ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 1 of 55

BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2019-326-E

In the Matter of: South Carolina Energy Freedom Act (House Bill 3659) Proceeding to Address S.C. Code Ann. Section 58-27-460(A)(1) and S.C. Code Ann. Section 58-27-460(A)(2) (Promulgation and Periodic Review of Standards for Interconnection and Parallel Operation of Generating Facilities to an Electrical Utility's Distribution and Transmission System)	)))))))))))))	**APPLICATION OF DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC FOR APPROVAL OF MODIFICATIONS TO SOUTH CAROLINA GENERATOR INTERCONNECTION PROCEDURES TO IMPLEMENT QUEUE REFORM AND APPENDIX DUKE CS**

Pursuant to S.C. Code Ann. § 58-47-460, S.C. Code Ann. Regs. 103-823, Order No. 2020-660, and other applicable rules and regulations, Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP," and, together with DEC, "Duke" or the "Companies"), by and through counsel, hereby submit to the Public Service Commission of South Carolina ("Commission") for expedited review and approval revisions to the South Carolina Generator Interconnection Procedures ("SC GIP") to enable a Cluster Study[1] process and to transition the Companies' South Carolina generator interconnection study process to a Cluster Study process ("Queue Reform Proposal").

[1] All capitalized terms not otherwise defined herein shall have the meaning assigned to them in the Appendix Duke CS, being filed as Attachment 2 to this Application.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 2 of 55

Through this Application, DEC and DEP respectfully request expedited Commission action to:

1) Approve limited enabling revisions to the current SC GIP presented as Attachment 1 to allow the Utilities subject to the SC GIP the option to implement an alternative Cluster Study interconnection study process. The changes proposed will allow Duke to transition to a Definitive Interconnection Study Process, while allowing Dominion Energy South Carolina, Inc. ("DESC") to continue to operate under the Section 4 serial generator interconnection study process included in the existing SC GIP until such time as DESC may propose an alternative Cluster Study interconnection study process;
2) Authorize Duke to transition the Companies' South Carolina generator interconnection study process to a Definitive Interconnection Study Process, consistent with the process recently authorized by the North Carolina Utilities Commission ("NCUC"), as further described in Section II;
3) Approve a new Duke-specific Appendix to the SC GIP ("Appendix Duke CS"), presented as Attachment 2, pursuant to which the Companies will administer the Definitive Interconnection Study Process, as further described in Section V; and
4) Terminate the Memorandum of Understanding between Duke, the South Carolina Office of Regulatory Staff ("ORS") and the South Carolina Solar Business Alliance ("SCSBA") approved by Order No. 2016-191 relating to the

Companies' administration of the pre-existing SC GIP study process, which shall now be subject to the terms and conditions of Appendix Duke CS.

The Companies' Queue Reform Proposal furthers the goals of Act 62 to improve the fairness and effectiveness of the South Carolina generator interconnection process, while also ensuring that all interconnection-related costs continue to be assigned to Interconnection Customers and not to retail customers.

The Companies have invested significant time and effort to engage with the SCSBA and other interested stakeholders in both South Carolina and North Carolina to develop the Queue Reform Proposal. Through these efforts, the Companies believe that consensus has been achieved with SCSBA and Duke is not aware of any opposition to the Queue Reform Proposal from ORS or other stakeholders. Accordingly, the Companies respectfully request that in lieu of pre-filed testimony and an evidentiary hearing, the Commission request comments on the Companies' Queue Reform Proposal to be filed by parties within 30 days from the filing of this Application (on or before December 17, 2020). The Companies request 14 days to provide reply comments in response to the comments filed by parties, should circumstances warrant. Thereafter, the Companies respectfully request the Commission to issue a directive on the Companies' Application on or before January 20, 2021, to be followed within 30 days by a final order. Given the significant amount of stakeholder collaboration that has resulted in this consensus approach to queue reform in the Carolinas and the fact that there are no known issues remaining in dispute pertaining to the Queue Reform Proposal, it is appropriate for the Commission to issue a decision on the Queue Reform Proposal based on the filings by the parties, in lieu of an evidentiary hearing. As described further herein, regulatory approvals are also required from the Federal Energy

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 3 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 4 of 55

Regulatory Commission ("FERC") in order to implement the Queue Reform Proposal, and such filings at FERC are dependent upon the approval of the Queue Reform Proposal by this Commission. Moreover, as also described herein, the development of additional renewable energy in the Carolinas is largely dependent upon solving the regulatory challenges discussed in Section III, which the Queue Reform Proposal is designed to address. The consideration of these issues in totality justify the Commission's consideration of this Application based upon the filings by the parties in the docket, as permitted under S.C. Code Ann. Regs. 103-817(C)(2).

