (1) | compensate (1) |
| 119:18;124:16 | characterization (1) | 75:22;130:14; | 136:2 | 174:11 |
| Certainly (19) | 78:12 | 163:5 | commencing (3) | complain (1) |
| 10:19,22;11:1; | characterized (4) | clearance (1) | 143:8;151:2; | 48:14 |
| 16:21;19:21;35:20; | 78:23;82:8;92:21; | 172:23 | 187:17 | complete (6) |
| $59: 16 ; 68: 18 ; 74: 24$ | 107:22 | cleared (1) | comment (9) | 8:7,20;56:7;95:5; |
| 94:16;95:14;101:24; | characterizes (1) | 27:16 | $8: 10 ; 46: 14,20$ | $172: 12 ; 176: 9$ |

```
completed (3)
    53:13;54:13;57:22
completely (2)
    9:12,13
completing (1)
    7:19
completion (2)
    56:4;171:18
compliance (18)
```

    20:14,16;43:5,16;
    96:23;98:14;110:15;
    139:5;150:20;
    156:17;157:1;
    160:21;163:8,18;
    166:8;168:12;
    177:22;187:6
    compliant (1)
146:19
complicated (1)
102:8
comply (14)
104:23;108:9;
116:15;155:6,17;
156:12,20;158:5;
159:2,10;160:6;
163:13;186:8,12
complying (2)
157:24;158:20
components (1)
144:5
compounds (1)
78:17
comprehensive (2)
53:19;86:8
computer (1)
170:21
conceivably (1)
73:2
concentrations (4)
60:10,13,21;67:7
concept (1)
94:16
concepts (1)
53:9
concern (35)
8:11;28:4,21;29:5;
30:4;31:21;32:3;
38:12;39:14;42:13;
68:21;70:18;71:23,
24;72:1,8;73:5,12,15;
75:11;80:23;81:18,
19;107:23;112:18,20,
23;114:22;118:23;
120:12;121:5;123:6;
129:8;130:8;136:24
concerned (10)
13:2;75:10;87:7;
95:12,22;113:3,4,5,7;
118:24
concerning (39)
4:15;10:11;15:6;
18:3,8,24;23:3;
33:13;37:12;40:15;

44:21;45:4,23;82:21; 85:6;87:22;93:12;
94:12;98:23;107:11;
111:12;115:14;
120:4;133:10;
135:10;136:12;
142:9;148:13;
157:13;160:22;
162:23;165:17;
170:9,11,13;173:17;
175:20;180:1;181:10
concerns (30)
5:24;6:1;12:14;
22:15;42:6;49:17,20, 24;50:10;67:10;
77:13;78:5,17;93:1;
94:20;95:14;102:4,
13,15;113:8,21;
116:19;120:15,23;
136:12,21;143:11;
144:2;161:19;181:4
conclude (2)
30:5;92:19
concluded (2)
27:21;84:3
concludes (1) 92:14
conclusions (1) 181:14
Concord (1) 138:17
concrete (20)
25:23;56:8,9,14, 15;59:10;121:5; 122:3,23;123:8,20;
124:1;129:3;136:21; 137:14;138:24;
139:18;140:10;
141:18;173:11
concur (1) 164:6
concurred (1) 33:12
Concurrent (1) 108:16
Condition (74)
9:1;14:2;31:4;32:7, 10;37:12;41:8,18; 43:2,23;51:1;52:7, 20;53:14;54:6,11; 66:23;70:11;74:7; 79:10,10;80:13; 86:21;88:2,19;89:5; 93:24;94:13;95:6; 96:13,19;98:14; 105:24;117:16; 121:15,19;122:14; 127:6;129:1;138:22; 139:6;142:4;143:4; 147:7;151:14; 154:11,23;155:3; 157:11;160:5; 161:11,22;163:23;

164:13,17,19;166:4, 9,12,16;167:2;173:4, 14;176:7;177:22; 178:2,12,13,14; 181:2;183:21;
185:23;186:11,13
conditioned (1)
171:11
conditions (77)
16:7,17;25:1;26:8; 32:17,17,19;33:17, 18;35:18;37:11;
39:19;42:24;43:6,12; 44:8;45:22,24;46:2; 47:7,11,17,22;48:2; 50:6;53:10;58:13; 61:10;78:9;80:9; 94:23;96:14,19,20; 102:6;105:16,18,20, 23;106:10;110:3,16; 114:14,14,16;117:7, 10,13,15;138:16; 145:12,23;146:2,6; 147:13;148:1,12,18; 149:1;152:7;153:6,9; 155:7,17;160:8; 165:21;168:13; 170:3;171:8;173:16; 177:18;178:5,9; 181:20;183:14,15; 186:8
conditions/requirements (1) 166:18
conduct (14)
27:13;28:9;37:18,
21;39:2;45:15;57:20;
83:14;85:10;86:14;
92:6;109:4;159:19;
174:9
conducted (9) 28:6;29:12,18; 32:11;39:9;48:10;
91:23;145:17;150:11
conducting (1) 33:2
conductors (2)
111:15;132:22
confidence (3)
12:14;17:4;65:8
confident (1)
15:4
confirm (2) 58:24;104:2
conflict (1)
178:12
conformance (1) 159:19
conformity (1) 160:1
confused (1) 52:2
connected (1)
109:10
consensus (1) 148:7
consequences (1) 104:3
Conservation (2) 69:15;184:18
consider (23) 11:9,11;23:5,17; 24:4,6,11;35:19; 68:18;88:21;89:1,1; 93:17;95:7;98:1; 100:10,16;102:7; 116:5;119:4;120:24; 146:6;170:15
consideration (4) 32:15;56:8;57:3; 125:8
considerations (3) 50:5;100:6;101:6
considered (9) 10:10;38:3;49:19; 68:2;69:19;81:23; 91:15;123:11;131:17
considering (6) 11:2;79:9;90:4; 121:9;125:23;131:9
consistent (5) 68:13;104:20; 143:22;153:2;173:1
constantly (1) 91:22
constituents (5) 68:9;74:8,9;78:15; 79:2
construct (2) 149:7;150:5
constructed (3) 144:22;149:19; 171:14
constructing (1) 160:1
construction (90) 5:21,23;6:7;7:20, 20,22;11:20;13:6; 14:8;20:12;21:5,9, 13;23:11;27:16;28:8; 30:5;31:8;36:10; 37:4;38:15;41:10; 43:8,13;44:4,17; 48:21;51:6,11;52:12, 16,22;55:14,20;56:7; 57:21;58:10;84:24; 91:10,19;92:3;96:15, 21,24;100:17;106:6; 110:4,6;111:2;115:4; 135:1;137:4,21; 143:6,8,19;144:18; 145:4,16;146:15,17; 150:3,16;151:1,2,7; 152:9,14,18;153:1, 20;154:14;156:14; 158:2,7,21;159:2; 160:11;166:3;167:8;

168:3,8,11,22;170:7, 16;171:22,24; 180:16;183:13
construction's (1) 91:8
consult (4) 54:13;87:21;88:3; 140:22
consultant (2) 164:23;165:2
consultants (2) 48:15;82:6
consultation (5) 101:11;106:1; 134:19;138:14,18
consumption (1) 181:11
contact (3) 39:7;76:21;94:19
contacted (2) 35:13;45:4
contain (2) 117:6;172:18
contaminants (2) 70:20;71:15
contaminated (4) 151:22,23;180:19, 20
contamination (1) 70:9
contemplated (1) 161:22
content (2) 64:6;183:20
contents (3) 22:11;128:5; 177:17
continually (1) 97:21
continue (5) 15:14;41:4;95:23; 98:20;147:5
continued (3) 50:10;118:1; 127:11
continuing (4) 43:2;58:5;76:5; 97:4
contour (1) 61:6
contractor (7) 152:4;173:23; 175:1,8;180:1,3; 181:5
contractors (4) 27:18;150:16; 151:8;180:17
contractor's (1) 175:2
contractual (1) 186:10
contradict (1) 101:23

| control (13) | 117:13;121:20; | 26:3;30:18;38:4; | deal (2) | 4:4;5:22;16:3; |
| :---: | :---: | :---: | :---: | :---: |
| 13:14;68:15; | 124:6;127:6;137 | 46:13,17;55:2,7; | 98:19;168:24 | 95:23;98:4;181:21, |
| 143:21,23;144:1,20; | 139:22;142:22; | 4:20;93:13;136:22; | dealing (2) | 24 |
| 145:10,19;147:2; | 143:2;145:11; | 141:3;167:24;171:5 | 78:16;174:18 | delays (1) |
| 148:15;150:14; | 157:17;173:5;180:24 | crossings (10) | deals (6) | 6:6 |
| 173:1,2 | country (3) | 157:9,13,17,23; | 78:1;94:1;138:23; | delegate (2) |
| controls (4) | 12:22;78:7;114:10 | 158:18;170:16; | 142:4;154:24;179:15 | 95:17;171:9 |
| 145:17;150:9,11; | County (1) | 172:6,11,19;173:6 | dealt (4) | delegates (1) |
| 157:8 | 184:18 | cryptic (1) | 48:17;94:3,1 | 97:3 |
| conversation (4) | couple (3) | 69:17 | 179:9 | deleterious (2) |
| 64:19;76:6;142:9; | 17:2;35:10;87:18 | culminates (1) | December (4) | 64:2;74:19 |
| 181:10 | course (6) | 174:21 | 34:4;92:7;117:1 | deliberations (1) |
| conversations (2) | 4:17;19:2;46:3; | cultural (2) | 187:16 | 41:5 |
| 88:12;134:9 | 98:3;162:4;180:2 | 118:22;120:13 | decibel (1) | delivered (1) |
| convinced (1) | court (6) | current (2) | 01:9 | 150:10 |
| 16:11 | 11:15;49:2,9; | 104:1,14 | decide (1) | deliveries (2) |
| cooperation (1) | 79:24;83:15;186:16 | currently (4) | 157:18 | 155:14,21 |
| 172:5 | cover (11) | 6:11,17,110:1 | decided (1) | demonstrated (4) |
| Cooperative (1) | 25:3;36:10;53:9; | 121:15 | 173:9 | 57:12;60:18; |
| 60:8 | 57:10;75:1;112:7; | cut (2) | decision (17) | 119:22;120:4 |
| coordinate (9) | 130:16;147:18; | 35:11;45:2 | 4:12;9:7,8;15:18; | demonstrates (3) |
| 41:11;44:3;61:14 | 152:1;155:20;174:13 | cutting (2) | 16:21;50:24;87:20; | 20:14,16;29:24 |
| 137:22;139:1;142:5, | covered (16) | 35:12;39:5 | 98:5;102:8;124:3,14; | deny (1) |
| 7;156:8;166:1 | 40:1;45:8;59:12; |  | 125:17;138:19; | 76:10 |
| coordinated (2) | 65:13;66:12;123:22; | D | 176:19,24;177: | Department (15) |
| 43:22,23 | 130:9;141:21; |  | 178:19 | 21:16;39:8,10; |
| coordination (4) | 147:14;151:14; | dabbling (1) | decommission (4) | 44:1;53:17;78:14; |
| 44:7;61:12;136:3; | 152:4;154:3,13; | 38:9 | 117:19;124:9; | 135:3;137:24;150:6; |
| 156:15 | 158:8;173:24;176:2 | Dacey (1) | 125:9;127:18 | 163:9;175:4,5;179:1, |
| copied (1) | covering (1) | 70:4 | decommissioned (3) | 8,12 |
| 23:7 | 30:10 | damage (2) | 119:8;122:20,20 | departments (1) |
| copies (3) | covers (7) | 161:23;162:2 | decommissioning (43) | 135:5 |
| 97:16;167:7 | 30:11;39:21;54:8; | damaged (1) | 101:10;116:24; | depend (1) |
| 172:17 | 85:2;122:7;130:18, | 166:3 | 117:4;118:5,7,10 | 112:13 |
| copy (9) | 21 | damages (1) | 119:5,11,19;120:5,9, | deposited (1) |
| 50:19;94:14;96:16, | crabs (5) | 174:11 | 14;121:3,21,23; | 61:5 |
| 22,23;97:7;98:16; | 83:2,9,24;84:9 | darter (1) | 122:1,6;123:12; | deposition (3) |
| 110:10;152:12 | 85:3 | 26:23 | 124:10,12,15;125:4; | 57:13;60:3;84:21 |
| corona (1) | cranes (1) | data (2) | 126:5,7,11,20,21,23; | depth (1) |
| 116:7 | 146:10 | 15:3;86:6 | 127:8;128:8,10; | 56:11 |
| correcting (1) | create (2) | date (4) | 129:15,18,21;130:7; | depths (4) |
| 24:8 | 139:3;182:5 | 14:15;40:23;96:3 | 131:9,12,18;132:3; | 120:18,20;132:9, |
| corrective (1) | created (2) | 131:13 | 133:6,10,24;134:6 | 11 |
| 58:9 | 6:5;40:19 | dated (6) | decommissioning-related (1) | DES (87) |
| corridor (4) | creates (1) | 34:9;40:4,10; | 117:10 | 5:15;6:3;7:17;8:1; |
| 37:24;43:9;52:4; | 181:22 | 41:22;49:15;135:18 | de-energize (1) | 9:9,21;10:19,22; |
| 118:21 | creatures (2) | dates (1) | 109:1 | 17:19;31:19:32:18; |
| corridors (1) | 4:11;83:8 | 67:4 | deep (1) | 39:15;41:7;43:20; |
| 28:23 | crested (1) | Dawn (1) | 87:11 | 46:3;47:2;50:23; |
| cost (5) | 26:7 | 87:2 | deeper (1) | 53:10;54:5,14,15,15; |
| 119:23;131:12,17; | crews (1) | day (20) | 137:2 | 57:19,22,24;61:11, |
| 161:4;162:16 | 147:2 | 4:8;5:14;8:14,24; | Defense (1) | 13;62:2,22;63:21; |
| costs (2) | criteria (3) | 14:19;18:24;25:5; | 78:14 | 65:7,10,19,21;66:22; |
| 126:8;165:2 | 6:14,16;107:24 | 31:10;51:8,14;69:5; | defer (3) | 68:17;69:5,8,19; |
| council (1) | critical (1) | 70:1;71:9;79:20; | 65:9;87:20;140:14 | 72:22,23;73:8;75:21, |
| 168:16 | 21:6 | 81:11;84:2;173:18; | definitely (1) | 23;76:9,12,18,21; |
| Counsel (37) | cross (1) | 182:17,18;187:13 | 152:8 | 77:1,14,17;78:1,14, |
| 25:2;30:21;32:7,8, | 159:17 | days (8) | deformation (1) | 20;79:1,15;81:2,19; |
| 9;37:10;47:12,16,23; | crossed (1) | 12:2;41:9;84:24; | 109:15 | 83:16;84:21;87:20, |
| 48:8,20;49:14;50:10, | 92:13 | 143:7;151:2;168:19; | degree (5) | 22;88:3,21,24;89:2,4, |
| 17;53:1;85:5;86:1,3, | cross-examination (1) | 169:14,17 | 12:9,23;13:7;93:5; | 6,13;94:14,17,19; |
| 23;87:9;88:21;102:4; 105:11,15:110.3; | $15: 2$ | dBA (2) | 103:8 | 95:17;96:4;98:6,7,8, |
| 105:11,15;110:3; | crossing (13) | 116:1,14 | delay (7) | 15;99:7;137:15; |


| 138:22;139:6; | 40:15;55:12;93:22; | 76:23 | diving (1) | drive (1) |
| :---: | :---: | :---: | :---: | :---: |
| 151:16;154:5,7; | 180:7,15 | discernible (2) | 38:9 | 34:24 |
| 169:3;180:16 | development (7) | 60:6,19 | Division (8) | driveway (1) |
| described (3) | 78:18;134:7; | discharge | 6:3;113:18; | 171 |
| 51:23;90:18;128:6 | 142:15;153:8 | 67:15 | 14:21,24;121:2; | ducks (2) |
| description (4) | 173:19;179:3;182:20 | discharged (1) | 137:22;139:1;179:14 | 38:8,9 |
| 20:22;21:11,14; | Devices (5) | 77:21 | docket (5) | due (4) |
| 110:23 | 143:23;145:20; | discontinuing (1) | 97:9,10,19;126:4 | 59:7;108 |
| Design (8) | 148:15;150:14;173:2 | :14 | 27:4 | 145:15;150:2 |
| 104:21;108:8,10; | DHR (3) | discovery (3) | dockets (1) | DUPREY (47) |
| 143:10;151:4; | 154:9;184:19 | 42:15,15,18 | 114:8 | 5:4;7:2;10:12,13 |
| 172:12,19,21 | 185:1 | discretion (3) | doctor (2) | 18:16;19:12;62:20; |
| designated (1) | diadromous (1) | 7:17;17:19;165:8 | 62:9,9 | 63:20;70:14;75:15, |
| 141:3 | 91:4 | discuss (8) | document (2) | $16 ; 99: 17 ; 110: 21,22$ |
| designed (8) | dictate (1) | 4:18;17:14;46:14 | 33:19;122:16 | 122:11;125:19; |
| 28:15;35:24;36:8; | 180:8 | 68:8;85:15;97:5; | documentation (2) | $126: 2,13,17 ; 127: 16$ |
| 104:20;106:16; | difference (2) | 53:14;182:22 | 20:14,15 | 19,22;128:9,14,18; |
| 108:9;114:23; | 129:17;186:19 | di | documented | 129:17,23 |
| designee | differ | $\begin{aligned} & \text { 16:7;85:20;93:7,9; } \\ & \text { 94:22:115:19:173:8, } \end{aligned}$ |  | ; |
| designing (2) | 63:17;71:10,13; | 12;181:2 | 40:12;52:9;86:19 | 158:9,12;162:18; |
| 114:19;115:1 | 112:8;121:7;122:5 | discusses (1) | 115:7 | 164:13;166:24; |
| desire (2) | 133:1;147:23,24; | 41:24 | Dodeman (2) | 182:10,21;184:5,12, |
| 88:22;183 | 159:21;162:7;163:7; | discussing (2) | 137:9,10 | 22 |
| despite (1) | 169:19;186:11 | 82:22;99:8 | Dog (2) | Durham (18) |
| 81:17 | differently (3) | discussion (22) | 60:8;62:1 | 26:16;29:11;61:23; |
| DES's (1) | 45:9;96:10;132:17 | 4:21;10:4;19:20 | done (16) | 62:4;68:4;77:10; |
| 9:18 | difficult (3) | 25:6,12;31:22;39:13; | 13:4;16:12,12; | 93:18;94:4;102:5; |
| detail (9) | 14:9;122:22;123 | 69:13,14;70:6;73:18; | 30:23;32:4,6,12 | 145:6,21;173:4; |
| 25:11;46:19; | diminution (1) | 82:21;89:16;92:15, | 54:4;58:19;62:17; | 174:7,13,23;175:4; |
| 144:20;146:7,16 | 161:14 | 17,24;93:5;131:21; | 69:7;70:13,19;87:15; | 177:6;184:16 |
| 172:13;173:10; | DIR (54) | 175:24;181:14; | 122:23;172:4 | Durham's (1) |
| 181:16;182:24 | 12:1;18:20;19:16 | 184:2;185:17 | Donna (2) | 93:1 |
| details (5) | 31:12,17;33:20; | discussions (4) | 102:10;113:2 | during (19) |
| 43:11;74:24;172:3, | 34:14;40:3,22;42:8; | 14:24;21:15;30:14 | DOT (21) | 12:2;15:1;38:16; |
| 7,19 | 45:11,19;46:5;49:12; | 139:17 | 144:1,2;145:18; | 41:15;43:7;44:4; |
| detect (1) | 50:19;51:19;53:5,16; | dismantled (1) | 150:12;157:8;158:1, | 51:20;84:2;91:2 |
| 109:1 | 58:4;62:14;71:8; | 127:1 | 3,20,23;159:6,12,20; | 93:5;106:6;122:17; |
| detected (2) | 74:2;85:16;88:8,23 | displaced (4) | 162:11,23;163:1,10; | 134:24;144:18; |
| 57:16;90:11 | 89:14;95:11;98:12; | 83:10;84:11,11,13 | 170:24;171:6,9,12,23 | 145:3;146:18;153:1; |
| determination (3) | 99:21;107:19;112:4; | dispute (9) | DOT's (1) | 168:8,10 |
| 53:18;100:4; | 120:7;122:17;128:3, | 148:21;156:24 | 143:20 | dye (1) |
| 142:20 | 12,16;132:1,20,24; | 160:14;161:12,17; | doubt (1) | 81:13 |
| determine (10) | 138:13;140:24; | 163:17;166:7;177:6; | 114:12 |  |
| 8:18;37:19;68:19; | 148:4;149:14; | 185:13 | down (13) | E |
| $79: 2 ; 88: 4,10 ; 138: 1$, $5 \cdot 139 \cdot 3 \cdot 141: 10$ | $151: 15 ; 154: 10,21 ;$ $163 \cdot 6 \cdot 164 \cdot 11$. | disputes (2) | 23:4;63:1;70:2; |  |
| 5;139:3;141:10 <br> determined (4) | $\begin{aligned} & \text { 163:6;164:11; } \\ & \text { 165:13;167:11,20 } \end{aligned}$ | 175:24;177:9 disruption (2) | $\begin{aligned} & 75: 9 ; 76: 24 ; 86: 24 ; \\ & 96: 18 ; 99: 3 ; 111: 7 \end{aligned}$ | eagle (13) $32: 4 ; 33: 14 ; 34: 16 ;$ |
| 32:5;78:21;131:7, | 176:6;182:14;184:10 | 14:17;135:24 | 130:11;152:5;161:6; | $37: 13,22 ; 38: 20,23$ |
| 10 | direct (2) | distances (1) | 182:4 | 39:10,24;42:1;44:15; |
| determines (3) | 37:6;69:24 | 28:12 | Dr (7) | 50:16;92:11 |
| 9:5;85:13;136:2 | directly (5) | distribution (3) | 71:11;75:18;77:4; | eagles (22) |
| determining (4) | 43:24;44:3;151:22; | 29:14;124:22; | 103:5,8,24;104:11 | 31:2,21,24;32:18; |
| 6:14;23:9,10; | 157:2;180:19 | 136:1 | drafted (1) | 33:9;34:3;38:3,11,15, |
| 164:24 | Director (11) | districts (1) | 121:15 | 24;39:7;40:15;41:8; |
| detour (1) | 11:24;14:15,21 | 118:24 | dragonfly (1) | 42:7,19;44:12,21; |
| 146:20 | 16:5;95:10;96:10; | disturb (1) | 26:15 | 45:10,12,23;49:24; |
| detours (1) | 98:2;120:6;131:24; | 38:15 | draw (1) | 53:7 |
| 144:22 | 140:8;176:5 | disturbance (5) | 48:7 | eagle's (1) |
| develop (4) | disagree (3) | 28:13;31:10;51:8, | drawings (2) | 42:12 |
| $57: 17 ; 117: 3$ | 54:17;122:10 | 14;135:23 | $172: 12,15$ | earlier (4) |
| 143:21;180:17 | 155:3 | disturbed (3) | drilling (1) | $25: 13 ; 64: 19$ |
| developed (5) | disagreement (1) | 61:2;92:2;120:24 | 146:10 | $106: 20 ; 129: 8$ |

```
early (4)
    89:24;90:2;131:8;
    182:19
```

