INFORMATION SHEET

PRESIDING: Commissioner Duffley; Chair Mitchell and Commissioners Brown-Bland, Gray, Clodfelter, Hughes and McKissick
PLACE: Via WebEx Videoconference
DATE: Wednesday, June 17, 2020
TIME: 9:35 a.m. – 12:50 p.m.
DOCKET NO.: E-2, Sub 1220
COMPANY: Williams Solar
DESCRIPTION: Williams Solar, LLC, Complainant, versus Duke Energy Progress, LLC, Respondent
VOLUME: 3

APPEARANCES

FOR WILLIAMS SOLAR, LLC:
Marcus Trathen, Esq.
Eric David, Esq.
Matthew Tynan, Esq.

FOR DUKE ENERGY PROGRESS, LLC:
Jack E. Jirak, Esq.
Brett Breitschwerdt, Esq.

WITNESSES

See attached

EXHIBITS

See attached

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REPORTED BY: Joann Bunze
DATE FILED: July 13, 2020

TRANSCRIPT PAGES: 124
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TOTAL: 124

PLACE: Via Videoconference

DATE: Thursday, June 18, 2020

TIME: 9:35 a.m. - 12:50 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: 3

Noteworthy Reporting Services, LLC

A P P E A R A N C E S:

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Raleigh, North Carolina 27601

T A B L E O F C O N T E N T S

E X A M I N A T I O N S

E X H I B I T S

PLACE: Dobbs Building, Raleigh, North Carolina

DATE: February 23, 2015

DOCKET NO.: E-100, Sub 101

TIME IN SESSION: 1:35 P.M. TO 6:17 P.M.

BEFORE: Sam Watson, General Counsel

IN THE MATTER OF:

Petition for Approval of Revisions to

Generator Interconnection Standards

VOLUME 1

study process.

MR. WATSON: Okay. Yes, ma'am.

MS. STANFIELD: But I think the language in the rules, and this is how I believe that most utilities across the country do this, is that the language makes all three of the studies optional, so they -- in the scoping meeting they can discuss do we want to do a feasibility study or not. And it's common, like you guys were saying, and I think very common now across the country, to skip that first feasibility study, especially for larger projects where they know there's a need to do the system impact study, but the idea is that you might get to a point where, for example, at the end of a system impact study, if you identify that there are no system impacts and there's no need for upgrades, then the need for a facility study, which studies -- which looks at the cost of the upgrades obviously isn't necessary and, thus, you can skip that. And so that's the -- the rules say that any of them are optional and that it's part of a sort of a dialogue with the Utility, depending on the nature of the project.

MR. WATSON: All right. So give me a ballpark on how much -- so you can go to the scoping meeting, you give them an estimate and an agreement for the facility study. What's a ballpark of what these estimates for doing a feasibility study are? $1,000? $10,000?

MR. FREEMAN: The ballpark would be more in line with the $10,000, but it just depends. Feasibility study is a fairly limited modeling exercise, so the cost of that study is, I'll say ballpark, maybe 2 to $5,000, something like that. When you move to the impact study, you're going much, much deeper in terms of modeling our existing system, modeling existing generators, existing load, and that level of effort is higher and you're -- I would say ballpark you're in that 5 to $10,000 range. And then when you move to the facility study, this is where you're actually sending your engineers to the field to do what I would call kind of a pole-to-pole detailed engineering cost estimate, and that's in that 5 to $10,000 range as well, depending on the size of the project.

Again, you know, some of these upgrades are -- require two to three miles of line extension work, and it may take an engineer, you know, easily a week or two to completely assess the requirements for an upgrade and do all the design work for that upgrade project.

MR. WATSON: Those numbers sound like numbers that you guys -- am I getting some agreement that that's move to the next step?

MR. FREEMAN: Correct.

MR. WATSON: And once we've done the final feasibility -- final facility study, then the Utility is left wondering are you going to move forward or not and waiting for the QF to finally come back and say, all right, I'm ready to go, I need to, you know, start building tomorrow.

MR. FREEMAN: Correct.

MR. WATSON: Okay. So the differences, then -- and I guess -- so that gets us all the way through from the application to eventually tendering an interconnection agreement, waiting for the customer to execute and return the agreement and said that looks good to me, let's go forward. And up until to that point all you've done is study. And it sounded like maybe there was some -- I say it sounded like. From reading the comments and reply comments and the proposed revisions, it sounded like there was now some additional design work, in addition to procurement and installation, that has to go on even beyond the studies that doesn't happen until after you get the interconnection agreement?

