PLACE: Via Videoconference

DATE: Thursday, June 18, 2020

TIME: 1:52 p.m. - 5:21 p.m.

DOCKET NO.: E-2, Sub 1220

BEFORE: Commissioner Kimberly W. Duffley, Presiding

Chair Charlotte A. Mitchell

Commissioner ToNola D. Brown-Bland

Commissioner Lyons Gray

Commissioner Daniel G. Clodfelter

Commissioner Jeffrey A. Hughes

Commissioner Floyd B. McKissick, Jr.

IN THE MATTER OF:

Williams Solar, LLC,

Complainant

versus

Duke Energy Progress, LLC,

Respondent

VOLUME: 4

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P R O C E E D I N G S

Held via videoconference:

COMMISSIONER DUFFLEY: Okay. We will go back on the record. And, Commissioner Clodfelter, I believe the floor is yours.

COMMISSIONER CLODFELTER: Thank you. Madam Court Reporter, audio okay for me?

COURT REPORTER: Yes. Everything sounds good. I can hear everyone.

COMMISSIONER CLODFELTER: Thanks.

KENNETH JENNINGS, STEVEN HOLMES, AND SCOTT JENNINGS, having previously been duly affirmed, were examined and testified as follows:

CONTINUED EXAMINATION BY COMMISSIONER CLODFELTER:

Q. Okay. Back to the two Mr. Jennings. The testimony and the documents show that the Facility Study was delivered to Williams Solar on July 30th, and that was also the first date on which the RET was authorized for use. So help me out here. It seems to me fairly obvious, and you can tell me why it's not at all obvious --

(Audio breaking up.)

COURT REPORTER: This is the court reporter. I lost most of it. Commissioner, you

froze up, and I lost most of that.

COMMISSIONER CLODFELTER: Okay. Let me start up again. Let me start from the beginning.

Q. We have the evidence and testimony that the Williams Solar Facility Study estimate was delivered on July 30th, and that was also the first date on which the new RET tool was authorized for use, and so it seems to me fairly obvious that the Facility Study for --

(Audio breaking up.)

COMMISSIONER DUFFLEY: Commissioner Clodfelter --

COMMISSIONER BROWN-BLAND: Commissioner Clodfelter, you froze up after Facility.

COMMISSIONER DUFFLEY: -- you froze up again.

COMMISSIONER CLODFELTER: I don't know why I'm freezing. No one else seems to be freezing.

COMMISSIONER DUFFLEY: Third time's a charm, Commissioner Clodfelter. If you try one more time, and then if we have issues, we will move around and hope that it clears itself up. So you

can try one more time.

COMMISSIONER CLODFELTER: All right. I'm gonna try one more time.

Q. Gentlemen, I don't believe it's possible that the Facility Study for Williams Solar could have started on the morning of the 30th of July and been finished during the day.

(Audio breaking up.)

COMMISSIONER HUGHES: Could I try to --

COURT REPORTER: I didn't get the question.

COMMISSIONER HUGHES: Dan, you can choose to use your phone for audio.

COMMISSIONER CLODFELTER: I think that's what I'm gonna do.

COMMISSIONER HUGHES: It works much nicer.

COMMISSIONER CLODFELTER: Tell me what the dial-in number is for the audio, and I will dial in.

COMMISSIONER HUGHES: You just go to one of the settings and say change -- change audio connection, and you could have them call you. It's a different number for different people.

COMMISSIONER DUFFLEY: Dan, I think I have the dial-in. It's 1 (415) 655-0003.

COMMISSIONER HUGHES: Commissioner Duffley, I think they might offer different phone numbers for different connections.

COMMISSIONER DUFFLEY: For panelists? Okay.

COURT REPORTER: Commissioner Duffley, is this all off the record?

COMMISSIONER DUFFLEY: Yes. Please take this all off the record for technical purposes.

COURT REPORTER: Certainly.

(Discussion off the record regarding technical issues.)

COMMISSIONER DUFFLEY: And we're back on the record.

Q. Mr. Jennings, what I want to ask about is the coincidence of the fact that the Williams Solar Facility Study estimate was delivered on July 30th, and that was also the first day on which the RET tool was authorized for use. It seems to me that it's highly unlikely that the Company started the Williams Solar Facility Study right after the authorization was provided, and then immediately finished it within the

space of an hour or two. Would that be correct?

A. (Kenneth Jennings) Yeah. I would assume that would be true.

Q. Which means the Facility Study was started at sometime before July 30th, correct?

A. Correct.

Q. Are there records -- does the Company have internal records that would show when the work on the Facility Study for Williams Solar was commenced and when it was completed?

A. I think we do have that, but I would defer to Scott Jennings.

Q. I will take the answer from Scott Jennings.

A. (Scott Jennings) Yeah. I mean, and I don't know the details, but yes, we would have internal records with a start point being at Maximo when, you know, work orders were created and design processes started for the Facility Study. And I think, to the content of that particular question, you know, in parallel with the Facility Study done with Williams Solar, the RET was being developed, I would imagine, but cannot say with 100 percent certainty that the RET was being developed. Williams Solar estimate was being run through the RET in parallel to evaluate those

results against other results used in developing the tool. And so I wouldn't consider it a coincidence that they were the same day, but just simply that that's a timestamp for when we felt at a comfort level with the RET to begin using that tool. But certainly there had been several months of engineering work occurring to get to that point, both in terms of the Facility Study design and the development of the RET.

Q. Which has told me, were you running two parallel studies, one under the old -- the old procedure and one under the RET? Were you running them in parallel?

A. So I wouldn't look at it as in parallel. We're two different studies. The field design work occurred and the development of the beginning stages of the construction work order and Maximo is a -- is the process that had been occurring and continues to occur absent the RET. And so that occurred consistently throughout the course of Williams and any other project.

What was a parallel path was the development of the RET, and I would say with pretty good certainty that, over the period of, you know, three or four months, outputs for Maximo were being placed into

iterations of the RET to evaluate what results we were getting against other analysis being performed with the RET.

Q. Well, thank you. That's helpful.

Do you know whether or not those outputs from Maximo -- what do they show?

A. The outputs --

Q. Before they were put into the RET. Before they were put into the RET.

A. Sure. I mean -- and I don't have the detailed numbers in front of me, but the outputs from Maximo that we take and put into the RET is a material cost, and it is a labor cost, or labor -- number of labor hours, and the RET absolutely adjusted -- particularly on the labor side, adjusted those upwards to our actual period, so what you would see is that the estimate to Maximo was a lower cost value than the RET.

Q. Well, does the Company's -- do the Company's records -- does the file in this Facility Study contain all of that workup to the final number? Does it contain the outputs from Maximo and then the adjustments made as you ran it through the iterations of the RET?

A. I cannot speak to any iterations of the RET.

The record that we have available is the output from Maximo, which is, again, just the materials cost and labor hours that were input to the RET.

Q. At any point during that time after the Facility Study agreement was executed on February 22nd, did anyone advise Williams Solar that you were going to be running these Facility Study outputs from Maximo through the RET?

A. I do not know an answer to that.

A. (Kenneth Jennings) So I -- I do not think so, Commissioner. You know, in general, it's kind of a balance of a variety of issues. And, in general, we're not sharing, you know, detailed information about the modeling of cost estimates, and we haven't in the past. Now, I will say that, you know, we're making great efforts to increase transparency on cost estimates now. We -- we anticipate that the cost data would be more regularly shared on a regular basis. But at that time, you know, we weren't necessarily -- we didn't know what the answer would be. I think it would have certainly -- would have slowed a few things down, so I -- just in general, I don't think that we did share that information with Williams.

Q. Well, at some point, though, after -- after

the Facility Study being signed and you've got your 45-day clock running, at some point the Maximo outputs are available. It's -- those could have been worked up into a Facility Study estimate and provided to Williams Solar; could they not?

A. They could have.

Q. And that would have happened at some point before July 30th, I suppose.

A. That very well may be.

Q. But somehow or other that didn't happen, and no one advised Williams Solar that the study was being held up for any reason?

A. I don't know that for sure. There may have been -- there may have been some communication on that, but, you know, precluding when they should expect their Facility Study agreement, I would have to go back and talk to the account managers on that. I do know that that project was a project B. I don't know what the status of project A was at that point. I'm assuming that project A was no -- the status of project A was known by that time. That's all I know at the moment.

Q. Well, during that time period -- and the time period I'm referring to now is, let's say, roughly February through roughly June. Let's just take that as

a bracket point for purposes of the question.

Was the Company releasing other Facility Studies to developers?

A. I would assume that we were.

Q. Do you know?

A. I don't know.

Q. Who would know?

A. Probably one of my -- one of my employees that work for me would know.

Q. Well -- and so, because you don't know, I will ask the question, but I think I probably know the answer.

If there were Facility Studies being released during that window, let's call it February through June, were they studies that reflected the application of the RET, or would they have been studies that would have been based on just the old basic Maximo process?

A. I'm not sure, but let me -- let me kind of -- let me draw, kind of, a scenario around that for a second. I don't know if you heard me earlier when I mentioned that over half of the projects have differences of less than $100,000.

Q. Yes.

A. Still, a number of projects with upgrades

that are -- that have -- or projects that have no upgrades. So I think the highest risk -- the highest risk for cost overrun with a -- with a bad estimate is a project with two and a half miles of reconductoring. And so we probably had numerous projects that were very minor upgrades and fall into that bucket of projects with variances of less than $100,000.

Q. That's very helpful. So I would ask you, because I think you don't know the answer, but do you? Is there anyone in the organization who would know the answer? How many others that were at that level of risk that you just described comparable to Williams Solar, in terms of the estimate?

A. So I will just say that there is not a lot that are similarly situated. I mentioned that -- I mentioned that half of those projects that I looked at had variances of less than $100,000. I also looked at the -- of all of those 93 projects that have -- that have the raw upgrades, or what the final accounting was for those projects -- if you give me one second. The total volume of projects that are similarly situated to Williams is very small, like maybe less than 10. Just takes me a second.

(Witness peruses document.)

So projects that have actuals for interconnection facilities and system upgrades greater than $1 million and a half, 3 out of 93. Greater than $1 million, 10. Less than $1 million, 83 out of 93.

Q. Okay.

A. I think, when you think about it in that context, it wouldn't make sense to stop processing interconnections altogether. That's just what I'm thinking.

Q. But -- thank you. That's very helpful, but it seems to me that, at some point, a judgment call was made that because of the characteristics of the Williams Solar application that might be -- there might be reason to not just push out the door an old-style Maximo estimate. Would I be correct in drawing that inference?

A. I think so. I don't know that to be factual, but I think that it would be a good assumption, and here's why, right. Like, if you have experience with projects that cost $1 million going up to as much as $1.5 million, and your certainty that that customer will pay for that is low, then I think it's really -- it's prudent to actually provide them a more accurate estimate. For one, it just limits the amount of --

given -- even though the litigation now about this, I think the litigation is different when the money has been spent. And when I say "money spent," I'm saying that it's really money that they are spending and owing to us for the cost of interconnecting.

Q. Okay. Thank you, Mr. Jennings. Both Mr. Jenningses, thank you.

COMMISSIONER CLODFELTER:

Commissioner Duffley, I may want to ask for a late-filed exhibit being some of the materials from the working file on the Williams Solar Facility Study, but I can't frame that right now. So if you will allow me, I will do some work through the course of the other testimony and try to frame a request for what I would actually like to see. And with that, I have one final question, and I will move back to Mr. Holmes, if I can.

THE WITNESS: Sure.

Q. If he's there.

A. (Steven Holmes) Yes.

Q. And if he can hear me.

A. I can hear you. Can you hear me?

Q. Yes, I can. Thank you very much. Sometimes the old technologies actually work too.

So I want to get back to the question I asked earlier about what -- the inclusion of a contingency item in the System Impact Study estimate. And I understand, again, that the contingency item is different than the range of reliability. I understand that. And I think the answer that I got was that, at the System Impact Study stage, most likely there was a zero contingency included. Nothing was included for contingency.

And so my question is whether or not -- let's not try to get drawn into the issue of whether the System Impact Study is a class 5 estimate or a class 4 estimate. I don't want to go there.

Under either of those, is it good practice to include a zero contingency item in the estimate?

A. I think, typically, estimates would include a level of contingency based on the level of definition.

Q. A class 5 would include a contingency, and a class 4 would include a contingency?

A. Typically.

Q. What does the qualifier typically mean in this case?

A. Yeah. So I -- the qualifier would be, if a class 5, in particular, had very little definition.

The fact that it had very little definition may make it unwise to include contingency on top of that, if that makes sense. So if you really have such little definition, there's an awful lot you don't know, but the lack of definition may already cover a contingency.

Q. Thank you.

COMMISSIONER CLODFELTER: Commissioner Duffley, that's all I have. Thank you, gentlemen.

COMMISSIONER DUFFLEY: Thank you. Commissioner McKissick?

COMMISSIONER McKISSICK: Sure. Thank you, Commissioner Duffley.

EXAMINATION BY COMMISSIONER McKISSICK:

Q. And I'm just gonna address this to Duke panel. I suspect it will probably be more directed to Mr. Holmes and Mr. Kenneth Jennings than the other member, but just kind of chip in and identify yourself in answering whatever the question may be. And I want to go back to the prefiled direct testimony that Mr. Holmes and Mr. Jennings initially provided, and particularly to page 29, and I will give you a minute to get there.

(Pause.)

Q. Looks like everybody got to that point?

A. (Steven Holmes) Yes, sir.

Q. All right. And I just want to make sure I understand things factually as they have been laid out here, because when I look to lines 4 through 6, at the very beginning it talks about Duke first becoming aware of cost exceedances during the first quarter of 2018 as a result of Duke beginning to receive invoicing and closing out completed generator interconnection construction projects; is that correct?

A. (Kenneth Jennings) That was when we first assembled the team that began to gather that information and review it.

Q. Okay. And if we come down on the same page to lines number 19 to 21 there, it speaks about Duke devoting substantial resources to fully assessing cost exceedances that were occurring and understanding the scope of the primary drivers. And we have that taking place in, I guess, 2018 and early 2019; is that correct?

A. Yes, sir.

Q. And if we move on down to lines 21 to 23, it says, "Duke had recently formed a distributed energies technologies organization, DET, to better manage the

unparalleled volume of interconnection requests and increasing complexities of the generator interconnection process"; is that correct?

A. So, yes, I think -- yes, that is true. The formal -- the formal name, distributary technologies, was formed at that time, and that organization was expanded with a new -- with some new groups, specifically the process governance and reporting team, who was kind of charged with conducting this analysis and evaluating this work.

Q. Okay. And then, if we go over to, of course, page 30, and it goes on a little bit further there, lines 3 to 6, it talks about DET and PEG group beginning to compile the generation interconnection cost data and moving on to complete disassessment of the discrepancies between the estimated construction costs and the post-construction invoicing or actual cost.

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

Q. And this is taking place in early 2018?

A. This is fall of 2018, right?

Q. Okay. So some of this -- I think by the

fall -- if we move down to line 6 through 9, we actually have the final accounting reports being prepared --

A. Okay. You're right.

Q. -- is that right, in 6 through 9?

A. Correct.

Q. So, at this point, we have the final accounting reports being prepared, and I think you said at one point that there were 12 of them; is that correct?

A. Yes, sir.

Q. So, I mean, at this point in time, there is a pretty clear definition of the magnitude of the problem between what the estimated costs are, either in the System Impact Study or in the Facility Study, and the final cost of these projects.

Is that a correct understanding of what's been determined at that point in time?

A. I don't think so.

Q. You don't think so? Help me with that.

A. So the reason I say that is, I think the point that I have been trying to make is that 12 is not a significant population of data, and as I mentioned -- and as I mentioned just a few minutes ago with

Commissioner Clodfelter, is that we know that half of the population has very limited material variances in any kind of a gross number, you know. While the estimate may have been not real high, the actual total variance was still under $100,000. So it's very possible that we didn't have significant cost overruns imbedded in all 12 of those, or even -- I don't know the complete statistics around the first 12 is what I'm saying.

Q. Okay.

A. What we were trying to do is to -- in early 2019, was increase the population of the data, identify patterns, and identify more explicit terms that were the problem so that we could identify it and fix it.

Q. Got it. But at -- but from early 2018 up to the fall of 2018, you have a lot of analysis being done between the magnitude of the difference between the System Impact Study, the Facility Study, and a final cost. And I know that there is an exhibit, and I don't want to get into any confidential information, but it kind of shows substantial variations between what those costs were between -- the difference between the estimates and the final cost of the project.

Is that consistent with your recollections

that there were some projects where the magnitude was substantial? And maybe you can define the term "substantial" in percentages the way you might best define it?

A. So I'm not -- I'm not recalling the dataset that you're referring to.

Q. Okay.

A. But the -- so -- and I will admit, I wasn't necessarily in my role at that time, but my understanding was that that time was mainly focused on collecting information and figure out ways to actually dig these -- this data out of the accounting system in a way that we could actually accurately define the difference between them. So it is not my understanding that I knew that in the middle of 2018. But again, I wasn't there in 2018. But I will say that, while percentages -- if you're looking only at percentages, they tend to look higher sometimes than -- for small projects you might see high percentages but low total dollars.

As I mentioned before, over 50 of the projects out of 93 were less than $100,000. They may have had significant percentage increases, but the total dollars were fairly small, and that's just

because, when we do electrical work, it doesn't take a lot of money -- or doesn't take a lot of time to run into something that increases the cost by $25,000, or something like that. You know, in some cases, we saw projects that had variances of $16,000, but that variance was -- might have been, it looks like, more than 100 percent. To me, if it's $16,000 and 100 percent, I don't think that that's a material variation.

I will also say that I don't know which table you were looking at, but I have seen tables where, if the exhibit was produced by Williams Solar or another developer, they have a tendency to include other charges that are not part of the estimating problem. When I say that, I'm referring to the study costs, the DET administrative costs, and the Advanced Energy commissioning costs. And those things will make things look very different.

Q. The percentages don't measure the magnitude; is that right? So --

A. I think that's true.

Q. Okay. So, in that case, I guess it would make no difference what the dollar amount was. I mean, the dollar amount is more important than the magnitude,

percentage-wise.

A. I think it should be.

Q. Okay. So what is your opinion about the difference between the estimate which was provided in the systems impact analysis for Williams Solar versus the facilities cost --

A. So the --

Q. -- based upon your definition?

A. Yeah. So -- so I think that, really, the definition and the problem is really best identified in Mr. Burke's testimony when he said that the threshold is $1 million. So as long as the total cost doesn't exceed $1 million, then the project is probably a go. His project was estimated at $800,000, so it was, I would assume, very marginal at that point. Now, he also added that sometimes projects are a go at $1 million and a half. And so I don't -- while the percentage was still high in the Williams Solar project from System Impact Study to Facility Study, all of the money hadn't been spent yet, which I think is a good thing. I can't hear you.

Q. The cost was estimated at the $774,000, and it went up to $1,388,374. In your mind, that's not significant?

A. No. I think it is significant. We -- part of that -- part of that increase is also other fees: sales tax -- sales tax, commissioning costs, contingency, metering costs were included in that increase. So I think that if we were to carve out all of the other intrinsic costs that were supposedly known, we are only looking at something that looks more like $1.1 million or 1 point -- you know, maybe close to 1.2. And that would be for both, not just for the system upgrades. The system upgrades were initially estimated at 700-and-something thousand, 773- -- -4,000. And when we added the interconnection facilities, it took it to $834,000. When we pull back contingency and commissioning costs, metering costs, then it's -- the raw number increases much less. Granted, it is significant, but I would think that, if I had a System Impact Study that is right on the line, and I don't have a Facility Study, and we kind of told you that the Facility Study is gonna be more accurate, that you might expect that the cost is gonna go up before it gets to the interconnection agreement . We don't guarantee that the high-level estimates at System Impact Study is gonna be the final estimate.

Q. The interconnection costs going from $60,000

up to $196,495?

A. Yes.

Q. I mean, by magnitude and percentages -- and I think in absolute dollar numbers -- that's substantial, but is that not substantial in your opinion?

A. Well, it's probably not -- I don't think it's substantial in the scheme -- in the scope of these kind of projects that are multimillions of dollars. I mean, this -- I don't know what the actual total cost of this project is, but I assume -- I assume that, you know, a point of reference is sometimes $1 million a megawatt, so it's probably at least $5 million. So no, I don't think that's a lot. But I get that, you know these -- it's not my business, it's their business, and so I respect that. But at the same time, as Mr. Burke pointed out, the threshold is $1 million. So the threshold -- the difference between 196 and 60 isn't pushing that above $1 million.

A. (Scott Jennings) And this is Scott Jennings. If I may just interject and try to help and supplement that answer, Commissioner.

Q. Sure.

A. What you referenced is the $60,000 up to, I think, $190,000 or somewhere in that neighborhood. And

again, part of that delta -- there is a part of that that was an estimating deference, but a big component of that, again, was the metering cost, and administrative overheads, and some of those other factors that it was known at the time of System Impact Study were not included in that cost estimate. So the true -- when we look at the, kind of, apples to apples for the interconnection from System Impact Study to Facility Study, it was really only an increase of around $60,000 I think to around $90,000. And that other $100,000 delta is all of those other items that we talked about that were clearly not intended to be included at System Impact Study cost.

Q. Okay. Now, I know, Mr. Jennings -- Ken Jennings, you used the term "high-level estimate." Now, at the point in time that the System Impact Study was being conducted, that was not the way that term was defined according to the orders that were in effect at that time dealing with language, dealing with preliminary estimate, the estimated interconnection facilities charges, or preliminary estimated upgrade charges. That term "high-level estimate" was not part of what existed at that time, because that wasn't adopted until June of -- I believe June 14, 2019, which

would have been after the System Impact Study was completed; would that be correct, sir?