Eastern (4)
27:8;30:1,2;60:19
eat (3)
72:2;76:13;80:6
eating (1)
75:12
economics (1)
167:17
edge (1)
116:3
edition (2)
145:18;150:13
Edward (1)
22:2
eel (2)
26:22;91:17
eelgrass (10)
31:3;57:2,5,11,15,
16,20;58:3,18,21
effect (21)
5:1;6:21,24;12:17;
13:1;19:8;20:1;
23:13;30:5;60:6;
84:5;99:5,14;100:5;
103:12;116:7;
129:14;144:11;
167:17;181:22;182:6
effective (1)
37:15
effectiveness (1)
101:1
effects (16)
13:23;21:13;22:7,
19;23:3;34:16;
100:17;101:3;
102:13;112:7;113:5,
6,7;144:8;167:14;
181:11
efficient (1)
167:23
effluent (4)
64:20;72:10,11;
77:20
effort (1)
65:21
either (9)
9:14;39:19;52:17;
86:4,15;88:1,6;89:6;
164:19
electric (16)
100:23;101:18;
102:9;103:2,7,21;
104:15;108:11,14;
111:14,23;135:6,17;
149:20;160:2;172:22
Electrical (1)
108:22
electricity (1)
7:9
electrocuting (1)

## 28:19

electrocution (3) 35:17,22,23
electromagnetic (9) 102:13,19;104:4,6; 106:4,8,11,13;107:11
electronic (8)
36:22;41:21;43:20; 67:1;74:9,13;85:21; 146:23
element (2) 63:19;80:7
elementary (1) 24:17
elements (1) 109:19
elevations (2) 86:9,10
eloquently (1) 8:15
else (15) 15:16;54:23;55:3; 71:1;82:24;83:2; 93:13;115:14; 118:16;127:15; 130:12;134:5; 170:13;180:1;187:8
elsewhere (2) 154:3;163:24
emergency (17) 101:13;135:6,15, 16,18,20,21;136:8, 13;141:4;144:14,16, 24;145:2;168:21; 170:3;180:22
EMF (7) 103:9,17,19;104:8; 105:16;107:8;112:18
emit (1) 90:7
emitted (1) 90:10
employees (1) 109:2
empower (1) 162:14
empowered (1) 58:9
emptying (1) 64:20
enable (1) 137:12
encompasses (1) 161:23
encountered (1) 120:16
encountering (2) 91:20;151:13
encounters (1) 41:14
encouraged (1) 30:22
encroachment (2)

159:6;171:3
end (10)
63:5;71:19;72:16;
75:9;111:7,8;154:4; 164:19;165:14; 166:16
endanger (1) 13:20
Endangered (17) 24:13,17;26:14; 27:10,11,21;31:9;
41:15;48:11,23;49:4; 51:7,13;52:5,22;
54:21;90:14
endorse (1) 14:1
energy (7) 23:12;112:8; 119:23;120:5,9; 133:20;135:16
enforce (2)
163:3,3
engineer (9)
55:16;143:16,18, 24;156:9;160:20; 162:14,19;166:6
engineering (2) 108:8,21
Engineers (5) 108:20;176:19; 177:1,2;178:19
England (2) 7:5;29:14
enough (5) 15:6;65:5;81:18; 163:5;169:17
ensure (9) 28:1;61:14;118:1; 127:11;136:6;144:7; 145:2;146:19;150:9
entered (12) 142:23;143:3; 145:5;155:8;158:6, 24;173:3;174:12; 181:1;185:22,24; 186:6
entering (1) 152:17
entire (3) 7:9;23:23;129:16
entities (6) 138:14,18;142:8; 155:9;185:22;187:7
entitled (3)
24:12;29:21;90:12
entity (2) 155:2;159:21
entrainment (3) 84:4;90:1,3
environment (26) 4:9,17;19:19;20:3, 20;22:7,20;23:3,14; 24:10;43:4,7;48:6;

53:20;71:24;78:9;
82:22;92:16;93:14;
98:23;99:6,15;123:1;
168:12;169:13;
176:12
environmental (26)
13:22;15:3;19:1;
24:15;34:18;42:24;
43:3,15;47:7;49:1;
53:17;55:16;58:7;
77:10;82:6,9;88:9;
92:21;96:24;103:19;
110:15;123:3,13;
150:19;154:4;169:4
envision (1)
9:16
envisioned (1)
120:14
ENV-Wt (1)
44:9
EPA (2)
78:13;116:12
equipment (6)
16:16;129:22;
145:9;155:14,20;
180:8
err (2)
75:13;81:21
erratic (1) 29:13
especially (2)
111:24;141:23
Essential (3)
90:12,17;91:1
essentially (2) 7:13;136:9
establish (5)
28:11;41:14;93:19;
94:7;95:1
established (5)
57:11,14;58:21; 136:10;144:23
estimated (2) 59:5,13
estimates (2) 60:9;119:23
Estuary (1) 71:12
et (16)
4:19;21:1,10; 22:16;25:4;46:24; 52:5;99:7,7;118:24; 148:15;151:10; 160:10;161:15; 162:1;168:23
evacuate (1) 134:24
evacuated (1) 135:2
evaluate (1) 81:9
Evaluation (4) 13:10,16;20:5;

152:11
even (4) 9:16;53:14;97:9,18
evening (3)
61:22;63:15;179:2
event (8) 117:16;156:24; 163:16;166:7;168:9, 22;169:12;170:2
events (4) 108:13;110:14; 135:22;168:10
Eversource (25) 37:17;45:15;105:5, 8;108:18;109:18; 110:3,7;115:20; 134:18,20;135:5,16; 136:6,10;137:15,18; 139:9;142:13,16; 145:11,13;149:19; 158:17;175:9
Eversource's (1) 108:17
everybody (6) 4:17;17:12;36:15; 129:9;146:13;185:5
everyone (9) 4:3;12:3;15:4; 80:22;99:2;105:22; 111:21;183:24; 187:11
everyone's (1) 184:4
everything's (1) 80:24
evidence (16) 6:18,21;17:16; 100:13,15;101:18,22, 23;102:17;104:2,7; 107:8;136:18;137:8; 178:8;180:5
exact (1) 40:18
excavation (3) 55:17;158:4,23
excavation/trenching (1) 171:2
exceed (2) 106:12;155:15
except (3) 87:13;147:9,15
exception (1) 44:16
excess (1) 84:20
exchange (1) 41:1
exclusion (1) 49:5
Excuse (5)
56:22;66:13;85:16; 93:3;170:19
executed (1)

| 172:4 | 6;87:9;92:19;94:6; | 142:23 | 29:17 | 11:13;33:11,15; |
| :---: | :---: | :---: | :---: | :---: |
| exemplary (4) | 101:12;103:5; | failed (1) | feeders (2) | 40:16,18,19,20;41:4, |
| 20:24;23:16;24:14; | 134:20;139:23 | 109:12 | 71:21;80: | 7;76:9,18;85:6; |
| 90:14 | 161:3;176:9 | failing (1) | feel (12) | 87:15;127:22; |
| Exhibit (47) | expertise (4) | 6:13 | 11:2;13:24;45:9; | 159:23;185:12 |
| 31:15;33:20,24; | 29:7;53:23;62:9 | fails (1) | 76:15,20;95:21; | finding (3) |
| 34:5,6,11,22;36:7,14, | 98:5 | 108:24 | 96:10;121:10;122:9; | 13:1;40:8;43:22 |
| 19;40:9,22;41:21; | experts (14) | failure (3) | 124:6;149:12;185:6 | findings (1) |
| 42:4,16;47:5,13; | 14:11;32:24;33: | 108:7;109:4,12 | feeling (1) | 43:21 |
| 49:15;51:1;67:2; | 47:7,16;67:21;68:4, | fairly (4) | 70:14 | fine (1) |
| 69:9;73:23;85:18,19; | 21;69:5;76:24;77:10; | 30:24;42:10;44:22; | feet (17) | 154:18 |
| 86:1,24;87:2;90:20; | 93:2;117:3;137:4 | 185:6 | 8:17;12:7,10,13 | finger (1) |
| 103:3;104:13; | explosion (1) | fall (4) | 13:4,9;15:8;44:18; | 68:1 |
| 105:14,17;110:5; | 135:24 | 109:16;111:16,21; | 55:10;56:11;111:6,6, | fingertips (1) |
| 117:14;122:15; | explosives | 123:10 | 7;120:18,20;132:9,11 | 159:5 |
| 135:8,20;146:12; | 174:19 | falling (2) | felt (1) | finish (3) |
| 148:18;164:20; | Exponent (1) | 112:20;114: | 82:7 | 79:18;82:16 |
| 177:6;184:7,13,15, | 103:5 | falls (1) | fenced (1) | 182:18 |
| 17,23;185:14 | exposed (2) | 93:24 | 27:17 | finished (2) |
| exhibited (1) | 73:13;83:12 | familiarity (1) | fencing (1) | 120:21;132:12 |
| 60:19 | exposure (5) | 183:7 | 49:5 | fire (19) |
| exhibits (4) | 60:14,20;61:2 | familiarized (1) | FERC (2) | 101:11,12;134:16, |
| 15:1;37:1;172:18; | 103:19;104:3 | 24:3 | 118:14;131:1 | 18,19,22;135:3,4,10, |
| 183:8 | exposures (1) | far (3) | FERC-approved (1) | 23;174:20;175:4,5; |
| exist (4) | 62:11 | 6:12;65:4;69: | 131:14 | 176:23,23;177:1; |
| 53:20;115:12; | expressed (1) | Farm (1) | few (3) | 178:19,22;179:11 |
| 128:7;178:1 | 185:20 | 185:4 | 6:1;75:3;187:4 | Fires (1) |
| existence (1) | extended (1) | farmed (1) | field (8) | 135:4 |
| 104:2 | 181:10 | 61:1 | 14:11;51:22;62:10 | first (20) |
| existing (7) | extending (2) | farmer | 76:17,18;101:19; | 6:4;7:12;14:23; |
| 14:1;58:20;65:1 | 14:7;148:1 | 62:16 | 104:4;150:16 | 16:19;17:8,11,17; |
| 118:21;125:9; | extent (11) | farms (4) | fields (18) | 50:5;55:8;101:17; |
| 149:10;156:13 | 48:20;59:6;91:2 | 59:21;60:12,18 | 83:12;90:7,10; | 123:6;136:18;149:6; |
| exiting (1) | 146:8;147:13; | 61:15 | 100:24;102:10,14,19; | 150:18;151:10; |
| 152:17 | 152:14;155:12,19; | Farrington (1) | 103:2,7,20;104:5,8, | 153:8;163:24;165:4, |
| expanded (1) | 156:6,13;165:23 | 143:15 | 15;106:4,8,11;107:3, | 11;186:7 |
| 10:9 | extra (1) | Fat (2) | 12 | fish (41) |
| expect (4) | 44:2 | 60:8;62:16 | figured (1) | 8:2;21:16,17; |
| 34:2;49:15;61:4 | extreme (3) | fatal (1) | 30:15 | 26:19;30:8;33:9,12; |
| 105:5 | 108:12,15,16 | 17:15 | file (8) | 34:1,11,15;35:9,12, |
| expectation (1) | extremely (2) | faults (1) | 83:18;96:16,22; | 19;38:19;39:4,16; |
| 174:9 | 25:19;104:14 | 109:1 | 106:7,16;107:2; | 40:3,11,17,20;41:12, |
| expected (5) |  | favor (2) | 152:10;154:15 | 22;42:14,17;43:24; |
| 7:7;59:9;83:17; | F | 10:6,7 | filed (12) | 44:4,24;45:4,24; |
| 102:21;103:17 |  | favorable (1) | 24:12;55:12;90:12; | 46:11;54:24;89:20, |
| expecting (2) | FAA (7) | 79:10 | 94:14;128:4,19,20; | 21;90:2,11,13,17; |
| 15:9;159:6 | 142:14,14,17,19 | FDA (3) | 135:16;144:1;155:2; | 91:1,21;92:1,9 |
| expects (1) | 143:5;150:24;151:1 | 81:7,15,19 | 171:6;176:22 | fish-eating (1) |
| 17:12 | facilities (8) | fears (3) | filing (4) | 38:13 |
| expenses (1) | 71:14;112:10,10, | 111:21,24;112:3 | 110:10;117: | fisheries (1) |
| 165:2 | 11;120:10;144:15, | feature (1) | 126:6,20 | 27:2 |
| expensive (1) | 17;149:11 | 121:8 | filter (2) | Fitch (2) |
| 10:20 | facility (11) | February (2) | 71:21;80:4 | 102:11;107:20 |
| experience (14) | 19:24;20:13;23:12; | 31:19;38:16 | filtering (1) | Fitches (2) |
| 14:14;66:9,13; | 100:4;101:1,9,13; | fecal (7) | 75:13 | 107:16;113:7 |
| 78:3;84:15;112:2; | 122:18;125:5,10; | 67:7,13,23;68:1 | final (6) | Fitzgerald (95) |
| 114:3,4,5,16;119:22; | 126:22 | 70:6,23;73:6 | 30:9;50:24;64:1; | $4: 23 ; 5: 3 ; 8: 12$ |
| 121:9;163:9;179:8 | fact (4) | federal (10) | 73:22;171:7,18 | 10:11,14;18:9,10,15; |
| experiencing (1) | 6:9;17:14;62:22; | 13:12;20:9,11; | finally (2) | 19:10,11,19,21; |
| 7:6 | 63:6 | 21:18;22:15;104:23; | 125:1;176:2 | 21:24;22:3,8,13,19; |
| expert (18) | facts (2) | 116:16;142:18; | financial (3) | 23:1,6,24;24:7; |
| $17: 5 ; 33: 4 ; 74: 24$ | 24:24;105:12 | 143:6;153:3 | 131:1,4,21 | $32: 16 ; 33: 16,22$ |
| 76:11,16,18,20;86:3, | factual (1) | federally (1) | find (16) | 35:21;36:4,6,13,20; |