MR. FREEMAN: Not exactly sure what you're referring to, but let's go back and spend a couple minutes on each study. Maybe that'll help --

MR. WATSON: Okay.

MR. FREEMAN: -- clear that up. So at the impact study level, that's a modeling exercise where you will model the existing system and will determine what kinds of impacts you'll have on the system. There may be voltage issues, voltage flicker issues, you know, any number of kind of reliability issues. So also at that point we will estimate -- well, let me back up. We'll determine what kind of impacts you'll have on the system, and then during that modeling exercise, we'll start what I call applying solutions to that model to fix the issues that we've got. It may mean, well, if I reconductor a mile line, does that solve my voltage issue, or if I move a particular piece of equipment or upgrade something at the substation. You know, we're looking for a solution to kind of solve the impacts that that facility has on our system; still all a modeling exercise at that point.

When we determine what kind of solutions are needed to fix the impacts, then we'll apply our first estimate of what the cost will be to upgrade that, you know, to upgrade our system. So, again, that's still all either a modeling exercise or a, you know, a very kind of high-level kind of ballpark estimate.

Then we move into the facility study where we do the detail design work that I think you're referring to. So in my mind, the facility study is the engineering study, if you will, where you're actually going into the field, you actually determine if you got to change out poles, you know, what kind of reconductor work you've got to do, are there right-of-way issues that you need to resolve. So you start kind of narrowing in on a much more detailed cost estimate associated with the project. I'm not sure if that's where you're going.

MR. WATSON: And this is all still before the interconnection agreement is executed.

MR. FREEMAN: Correct.

MR. WATSON: I guess my -- I won't be able to point to a specific page, but my recollection was in -- that some of the parties had -- there was some discussion about having to -- well, it came in the financial security question and about whether to pay up front after the interconnection agreement has been signed, how to pay for the further work that would have to be done, and I thought I saw mentioned in what that further work was was design. But I guess it's -- at that point you've already got your design and you're really looking at procurement and construction.

MR. FREEMAN: I think that's correct, yes.

MR. WATSON: Okay. All right. Well, again, as you --

MR. FREEMAN: Well, as we've moved around this a lot, we did -- we have agreed to what we refer to in the proposed procedures is an interim interconnection agreement, because the developers asked us we need the interconnection agreement so we can obtain financing, so at that point there's still no, you know, dollars exchanging hands for the upgrade work, but there's an interconnection or interim interconnection agreement associated with this, and that generally was -- I mean, that's done before we actually do the detailed design work, if that makes sense.

MR. WATSON: Okay. So I guess what -- to -- the way I understand it, the reason that NCSEA first asked us to relook at this was because FERC had made changes to their interconnection standard, and my recollection of those changes is that they were sort of instigated -- initiated at the insistence of the solar folks to raise the levels of some of the screens based on experience that more projects -- fewer projects would need the full study. And here we've been focusing more, as is mentioned in the comments, on the clogged

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-100, SUB 101

In the Matter of	)	**REBUTTAL TESTIMONY OF**
Petition for Approval of Generator	)	**GARY R. FREEMAN**
Interconnection Standard	)	**ON BEHALF OF DUKE ENERGY**
	)	**CAROLINAS, LLC AND DUKE**
	)	**ENERGY PROGRESS, LLC**

fundamental flaw in the Companies' interconnection process but instead is an inevitable product of the interdependency of projects all locating in the same area and on the same circuit or substation.

Q. WHY HAVE YOU FOCUSED ON THE SIS TIMELINE FOR DISTRIBUTION-CONNECTED PROJECTS?

A. Distribution-connected projects constitute the vast majority of the utility-scale solar projects that have been interconnected (approximately 93%) and the vast majority of the utility-scale solar projects that remain in the queue (approximately 71%). Therefore, understanding the SIS timeline for distribution-connected project is critical to assessing the factors driving the current interconnection wait times.

Q. PLEASE COMMENT ON THE SIS TIMELINE FOR TRANSMISSION-CONNECTED PROJECTS.

A. As the Companies have previously explained, the amount of distribution-connected solar in North Carolina is unparalleled and these penetration levels give rise to a wide range of technical considerations and costs in connection with the interconnection. In contrast, there tends to be fewer factors impacting transmission-connected generation and where transmission network constraints arise, they tend to involve substantial expense that result in voluntary withdrawal within the established timelines. Nevertheless, there have been many instances in which developer actions have delayed the study process for transmission-connected projects and, once again, the Companies expect delays to increase as more substantial upgrades are triggered.