In support of this Application, the Companies show the Commission the following:

I. INTRODUCTION AND SUMMARY OF REQUEST

The Companies are responsible for safely and reliably interconnecting new generating facilities to the Companies' distribution and transmission systems. The Commission has adopted the SC GIP to regulate the Companies' process for studying Interconnection Requests submitted by South Carolina Interconnection Customers subject to the Commission's jurisdiction, including qualifying facilities ("QFs") under the Public Utility Regulatory Policies Act of 1978 ("PURPA"). Under the SC GIP, such projects have traditionally been processed and studied on a "first come, first served" basis in a "serial queue" based upon the timing of their submission of an Interconnection Request. The Companies similarly administer generator interconnection queueing and processing under interconnection procedures adopted by the FERC and the NCUC, which have also traditionally used a serial queueing and study process.

Duke has achieved tremendous success interconnecting new renewable energy capacity, primarily utility-scale solar, to the grid. However, as further described in Section III below, significant reform is needed to address the growing challenges and complexities

facing Duke's generator interconnection process in the Carolinas. The existing serial queuing and study process is no longer capable of managing the significant number of new Interconnection Customers requesting to connect to the Duke systems, particularly in light of the increasing need to make substantial upgrades to the Companies' distribution and transmission systems to interconnect new generation.

The Companies' Queue Reform Proposal is designed to transition the Duke interconnection process to a Cluster Study approach where the "first ready" projects are clustered and studied together and the costs to interconnect are allocated amongst Interconnection Customers based upon their relative impact to the grid. The Companies' Queue Reform Proposal builds on Cluster Study frameworks developed and implemented by other utilities across the country and is designed to provide significant flexibility to Interconnection Customers early in the study process while also reducing risk and increasing business certainty as Interconnection Customers progress towards an Interconnection Agreement. The Definitive Interconnection Study Process is also designed to reduce speculative projects entering the queue by requiring Interconnection Customers to demonstrate project "readiness"—*i.e*, the right to sell power from the facility via a binding contract—or to provide increased financial security if the project cannot demonstrate readiness or risk a Withdrawal Penalty if the project fails to achieve commercial operation.

In sum, Duke's proposed Definitive Interconnection Study Process will reduce the number of speculative projects entering the queue and will enable the Companies to more timely, fairly and efficiently process new Interconnection Requests. As such, the Companies' Queue Reform Proposal will help to achieve Act 62's goals of fashioning generator interconnection procedures that allow for a continued transition to higher

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 5 of 55

penetrations of distributed energy resources, while ensuring that the generator interconnection process is efficient and fair, reasonable, and non-discriminatory for all customers.[2]

Recognizing the importance of stakeholder input and support to address existing interconnection challenges and to improve the efficiency of the generator interconnection process, Duke has engaged in a robust stakeholder process since March 2019 to discuss queue reform in the Carolinas. Through these efforts, Duke has refined its initial Queue Reform Proposal and has achieved significant stakeholder consensus regarding the implementation and administration of the proposed Definitive Interconnection Study Process. The Companies provide further details on this stakeholder engagement in Section II.

Finally, it is important to highlight that the Companies operate integrated transmission systems and, in some areas, distribution systems that extend across state lines throughout the Companies' service territories in both South Carolina and North Carolina. Moreover, many Interconnection Customers interconnecting to the Companies' transmission systems are subject to FERC-approved generator interconnection procedures under the Companies' Open Access Transmission Tariff ("OATT"). The integrated nature of the Companies' systems and overlapping system impacts of new Interconnection Customers throughout the Carolinas necessitates coordinated and complementary regulatory approval by the NCUC and the FERC. Commission approval is a critical step in Duke's ongoing process to obtain the needed regulatory approvals from the State and federal regulatory authorities in order to transition all Interconnection Customers to the Definitive

[2] *See* S.C. Code Ann. § 58-27-460(A)(3).