| 38:2;41:6;42:3; | 126:6,23 | 21:16;33:9,12; | goose (1) | guidance (1) |
| :---: | :---: | :---: | :---: | :---: |
| 43:19;46:21;47:4,15, | former (1) | 34:1,12,15;35:9,12, | 41:3 | 30:9 |
| 21,24;49:12;52:8; | 75:7 | 19;39:4,16;40:11,17, | govern (1) | Guide (2) |
| 55:8;56:2,16,19,22, | forth (4) | 21;41:13,22;42:14, | 145:7 | 68:15;104:21 |
| 24;58:14,22;64:7; | 16:8;103:20;158:3, | 17;43:24;44:4;45:4, | governing (2) | guideline (1) |
| 66:22;69:6;74:1; | 23 | 24 | 19:23;140:20 | 116:14 |
| 77:8;82:5;83:6,7,16; | fortunate (1) | Game's (2) | government (1) | guidelines (9) |
| 85:8,17,22;86:13; | 95:11 | 40:3;44:24 | 20:9 | 35:23;38:21;44:15; |
| 87:23;88:17;89:3,20; | forward (2) | gaps (4) | governmental (2) | 68:22;106:12,18; |
| 96:13;97:18,22; | 11:12;47:2 | 75:18,21;76:10; | 82:3;142:7 | 108:22;116:12,16 |
| 98:11;99:10,11,16; | found (10) | 130:14 | governments (1) | guiding (1) |
| 106:21;113:17,23; | 27:14;90:21;103:1; | gave (1) | 22:16 | 21:21 |
| 114:6;115:3;118:18; | 104:1;105:13,17; | 113:14 | governs (1) | Gundalow (2) |
| 130:23;141:13; | 117:14;122:5,14; | geese (1) | 24:6 | 124:22,23 |
| 146:21;151:5,20; | 143:1 | 38:8 | grade (4) |  |
| 154:6;161:10;169:2, | Foundation (2) | general (10) | 120:18,21;132:9, | H |
| $\begin{aligned} & \text { 6;175:22;176:11,18; } \\ & \text { 182:8,9;184:20; } \end{aligned}$ | $\begin{aligned} & \text { 69:15;75:1 } \\ & \text { four (6) } \end{aligned}$ | $\begin{aligned} & \text { 20:22;39:20;62:6; } \\ & \text { 101:19;136:24; } \end{aligned}$ | 12 graduation (2) | abitat (13) |
| 185:16;186:21 | 53:15;120:18,20; | 147:17;165:17; | 146:18;147:11 | 21:7,7;26:17; |
| Fitzgerald's (2) | 132:4,9,11 | 167:2;176:7;184:1 | grant (1) | 27:15;28:24;48:13; |
| 52:3;120:11 | frame (2) | generally (8) | 157:19 | 84:23;88:18;89:23; |
| flag (1) | 13:17;169:1 | 72:7;100:14;105:3 | Grasshopper (1) | 90:13,17,18;91:1 |
| 183:19 | frames (1) | 111:5,14;129:21; | 29:1 | habitats (3) |
| flagger (2) | 169:19 | 151:24;166:18 | gravel (1) | 26:1;44:2,6 |
| 146:7,16 | Frazier (5) | generated (1) | 160:10 | half (2) |
| flaggers (2) | 143:15,15;144:4 | 100:24 | great (11) | 56:11;156:4 |
| 145:14;150:1 | 145:23;170:23 | generation (1) | 25:11;38:7,13; | half-inch (1) |
| flexibility (2) | free (1) | 6:23 | 57:5,7;68:21;71:12; | 60:2 |
| 6:3;12:10 | 124:6 | GeoInsight (1) | 89:14;92:23;167:15; | halfway (1) |
| flooding (1) | freshwater (1) | 34:23 | 174:2 | 86:24 |
| 135:23 | 27:2 | gets (1) | greater (2) | Hampshire (18) |
| flow (1) | Frink (1) | 157:7 | 120:20;132:11 | 21:16,17;24:19; |
| 60:7 | 185:4 | given (14) | grid (1) | 34:1;41:11,12;43:24; |
| flushed (1) | frustration (1) | 11:20;18:24;33:2, | 125:13 | 51:2;98:6;106:2; |
| 75:8 | 96:2 | 5;42:15;53:5;63:6; | Groton (1) | 114:17;135:17; |
| FM (2) | fulfill (1) | 99:6;114:24;138:15; | 179:16 | 137:22,23;146:10; |
| 105:2,5 | 9:19 | 141:2;161:6,18; | ground (7) | 150:6,12;152:11 |
| focus (1) | full (3) | 171:17 | 31:10;37:15,18; | hand-cutting (1) |
| 63:21 | 43:10;172:24; | giving (3) ${ }^{\text {a }}$ | 45:14;51:8,14; | 27:4 |
| folks (5) | 178:7 | 6:3;65:21;130:13 | 109:15 | handle (4) |
| 4:15;30:20;52:4; | functional (1) | glasses (1) | groundwater (4) | 65:7;69:21;165:6,7 |
| 73:13;122:8 | 124:16 | 180:10 | 151:18,21;180:13, | handles (1) |
| follow (6) | Fund (1) | gloves (1) | 14 | 151:22 |
| 39:11;43:11;45:6; | 78:8 | 180:11 | group (2) | handling (2) |
| 108:19;111:19; | funding (1) | goes (9) | 62:6,13 | 174:19;180:19 |
| 143:21 | 118:13 | 37:17;38:10;44:18; | grow (1) | hands (2) |
| following (5) | further (17) | 62:23;70:2;75:2; | 59:15 | 9:18;88:9 |
| 35:15;85:11;86:6; | 4:18;11:11;46:10, | 118:22;163:23;164:4 | growing (1) | handwriting (1) |
| 89:10;170:24 | 14,15;51:23;54:11, | Golden (1) | 43:10 | 69:17 |
| follows (1) | 18;82:12,14;89:16; | 38:23 | growth (2) | happen (4) |
| 142:24 | 92:17;93:11;96:11, | Golden-winged (1) | 6:24;7:6 | 62:19;111:10; |
| footprint (1) | 18;134:1;167:13 | 28:20 | Guard (4) | 127:2;187:1 |
| 109:13 | future (5) | Good (23) | 137:15,19;138:15; | happening (2) |
| Force (3) | 127:9;128:7,24; | 4:2;14:7;38:1; | 142:15 | 33:6;76:15 |
| 74:21;75:7;78:6 | 131:13;133:11 | 47:3;54:16;65:7; | guess (16) | happens (2) |
| foresee (2) | G | $69: 21 ; 73: 1,18 ; 98: 19$ <br> 107:6•108•8•113:15. | $9: 6 ; 39: 13,23$ | 9:21;170:9 |
| forgive (1) | G | 107:6;108:8;113:15; 138:17;146:19; | $\begin{aligned} & 47: 17 ; 52: 23 ; 61: 17 \\ & \text { 63:10;64:24;66:16; } \end{aligned}$ | $\begin{gathered} \text { harassed (1) } \\ 38: 24 \end{gathered}$ |
| 58:16 | GAGNON (1) | 147:21;149:8,12; | 69:23;77:6;80:11; | Harbor (2) |
| form (3) | 87:4 | 165:9;167:18,20; | 119:12;143:16; | 138:15;139:2 |
| 104:9;143:5; | gained (1) | 179:18;183:17 | 152:7;162:20 | Harbors (1) |
| 150:24 | 33:1 | good-quality (1) | guessing (2) | 137:23 |
| formal (2) | Game (22) | 28:24 | 168:24;169:3 | hard (3) |


| $15: 18 ; 36: 16 ; 53: 2$ | $21: 17 ; 24: 19 ; 41: 12$ | 44:18 | 85:11;170:6 | 20:7;26:20;70:8, |
| :---: | :---: | :---: | :---: | :---: |
| hard-pressed (1) | her | hug | impact (23) | 3;89:22;108:13; |
| 159:22 | :18 | 161:18 | :7;27:1,3;31:7 | 110:5;123:19,24; |
| harmful | herself | hu | 5,16;55:9;60:1 | 26:7;132:4;133:12; |
| 103:11 | 165:6,8 | 7:13;103:7, | ;84:16;89:21; | 156:15;162:2 |
| hat (1) | hibernacula (1) | humans (1) | 90:15,23;91:8,13,24; | included (2) |
| 160:17 | 48:23 | 71:19 | 92:9;103:6;109:17; | 70:10;81:4 |
| haz (1) | high (4) | hundred (1) | 110:14;159:18; | includes (1) |
| 151:24 | 26:9;60:21;108:10 | 38:8 | 168:11;170:3 | 45:13 |
| hazard (5) | 172:13 | hurricane | impacted (13) | including (12) |
| 66:15;136: | higher | 114:13 | 26:10,19,20;28:2 | 23:14;30:21;55: |
| 139:4;142:2,20 | 60:22,23 | hydrocarbons (1) | 55:11;57:6;59:6 | 82:23;102:2;130:17; |
| hazardous (3) | highest (1) | 64:8 | 77:23;84:1,3;90:23; | 145:14,18;147:10; |
| 151:11,13;180:21 | 114:19 |  | 91:19;92:12 | 150:1,13;152:16 |
| hazards (1) | highly (3) | I | impacting (1) | income (2) |
| 141:17 | 57:9;78:7;109:18 |  | 26:1 | 161:14;162:1 |
| HAZWOPER (1) | High-Voltage (1) | IACOPINO (40) | impacts (35) | inconsequential (1) |
| 151:12 | 104:21 | 36:15;41:20;47:19 | 15:6;19:1;21:9 | 30:7 |
| HDD (2) | highway | 22;48:7;49:3,10,21; | 25:14,17,18;26:6 | inconsistent (1) |
| 94:6,11 | 143:16 | 50:4;54:19;87:2,5; | 30:9,12,13;34:3; | 29:14 |
| heads (1) | highwa | 93:15;94:21;125:6, | 35:14;44:1,5;45:5; | incorporate (2) |
| 154:20 | 144:9,12;170:17 | 22;126:6,15,19; | 46:12;55:1,6;59:11; | 37:2;77:18 |
| Heald (3) | himself (1) | 127:17;128:19; | 61:1,15,18;82:9,17; | incorporated (1) |
| 102:11;113:2,10 | 62:8 | 140:21;160:24; | 91:14;92:15,22; | 47:10 |
| health (30) | hire (9) | 164:16,18;165:7,10; | 93:12;100:22; | incorporates (1) |
| 20:3;71:23; | 94:5;160:19;161:3 | 166:13,20,23;167:3; | 101:16;115:21; | 39:15 |
| 82:4;99:24;100:6,18, | 162:14;164:8,23 | 176:13;178:3,4,24; | 143:18;144:7; | increase (2) |
| 23;101:15;102:14; | 165:4;174:24;176:8 | 179:13;186:3,5,17,24 | 145:15;150:2 | 6:22;115:24 |
| 103:8,11,13;104:1,3, | hiring (1) | Ice (3) | impasse (1) | increased (2) |
| 10,16;112:7;113:5,6, | 117: | 108:16,17;114:18 | 11:14 | 61:1;89:23 |
| 7;116:13;150:18; | historic | ICES (1) | imperative (1) | increments (1) |
| 151:9;174:1;180:6, | 20:2;118:23;12 | 106:18 | 76:2 | 129:2 |
| 18;181:12,23;182:6 | 152:24;154:9;162:3 | ICNIRP (1) | impervious (1) | incurred (1) |
| hear (2) | historical (5) | 106:18 | 71:16 | 165:2 |
| 105:22;126:3 | 78:20;118:23; | idea (8) | implement (4) | indeed (1) |
| heard (14) | 120:12;121:2;161:20 | 14:22;54:16;73: | 25:9;41:18;149:24; | 80:10 |
| 10:10;12:19;17:5 | Historically (3) | 138:17;146:19; | 150:9 | independent (7) |
| 19:1;51:19;59:3; | 14:11;29:3,10 | 147:21;149:12 | implementing (1) | 43:3,15;58:7,12; |
| 61:12,21;87:7; | history (1) | 164:16 | 109:24 | 94:6;117:3;119:21 |
| 111:12;114:1;119:6; | 78:2 | ideal (1) | importance | independently (1) |
| 122:18;140:5 | hit (2) | 160:16 | 57:4 | 43:17 |
| hearing (13) | 75:19;1 | identification (7) | important (4) | indicate (4) |
| 15:19;36:17;70:1; | hoary (1) | 20:8,8;21:3,6; | 35:13;57:8;76:2; | 81:7;82:6;91:2 |
| 82:19;93:20;94:7 | 30:1 | 137:6,17;139:24 | 95:14 | 92:18 |
| 95:1,2,24;98:1; | hog-nose | identified (14) | impose (1) | indicated (12) |
| 125:7;135:13;187:15 | 27:9 | 6:12;20:23;24:16 | 160:5 | 47:6;56:12;58:19; |
| hearings (2) | hope (1) | 25:16,16;26:5;27:9; | imposed | 7:10;82:7;83:22; |
| 12:2;51:20 | 161:7 | 29:3,15;49:3;52:14; | 26:8 | 4:12,17;86:14; |
| Heavy (5) | hopefull | 55:9,10;67:23 | imposition (2) | 89:21;90:2;117:5 |
| 74:17;108:14,17; | 98:20; | identifies (1) | 118:7;121:24 | indicates (7) |
| 114:15;155:14 | horseshoe (4) | 20:7 | improved (1) | 29:23;67:5;83:9 |
| Hebert (1) | 83:2,9,23; | identify | 119:9 | 86:2,3;90:9;91:12 |
| 174:14 | host (10) | 52:10;115:12; | Inc (1) | indicating (1) |
| help (1) | 110:12;15 | 137:16 | 103:6 | 117:24 |
| 52:3 | 166:1;167:6;168:4 | identifying (2) | inch (1) | indicator (1) |
| helpful (4) | 16;170:5;172:15,16 | 75:21;137:6 | 60:4 | 67:13 |
| 31:20;48:3;148:2 | hosting (1) | IEEE (1) | incident (2) | individual (6) |
| 183:8 | 129:12 | 104:20 | 136:2;169:21 | 25:14;28:12,13; |
| Henslow's (1) | hosts (1) | iii (1) | incidents (2) | 62:7;102:2;112:17 |
| 29:2 | 38:7 | 121:22 | 169:20,22 | individuals (1) |
| here's (1) | hour (1) | immediate (1) | inclined (1) | 84:13 |
| 34:24 | 167:23 | 169:5 | 161:1 | industry (2) |
| Heritage (3) | house (1) | immediately (2) | include (14) | 35:15;39:11 |

infauna (7)
83:1,8,10,11,14,18; 85:2
information (26)
7:1,4;13:22;15:6;
17:10,12;20:7;23:3;
42:14;61:8;68:24;
72:5,17;77:17;78:12;
79:2;90:8;98:19;
100:11;101:6;
127:20;141:9,16; 156:16;167:9;168:4
informed (1)
83:16
infrastructure (10)
120:17,20;121:12; 123:10;126:10; 132:6,8,11,15;167:18
initial (1) 171:16
initiation (1) 28:10
injured (1) 38:24
inkling (1) 66:1
inland (1) 29:9
input (4) 35:13;39:8;45:4; 94:12
inquire (1) 54:2
insignificant (1) 90:4
inspection (1) 109:24
install (5) 27:5;49:5;137:6, 16;139:24
installation (14) 9:2,20;35:6;56:5; 82:10;84:18;85:11; 86:6;89:10;91:3; 92:6,23;152:23; 174:6
installations (1) 172:20
installed (1) 138:24
instance (3) 8:17;126:22;136:1
instances (1) 187:4
instructions (3) 141:16;158:2,22
instructs (1) 163:10
insurance (1) 175:3
intended (2) 44:8;52:10
Interaction (3)

28:17;36:1,9 $\quad$ issuance (1)
171:11
issue (37)
4:5;5:8;8:15;10:4;
11:3;17:24;53:12;
57:8;63:15;65:20;
70:4;72:19;73:2;
78:15;82:11;85:9;
86:1;88:22;90:9;
114:3;117:6;119:2,
16;137:19;141:19;
157:18;159:6;163:3,
21;164:9;169:4;
170:17;171:9,24;
179:16;180:5;181:8
issued (5)
94:5;97:11;116:24;
142:20;171:7
issues (24)
4:18;8:13;10:23;
16:16;30:16;58:8;
95:23;102:2;136:16,
17;148:8,13;156:1;
161:8;162:19;165:1,
18,22;174:16;
176:12;179:9;
180:13;182:19;
183:19
Item (2)
20:15;132:14
Items (3)
121:10;132:6;
170:8
IVe (2)
19:23;100:3 47:2,10;56:8;67:16 70:21,21;73:7;77:21, 22;78:1;79:23;80:2, 5;83:10;84:1;93:2; 94:6;98:8;129:3; 142:23;143:3;145:5; 146:2;155:8;158:6, 24;173:3,16;174:12; 179:1;181:1;185:22; 186:1,6
introduced (1) 62:8
introduction (1) 101:20
inventory (1) 175:4
invertebrates (3) 26:13;46:11;54:24
involved (4) 10:21;49:19;63:10; 81:8
involves (1) 94:24
Ionizing (1) 103:23
irreversible (1) 25:20
ISO (2) 125:12;127:14

July (3) 38:16;42:16;49:16
jumped (1) 92:11
jurisdiction (4) 13:13;21:2;97:4; 163:2
juvenile (1) 91:17

|  |
| :--- |
| ka |
| ke |

keep (5)
46:17;149:14,17; 153:21;167:18
kicked (1) 94:15
kicking (1) 130:11
kicks (1) 128:7
kind (8) 4:19;11:13;81:5; 98:9;111:17,19; 157:7;182:4
King (1) 60:8
Knights (1) 19:3
knowing (1) 181:17
knowledge (3) 119:22;120:4; 138:16
knowledgeable (1) 62:11
known (1) 51:22
knows (2) 24:3;78:21
kV (3)
105:4;116:9,10

| $\mathbf{L}$ |
| :---: |

laid (1)
56:14
land (1) 30:11
Landing (1) 124:22
lands (1) 173:7
lane (1) 144:19
language (1) 158:9
large (1)
115:8
largely (1)
10:24

LaRoche (2) 27:6,6
last (7)
9:19;19:5;72:4;
76:7;79:7;123:6; 138:4
later (5)
9:15;37:17;73:14; 168:19;169:17
lattice (1)
111:5
law (2) 20:11;69:15
layer (2) 44:23;84:14
lead (1) 19:19
lean (1) 14:13
learn (1) 181:24
least (15) 15:22;29:4;31:2,3; 41:9;67:2;121:8; 131:10;143:7; 144:19;145:7;149:5; 151:2;168:6;179:15
leave (8) 9:17;69:21;77:5,6; 97:6;123:4;140:20; 155:11
leaving (2) 88:9;132:2
left (5) 4:7;49:20;50:4; 98:5;111:18
legal (4) 11:13;160:24; 166:13;185:21
legally (1) 185:24
legitimate (1) 75:11
lengthy (2) 20:21;23:23
lens (1) 153:10
less (3) 61:5;120:18;132:9
letter (19) 31:19;33:24;34:9, 11,14;35:9;40:3,4,7, 8,10;41:2,22;42:17; 45:1;46:1;57:24; 169:15;172:5
letters (2) 74:4;185:5
leukemia (1) 104:8
level (7) 17:4;63:11;69:13; 89:23;116:11; 172:13;182:24
levels (6)
102:18,22;103:17;
106:17;116:1,2
license (1)
175:2
licensed (3)
143:17;174:24;
175:8
lie (1)
179:23
life (4) 66:9;90:1,3,21
lifespan (1) 65:4
light (1) 82:11
lightly (1) 186:23
likely (5) 29:23;92:1;105:7; 127:14;131:17
likewise (1) 74:23
limit (2) 16:20;18:13
limitation (1) 152:16
limited (8) 8:5;18:6;30:10; 51:16;55:17;59:8; 114:5;135:22
limiting (1) 10:8
limits (2) 29:20;155:15
Line (27) 28:17,22;36:1,8, 11;79:18;81:6;87:1; 104:19;108:22; 109:2,14,16;113:19; 114:1;120:13; 124:17,22,24;125:10, 14,15;129:10,15; 130:5;137:1;182:4
lines (17) 35:24;36:7;86:10; 100:20;104:22; 108:3;111:13,14; 112:9,12;115:11; 116:9,10;119:7; 123:10;149:21; 169:21
lipid (1) 64:5
list (10) 47:6,16,19,21; 73:19;74:22;75:6; 94:23;168:1;184:23
listed (8) 34:23;49:18,21; 64:3,4;100:7;102:22; 146:1
listening (4)

10:14;81:1;129:9; 133:17
lists (2)
43:21;96:17
liter (2)
60:11,22
literature (2) 103:6,15
Little (39)
9:2;14:13;19:2;
26:3;30:2,14,17;38:4, 6;40:7;46:12,17,19, 22;52:2;55:1,6; 61:21;73:1;77:19; 82:16;83:24;84:8,20; 88:15;90:6;93:12,22; 94:1;95:4;133:16; 136:22;137:7; 147:24;163:6,7; 170:18;179:21; 181:16
live (3) 4:11;7:24;95:13
load (1) 106:7
loading (4) 108:12,15;114:16, 17
Loadings (1) 108:23
loads (1) 146:9
lobsters (5) 83:2,8,23;84:1; 85:3
local (26)
135:3,4;138:15; 142:18;144:9,12; 155:13,22,23;156:19; 157:8,13,16;159:7, 13,17;160:16,23; 162:2,9,11;164:4; 165:17;172:19,20,23
localized (1) 138:19
locally (3) 155:16;157:23; 158:18
located (4) 59:18;84:9;105:9; 109:15
location (3) 52:17;137:7;140:1
locations (4) 29:8;68:8;102:20; 152:21
logistical (1) 16:15