Q. ASIDE FROM THE SIS PROCESS, WHAT ARE THE OTHER MAJOR COMPONENTS OF THE INTERCONNECTION PROCESS?

A. The other major components of the interconnection process are the Facilities Study including the field engineering design work, the construction process, the inspection and commissioning process.

Q. PLEASE DESCRIBE HOW THOSE PROCESSES CAN ALSO BE TIME-CONSUMING.

A. The Facilities Study includes any final modeling requirements, but most importantly for distribution projects, includes the field engineering design work and development of the construction work order and more detailed cost estimates. So, for example an engineer might require several weeks to confirm existing right of way easements, obtain property owner approval for any pole line changes, obtain any new right of way, submit highway and in many cases rail road encroachment permits in addition to normal design, construction drawings, and work order estimates. For transmission projects these functions can take many months.

The construction process can be very complex, particularly in the increasingly common scenarios where projects are triggering large distribution upgrades or transmission network upgrades. For example, distribution upgrade costs in many cases have exceeded $1M and require a half year or more to complete. Transmission network upgrade costs are now being seen in the $10-$40M, and in one case will exceed $100M. The construction process can be delayed by challenges ranging from complex line outage restrictions to more mundane weather conditions. For examples, one recent distribution-connected project was delayed for months where a pole line crossing a land-owner's property could not be accessed because of rainy weather and the land-owner would not allow construction equipment on their property until his land dried out.

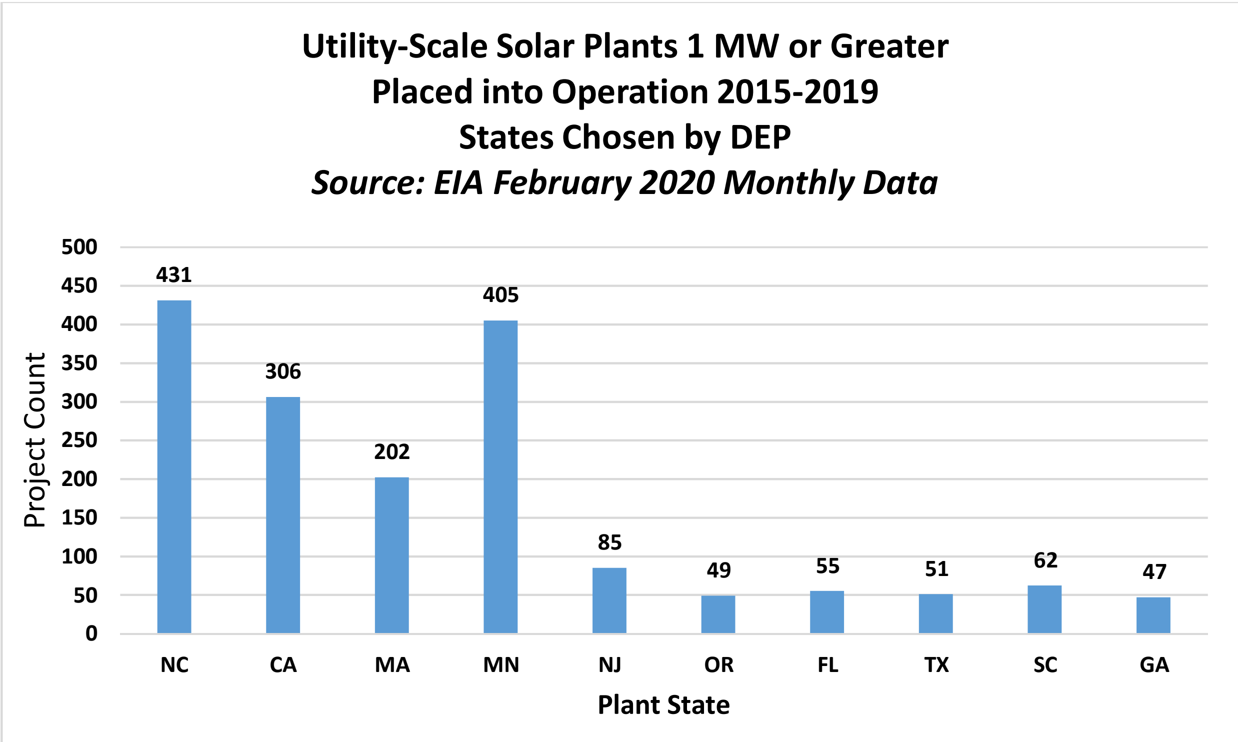
Q. HOW WILL HB 589 IMPACT THE INTERCONNECTION PROCESS.

A. HB 589 marked an important transition in the state's renewable procurement strategies away from standard offer contracts that incented a surging and unparalleled growth of 5 MW distribution-connected projects and towards a competitive procurement process that is expected to result in the selection of larger, transmission-connected projects.