A. (Kenneth Jennings) I think you're correct. I'm just not exactly sure what the distinction between preliminary and high-level would be.

(Audio broke up.)

THE WITNESS: Excuse me?

Q. In your mind, is there any distinction between the two?

A. Well, without having them defined, no. I would think preliminary means that -- I mean, in my opinion, it means that I don't have a lot of information to make that estimate.

Q. So why was there a need for Duke to advocate changing the terminology to what was eventually adopted on June 14, 2019, if that terminology was fine as it was originally?

A. Yeah. I got that question from Chair Mitchell, and I wasn't sure.

Q. Okay. That's fair. That's fair. Now, let me ask you this. In reviewing this testimony, it looks as if, on lines 11 through 19 on page 30 -- and if you look there it talks about the Revised Estimating Tool was developed by the end of 2018. If you see line 17

where that is stated. Is that correct?

A. (Witness peruses document.)

Q. You might want to take 16 and 17 and read them together. And it states, "The tool referred to as the Revised Estimating Tool, or RET, was developed by the end of 2018." And it goes on to say a little more.

A. (Witness peruses document.)

Q. I mean, is the prefiled direct testimony incorrect, or is that, in fact, when it was developed and it was available?

A. So I don't -- I do not recall having the Revised Estimating Tool at that time. What I do recall about the Revised Estimating Tool, or what we were com- -- what we were -- what we were doing at the end of 2018 was actually performing the final accounting reports.

Q. Okay.

A. So I will have to look at that again. To be honest with you, I read this more than once, and I don't recall that being -- being there.

A. (Scott Jennings) Commissioner, Scott Jennings here. Just to maybe help with that. The statement I think is alluding to the fact that -- I'll call it a beta version of that tool had been

developed at that point, but it was not at a phase where it had been -- really gone through testing review or other, you know, considerations to where we would have felt that it was in any way ready for, you know, actual usage for projects. And that was just a milestone or track at developing the tool had been completed.

Q. Let me ask you this. As I recall, it was January 28th of 2019, that Duke provided the System Impact Study to Williams Solar; is that correct?

A. (Kenneth Jennings) Yes, that is correct.

Q. And I think we have made reference several times, and I could go back and find the exhibit if I need to. So that final sentence that is a part of that first paragraph of that letter that went to Williams Solar -- I think Exhibit JB-1 is one that comes to mind where that is stated. And as I recall -- that one I recall. Let me just show you what it says. It says if I desire to move forward -- well, let's go back up there a little bit further. What it basically says here is that they understand the owner of the project is gonna need to make a determination. And the determination will be -- the purpose of the email is for a decision to be made whether or not to move

forward with the project for the final cost or to withdraw.

So that's a pretty major decision, isn't it?

A. Yes, agreed.

Q. Now, at that point in time, you knew that there had been substantial discrepancies between the Facility Studies and final cost of the project, as well as between the System Impact Study and final costs. So we know that Williams Solar is making a decision at that time that's a very important decision for them to make in terms of the future of the project; would that be correct?

A. (No response.)

Q. Based upon the language that's in this particular email. I mean, it appears that Duke is aware that this is a significant point in their decision whether to move forward or not.

A. So I'm not looking at the exhibit right now, but I'm thinking that --

Q. Do you want to pull it?

A. I don't have the book for -- I read it earlier. So you're talking about the letter -- the email that we would have sent with regards to the --

Q. System costs. All the data dealing with the

estimated costs of the project at that point in time.

A. So I typically don't think of the System Impact Study results as being the final results. I don't think that -- I don't think that that -- I mean, it may say that this is a final decision, but it is not nearly as conclusory as the Facility Study, at least in the process that we have now with the serial process, because the added costs typically, in going from System Impact Study to Facility Study, is maybe $15,000 more. So, you know, I just don't think of the decision that would have been made at that point as being nearly as relevant as the decision once you get to the Facility Study results and you're making a decision about an interconnection agreement.

Q. Let me ask you this. Do you think that Duke, being aware of these discrepancies with your estimates, should have updated and used more reliable parameters for doing the estimate than what had traditionally been used based upon the experience you had observed at the end of the last quarter of 2018 when you had the Revised Estimating Tool ready to go, or at least a testing version of it ready to go? I mean, would that not have been a reason, at that point in time, to have used other -- something other than the traditional

model of the traditional parameters that were used for providing an estimate, knowing that they are gonna make a significant decision based upon that estimate?

A. Commissioner, with all due respect, I -- you know, I just feel like we did the best we could do with the -- as fast as we could do it without disrupting this process, and I feel like we did the least amount of damage that we could in the process of getting to the right place with communicating the -- a better number and providing better insight into what the actual costs -- the actual cost of connecting projects would be in the future.

Q. Well, after that January 28th estimate was provided and sometime before the Facility Study was completed, was there thought given to going back and letting them know that these numbers may significantly change?

A. I'm not sure about the dates. I will say that we had discussions about how we would communicate this, yes.

Q. And what were the nature of those communications?

A. Would we do an email blast? I mean, by the end of 2000- -- by the end of January, February, I was

beginning to have discussions with some developers that had already received their final accounting report. And as we mentioned, we did 12 final accounting reports. Not -- not all of them were significant, but there were one or two developers that had concerns and we were having those discussions with. I think there -- you know, there could have been some assumption that as these -- as these discussions were occurring with them and with -- with other members of NCCEBA, that this would become a more, I guess, profound discussion. But that is the general, kind of, way that I was thinking about it.

And as I mentioned earlier, these issues tend to be extremely adversarial as soon as this starts, and as this is now, and perhaps we could have done better in communicating. I think that I mentioned earlier that, if there was an area that we could do better at, it tends to be in communication. You know, I have worked on improving our communication with the developers and the stakeholders over the last year, and we are doing that right now through the queue reform effort. And, in general, we are currently discussing this exact issue. How can we make transparency better? How can we improve, you know, discussions? And can we

-- can we find common ground on how these things can be communicated? So I am personally working on that, and perhaps, you know, I made mistakes last year on this, but I feel like -- that we did as much as we could as fast as we could without -- without -- you know, with making as little mistakes that we could, I feel like.

Q. Now, let me ask you this. Did you consider the fact that, when Williams Solar received the System Impact Study and saw that estimate, that they may rely upon that estimate to their detriment?

A. I did not. And just it's not the final estimate so -- and extreme differences between System Impact Study and Facility Study, while it's not a good excuse, it's not that unusual in the process. I mean, I work -- I have worked on developing projects and interconnection projects in other areas of the country myself, and you do see -- you do see -- it's not cost-estimating process problems as much as it is just -- just changes in cost occur. And a lot of it is just because, you know, either an upgrade wasn't included somewhere or something else. I'm not exactly sure what it is, but we are working to fix that. We are trying to fix it the best we can.

I certainly just -- I don't think -- when I

was a developer, I wouldn't have made any kind of final decisions on a System Impact Study number. It was always clearly communicated to me that I couldn't rely on that number, and I better wait for the Facility Study. Most of my work was done in PJM. I feel like we tried to communicate the same -- the same messages that PJM was communicating to me when I was developing. And so I just -- I just don't feel like that System Impact Study is a critical decision point for developers. Or it should not be. I do believe that the interconnection agreement is a -- is a -- there is a lot of finality associated with that, and therefore, commitments -- serious commitments are made, and I just feel like that is the linchpin of the decision process.

Q. Let me ask you this. Was any thought given when you sent the letter out to Williams Solar with their System Impact Study to let them know that what they were looking at was a level 5 estimate?

A. No.

Q. Or something to alert them to the fact that there could be a substantial disparity between the numbers they were looking at and what that final number would be? I mean, something to put them on notice?

A. Well, I mean, the letter, itself, that comes

with the System Impact Study is very clear and very -- very clear about the amount of risk that's imbedded in it. And it's -- basically, it says that prices -- or the cost could change significantly. Developers -- or the engineers have not visited the site. Ground conditions can -- you know, can make a difference. So there -- I mean, it's boilerplate language, granted, and a developer can assume that it's -- it could ignore it, but it's not put there to be ignored. It's put there because we recognize that there is an opportunity that costs could range pretty significantly between System Impact Study and Facility Study.

Q. If System Impact Study was being conducted today for Williams Solar, what would the numbers look like? Would it look like the Facility Study?

A. Yes.

Q. Okay. And let me ask you this. I mean, if you were moving forward, would you think that it might be wise to give future interconnection applicants notice that what they are receiving is a -- what I call a class 5 estimate?

A. Yes.

Q. And would that probably be best practices to do so?

A. Yes. Yes. So, Commissioner, you know, I appreciate that comment. We -- so we are actually working towards that right now. We are working on a more robust document to explain the cost estimates in greater detail, and the AACEI guidelines are actually part of the project management team that's now -- that's now leading and helping to manage these costs. And so, you know, as part of our evolving process and improving process, we have actually developed a team that's imbedding the things that you are referring to now into the process.

Q. -- six, and I'll kind of --

COURT REPORTER: Excuse me, Commissioner. You were muted. I missed the beginning of that.

COMMISSIONER MCKISSICK: Oh, I'm sorry. Am I unmuted now? I assume so.

Q. All right. There was an Exhibit JB-6. Do you want to pull that one up real quick?

(Pause.)

A. (Witness peruses documents.)

Okay, Commissioner.

Q. All right. Now, down at Request Number 2 it says, "Please confirm that the scope provided in the

SIS dated December 20th of 2018 has not changed." Now, this document was something that was generated after they received the Facility Study and were trying to compare the difference in the cost between the SIS and the Facility Study. And the response to that was, "Confirm, the scope has not changed."

Was that an accurate statement when made?

A. So, probably not. So I think that -- I think that Scott Jennings described it best earlier, and he can weigh in here in a second, but -- so the difference between the System Impact Study and the Facility Study, with regards to scope, could be defined in different ways. And so, while the defined -- the defined upgrades or the violations that created upgrades were probably the same, the estimates of the cost were completely different because the assumed costs for the units that were being purchased to build the upgrades that were defined in the System Impact Study are different. And I think Scott can probably elaborate on that better than I can, but -- do you mind, Scott?

A. (Scott Jennings) And I think you stated that well, but again, the scope, itself, look at how many miles of wire had to be replaced and how many switches had to be installed. On paper, that scope, itself, did

not change. So I think that is a -- I'm just looking at the document here, but I think that that is a fair statement, that the count of widgets did not change during that time period. But, during that time period, as we had the opportunity to do field visits and more detailed engineering, you know, to the examples that I provided earlier, the scope -- the scope that is associated with accessing our facilities, understanding the conditions that this line are in, how many farmers' fields do they go across to how much flagging are we going to need, variables like that, those define the cost of the project. And even though the widgets didn't change, we learned information like that. And admittedly, during this time period, we also were working to improve the accuracy of our estimating processes, and some of that, the cost delta associated with, you know, those processing improvements that we have undertaken.

Q. Sure. And I believe Request Number 3 was, "Please clarify the reasons for the increase in cost." "After several" -- and the response was, "After several true-ups that we have conducted on similar projects, we have found the initial costs that were provided historically, both ballpark costs and detailed

estimates, to be significantly underestimated. Therefore, we have applied a new formula to ensure that the upfront costs more closely align with the final true-up." And I think that would be an accurate characterization.

A. Yes, sir. That's where the RET comes into play.

Q. Thank you.

COMMISSIONER MCKISSICK: I don't have any further questions at this time.

COMMISSIONER DUFFLEY: Commissioner Brown-Bland?

COMMISSIONER BROWN-BLAND: Just one to the panel, whoever can answer.

EXAMINATION BY COMMISSIONER BROWN-BLAND:

Q. But what did you use for the final bill and true-up before you started doing and using the final accounting reports?

A. (Kenneth Jennings) We weren't doing final accounting reports prior to that. We weren't truing up before that.

Q. So how was the billing -- what was used to do billing?

A. We accepted the estimate to be the value.

Q. All right. Thank you.

EXAMINATION BY COMMISSIONER CLODFELTER:

Q. And to the extent there was any overage, it ran through the REPS rider, correct?

A. (Kenneth Jennings) Yes. It ran through REPS in some form.

COMMISSIONER CLODFELTER: All right.

COMMISSIONER DUFFLEY:

Commissioner Hughes, did you have questions?

COMMISSIONER HUGHES: Yeah. Just one question and a couple clarifications.

EXAMINATION BY COMMISSIONER HUGHES:

Q. We spent a lot of time yesterday talking about the AACE guidelines and looking at the tables. The version that we have in our exhibits is a 2019 publication. I'm just trying to get a sense of going back in time. Mr. Jennings said that this is being used a lot now.

Going back in time, was AACE something that Duke corporate -- Duke management used at all for cost estimating? Would the team have been members of this organization? Would you have had the 2016 version of this document laying on people's desks?

A. (Steven Holmes) Yeah. I could answer that,

Commissioner Hughes. This is Steve Holmes. Yeah. So, personally, I'm a member of the Association of Cost Engineers, and our Duke Energy project framework relies heavily upon two sources, Project Management Institute and AACE. And this document could have been the first issue of this specific document. So this is one of a group of documents that address cost estimating in different industries. There are more general documents that we based our framework off that applies to various types of work. This one is specifically for this type of transmission-line work.

Q. Okay. So -- so all of our effort to look at the percentage difference, it's not -- it's not as if there was a decision, "Okay, we want to do a class 5 system study, so let's follow these rules"; it was just going back in time and looking what was done at the time and then mapping it out to a guideline that was produced in 2019; is that correct? Chicken or the egg. It was -- you just took this document and went back in time -- I mean, excuse me, 2018 -- and said it was a level 5. Or when it was being done, would the level 5 lingo have been common among the people doing the cost estimation?

A. (Kenneth Jennings) So, Steven, what I --

Q. Is that clear? I could restate that. I think I had a mistake with the dates.

A. I think it's clear. Can you hear me, Commissioner Hughes? Okay. Steven, if you give me one minute and let me kind of layer in my understanding of the implementation of the AACE, and then you can -- I think it would be good if you could, kind of, explain when you came to work for Duke and what you have been working on.

From a -- so from a transmission interconnection perspective, we have been using the AE -- AACEI guidelines for quite a while, and Steven will be able to tell you more specifically about how that evolved for the transmission group. From the distribution perspective, I would agree with you that there probably was not consideration for this in 2017 or '18, but when we were working on this in late 2018 and very much so in early 2019, we were working with distribution project management who was working with people in the Center of Excellence -- Project Management Center of Excellence to develop their program. And I believe that the program was already kind of moving on normal distribution work, and they began to integrate the process into the distribution

work in early 2019, and that's becoming much more fully integrated. You know, probably more like early 2020 and up until now, we are seeing -- we are seeing more participation and more execution on the formal structure on the distribution side. And I think both Scott and Steven can probably elaborate a little bit on that.

A. (Scott Jennings) Let me just jump in and then I'll let Steven close it out. But yeah, I mean, I've worked, you know, 18 years in various types of distribution engineering project management construction, and it's really only been in the last couple of years that we have started implementing these types of project management guidelines into our work processes, whether we are talking solar generator interconnects or just general distribution work. It's just an area where, in distribution, probably given the nature of our work being a lot of generally small-dollar-amount but high-volume projects in comparison to building a transmission line or a power plant. We are just really beginning to mature in this process.

Q. Okay. I appreciate -- Mr. Holmes, did you want to add something? I appreciate that. So if I --

last point on this. If I went back and talked to, I guess it was Mr. Winter that sent the actual estimate email or some of the other people, and if I went back to them and said, "Guys, what do you think? Is this a level 4 or level 5," is it a fair premise that they might have said, "I don't know what you're talking about," or, "I don't know the definition of that level 4, level 5"? It wasn't parlance for them, they weren't working off of that kind of definition?

A. (Kenneth Jennings) Commissioner, I can tell you with a pretty high level of certainty that, if we asked Mr. Winter if he knew what those were, especially at that time, the answer would be no. And I will just add one other clarifying point. I was talking to one of my colleagues in another utility, I think it was Monday, and we were talking about Facility Studies and their processes, and I asked them what level of estimate they were using, and they didn't -- they didn't know what class levels were, and they weren't familiar with the process. So I think that, while I don't want to say it's cutting edge, but I want to say that we are not -- we're not -- we're not a laggard. We are not -- we are probably not leading, but we are not -- we are definitely not a laggard on this.

Q. Okay. I just wanted to -- because the way we were talking about it, it was hard to know whether this was all in place when it was going on.

Two other clarifications. I think, Mr. Jennings, you said -- and I think this might have been based on your personal experience, but that you expected a difference between a System Study and a Facility Study to be $15,000. I think we are here because it's a larger difference.

Is it unusual to have the difference in what -- you know, what's been spent by Williams? I mean, I think it's upwards of $100,000, and you mentioned -- your quote was kind of off the top of your head, $15,000.

A. So what I was referring to is the amount of money that we spent to study the project, direct charging. That means the modeling that went into examining it. I think we spent about $13,000 studying it in the System Impact Study direct study. That doesn't include the DET administrative overheads, it doesn't include commissioning. All I'm talking about is studying. I'm not really talking about any kind of upgrades. The point I was trying to make was had -- had -- had the decision to go forward to have a

Facility Study cost another 15, maybe -- and I shouldn't say that they are fixed, because it depends on the amount of work in it. You know, let's just say they are $30,000, right. So you could spend another $30,000 and know whether or not you are on the hook for $1,300,000 or $800,000. But the idea of having phase studies is to improve the accuracy of the estimate and improve the certainty for the developer. It was never intended that the System Impact Study would be the decision point for development. And that's the case on all -- I would say that's the case in all utilities, and all RTOs, and ISOs, that the System Impact Study would not be a -- would not -- I don't think you could talk to a developer in this country that would say that they would buy a turbine or they would buy panels based on the estimated System Impact Study.

Q. Okay. And that clears that. I don't think I understood it when you first said it. And the last thing, if you go back to this exhibit we have hit a number of times, Exhibit 1, Burke Direct Exhibit 1 with the letter from Mr. Winter, I think you had mentioned, Mr. Jennings, that that letter says that there could be a significant change, and I want to clarify.

Was this letter the letter that was sent to

everyone? Was this a boilerplate letter? And I don't see the word "significant" in this letter. I see -- the thing that I say -- see is knowing that cost can potentially increase. Is that what you meant by the word "significantly"?

COMMISSIONER DUFFLEY: You're on mute, Mr. Jennings.

THE WITNESS: Thank you so much, Commissioner Duffley. Could you point me at the exhibit again? Did you say it was Exhibit --

Q. It's J -- yes, it's JB Exhibit 1. It's the letter that was sent with the System Impact Study. And I had thought that, when you were answering Commissioner McKissick's questions, you had said that this letter says there could be significant changes as an extra warning to someone, and I just wanted to make sure that I'm not missing the word "significant" in the letter, or if you had other letters that might have used the word "significant"?

A. So perhaps my paraphrase was inaccurate. I have not looked at that in a while. I interpret it to mean that there could be significant change, but I may be interpreting it -- and I still don't have the exhibit in front of me, but knowing you, I'm gonna take

your word for it that my -- my assumption was incorrect.

Q. So, again, I don't mean to -- I can read it to you. It says, "Knowing that cost can potentially increase." If someone -- if someone said that to you, you know on -- you know, for anything, that, I want you to know that costs can potentially increase, would you interpret that to be significantly increase?

A. Because of my experience, I would say yes, but I -- so that --

Q. Okay.

A. It's my -- I'm going by my own experience in the industry. And so if -- if I didn't have that experience, perhaps my -- my paraphrase of that is inaccurate, I agree. But I'm reading it with my -- I'm kind of reading it through the lens of someone that's done an interconnection before.

Q. Fair enough. We all do that. Okay. That's it. Thank you.

COMMISSIONER DUFFLEY:

Commissioner Gray, did you have questions?

COMMISSIONER GRAY: Yes, ma'am.

EXAMINATION BY COMMISSIONER GRAY:

Q. For Mr. Kenneth Jennings, please.

A. (Kenneth Jennings) Yes, sir.

Q. Do you happen to have a copy of JB Exhibit 6, Burke Exhibit 6, under his direct testimony?

A. I do.

Q. The first page is an email.

Page 2, at the top of the page, the first full sentence, could you read that, please?

A. "This is a 90-percent increase compared to the very detailed scope and calculation provided at the SIS stage."

Q. And can you read in the parentheses what the amount of money is?

A. $750,869.

Q. Are there other of the 90 completed efforts that have cost $750,000 more than the SIS?

A. Yes.

Q. And how many?

A. Hang on one second, please.

Q. Excuse me, under the 5 megawatt category.

A. Correct.

(Witness peruses document.)

So I don't have -- I don't have the number -- I don't have the buckets -- explicitly the number that you are referring to, the $750,000. I asked one of my

employees to bucket them in $100,000, $500,000, $1 million, and over $1 million. And so, between $500,000 -- so there is 80 of them that have variances between 100 -- well, below $500,000. Would be 29 -- 29 projects between $100,000 and $500,000. Ten projects between $500,000 and $1 million. And three projects over $1 million.

Q. And have those projects been completed?

A. Yes, sir.

Q. They have all finished to final accounting?

A. Yes, sir.

Q. Thank you. That's all.

COMMISSIONER DUFFLEY: Thank you, Commissioner Gray. So I have a few questions.

EXAMINATION BY COMMISSIONER DUFFLEY:

Q. Through the testimony today, I feel like I have heard two types of investigations were going on in 2018, and I just want to make sure I heard this correctly. The first investigation was related to the REPS order, the 2017 DEP order, and the overhead and associated overheads related to that order. And then the second investigation that was going on in 2018 was related to these discrepancies between the Facility Study estimate and the final accounting. Is that

correct?