## long (6)

12:7;56:24;80:9; 95:16;122:21;153:6
long-eared (2) 29:17,22
longer (6)
13:10;112:11; 124:17,18,24;125:5
long-sleeved (1) 180:10
long-term (1) 25:20
look (26) 6:8;39:16;41:20; 42:23;43:1;50:11; 51:12;52:12;66:16; 73:19;79:19;87:18; 94:6;121:19;130:12; 132:3;134:12,13; 136:17;146:13; 152:6;177:5;179:1; 183:18;184:23; 185:11
looked (7) 39:14;48:5;72:14; 112:16;115:7;147:8; 173:5
looking (24) 34:21;42:9,10; 50:20;52:4;65:2; 69:9;71:8;74:5,14; 75:16,17;77:9;79:9, 14,16;113:11;120:7; 127:20,24;133:20; 140:11;146:11; 148:16
looks (2) 63:21;107:15
$\operatorname{loop}(1)$ 45:20
losing (1) 14:8
Loss (3) 161:14,23,24
$\operatorname{lot}(20)$ 8:21;11:8;13:9; 17:2;44:11;49:17; 59:3,20;64:21;65:21; 68:24;72:20;93:7; 101:22;112:3;119:6; 146:7;152:8;175:23; 180:4
lots (1) 130:14
low (1) 27:3
lower (2) 105:4;106:17
Low-Frequency (1) 104:15
low-level (2) 104:4,8
low-voltage (1) 90:10
Lynn (2) 143:15,15


| 24:20;35:18;37:22; | 16 | 113:5 | money (1) | 156:4;159:1;173:3, |
| :---: | :---: | :---: | :---: | :---: |
| 39:17;40:16;45:7,7; | meets (2) | milligrams (2) | 131:16 | 17;174:12;175:13,14, |
| 48:12,23;50:1,6; | 172:21,23 | 60:10,21 | monitor (5) | 17;177:12;178:5; |
| 52:2;59:13,24;62:15; | member (2) | millimeter (1) | 43:3,15;55:16; | 183:1,20,23;185:19 |
| 67:6,8,14,16;68:2,20; | 4:23;24:2 | 61:6 | 58:7;98:21 | move (12) |
| 82:2;83:11;84:20; | Members (3) | mind (6) | monitored (2) | 4:16;11:12;19:18; |
| 85:15;87:10;90:7,23; | 40:12;86:19; | 6:2;8:8;63:4;65:1; | 43:17;79:3 | 30:17;55:6;83:1,6; |
| 91:8,19,23;94:2; | 122:16 | 99:3;119:15 | monitoring (22) | 89:19;99:23;115:17; |
| 95:22;97:10;105:2; | memo (3) | mine (1) | 8:18;12:11;25:3; | 116:22;165:20 |
| 110:14;114:13; | 45:16;50:7;53:8 | 141:6 | 37:16;43:9;55:21; | moving (4) |
| 120:23;122:19,21; | Memorandum (6) | minimal (1) | 57:12;62:3;65:13; | 4:9;29:16;91:21; |
| 123:12;124:5; | 145:5;155:7,18; | 25:19 | 66:24;70:12;83:14, | 170:1 |
| 130:11;132:24; | 156:7;158:5;165:24 | minimization (5) | 19;84:23;85:23; | much (10) |
| 133:11;147:23; | memory (1) | 26:24;35:14;42:2; | 88:16,19;96:23; | 17:9,17;66:18; |
| 151:20;152:1;157:4; | 141:6 | 45:5;92:8 | 98:15,18;162:12; | 72:12;81:21;111:3; |
| 165:1,10;166:9; | mention (3) | minimize (5) | 175:11 | 112:13;149:3; |
| 168:11;170:3; | 42:21;93:8;126:3 | 21:12;28:18;44:5; | monitors (2) | 183:12;187:1 |
| 171:17;174:11; | mentioned (9) | 101:2,15 | 49:1;97:1 | multi (1) |
| 176:19,24;177:2,13; | 11:7;58:8,16; | minimized (1) | monitor's (2) | 88:2 |
| 178:20;179:4; | 65:22;68:9;98:13 | 91:9 | 43:5;58:9 | multi-beam (7) |
| 183:23;186:5,6 | 118:19;127:13;146:8 | minor (1) | MONROE (4) | 86:5,7,16,17;87:8, |
| Maybe (9) | mentioning (1) | 84:16 | 35:2;127:21; | 16;89:11 |
| 31:22;40:13;52:24; | 113:11 | minute (2) | 160:17;161:2 | multiple (9) |
| 123:17;130:2; | mentions (1) | 33:14;76:7 | monthly (1) | 10:4;12:23;13:12, |
| 134:12;139:12; | 71:12 | minutes (3) | 168:6 | 17,18,23;14:23; |
| 169:17;179:2 | Merrimack (3) | 82:17;87:18 | more (51) | 15:13,22 |
| McCosker (2) | 118:11,20;119:1 | 173:22 | 4:14;6:1;10:17; | multiples (1) |
| 102:11;113:2 | mess (1) | miss (1) | 11:18;15:23;33:8; | 14:3 |
| mean (12) | 170:22 | 154:24 | 38:7;43:10;45:10; | multitude (1) |
| 6:11;56:18;74:19; | met (3) | missing (3) | 46:19;48:15;53:2; | 161:8 |
| 75:11;79:12;87:24; | 6:17;139:9;142 | 74:21;75:6;87:1 | 54:3;71:23;72:12; | municipal (17) |
| 113:23;119:24; | Metals (2) | mistake (1) | 73:1;75:8;77:4; | 146:16;156:9,10, |
| 138:16;140:10; | 64:5;74:17 | 23:7 | 78:24;84:15;86:8,11; | 13,21,22;157:3,16; |
| 151:24;171:12 | meter (1) | mitigate (7) | 87:18;88:4,23;93:7; | 159:14;160:7; |
| meaning (2) | 6:23 | 21:12;25:22;101:3, | 112:13;116:2;122:9, | 163:13,15,17;166:2, |
| 5:22;79:21 | method (6) | 15;109:22;145:15; | 9;127:13,19;129:13; | 5,7;172:10 |
| means (1) | 37:16;87:22;88:7; | 150:2 | 133:18,24;138:18; | municipalities (2) |
| 70:15 | 110:23;111:1;178:15 | mitigated (1) | 139:17;142:9;148:7; | 166:2;175:17 |
| meant (2) | methodologies (1) | 108:6 | 163:8;169:23; | municipality (5) |
| 80:15;179:11 | 95:20 | mitigation (8) | 170:11,19;178:21; | 155:19;156:11,17; |
| meantime (1) | methodology (2) | 26:8;39:1;57:18; | 179:22;181:16,24; | $157: 4 ; 166: 9$ |
| 122:24 | 88:5,13 | 85:15;92:8;106:16; | 183:9,12;184:1; | mussels (1) |
| measurable (1) | methods (3) | 144:6;148:21 | 185:10 | 68:6 |
| 7:6 | 27:4;68:12,13 | MOA (1) | morning (2) | must (5) |
| measure (1) | Microalgae (5) | 185:23 | 70:1;187:12 | 63:9;109:7;128:1; |
| 106:3 | 56:2,6,13,18;59:14 | MOAs (1) | mortality (2) | 147:1;183:22 |
| measurements (3) | microbial (3) | 185:19 | 60:1;89:24 | Muzzey (65) |
| 106:9,11;107:3 | 62:5;70:13;71:3 | model (1) | most (13) | 11:24;12:1;14:15, |
| measures (9) | microbiological (1) | 115:21 | 25:17;38:17;44:13; | 22;16:5;18:20;19:16; |
| 21:11;27:1;39:2; | 70:10 | modeled (2) | 78:6;88:10;90:11; | 31:12,17;33:20; |
| 42:2;92:8;101:2,14; | might (19) | 15:10;102:18 | 92:1,20;102:3; | 34:14;40:3,22;42:8; |
| 145:13;149:24 | 6:2;11:9,10;15:23 | modeling (6) | 107:22;112:18; | 45:11,19;46:5;49:12; |
| mechanism (1) | 31:20;58:1;66:7; | 58:19,24;60:9; | 131:17;169:20 | 50:19;51:19;53:5,16; |
| 131:11 | 72:21;110:23; | 102:22;103:14; | MOU (23) | 58:4;62:14;71:8; |
| medical (1) | 112:14;115:12; | 115:23 | 136:5;145:21; | 74:2;85:16;88:8,23; |
| 62:9 | 117:6;137:4;139:23; | modified (1) | 147:14,23;167:12; | 89:14;95:10,11; |
| meet (10) | 141:21;153:9; | 171:18 | 174:17,23;175:7; | 96:10;98:2,12;99:21; |
| 28:16;30:8;54:6; | 164:17;178:11,21 | modify (3) | 176:17;177:6,17,21; | 107:19;112:4;120:6, |
| 68:4;69:8;85:14; | migrating (1) | 177:17,20,21 | 178:6,14;181:19; | 7;122:17;128:3,12, |
| 116:13;124:17; | 38:7 | Mollusk (1) | 184:6,14,16,17,19; | 16;131:24;132:1,20, |
| 142:17;160:12 | Miller (2) | 68:16 | 185:1,3,22 | 24;138:13;140:8,24; |
| meeting (4) | 102:12,15 | moment (2) | MOUs (17) | 148:4;149:14; |
| 61:22;63:16;69:11, | Millers (1) | 146:13;186:3 | 147:10,11;155:19; | 151:15;154:10,21; |


| 163:6;164:11; | $\begin{aligned} & 125: 20 ; 127: 10 ; \\ & 130: 6 ; 134: 21 ; 147: 7 ; \\ & 157: 18 ; 162: 12 ; \\ & 164: 2 ; 171: 23 ; 172: 2 ; \\ & 177: 21 ; 181: 15 ; \\ & 185: 17 \\ & \text { needed (10) } \end{aligned}$ | $\begin{gathered} 135: 14 ; 139: 7 \\ 142: 11 ; 143: 13 \\ \text { NH (1) } \\ 44: 4 \\ \text { NHDES (5) } \\ 9: 3 ; 41: 17 ; 44: 8 ; \\ 67: 6 ; 96: 22 \end{gathered}$ | $\begin{gathered} \text { nowhere (1) } \\ 71: 1 \\ \text { nudged (1) } \\ 130: 3 \end{gathered}$ | $\begin{aligned} & 167: 24 \\ & \text { offer }(\mathbf{2}) \\ & 72: 12 ; 163: 7 \\ & \text { offered }(\mathbf{1}) \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| 165:13;167:11,20; |  |  |  |  |
| 176:5,6;182:14; |  |  |  |  |
| 184:10 |  |  |  |  |
| myself (1) |  |  |  | 16:22 |
|  |  |  | 12:8,15,19;26:7 | ffice (1) |
|  |  |  | 30:20;31:22;36:19; | 179:11 |
| N | 12:24;13:5;17:21 | night (1) | 39:15;77:20;85:18; | OFFICER (160) |
|  | 50:6;72:6;76:20 | 6:2 | 96:17;105:12;110:2; | 4:2;5:9,12;8:9; |
| name (1) | 95:22;96:8;136:4 | nine (1) | 115:4;119:24; | 10:2;11:23;14:4,20; |
| 40:18 | 176:9 | 24:16 | 145:23;146:9; | 16:23;17:23;18:2,12 |
| National (14) | needless (1) | nitrogen (1) | 148:12;184:20 | 21,22;19:17;21:23; |
| 24:19;38:20;44:15; | 16:3 | 77:23 | numerous (2) | 22:5,10,14,23;23:2, |
| $68: 14,22 ; 108: 10,14$ | needs (7) | No14 (1) | 9:11;102:20 | $21 ; 24: 1 ; 30: 19 ; 31: 14$ |
| $\begin{aligned} & 110: 8 ; 137: 11 ; \\ & 142: 14 ; 149: 20 \end{aligned}$ | $\begin{aligned} & 81: 1 ; 119: 4 ; 120: 9 \\ & 124: 18 ; 132: 4 ; 133: \end{aligned}$ | $\begin{gathered} 168: 2 \\ \text { NOAA }(4) \end{gathered}$ | 0 | $\begin{aligned} & \text { 18;33:3;34:10;35:8; } \\ & \text { 36:3;37:5;40:13; } \end{aligned}$ |
| $160: 1 ; 172: 22$ | $157: 12$ | 137:13;140:4,5,7 |  | 42:5;44:10;45:17,21; |
| natural (32) | negative (2) | nobody (2) | object (2) | 46:9,18;50:22;52:1, |
| 4:9,16;19:18;20:3 | 14:8;60:17 | 10:17,18 | 86:17;149: | 19;53:11,24;54:10, |
| 20,24;21:1,4,17; | negligible (1) | noise (6) | objected (2) | 22;55:5;58:15;65:24; |
| 23:13,15,16;24:10, | 61:3 | 92:3;104:21;116:2 | 93:23;94: | 69:2,22;70:17;75:4; |
| 14,18;34:18;41:12; | negotiated (1) | 8,11,17 | objects (2) | 79:5;80:14,18,21; |
| 43:4,7;59:17,22;60:6, | 28:14 | Non- (1) | 48:16;49:6 | 82:13,20;83:5;85:4, |
| 13;71:24;82:21; | NESC (4) | 103:22 | obligated (1) | 24;86:22;87:6,19; |
| 90:14,15;92:15; | 108:14,15,15 | none (1) | 117:18 | 89:8,15,18;93:10; |
| 93:14;98:23;99:5,15 | 110:7 | 135:13 | obligation (4) | 94:10;95:9;96:9; |
| nature (1) | nest (6) | Non-Ionizing (1) | 118:4,8;122:1; | 97:14,20,23;98:22; |
| 59:8 | 32:23;33:6,10 | 106:14 | 186:8 | 99:1,12,22;105:21; |
| navigable (1) | 37:19;39:10;42:1 | non-point (1) | obligations (1) | 107:5,10;110:20; |
| 140:17 | nesting (3) | 64:21 | 127:12 | 111:11;114:7; |
| navigating (1) | 28:5;34:3;38:16 | nor (1) | observer (1) | 115:13,16;116:18,21; |
| 141:15 | nests (8) | 91:5 | 113:24 | 119:17;121:18; |
| navigation (6) | 28:10,12;32:4; | normally (5) | obtain (3) | 122:13;123:17; |
| $136: 19 ; 137: 14,18$ | $34: 16 ; 37: 14,17,22$ | $\begin{aligned} & 56: 6 ; 63: 21 ; 128: 19 \\ & 171: 12.17 \end{aligned}$ | $84: 22 ; 86: 5 ; 156: 19$ | $\begin{aligned} & 129: 7 ; 130: 1 ; 131: 6 \\ & 23 ; 132: 18 ; 133: 3,8 \end{aligned}$ |
| crisational (2) | New (33) | Normandeau | 72:18 | $\begin{aligned} & 23 ; 132: 18 ; 133: 3, \\ & 23 ; 134: 8,11 ; 135: \end{aligned}$ |
| 139:4;140:6 | 7:5;16:14;21:15, | 40:5,10;41:24 | obviously (12) | 12;136:11;138:21; |
| near (5) | 16;24:19;29:8,14; | Northern (4) | 9:9;26:3;29:7; | 139:10,20;140:19; |
| 29:3,11;42:12; | $\begin{aligned} & 34: 1 ; 41: 11,12 ; 42: 18 \\ & 43: 24: 51: 2: 53: 3 \end{aligned}$ | $\begin{aligned} & 27: 10 ; 29: 16,21 \text {; } \\ & 63.5 \end{aligned}$ | $58: 23 ; 59: 3 ; 65: 20$ | $141: 7 ; 142: 3 ; 147: 20$ <br> 148:6,10,17,22,24. |
| $152: 22,24$ earby (1) | $\begin{aligned} & 43: 24 ; 51: 2 ; 53: 3 ; \\ & 54: 15 ; 68: 23 ; 73: 12 \end{aligned}$ | $\begin{gathered} \text { 63:5 } \\ \text { note }(\mathbf{1 3}) \end{gathered}$ | $\begin{aligned} & \text { 67:14;75:11;77:23; } \\ & 78: 22 ; 118: 20 ; 168: 22 \end{aligned}$ | $\begin{aligned} & \text { 148:6,10,17,22,24; } \\ & \text { 149:16;152:6; } \end{aligned}$ |
| 72:9 | 77:24;78:15,18;98:6; | 31:1;41:6;47:5 | occasioned (1) | 153:13,19;154:12,19, |
| Nearest (1) | 106:2;114:17;122:5; | 58:4;96:18;102:3 | 143:19 | 22;155:5;156:10; |
| 59:17 | 129:8;135:17; | 112:5;118:12; | occupancy (1) | 159:15;160:4; |
| necessarily (3) | 137:22,23;142:1; | 120:16;156:3; | 171:1 | 161:21;162:22; |
| 8:23;32:12;67:23 | 146:10;150:6,12; | 175:22;179:5;181:9 | occupied (1) | 163:22;164:10,15 |
| necessary (20) | 152:11 | noted (2) | 134:23 | 165:16;166:7;167:4, |
| 10:18;11:4;13:18; | newer (1) | 38:6;40:7 | occur (7) | 22;168:2;169:10,24; |
| 23:18;35:12;55:18, | 112:14 | notes (8) | 5:21;24:20;26:1 | 171:21;172:8; |
| 21;66:20;68:19; | Newington (21) | 62:14,19;69:10; | 68:9;105:2,4,8 | 173:15;174:2; |
| 76:19;85:15;109:4; | 29:4;61:22;62:8 | 77:9,11;131:7;132:6, | occurred (1) | 175:15,19;176:4; |
| 119:5;124:17; | 102:5;136:6;145:6; | 8 | 53:22 | 177:11,14,19;178:10; |
| 131:13;141:11; | 147:23;167:12; | notice (3) | occurrence (2) | 179:19;181:3,7; |
| 156:16;168:6; | 173:3;174:13; | 137:20;143:5 | 59:22;168:2 | 182:3,15;183:16; |
| 181:20;183:10 | 175:23;176:17,18,21, | 150:24 | occurs (2) | 186:2;187:3,10 |
| need (34) | 23;177:1,4;184:6,8, | notification (3) | 34:4;116:9 | officers (2) |
| 6:24;14:13;15:11, | 11,13 | 110:12;170:11 | Oceanic (1) | 145:14;150:1 |
| 13;23:5,22;24:4; | newly (1) | 174:22 | 137:11 | official (1) |
| 30:16;32:6;34:20; | 42:11 | notify (6) | October (3) | 162:15 |
| 36:24;37:3;52:2; | next (13) | 41:11;67:4;118:3; | 34:9;45:1;46: | officials (7) |
| 72:24;81:16;88:15; | $22: 17 ; 48: 19 ; 57: 2$ | 139:14;168:15;170:4 | off (7) | $144: 24 ; 156: 23$ |
| $\begin{aligned} & 95: 5 ; 118: 1 ; 119: 13 \\ & 120: 3 ; 121: 14 \end{aligned}$ | $\begin{aligned} & \text { 83:7;99:24;115:17; } \\ & 116: 23 ; 134: 2,16 \end{aligned}$ | $\begin{aligned} & \text { November (1) } \\ & 50: 8 \end{aligned}$ | $\begin{aligned} & 4: 7 ; 19: 20 ; 73: 10 ; \\ & 105: 22: 132: 7: 146: 1: \end{aligned}$ | $\begin{aligned} & \text { 157:3;160:13; } \\ & \text { 163:15.17:170:5 } \end{aligned}$ |
| 120:3;121:14; | 116:23;134:2,16; | 50:8 | 105:22;132:7;146:1; | 163:15,17;170:5 |