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 6 of 55

Interconnection Study Process in a timely manner. Accordingly, and in light of the significant pre-filing stakeholder efforts undertaken and the consensus already achieved, Duke believes the expedited procedural schedule requested herein is reasonable and appropriate.

II. PROCEDURAL BACKGROUND AND STAKEHOLDER ENGAGEMENT

The South Carolina Energy Freedom Act ("Act 62") recognized the importance of the generator interconnection process to adding renewable energy to the grid and directed the Commission to review the State's interconnection policies and procedures under S.C. Code Ann. § 58-27-460. To that end, on September 15, 2020, the Companies filed a joint request, together with DESC, SCSBA, and Southern Current, LLC, requesting the Commission address the directives from Section 58-47-460 in two phases of work, with this first phase to focus more narrowly on Commission approval of revisions to the SC GIP to allow the Companies to expeditiously undertake queue reform. The second phase of work, as approved by the Commission, will involve comprehensive revisions to the other portions of the SC GIP not implicated by the Duke Queue Reform Proposal, after a series of stakeholder meetings intended to seek consensus on proposed reforms.

The Companies have been engaging with stakeholders about this queue reform transition in the Carolinas for almost two years. The Companies began informally engaging with stakeholders in early 2019 and held a queue reform kickoff meeting on March 18, 2019. The Companies formalized the North Carolina-South Carolina stakeholder process in June 2019 after the NCUC determined in its most recent review of the North Carolina Interconnection Procedures ("NC Procedures") that the "current serial study process is unsustainable for the [Companies] based upon current and growing volumes of utility scale Interconnection Requests" and directed a formal queue reform

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 7 of 55

stakeholder process be initiated.[3] The Companies' queue reform stakeholder process has met 13 times since March 2019 and has included a broad spectrum of interested parties across both States.[4]

During the initial Stakeholder Meeting Nos. 1-5, the Companies addressed important interconnection policy issues such as the growing transmission system constraints on the Duke systems; benchmarking to other regional transmission organization's ("RTO")/independent system operator's ("ISO") and utilities' approaches to implementing Cluster Studies; the need for financial and/or project readiness commitments to ensure only commercially viable and non-speculative projects enter the cluster; cost allocation issues within the cluster study process; and ensuring a fair process for transitioning pending Interconnection Customers from the current serial process to a future-state cluster study process. On December 4, 2019, during Stakeholder Meeting No. 6, the Companies introduced Public Service Company of Colorado's ("PSCo") cluster study process recently approved by FERC,[5] and, on January 27, 2020, Duke held Stakeholder Meeting No. 7 to discuss the Companies' detailed Queue Reform Proposal. Since introducing the Companies' draft Queue Reform Proposal in January 2020, the Companies have held six additional stakeholder meetings to receive feedback on the Companies' Queue Reform Proposal. Attachment 3 to the Companies' Application details the robust stakeholder participation in Stakeholder Meeting Nos. 7-13 held throughout 2020.

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[3] *Order Approving Revised Interconnection Standard and Requiring Testimony and Reports*, at 60, N.C.U.C. Docket No. E-100, Sub 101 (June 14, 2019) ("June 2019 NC Interconnection Order").

[4] As noted, the Companies voluntarily initiated a stakeholder process in March 2019 prior to the *June 2019 NC Interconnection Order*.

[5] *Pub. Serv. Co. of Colo.*, 169 FERC ¶ 61,182 (2019) ("PSCo December 2019 Order Approving Queue Reform").

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 8 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 9 of 55

After over a year of stakeholder meetings, the Companies filed their Queue Reform Proposal with the NCUC on May 15, 2020. After filing the Queue Reform Proposal, the Companies and stakeholders continued to engage in an effort to resolve outstanding issues. On August 31, 2020, the Companies filed an updated Queue Reform Proposal that reflected nearly complete consensus with stakeholders, which the NCUC approved by Order issued October 15, 2020. The Companies have attached the NCUC's *Order Approving Queue Reform*[6], as Attachment 4 to this Application.