A. (Kenneth Jennings) Yes; that's correct.

Q. If we could turn to page 24 of Scott Jennings' testimony, please.

A. (Scott Jennings)

(Witness peruses document.)

I'm there, Commissioner.

Q. Okay. I'm waiting for the other Mr. Jennings to get there.

A. (Kenneth Jennings)

(Witness peruses document.)

What page again?

Q. Page 24.

A. Okay.

Q. Okay. And this also relates to Commissioner Gray's question for you regarding the increase between the SIS estimate and the Facility Studies estimate of around $758,000. First off, I have seen in the testimony that this is a 90 percent increase, and I have seen that it's also an 80 percent increase.

Do either of you know, which is it? Is it an 80 percent increase or 90 percent increase?

A. I think it depends on what the baseline is,

right? So I think that Scott has these numbers, so he may be able to represent it better. But if you assume that some of the other costs, like the DET administrative costs, and the sales tax, and the AE commissioning costs were known, and we subtract those out of the total, I think it's less, but --

A. (Scott Jennings) Yeah. I can maybe try to supplement that. If you just look at the direct construction cost estimate delta between the SIS and then the Facility Study, that was in the range of 37 percent increase. That's just an apples to apples how much money we would expect the base construction to cost, okay. What we then -- where you start then having the other layers added onto it that you see that total cost increase of 80 or 90 percent goes back to, number one, the addition of contingency. It was around $185,000 total. And then as we have discussed, sales taxes, overheads, the commissioning, the metering, those costs were added in as well, and those were known at the time of the System Impact Study to not be included . So if you look at truly just the direct base construction cost estimate between the two tools, it's around -- it was around 37 percent in the case of Williams.

Q. Thank you. And so the $185,000 that you mentioned for the contingency, that's the 20 percent contingency; is that correct?

A. Yes, ma'am.

Q. Then what is the percentage of increase between the SIS estimate and the Facility Study estimate that is related to the overheads?

A. I do not have a breakdown of that, unfortunately. You know, with the way the figures are compiled in the SIS, it's just a straight-line unit cost that includes direct cost and overhead. So, unfortunately, I don't know what overhead percentages were baked into that. But I want to be cautious when we use the word "overhead." And I was saying that we had a 37 percent, you know, apples-to-apples cost increase on the construction. Both of those are an apples-to-apples comparison, in terms of the Duke corporate overheads that are applied. So that would have been included in both of those. The overheads that we talk about being added to -- to that, then, as a part of providing the Facility Study and was actually just the DET overheads which Mr. Kenneth Jennings has described.

Q. And that is --

A. Just to clarify.

Q. And that was the percentage that I'm interested in. And thank you for that further explanation. I understand it sounds like there are two buckets of overheads.

A. Yes, ma'am.

Q. And so the percentage of increase that I'm interested in between the SIS and the Facility Study is the amount of overhead -- the DET overheads that you added pursuant to the Commission order of 2017.

A. (Kenneth Jennings) So I think it would only be about $20,000. So it's a very small percentage for the DET administrative overheads. I mean, there are -- there are some other costs that are associated with that, you know, that we estimated and added to it, but would come later, such as the Advanced Energy commissioning costs, and those can be -- those can be up to $100,000, depending on how many times that Advanced Energy has to go back and reinspect the project.

Q. Okay. Thank you. And then while we are here, on page 25 of Scott Jennings' testimony, you stated that you made changes to Maximo in the third quarter of 2019. If you performed a new Facility Study

for the Williams Solar facility with these, you know, third-quarter changes to Maximo, what would the effect be on the estimate? Would it go up or down, in your opinion?

A. (Scott Jennings) It absolutely would have gone up. The baseline increases that we made in Maximo -- and I believe that was around September of last year -- did cause a -- after a lot of study, an increase, particularly on the labor-cost side, that has been implemented in Maximo and consistent across all types of projects that we estimate in Maximo.

Q. Okay. Thank you. And we will just finish up your testimony, if you could go back to page 18. You mention a contingency factor for -- are you there yet?

A. Yes, I am.

Q. Okay. You mention a contingency factor for North Carolina DOT-specific projects.

Is that contingency factor 20 percent?

A. I do not know how that tool is set up. I will say that, in line with the conversation we had a few minutes ago about maturity of project management toolsets and distribution, this has been a working process, a learning process, both in terms of what we talked about here with the generation interconnect

projects as well as how we estimate costs for the DOT as well. So I could not tell you right now whether that tool has a contingency factor, and if it does, what the percentage is.

What I could just attest to is that we feel, when we look at the types of contingency factors that can occur on solar generator -- just generator interconnects in general, based on the typical locations of these projects and the type of work that is involved in these projects, we talk about matting and site access. You know, matting is something -- just to describe that for everybody, if a location is too wet to get a truck into, we are now going through a very labor-intensive process of weighing down -- you can imagine in your mind we use big rubber mats or timber platforms laid out to provide vehicle access to our poles. That's something that may not be anticipated at the time that we are doing the design for the Facility Study. But, you know, then when it comes time to perform construction, we get into a wet cycle, and the site conditions completely change. And that's a very cost-intensive, you know, experience when we have to deal with that on these. And it's very common, again, given some of the terrain and geographic

areas where these interconnect projects are being built. And so what I will speak to is just our experience with those types of factors, you know, really driving what we feel is an appropriate contingency amount for this type of work scope.

Q. And just to clear up the record, it does say that the cost estimating tool for DOT does add -- similarly adds contingency and overhead. So there is a contingency amount added, but you're not familiar with the --

A. I do not know what -- yeah, that's correct. I do not know how it is calculated or what the percentage is.

Q. Thank you.

A. Yes, ma'am.

Q. And then if you could go to page 16.

A. Okay.

Q. So you testified midway down that the RET is an interim tool to immediately provide some more accurate cost estimates. And I just want to know what the Company is currently doing to create a permanent fix.

A. That's a great question, Commissioner. You know, we would love -- and I think I got some similar

questions like this earlier in the day about whether we anticipated or intended Maximo to be a tool that could accurately estimate costs for all kinds of distribution projects. And, you know, at the time it was implemented, it was very much around repeatable costs for average, typical, high-volume types of construction work. And so, yes, our -- our objective at the end of the day would be for us to be able to develop accurate cost estimates for all types of work within Maximo and to not have to apply a secondary specialized project-specific tool like we are doing with the RET.

But the effort to get there is very significant, and there are steps underway, beginning with what I described with some of the work that was done in the fourth quarter -- third quarter last year, increasing labor values of Maximo. That was a step. And we have individuals that are continuing to look at how the cost estimating process works in Maximo to determine ways to get to that endgame. I have to say it's very complex, and I know that's a question that was raised. Why didn't we just, you know, fix Maximo?

You know, Maximo is used by around 6,000 employees in distribution. The compatible units within Maximo are used from our engineers, our administrative

personnel who close work orders and do contractor invoicing, even our linemen work with the compatible units that are in Maximo to as-built projects. So when we implement changes, when we add CUs, when we do those types of activities to Maximo, it requires training and education for 6,000 users, and it takes time to adjust those variables within the tool. And so that's why, you know, it's not something easily undertaken, but it is something we are absolutely working towards. But as I described, in the meantime, we feel like the RET provides a very valuable, you know, tool to help us in the interim.

Q. But so, how long do you plan to use the interim tool? Or, I guess I'm not sure I heard, are you actively pursuing a full revision of Maximo?

A. I would not consider it a full revision of Maximo, but, instead, continued refinement. Part of that goes to data configuration in the pool -- and the tool part of that might be training in different estimating practices for our engineering team. There are several variables, you know, at play there that can lead into the end result. So yes, there are active -- there is active work going on right now to supplement training for our engineering teams. There have been

some new CUs added to the tool to help refine our estimate accuracy.

And I'd like to just also raise the point that, you know, it's a very dynamic environment. So what we are talking about is one input, but we also have other inputs into our -- what ultimately are our actual cost, work methods change, the things that we do to try to help keep our linemen who are doing various, you know, dangerous work around energized conductors that are constantly -- multiple variables that are changing that lead to the actual cost that we incur on projects.

And what we are committed to doing is continuing to refine Maximo, refine our engineering training, understand our work methods, compare that to our cost actuals, and, you know, at some point, I can't give you a hard date, but they are working towards a point where we could look at the outputs for Maximo and say, yup, we have now gotten to where, you know, we feel like they are in line with the good cost estimate for DOT work, for solar interconnects, you know, and get to that point where we can take those additional estimating tools out of the picture.

Q. Okay. And while you are using these

estimating tools, the two different estimating tools, have you compared those tools or benchmarked those tools against other utilities?

A. I don't know the answer to that.

A. (Kenneth Jennings) So I'm not aware of any benchmarking against other utilities. We did benchmark our own projects. So, basically, we developed the tool from existing projects, and then back-cast against those projects to see how accurate our estimate would have been if we would have used it originally, instead of using old methodology. And we have seen very good results. And I think Steven Holmes mentioned earlier that, when he looked at it, it represented a level 3 estimate, meaning that the -- that all of the projects fall in -- 80 percent of the projects fall within the expected outcome of a level 3 estimate. And Steven, you could confirm that, make sure that I'm accurate.

A. (Steven Holmes) Yes. You were listening well.

COMMISSIONER DUFFLEY: And I think we have come to our afternoon break, but I have about 10 more minutes. Ms. Court Reporter, would you like me to continue, or do you need a break?

COURT REPORTER: I'm fine. We can keep

on going. Thank you.

Q. So, Mr. Ken Jennings, you anticipated my next question.

Since the tools have been put in place, you have been benchmarking, and what was the delta between -- I have a two-part question -- the delta between the Facility Study and final cost or final accounting, and then the delta between the SIS and the Facility Study estimate?

A. (Kenneth Jennings) So can you --

Q. So you stated that you have tried to -- I thought you meant, when you were talking about benchmarking, that since you have put these new estimating tools, or these new tools into play, the RET as well as changes you have made to the SIS estimate, that you have gone through final accounting and the -- that the final accounting is matching up more equally, or maybe being 10 percent over, like you're having to refund money to the interconnection customers. Could you just speak more, and again, in detail about that, and have you done that cost comparison between the SIS -- if you were having issues between the SIS and the Facility Study, have your changes fixed that?

A. So I would say that the changes have fixed

it. I will -- I will say that the revisions to the System Impact Study estimation tool has really been tooled to just match the output of the RET, and what I mean by that is we've just added a multiplier to the original System Impact Study estimating tool.

With regards to the -- actually comparing the RET tool to actuals, so what I do recall -- again, Steven Holmes has done more work around the benchmarking than I have, but as I recall, Steven said that, on average, our estimates from the RET tool come out about 10 percent higher than the actual. So, in reality, if we were using the RET tool all the time, my expectation would be that I would be giving 10 percent of the money back to developers on a regular basis.

A. (Steven Holmes) I just want to clarify that. I think you said 10 percent over and meant 10 percent under. The rest of your statement was correct. We are seeing actuals coming out 10 percent under the RET estimate on average.

A. (Kenneth Jennings) That's what I meant. Thank you, Steven.

Q. Okay. And then, according to Williams Solar, DEP was putting in -- using inputs from pre-'19 -- 2019 actual costs.

So were there any inputs to the SIS estimate modeling tool that were being revised prior to that June 2019 revision?

A. So I think this comes from Mr. Jack McNeil's testimony, but I have read it, and I am very familiar with it. It's my understanding that we didn't make any changes to the System Impact Study estimating tool during that time. And it is my understanding that the reason we didn't was because, at the time, they were benchmarking it against the output from the old methodology Facility Study, and they weren't seeing disparity differences between the System Impact Study estimating tool and the Facility Studies until -- until we implemented the RET. And we implemented the RET because we were seeing variances between the Facility Study and the actuals.

Q. Okay. Thank you. So I just want to clarify earlier testimony. I thought I heard that the AACE -- and it might have been class 5 or 4 -- that 80 percent of the projects should fall within those risk ranges. So, for example, let's say for a class 4, where you might have a negative 15 percent to positive 40 percent, there are 20 percent of the projects that are going to fall outside of that range; is that

correct?

A. (Steven Holmes) That's correct. And that range in the statement you just made applies to all class of estimates.

Q. And do you agree that the allocation of cost to the interconnection customers has been evolving since at least 2015?

A. (Kenneth Jennings) Yes.

Q. Okay. And I'm just trying to get a sense of who knew what when and -- just in looking at the allocation of risk, and I went back to the interconnection docket, and I just -- no one has mentioned this, so I just want to bring it up and see what the answer is.

So you have the January 17, 2017, REPS rider order with the language, and we have discussed that language that talked about putting more overhead costs onto the interconnection customers. But then in -- I guess on March 1, 2017, is this accurate? So Duke filed a report called cost allocation procedures required by January 17, '17 order, and that was filed in the interconnection docket; is that accurate?

A. I would assume that it is, subject to check. But with your experience, Commissioner, I would assume

that you are correct. I don't recall.

Q. So it's my understanding that Duke, after that order, was working with the Public Staff on this cost allocation, or this end; is that your understanding, that they were working with the Public Staff?

A. Yes.

Q. Do you know -- I mean, was NCCEBA or any other third party part of this, or was this report just discussed between Duke and the Public Staff?

A. So I wasn't in those discussions. And so I can't say with certainty. But I will -- I will assume that they were not at the moment.

Q. Okay. Thank you. But it's my understanding, based on my questions to you, that the overhead costs, that it's a small percentage in the present case, this Williams Solar case. This overhead issue, based on the 2017 order, is a small $20,000; is that accurate?

A. Yeah. I think it goes up to construction, but I think, if I recall, it was $12,000 at System Impact Study, and I think it's in my testimony, so -- there is -- the table is a public table. $18,000 at Facility Study, and it may be an additional $20,000 at construction, which would perhaps make it $38,000 total

at project. But yes, in the scheme of things, compared to a $1 million project, it's a fraction of a percent.

Q. And what is your opinion -- I mean, did the solar developers -- or what percentage of solar developers -- if it's zero, it's zero, but if it's not, it's not -- were aware of DEP's investigation or Duke's investigation in 2018? The investigation related not to the overheads but to the other discrepancies.

A. I doubt that it was none. There were -- there were developers that were impacted early, and so they were -- they were in active discussions with me and my predecessor in early -- probably late 2018, early 2019 that we were having those discussions. I don't remember really having detailed discussion about what the investigations were, and to be quite honest, I probably didn't know a lot of details at that point in my new role. I just know that we were discussing it and talking about how we might address some of the more significant cost overruns. And as I mentioned, they are not all like blowouts, right. And some of them -- some of the developers actually anticipated cost overages, but not to the degree that we ran into them. And when I say that, I say that because there were instances when, you know, in -- years ago, especially,

you know, during the Hurricane Florence, you know, the reconstruction and everything after Hurricane Florence, where we were coordinating with developers, and developers were saying, you know, we'd really like to have this project before the end of the year, we will pay extra.

And to be quite honest, we were -- this kind of project management is not our bailiwick. So we are not good at, like, defining what the scope change is when somebody says, "I'll pay for the extra work if you expedite my project," and so we don't have any records of asking developers to sign a change order like a builder would do if you were asking him to work overtime on your house or something like that. And so those -- those developers we were actively discussing with these kind of overruns. And to be quite honest, the same developers we're still working with very closely to resolve these cost overruns that have persisted.

Q. But that's not something typical that one developer would share with another developer, or do you have an opinion on that?

A. I don't know. I mean --

Q. Okay. And then one last question before the

break, and then I have a few staff questions that I want to ask. Just kind of -- was there no internal discussion regarding the 10 high-risk projects? You mentioned the -- you know, Williams Solar falls into one of these 10 high-risk projects that you've mentioned to other Commissioner questions.

Was there any type of internal discussion to let them know before they received their Facility Study agreement -- or estimate?

A. So I -- I don't think -- so I wasn't involved in a discussion about it. I probably should have been. I'm not aware that we did. That we actually -- that we reached out or even discussed how we would communicate -- in advance of the new estimate, how we would kind of give them a heads-up. I'm not sure that the outcome would be any different, Commissioner. Had I called them in June and said, "We are gonna send you a new estimate. It's gonna be $800,000 higher than what we told you in January," I think that that would not have softened the blow in July. Probably just would have aggravated them more until they received it.

Q. Okay. Thank you.

COMMISSIONER DUFFLEY: We are gonna go ahead and take our afternoon break. We will return

at 3:50, and we are gonna go off the record. Please turn your cameras off and mute yourself.

(At this time, a recess was taken from 3:35 p.m. to 3:52 p.m.)

COMMISSIONER DUFFLEY: We will come back on the record.

Q. So before I ask the Commission questions, one more general question.

Are you generally meeting your timelines for -- under the NCIP for your -- 45-day timeline for the Facility Study, generally?

A. (Kenneth Jennings) I think so, but, I mean, I think generally is probably a loose term, meaning that it's probably beyond 45 business days, but I think that -- I think that -- I think that we are doing a decent job at it, but I don't -- I don't have a metric on that at the moment.

Q. Okay. Thank you. And I have heard two different -- you seem to be looking at something when you're talking about these estimates. At one point, I heard there were 93 facilities and 55 were under $100,000 and under -- 80 percent were under $500,000. And then the second time we talked about the numbers you mentioned 80 projects and you said 29 projects were

between $100,000 and $500,000. If you could file a late-filed exhibit to explain those numbers, and also explain -- I mean, maybe the difference between those two numbers is one's Facility Study, so final accounting, and one's assist to Facility Study. If you could just file a late-filed exhibit to explain what you are looking at.

A. Absolutely.

Q. Thank you. And then I do have a couple of questions from the staff. On page 29 of your direct testimony, you note that, during the second half of 2018 and into 2019 Duke worked to identify the cause of the discrepancies between its Facility Study cost estimates and actual construction cost. This time period overlaps with the time that Duke was conducting its first tranche of bids in the Competitive Procurement of Renewable Energy program. Should the Commission be concerned that the cost estimate for the tranche 1 CPRE, which is the Competitive Procurement of Renewable Energy, that those CPRE bidders, especially the winning bidders, were underestimated?

A. So I would say no. And this kind of relates to one of the answers that I had for Commissioner Hughes. So our transmission estimating

process is different. It is -- it has been -- my understanding is transmission has been executing with AACEI methodology for some time now, and we have not seen the same level of variance in that area as we have on distribution. And I just think that it's kind of a different animal. There is not as much of it. I will just give you an example. I did ask someone recently, you know, what -- what is -- what do our projects look like there? So the most recent one that we just finished, we did a final accounting report on, was overestimated by $300,000. So we were paying $300,000 back. And I don't remember what the estimate was for the total amount. I want to say it was, like, $9 million, or something like that.

Q. Okay. Thank you. So the second question is, as projects move through construction, how does DEP track the actual spending against the budgeted amount?

A. So we just recently developed tools for that, actually, and we now have -- but I'm not sure that DEP actually has it yet, but we -- our distribution teams have been working on developing tools to track. And to be quite honest, it's still a challenge to track, because these projects are not nearly as long as, say, a transmission project. So, you know, invoicing can

sometimes be 60 days in arrears or longer. So you're -- you're actually trying to track, you know, invoices that you received against budgets on a project that only lasts -- you know, lasts from, you know, three to six months. Some will go up to a year, but still, you know, a three-month project with a 60-day lag, you are going to be done before you actually know what half of your cost was, right. But we are working actively to develop those tools, and I have seen -- I have seen DEC work that looks promising to me for future reference.

Q. And in the contract with Pike Engineering, is there any specificity as to the degree of estimation -- hold on, sorry -- as to the degree of estimation accuracy expected of them, like a plus or minus 30 percent or class 3?

A. I will let Scott answer that.

A. (Scott Jennings) No, there is not anything that I'm aware of.

A. (Kenneth Jennings) So, Scott, one thing that I think might be important to -- it seems like it to me, that the -- Pike -- there's nothing in the contract, but Pike workers that are assigned work aren't necessarily aware of what estimates are, right?

A. (Scott Jennings) They are not aware of classes of estimates or any of the estimating guidelines that we have talked about. And, you know, I believe that, if you look at some of the standards around the interconnection process, even at the time of Facility Study, it's not contemplated that 100 percent of engineering is completed and we have a shovel-ready constructible design. And so, you know, that's something that is not, in terms of our contract with Pike Engineering, written in stone, and something that we just have to try to imagine on a project-by-project basis.

Q. Okay. And then on the bottom of page 39 of your direct testimony --

A. (Kenneth Jennings) 31?

Q. 39.

A. I don't think I still have my direct testimony in front of me.

Q. Well, I could probably just read it to you. I don't think that you really need it. You state, "The majority of the interconnection customers have disputed the DET administrative overheads and have refused to pay those."

What is DEC and DEP -- what is Duke doing

about this?

A. So when I look at that, in general, I'm looking at most of the financial -- the final accounting reports. And so we're -- we were essentially working with disputing developers on some type of compromise to resolve any remaining issues. Projects that withdraw and do not pay, I'm not exactly sure what recourse we have. Once the project is out of the -- is out of the queue, if they don't pay whatever remaining costs or overheads, the administrative overheads that remain, then it's an LLC, and I'm not exactly sure, from a legal perspective, what my recourse would be. But for those that have actually gone to production -- gone to -- through construction and commercial operation, we are -- we are in current discussions with them, at least a large set of them.

Q. Okay. Thank you.

COMMISSIONER DUFFLEY: Any other Commissioner questions?

(No response.)