| offshore (1) | 68:3,18;69:8 | outreach (1) | 74:9,12,13;75:17; | 71:3;72:6;81:19 |
| :---: | :---: | :---: | :---: | :---: |
| 59:18 | 77:16;98:7 | 47 | 81:12;85:20,21,23; | thogens (19) |
| old (4) | opp | o | 86:24;87:1;105:14; | 61:23;62:5;64:23 |
| 48:16;53:15;54 | 5:17 | 38:18;44:13; | 46:12,21,24;158:14, | 5:2;66:2;67:12,22; |
| 141:6 | op | O | 15 | 9:23;70:5,8,13,24 |
| once | 161: | 22 | Pages | :18;72:10;75:5 |
| 69:6,10 | option | 10,14;24:23;77 | 36:14,21, | 7:13;79:12,21; |
| 79:15;96:20, | 15:2 | 81:6.116 | 8;50:8,9;102:23, | 82:14 |
| 121:6;124:16;146:16 | order (13) | 19:9;124:21; | 24;183:2 | paths (1) |
| one (57) | 58:9;60:4 | 53:11;159:13 | PAHs (2) | 52:16 |
| 6:5;7:4 | 116:24 | 63:2;164:4;183:13 | 64:6;74:1 | Patrol (2) |
| 10:20;12:6;13:14,19 | 119:11;134: | overhead (4) | Pam (1) | 137:24;139 |
| 15:23,24;16:5;17:2, | 140:22; | 4:16;132:21 | 161:9 | paved (1) |
| 18;22:17;26:6;31:3; | 156:12;176:9;182:22 | 146:14;172:2 | Panel (2) | 152:18 |
| 34:23;35:1,4,10; | or | overla | 4:15;7 | pavement |
| 42:9;43:8;48:19; | 118:11;147 | 52:8 | paper (3) | 160:10 |
| 51:22;54:3;57:22; | Orderly (4) | overly (1) | 50:8,19,20 | pay (3) |
| 58:5;65:6,10;66:19; | 134:7;153: | 56:17 | Paragraph ( | 7:23;62:22;162:16 |
| 67:11,20;68:10;74:2, | 173:19;179:3 | oversee | 23:10;35:5;110: | PCBs (3) |
| 3,3;75:2;78:6;80:21; | orders (3) | 113:18 | 143:2 | 64:10;74:15;75:2 |
| 87:14,17;91:6;94:11; | 60:22;96:1 | overseen | Paragrap | PDF (6) |
| 101:7,17;128:19; | ordinarily | 78:13 | 105:14 | 37:7,8;43:1;50 |
| 130:23;140:13; | 182:20 | oversi | parameters | 86:24; |
| 144:19;147:12; | organic | 99:8;159:20 | 65:22;73:2 | peak (1) |
| 149:6;155:11; | 73:6 | 160:16;164 | parasitic | 106:7 |
| 158:12;167:1; | orga | overs | 71:18 | Pease (3) |
| 183:18;185:10 | 55:2; | 145:8;155:20 | parent | 74:20;78:5;142:15 |
| nerous (3) | orga | oversized | 12 | pedestrian |
| 66:5,7;82:2 | 7:15;104:1 | 146:9 | parking | 146:20 |
| ones (5) | Organ | overth | 46:7 | pending (1) |
| 48:3, | 116:13 | 132:19;133: | part | 137:17 |
| 101:7;122:5 | origin | overview (1) | 7:14;9:9 | people (29) |
| ly (15) | 18:23;36:23; | 183:3 | 12:15;15:13;17 | $10: 6 ; 11: 9,10,1$ |
| 17:6; | 48:15;102:23 | overweight (2) | 38:3;49:6;64:18 | 12:14,20;17:7;31:22 |
| 49:7; | 109:13;128:10 | 145:8;155:2 | 70:12,20;71:20 | 36:16;41:3;54:16; |
| 88:13;90:4;130:16 | 143:9;15 | own | 92:20;97:9;99:9 | 72:1;75:12,24;76:13 |
| 132:15;141:4,17; | OSHA (4) | 108 | 106:24;118:9;122: | 80:6,23;94:18;126:3; |
| 160:24;174:5;181:8 | 151:11,2 | owned | ,8;123:6;130:5; | 129:4;141:14;153:9 |
| open (3) | 180:21 | 162:4 | 138:4;151:15,17,20; | 163:10,11;183:6,11 |
| 62:5;92:16;144:19 |  | owner | 178:5 | 184:6;185:8,11 |
| operating (2) | 28 | 107: | partic | per (2) |
| 120:23;125:13 | Osp | oyst | 0:15;31:7;34:1 | 60:11,21 |
| operation (11) |  | 59:17,21;60:3,6,8 | :12;48:3;51:6 | perceive (1) |
| 20:13;21:6,9, | others | 17;61:15;62:16;63 | $2: 10 ; 63: 8,15,19$ | 11:6 |
| 23:11;30:6;43:13 | :14;64:17; | oysters (16) | 4:11;67:18;72:15; | percent (3) |
| 100:17;103:10; | 121:13;124:6 | 8 | 19:15;127:4 | 7:8;90:5;172:12 |
| 106:5;135:1 | 132:16;170:8 | 12,19;61:1;62 | particularly ( | perch (1) |
| operational (1) | otherwise | 64:2:68:6.72 | 19:20 | 39:6 |
| 101:8 | 149:13 | 6:13;80 | parties (2) | perform (2) |
| Operations ( | out (22) | 82:23;181:10 | 00:15;178 | 49:1;175:9 |
| 135:6,18;143:17 | 4:20; | oyster's (1) | parts (3) | performed (2) |
| 24;151:12;180:21 | :20 | 71:24 | 12:21;61:12;114:9 | 14:13;55:15 |
| perators (1) | 19: |  |  | Perhaps (6) |
| 16:16 | 0:7;93:16;119: | P | 56:1 | 33.7.41:1 |
| opined | 5:1;127:23 |  | passag | 88:13,19;123:21 |
| 103:8;144 | 130:17;133:14; |  |  | period (2) |
| opinion (6) | 138:22;148:11; | 6: | past | 63:2,3 |
| 44:22;50:13;70:7 | 178:16;183:24; | page (35) | 6:13;52:24;53 | periodic (1) |
| 103:14;133:16; | 186:14 | 23:7;34 | 57:6 | 115:11 |
| 140:13 | outcomes (3) | 36:12;37:7,8, | path (2) | permanent (1) |
| pportunities (2) | 8:16;9:11;11 | 41:21;42:6,6;43:1, | 84:10; | 90:24 |
| 8:4;95:24 | outdated (1) | 20;48:8,19;50:18,20; | pathogen (6) | permanently (1) |
| opportunity (5) | 30:24 | 67:1;70:2;71:10; | 64:17;65:16;69:12; | 138:7 |


| permission (3) | 122:18;123:4,9,14; | 61:3;67:3;84:7,10; | Ports (2) | Practice (3) |
| :---: | :---: | :---: | :---: | :---: |
| 5:17;171:4;174:20 | 124:20;132:2,13 | 91:21;153:23 | 137:23;139:2 | 108:21;115:10; |
| permit (27) | placed (8) | plowing (3) | Portsmouth (3) | 149:8 |
| 5:16;17:19;32:19; | 56:10,11;117:11 | 5:21;9:5;84:3 | 81:13;147:22; | Practices (14) |
| 39:15;41:7;42:24; | 138:1,5,6,9;147: | plow's (1) | 156:3 | 25:4,9,21;35:16; |
| 43:6,20;44:8;46:4; | places (1) | 90:1 | ose (1) | 39:13,22;40:1,6;45:7, |
| 63:12;64:1;66:22; | 12:8 | plume (6) | 136:22 | 13;55:20;110:11; |
| 73:23;79:16;138:22; | placing (1) | 57:13;58:19;60:7 | posed (1) | 115:21;152:12 |
| 139:6;153:3;154:7; | 89:2 | 16;91:21;92:4 | 65:3 | pre- (1) |
| 158:4,23;159:6; | plan (75) | plus (2) | position (4) | 102:19 |
| 171:2,3,4,24;172:3 | 16:7;33:9,11 | 101:7;184:13 | $10: 16 ; 11: 21 ; 14: 19$ | pre-blasting (1) |
| permits (9) | 40:15,18,23;47:1 | pm (3) | 71:7 | 174:10 |
| 22:15;143:20; | 55:13,14;57:23; | 82:18,19;187:1 | positions (2) | preconstruction (2) |
| 156:19;163:3; | 83:19;84:23;88:19, | point (42) | 11:16,18 | 30:22;39:3 |
| 170:24;171:7,10,16; | 20,20;89:4;97:24; | 14:7;16:5;17:6; | positive (2) | pre-construction (7) |
| 173:9 | 98:2;101:10,10,12, | $27: 15 ; 30: 20,24 ; 57: 6$ | 6:20;101:23 | $32: 22 ; 37: 12,16,21$ |
| permitted (1) | 14;106:16,23; | 59:18,19;63:24; | possibility (3) | 48:10;49:21;50:15 |
| 75:21 | 116:24;117:4;118:6; | 64:20;69:4,6;71:5 | 8:24;28:18;61:2 | preempts (1) |
| permitting (3) | 119:11,19,20,20; | 22;72:20;93:16; | possible (7) | 157:15 |
| $20: 10 ; 21: 19$ | 120:3,9,14;121:3,22, | 94:16;96:1,4;106:22; | 13:22;67:6;113:13; | prefer (1) |
| $151: 16$ | $23 ; 123: 12,21,24$ | $109: 15 ; 113: 16$ | $156: 13 ; 168: 19$ | 185:8 |
| person (8) | 124:10;126:7,12,20, | 119:18;120:23; | 169:16;181:11 | preferable (2) |
| 71:10;76:19; | 21,24;127:8,18; | 121:4;124:16;127:8; | possibly (2) | 123:3,13 |
| 119:21;120:2;130:3; | 128:4,5,8;129:15; | 128:22,24;131:3,4; | 67:12;119:9 | prefiled (2) |
| 160:19;162:17,21 | 130:7,11,24;131:9; | 133:13;134:4,14; | post (2) | 24:14;49:13 |
| personal (2) | 132:4;133:6;134:17, | 138:22;148:11; | 97:1;98:1 | premise (1) |
| 133:16;180:8 | 18,21;135:7,15,18; | 155:10;172:14; | post-blasting (1) | 10:17 |
| Personally (1) | 136:13;151:19,21; | 173:18;182:22; | 174:10 | prepare (2) |
| 183:17 | 152:21;168:21; | 185:18 | post-construction (3) | 134:21;172:24 |
| personnel (2) | 175:1,11;180:7,14, | pointing (1) | 43:9;86:12;102:20 | prepared (4) |
| 134:24;150:16 | $15,18$ | 24:5 | post-dated (1) | 101:11;119:21; |
| person's (1) | plans (31) | points (1) | 42:14 | 134:19;182:23 |
| 140:13 | 21:11;91:16;93:21; | 152:19 | post-dates (1) | preparing (2) |
| perspective (2) | 94:13;95:3,4,18,21; | poles (10) | 42:18 | 72:4;120:2 |
| 123:3,13 | 96:5;97:8,13,15,17; | 100:21;108:1; | posted (1) | presence (2) |
| persuasive (1) | 98:7,18;99:7;101:2; | 109:6,8,16;111:16; | 97:13 | $37: 19 ; 43: 14$ |
| 81:4 | 106:23;123:19; | 124:19;129:10; | post-hearing (5) | present (15) |
| pertaining (1) | 133:10;137:11; | 132:2,22 | 37:8;45:16;50:7; | $29: 3,11,13,23$ |
| 95:3 | 140:4;143:21;144:1; | police (5) | 53:8;158:15 | 48:24;50:2;52:11; |
| Pesticides (2) | 145:10;167:8,8; | 144:20;146:7,16; | posting (2) | 56:13;67:12,14,17; |
| $64: 9 ; 74: 15$ | 168:3;171:22,24; | 175:5;179:14 | 97:15;107:4 | 77:17;79:3;116:1; |
| PFAS (1) | 173:1 | policies (4) | potential (19) | 147:3 |
| 78:17 | plant (2) | 110:7;145:18; | 8:16;21:8,12; | presentation (1) |
| PFOA (1) | 24:17;26:6 | 149:20;150:13 | 25:17;26:17;30:13; | 34:23 |
| 180:12 | Plante (5) | poll (6) | 34:16;35:17;44:5; | presented (3) |
| PFOS (1) | 117:9;144:16; | 4:14,22;10:6;18:4, | 61:18;64:23;82:8; | 30:3;40:20;61:8 |
| 180:13 | 145:1;174:4;180:5 | 8;99:2 | 92:21;100:16,22; | PRESIDING (158) |
| phone (3) | plants (11) | pollution | 101:3;112:6;167:13, | 4:2;5:9,12;8:9; |
| 76:1,3,21 | 20:24;21:4,10; | 152:20 | 14 | 10:2;11:23;14:4,20; |
| physical (1) | 23:15;25:10;26:5; | Polyaromatic (1) | potentially (9) | 16:23;17:23;18:2,12, |
| 108:12 | 46:10;54:23;64:21; | 64:7 | 14:7;26:20;28:23; | 21,22;19:17;21:23; |
| pick (1) | $72: 9,9$ pra | polychlorinated (1) | 80:6;92:12;95:21; | 22:5,10,14,23;23:2, |
| 76:20 | plates (1) | 64:10 | 107:22;151:23; | $21 ; 24: 1 ; 30: 19 ; 31: 14$ |
| pictures (1) | 147:3 | pools (1) | 180:20 | 18;33:3;34:10;35:8; |
| 114:8 | plating (2) | 19:3 | power (5) | 36:3;37:5;40:13; |
| piece (1) | 147:9,16 | population (2) | 11:6;28:22;132:22, | $42: 5 ; 44: 10 ; 45: 17,21$ |
| 26:3 | play (2) | 83:23;84:5 | 22;140:16 | 46:9,18;50:22;52:1, |
| pine (3) | 56:9;91: | populations (1) | practicable (3) | 19;53:11,24;54:10, |
| 35:11;39:6;45:2 | please (1) | 7:24 | 146:9;156:20; | 22;55:5;58:15;65:24; |
| place (15) | 184:11 | portion (1) | 163:12 | 69:2,22;70:17;75:4; |
| $44: 12 ; 57: 19 ; 61: 10$ | $\begin{array}{\|l} \text { plow (16) } \\ 5: 8,16,19 ; 7: \end{array}$ | 133:20 <br> portions | practical (3) 125:11;133 | $\begin{aligned} & 79: 5 ; 80: 14,18,21 ; \\ & 82: 13,20 ; 83: 5 ; 85: \end{aligned}$ |
| 110:1;120:22; | $8: 2,3,15 ; 9: 10 ; 18: 3$ | $27: 24$ | 186:17 | 24;86:22;87:6,19; |

SEC 2015-04 PSNH,D/B/A EVERSOURCE ENERGY APPLICATION FOR CERTIFICATE OF SITE \& FACILITY

| 89:8,15,18;93:10; | 180:16 | 83:13;94:18;95:12, | protected (2) | 173:5;174:1;181:1, |
| :---: | :---: | :---: | :---: | :---: |
| 94:10;95:9;96:9; | private (1) | 13;96:1;99:4,13; | 42:20;44:22 | $23 ; 182: 6$ |
| 97:14,20,23;98:22; | 186:9 | 100:18;102:21; | protection (5) | Public's (10) |
| 99:1,12,22;105:21; | proactively (1) | 103:10;104:16,22 | 35:23;38:23;55:13; | 37:11;47:16;48:9; |
| 107:5,10;110:20; | 108:6 | 105:7;106:5,6; | 103:23;106:15 | 49:14;86:1,3;87:9 |
| 111:11;114:7; | probable (1) | 107:20;108:7,9 | protections (1) | 88:22;137:3;139:23 |
| 115:13,16;116:18,21; | 109:19 | 112:12;115:22,24; | 31:23 | PUC (4) |
| 119:17;121:18; | probably (15) | 116:7,12,15;117:17, | protective (2) | 113:17;114:3; |
| 122:13;123:17; | 4:10;40:20;65:2 | 19;118:1,9,12,20; | 44:14;180: | 173:8,11 |
| 129:7;130:1;131:6, | 71:10;78:6,15;98:3; | 121:8;122:2,8; | protocols (7) | pull (1) |
| 23;132:18;133:3,8, | 125:12;126:23; | 127:11;129:16; | 41:14,17,18;67:18 | 111:17 |
| 23;134:8,11;135:9, | 134:12;141:11; | 130:5,8,15;135:1; | 68:12,13;179:22 | pulled (1) |
| 12;136:11;138:21; | 158:8;169:5;170:17; | 136:7,142:16,17; | prove (1) | 109:14 |
| 139:10,20;140:19; | 184:23 | 143:4,19;144:5,10 | 141:5 | pulling (1) |
| 141:7;142:3;147:20; | problem (5) | 18;145:4,16;147:5; | provide (12) | 146:5 |
| 148:6,10,17,22,24; | 7:12;8:18;17:8 | 149:7,18;150:3,5,23; | 28:23;59:14;86:8 | pursuant (3) |
| 149:16;152:6; | 80:11;111:15 | 152:13;156:11; | 95:24;131:10;140:4; | 100:11,13;135:6 |
| 153:13,19;154:12,19, | problems (6) | 160:3;161:7,18; | 144:6;150:21;167:6; | purview (1) |
| 22;155:5;159:15; | 12:22;13:4,7,9 | 162:24;166:4;168:7; | 173:10;175:1,10 | $155: 1$ |
| 160:4;161:21; | 115:12;179:7 | 171:23;172:14; | provided (16) | put (15) |
| 162:22;163:22; | procedural (1) | 179:17;181:21;182:5 | 29:21;34:3;62:24; | 6:1;7:10;8:6;16:8; |
| 164:10,15;165:16 | 4:5 | projected (1) | 63:10;90:8,19;91:4, | $47: 2 ; 55: 21 ; 61: 10$ |
| 167:4,22;168:2; | procedures (1) | 106:6 | 11;101:21,24;135:7, | 68:1;77:4;100:1 |
| 169:10,24;171:21; | 61:10 | projects (7) | 19;152:15;168:4; | 112:3;122:4;147:7; |
| 172:8;173:15;174:2; | proceed (2) | 6:7,20;16:4;110:2 | 172:14,16 | 160:15;169:14 |
| 175:15,19;176:4; | 9:3,20 | 112:9;119:23;120:5 | provides (2) |  |
| 177:11,14,19;178:10; | proceeding (5) | Project's (1) | 20:22;58:11 | Q |
| 179:19;181:3,7; | 42:23;49:17;95:16; | $27: 1$ | providing (1) |  |
| $182: 3,15 ; 183: 16$ | $122: 17 ; 131: 8$ | Project-specific (1) | $140: 1$ | qualification (1) |
| 186:2;187:3,10 | process (14) | 50:22 | provision (5) | 138:10 |
| presumed (1) | 12:12;14:18;51:2 | promptly (1) | 123:19;124:1; | qualified (6) |
| 39:24 | 93:19;94:7;95:1; | 109:3 | 145:20;156:15; | $31: 5 ; 51: 4,1$ |
| presumes (1) | 98:10;148:21;162:6, | proof (1) | 177:10 | 119:21;120:3;162:15 |
| 9:6 | 6,15;172:1;176:21; | 72:18 | provisions (5) | qualify (1) |
| pretty (7) | 185:13 | proper (1) | 158:2,22;174:1 | 129:3 |
| $62: 22 ; 64: 16 ; 65: 7$ | produced | 180:8 | 179:21;181:19 | quality (17) |
| $75: 1 ; 160: 8 ; 172: 13$ | 93:21 | properly (1) | proviso (1) | $4: 8,13,16,21 ; 5: 2 ;$ |
| 184:24 | professional (3) | 118:3 | 166:16 | 10:23;12:18;18:7 |
| prevent (2) | 31:5;51:4;143:1 | property (11) | proximity (2) | $19: 8,22 ; 20: 2,18,19$ |
| 27:17;109:10 | professionals (1) | $100: 20 ; 107: 17,18$ | $100: 19 ; 108: 2$ | 25:6;48:6;58:17;93:6 |
| preventing (1) | 51:17 | 20,21,22;108:3; | PSNH (1) | quick (2) |
| 11:19 | professors (1) | 116:3;161:13,15,23 | 110:2 | $39: 16 ; 184: 5$ |
| prevention (1) | 67:11 | proposal (1) | public (73) | quickly (2) |
| 152:20 | Program (17) | 172:3 | 15:24;20:3;25:3; | 140:24;184:24 |
| previous (1) | 41:23;61:11;64:15; | proposed (37) | 30:21;32:7,9,10; | Quinlan (1) |
| $92: 24$ | 65:9;66:23;67:4,19, | 20:13;23:12;24:24 | 47:13,23;48:20; | $7: 7$ |
| previously (4) | 24;68:15;69:20; | $25: 1 ; 29: 20 ; 31: 6$ | 50:11,17;53:1;71:23; | quite (4) |
| 54:4;68:10;73:16; | 70:12;71:1;72:24; | 33:17,17;43:14;44:2; | 72:1;82:4;85:5; | 8:5;64:14;75:22; |
| 174:16 | 81:9;135:17,20; | 47:23;48:21;51:5,18; | 86:24;93:20;94:1 | 124:23 |
| prey (1) | 136:10 | 56:10;96:14,20; | 17;95:2,24;96:6; | quote (1) |
| 38:13 | programs (1) | 97:24;98:13;100:4, | 98:19,20;99:24; | 135:21 |
| primarily (2) | 110:1 | 24;101:13;104:19; | 100:6,18,20,23; |  |
| 73:5;137:9 | progress (1) | 105:16,23;110:3; | 101:15;102:4; | R |
| printer (1) | 167:21 | 117:12;121:19; | 103:13,19;105:12,15; |  |
| 170:21 | project (96) | 122:14;127:6;143:5; | 106:2,22;107:4; | racer (1) |
| prior (26) | 4:24;5:23;6:9,10; | 148:12;150:24; | 108:3;110:4,14,16, | 27:11 |
| 17:20;28:7,10; | 7:11;12:3,16;19:6; | 165:21;167:8; | 17;112:6,7;117:13; | radar (1) |
| 31:7,9;37:3;40:24; | 24:21;26:16;27:24; | 172:21;173:4 | 121:20;127:7; | 73:11 |
| 41:9;44:4;51:6,8,14; | 28:5,16;29:4,11; | proposes (4) | 142:23;143:3;144:8, | radial (1) |
| 52:12,22;67:3;84:24; | 30:13;34:4;35:24; | 70:11;86:4;157:22; | 9,11,12;145:12; | 109:17 |
| 96:15;118:8;122:1; | 36:8;38:21;41:16; | 158:17 | 149:9;157:17;167:9, | radiated (1) |
| 138:23;142:5;152:9; | 43:14;44:2;56:5; | protect (3) | 10;168:11,13,14,23; | $111: 22$ |
| 154:14;169:1;175:6; | 57:10;59:24;60:5,16; | 8:2,4;43:6 | 169:13,14;170:4; | Radiation (3) |