Most recently, the Companies' held Stakeholder Meeting No. 13 on October 30, 2020, to receive pre-filing input on the proposed Queue Reform Proposal in South Carolina, including allowing seven days for stakeholders to provide written comments after the meeting.[7] Duke incorporated stakeholder feedback received during the meeting and no additional comments were received raising specific concerns with the Queue Reform Proposal. Thus, through these continued efforts, Duke has substantially refined its initial Queue Reform Proposal and has achieved significant stakeholder consensus regarding how to most fairly and efficiently transition the SC GIP as well as the NC and FERC interconnection processes to a more definitive interconnection study process.

III. REGULATORY BACKGROUND AND NEED FOR QUEUE REFORM

Queue reform has been of increasing interest to the Companies, independent generation developers, and other stakeholders due the significant growth in utility-scale Interconnection Requests in the Carolinas and the evolving challenges managing the current serial generator interconnection process. Largely as a result of Duke's success

[6] *Order Approving Queue Reform*, N.C.U.C. Docket No. E-100, Sub 101(Oct. 15, 2020).

[7] In early 2019, Duke established a dedicated email box, queueform@duke-energy.com to enable stakeholders to provide written feedback on the stakeholder process and Queue Reform Proposal.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 10 of 55

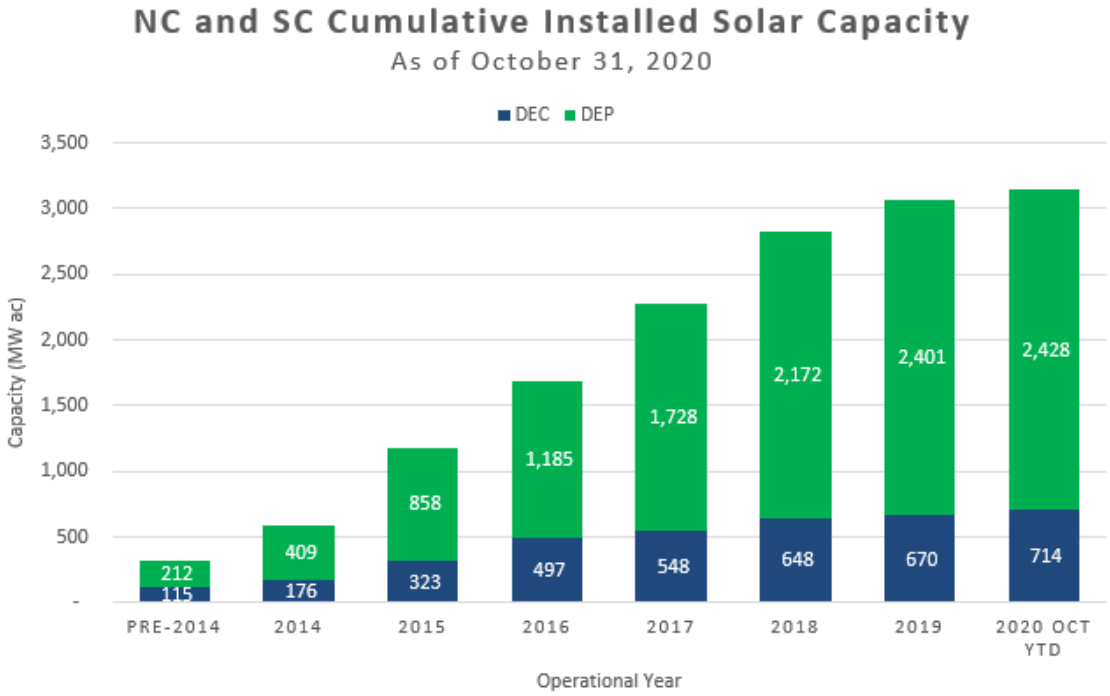
interconnecting new utility-scale solar to the DEC and DEP systems, it has become increasingly challenging to efficiently process Interconnection Requests, as substantial portions of the available capacity of the Companies' distribution and transmission systems have been consumed by solar generator interconnections. Before addressing the details of the Companies' Queue Reform Proposal, the Companies explain why queue reform is necessary and provide the "regulatory background" to Duke's Queue Reform Proposal to modify the SC GIP.