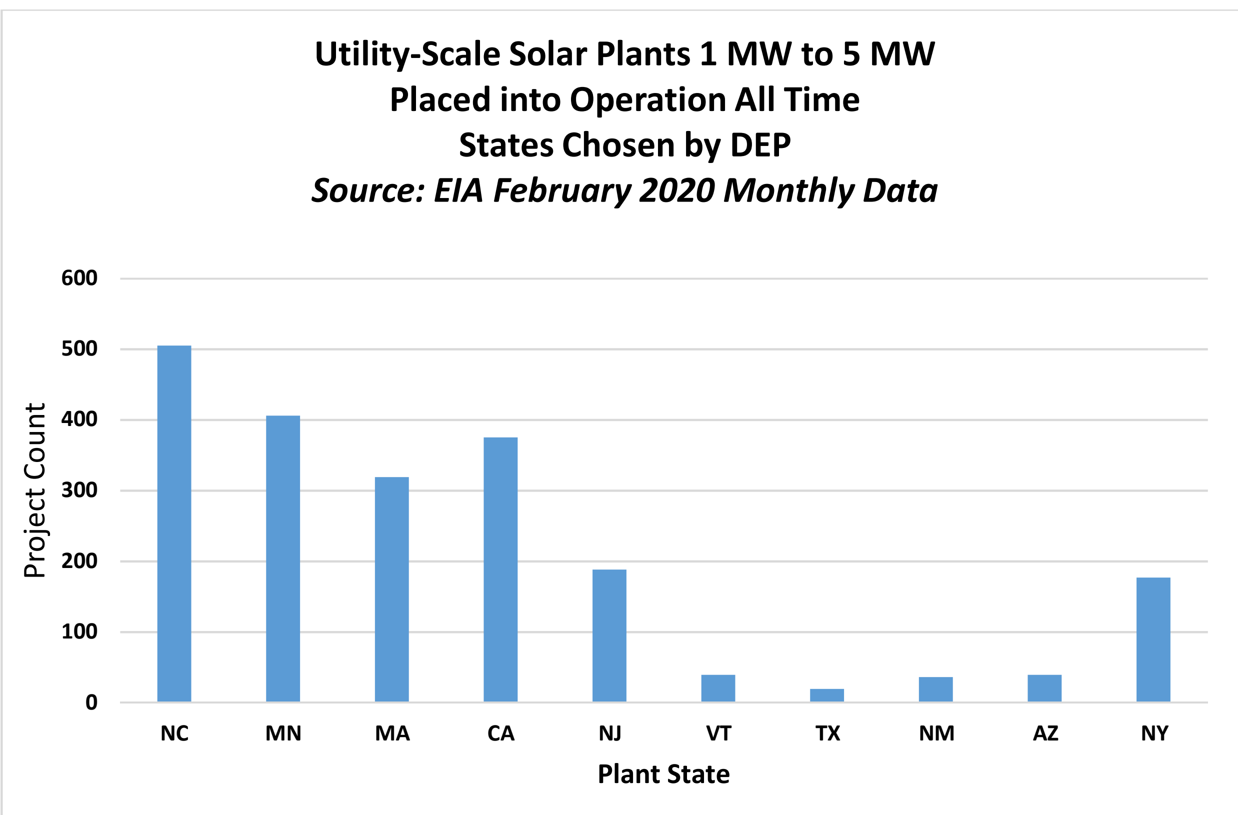
In the long-term, from an interconnection process perspective, this transition is expected to result in more efficient interconnection practices and will tend to minimize upgrade costs by selecting projects that are located in favorable grid locations.

In simple terms, it is much easier to study and interconnect a single cost-effective 80 MW transmission-connected project identified through CPRE than it would be to study and interconnect 16 distribution-connected 5 MW projects, each of which must be carefully studied to ensure

Alternative Figure 1



Alternative Figure 2



From: James, Beckton [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A4D3A20F64F64A0480E66F9BCFF404D5-C55923 (337]
Sent: 3/26/2019 3:21:31 PM
To: Andreasen, Jack [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3b8ed4d8bc3241ea81b386284e7bbe74-JAndrea (48]
Subject: RE: True up labor calculation

Jack,

The labor shown on the cost driver report comes from the Resource Type Summary page.
It is difficult to assign the overhead burdens to the contract labor, so I include all of the Duke overhead allocations under Duke labor.