| 103:23;106:15; | 72:18 | 33:13;166:14 | referred (2) | 117:2 |
| :---: | :---: | :---: | :---: | :---: |
| 107:12 | realistic (1) | recommendations (2) | 51:1;166:15 | relationship (3) |
| radio (4) | 129:11 | 44:24;108:19 | referring (1) | 104:7;119:14; |
| 104:17,21;105:2,2 | really (14) | recommended (8) | 40:14 | 186:19 |
| rainbow (1) | 66:18;70:2;72:6, | 35:15,18;38:19; | refers (2) | relative (13) |
| 91:18 | 17;75:19;79:18;87:7; | 39:5,11;44:14;47:10, | 151:24;176:1 | 24:10;25:6,10; |
| raise (6) | 93:13;112:3;121:11; | 17 | reflect (2) | 26:13,19;27:8;35:13; |
| 4:18;5:8;32:13; | 141:18;148:19; | recommending (2) | 96:6;168:7 | 61:11;92:8,11;119:4; |
| 119:16;144:2;149:5 | 162:7;171:12 | 35:10;95:20 | regard (15) | 153:24;161:13 |
| raised (14) | realm (1) | recommends (1) | 43:4;50:23;58:1 | relatively (2) |
| 8:13;61:23;63:15; | 34:17 | 39:7 | 61:9;78:4;102:9; | 73:12;78:18 |
| 77:13;78:17;93:2; | reason (4) | reconsider (1) | 104:17;105:13; | relaying (1) |
| 102:1,12,15;106:21 | 34:22;63:3;109:3; | 11:21 | 120:8;144:14; | $108: 24$ |
| 136:18,21;161:19; | 122:4 | reconsidering (1) | 157:16;158:7; | released (1) |
| 174:16 | reasonable (1) | 10:16 | 159:17;173:20;174:3 | 73:6 |
| randomly (1) | 35:20 | reconvene (2) | regarding (20) | relevant (4) |
| 111:18 | reasoning | 9:23,24 | 20:18,19;44:1; | 100:13;116:15; |
| range (2) | 12:16 | record (7) | 49:13;50:13;57:4; | 150:20;154:16 |
| 9:12;112:8 | reasons (5) | 6:1;12:8;14:1; | 58:17;61:23;77:13; | reliability (9) |
| raptor (6) | 6:5;10:9;42:9; | 99:9;112:11;159:23; | 88:12;93:22;102:15; | 6:9,15;99:13; |
| 28:10;37:13,16,22; | 74:3;98:4 | 178:8 | 113:21; $120: 12$; | 104:16;110:9;118:2, |
| 45:12;50:16 | reassurance (1) | recorded (4) | 125:24;141:17; | 11;127:11;149:22 |
| raptors (7) | 58:12 | 12:8;24:18;28:4 | 165:21;175:24; | reliable (1) |
| 28:19;37:19;40:16; | reassure (1) | 42:11 | 179:2;181:4 | 6:15 |
| 48:18;49:8,24;53:7 | 43:16 | records (1) | regardless (1) | relied (1) |
| raptor-safe (3) | reassures (1) | 29:15 | 13:10 | 59:1 |
| 35:16;39:12;45:6 | 42:20 | record's (1) | regards (5) | relocation (1) |
| rare (16) | recall (19) | 87:11 | 55:24;59:2,21; | 44:17 |
| 20:24;21:4;23:14, | 15:1;24:22;32:2,4, | recovered (1) | 61:18;176:11 | rely (1) |
| 15;24:13,16;31:8; | 9;33:4;52:3;58:17; | 131:18 | Region (1) | 53:16 |
| 41:15;48:11,22;49:4; | 66:8;69:1;98:12; | recovering (1) | 134:7 | relying (6) |
| 51:7,13;52:21;54:20; | 107:19;113:1,8,10; | 131:12 | regional (3) | 53:23;54:2,4,12; |
| 90:13 | 131:20;139:17; | recreational (1) | 110:8;118:2 | 68:22;136:9 |
| rarely (1) | 141:20;145:22 | 81:10 | 149:22 | remain (7) |
| 186:18 | receive (4) | red (2) | regularly (2) | 79:22;80:1;95:18; |
| rather (10) | 96:6;97:7,13,15 | 30:1;63:17 | 29:7;63:9 | 109:20;128:5; |
| 17:21;20:21;23:23; | received (2) | redeveloping (1) | regulate (1) | 129:10;147:1 |
| 88:24;89:2;123:9; | 57:23,24 | 57:7 | $20: 12$ | remedied (1) |
| 124:19;127:14; | receives (2) | reduce (2) | regulation (1) | 105:10 |
| 169:21;184:2 | 71:13;98:9 | 35:16;106:17 | 157:1 | remember (5) |
| razor (2) | receiving (1) | reduced (1) | regulations (11) | 7:21;36:15;63:2; |
| 59:4,6 | 97:16 | 91:2 | 104:24;142:19; | 81:15;112:19 |
| reach (6) | recent (2) | reducing (2) | 156:14,21;158:3,22; | remind (1) |
| 57:14;58:20; | 53:2,21 | 30:9;146:8 | 160:7;163:14,19; | 126:2 |
| 155:22;156:23; | recently (1) | reef (1) | 181:17,18 | reminder (1) |
| 160:13;163:15 | 42:11 | 59:17 | regulatory (6) | 10:3 |
| reached (2) | reception (2) | re-entry (1) | 20:10;21:20;28:14 | remiss (2) |
| 155:24;181:14 | 102:16;113:6 | 27:17 | 57:17;117:21;169:7 | 73:9,11 |
| read (19) | Recess (1) | refer (3) | reiterate (1) | removal (7) |
| 9:1;20:21;23:18, | 82:18 | 157:4;166:9,19 | 181:12 | 27:13;30:10; |
| 23;72:3;86:20;100:8; | recite (1) | reference (11) | reject (1) | 124:15;129:18,22; |
| 105:22;123:5;130:2; | 169:19 | 23:8,19;36:21; | 178:6 | 132:5;185:4 |
| 132:14,16;157:21; | recognize (2) | 41:8,9;43:19;47:12; | relate (4) | remove (4) |
| 158:13;164:14,17; | 27:18;75:3 | 151:11;154:1;179:6; | 110:9,11;126:13, | 49:3;52:15;123:3; |
| 173:13;183:4,6 | recognizing (1) | 184:11 | 15 | 126:10 |
| reading (11) | 181:15 | referenced (7) | related (6) | removed (5) |
| 31:15;36:4;52:9; | recollection (2) | 25:5;35:22;46:1; | 48:5;78:12,19; | 120:19;125:16; |
| 85:17;122:10; | 67:9,20 | 48:1;115:6;177:4; | 117:7,10;152:19 | 127:2;132:10,23 |
| 130:10;133:1,4; | re-colonize (2) | 183:8 | relates (4) | repair (1) |
| 153:5,22;169:11 | 56:6,15 | references (1) | 76:12;110:4;120:1; | 145:9 |
| reads (1) | recommend (1) | 40:4 | 185:3 | repairs (1) |
| 183:24 | 147:4 | referencing (2) | relating (3) | 109:5 |
| real (1) | recommendation (2) | $59: 22 ; 176: 14$ | 105:16;110:6; | repeat (2) |

36:18;184:10
replaced (1) 56:4
report (10)
24:12;29:21;90:12, 15;103:2;104:12; 108:21;117:23; 125:24;169:20
reported (1) 43:17
Reporter (5) 49:2,9;79:24; 83:15;186:16
reporting (4) 66:24;127:10; 169:5,21
reports (7) 29:9;96:24;97:1; 98:15,17,18;127:9
represent (2) 11:16,17
representative (1) 115:22
represented (6) 104:19;109:18; 139:9;142:13,16; 174:14
represents (1) 105:8
reptiles (3) 27:8;46:11;54:24
request (13) 32:8,10,14;48:9; 85:5;86:21;93:18,24; 94:3,24;95:6;140:17; 157:19
requested (4) 62:16;66:2;117:9; 171:8
requesting (1) 158:11
requests (1) 50:16
require (27) 22:22;45:3;54:15; 64:1;66:6;72:21,22; 81:8,19;82:1;89:6; 101:5;119:11,18; 124:15;125:12,16; 137:5;139:4;140:7; 143:20;145:13; 150:15;151:7; 156:18;173:9;180:17
required (22) 44:7;48:24;52:7; 57:19;58:2;64:15; 66:2,3,23;81:24;84:6, 22;125:4;126:11; 134:17;149:11; 154:4;160:6;165:4; 171:1;174:5;175:9
requirement (16) 53:3,21;62:2;68:3,

5;77:18;86:18;88:18; 124:8,9;125:2,23; 127:5;130:24;131:1; 186:13
requirements (40)
20:17;21:22;22:6, 9;24:11;28:16;44:9; 46:4;55:21;66:24; 78:19;90:18;100:9, 12;101:4,10;108:15, 17,18;110:8;114:20; 115:6;117:2,5; 118:10,13,15,19; 119:24;133:4;139:5; 142:17;149:21; 153:3;163:4;168:24; 169:5,8;172:22,24
requires (10)
51:2;55:14;67:2; 124:11,12;136:6; 138:23;155:13; 174:23;175:7
requiring (3)
82:4;127:7;131:4
reread (1)
153:11
research (5) 60:18;83:20;90:9; 104:12,14
reserved (1) 131:16
resident (1) 23:18
residents (1) 95:13
resolution (6) 157:6;161:12,17; 166:11;177:8;185:13
resolve (5) 11:3;13:8;156:1; 157:2;163:20
resolved (6) 9:14;11:19;13:6; 102:5;162:3;174:15
resolving (1) 164:24
Resource (1) 90:15
resources (4)
21:7;34:18;120:2; 121:2
respect (5)
16:21;63:12;126:5; 134:6;183:13
respective (1) 168:17
respond (5) 5:18;7:16;109:3; 113:20;135:5
response (10) 60:20;101:13; 135:7,15,17,20,21; 136:10,13;180:22
response] (17) 18:1;55:4;56:1; 83:4;89:17;98:24;
107:13;115:15; 116:20;135:11; 136:14;143:12; 155:4;165:19;181:6; 182:2;187:9
responses (1) 25:18
responsibilities (1) 176:10
responsibility (1) 96:5
rest (3) 9:22;78:19;112:3
restoration (3) 47:1;55:13,14
restore (1) 166:2
restricting (1) 91:9
restriction (1) 99:7
restrictions (3) 44:19;91:11; 103:18
resubmit (2) 143:5;150:23
result (5) 9:11;61:2;103:12; 105:7;109:17
results (4) 94:8;106:8,10; 107:2
resume (3) 4:6;82:21;187:15
resumed (1) 82:19
re-survey (1) 31:2
re-surveying (1) 49:10
resuscitation (1) 150:19
retain (1) 175:8
retained (2) 103:4;143:14
rethink (1) 12:24
retire (3) 123:7,21;125:9
retired (4) 125:15;129:10,15; 130:6
retirement (7) 118:4,8;122:2; 124:13;125:12; 127:12;130:4
returning (1) 57:8
review (18)

13:11;44:7;81:5;
94:8;95:18;96:5;
112:5;121:2;124:2,
10;125:21;143:18;
155:10;166:5;
170:19;171:15; 172:16;174:21
reviewed (8)
76:8;80:22;81:6;
93:3,4,9;142:15;
180:15
reviewing (3)
40:12;86:19;
122:16
Revised (3)
50:24;83:18;88:18
Revision (1) 68:16
revisions (1)
185:20
revisit (1) 18:8
right (27)
15:8;17:13;34:21;
52:8;62:18;74:6,23;
75:20;87:24;111:19;
114:17;127:24;
130:4;133:21;
134:15;139:19; 141:6;159:12;
165:12,20;167:2;
171:14;173:14;
177:12;179:10,20;
187:11
right-of-way (15)
37:18,23;39:4;
42:12;48:12,13;
52:18;109:21;
111:10,18;116:4; 134:22;135:2;
146:14;152:17
rigorous (1)
81:2
rigs (1)
146:10
ringed (1) 26:15
risen (1) 69:12
risk (5) 65:3;76:14;77:3; 108:1,6
risking (1) 124:19
risks (2) 100:20;109:22
river (1) 70:21
rivers (3) 67:16;71:13;77:22
road (19) 99:3;130:12; 144:21;148:8,13;

156:9;157:9,13,17; 158:1,21;159:1,7; 160:11;162:2,8;
165:17;166:6;172:19
roads (33)
100:20;108:4; 136:7;144:19,22; 145:3,8,9;146:11,16; 147:4;152:18; 155:13,16,23;157:8, 9,16,24;158:7,19; 159:14,17;160:9,16, 23;162:9,10,11; 164:2,4;166:2; 172:20
roadways (1) 127:2
roadwork (1) 147:1
Rockingham (3) 184:18,21;185:3
rocky (1) 56:3
role (4) 43:2;160:15; 162:23;163:1
room (1) 163:8
roosting (1) 33:7
Roseate (1) 29:5
R-O-S-E-A-T-E (1) 29:6
route (4)
102:21;115:22;
116:12;162:10
routes (1) 163:2
routine (2) 70:10,22
RSA (2) 19:23;100:3
Rule (12) 20:18;22:1,17; 24:6;120:15;126:14, 16,18;127:23;132:3; 157:1;179:6
ruled (1) 76:8
Rules (23) 20:6;53:19,20; 54:9;104:24;117:20; 118:6;119:18;120:8; 121:24;123:11,22; 124:8;128:6,6; 133:10;156:14,21; 160:7;163:13,18; 179:1,23
rule-specific (1) 21:21
run (44)
8:16,20;9:1,10,15,

| $22 ; 10: 5,7,8 ; 11: 5,9$ | sampling (4) | 17;96:16,23;97:1,2,3, | 163:7,11 | 120:18,21;123:19; |
| :---: | :---: | :---: | :---: | :---: |
| 10,15;12:6,10;13:3,8, | 64:2;80:11,15,19 | 7;98:16,16;106:7,16; | segue (1) | 132:7,9,12,23;143:4; |
| 20;14:9,12,16;15:3,4, | Sanitation (1) | 107:2;110:11,13; | 47:3 | 149:7,18,24;150:4,8, |
| 5,7,15,23;16:6,14,19; | 68:15 | 117:20;122:16; | seldomly (1) | 11,15,21,23;151:7; |
| 17:9,10,11,15,17,20; | Sarah (2) | 125:21;152:15; | 109:16 | 152:10;153:1;155:6, |
| 18:3,5,6,8,11,14; | 34:9;41:23 | 154:15;156:2;157:5; | selectmen (1) | 16,21;156:1,8,15,17, |
| 58:23;66:4 | satisfaction (1) | 160:14,15,19,21; | 168:15 | 22;163:14;166:1; |
| runs (10) | 41:13 | 162:13;163:20; | send (1) | 167:5;168:5,15; |
| 10:5,18;12:15,23; | satisfactory (1) | 164:3,21;166:10,19; | 41:3 | 170:4 |
| 13:17,19,23;14:23; | 131:11 | 167:7;168:5,18; | sense (7) | sheet (1) |
| 15:13,22 | satisfied (2) | 170:6;174:21;176:1, | 15:11;62:12;66:17; | 175:3 |
| Rye (1) | 52:23;53:4 | 8;177:7;178:15,20; | 73:10;75:6;79:11; | shellfish (26) |
| 29:8 | satisfy (1) | 187:5 | 111:8 | 59:2,11;61:9,11,16, |
|  |  | second (18) | sensing | 9;64:15;65:9,13; |
| S | save (1) | 5:16,19,20;7:18 | 148:7 | 66:23;67:4,19,24; |
|  | 5:16 | 9:1,17,14:22;15:7 | sensitive (4) | 68:14,16;69:20 |
| safe (1) | saw (1) | 17:10,15,18,19; | 44:1,6;119:13 | 70:12;71:1,20;72:24; |
| 27:14 | 75:19 | 18:11;22:1;39:18; | 120:12 | 80:3;81:9;82:22,24; |
| safeguards (1) | saying (7) | 85:12;107:24;156:4 | sent (1) | 83:3;181:11 |
| 44:11 | 9:4;62:24;63:7,20 | second-guessing (1) | 40:17 | shellfishing (1) |
| safely (2) | 77:3;89:3;95:6 | $72: 23$ | sentence | 81:11 |
| 115:2;150:10 | schedule (4) | secondly (1) | 164:21;165:4,11 | shielded (1) |
| safer (1) | 13:20;167:9;168:3, | 6:8 | 14 | 38:17 |
| 52:16 | 7 | Secretary (1) | separate (1) | shirts (1) |
| safety (72) | SCHMIDT (48) | 164:7 | 46:17 | 180:10 |
| 20:4;75:14;81:22 | 5:6;14:5,6,21; | section (11) | separately | shoes (1) |
| 100:1,6,18,23; | 18:18;19:14;32:21; | 22:12,15,21;37:9; | 26:4 | 180:10 |
| 101:11,12,16;103:13, | 33:23;34:6,8,13; | 93:4;123:6;170:20; | September (6) | shore (1) |
| 21;104:6;106:3,13; | 35:4;46:8,16;54:7; | 176:3;177:22,23; | 34:4;40:5,10,24; | 38:9 |
| 108:11,14;110:5,17; | 61:20;62:18;63:14, | 181:9 | 41:22;92:7 | shoreland (1) |
| 112:7;113:18,19,21; | 22;65:12,17;66:11; | Sections (1) | serve (1) | 152:23 |
| 114:21,24;134:17,18, | 73:3;74:11,23;99:19; | 100:7 | 6:10 | short (5) |
| 20,22;135:10; | 129:6;130:22; | sedge (2) | service (1) | 7:22;82:15;169:22; |
| 136:19;137:24; | 133:19;148:5; | 26:7;29:10 | 7:9 | 173:24;185:6 |
| 139:8;142:10,12; | 153:24;154:8,17; | sediment (11) | Services (4) | shorter (3) |
| 143:14;144:9,12; | 159:4,12;162:24; | 58:20;59:8,11; | 43:1;53:17,20; | 111:4,8;169:22 |
| 145:13;149:20,24; | 163:1;164:6;171:16, | 60:14;61:4;71:19; | 88:10 | short-nose (1) |
| 150:17;151:9;152:4; | 22;172:2;177:13,15, | 72:11;80:19;84:15; | set (3) | 26:21 |
| 153:20,20;160:2; | 16;178:17;179:10, | 89:12;92:3 | 103:20;158:3,22 | show (3) |
| 165:22;168:14,23; | 18;182:12 | sediments (4) | setting (1) | 80:10;103:17 |
| 169:14;170:4,14,17; | Schmidt's (1) | 57:14;59:7;67:17; | 104:9 | $131: 15$ |
| 172:22;173:21,22,24; | 78:4 | 89:24 | seven (4) | shows (1) |
| 174:1;175:21;179:1, | science (2) | seeing (4) | 71:13;168:19; | 80:8 |
| 6,9,12;180:2,3,7,10, | 111:23;112:1 | 37:1;69:18;113:8, | 169:14,17 | SHULOCK (93) |
| 18;181:5,23;182:7 | scientific (2) | 12 | seven-day (1) | 5:7,11,14;7:3;10:7, |
| Safety/Occupational (2) | 103:9,15 | seem (16) | 169:1 | 14,15;14:6;15:20; |
| 150:17;151:9 | scientist (2) | 35:20;42:22;51:21; | several (5) | 16:24;17:1;18:19; |
| safety-related (1) | 31:5;51:3 | 52:3;58:17;62:11; | 24:24;65:21 | 19:15;36:18;63:24; |
| 170:8 | scrambling (1) | 75:1;81:18;86:16; | 136:20;146:1;183 | 64:9;65:23;68:10; |
| salt (9) | 185:12 | 111:9;113:1,10; | Severe (2) | 73:20,22;74:5,7,13, |
| 26:9,10;46:23,23; | Seacoast (3) | 123:9;139:16; | 135:22;169:23 | 16,18;96:12;99:20; |
| 47:1;55:9,11,12,24 | 7:4;99:13;104:16 | 145:22;186:22 | shad (1) | 100:1,2;105:24; |
| salvage (1) | searches (1) | seemed (2) | 91:18 | 106:20;107:7,14,24; |
| 126:8 | 27:13 | 51:23;63:5 | Shaking (1) | 112:16,22;113:2,13, |
| same (18) | searching (1) | seems (26) | 154:20 | 17,20;114:4,12; |
| 5:21;7:20;11:20; | 87:14 | 46:5;52:20;58:5 | shall (63) | 115:9,18;116:23; |
| 17:16;56:5,12;71:9; | season (10) | 62:22;68:17;71:7; | 9:3;20:6;23:17 | 124:4,5;129:20; |
| 76:15;118:9,19; | 5:22;7:21,22;8:7 | 72:19;76:23;77:15; | 31:6;41:10,16,17; | 130:20;132:21; |
| 128:5;134:9;140:9; | 11:20;13:6;14:8; | 81:22;97:5;110:22; | 54:2,5,13;67:3;68:6, | 133:7,19,21;134:16; |
| 147:9;166:4,12,15; | 28:8;38:16;43:10 | 113:23;119:6;128:1; | 8,12;83:1;88:3,21; | 135:14;136:15; |
| 169:2 | SEC (49) | 132:14;138:17,20; | 89:12;96:16,22;97:1, | 138:3,8;139:7,11,19, |
| sample (1) | $\begin{aligned} & 9: 4,5,23 ; 17: 22 \\ & 40: 12: 86: 19: 94: 15 . \end{aligned}$ | $149: 4,12 ; 156: 4$ | $3 ; 98: 16 ; 106: 3,7,15$ | $22 ; 142: 12 ; 143: 13$ |
| 66:5 | $40: 12 ; 86: 19 ; 94: 15,$ | 161:13;162:8,12; | 107:2;117:18,23; | 146:3;148:3,9,14; |