a. <u>Surging solar growth in the Companies' service territories has prompted need for Queue Reform</u>

Policies in both South Carolina and North Carolina have contributed to surging and sustained growth in utility-scale solar Interconnection Requests in the Companies' service territories. Since 2014, third-party installed utility-scale solar capacity across the Companies' systems has increased rapidly by over 2,600 megawatts ("MW") in DEC and DEP to approximately 3,140 MW as of October 31, 2020.[8] Figure 1 below depicts year-over-year growth in installed solar photovoltaic ("PV") capacity in DEP and DEC since 2014, and shows that DEP has approximately 2,430 MW of third party solar PV installed, while DEC has over 710 MW installed.

[8] The 3,142 MW installed in DEP and DEC in the Carolinas represents third-party QF installations and excludes approximately 140 MW and 79 MW of utility-owned utility-scale solar Generating Facilities owned and operated by DEC and DEP, respectively, as well as third-party solar Generating Facilities interconnected behind Duke wholesale customers in South Carolina and North Carolina within the DEC or DEP Systems.

Figure 1*



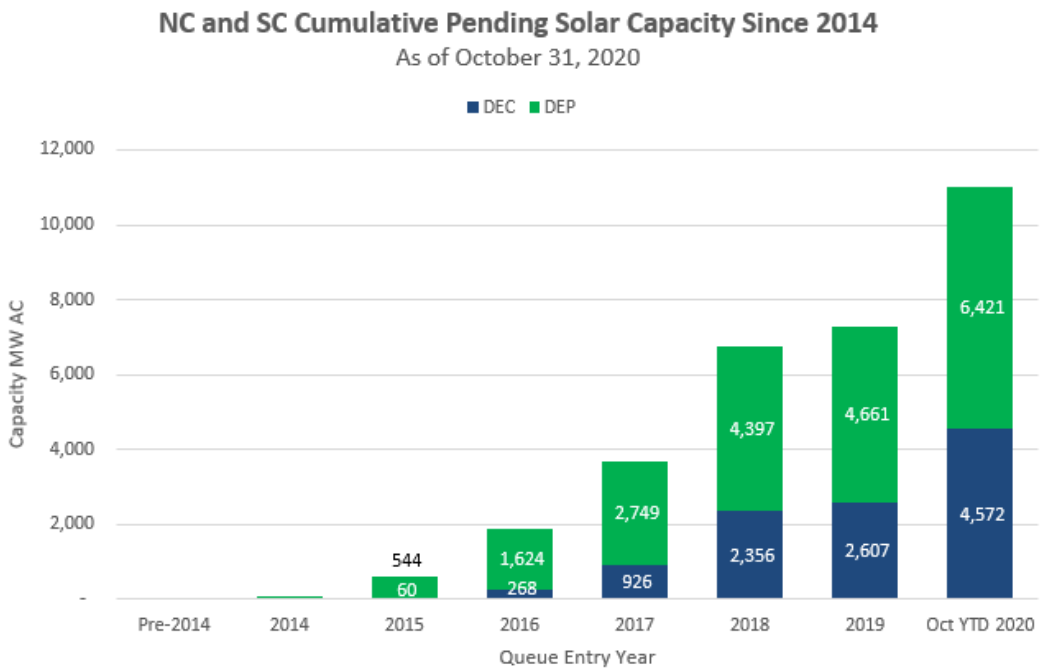
**Represents installed South Carolina and North Carolina solar capacity above 1 MW.*

The Companies are also continuing to experience significant utility-scale solar development with over 10,990 MW of additional proposed utility-scale solar projects requesting to interconnect and to sell power to the Companies, including 4,740 MW that are proposed to be sited in South Carolina, as of October 31, 2020. Figure 2 below depicts the growing levels of pending solar PV capacity requesting to interconnect to the DEC and DEP grids and reflects the significant continued interest in developing new utility-scale solar projects.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 11 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 12 of 55