COMMISSIONER DUFFLEY: Okay. Questions on Commission questions? Mr. Jirak?

MR. JIRAK: Commissioner Duffley, if it's okay with you, I would defer to the normal

practice of, if there is going to be questions -- deferring first to complainant questions, if they have any on Commission questions, and let me close with my redirect.

COMMISSIONER DUFFLEY: Mr. Trathen, how do you respond?

MR. TRATHEN: That's fine, and I have no questions. I will make it easy.

MR. JIRAK: Great. Thank you. All right. Well, let me get started. I do have a good amount of ground to cover, but I will move as quickly as I can, Commissioner Duffley.

FURTHER REDIRECT EXAMINATION BY MR. JIRAK:

Q. I want to start with the big picture questions and just make sure, you know, that we are 100 percent clear in discussing these issues. And, Mr. Jennings, you were asked a number of questions from a number of Commissioners, including Commissioner Gray, regarding the data that we have compiled with respect to actually operational projects, that is projects that signed an IA, got constructed, and now received final accounting reports.

Do you remember discussion of those documents?

A. (Kenneth Jennings) Yes, sir.

Q. And as we've gathered that information, it's your testimony, I believe, that we have identified that there has been a consistent pattern of cost overruns on actually constructed projects, correct?

A. Yes, sir.

Q. And the big picture cost estimation issue that we have identified that has led to these issues is -- the solution for that issue is the RET; that is the solution we developed to avoid these overruns in the future, correct?

A. Correct.

Q. And this case ultimately is about a cost estimate, not a constructed project?

A. That's correct.

Q. And so we implemented the RET in order to avoid being in the situation in the future where we are having to fight about a cost exceedance --

MR. TRATHEN: Chair Duffley?

COMMISSIONER DUFFLEY: Mr. Trathen?

MR. TRATHEN: I don't think this is an opportunity for cross examination of his witness. If I'm understanding we are trying to move this along, I just ask that we could keep the questions

to non-leading questions to the extent possible. Thank you.

COMMISSIONER DUFFLEY: Mr. Jirak, you can continue.

MR. JIRAK: Thank you.

Q. And is it -- in terms of what was intended by implementing the RET, what was the big-picture goal that the Company had in mind when it went about implementing the RET going forward in the future?

A. Providing better information to developers so that they didn't end up with a final accounting report that was significantly higher than -- than they received in the interconnection agreement.

MR. JIRAK: Okay. Now, as it relates to the cost estimate delivered to Williams Solar, Commissioner Duffley, there were a number of questions around comparing the interconnection facilities -- I mean, excuse me, the System Impact Study cost estimate against the Facility Study cost estimate. In advance of the hearing today, Commissioner, we filed a supplemental exhibit, and that exhibit, I believe, will greatly assist this conversation and make it much more efficient, because it shows all of this information we have

discussed in a simple tabular format. And all the information in the table is already in the record in this proceeding. And with your permission, Commissioner Duffley, I would like to introduce that document as a redirect exhibit.

MR. TRATHEN: Could I just -- could I ask a question, Mr. Jirak? I can't find where this data is coming from in the record. Could you point me to the record where this data is?

MR. JIRAK: Sure. The information in the first table are the cost estimates that were delivered in the System Impact Study report that was delivered to Williams Solar. And the second number -- set of numbers are the cost estimates from the Facility Study report delivered to Williams Solar. And those are exhibits to the testimony of Mr. Burke. Give me one minute. Do you need the specific exhibit number?

MR. TRATHEN: I do not. If you could give me one second, because those did not match up when I looked at them before.

(Pause.)

COMMISSIONER DUFFLEY: So, Mr. Jirak, if I'm understanding you properly, there -- we have

been sent an email that's the DEP exhibit that you sent this morning, and this will answer my request for the late-filed exhibit; is that correct?

MR. JIRAK: No. The question that you asked is a different issue. This -- but this document I'm referring to does lay out some -- does, in a very clear form, lay out some of the other topics -- some of the other issues that were addressed in the Commissioner questions.

COMMISSIONER DUFFLEY: Okay. Thank you. And how do you want to identify this exhibit?

MR. JIRAK: I would like to -- it's marked DEP cross exhibit, but -- we thought we may use it on cross, but if I could, I would amend that to read DEP Redirect Exhibit 1.

COMMISSIONER DUFFLEY: The email document from DEP that was emailed to the Commission this morning will be identified as DEP Redirect Exhibit Number 1.

(DEP Redirect Exhibit Number 1 was marked for identification.)

MR. JIRAK: And I think the benefit of this document, I believe, is to just make even more clear what are the causes for the cost increase

between this Williams System Impact Study, and the Williams Facility Study impact. So Mr. Scott Jennings and Mr. Ken Jennings have been given this document, and they have a copy in front of them.

Q. Mr. Scott Jennings, you earlier referenced the fact that total increase -- in response to the Commissioner's questions you referenced the fact that the total increase in just the base work scope was under 40 percent.

Can you -- can you explain how you derive that from this document?

A. (Scott Jennings) I can. So the top half of this document, on the left-hand column, we have the System Impact Study cost estimates. And again, this is the, you know, base direct construction cost estimate of $834,000, which was provided for Williams Solar. Then taking what was component of the Facility Study that was provided last year to Williams, we see for the same, again, apples-to-apples direct work scope comparison, now a revised estimate at that time of the $1.147 million. And both of those figures include both the offsite system upgrades and the interconnection facility construction cost estimates.

Q. Thank you. And, Mr. Jennings, as you think about the discrete items added in Facility Study, what is the biggest driver, obviously, from a dollars perspective, of the increase?

A. I mean, honestly, I think the biggest driver of that was the work that we did to implement the RET, understanding --

Q. I'm sorry, Mr. Jennings, I was speaking specifically to the second table that identifies the discrete items added in the Facility Study and the line items there that show the discrete line -- the discrete items.

Among those items, what is the biggest dollar amount?

A. Apologies. Yes. So the biggest item there is the contingency factor that was applied, the 20 percent.

Q. And it's the Company's view that a contingency is an appropriate add -- to be added going forward, correct?

A. Yes.

Q. And in the end, that's a simple policy decision for this Commission to determine; if 20 percent is not, in their view, the right number,

that contingency number could be lowered?

A. It could be, at the direction of the Commission, yes.

Q. And a number of these other items also were items regarding -- which this is a question for Ken Jennings -- were items regarding -- which GreenGo was aware that they were not included in the System Impact Study estimate; is that correct, Mr. Ken Jennings?

A. (Kenneth Jennings) Yes.

Q. Now, I want to revisit one more basic issue in response to the questions from Commissioner McKissick, and talk about, Mr. Ken Jennings, from your extensive experience in the interconnection process, do all developers understand that there is a potential for a change in the cost estimate from what is delivered in System Impact Study to what is delivered in Facility Study?

A. I think that they do.

Q. And what are some of the factors that would lead developers to understand that?

A. Well, they have seen it before in other areas here -- they have seen it here, and perhaps other areas that they may be developing in. And also -- and it's

also clearly stated on the letter that it's a preliminary estimate and subject to change.

Q. Okay. Well, as we think about how the North Carolina Interconnection Procedures define what is to be delivered at System Impact Study, and for that we will look to the 2015 North Carolina Interconnection Procedures. And to speed this along, I will simply read that for you. I won't ask you to pull it up. But as you recall, the North Carolina Interconnection Procedures define what is to be provided.

And do you recall that that is referred to as a preliminary estimate? Is that the case in the 2015 procedures?

A. That's correct.

Q. And do you recall that it is made clear that the charge is not based on field visits or detailed engineering cost calculations?

A. That's correct.

Q. And are field visits and detailed engineering cost calculations the kind of thing that could lead to costs changing from a System Impact Study to a Facility Study cost estimate?

A. That's correct. That's the only difference, certainly. It can be the only difference.

Q. And does the System Impact Study agreement, itself, identify the fact that the preliminary estimated interconnection facilities charge is nonbinding?

A. Yes.

Q. And did our communication that conveyed the System Impact Study report also communicate that the cost estimates are nonbinding?

A. Correct, yes.

Q. Okay. I want to, again, revisit the -- just briefly -- and I don't want to spend too much time on this, but the discussion about the timing of development of the RET.

So you acknowledge in your testimony -- well, let me first address some of the questions from Commissioner Clodfelter in this issue regarding when the RET was approved and implemented for use.

So what was the date on -- what was the date on which we -- the RET was approved for use? Do you recall that date?

A. I do not recall what that date was. I think -- I think we said -- we said that it was approved July 30th, but I think that that was really just the first time that we actually officially used it

in a Facility Study.

Q. So is it your testimony then that "approval for use" means the first RET-generated Facility Study cost estimate was approved for release?

A. Yes.

Q. Okay.

A. I mean, that would be consistent with the first time we used it was July 30th, and therefore, that was the first time -- I mean, that was basically the point at which time it was approved to be used, yes.

Q. Okay. And, Mr. Scott Jennings, notwithstanding the fact that the Williams Solar Facility Study estimate was the first estimate -- maybe the first estimate to be formally issued using the RET, do you have any reason to believe that it was not -- that the RET was not applied appropriately and consistently with its intended use for purposes of developing the estimate?

A. (Scott Jennings) No. I believe that the tool was absolutely used for purposes of the Williams Solar estimate in good faith with the intent of its use and design.

Q. Okay. Mr. Jennings, regarding the issue of

communication with the development community regarding this change, what did the Company do with respect to projects that were already in construction once the RET tool was implemented?

A. (Kenneth Jennings) We did -- we did notify developers that were in construction that -- that we -- we provided them a revised estimate before construction was complete, regardless of what phase of construction they were in. So they were notified. It was obviously after they had already had an interconnection agreement.

Q. Okay. And you mentioned this earlier, but with respect to those projects that had an interconnection agreement but were notified of the cost increase, you also mentioned our discussions with those developers or sub-developers to achieve a resolution.

Can you -- is that effort ongoing?

A. Yes, it is. Currently, we meet weekly. We could probably -- we could possibly start to meet more frequently. We have been going on -- initial discussions probably started before the COVID-19 event. The more frequent meetings have been going on for a little over a month.

Q. Okay. Just a handful more questions.

Commissioner Hughes had asked some questions regarding sort of the -- what he characterized I think appropriately as a chicken-or-the-egg question about whether or not, you know, the folks at Duke think about the estimates first and foremost as a class under the AACEI standards or something different.

Is it your testimony that the Company implements its cost-estimating process as directed by the North Carolina Interconnection Procedures?

A. Yes. I mean, we are in compliance with the North Carolina Interconnection Procedures.

Q. And again, we spoke about this just briefly, but the definition as applied to -- in the 2015 procedures required us to deliver a preliminary estimate that was use-based but was not based on field visits and/or detailed engineering.

Did the Company, in fact, deliver an estimate that met those requirements?

A. Yes.

Q. And, Mr. Jennings -- I mean, a question for Mr. Holmes. The AACE guidelines, in your view, do they provide a framework for considering how to think about the accuracy -- expected accuracy of a range, correct -- of an estimate, correct?

A. (Steven Holmes) Yes, they do.

Q. They don't dictate one way or the other how you have to do an estimate, correct?

A. Not at all.

Q. Okay. Mr. Jennings, there were some questions as well from Commissioner Duffley regarding DET administrative overheads, and some questions specifically around when developers would have been put on notice of the need to recover those DET administrative overhead costs.

Approximately when did the Company first begin implementing and applying the DET administrative overhead table?

A. April of 2018.

Q. Okay. So for every interconnection customer that received that charge on a bill, whether achieve commercial operation or not, they would have already had notice since that day of the implementation of the overheads, correct?

A. We would have been collecting it throughout the interconnection process. So it's not just at the -- at the end, or at the completion of the project that we collect it. We collect it, you know, early and throughout the process, and, therefore, they should

have seen it and paid for at least part of it. It's the final part of it that tends to go unpaid if the -- if there is a final bill.

Q. And do you recall whether or not Mr. Jeff Riggins in the most recent interconnection proceeding also described -- provided testimony regarding the need to recover those types of costs as well?

A. He did.

Q. A very specific point I want to clear up, Mr. Jennings -- Kenneth Jennings -- regarding your testimony. You were referencing in response to some questions the fact that, in some cases -- specific cases, interconnection customers have requested expedited completion of projects for particular commercial reasons, and the Company's efforts related to those situations. Do you recall that question?

A. Yes, I do.

Q. In the context of those discussions, I think you said the phrase, "Project management is not our bailiwick." Do you remember that, generally?

A. I do.

Q. And can you give a little more context what you meant by that statement?

A. What I meant was that we're not accustomed to driving the -- or at least -- at least my team had not been accustomed to driving the process towards a structure that would -- that would -- that would identify incremental costs associated with expediting, and, therefore, we didn't really capture a formal acceptance of increased costs. And so my point was that we had not really established the process for getting approval for increased costs associated with faster delivery of a project.

Q. So, for instance, had an interconnection customer requested a particular outcome that would have required more costs, one option would have been to amend the interconnection agreement to reflect that change in cost, correct?

A. Correct.

Q. But we didn't -- at that time, we chose to work collaboratively with interconnection customers, rather than to require that formality?

A. Yes.

Q. And that's the project management step that you were referring to?

A. That's exactly what I meant.

Q. Just briefly on the development of the RET,

there was discussion again about the point in time in which the RET was developed, and you would agree it was your testimony that the RET was preliminarily developed in beta format in late 2018, correct?

A. Yes.

Q. But, at that time -- this may be a question for Mr. Scott Jennings -- the Company did not have final and sufficient information to make a fundamental change to its cost-estimating processes, correct?

A. (Scott Jennings) That is correct.

Q. And last real specific issue, jump back to before lunch, Commissioner Mitchell had asked -- or excuse me, Chair Mitchell asked some questions regarding Section 4 -- the new Section 4.3.9 of the North Carolina Interconnection Procedures.

Do you recall those questions, Mr. Kenneth Jennings?

A. (Kenneth Jennings) Yes.

Q. Okay. And I can expedite this, rather than have you turn there, as you recall the questions related to that provision and the fact that security is required if an upgrade is identified at the System Impact Study phase of the interconnection process; do you recall that?

A. Yes.

Q. And have you had a chance to look back at 4.3.9 since those questions?

A. I did.

Q. And what type of -- what type of upgrades would require a posting of security?

A. So those are network upgrades. And network upgrades -- I mean, it's kind of confusing. Network upgrades are related to transmission work, and --

Q. Typically they are -- network upgrades are synonymous with transmission upgrades, correct?

A. Yes, they are. And those upgrades -- had Williams Solar had network upgrades, those upgrades would not have gone through the RET tool. They would have been estimated by the transmission team, and the transmission team has their own estimating process. And as I mentioned --

Q. Fundamentally, that 4.3.9 is not applicable to Williams at all, because they were not assigned any transmission upgrades, correct?

A. Correct.

Q. And can you remind the Commission, what was the intention of adding 4.3.9? Why was it important to put a milestone payment around a transmission upgrade

that was identified at System Impact Study level?

A. It was to eliminate a transmission interdependency that might delay transmission projects. So -- and that actually does relate to the discussion about base case and interdependency that I had with Chair Mitchell at the time.

Q. Okay. And the reason why it's only applicable to transmission-level upgrades is because transmission-level upgrades tend to -- will almost always affect more customers than a distribution-level upgrade?

A. That's correct.

Q. And so would you agree that the intent of this was really looking to solve interdependency issues more so than any cost issues?

A. Correct.

MR. JIRAK: Commissioner Duffley, that is all that I have. Thank you for your patience.

COMMISSIONER DUFFLEY: Thank you. Do you have any motions you would like to make?

MR. JIRAK: Yes. Thank you, Commissioner Duffley. At this time, I would move into evidence DEP Rebuttal -- excuse me, DEP Redirect Exhibit 1.

MR. DAVID: And Chair Duffley, this is Eric David. Williams Solar objects to the admission of that exhibit, and I would be happy to, in two or three sentences, explain why.

COMMISSIONER DUFFLEY: Please explain.

MR. DAVID: So we had asked for in discovery and received in discovery detailed breakdown of the system upgrades costs, and I can point the Commission and Madam Chair to that page. And, frankly, the costs that they gave us at that time, particularly as the contingency, are different -- the broken-out cost for contingency for system upgrades is different than the costs we have here. So it's not only new data, but it's inconsistent with their prior discovery submissions on this exact same issue. So, frankly, we don't know what to believe about contingency, and it's not even clear Duke knows what their own contingencies were.

So this is -- to me, this is not authenticated, and it's inconsistent with the submissions that were made in the regular order of discovery. And in particular, Madam Chair, if you went to CEB Exhibit 12, page 7, there is a

spreadsheet that was put together by Duke, and the contingency there for system upgrades is $180,000 not $170,000.

COMMISSIONER DUFFLEY: Let me -- Mr. David, CEB?

MR. DAVID: 12, page 7.

(Pause.)

MR. DAVID: Madam Chair, as you're looking at it, there's really -- I really have two issues. When we asked them for a breakdown in discovery, they didn't give us the inflation broken out, they didn't give us the metering estimate broken out, they didn't give us the administrative overhead broken out, they didn't give us the commissioning estimate broken out, and they didn't give us the sales tax broken out, and the contingency is a different contingency number. So we just don't know what to believe, and we think that Duke ought to be stuck with what they gave us in discovery, not what they produced overnight.

COMMISSIONER DUFFLEY: So you would rather them -- you would rather the Commission make a decision on numbers that we're not sure are accurate?

MR. DAVID: Well, Madam Chair, that's not exactly the way I would put it. I think that Duke vouched for the accuracy of the numbers that were provided in discovery.

COMMISSIONER DUFFLEY: Mr. Jirak?

MR. JIRAK: Yeah. First of all, I make a general observation that, for instance, CEB-12, itself, is an extensive amount of information that touches on all those other subjects, and I simply view this as a different format. I guess the only number that you have identified as potentially being misaligned was contingency. Was there anything else that you didn't think was aligned with documents already provided?

MR. DAVID: Well, the other costs weren't broken out, Mr. Jirak, so we weren't able to match up those. But I would presume that if the one that is broken out is different, I'm gonna bet that they all are different.

MR. JIRAK: Okay. Well, how about -- I don't want to -- this is not something we need to spend a lot of time on, Commissioner Duffley. I think we could recreate this table using information specifically tied to the existing

record pretty easily. So to not dwell on this too much longer, keep this thing as efficient as possible, we are fine withdrawing this, and we'll take a look at the record, and I think we could easily provide this similar information with what's already in the record.

COMMISSIONER DUFFLEY: Thank you, Mr. Jirak.

MR. DAVID: Thank you, Madam Chair.

(Microphone is muted.)

COMMISSIONER DUFFLEY: Thank you, Madam Court Reporter. I'm the worst offender. Everyone else has done such a good job taking themselves off mute, so I appreciate it. So thank you, gentlemen, for testifying. We will now move back to Williams Solar.

MR. JIRAK: Commissioner Duffley, if I may -- well, I will raise this at the end of the hearing. I apologize. I was going to ask a procedural question, but I will hold off on that. Thank you.

COMMISSIONER DUFFLEY: Okay. Thank you, Mr. Jirak.

MR. TRATHEN: Thank you, Chair Duffley.

We'd call as our first rebuttal witness, Jonathan Burke. Mr. Burke, are you there?

COMMISSIONER DUFFLEY: Mr. Burke?

MR. DAVID: Sorry, Chair. He misplaced his summary. Let me help him find it, if that's okay.

(Pause.)

COMMISSIONER DUFFLEY: Someone's not on mute.

(Pause.)

THE WITNESS: Okay. Sorry about that.

COMMISSIONER DUFFLEY: Is Mr. Burke available?

THE WITNESS: Madam Chair, can you hear me?

COMMISSIONER DUFFLEY: Yes. I just remind you of your affirmation that you made yesterday.

THE WITNESS: Yes, ma'am.

JONATHAN BURKE,

having previously been duly affirmed, was examined and testified as follows:

DIRECT REBUTTAL EXAMINATION BY MR. TRATHEN:

Q. Good afternoon, Mr. Burke. Are you the same

Jonathan Burke who offered direct testimony in this proceeding?

A. I am.

Q. Did you cause to be filed in this proceeding rebuttal testimony consisting of 25 pages and 2 exhibits?

A. Yes.

Q. Do you have any corrections to your testimony?

A. Yes, I do. I have two corrections. The first on page 5, line 19. The word "crate" should be "create." And the second correction, on page 5, line 22, the words "apparently used for first time on the Williams Solar project" should be deleted. That phrase is duplicative of the preceding sentence.

Q. Mr. Burke, as corrected, if I asked you those questions today, would your answers be the same?

A. Yes.

MR. TRATHEN: Madam Chair, I ask that Mr. Burke's rebuttal testimony be entered into the record and the corresponding Rebuttal Exhibits 1 and 2 be marked for identification.

(Microphone on mute.)

COURT REPORTER: Excuse me,

Commissioner Duffley, you're on mute again.

COMMISSIONER DUFFLEY: Thank you. Mr. Burke's rebuttal -- prefiled rebuttal testimony is copied into the record as if orally given from the stand, and his exhibits are marked for identification as premarked in the filing and will be received into evidence.

(JB Rebuttal Exhibits 1 and 2, were identified as they were marked when prefiled and were admitted into evidence.)

(Whereupon, the prefiled rebuttal testimony of Jonathan Burke was copied into the record as if given orally from the stand.)

REBUTTAL TESTIMONY OF JONATHAN BURKE

FOR WILLIAMS SOLAR, LLC

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

Docket No. E-2, Sub 1220

May 19, 2020

I. WITNESS IDENTIFICATION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jonathan Burke. My business address is 1447 South Tryon St, Suite 201, Charlotte, NC 28203.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am the Country Manager and President of Development for GreenGo Energy US, Inc. ("GreenGo").