SYSTEM IMPROVEMENT SUMMARY		
System Improvement Estimate	**System Improvement Actual Cost**	**Variance**
$ 121,866.59	$ 313,426.84	$191,560.25

Description:	1. Reconductoring to replace existing 3 - #1 CHD circuit with 3-477 AAC circuit from DIS# 1326 to DIS# 1338 (approximately 0.389 miles). 2. Sectionalizing/protection to: a) Replace 3-100A fuses at DIS#2L023 with G&W Viper recloser b) Install new 3-100KS fuses at DIS#1339. c) Feeder Circuit Breaker settings change required. d) Replace 4E-140 “C” type reclosers at DIS# 1592 with V4E-140 “C” type reclosers. 3. Verify the substation regulator is set to either Ignore Mode or Co-Generation Mode (based on the control type).

Key Cost Drivers:	
Materials:	$117,916.94
Contractors:	$140,406.57
Duke Labor:	$55,103.33

Contractors	
Project ID CB	
Resource Type ID CB	(All)
Row Labels	**Sum of Monetary**

Duke Labor and Burd	
Project ID CB	(Multi Items)
Resource Type ID CB	(All)
Row Labels	**Sum o Mone Amou**
Allocated Fringes & Non Union	$2,67
Allocated Payroll Tax	$88
Allocated S&E (Non-Labor)	$39,68
Incentives Allocated	$10
Labor	$1,28
Labor Overhead Allocations	$9,83
Unproductive Labor Allocated	$24
Vehicle & Equip Chrbk (Alloc)	$27
Vehicle & Equip.	$1

Subtotal of Taxable costs	$	313,426.84
NC Utility Sales Tax - 7%	$	21,939.88
Total of System Improvement Costs Due Upfront	$	335,366.72

	Amount JD
Baseload Contract Labor	$140,406.57
Grand Total	**$140,406.57**

Chargeback	
Travel Expenses	$4
Grand Total	**$55,1**

Thanks,
Beckton

From: Andreasen, Jack
Sent: Tuesday, March 26, 2019 1:27 PM
To: James, Beckton <Beckton.James@duke-energy.com>
Subject: True up labor calculation

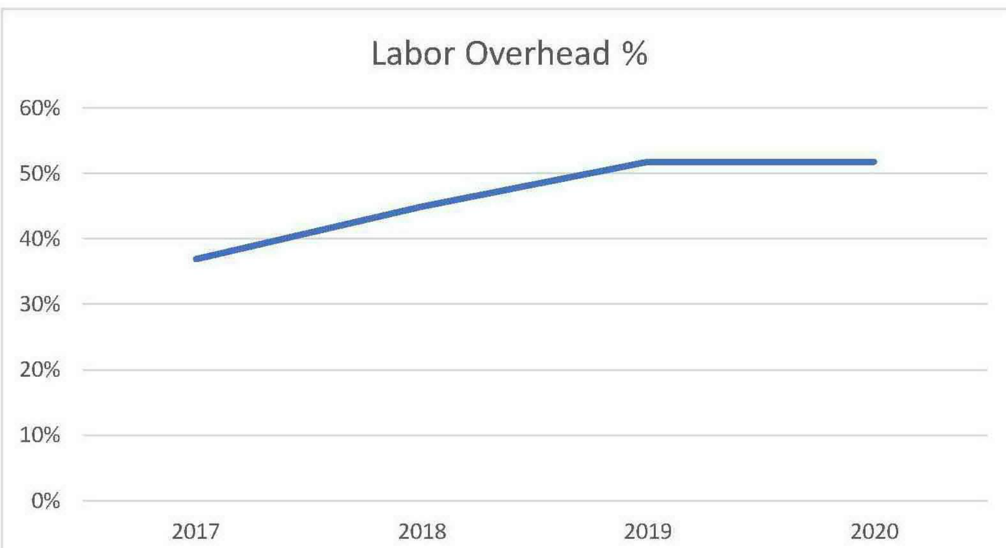
Hey Beckton,

I was checking out the "project data dump" tab in the attached final true up. I was hoping you could shed a little light onto how labor is calculated in this tab. We're trying to get a more granular look how the labor calculations actually look in these true-ups. Alongside of that, where does the guaranteed 60/hr week figure into this sheet?

Your help is always appreciated.

Best,
Jack Andreasen
Engineering Design Associate
Jack.Andreasen@duke-energy.com
Duke Energy 919-546-5305

Year	Manhour Labor Rate	Year	Labor Overhead %
2017	$66	2017	37%
2018	$71	2018	45%
2019	$74	2019	52%
2020	$84	2020	52%



Figures represent labor rate and labor overhead percentages used to develop cost estimates