| 151:17;152:3; | 100:7,14;116:3; | 87:15 | 20:20;31:23;41:8; | 26:14;27:10,11,11, |
| :---: | :---: | :---: | :---: | :---: |
| 157:14;158:10,14; | 120:10,19;122:12; | sometime (1) | 42:1;54:9;55:20; | 20;29:1,17;38:11,12; |
| 159:8,22;166:17,21; | 132:7,10,23;133:2; | 141:24 | 71:4;122:9;141:15; | 68:5;81:8,15;97:2; |
| 167:15,24;168:21; | 134:17;135:15; | somewhat (3) | 152:21;154:2; | 105:1;116:16;153:2; |
| 169:9,18;170:15; | 150:10;152:11,18; | 69:17;81:4;161:16 | 155:17;167:1; | 154:2,16;155:1; |
| 171:20;172:10; | 162:3;175:1 | somewhere (1) | 179:20;183:14 | 162:9;163:2;164:1; |
| 173:20;174:3; | sites (7) | 53:19 | specifically (12) | 172:20,23;173:7; |
| 175:18;176:17; | 20:2;27:13;78:7 | sonar (1) | 33:8;34:15;45:18; | 178:22;179:14 |
| 177:5;179:24;180:3; | 115:22;118:23; | 89:11 | 52:13;108:11;120:1; | stated (6) |
| 182:13 | 152:24;154:9 | soon (3) | 136:16;161:2,13; | 72:8;87:24;108:18; |
| Shulock's (1) | Site-specific (3) | 7:8;168:18;169:16 | 164:3,22;178:18 | 145:1;157:18;172:11 |
| 8:10 | 28:6;180:6,18 | sooner (1) | specifications (3) | state-listed (1) |
| sick (2) | sitting (1) | 168:6 | 126:24;158:1,20 | 26:6 |
| 80:7,23 | 138:16 | sorry (19) | specified (2) | state-maintained (1) |
| side (4) | situation (4) | 18:13;19:7;22:3, | 68:11,14 | 170:16 |
| 66:19,19;75:14; | 7:11;8:6;10:1 | 20,20;23:1,7,9,22; | specifies (1) | statement (8) |
| 81:22 | 171:19 | 31:14;33:21;36:4 | 120:17 | 9:19;33:24;34:2; |
| sides (2) | situations (2) | 42:3;74:12;96:2 | specify (2) | 71:6;72:15;87:14; |
| 15:20;107:21 | 14:12;141:4 | 126:3;133:21; | 12:13;95:19 | 115:2;147:17 |
| $\boldsymbol{\operatorname { s i g n }}$ (1) | $\boldsymbol{\operatorname { s i x }}$ (2) | 139:15;152:2 | spill (1) | status (4) |
| 137:6 | 10:6;24:17 | sort (6) | 169:3 | 21:14;104:14; |
| signage (1) | size (1) | 9:17;72:6;77:3; | spilled (1) | 126:1;185:24 |
| 140:7 | 161:6 | 79:7;121:1;163:16 | 73:7 | statute (3) |
| signed (1) | skip (1) | sorts (1) | spotted (1) | 19:23;21:21;124:8 |
| 177:17 | 134:12 | 16:3 | 27:23 | statutory (1) |
| significance (1) | sleep (1) | sound (8) | spring (1) | 169:7 |
| 23:17 | 113:4 | 101:8;112:19; | 85:12 | steel (3) |
| significant (17) | slightly (1) | 113:3;115:17,18,21, | square (2) | 147:3,9,15 |
| 21:3;26:2;57:3; | 50:13 | 24;116:19 | 35:3;55:10 | steep (1) |
| 61:7;65:3;77:16; | slopes (1) | Sounds (4) | SRP (1) | 152:22 |
| 78:3;84:5;85:13; | 152:22 | 38:1;44:11;47:3 | 42:12 | stems (1) |
| 91:24;103:24; | small (2) | 89:14 | Staff (1) | 64:18 |
| 110:13;112:20; | 30:6;84:7 | source (1) | 162:20 | step (2) |
| 115:5;118:22;168:9; | small-footed (1) | 105:9 | stage (1) | 77:1;185:21 |
| 169:11 | 30:3 | sources (2) | 11:11 | stick (1) |
| significantly (2) | smelt (1) | 64:22;79:13 | stages (4) | 141:12 |
| 60:22;103:18 | 91:19 | southeastern (1) | 11:11;90:1,3,21 | sticks (1) |
| signing (1) | snake (3) | 59:18 | stand (3) | 63:4 |
| 146:20 | 27:9;48:23;50:14 | sparrow (2) | 4:15;14:19;113:14 | still (4) |
| silt (1) | snakes (7) | 29:1,2 | standard (6) | 17:18;81:4,23; |
| 61:24 | 27:14,16;31:11; | sparsely (1) | 35:15;116:4;158: | 178:1 |
| silver-haired (1) | 50:1;51:10,15;52:14 | 26:11 | 3,23;180:23 | stipulated (15) |
| 30:1 | snow (1) | Spaulding (1) | standards (18) | 24:24;25:1;33:17; |
| similar (7) | 114:18 | 162:10 | 28:18;36:2,9; | 39:19;47:11;48:2; |
| 25:7;67:22;110:24; | Society (1) | speak (6) | 39:12;104:10; | 96:14;98:13;102:6; |
| 119:23;120:5; | 108:20 | 7:2;10:12;15:16; | 108:10,11,13;110:9; | 105:12;143:4; |
| 145:20;177:10 | softshell (2) | 36:16;68:4;73:5 | 114:15;115:1; | 148:12;173:14; |
| similarly (2) | 59:4,5 | special (5) | 149:22;158:20; | 181:1;183:15 |
| 31:5;51:3 | soil (6) | 28:4,21;29:5; | 159:10,20;160:11,22; | stipulation (5) |
| simply (1) | 80:11,19;151:21 | 31:21;38:12 | 164:1 | 125:22;142:24; |
| 128:23 | 23;180:13,20 | species (46) | start (9) | 157:20;164:21; |
| single (21) | soils (1) | 20:23;21:4,10; | 6:4,8;8:20;9:22; | 173:13 |
| 10:5,6,8;13:8; | 185:3 | 23:14;24:13,17; | 10:16;19:9;41:10; | stipulations (1) |
| 14:12,16;15:2,4,5,15; | sold (1) | 25:14,15;26:6,18,19, | 67:3;84:24 | 183:14 |
| 16:6;18:5,6,8,14; | 32:12 | 20;27:10,12,19,21; | started (3) | stirred (2) |
| 86:4,11,15;87:8,17; | solid (1) | 28:3,21,24;29:2,5,10, | 4:4;18:24;79:9 | 79:22;80:2 |
| 88:1 | 75:1 | 18;30:4,6,23;31:9; | starting (3) | stirring (1) |
| singular (1) | somebody (1) | 41:15;44:2,6;48:11; | 4:23;9:15;74:8 | 61:24 |
| 11:5 | 162:4 | 49:4;51:7,13;52:11 | starts (3) | stop (3) |
| Site (27) | someone (5) | 22;54:21;56:6,12; | 9:4;42:6;87: | 8:19;15:14;30:15 |
| 13:10,15;19:24; | 126:2;130:12; | 68:7;90:14,21;91:5,8, | state (33) | storage (1) |
| 20:5,18;78:8,13; | 160:20;164:9;165:5 | 12,23 | 6:11;13:12;20:9, | 174:19 |
| 94:18;97:2;98:17; | someone's (1) | specific (15) | 11;21:18;22:16; | stormwater (1) |

$152: 20$
straightjacket (1)
$17: 7$
straw (2)
$10: 5 ; 181: 21$
stream (1)
$27: 7$
Street (1)
$174: 7$
streets (2)
$144: 10,13$
structural (2)
$108: 7,23$
structure (2)
$108: 24 ; 109: 12$
structures (5)
$100: 22 ; 108: 2 ;$
$109: 10,11 ; 113: 22$
strung (1)
$111: 15$
studied (2)
$78: 7,24$
studies (1)
$91: 22$
sturgeon (4)
$26: 21,21 ; 34: 17 ;$
$42: 1$
Subcommittee $(\mathbf{4})$ 24:2;83:17;157:22; 158:18
subject (6) 28:12;99:24; 103:16;157:24; 158:19;166:5
subjects (1) 111:20
submarine (5) 9:2;35:6;82:10; 92:23;152:23
submission (2) 93:19;95:2
submissions (1) 154:2
submit (11) 33:8;41:16;88:18; 89:4;117:23;118:5; 121:22;127:18; 130:6;134:18;141:9
submitted (13) 33:15;47:17;58:2; 62:2;83:21;94:14; 95:19;97:9;100:11, 13;104:12;129:16; 137:10
Subsection (1) 22:1
subsequent (1) 94:24
substances (4) 64:3,4;70:22;74:19
substantial (1) 64:16
substantive (1)

72:21
substitute (1) 82:1
substrate (3) 56:3;59:14;84:2
subtidal (2) 26:12;46:24
successful (3) 9:12;17:6,13
successfully (2) 16:13,18
successive (1) 117:21
successor (1) 117:21
suffice (2) 129:4,5
sufficient (2) 79:1;121:16
sufficiently (1) 40:2
suggest (9) 12:22;78:2;87:24; 96:7;145:12;153:5; 161:1;164:18;183:5
suggested (7) 32:17,19;37:11; 47:8;53:6;60:2;87:10
suggesting (1) 12:15
suggestion (2) 86:23;129:14
suggestions (2) 45:24;95:15
suggests (1) 37:2
suitable (3) 26:17;27:14;59:14
suite (1) 6:19
summarize (5)
70:15;100:9; 101:18;173:21;185:7
summarized (1) 104:11
summarizes (1) 107:8
summary (2) 90:20;103:3
summer (1) 57:21
sunfish (1) 26:22
super (4)
35:11;39:5;45:2; 78:8
supervising (1) 157:9
supervision (1) 55:15
supplemental (2) 117:8;145:24
supporting (2)

100:22;108:2
suppose (1)
153:21
sure (32)
6:6;8:12;10:10;
32:18,24;34:7,20;
41:2;54:1;56:20;
58:1;66:15;71:6;
73:8,9,17;80:24;
81:24;82:3;93:6;
98:8;123:23;124:7;
154:17,21,23;160:8,
18,21;163:5;174:8;
186:5
surface (1)
89:12
surfaces (1)
71:16
surprisingly (1) 101:5
survey (33)
28:7,9;29:12,22,22, 24;31:8;32:23;33:2; 39:3;49:22;51:6; 52:6,7,10,21;53:9,13; 54:3,4,5,12,13,14,15; 57:16,20;85:9,10,12; 86:10,15;89:9
surveyed (1) 26:18
surveying (1) 39:4
surveys (23) 28:6;29:19,20; 30:22,24;32:3,11; 36:24;37:2,3,13,15, 18,21;45:14;48:10, 15;49:22;50:15;53:2, 22;115:10;174:10
survive (1) 59:9
suspect (1) 47:11
suspended (3) 57:13;60:9;89:24
suspenders (1) 166:22
swamp (1) 26:23
swath (1) 84:19
sweep (3) 52:5,11;53:10
sweeping (1) 152:18
sweeps (4) 49:1,11;50:14,23
swim (1) 92:1
symptoms (1) 73:14
system (13) 26:11,11,12;46:24,

24;71:20;86:5,7;
89:11;90:2;118:3; 127:12;136:1
systems (4)
67:15;109:1,7; 133:20

| $\mathbf{T}$ |
| :---: |

talk (17)
4:11;5:10;45:10; 46:10;54:17;55:3; 61:20;76:4;82:14,24; 133:17,24;134:5; 149:17;173:19; 179:3;182:19
talked (6)
14:16;19:5;81:12;
93:4;106:22;139:13
talking (9)
4:8;13:11;22:17;
46:21;54:20;58:18;
69:23;81:2;130:15
talks (5)
11:4;71:11,15;
76:22;161:11
tallest (1)
111:7
tariff (2)
131:14,19
task (1) 43:5
team (1) 147:5
technologies (1) 112:14
technology (3)
12:21;16:14;122:6
teed (1)
86:2
telecommunications (2) 111:1,4
television (4)
102:16;104:17; 105:2,6
tells (1) 81:15
temporarily (3) 55:11;84:18;91:2
temporary (12) 27:5;58:10;67:8; 89:22;90:24;137:16; 138:12;141:23; 144:6,21;145:15; 150:2
ten (7)
82:17;117:24; 125:24;127:9,10; 173:22;183:2
tend (1) 111:16
tenth (1)
61:5
ten-year (1) 129:2
terms (12)
11:4;17:15;63:7;
78:7,8;80:12;110:15;
127:23;147:23;
155:6,17;168:12
tern (1) 29:6
test (10) 14:9;17:8,10,11,15, 17,20;68:12;74:8; 81:16
tested (5) 62:4;64:11;68:7; 80:24;81:1
testified (10) 7:7;12:4;33:4; 62:8;65:8;67:21; 144:16;170:23; 174:4;180:6
testifying (1) 70:4
testimony (40) 12:19;15:1;17:5; 24:15;47:9;49:14; 51:19,23;57:4;59:20; 60:2;61:8,21;62:24; 63:23;66:8,12,16; 67:9;71:9;75:22;
76:11;77:4,10,14; 87:8;105:10;111:12; 112:17,21,24;113:11, 14;115:20;117:8; 119:6;140:5;141:14; 145:24;174:17
testing (29)
17:20;62:3,17; 63:17;64:17;65:16, 22;66:2,3,7;68:8; 69:12;70:5,8,11,13, 18,22,23;71:1,3;72:6; 73:9,20;75:19;76:16; 81:20;82:23;85:6
tests (1)
107:16
Thanks (1)
154:11
theirs (1) 139:5
theme (1) 42:22
then-applicable (4) 117:20;118:6; 121:24;123:22
therefore (6) 60:5;67:16;86:10; 103:11;116:1;134:23

## thermal (1)

6:16
thick (1)
60:2
thickness (3)