Q. DID YOU PROVIDE DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My rebuttal testimony responds to several points made by Duke's witnesses in their Direct Testimony.

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. My testimony addresses the following specific issues:

- Duke's claims that its efforts to correct its inaccurate efforts were "proactive';

- Duke's misleading claims that it is a national leader in solar project interconnection;
- Duke's apparent failure to control costs;
- Duke's failure to adequately explain the Facilities Study estimate provided to Williams Solar;
- Duke's inappropriate reliance on prior Commission orders relating to overheads;
- The expenses incurred by Williams Solar as a result of DEP's failure to provide a good faith estimate of costs in the Williams Solar System Impact Study report; and
- Duke's contentions regarding the relief sought by Williams Solar in this proceeding.

III. REBUTTAL TESTIMONY

Q. DUKE'S WITNESSES ASSERT THAT DUKE ACTED "PROACTIVELY" TO ADDRESS THE PROBLEM OF ESTIMATES NOT MATCHING UP TO ACTUAL COST. DOES THE EVIDENCE SUPPORT THIS ASSERTION?

A. No, it does not. I did find it notable that Duke's witnesses repeatedly characterize Duke's efforts with respect to the estimation process as "proactive"—collectively eight times according to an electronic search—apparently hoping that mere repetition would make it true.

To my understanding, however, the term "proactive" refers to controlling a situation by causing something to happen rather than responding to it after it has happened. This does not describe Duke's efforts in the least.

The testimony of Duke's witnesses highlights that Duke failed to implement appropriate tools to render accurate cost estimates and to control project costs and,

instead, reacted after the fact, with great delay, when it realized it had created a serious problem. According to Duke's own testimony, the company believed by early 2018 that the actual costs it was incurring for interconnection upgrades were significantly higher than what it had estimated.[1] Yet, it took Duke more than a year and a half to communicate this concern to any stakeholder group or the Commission, all the while it was apparently working in secret to craft a new estimating process and tool to address Duke's concerns. In the meantime, solar projects, like Williams Solar, received estimates that Duke believed were flawed. I am certain that if Duke were responsible for paying the ultimate interconnection and upgrade costs, it would have identified, communicated, evaluated and resolved this problem much more quickly once it believed there was an underlying problem.

Q. DID DUKE MAKE ANY EFFORT TO "PROACTIVELY" WORK WITH INDUSTRY ON THIS ISSUE?

A. I saw no evidence of any "proactive" efforts on Duke's part to communicate with Williams Solar or industry trade associations with respect to its perceived problem with the potential for faulty estimates. To the contrary, I assumed that the initial SIS estimate provided by Duke to Williams Solar was a good faith estimate of what Duke actually expected the upgrades to cost once completed. I trusted and relied on Duke's SIS estimate for establishing Williams Solar's budget based on Duke's extensive experience in estimating and completing these upgrades both for third

[1] K. Jennings & Holmes Direct, at 29 lines 4-6.

parties and for Duke itself. In fact, Duke refers to the output of the SIS estimate as budgetary in nature in the SIS report itself. At no point prior to receipt of the Facilities Study email did Duke notify Williams Solar that Duke believed its SIS estimate was unreliable or inaccurate.

Duke could have notified Williams Solar, the industry trade associations or the Commission of its belief that interconnection costs were underrepresented in multiple forums across this eighteen-month period that Duke says it was working on the issue. The industry was engaged in active dialogue during this time period on a number of issues relating to interconnection, culminating in a settlement agreement, that Williams Solar is covered by, in January 2018. Furthermore, during this time and thereafter, Duke engaged with the Commission in multiple communications in revising and updating the North Carolina interconnection standards without any mention of the issue.

Finally, Duke could have presented this issue to the Interconnection Technical Standards Review Group (TSRG), which is but a technical working group intended to provide a forum for addressing industry-wide issues relating to the interconnection process. To my knowledge, however, Duke did not raise the issue in this forum.

Duke had multiple venues and opportunities over the eighteen-month period of time to make stakeholders aware of its concern, but it chose not to do so.

Q. DO DUKE'S WITNESSES EXPLAIN WHY DUKE WAS UNWILLING TO PROVIDE WILLIAMS SOLAR ANY MEANINGFUL INFORMATION ABOUT THE DISCREPANCY IN THE COST ESTIMATES?

A. No. None of Duke's witnesses offer any explanation for why it refused to provide any detailed justification for the revised estimate. As I describe in my Direct Testimony at pages 18-19, at no point was Duke willing to explain to us the methodology it used to arrive at the revised cost estimate, despite our repeated requests for any explanation. In fact, the information Duke did provide was misleading. Duke's lawyers responded to the Williams Solar NOD by saying just that it was the product of "more detailed engineering" and "extensive recent experience" in completing system upgrades. I can only surmise that Duke didn't want to provide me information on the discrepancy because they knew they had no good explanation for what happened or were looking for ways to avoid being challenged. It is also important to note that at no point in the Duke witnesses' testimony do they actually describe any Williams Solar project-specific technical assumptions that changed between the System Impact Study and the Facilities Study and that were derived from more detailed engineering or field visits. In the end, I remain without any rational justification for Duke's inability to render a reliable estimate such that it felt it needed to unilaterally crate a new estimating tool using what Mr. Bolyard describes as an inappropriate "top down" estimation approach used apparently for the first time on the Williams Solar project. This new approach, apparently used for the first time on the Williams Solar project, resulted

in an estimate substantially deviating from the previous projects studied and offered interconnection agreements by Duke.

Q. DUKE WITNESS KEN JENNINGS PROVIDES AN EXTENSIVE DISCUSSION OF WHAT HE CHARACTERIZES AS DUKE'S "NATION-LEADING INTERCONNECTION SUCCESS."[2] HOW DO YOU RESPOND?

A. It is true that Duke has expended effort to accommodate the interconnection of new renewable energy resources like solar to its grid, but not because it wanted to become a national leader in adoption of utility-scale interconnection to its system. Duke has interconnected utility-scale solar because it is required by state and federal law to do this, not because of any altruistic motive on its part. And for this reason the Commission's continued oversight of this process remains critical.

It is important to acknowledge that Duke is a "competitor" in this space—both in terms of its own generation facilities, regardless of fuel type, and in terms of its competitive solar investments—which is why the law compels Duke to interconnect and purchase power from independent generators under state jurisdictional mandates.

Duke-owned competitive renewable energy generation activities appear to be flourishing and becoming an ever-increasing share of its corporate operation revenue mix. According to its latest financial report, Duke's renewable energy subsidiary—Duke Energy Renewables—"contributed $57 million in segment

[2] K. Jennings & Holmes Direct, at 8.

earnings to the company in the first quarter. That puts the renewable division on course for the $240 million in segment earnings on the year." *See* John Downey, CHARLOTTE BUSINESS JOURNAL, "Takeaways from Duke Energy's Q1 earnings: Financial strength, Atlantic Coast Pipeline outlook and booming renewables" (May 13, 2020). The article goes on to note that "Duke Renewables added two major solar projects, totaling 250 megawatts, and a 200-megawatt wind project in 2019," "has added another 60-megawatt solar project" in 2020, and "[b]y the end of the year, it plans five more commercial solar projects totaling 496 megawatts and two wind projects totaling 530 megawatts." *Id.* Conversely, on the regulated side, Duke has enhanced its bottleneck control of how, when and under what terms its competitors may interconnect with its network and thereby significantly influences (read restricts) wholesale competition.

The irony here is that Duke openly states that it is reaping the reward of investing in solar at large scale in other utility footprints to create shareholder wealth across the nation. However, in North Carolina, its actions suggest an intention to make interconnection as difficult, time consuming and expensive as possible.

Solar developers like Williams Solar need fairness and predictability in the interconnection process. Duke's "happy talk" about how many megawatts it has already connected does not address the realities of the current interconnection process or provide assurances that projects currently in the queue may achieve

interconnection, in a reasonable time frame, on reasonable terms and conditions under Duke's administration and leadership of interconnection processes.

Q. DUKE WITNESS KEN JENNINGS DISMISSES YOUR PORTRAYAL OF VARIOUS "TECHNICAL BARRIERS" THAT HAVE BEEN IMPLEMENTED BY DUKE AS NECESSARY TO PROTECT THE SAFETY, RELIABILITY AND POWER QUALITY OF SERVICE TO OTHER CUSTOMERS. HOW DO YOU RESPOND?

A. The question that is raised by Duke's imposition of new tests, screens and standards is whether these additional hurdles are reasonable and necessary in light of current engineering standards. While this proceeding is not the proper proceeding for this debate, there are a few points worth observing.

First, the specific practices in question have generally not been the subject of rigorous consideration by the Commission given that the only mechanism at present for such review would be a complaint proceeding. However, as Mr. McNeill notes in his testimony,[3] there were several disputes lodged by the solar industry generally in the fall of 2017 over the unilateral shift by Duke of substation nameplate transformer limits not specified under House Bill 589 and whether the Method of Service Guidelines newly introduced by Duke represented Good Utility Practice. These disputes resulted in a Settlement Agreement between Duke and the industry in which Duke agreed, among other things, not to materially revise its then-

[3] McNeill Direct, at 24, lines 14-18.

existing policies, screens and practices (or to introduce new ones) for a subset of defined projects, including Williams Solar. As a result of Duke's breach of this agreement through its unilateral imposition of cluster-based studies for "transmission impacts" by distribution projects, six GreenGo-developed projects have filed a lawsuit against DEP in the North Carolina Business Court which remains pending as of this date. *See Elk Solar, LLC, et al., v. Duke Energy Progress, LLC*, Case No. 19 CVS 0012012 (filed Aug. 30, 2019).

Second, the progress of the Williams Solar interconnection request, as described by Mr. McNeill, demonstrates the real-world impact of these issues—although he omits some critical details.

- Williams Solar filed its IR in October 2016.

- Williams Solar proactively provided notice to Duke early in 2017 that it should proceed with the study of its project in parallel with Project A. Despite Williams Solar's request, Duke waited to start Williams Solar studies until after Project A selected a mitigation option in July 2017.[4] However, the Interconnection Procedures require the Duke proceed to study a Project B in parallel with Project A, not to wait until Project A is resolved. Interconnection Procedures, § 1.8.2.1.

- Williams Solar's SIS was further intentionally "delayed" by Duke for six months due to the solar industry disputes regarding Duke's unilateral attempt to change the substation nameplate size definition and imposition of the Method of Service Guidelines.[5] Mr. McNeill does not explain why these disputes required delay in the study of the Williams Solar request nor did he mention to Williams Solar that its SIS was on hold until its resolution.

- Mr. McNeill claims that the SIS was resumed in "early 2018,"[6] but there is no evidence of active work and the project was again delayed for another

[4] McNeill Direct, at 24.
[5] *Id.*, at 24.
[6] *Id.*, at 24, line 19.

seven months until July 2018, apparently while Duke conducted a unilaterally imposed new "transmission impacts" analysis.

- Once the Williams Solar SIS was finally initiated sometime near the beginning of July 2018, Duke took nearly five months, until December 20, 2018, to release the System Impact Study report results internally.[7]

- Finally, Duke's DET Account Management team shared the report to Williams Solar on January 28, 2019, more than a month after it was ready to be released, a delay not explained by Mr. McNeill.

That Mr. McNeill described this timeline as "typical for a preliminarily-independent project" (*id*., at 25, lines 10-11) is cold comfort. Even if one selects July 2017 as the appropriate starting point, if Duke had simply performed the studies it was required to perform per the NCIP standard (and that Williams Solar was paying for Duke to perform), Duke would have been done with both the SIS and Facilities Study reports in 2017 or early 2018—not near the end of 2019.

Q. DO DUKE'S WITNESSES ADDRESS EFFORTS BY DUKE TO CONTROL OR CONTAIN THE COSTS ITS SUBCONTRACTORS CHARGE FOR SYSTEM UPGRADES?

A. No, they do not. Based on Duke's testimony and its discovery responses, it appears that Duke's sole focus was on passing on the costs to solar developers, no matter how unreasonable the costs may be. The fact is that Duke has no incentive to control costs for its competition, and Duke does not appear to be doing so. For Duke, uncontrolled costs charged to solar developers for installation of interconnection facilities and system upgrades are a feature of the interconnection

[7] *Id.*, at 25, lines 9-10.

process, not a bug. Duke treats cost overruns as a mathematical exercise—how to add to estimates so they match up with the overruns rather than trying to control costs in a prudent manner. There is simply no explanation for a doubling of costs in a matter of a year or two unless the results were intentional or negligent or both. Duke's lack of interest in this question is extremely troubling, and I hope it will be of interest to the Commission. Solar providers are forced to write a literal blank check under the interconnection procedures where the expenditures are dictated by a party that actively competes with them for every kWh produced.

Q. WHAT SHOULD THE COMMISSION DO ABOUT THIS ISSUE?

A. This is a serious, existential issue for our industry at both distribution and transmission scale. But it is only tangential to this proceeding given the preliminary stage of the Williams Solar project. I recommend that the Commission initiate an investigation into the relationship between Duke and its subcontractors with respect to the cost of installation of interconnection facilities and system upgrades and whether Duke is acting in accordance with the public interest in controlling costs and encouraging solar development in a non-discriminatory manner under a broad definition. To me, a reasonable comparison would be to examine how Duke's own controls and best practices are implemented in both their regulated and unregulated businesses as compared to that of their competition under the interconnection standard as adopted by the Commission. In the absence of some third-party control and supervision, one would expect that Duke's interconnection costs will continue to escalate in an unchecked fashion.

Q. DO DUKE'S WITNESSES DISPUTE THAT DUKE WAS REQUIRED TO PROVIDE AN ESTIMATE TO WILLIAMS SOLAR IN GOOD FAITH?

A. No.

Q. WHAT DO THEY SAY ABOUT THIS ISSUE?

A. I understand their testimony to take the view, generally, that Duke was following Duke's unilaterally adopted procedures in rendering estimates to Williams Solar, and that this approach constitutes good faith.

Q. WHAT IS YOUR RESPONSE?

A. Page after page of Duke's testimony lauded the amount of solar power Duke has connected to its system; Duke's witnesses repeatedly proclaim Duke as the nation's leader in solar interconnection. And yet, despite all of this experience and purported expertise, in January of 2019, Duke sent Williams Solar an Initial Estimate that Duke claims was off by almost 100%. Given its experience with solar interconnection, I simply don't understand how Duke could have been so wildly inaccurate in preparing the estimate. That Duke may have been following its customary procedure does not provide any comfort; certainly, Duke's customary procedure should not include providing estimates that Duke itself does not believe are accurate. According to Duke's own witnesses, they believed that actual interconnection and upgrade costs were out of control before they actually initiated the SIS and furthermore Duke knew full well before it prepared the System Impact Study report itself, as Duke had been studying the issue for nearly a year by this time according to their witness testimony. Yet, Duke made no alterations to the

Williams Solar Initial Estimate and offered no disclosure of its concerns. This is truly puzzling to me.

Q. DUKE'S WITNESS KEN JENNINGS ASSERTS THAT WILLIAMS SOLAR WAS NOT TREATED IN A DISCRIMINATORY FASHION BY DUKE IN CONNECTION WITH ITS INTERCONNECTION REQUEST. WHAT IS YOUR RESPONSE TO THIS?

A. The evidence I have seen does not satisfy me on this question. For example, the original electronic file title recorded in the metadata associated with the System Impact Study provided by Duke to Williams Solar included the phrase "ihateyou." I understand that Duke has blamed this phrase on a rogue Pike Engineering employee, but both Duke and Pike have refused to produce any documents to support that assertion. I understand from my lawyers that Pike confirmed it had hundreds of emails about this phrase, but both Duke and Pike refused to produce any of these documents in discovery despite our discovery requests seeking those documents.[8] While Duke has apologized for the unprofessional nature of the communication, given that Duke and Pike are withholding (hiding) the documents that might explain what it meant, I am unable to rule out that personal animus played a role in the treatment of Williams Solar's interconnection request. In this regard, the fact that the RET was applied, apparently for the first time, in connection with the Williams Solar facilities study—combined with the unprofessional

[8] JB-9, at 48.

statement displaying personal animus towards, presumably, the recipient of the file—can hardly be a coincidence.

In any event, regardless whether Williams Solar was singled out in some fashion, as explained by witness Bolyard, by any standard, the revised cost estimate in the Facility Study provided by Duke was not properly prepared and did not reflect appropriate and industry accepted practices.

Q. DUKE'S WITNESSES POINT OUT THAT FACILITIES STUDY ESTIMATES ARE BASED ON "FIELD VISITS" AND "DETAILED ENGINEERING COST CALCULATIONS." DOES THIS DIFFERENCE EXPLAIN THE SUBSTANTIALLY DIFFERING ESTIMATES GIVEN TO WILLIAMS SOLAR?

A. No, it does not. While Duke's witnesses repeatedly reference the fact that a facilities study estimate is based on more detailed design and engineering based on the specific specifications of the project, they do not assert that the difference in estimates provided to Williams Solar was in any way related to "field visits" or "detailed engineering calculations." Duke had plenty of opportunity to do so as it applied to Williams Solar. If the increase had been due to these factors, I might have understood and been willing to accept the deviation (although I still might have questioned the overall magnitude of costs claimed). Here Duke's own witnesses explain that the only reason for the discrepancy in estimates was Duke's

adoption of a new estimating tool, which by its witness's own admission, was designed to result in a higher estimate.[9]

Q. DUKE'S WITNESS KEN JENNINGS TESTIFIES THAT "GREENGO'S SOLAR DEVELOPMENT BUSINESS AND INVESTMENT STRATEGY RELIES UPON ITS BUSINESS JUDGMENT AND IS ONLY INDIRECTLY AND INCIDENTALLY RELATED TO DUKE'S ADMINISTRATION OF NC PROCEDURES." DO YOU AGREE WITH THAT STATEMENT?

A. No. Ultimately, solar developers like GreenGo are at the mercy of Duke and its control of the interconnection process. Interconnection is on the critical path to delivery and financing of renewable energy projects. To say that our business "is only indirectly and incidentally related to Duke's administration of NC Procedures" is akin to saying that the enjoyment of the passengers on the Titanic was only indirectly and incidentally related to the captain's navigation decisions. Williams Solar—by necessity—relied on the good faith of Duke to provide an Initial Estimate and Revised Estimate that were connected to reality. Mr. Jennings is essentially saying that Williams Solar should never have trusted Duke in the first place.

More broadly, as I testified previously, Duke has continued to place roadblock after roadblock in the path of solar developers to thwart and delay the interconnection process and speed. Each additional day that it takes to interconnect

[9] K. Jennings & Holmes Direct, at 10 lines 19-20.

a competitive project like Williams Solar costs the solar developer money and increases Duke's profit.[10]

Q. WHAT IS YOUR REACTION TO DUKE'S TESTIMONY CONCERNING THE PROCESS BY WHICH THE REVISED ESTIMATE FOR WILLIAMS SOLAR WAS PREPARED?

A. I was very troubled by the testimony. Duke admitted that the end result of its eighteen-month analysis of the estimating process was simply to start with what Duke's subcontractors had been charging Duke for interconnection and upgrade work (whether reasonable or not, but certainly uncontested by Duke) and then work backward to create a Rube Goldberg-like set of spreadsheets that would produce an estimate that matched those intended cost targets.

In short, rather than spending eighteen months to determine why the actual costs being charged for upgrade work were so dramatically out of line with what industry standard estimating software determined it should cost, Duke spent its time on a "multivariate analysis" designed to spit out a predetermined result deviating from any form of good utility practice.

Q. WITH REGARDS TO DUKE'S INCLUSION OF "OVERHEAD" CHARGES IN THE ESTIMATES, WHAT IS YOUR REACTION TO MR. KEN JENNINGS' STATEMENT THAT THE MAJORITY OF

[10] Burke Direct, at 29-30

INTERCONNECTION CUSTOMERS HAVE DISPUTED THESE ASSESSMENTS AND HAVE REFUSED TO PAY?[11]

A. This seems logical and does not surprise me in the least. I would expect this to be the case because Duke's unilateral imposition of these charges has never been vetted by the Commission and Duke has rolled it out in ways that are seemingly arbitrary and contrary to industry's understanding of pre-existing rules and contracts.

To this point, Duke's recitation of the history on this issue in its testimony is completely inconsistent with my understanding—and, to my knowledge, the understanding of industry members—of what actually has transpired.

To illustrate how heavy-handedly Duke treats its interconnection Customers, just last week I received the document attached as JB Rebutal Exhibit 1 from Duke for one of GreenGo's other projects, 1035 Lee Landing Solar, LLC. In this email, Duke transmits for execution the standard form System Impact Study Agreement but in its transmittal of this document it states as copied below:

> **Administrative Overhead Costs**:
> Attached for your record is a copy of the Administrative Overhead and Commissioning Costs table.
> Execution of the SISA confirms your acceptance of administrative charges associated with the processing of your interconnection project.

And immediately following the form System Impact Study Agreement is copied a schedule of Administrative Overhead and Commission Costs. In other words, Duke is saying to GreenGo that if it signs and returns the System Impact Study

[11] K. Jennings/Holmes Direct, at 39, lines 20-21.

Agreement, it is agreeing to, and presumably waiving its right to challenge, Duke's unilateral imposition of charges that have not been approved or reviewed by the Commission.

To be clear, I have no issue with the adoption of a standardized list of charges so that Interconnection Customers are informed of Commission-approved and vetted charges, but I do have an issue with Duke unilaterally imposing these charges without seeking the approval of the Commission or involving industry in the development and alignment of these costs. To me, it is outrageous that Duke would effectively seek to modify the Commission-approved System Impact Study Agreement by unilaterally including language in its transmittal of this document imposing charges that the Commission has never approved. This episode perfectly illustrates Duke's approach to the overheads issue generally.

Q. WHAT IS YOUR RESPONSE TO MR. JENNINGS' EXTENDED DISCUSSION OF THE PURPORTED BASIS FOR THESE CHARGES?

A. Mr. Jennings cites to the Commission's January 17, 2017, REPS compliance report order, as well as the 2019 Interconnection Procedures Order as the bases for Duke's unilateral imposition of overheads charges. *See* K. Jennings/Holmes Direct Testimony, at 38 n.18. Neither of these orders does what Mr. Jennings implies.

In its 2017 REPS order, the Commission held that:

> DEP shall continue to refine its interconnection cost allocation procedures to ensure that interconnection costs are not recovered through the REPS rider charges and more interconnection costs are recovered from the developer or interconnection customer through Commission approved interconnection charges. DEP shall work

> with the Public Staff in making these refinements and shall submit a report on these efforts to the Commission no later than March 1, 2017, ***such that the information gathered can be utilized in future discussions or proceedings related to potential modifications of the North Carolina Interconnection Procedures in Docket No. E-100, Sub 101***. In its future REPS rider applications, DEP shall be more transparent regarding the inclusion of costs as "other incremental costs" and shall file detailed worksheets and testimony explaining the discrete costs that the Company includes as "other incremental costs," listing separately labor and non-labor costs. The Public Staff shall continue to provide testimony discussing its review of those items in future REPS rider proceedings.

Order Approving REPS and REPS EMF Rider and REPS Compliance Report, Docket No. E-2, Sub 1109 (Jan. 17, 2017), at Decretal ¶ 2 (emphasis supplied). In response to this order, Duke advised the Commission that both DEC and DEP would work with the Public Staff to ensure "that more interconnection costs are recovered from the developer or interconnection customer ***through Commission-approved interconnection charges***." Letter from Robert W. Kaylor, Docket Nos. E-100, Sub 101, E-2, Sub 1109, and E-7, Sub 1131 (March 1, 2017) (emphasis supplied). With this letter, Duke provided the Commission an initial report "to be utilized in future discussions or proceedings related to potential modifications of the North Carolina Interconnection Procedures in Docket No. E-100, Sub 101." *Id.*

In other words, what Duke was directed to do, and what Duke promised to do, was to work with the Public Staff on a proposal, which would be considered by the Commission in connection with Docket E-100, Sub 101, for recovering these additional costs from Interconnection Customers. The order did not direct Duke to

unilaterally impose these costs on the solar community without their opportunity to participate and without Commission oversight.

Mr. Jennings further claims that the administrative charges were implemented "beginning April 1, 2018 after consultation with the Public Staff" (K. Jennings/Holmes Direct, at 39 lines 2-3), but this doesn't tell us anything. What exactly did the Public Staff say? What information did the Public Staff have before it? Did the Public Staff purport to speak for the Commission with respect to the imposition of charges on Interconnection Customers? Is it Duke's practice to seek approval of charges to be imposed on Interconnection Customers from the Public Staff rather than the Commission, and without seeking the input of the affected industry members? How does this comply with the Commission's directive, and Duke's corresponding promise, to make a formal proposal on the issue in Docket E-100, Sub 101?

Mr. Jennings also suggests that the Commission approved the charges in its June 2019 interconnection procedures order, but this is also not accurate. I would point out that Mr. Jennings testified that Duke unilaterally imposed the charges beginning April 1, 2018 (page 39 line 2), more than a year before Duke implies the Commission "approved" the charges. More substantively, while the order does have language directing Duke to seek to recover its costs from Interconnection Customers, this statement of policy should not have been read to endorse the unilateral imposition of new costs on Interconnection Customers outside of normal Commission processes. Certainly, the Commission did not have in front of it at

that time the specific charges sought to be imposed by Duke nor did it have any specific request from Duke to approve the imposition of overhead charges. Indeed, in this proceeding Duke's witnesses did not provide any information relating to overhead costs for interconnection requests for projects sized greater than 2 MW in the proceeding leading to the 2019 order. *See, e.g.*, Rebuttal Exhibit JWR-3, Rebuttal Testimony and Exhibits of Jeff Riggins (Jan. 8, 2019).

On February 28, 2020, Duke did provide the Commission with an Internet link to its Administrative Overhead and Commission Costs fee schedule—albeit in the context of a Commission-required report on "interconnection-related expenses and revenues associated with fee-related work for the prior year" and without any request for action on the schedule. *See* "Interconnection Fee-Related Work and Post-Commercial Operation Inspection Report," Docket No. E-100, Sub 101 (Feb. 28, 2020). To my knowledge, this Internet link is the first time Duke provided the Commission any visibility into its newly minted "overheads" policy, and here only because the Commission required disclosure of current fees.

For Mr. Jennings to now imply that the Commission has directed it to impose these charges when Duke has never sought approval of them, it has never submitted studies seeking to justify the charges sought, and the specific charges have never been before the Commission for approval, is misleading.

Q. WHAT WOULD YOU REQUEST THAT THE COMMISSION DO WITH RESPECT TO OVERHEADS IN THIS PROCEEDING?

This is obviously a multifaceted issue affecting many different stakeholders, including Williams Solar, and it is likely precedential in nature. As alluded to by Duke in its testimony, it is the subject of numerous Notice of Disputes by interconnecting parties and is raised in the numerous pending complaints before the Commission. *See also* Burke Direct, at 31.

First, the issue relevant to this case is the appropriate amount of overheads to be included in a cost estimate and at what stage. I would simply ask the Commission to conclude that Duke's approach to overheads as reflected in the RET is not an acceptable, good faith method of estimating costs.

Second, an issue not presented by this case, despite Mr. Jennings' pages of testimony, is the appropriate amount of overheads that can actually be assessed and invoiced by Duke to an interconnection customer. To this point, Duke has attempted to bill for overheads in ways which are inexplicable and compounding. For example, DEP has invoiced Glenfield Solar $3,000 in "overhead" costs where the invoice states that DEP had incurred $242.50 in "study expenses," no overhead costs relating to any study, and $3,000.00 in unrelated and unexplained "Overhead Costs." JB Rebuttal Exhibit 2. GreenGo has other similar examples of inexplicable assessment of generalized overheads seemingly unconnected to any actual work done by Duke.

While these charges are not directly in issue in this case, this is a good example of why the solar industry is disputing these charges as they are (1) unexplained, (2) unrelated to any actual work done, and (3) disproportionate to the

study charges imposed. These specific charges do not involve large sums of money, but they illustrate the larger problem at work when Duke feels free to implement rules and policies as it sees fit. Duke concedes that interconnection is "fully regulated" by the Commission, yet it acts as if it is able to unilaterally impose charges that have not been vetted or approved.

I would urge the Commission to investigate Duke's assessment of these charges as this is a matter cutting across all interconnection customers and also impacts ratepayers as well.

Q. HOW DO YOU RESPOND TO MR. JENNINGS' CONTENTIONS REGARDING THE SETBACK VARIANCE SOUGHT BY WILLIAMS SOLAR?

A. Mr. Jennings attempts to characterize the expenses incurred by Williams Solar in seeking the variance and otherwise dealing with Johnson County's setback requirements as part of Williams Solar's business plan and, therefore, not attributable to DEP's cost estimates. Although he spends pages discussing the timing and procedure of Williams Solar's variance request, Mr. Jennings misses the point. Williams Solar did not incur significant costs in seeking the variance until *after* it received the System Impact Study estimate that DEP has since attempted to disown. Williams Solar directly relied on the System Impact Study estimate in determining whether to pursue the variance, and later, a purchase option, throughout 2019. The decisions to incur these expenses were made *after* Williams Solar received the System Impact Study and *before* Williams Solar received the

Facilities Study estimate. As I stated in my direct testimony, Williams Solar would not have incurred those expenses if, in January 2019 or earlier, DEP had provided a substantiated cost estimate as high as the Facilities Study estimate.

The fact is, the Facilities Study estimate is, by itself, high enough to justify canceling the Williams Solar project. However, based on the information provided by DEP prior to and during this proceeding, the Facilities Study estimate has not been substantiated and is not a reliable predictor of costs. Williams Solar has spent additional funds to keep the project alive during the pendency of the informal dispute process and this complaint proceeding with the hope that Williams Solar will ultimately receive from DEP what Williams Solar was owed under the NC Procedures and the parties' System Impact Study Agreement and Facilities Study Agreement: an actual, good faith estimate of what it will cost to interconnect the Williams Solar project, and remedies for DEP's failure to meet its obligations.

Q. MR. JENNINGS DEVOTES NEARLY 25 PAGES OF HIS TESTIMONY TO RESPONDING TO WILLIAM SOLAR'S REQUESTS FOR RELIEF IN THIS PROCEEDING. WHAT IS YOUR RESPONSE TO THAT TESTIMONY?

A. Most of that testimony appeared to be making legal arguments, not testifying about facts. Because I am not a lawyer, I am not in a position to respond to Mr. Jennings's legal analysis. My assumption is that that Commission has ample authority to provide appropriate relief, including, among other things, remedial orders, the refund of amounts charged by Duke for studies not properly conducted, and an

accounting of costs incurred in reliance on the bad faith estimates provided by Duke and an order to pay. Williams Solar has produced to Duke substantial documentation of those expenses, and they cannot reasonably be disputed.

Q. ARE YOU ASKING COMMISSION TO OVERRIDE THE GENERAL ASSEMBLY?

Of course not. But my understanding is that Duke is free to offer power purchase agreements or interconnection agreements with terms that differ from its baseline legal requirements. I don't believe Duke disputes this. While I am not a lawyer, again it is my understanding that the Commission has broad authority to supervise public utilities like Duke and to fashion appropriate relief when Duke breaches its legal obligations.

Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?

A. Yes. Thank you.

Q. Mr. Burke, do you have a summary of your rebuttal testimony?

A. I do.

Q. Please go ahead and give it.

A. My rebuttal testimony responds to several aspects of the testimony of Duke's witnesses. Both what they say and what they don't say.

First, I find it remarkable that Duke's witnesses often repeat the mantra that the Company was proactive in administering the cost estimation process. Proactive is the opposite of what the evidence shows. DEP -- DEP's estimate -- estimation process is broken at every step.

According to its own testimony, DEP believed, by early 2018, that the actual cost it was incurring for interconnection construction was significantly higher than what it was estimating, yet it sat on this information for at least a year and a half, all the while sending out estimates that they believed were inaccurate knowing we were going to make business decisions -- significant business decisions based on the results provided by DEP. Not only did DEP hide from Williams Solar, GreenGo, and the developer community, the problems with and the concerns it had

with its cost estimates, it misled Williams Solar about the nature of the issue when we inquired.

The evidence shows that Duke didn't exercise due care in updating its failed data. It provided information to Williams Solar knowing it was not accurate. It cobbled together a revised estimating approach by applying arbitrary multipliers to the unit cost data of compatibles produced by Maximo, and it misled Williams Solar about the reason for the discrepancy and estimates. This fails to meet standards of good utility practices.

Second, Mr. Jennings spends a lot of time in his testimony talking about what he characterizes as Duke's nation-leading interconnection success. If by "success" he means making interconnection as difficult, time-consuming, expensive, and uncertain as possible, then I would agree with him.

Duke is a very active competitor in this space, and they have no incentive to make interconnection quick, easy, or efficient. Realities of the current interconnection process is that Duke acts as an arbitrary gatekeeper. A good example of this is recent correspondence GreenGo received concerning its lead planning solar project, which I

attached as JB Rebuttal Exhibit 1. In its transmittal of the System Impact Study agreement, which is a Commission-approved form document, Duke advises that, by executing the agreement, I will be agreeing to Duke's assessment of administrative charges associated with the processing of the project. In other words, Duke is saying that they are trying to condition their entry into a Commission-mandated form agreement -- side agreement where the party seeking interconnection has to waive its rights to contest Duke's charges before Duke will even agree to do what it's legally obligated to do.

Third, I have real concerns about the uncontrolled costs increases alleged and associated with interconnection. The evidence in this case shows that Duke treats cost overruns truly as a mathematical exercise. How to add to estimates so they match up with overruns, rather than trying to actually control and influence costs in a prudent manner. There is simply no explanation for doubling of costs in a matter of a year or two unless the results are intentional, or negligent, or both.

Duke's lack of interest in this question is extremely troubling, and I hope it will be of interest

to the Commission. Independent power producers are forced to write a literal blank check under the interconnection procedures where the expenditures are dictated by a party that actively competes with them for every kilowatt hour produced. This is a tangential issue to this proceeding, but is critically important to the survival of this industry.

I would encourage the Commission to investigate Duke's cost management practices and controls. In the absence of some third-party control and supervision, one would expect that Duke's interconnection costs will continue to escalate in an unchecked fashion.

Related to this last point, I would like to emphasize how important these issues are to our industry. Companies like mine need rules and procedures that are clear, fair, predictable, enforceable, and fair and that result in timely interconnection without discrimination. In the absence of these market fundamentals, it will be difficult to justify continuing to allocate resources to this market, both in the short and the long run. Thank you for your time and consideration.

MR. TRATHEN: Witness is available for

cross examination.

MR. JIRAK: Commissioner Duffley, we have no cross examination for Mr. Burke.

COMMISSIONER DUFFLEY: Commissioner questions? Commissioner Clodfelter?

Commissioner Clodfelter, could you unmute?

COMMISSIONER CLODFELTER: I am unmuted. Okay? Is the audio coming through for the court reporter? Joann?

COURT REPORTER: Yes, I hear you well.

COMMISSIONER CLODFELTER: Great. Thank you.

EXAMINATION BY COMMISSIONER CLODFELTER:

Q. Mr. Burke, I'm trying to identify, there are several critical points that seem to be coming out of the evidence, and I'm trying to sort of identify each one of them and sort of examine them all, and the one I want to focus on with you is the point of decision after Williams Solar executed the Facility Study agreement. And I asked some questions of the Duke panel about that period of time between roughly February of 2019 and when you received -- when Williams Solar received the Facility Study estimate at the end

of July in 2019. And so I'm really focused on that period with the questions I'm gonna ask you.

Suppose that, during that time period, Duke had produced a Facility Study estimate using only updated or revised Maximo outputs and not using the RET tool. Let's suppose they had delivered a Facility Study estimate to Williams Solar, and perhaps it may have varied some from the System Impact Study. Let's even assume that it had gone up some, maybe to $1 million total.

Would -- under that set of assumptions, would Williams Solar have proceeded to execute an interconnection agreement?

A. Yes.

Q. And if it had done so, it would then have posted the required security under the interconnection agreement, right?

A. Yes.

Q. And the project would have then gone to construction, and if it turned out that, in fact, Duke's actual construction costs were in the neighborhood of $1,500,000, where would we be?

A. Under -- to be clear, the $1,500,000 would -- if it were justified as reasonable costs that Duke

experienced, there would be no justification but to pay the balance. But I believe where we stand today is, the issue is the reasonableness of those cost overruns and the delta related to that.

Q. Well, thank you for that, because that's really, I guess, what I'm wanting to talk about or focus on a little bit about.

Where in the record is the evidence that I can examine as to whether or not $1,500,000 of costs is, in fact, a reasonable amount for this particular project?

A. Well, the $1,500,000, as it relates to the hypothetical that you mentioned earlier, was related to an investment point where we had certainty at $1 million, Duke built an infrastructure, and then came back with a $500,000 adder, or 50 percent increase over budget. My response to that was that -- that effort to ensure that there is reasonable costs within the $500,000 would need to be unpacked. And, quite frankly, there is a high likelihood that we would have provided the notice of dispute, like we have for five other projects in 2019 that were constructed, and we would be looking for information to justify the rationale for the $500,000, because, ultimately, that

is what we, as an industry, are looking for.

There -- I recognize the fact that Williams Solar is not at the far stage. We have not posted money, and we have not gone to that, but it's just normal due diligence to be able to verify that those debit points are there. And for the information we received for the other projects that I mentioned earlier, we do not have concrete information to be able to unpack and to actually look at invoices directly related to the scopes of work that were billed to us. We miss significant portions of the information to actually verify that the costs represented by Duke are actual costs related to the work effort. And so I think there is a significant amount of information sharing that needs to be done in an effort to kind of cure this risk and cure this issue.

Q. I understand, but on the hypothetical that I posed, we would be conducting that examination and investigation after Williams Solar had put up roughly $1 million as security, and we add a constructed project, and we would be talking about the reasonableness of the actual cost at that point.

A. That's right.

Q. Right. But on the record that we have in

front of us today, we really don't have any evidence to know whether or not an actual set of invoices for $1,500,000 would or would not be reasonable; we don't have the evidence on that?

A. That's right.

Q. That's all I have for you. Thank you, sir.

COMMISSIONER DUFFLEY: Any other Commissioner questions? Commissioner Brown-Bland.

EXAMINATION BY COMMISSIONER BROWN-BLAND:

Q. Yes, Mr. Burke. Yesterday I was asking a question that got referred back to you, and that is, do you know how much Williams was charged for the System Impact Study?

A. For the processing of the System Impact Study, we have not received that information yet, ma'am.

Q. And with regard to the Facility Study?

A. We have not received that bill either.

Q. All right. So the answer is you do not know how much you will be charged from either?

A. No, ma'am. That is correct.

Q. Thank you.

COMMISSIONER DUFFLEY: Any other Commissioner questions?

(No response.)

COMMISSIONER DUFFLEY: I just have one question.

EXAMINATION BY COMMISSIONER DUFFLEY:

Q. Did Williams Solar understand that the SIS estimate contained a zero contingency?

A. No. I will be frank with you. I was -- I was a bit shocked to understand that the SIS was being represented as not having contingency, because effectively this is construction effort, or project management where there will be construction effort, and it would be atypical and not within the professional disciplines not to have cost estimates or some sort of contingency applied at these types of stages. So I was not aware that that was there, and I was a little bit shocked.

Q. Thank you.

COMMISSIONER DUFFLEY: Questions on Commission questions?

MR. JIRAK: Commissioner Duffley, if I may, this is not a question. I tried to jump in there. I was a little too slow. I know Commissioner Brown-Bland has asked for documentation regarding the actual study cost. If

it's -- with your permission, we would be allowed to file a late-filed exhibit to also show those study costs.

COMMISSIONER DUFFLEY: The Commission would request such a late-filed exhibit be filed.

COMMISSIONER BROWN-BLAND: Thank you.

COMMISSIONER DUFFLEY: Any questions on Commission questions? I see Mr. Jirak shaking his head.

MR. JIRAK: None for me.

COMMISSIONER DUFFLEY: Mr. Trathen or Mr. David?

MR. TRATHEN: None from Williams Solar.

COMMISSIONER DUFFLEY: Thank you. Thank you, Mr. Burke, for testifying. We appreciate it.

THE WITNESS: Thank you. Thank you, ma'am.

MR. TRATHEN: I turn now to Mr. Tynan.

MR. TYNAN: Madam Chair, we'd like to call our second rebuttal witness, Charlie Bolyard.

COMMISSIONER DUFFLEY: Mr. Bolyard, please remember the affirmation you provided yesterday.

THE WITNESS: Yes, ma'am. Thank you.

CHARLES BOLYARD,

having previously been duly affirmed, was examined and testified as follows:

DIRECT REBUTTAL EXAMINATION BY MR. TYNAN:

Q. Good afternoon, Mr. Bolyard. Are you the same Charles Bolyard who offered direct testimony in this proceeding?

A. Yes, I am.

Q. Did you cause to be filed in this proceeding rebuttal testimony consisting of 22 pages and 2 exhibits?

A. Yes, sir.

Q. Do you have any corrections to your testimony?

A. No, sir.

Q. If I were to ask you the same questions in these prefiled submissions today, would your answers be the same?

A. Yes, sir.

MR. TYNAN: Madam Chair, I would ask that Mr. Bolyard's rebuttal testimony be entered into the record, and the corresponding Rebuttal Exhibits 1 and 2 be marked for identification.

COMMISSIONER DUFFLEY: Mr. Bolyard's

prefiled rebuttal testimony is copied into the record as though given orally from the stand, and his exhibits are marked for identification as premarked in the filings, and will be received into evidence.

MR. TYNAN: Thank you, Madam Chair.

(CEB Rebuttal Exhibits 1 and 2 were identified as they were marked when prefiled and were admitted into evidence.)

(Whereupon, the prefiled rebuttal testimony of Charles Bolyard was copied into the record as if given orally from the stand.)

REBUTTAL TESTIMONY OF CHARLES E. BOLYARD, JR.

OF McDONOUGH BOLYARD PECK, INC.

FOR WILLIAMS SOLAR, LLC

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

Docket No. E-2, Sub 1220

May 19, 2020

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Charles E. Bolyard, Jr. My business address is Williams Plaza 1, 3040 Williams Drive, Suite 300, Fairfax, VA 22031.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

II. PURPOSE AND SCOPE

Q. **WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

A. I respond to the testimony of Duke Energy Progress, LLC ("DEP") witnesses Jennings & Holmes, McNeil, and Jennings. My testimony is organized as follows:

- AACE Guidelines and Contingency. I respond to the testimony of Mr. Holmes regarding application of guidelines issued by AACE International ("AACE") to

the Facilities Study estimate (the "Revised Estimate") provided to Williams Solar by DEP. I specifically address the contingency level applied by DEP in the Revised Estimate provided to Williams Solar, LLC.