| 61:4,6;160:9 | 75:9 | training (3) | tuned (1) | UNH (11) |
| :---: | :---: | :---: | :---: | :---: |
| thin (1) | tomorrow (7) | 150:22;151:12; | 141:15 | 67:11,21;69:6; |
| 84:14 | 153:11;179:3,21; | 180:22 | Turnpike (2) | 102:5;144:15,17; |
| thinking (3) | 182:17,18,23;187:12 | Transcript (5) | 162:10;171:3 | 175:7,14;177:10; |
| 12:16;120:11; | tongue-tied (1) | 69:24;72:3,14,16; | turtle (5) | 184:9,14 |
| 121:13 | 170:20 | 75:17 | 27:20,23,23;48:23; | Uniform (5) |
| third (1) | tonight (6) | transcripts (2) | 50:14 | 143:22;145:19; |
| 50:5 | 153:12;183:6,19 | 79:15,19 | turtles (6) | 148:15;150:14;173:2 |
| Thirty-seven (1) | 184:1;185:17;187:8 | transformers (1) | 31:11;50:1;51:9, | unimpeded (1) |
| 117:22 | took (1) | 132:7 | 15;52:5,15 | 27:7 |
| thorough (3) | 5:15 | Transmission (19) | TV (1) | unique (2) |
| 46:6;51:24;183:11 | top (1) | 104:22;108:22; | 91:6 | 73:4;77:19 |
| though (10) | 146:24 | 111:13;112:9,12; | tweaking (1) | University (1) |
| 52:20;53:12;81:18, | topic (2) | 113:19,21;114:1,10; | $15: 11$ | $175: 10$ |
| 22;97:10;149:4; | 79:8;115:17 | 115:11;118:2;119:7; | twice (2) | unknown (1) |
| 154:1;156:4;162:8, | topics (2) | 124:21;125:10,14,15; | 121:7;153:18 | 17:17 |
| 12 | 19:22;150:20 | 131:14;137:1;149:21 | two (15) | unless (5) |
| thought (13) | tornado (1) | transportation (6) | 6:13;17:3;34:18, | 9:23;85:1;87:17; |
| 4:13;8:23;14:18; | 114:14 | 110:17;150:6; | $22 ; 48: 16 ; 49: 7 ; 63: 2$ | $175: 12 ; 182: 18$ |
| 62:7;69:11;71:5; | total (2) | 163:10;168:14; | 3;67:2;76:24;107:21; | unlikely (5) |
| 94:15;109:7;111:3; | 90:5;109:1 | 169:13;174:18 | 132:5;145:12;152:5; | 29:12;57:10;84:4, |
| 129:21;137:4; | touch (2) | transported (1) | 185:22 | 12;90:11 |
| 139:18,23 | 145:7;181:8 | 132:7 | type (9) | unreasonable (16) |
| Threatened (16) | touched (4) | travel (2) | 62:17;63:17;65:1; | 5:1;12:17;13:1; |
| 24:13,16;27:12; | 139:12;148:14 | 65:5;153:20 | 96:1;107:23;112:12; | 19:8;20:1;23:13; |
| 29:2,18;31:9;38:11; | 167:16,16 | travels (1) | 121:7,11;171:19 | 99:5,14;100:5,16; |
| 41:15;48:11,22;49:4; | tough (1) | 120:13 | types (4) | 103:12;112:6;144:8, |
| 51:7,13;52:21;54:20; | 40:8 | treated (1) | 28:19;34:19;91:12; | 11;181:22;182:6 |
| 90:13 | towards (2) | 64:20 | 112:8 | unreliable (2) |
| three (2) | 60:7;65:21 | treatment (7) | typically (1) | 6:11,12 |
| 56:11;146:14 | tower (9) | 64:21;67:15;71:14 | 120:15 | unsafe (1) |
| $\begin{aligned} & \text { three-week (1) } \\ & \text { 60:20 } \end{aligned}$ | $\begin{aligned} & 109: 23 ; 110: 23 \\ & 111: 1,4,5,12 ; 11 \end{aligned}$ | 72:8,9;79:13;81:14 <br> tree (3) | U | 76:13 |
| throughout (2) | 115:14;133:14 | 30:10;35:11;37:20 |  | 9:13 |
| 12:11;95:16 | towers (9) | tree-cutting (2) | ultrasonic (1) | up (44) |
| thumb (1) | 100:21;108:1; | 39:8;45:3 | $29: 19$ | $4: 7 ; 7: 2 ; 8: 20 ; 9: 15$ |
| 34:24 | 109:20;112:23; | tree-removal (1) | unable (1) | $11: 18 ; 14: 6,23 ; 16: 5$ |
| thus (1) | 113:9;114:10,19,23; | 27:3 | 157:2 | 26:4;36:16;46:13; |
| 60:11 | 127:1 | trees (6) | unanticipated (2) | 58:6;62:1,6;69:14, |
| tide (1) | Town (21) | 35:11,14;38:17; | 168:10;169:12 | 19;70:5,5;71:19; |
| 63:18 | 61:23;62:3;93:1, | 39:6;45:2,5 | uncovered (1) | 75:9;76:1,3,7,20; |
| tides (1) | 18;145:8;147:4; | trial (47) | 141:22 | 79:14,22;80:2,4; |
| $141: 22$ | 155:22,24;157:9; | 5:16,20;7:12,13, | under (20) | 82:16;85:6;86:2; |
| timber (2) | 160:8;167:6,17; | 18;8:16,20;9:1,10,15, | 19:22;20:5,11; | 87:3;93:17;95:7; |
| 31:11;51:9 | 168:4,16;175:13,23; | 22;10:5,5,7,8,18; | 40:1;52:7;55:15; | 97:6;121:6;131:22; |
| time-of-year (5) | 176:24;178:19; | 11:5,9,10,15;12:6,10, | 80:8;84:14;100:2; | 146:4,5;149:3; |
| $44: 19 ; 91: 10,13,14 ;$ $99 \cdot 6$ | 186:11,14,20 | 15,23;13:3,8,17,19, | 120:16;121:22; | 154:10;173:18; |
| 99:6 | towns (6) | 19,23;14:12,16,23; | 123:11;124:23; | 179:20;184:24 |
| times (4) | 110:12;148:2; | 15:3,4,5,7,13,15; | 131:13,20;134:6; | updated (3) |
| 8:1,3;67:5;172:4 | 158:6;159:1;168:16; | 16:14;18:3,5,6,8,11, | 174:7;177:7;181:9; | 42:13;49:22;168:5 |
| timing (3) | 174:14 | 14;58:23 | 182:19 | updates (1) |
| 128:7,13,15 | town's (2) | $\boldsymbol{t r i p}(1)$ | underground (8) | 42:1 |
| tired (1) | 170:5;174:15 | 175:3 | 92:6;120:17,19; | upgrades (1) |
| 152:2 | traffic (27) | true (1) | 132:8,10,15;133:15; | 6:19 |
| tissue (3) | 143:14,17,18,21, | 186:24 | 174:6 | upon (11) |
| 64:1;74:9;80:5 | 22,24;144:1,4,7,20; | trust (3) | underlined (1) | $16: 1,11 ; 59: 1 ; 76: 8$ |
| titled (2) | 145:10,14,15,16,19; | 10:22;77:4;98:10 | $35: 5$ | $109: 9 ; 112: 13 ; 118: 7$ |
| 103:2;104:13 | 147:2;148:15;150:1, | try (1) | underneath (1) | 121:24;171:11,18; |
| today (2) | 2,9,11,14;165:21; | 66:16 | 160:10 | 176:15 |
| 10:8;126:21 | 170:7,14;173:1,2 | trying (9) | underwater (1) | Upper (2) |
| together (1) | trained (3) | $33: 11 ; 40: 16,17$ | 91:9 | 84:8;90:6 |
| 103:16 | 27:18;150:17; | 45:2;112:19;127:22; | undue (3) | urban (1) |
| toilet (1) | 151:8 | 140:24;165:3;185:12 | 6:6;19:7;95:23 | 71:17 |


| use (20) | 83:4;89:17;98:24; | waive (4) | 10,15;145:22;146:5, | 146:18;147:11 |
| :---: | :---: | :---: | :---: | :---: |
| 6:22;27:23;55:19; | 107:13;115:15; | 126:18;127:23; | 3;147:19;148:16; | weekly (4) |
| 81:13;86:4,7;88:1,6; | 116:20;135:11 | 28:10;131:1 | 153:23;159:18; | 96:22,23;98:14,18 |
| 89:10;100:19;108:3; | 136:14;143:12; | waived (9) | 161:5;164:8;165:3,9, | weeks (1) |
| 124:18,24;145:7,8,9; | 155:4;165:19;181:6; | 117:1;126:4,17,19; | 12;166:12;182:11 | 67:2 |
| 155:13,23;171:1; | 182:2;187:9 | 127:4;128:2,4,12,14 | weak (1) | weight (1) |
| 184:3 | verbatim (1) | waiving (1) | 104:9 | 155:15 |
| used (8) | 100:8 | 130:24 | wear (1) | well-understood (1) |
| 39:6;53:14;63:8; | verification (1) | walk (4) | 160:17 | 12:20 |
| 74:20;115:20; | 105:17 | 31:6;51:4,12,17 | weather (2) | well-used (1) |
| 117:17;121:9;125:5 | verify (1) | walking (1) | 108:13;135:23 | 12:21 |
| useful (3) | 54:5 | 52:4 | WEATHERSBY (158) | wetland (3) |
| 117:18;125:5; | vernal (1) | wants (2) | 4:2;5:9,12;8:9; | 31:7;51:5,16 |
| 185:11 | 19:3 | 10:17;76:14 | 10:2;11:23;14:4,20; | wetlands (5) |
| uses (1) | versus (2) | warbler (1) | 16:23;17:23;18:2,12, | 11:1;19:4,4;31:4; |
| 73:15 | 87:8,16 | 28:20 | 21,22;19:17;21:23; | 51:3 |
| using (2) | vest (1) | warrant (1) | 22:5,10,14,23;23:2, | what's (9) |
| 86:15;108:8 | 162:12 | 67:8 | 21;24:1;30:19;31:14, | 88:10;134:2; |
| usual (2) | vetted (1) | waste (5) | 18;33:3;34:10;35:8; | 142:11;162:22; |
| 70:19;170:20 | 13:24 | 67:13;151:12,13 | 36:3;37:5;40:13; | 163:23;164:13; |
| usually (2) | viable (2) | 24;180:21 | 42:5;44:10;45:17,21; | 172:1;185:24;187:5 |
| 116:9,10 | 79:22;80:1 | wastewater (6) | 46:9,18;50:22;52:1, | whatsoever (1) |
| Utilities (1) | vibration (1) | 67:15;70:20;71:14 | 19;53:11,24;54:10, | 62:21 |
| 106:2 | 175:11 | 78:1;79:12;81:14 | 22;55:5;58:15;65:24; | whereas (1) |
| utility (4) | vicinity (3) | watch (1) | 69:2,22;70:17;75:4; | 7:16 |
| 149:8,10;150:7; | 24:20;28:5;39:9 | 10:23 | 79:5;80:14,18,21; | Whereupon (1) |
| 163:4 | view (3) | watching (1) | 82:13,20;83:5;85:4, | 187:13 |
| utilization | 33:1;133:13 | 10:22 | 24;86:22;87:6,19; | whole (6) |
| 25:22 | 134:14 | water (33) | 89:8,15,18;93:10; | 7:14;10:4;14:22; |
| utilize (1) | violation (1) | 4:8,11,12,15,21; | 94:10;95:9;96:9; | 34:17;112:8;162:5 |
| 27:3 | 38:22 | 5:1;10:23;12:18; | 97:14,20,23;98:22; | who's (2) |
| utilized (4) | violations (1) | 18:7;19:2,4,8,22; | 99:1,12,22;105:21; | 10:21;162:7 |
| 25:21;96:17; | 97:4 | 20:2,19;25:6;48:6; | 107:5,10;110:20; | wiggle (1) |
| 152:13;180:9 | virus (1) | 58:17;67:7;70:19; | 111:11;114:7; | 163:8 |
| utilizing (1) | 70:8 | 71:13;75:9;78:2; | 115:13,16;116:18,21; | wild (1) |
| 7:8 | viruses (2) | 79:23;80:2,15;83:11; | 119:17;121:18; | 41:3 |
|  | 71:4,18 | 84:6;90:22;93:6; | 122:13:123:17; | wildlife (8) |
| V | visible (1) | 151:23;152:22; | 129:7;130:1;131:6, | 20:23;21:3,7,18; |
|  | Vivian | 180:20 | 23;132:18;133:3,8, | 23:14;30:8;38:20; |
| vacuum (1) | Vivian (2) | water-associated (1) | 23;134:8,11;135:9, | 91:5 |
| 69:7 | 102:12,14 | 30:12 | 12;136:11;138:21; | William (1) |
| Valley (3) | voice (1) | water-quality (1) | 139:10,20;140:19; | 103:5 |
| 118:11,20;119:1 | 5:24 | 57:12 | 141:7;142:3;147:20; | win (1) |
| value (1) | voiced (1) | waters (3) | 148:6,10,17,22,24; | 178:15 |
| 161:14 | 95:14 | 81:9;140:18;173:7 | 149:16;152:6; | Wind (7) |
| variable-outcome (1) | voltage (1) | WAY (81) | 153:13,19;154:12,19, | 108:15,16;112:10; |
| 10:1 | 6:16 | 5:5;15:10,17,18 | 22;155:5;159:15; | 114:18;126:22; |
| varied (1) | voltages (1) | 18:17;19:13;32:1,2; | 160:4;161:21; | 133:20;179:16 |
| 9:11 | 105:4 | 34:5,7,20;35:7;36:12, | 162:22;163:22; | winter (2) |
| various (5) | volume (4) | 23;38:1;46:7;47:14; | 164:10,15;165:16; | 48:22;50:1 |
| 11:16,17;30:23; | 79:1;84:6,8;90: | 50:18,21;56:16,20, | 167:4,22;168:2; | wire (1) |
| 71:15;90:20 | voluntary (2) | 23;64:13;65:6,16,18; | 169:10,24;171:21; | 109:14 |
| vast (1) | 124:14;125:2 | 66:13,14;69:3,4; | 172:8;173:15;174:2; | wires (5) |
| 101:21 | vote (7) | 72:3;73:17;74:6,14, | 175:15,19;176:4; | 109:7,8,9;124:20, |
| vegetated (1) | $4: 19 ; 5: 10,15$ | 17;79:6,7;80:1,17,20; | 177:11,14,19;178:10; | 21 |
| 26:11 | 15:15;17:18;181:21, | 85:21;86:20;87:10, | 179:19;181:3,7; | wish (1) |
| vehicle (1) | 24 | 12,13;93:3;99:18; | 182:3,15;183:16; | 129:12 |
| 175:3 |  | 106:19;107:6; | 186:2;187:3,10 | withdrawn (1) |
| vehicles (4) | W | 112:16;113:1,10,15; | web (3) | 90:6 |
| 136:8;144:15,16; $146: 15$ |  | $114: 22 ; 121: 17$ $127 \cdot 19 \cdot 128: 21$. | 94:18;97:2;98:17 week (1) | within (23) |
| 146:15 | wait (4) | 127:19;128:21; | week (1) | 5:21;6:19;7:5,20; |
| verbal (17) $18 \cdot 1 \cdot 55 \cdot 4 \cdot 56 \cdot 1$ | $7: 13 ; 134: 2,2 ;$ $153 \cdot 14$ | $130: 10 ; 131: 3,20 ;$ $138 \cdot 2,11,20 \cdot 140 \cdot 8$ | 72:4 | 12:10;13:6;26:16; |
| 18:1;55:4;56:1; | 153:14 | 138:2,4,11,20;140:8, | weekend (2) | 29:19;37:20,23;39:9; |


| $\begin{aligned} & 48: 13 ; 49: 16 ; 51: 22 ; \\ & 52: 17 ; 60: 13 ; 93: 24 ; \\ & 109: 13,20 ; 111: 10 ; \\ & 116: 12 ; 174: 13 ; 178: 9 \end{aligned}$ |  | $\begin{gathered} 67: 2 ; 74: 1 \\ \text { 12D (3) } \\ 51: 1 ; 73: 22,23 \end{gathered}$ | $\begin{aligned} & 37: 12 ; 100: 16 ; 110: 6 \\ & 118: 3 ; 149: 18 \\ & 20 \text { (5) } \end{aligned}$ | $\begin{gathered} 43: 2 \\ \text { 29th (1) } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | Y |  |  |  |
|  |  |  |  | 117:1 |
|  | yard (1) |  | 43:21;60:10;73:14; | 2d (1) |
| without (7)$5 \cdot 16 \cdot 30 \cdot 13 \cdot 46 \cdot 12$. | $111: 22$ | $\begin{aligned} & \text { 67:1;70:1;79:20; } \\ & 81: 11: 167: 5 \end{aligned}$ | $78: 11,24$ | 120:16 |
|  |  |  | $2007 \text { (1) }$ |  |
| $72: 20 ; 86: 9 ; 152: 16 ;$ 172.7 | $7: 14 ; 33: 5 ; 40: 24$ | 131 (2) | 38:20 | 3 |
| $\begin{gathered} 172: 7 \\ \text { witness (1) } \end{gathered}$ | 43:8;54:3;57:22years (13) | 75:17;90:20 | 145:18;150:13 | 3 (6) |
|  |  | 14 (5) |  |  |
| 79:20 | 48:16;53:15;63:2, | 41:21;42:6;71:10; | 200ths (1) | 50:12;86:1,24; |
| wold (1) | 3;73:14;78:11,24; | 74:13;87:1 | 60:4 | 100:19;118:4;149:23 |
| 112:5 | $88: 16 ; 117: 24$ | 141 (1) | 2012 (1) | 3:34 (1) |
| wonder (1)161:11 | $122: 22 ; 125: 24$ | 146:12 | 6:13 | 82:18 |
|  | $127: 9,10$ | 1456 (1) | 2015 (2) | 3:48 (1) |
| wondered (2) |  | 55:10 | 68:16;135:19 | 82:19 |
| $119: 2,12$ | $\mathbf{Z}$ | 15 (4) | 2016 (1) | 301 (1) |
| wondering (7) 121:12;124:14; |  | 40:24;42:6;168:9; | 117:1 | 22:18 |
| 121:12;124:14; | zone (1) | 169:11 | 2017 (2) | 301.03 (1) |
| 132:16;146:1; | 109:17 | 16 (5) | 40:24;49:16 | 22:11 |
| 161:15;169:15; |  | 34:9;45:1;46:1 | 2018 (9) | 301.03d (2) |
| 178:22 | 1 | 148:18;170:2 | 34:9;40:5,10; | 20:6;22:9 |
| wooden (1) |  | 1600 (1) | 41:22;42:16;45:1; | 301.07 (1) |
| 25:24 | 1 (10) | 179:6 | 46:1;50:8;187:16 | 22:6 |
| word (3) | $20: 7 ; 22: 4 ; 47: 5,13$ | $162(3)$ | 202.24 (1) | 301.07a (2) |
| 165:10;184:2,3 | $49: 15 ; 50: 11 ; 92: 7$ | 37:9;50:9,20 | 100:14 | $20: 18 ; 22: 19$ |
| wording (2) | 100:7;117:23;148:18 | 162-H16 (2) | 203 (7) | 301.07c (2) |
| 53:5;183:20 | $1,000(6)$ | 19:23;100:3 | 33:24;34:6,11,24; | $22: 4,24$ |
| words (1) | $12: 7,10,13 ; 13: 3,8$ | $163 \text { (1) }$ | 35:1,3;40:4 | $301.08(1)$ |
| 95:4 | 15:8 | 50:20 | 203s (1) | 100:11 |
| work (25) | 1,000-foot (1) | 167 (2) | 34:22 | 301.08d2a (2) |
| 15:10;16:15;21:2; | $13: 19$ | 37:7,8 | 204 (1) | 120:10;128:1 |
| 28:11;29:20;38:17; | $10 \text { (7) }$ | 168 (2) | 69:10 | 301.08d3 (1) |
| 44:13;51:21;57:17, | 44:18;60:10;116:1; | 184:7,13 | 208 (1) | 134:17 |
| 22;61:14;71:21; | $155: 12 ; 156: 5$ | 17 (5) | 42:16 | 301.14 (2) |
| $75: 24 ; 76: 4 ; 82: 9$ $92 \cdot 22 ; 137 \cdot 19$ | $164: 19 ; 165: 14$ | 81:12;90:5;148:20; | 21 (5) |  |
| 92:22;137:19; $152 \cdot 24 \cdot 155 \cdot 21$. | $100 \text { (1) }$ | 170:9,10 | 43:20;50:8;148:23; | 301.14b (1) |
| 152:24;155:21; $156: 22 \cdot 159 \cdot 19$ | 8:17 | 18 (3) | 161:11,22 | 23:4 |
| 156:22;159:19; 160:12,20;163:14 | 100-foot-wide (1) | 148:20;170:9 $172: 17$ | 2-2 (4) | 301.14f (1) |
| 186:14 | 104 (1) | 184 (2) | 184:8,13 | 302.04a7 (1) |
| worked (1) | 102:23 | 105:14;143:2 | 24 (3) | 44:9 |
| 78:10 | 105 (1) | 189 (3) | 36:7,14,21 | 308 (1) |
| worker (1) | 111:6 | 41:21;42:4,5 | 25 (5) | 127:24 |
| 151:22 | $107 \text { (1) }$ | 18A (1) | 7:8;36:7,14,21; | 31 (2) |
| workers (3) | 102:23 | 172:17 | 102:24 | 92:7;143:2 |
| 135:2;180:9,19 | 11 (10) | 190 (1) | 250 (1) | 31st (2) |
| working (2) 14:10;58:7 | 85:20,21,23;156:6; | 111:6 | 177:6 | 49:16;57:23 |
| 14:10;58:7 World (3) | 157:11;160:5; | 1910.120e (1) | 26 (3) | 32 (1) |
| 103:24;114:9; | 163:23;164:5,19 $165: 15$ | 193 (8) | 105:14 | 34 (9) |
| 116:13 | $115 \text { (1) }$ | 33:21;70:2;105:18; | 267 (1) | 31:4,16;51:1;52:7, |
| worst (1) | 116:10 | 110:5;117:14; | 184:15 | 20;53:14;54:6; |
| 116:11 | 12 (2) | 122:15;148:18; | 268 (1) | 105:18,24 |
| wren (1) | 165:23;166:16 | 164:20 | 185:15 | 345 (1) |
| 29:10 | 123 (1) | 194 (2) | 27 (2) | 105:4 |
| writing (3) | 158:14 | 33:20;70:2 | 90:5;102:24 | 35 (2) |
| $157: 5 ; 166: 10 ;$ $168 \cdot 18$ | 124 (1) | 195 (1) | 270 (1) | 105:18;106:10 |
| 168:18 | 120:22 | 70:2 | 184:17 | 36 (7) |
| $\begin{gathered} \text { written (1) } \\ 158: 15 \end{gathered}$ | $129 \text { (4) }$ <br> 85:19;86:14;87:4.5 | 2 | $\begin{array}{\|l\|} \hline 28(1) \\ 105: 14 \end{array}$ | $\begin{aligned} & 117: 15,16 ; 129: 23 ; \\ & 130: 15,18,20 ; 133: 17 \end{aligned}$ |
| wrong (2) | 12A (3) |  | 28th (2) | 37 (9) |
| 22:22;23:7 | $\begin{aligned} & 31: 15 ; 73: 24 ; 74: 5 \\ & \text { 12C (2) } \end{aligned}$ | $\begin{array}{\|l\|} \mathbf{2}(\mathbf{8}) \\ \quad 20: 15 ; 34: 8 ; 35: 6 ; \end{array}$ | $\begin{aligned} & 31: 19 ; 83: 19 \\ & \mathbf{2 9 ( 1 )} \end{aligned}$ | $\begin{aligned} & 117: 15 ; 121: 19 \\ & 122: 14 ; 123: 6 ; 129: 1 \end{aligned}$ |