- DEP's "Correction" of Maximo Output. I respond to DEP's assertions regarding its use of Maximo and subsequent manipulation of the Maximo output to arrive at the Revised Estimate.
- Good Faith. I respond to DEP's witness testimony claiming that the estimates they provided were made in good faith. First, DEP admits without saying as much that the SIS estimate (the "Initial Estimate") was not provided honestly, as DEP believed at the time the estimate was provided to Williams Solar that its estimates were inaccurate. Second, none of DEP's testimony supports a conclusion that the Revised Estimate was developed in a manner intended to reasonably estimate the actual costs of interconnecting the Williams Solar project. These actions do not appear to be in "good faith," whether you apply the interpretations DEP's witnesses try to give to that phrase or any other reasonable meaning.

III. AACE GUIDELINES AND CONTINGENCIES

Q. PLEASE SUMMARIZE YOUR OPINION WITH REGARD TO THE APPROPRIATENESS OF THE CONTINGENCIES APPLIED BY DEP IN ITS REVISED ESTIMATE.

A. As stated in my direct testimony, based on the design requirements at the Facilities Study stage and the use of site visits in preparing the Revised Estimate, the 20-percent contingency applied by DEP is excessive and appears to be merely a factor to increase the estimated costs rather than a true contingency.

Q. DOES THE TESTIMONY OF DEP'S WITNESSES CHANGE YOUR OPINION REGARDING THE INAPPROPRIATENESS OF THE CONTINGENCIES APPLIED BY DEP IN THE REVISED ESTIMATE?

A. No. Nothing in the testimony of DEP's witnesses changes my opinions about the level of engineering used in preparing the revised estimate, the excessiveness of the 20-percent contingency, or my opinion that the "contingency" is being used as a factor to increase estimated costs. DEP's witnesses mostly confirm that my critique of the Revised Estimate was correct, and where their opinions differ from mine, DEP witnesses' opinions are not supported.

Q. **DO YOU AGREE WITH DEP'S WITNESSES ABOUT THE APPROPRIATE FRAMEWORK FOR PREPARING AND ANALYZING ESTIMATES?**

A. DEP's witness relies on the AACE International ("AACE") Cost Estimating Framework embodied in AACE's Recommended Practice No. 96R-18 as an appropriate framework for considering both the Initial Estimate and the Revised Estimate.[1] As a member, Fellow, and past President of AACE, I am very familiar with this standard and, as noted by Mr. Holmes, I also relied on the AACE standards in arriving at the opinions in my direct testimony. My familiarity with this standard includes, among others, my application of this standard in expert testimony in arbitration proceedings regarding the standard of care as it relates to the preparation of cost estimates, revised cost estimates, and forecasts of costs at construction completion for power generating facilities with costs up to $3.5 billion and heavy industrial processing facilities with costs up to $10.2 billion.

Q. DO YOU AGREE WITH DEP WITNESS HOLMES' SUGGESTION THAT THE INITIAL ESTIMATE IS A CLASS 5 ESTIMATE UNDER THE AACE COST ESTIMATING FRAMEWORK BASED ON THE DESIGN STAGE OF THE PROJECT?

A. No.

Q. PLEASE EXPLAIN.

A. DEP Witness Holmes contends that "in most cases" a System Impact Study estimate is a Class 5 estimate because, at that stage, Duke lacks "detailed design

[1] K. Jennings & Holmes Direct, at 21-27.

engineering . . . , a definitive materials list, or a construction schedule" and has not "conducted a site assessment or any field engineering."[2] As discussed in the AACE Cost Estimating Framework, Class 5 estimates "are generally prepared based on very limited information," "may be prepared within a very limited amount of time and with very little effort expended" and are sometimes referred to as "back of the envelope" or "guesstimate[s]."[3] DEP Witness Holmes's conclusion is not consistent with the Initial Estimate, which is based on specific system upgrades that are described and quantified and is not simply conceptual in nature.

Q. WHICH AACE COST ESTIMATING FRAMEWORK CLASSIFICATION DO YOU BELIEVE IS APPLICABLE TO THE INITIAL ESTIMATE?

A. The Initial Estimate appears to be at least a Class 4 estimate, based upon the detail known about the project, its location, and the facilities needed to interconnect it, as described in the System Impact Study.

One stated purpose of classifying cost estimates is "to align the estimating process with project stage-gate scope development and decision-making processes."[4] The estimate classification should match the purpose for which the cost estimate is intended. The AACE Cost Estimating Framework makes clear that

[2] K. Jennings & Holmes Direct, at 25.

[3] K. Jennings & Holmes Direct, Exhibit 1 at 8.

[4] K. Jennings & Holmes Direct, Exhibit 1 at 6.

Class 5 estimates are for concept screening. A project at the System Impact Study stage is well past the concept stage. DEP intends the estimate to be the basis of significant economic decisions by the interconnection customer. These characteristics are consistent with at least a Class 4 estimate.

It is my understanding that, in relation to its pending rate proceeding, DEP has represented that "high-level" estimates it has prepared based on "the number of devices to be deployed and the number of circuit miles to be upgraded at the circuit level," and "per-unit costs based on . . . historical costs," "without cost estimators visiting actual sites," are Class 4 estimates.[5] This is consistent with my understanding of how the Initial Estimate was prepared for Williams Solar.

Q. DOES THE ESTIMATE CLASSIFICATION, BY ITSELF, DETERMINE HOW ACCURATE AN ESTIMATE IS EXPECTED TO BE?

A. No. As described in the AACE Cost Estimating Framework, estimate accuracy is driven by a number of systemic risks including level of familiarity with the technology, uniqueness or remoteness of a project location, complexity of the project, quality of reference cost estimating data.[6]

Q HOW DO THOSE FACTORS AFFECT THE EXPECTED ACCURACY OF

[5] Public Staff Testimony of Jeff Thomas, Docket No. E-2, Sub 1219, at 73, *available at* https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=2607e867-0b10-4b5b-be39-1d804cfd6de7.

[6] Jennings & Holmes Direct, Exhibit 1 at 6-7.

THE INITIAL ESTIMATE?

A. Here, given DEP's touted experience with installing solar interconnection projects of this size and in this region, it is reasonable to expect the Initial Estimate to be more accurate than a typical Class 4 estimate, likely in the range of -15% to +20% of actual costs. Taking DEP's contention that the Revised Estimate is more accurate as true for the sake of argument, the Initial Estimate was unacceptably inaccurate.

Q. TURNING TO THE REVISED ESTIMATE, HOW DO YOU RESPOND TO THE CONTENTION OF DEP'S WITNESSES REGARDING THE LEVEL OF ENGINEERING SUPPORTING THAT ESTIMATE?

A. DEP Witnesses K. Jennings and Holmes seem to suggest that there is a round of more detailed engineering that occurs after execution of an interconnection agreement and that the engineering underlying the Revised Estimate is somehow preliminary.[7] This is not consistent with my understanding of the North Carolina Interconnection Procedures, which I understand require design of interconnection facilities and upgrades at the Facilities Study stage. NC Procedures § 4.4.5. It is my understanding that the estimates provided at the Facilities Study stage are incorporated into the Interconnection Agreement. DEP Witnesses Jennings and Holmes's suggestion is undercut by other testimony by DEP's witnesses and by

[7] K. Jennings & Holmes Direct, at 20-21, 26.

DEP's repeated argument in this proceeding that the Facilities Study is when the detailed engineering occurs. For instance, DEP Witness Scott Jennings states that "the Facilities Study does not always result in the final engineering and design of the interconnection,"[8] suggesting that the Facilities Study sometimes does produce the final engineering and design of the interconnection. According to Mr. S. Jennings, the "Facilities Study often involves a field visit which provides the opportunity to perform a more detailed engineering estimate taking into account actual facility and site conditions."[9] The suggestion that there is substantial engineering uncertainty left after completion of the Facilities Study is unwarranted.

Furthermore, to the extent that there was some sort of significant engineering design effort to be undertaken after an Interconnection Agreement was signed, I would expect to see a significant charge for design costs to be included as a line item in the Revised Estimate. There is no line item in any of the estimates produced by DEP for engineering or design costs.

Q. DO YOU AGREE WITH DEP WITNESS HOLMES' SUGGESTION THAT THE REVISED ESTIMATE IS A CLASS 3 OR CLASS 4 ESTIMATE?

A. No.

Q. PLEASE EXPLAIN.

[8] S. Jennings Direct, at 5-6.

[9] *Id.* at 6.

A. The Revised Estimate should be at the AACE Estimate Class 2. Based on DEP's description of its processes, including design, underlying the development of its Revised Estimate and the discussion of the intent of the Facility Study Report found in the North Carolina Interconnection Procedures, along with the discussion of the Interconnection Agreement process, the Revised Estimate represents the point at which the project is ready to move into construction planning and execution. This status of project definition is commensurate with AACE Estimate Class 2, which is at "project control or bid/tender" status. This means that the project is ready to turn over to field forces for construction.

Q. WHAT RANGE OF ACCURACY WOULD YOU EXPECT FROM THIS ESTIMATE?

A. The expected accuracy range at Estimate Class 2 is -15% (low) to +20% (high), particularly when considering DEP's purported extensive experience on regional independent generator facility interconnection projects of similar size to the Williams Solar project.

Q. HOW DOES THIS RANGE OF ACCURACY RELATE TO THE APPROPRIATE LEVEL OF CONTINGENCY THAT SHOULD BE APPLIED AT THE FACILITIES STUDY STAGE?

A. It is important to understand that the range of accuracy of estimates described in the AACE standards is different than the contingency. The contingency should be

considered in general based on the risks associated with known, but undefinable, circumstances that experience on similar projects identifies are likely to occur during project execution. Given that DEP's Revised Estimate is at a minimum Class 2, I would expect the contingency, again with DEP's touted extensive interconnection experience and ability to evaluate risk, to be in the range of 5% to 10% maximum.

Q. HOW SHOULD ESTIMATES BE RELATED TO COST CONTROL?

A. Estimates are not just numbers that induce a "yes" or "no" response from investors. Cost estimates should also be used for cost control—that is, DEP should be using the cost estimates on an ongoing basis as a "check" to protect against unjustified cost overruns on interconnection projects.

Q. DID DUKE'S WITNESSES ADDRESS THE USE OF THE ESTIMATES FOR COST CONTROL PURPOSES?

A. I do not see any indication in DEP's testimony, or in the discovery material that I have reviewed, that DEP is using its estimates in this manner. At least some of the difference between DEP's estimates and its actual incurred costs may result from a failure of cost control during construction performance rather than pre-construction cost estimating.

Furthermore, DEP's explanation regarding the RET is that the process of developing it began when DEP realized it had cost overruns at the "true up" stage—

that is, after projects were completed.[10] If DEP were using its estimates for cost control, the fact that the estimates were being grossly overrun would have been discovered and addressed during construction, not after the fact.

IV. DEP'S MANIPULATION OF MAXIMO OUTPUT

Q. DOES THE TESTIMONY OF DEP'S WITNESSES CHANGE YOUR OPINION THAT THE REVISED ESTIMATE WAS UNREASONABLE AND UNRELIABLE?

A. No.

Q. PLEASE EXPLAIN.

A. As previously stated, my criticism of the Revised Estimate and the Revised Estimating Tool (RET) that generated it is that the method applied by DEP is unreliable and unreasonable. The evidence shows that DEP generates an estimate using Maximo—which is an industry-standard, appropriate method—but then it manipulates that estimate using various multipliers, which is an inappropriate method.

DEP appears to agree that using Maximo to generate cost estimates is consistent with industry standards. DEP Witness S. Jennings states:

While there are nuances to the specific design standards used by

[10] K. Jennings Direct, at 28030; *see also* Exhibit CEB-6 at 28 ("In Q1 2018, DET Management directed DET Process to further investigate observed discrepancies between estimated construction costs and actual construction costs for distribution interconnection projects coming online during Q4 2017.").

> each utility, the general process of utilizing standards based on compatible units to calculate bills of material and labor estimates, coupled with application of overhead rates, is consistent across the industry. Based upon my experience, I am confident that the methodology that Duke utilizes within Maximo to develop cost estimates is consistent with good utility practice . . . . [11]

What Mr. Jennings does not state, and what he appears to intentionally avoid saying, is that DEP's use of the RET is "good utility practice." Rather, Mr. Jennings states only that use of the RET "is intended to supplement" DEP's use of Maximo.

Mr. Jennings explains that, for various reasons—primarily that doing so would be difficult and time consuming—DEP decided not to update the cost database in Maximo itself so that it would be capable of producing accurate estimates on its own without supplementation.[12]

Mr. Jennings's explanation regarding the RET is also undercut by a hidden worksheet in the RET (previously filed as Exhibit CEB-13) that I did not observe until after receiving Mr. Jennings' testimony. That worksheet, labeled "Revision Notes," indicates that DEP was using the RET (or a prior version of it) to adjust Maximo output as early as April 2018. CEB Rebuttal Exhibit 1, at 5. That is, it appears DEP's manipulation of Maximo output started well before DEP completed its comparison of estimates and actuals culminating in the RET in mid- to late 2019.

[11] S. Jennings Direct, at 21.

[12] S. Jennings Direct, at 15-16.

As previously stated, DEP's witnesses provided no information regarding the development of the RET. While DEP states that the RET is a result of a "multivariate analysis," it has not produced any evidence of that analysis in discovery or in its witness testimony.

The problem with DEP's approach should be apparent. Maximo is a tool—which DEP apparently uses for its own network upgrades—that generates estimated costs by matching the various components of the project to a database of equipment costs, labor rates, expected labor time for specified activity, applicable taxes, and overheads. This is the way cost estimates should be performed—developing costs from the "bottom up." If labor rates or equipment costs change, then the appropriate approach is to go into the database and input cost data to reflect those updated rates. If the time associated with a specific task changes, then the database should also be updated accordingly.

By contrast, what DEP did here was multiply the Maximo output (which, again, is apparently satisfactory for Duke's own purposes) by a series of mathematical multipliers solely to get to a higher number—i.e., a "top down" approach to estimating. DEP wanted the estimates to yield higher results, so it started from this premise and worked backward to find the "right" combination of multipliers that achieved the top line number they wanted. The effect of using blunt multipliers is that it divorces the estimation process from the specifics of the project

in question. For example, if the multiplier increases the labor charge, that increase may not be appropriate to the specific project based on its unique labor needs. Or if the multiplier grosses up equipment costs, those higher costs might not be relevant to what is needed for the project. This approach to estimation is simply not consistent with industry standards. No credible construction estimator would start with what the general contractor wanted to charge for a project and then work backward to achieve that result by artificially manipulating labor rates, overheads, and contingencies.

I simply cannot fathom why a company with Duke's resources would be unable to appropriately and accurately estimate the costs of these projects, especially with the Maximo tool in place, and with Duke's vast experience over many years with precisely the sort of projects that are in issue here.

Q. HOW DO YOU RESPOND TO DEP WITNESS K. JENNINGS'S CONTENTION THAT THE ADJUSTMENTS MADE BY THE RET ARE NOT ARBITRARY?

A. DEP Witness K. Jennings provides no evidence that the adjustments are not arbitrary. Mr. Jennings testifies that the "purpose of the RET was to improve the cost estimates to better align with actually-experienced project costs,"[13] but he provides no evidence that the mathematical adjustments to the Maximo estimate

[13] Jennings & Holmes Direct, at 31-32.

made by the RET are connected or tied to specific differences in actual costs in comparison to estimated costs. DEP has provided no information regarding the "multivariate analysis" that led it to apply the adjustments it makes in the RET, and there is no way to evaluate its statistical or even its logical validity. Instead, DEP Witnesses K. Jennings and S. Jennings each state that the other provides detail about this analysis, while neither actually does so.[14]

Furthermore, DEP Witness S. Jennings seems to confirm the arbitrary nature of several of the adjustments. In his testimony, Mr. Jennings states that DEP would consider adjusting the overhead or contingency factors to reduce estimates in the future if RET estimates exceed actual costs.[15] Mr. Jennings's testimony is not that DEP would reduce these factors if the overheads or contingencies turn out to be overestimated, but that these factors would be used as "dials" to adjust total estimates downward, in the same way the RET currently uses these factors to dial total estimates upward. This testimony confirms that the RET's multipliers are not tied to DEP's actual expected costs in discrete areas (e.g., labor, overheads, or contingencies). Instead, DEP is using these factors to gross up the estimate to reach some predetermined higher cost level.

Q. IS THERE ANY OTHER EVIDENCE OF THE ARBITRARINESS OF THE

[14] Jennings & Holmes Direct, at 31; S. Jennings Direct, at 24-25.

[15] S. Jennings Direct, at 19-20.

RET ADJUSTMENTS APPLIED BY DEP?

A. Yes. In discovery, DEP produced an e-mail dated June 19, 2019 (when the RET was in its final approval stages), in which Beckton James (the creator of the RET) indicates that a revised estimate—apparently generated using the RET—should be provided to an interconnection customer using a "[c]ontingency adder of 10% to cover potential risk from weather, work conditions and environmental work." CEB Rebuttal Exhibit 2. It is unclear why Mr. James would consider a 10% contingency based on those factors appropriate for one project, but a 20% contingency appropriate for all other projects, like Williams Solar.

Q. IS IT YOUR OPINION THAT THE ONLY PROBLEM WITH THE REVISED ESTIMATE IS THAT IT PRODUCES A HIGHER RESULT THAN THE INITIAL ESTIMATE?

A. No. As I hope my direct testimony and this rebuttal testimony make clear, my critique of the Revised Estimate is not that the estimate is high in comparison to the Initial Estimate but that there is no reason to think it is a valid estimate. The Initial Estimate—although apparently wildly inconsistent with data known to Duke at the time it was provided to Williams Solar—at least uses a valid estimating methodology despite relying on the outdated cost data. My critique of the Revised Estimate is that it was not based on a valid methodological approach that was designed to produce accurate estimates.

Q. HOW DO YOU RESPOND TO MR. SCOTT JENNINGS'S CLAIM THAT THE DATA USED IN MAXIMO IS NOT OUTDATED AND THAT THE MAXIMO ESTIMATES ARE NOT UNRELIABLE AND UNREASONABLE?

A. There is no evidence that the data used in Maximo is up to date with regard to any cost other than materials. DEP Witness S. Jennings provides little or no information about the vintage of data in Maximo that were used to produce the Revised Estimate. I would point out that DEP has repeatedly referred to the RET as "updat[ing]" the Maximo output, not the underlying cost data, and that Mr. Jennings's testimony is that the RET was developed out of necessity because updating Maximo data is time consuming.[16] I know of no reason why a company with Duke's resources could not properly update the Maximo tool. DEP's explanation that it is "time consuming" is not a reason, in my judgment, for letting the utility of the tool lapse. As I indicated in my direct testimony, Maximo is designed with the intention that it be properly and timely updated. If DEP is not properly updating the tool—and every indication is that it is not—then the tool is of little value.

As far as Maximo output being "unreliable and unreasonable," DEP

[16] S. Jennings Direct, at 15.

Witness S. Jennings says the data are "accurate" for the purpose of "DEP's historical experience in terms of system-wide materials and labor costs."[17] But that's not the purpose of the estimates provided to Williams Solar or discussed in my testimony. My testimony addresses the fact that it is DEP's position that Maximo does not itself accurately estimate interconnection facilities and upgrade costs. No DEP witness contests this point. Furthermore, the existence of the RET is predicated on DEP's belief in the inaccuracy of Maximo's output. It is impossible for Maximo and the RET to both be accurate.

Q. DID DEP'S WITNESSES PROVIDE ANY DETAILS ON HOW THE RET WAS CREATED THAT SUPPORT THE VALIDITY OF THE ESTIMATES COMING OUT OF THE RET?

A. No.

Q. DO DEP'S WITNESSES PROVIDE ANY DATA SUPPORTING THEIR CLAIMS THAT THE RET PROVIDES ESTIMATES THAT ARE "MORE ACCURATE"?

A. No.

Q. DO DEP'S WITNESSES PROVIDE ANY EVIDENCE THAT THE SIS ESTIMATION TOOL REV1 GENERATES REASONABLE ESTIMATES OR ESTIMATES COMPARABLE TO THE RET?

[17] *Id.* at 11.

A. No. DEP Witness McNeill states that "a simple multiplier" was used in the SIS Estimation Tool Rev1 for the purpose of expediency, not accuracy. The only data I have seen regarding the performance of SIS Estimation Tool Rev1 is in Exhibit CEB-21. This data indicates that there were **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** projects for which an SIS estimate was generated after the June 2019 implementation of SIS Estimation Tool Rev1 and for which the Facilities Study estimate was produced after the July 30, 2019 implementation of the RET. The total Facilities Study estimates for these projects is, on average, **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** higher than the total SIS estimate. That is, the "simple multiplier" of 2.0 seems to be producing wildly inaccurate estimates, not estimates that are "generally in alignment" with or "substantially similar to" estimates produced by the RET, as DEP Witness McNeill contends.

V. RESPONSE TO DEP'S "GOOD FAITH" CONTENTIONS

Q. DO YOU HAVE AN OPINION ABOUT WHAT THE PHRASE "GOOD FAITH" MEANS IN TERMS OF DEP'S OBLIGATION TO PROVIDE COST ESTIMATES IN THE SYSTEM IMPACT STUDY AND THE FACILITIES STUDY?

A. I am not an attorney. I am informed by Williams Solar's attorneys that the phrase "good faith" is a legal term that has been addressed in many different contexts, and

that, in general, it means

> A state of mind consisting in (1) honesty in belief or purpose, (2) faithfulness to one's duty or obligation, (3) observance of reasonable commercial standards of fair dealing in a given trade or business, or (4) absence of intent to defraud or to seek unconscionable advantage.

Black's Law Dictionary (11th ed. 2019). This is consistent with my lay understanding of the phrase "good faith."

Q. HOW DOES YOUR TESTIMONY AND THE TESTIMONY OF DEP'S WITNESSES RELATE TO WHETHER THE ESTIMATES PROVIDED BY DEP TO WILLIAMS SOLAR WERE PROVIDED IN "GOOD FAITH"?

A. In my testimony, I have not opined specifically on what the standard of "good faith" means. However, based on DEP's discovery responses, the documents it has produced, and the testimony of its witnesses, it is my opinion that DEP's estimates do not meet any of the "good faith" standards described in my previous answer or in the testimony of DEP's witnesses.

Q. **PLEASE EXPLAIN.**

A. Starting with the general definition described above, the Initial Estimate meets none of those standards. DEP believed as early as Q1 2018 that its cost estimates did not match its actual costs and, as a consequence of its research into the identified discrepancies, DEP had developed the RET by the end of 2018 just before the Initial Estimate was provided to Williams Solar. It is indisputable that DEP knew or

should have known that it would not stand behind the estimate provided in the Williams Solar System Impact Study in January 2019. Providing that estimate, with the intent that Williams Solar would rely on it, was not honest, was not consistent with DEP's admitted obligation to provide a reasonable estimate,[18] and was not consistent with any reasonable commercial standards, including industry estimating standards.

As for the Revised Estimate, DEP's RET is not consistent with industry standards, and, as I have previously stated, appears to apply a series of arbitrary adjustments to the Maximo output.

Considering other possible interpretations of "good faith," DEP Witness Kenneth Jennings offers that good faith is "those efforts that are reasonable in light of the totality of the circumstances and consistent with the overall structure of the arrangement."[19] This is an incredibly vague statement. However, the "totality of the circumstances" seems to be that DEP has an extensive recent experience with exactly this sort of project and it is unreasonable for its efforts to estimate costs to consist of knowingly using outdated costs (the Initial Estimate), and manipulating the output of its industry standard estimating method using a series of unjustified

[18] McNeill Direct, at 26.

[19] K. Jennings & Holmes Direct, at 17-18.

multipliers (the Revised Estimate). DEP Witness Kenneth Jennings also suggests that "good faith" is the absence of "bad faith," meaning "a specific intent or motive to harm or deceive."[20] Without diving too deep on DEP's motives, in my opinion, DEP's providing an estimate that it believed was inaccurate (the Initial Estimate) is deceptive, whatever its motivation was.

DEP Witness McNeill's suggestion that the estimates provided to Williams Solar were done in good faith because DEP followed its own protocols[21] does not make sense to me. If DEP's protocols are not designed to produce accurate or reliable cost estimates—and I do not believe they were—simply following those protocols does not imply the resultant cost estimates were made in good faith.

Finally, although DEP Witness S. Jennings repeats the phrase "good faith," he provides no indication of what he believes that phrase means, so I am unable to address his assertions.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

[20] *Id.* at 52.

[21] McNeill Direct, at 26.

Q. Mr. Bolyard, could you please go ahead and give a summary of your rebuttal testimony?

A. Yes. Thank you. Madam Chairperson and Commissioners, good afternoon. My rebuttal testimony responds to several issues raised by the testimony of DEP's witnesses.

First, I address DEP witness Holmes' testimony regarding application of AACE International's cost estimating framework embodied in AACE's Recommended Practice Number 96R-18 to the estimates provided to Williams Solar by DEP.

While DEP witness Holmes suggests that the initial estimate provided with the System Impact Study is a class 5 estimate under the framework, based on the level of engineering detail provided in the System Impact Study, which is not simply conceptual in nature but describes and quantifies specific system upgrades, the initial estimate appears to be at least a class 4 estimate. Particularly in light of DEP's experience in interconnecting similar projects, taking DEP's revised estimate as a more accurate -- as more accurate for the sake of argument, the initial estimate provided by DEP is unacceptably inaccurate.

As to the revised estimate, I disagree with

DEP witness Holmes' suggestion that this estimate is a class 3 or class 4 estimate under the AACE cost estimating framework.

Based on the level of design and the North Carolina Interconnection Procedures indication that the Facility Study is made in preparation for a construction planning meeting, the revised estimate is commensurate with AACE estimate class 2. Given this classification and DEP's experience in interconnecting similar projects, I would expect a contingency supplied by DEP to be in the range of 5 percent to 10 percent rather than at 20 percent applied by the Revised Estimating Tool, RET.

I also note that cost estimates, in addition to being used for making investment decisions, should also be used for cost control purposes. The information provided by DEP in this case does not show the estimates are being used for cost control. Rather, DEP appears to have realized, at the true-up stage, after a number of projects were completed, rather than during construction, that its actual cost did not match its cost estimates.

Next, I address DEP's adjustment of Maximo output using the RET. In response to DEP witness

S. Jennings and his comments regarding application of the RET to Maximo's output, I note that Mr. Jennings states that DEP's use of Maximo is consistent with good utility practice but does not state that he believes the RET is consistent with good utility practice.

DEP uses Maximo for its own purposes, but apparently needs to adjust Maximo's output for interconnection costs. While DEP witness S. Jennings takes issue with my characterization of the adjustments made by the RET as arbitrary, his testimony does not explain the origin of these adjustments, and he explains that DEP may change the adjustments if they do not pan out in practice. The arbitrariness of the contingency adjustment is also demonstrated by a June 19, 2019, email produced by DEP in which the creator of the RET, apparently using the RET to estimate cost of a certain project, suggests using a 10 percent contingency to cover risk from weather, work conditions, and environmental work rather than the 20 percent contingency applied to Williams Solar and other projects.

DEP witness S. Jennings addresses whether the data in Maximo is outdated but does not explain how the data, with the exception of material costs, was updated

at the time of the revised estimate. Moreover, no witness for DEP contests the fact that Maximo, itself, does not produce accurate estimates for interconnection facilities and upgrade costs.

With regard to the origins of the RET, none of the DEP witnesses provide any detail on the creation of the RET or any data to support their claim that the RET's estimates are more accurate.

Finally, in response to statements made by DEP's witnesses that the estimates provided to Williams Solar were provided in good faith, I do not agree that DEP has met the standards of good faith that its witnesses describe, nor do they meet the general meaning of good faith described to me by Williams Solar's attorneys or my own lay understanding of the phrase. In particular, providing the initial estimate based on outdated cost data more than a year after DEP believed its actual costs were greatly exceeding its cost estimates, with the intent that Williams Solar rely on that estimate, appears deceptive. And providing an estimate produced by manipulating Maximo data using a series of multipliers, the RET, despite DEP's extensive recent experience with exactly the type of project at issue, does not seem to be a reasonable

practice.

Thank you for your time.

MR. TYNAN: The witness is available for cross examination.

MR. JIRAK: Thank you.

CROSS EXAMINATION BY MR. JIRAK:

Q. Mr. Bolyard, how are you? This is Jack Jirak.

A. Good afternoon, Mr. Jirak.

Q. I just have a couple of quick questions for you. I would like to turn your attention to your rebuttal testimony on page 7.

COMMISSIONER DUFFLEY: Mr. Jirak?

THE WITNESS: Yes, ma'am.

COMMISSIONER DUFFLEY: We have lost one of the Commissioners, if you could just wait a few minutes.

(Pause.)

COMMISSIONER DUFFLEY: Okay. Mr. Jirak, you can continue.

MR. JIRAK: Thank you, Commissioner Duffley.

Q. Mr. Bolyard, briefly, again, page 8 of your testimony, beginning line 11, your testimony states,

"DEP witness K. Jennings and Holmes seem to suggest there is a round of more detailed engineering that occurs after execution of an interconnection agreement, and that engineering underlying the revised estimate is somehow preliminary. That is not consistent with my understanding of North Carolina Interconnection Procedures, which I understand require design of interconnection facility upgrades at the Facility Study stage."

Do you have a copy of the Interconnection Procedures with you there, Mr. Bolyard?

A. I do, yes. Which version? Which edition?

Q. The currently applicable version. There have been no change in these particular portions, or no substantive changes in these particular portions. And I would turn your attention to Section 4.4.4 of the procedures.

A. (Witness peruses documents.)

Q. Let me know when you are there.

A. 4.4.4? Did I hear you correctly?

Q. Yes, sir.

A. Yes, I'm there.

Q. Okay. I'm gonna read it briefly. "The Facility Study report shall specify the estimate" --

excuse me, "shall specify and estimate the cost of the equipment, engineering, procurement, and construction work, including overhead, needed to implement the System Impact Study and to allow the generating facility to be interconnected and operate safely and reliably."

Would you agree, Mr. Bolyard, that this -- this provision in the procedures is -- requires the Company to identify the cost of engineering that's to be -- that's to occur after the Facility Study report?

A. I would agree with you that it identifies the world "engineering," but it doesn't identify when the engineering would take place. And since I understood that, based on what was in my rebuttal testimony and the reference to the following paragraph, 4.4.5, that the utility shall design any required interconnection facilities and/or upgrades under the Facility Study agreement. So when I look at those two paragraphs together, my understanding of the word "engineering" in 4.4.4 is an indication that the engineering has been done and that that's leading to the ability to estimate the cost of the equipment and the procurement and construction costs that are anticipated for the project.

Q. So why would you need to estimate the cost of something that's already been done, Mr. Bolyard?

A. (No response.)

Q. "The Facility Study report shall estimate the cost of engineering."

If you have already done the engineering, why would there be a need to estimate? Instead, you would just report what your actual engineering costs were?

A. And that was the case, as I understand it from my review of the record with respect to Williams Solar, that the basic engineering between the System Impact Study and the Facility Study didn't change. That electrical engineering work that was described was identified as having no change.

Q. Did you -- were you able to listen in to the hearing earlier today and the testimony of Mr. Scott Jennings?

A. Yes, sir.

Q. Do you have any reason to disagree with his testimony concerning the fact that there is additional design and engineering work that occurs post interconnection agreement?

A. I understood Mr. Jennings to describe that work as construction engineering having to do with the

processes and procedures of doing the construction as opposed to design engineering being the design of the technical aspects of the system upgrade.

Q. And do you have any reason to disagree with Mr. Jennings' opinion that even further construction engineering can lead to potential cost increases above and beyond estimated costs?

A. I -- I would disagree with that. I think that, for the reason that, if you have the technical engineering performed, as we did in the case of Williams Solar, you have the ability to estimate the construction performance that's gonna support that engineering, then there would be no need to estimate further construction engineering, although there is indication in the testimony that there are sometimes circumstances not contemplated that occur. For example, there was a description of needing mats to support equipment in the field if there were wet conditions.

Q. But just to be clear, would you agree that the North Carolina procedures contemplate further design work that -- to be occurring after interconnection agreement execution?

A. With the understanding that you are asking me

that question with respect to 4.4.4 of the procedures, that language that's there is engineering. It doesn't say design engineering, it just says engineering.

Q. Well, could you please turn to section 5.2.4 of the North Carolina procedures?

A. 5.2.4?

Q. Correct.

A. Okay. I'm there.

Q. And I'm gonna read this for you as well. "The interconnection agreement shall specify milestones for payment of upgrades in interconnection facilities and/or provisions of financial security for interconnection facilities, it's acceptable to field that are required prior to the start of design and construction of the upgrades in interconnection facilities."

So wouldn't you agree with me, Mr. Bolyard, that, once again, here is very clearly contemplating in the procedures that there is additional engineering and design work that happens after interconnection?

A. Allow me a moment to read what you recited, please.

(Witness peruses document.)

Okay. The question again, please?

Q. You were making the distinction between engineering and design, and you said that you didn't believe the procedures allowed for further design after interconnection agreement.

Would you not agree that this section of the North Carolina Interconnection Procedures clearly contemplates that additional design work will occur after execution of the interconnection agreement?

A. I will agree that the word "design" is in the language in the paragraph that you read to me and that I have read, but it doesn't specify what type of design or what type of effort that it is. It just says design. It doesn't say engineering design, it doesn't say temporary works design. It's nondescriptive.

Q. Okay. But you agree that further design of some sort is required after interconnection agreement? I will let you answer that question.

A. You trailed off and I dropped part of your voice, so could you ask the question again, please?

Q. We will let that issue go. I think the procedures speak for themselves. Let me ask one more question on this issue. If you turn to the next page, page 8, line 10.

A. Are we back to the -- back to the rebuttal

testimony?

Q. Yes, sir.

A. Yes, sir.

Q. Okay. This -- again, we are on the same subject, whether or not there is additional design and engineering work that has to occur after interconnection agreements, and I am looking at your testimony beginning on line 10, page 8 of your testimony. We have addressed what the procedures say about the fact that there is design and engineering to continue, but now we are gonna look at your testimony in this issue, and you say, "Furthermore, to the extent there was some sort of significant engineering design effort to be undertaken after an interconnection agreement was signed, I would expect to see a significant charge for design costs to be included as a line in the revised estimate. There is no line item in any of the estimates produced by DEP for engineering or design costs."

Do you see that portion of your testimony?

A. Yes, sir, I do.

Q. Can you turn to your direct testimony, Exhibit CEB-12, please?

A. Yes, sir.

Q. And please turn to page 6 of 8.

A. Yes, sir.

Q. So whereas your statement says there is no line item in any of the estimates for engineering design costs, would you not agree that there is an estimate in this -- there is a line item in this cost estimate for engineering design costs?

A. What I will agree to, Mr. Jirak, is that there are blue highlighted lines on this particular page that show engineering and design. However, if you go back to the preceding pages where the actual detail of the cost estimate is presented, none of those categories for the computation of labor, the computation of estimated material costs, the computation of vehicle costs, the computation of flagging, any of the other things that are identified, have a line-item component for engineering. So when I look at page 8 and then look at the preceding pages, 5, 4, back to 3, and the descriptions that are given for the detailed calculations, the only way that those engineering and design line items appear on page 6 is because somebody arbitrarily made a number to stick in there to say, "We're gonna put a line item here for engineering and design." Because when you add up the

dollar values that are the totals for each of the categories and compare that to what's on the preceding pages that I described, it doesn't work. The math doesn't work. So the engineering design are what I would refer to as plug numbers, but they are not supported by the basis of the detailed calculations for the categories of work that occur on the preceding pages.

Q. But these are estimates -- and we can disagree about whether they are valid estimates or not, but Duke has included in this cost -- in this description of the cost estimate its projection of the engineering design costs it will incur after interconnection agreement; do you agree with that?

A. No, I don't agree with that. I would go back to my comment to you earlier. Those three blue highlighted lines show up as indications of engineering and design, but they are not identified in any of the detailed cost estimate calculations for those categories in earlier pages. So to the extent that they are there, again, they are what I call a plug number, but there is no indication to what they represent. There is nothing in the preceding pages that say, for example, at the top of page 6,

engineering and design, $21,369.60. That's the sum total of the two blue lines further down in the page. If you go to the preceding pages where the detailed calculations of the cost of construction and so forth are presented, there is nothing that identifies what type of design it is, how many hours it's gonna take, what the cost of the design is gonna be, or how it's gonna be used. So while I will agree that it's on the page, I do not agree that it has any basis in the preceding detailed calculations of the cost.

MR. JIRAK: Okay. I have no further questions.

REDIRECT EXAMINATION BY MR. TYNAN:

Q. I just have one quick question for you, Mr. Bolyard. Could you turn to your rebuttal testimony, Exhibit 1?

A. Just a moment please.

(Witness peruses documents.)

Yes, sir.

Q. This exhibit is a copy of the time and expense template provided by DEP in discovery in this case; is that right?

A. Yes, sir.

Q. And this copy of the Excel spreadsheet that

you reproduced here as your rebuttal exhibit includes all of the hidden tabs and hidden data fields that were in that final copy of time and expense template XLXS, is that right?

A. Yes, sir.

Q. In any of the various tabs and hidden fields in this spreadsheet, which is the RET, is there any calculation on any page for engineering and design work?

A. Give me a moment to look through it for context, please.

(Witness peruses document.)

Certainly is tiny print.

(Witness peruses document.)

I can't identify a line item in any of those pages that addresses engineering and design.

Q. And just referring back to Exhibit CEB-12, page 6 of 8, where you were -- that you were just discussing a moment ago.

The top of that page refers to the tables that follow as the Revised Estimating Tool output; do you see that?

A. Yes, sir, I do.

Q. Based on your review you performed just now

of the RET, do these tables come out of the RET?

A. Not that I can identify, based on the comparison that I just made to Exhibit 1 from my rebuttal.

MR. TYNAN: That's all I have.

COMMISSIONER DUFFLEY: Thank you.

Commission questions? Chair Mitchell.

EXAMINATION BY CHAIR MITCHELL:

Q. Mr. Bolyard, I want to ask you a question, and this is testimony you provided initially in your -- in your direct testimony. I apologize for making you flip back, but I got to make sure -- I need to make sure that I'm clear on this point.

A. Okay.

Q. So I'm looking at page 26 of your direct testimony. You reference a cost exposure of approximately $30 million arising from the unreliable results coming from DEP's cost-estimating performance. And then you have cited to and attached to your testimony an email chain that's an internal Duke email correspondence. Can you help me understand that $30 million or what you're understanding of the $30 million is? Is it simply just the difference between the old estimating tool and the revised one?

And, additionally, does that $30 million include overheads which Duke began to seek from customers subsequent to the 2017 REPS order?

A. So your question is a two-part question.

Q. Yes.

A. So I think I will answer the second part first. As my understanding, based on what I have learned from listening to the testimony, that -- the REPS order dealt with administrative overheads. So with that understanding, when I look at the document that is identified as Exhibit 20 to my prefiled direct testimony and the comments that you identified just a moment ago, this email is dated June 6th -- or at least the leading email at the top of the page, first page, is dated June 6, 2019. So it's an email that comes before the Revised Estimating Tool is issued and training takes place and it's authorized for use or application. My understanding of the $30 million is that it has a component of approximately $9 million from DEC and $21 million from DEP, and it represents the cost exposure to Duke for the difference between what they have identified as actual costs of construction compared to the estimated cost of construction. That's how I understand it.

Q. So the $30 million is not a DEP number, but it includes both DEP and DEC numbers?

A. That's my understanding; yes, ma'am.

Q. Okay. And so that $30 million is -- does not -- is it your understanding that the $30 million doesn't include any overhead charges sought by the Company?

A. When you say "overhead," I would have to qualify my response to that to be the administrative overhead based on your reference to REPS, because the cost estimates that were prepared using Williams Solar, for example, at the Facility Study stage, included a component of overhead related to construction performance and actually building the work. And so there is overhead in those estimates, but it may not be the administrative overhead that I understand you to be referring to with respect to the REPS.

Q. Okay. Thank you. I appreciate your explanation there.

CHAIR MITCHELL: I have nothing further.

COMMISSIONER DUFFLEY: Any other further questions from Commission?

(No response.)

COMMISSIONER DUFFLEY: Questions on

Commission questions?

MR. JIRAK: None from DEP. Thank you, Commissioner Duffley.

MR. TYNAN: And none from Williams Solar.

COMMISSIONER DUFFLEY: Okay. Thank you, Mr. Bolyard. We appreciate you testifying today.

THE WITNESS: Thank you, and thank the Commission for their time and attention.

COMMISSIONER DUFFLEY: So it looks like we have come to the end of our proceeding, and are there any motions pertaining to the evidence?

MR. TRATHEN: Yes. Madam Chair, we move the introduction of Mr. Burke's two rebuttal exhibits, as well as Mr. Bolyard's rebuttal exhibits. Are there two of those? Yes, two rebuttal exhibits for Mr. Bolyard as well.

COMMISSIONER DUFFLEY: So the two Burke rebuttal exhibits and two rebuttal Bolyard exhibits will be received into evidence.

MR. TRATHEN: Thank you.

(JB Rebuttal Exhibits 1 and 2 were identified and admitted into evidence on page 105, and CEB Rebuttal Exhibits 1

and 2 were identified and admitted into evidence on page 143.)

COMMISSIONER DUFFLEY: Any other motions?

MR. JIRAK: None from Duke. I believe, Commissioner Duffley, all of the prefiled direct -- prefiled testimony of DEP witnesses and all exhibits have already been moved into the record.

COMMISSIONER DUFFLEY: Thank you, Mr. Jirak.

Yes, Commissioner Clodfelter? Commissioner Clodfelter, if you could go off mute.

COMMISSIONER CLODFELTER: Yeah. I decided that the potential late-filed exhibit that I discussed with Mr. Ken Jennings, I do not need that exhibit. So I will not be requesting it.

COMMISSIONER DUFFLEY: Okay. Thank you, Mr. Clodfelter.

So that leaves us with proposed orders and briefs. The typical convention is 30 days after the notice of the transcript. Does anyone object to that schedule?

MR. TRATHEN: No objection from Williams Solar.

MR. JIRAK: No.

COMMISSIONER DUFFLEY: Okay. With no objection, we request that you file proposed orders and briefs 30 days from the notice of the transcript. So before we adjourn, I want to thank everyone for all of the hard work everybody has put into this remote hearing. I know it was a first for a lot of us, so I thank you very much for all of your hard work. And with that, we are adjourned.

(The hearing was adjourned at 5:21 p.m. on Thursday, June 18, 2020.)

CERTIFICATE OF REPORTER

STATE OF NORTH CAROLINA)

COUNTY OF WAKE)

I, Joann Bunze, RPR, the officer before whom the foregoing hearing was taken, do hereby certify that the witnesses whose testimony appear in the foregoing hearing were duly affirmed; that the testimony of said witnesses were taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this hearing was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

This the 30th day of June, 2020.

JOANN BUNZE, RPR

Notary Public #200707300112