Figure 2*



**Represents pending South Carolina and North Carolina solar capacity above 1 MW (excludes connected MW).*

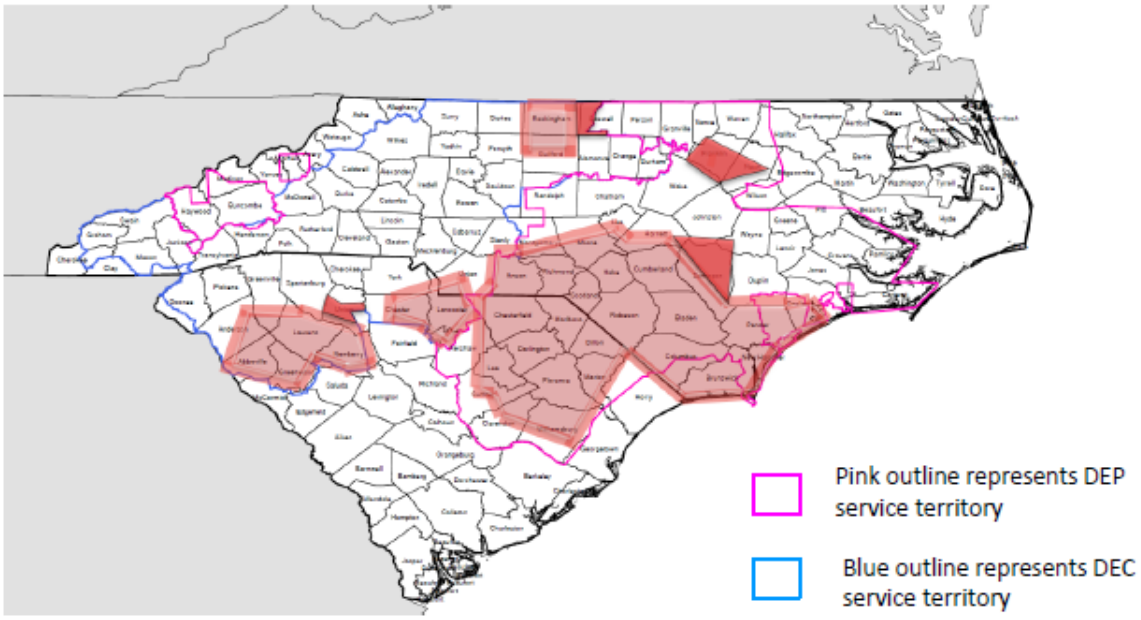
Many of the projects under development today are "speculative" in that the Interconnection Customer has not definitively committed to construct the project at the time it submits its Interconnection Request into the Companies' queues. Under the current serial study and Upgrade cost prioritization process, project developers are incentivized to submit projects early in the development process to obtain priority rights to available transmission capacity with little downside risk to withdrawing late in the interconnection study process.

The continued development of utility-scale solar projects has created growing areas of constraints on the DEC and DEP transmission systems. As the Companies first reported to the Commission in January 2019,[9] these constraints require the construction of

[9] Duke Energy Carolinas, LLC and Duke Energy Progress, LLC Generator Interconnection Report, Docket No. 2018-202-E (filed January 11, 2019).

significant new Network Upgrades to safely and reliably integrate new generating capacity into the DEP and DEC systems. Figure 3 shows the current areas of transmission system constraint across the DEP and DEC systems.[10]

Figure 3



Importantly, the cost of constructing new Network Upgrades required to safely and reliably integrate new generation into the DEC and DEP systems are estimated in the tens or even hundreds of millions of dollars. Under the current SC GIP's serial interconnection process, 100% of these costs are assigned to the earliest-queued projects triggering the need for Network Upgrades, even though later-queued projects may also benefit from the same Network Upgrades. In many cases, assignment of such significant Upgrade costs can make new generation projects infeasible, requiring the project to either pursue options to delay committing to fund the Network Upgrades—thereby disadvantaging other Interconnection

[10] *DEC DEP Generator Interconnection Requirements and Locational Guidance*, at Attachment 1 "DEC DEP Constrained Areas" (Aug. 5, 2019), *available at* https://www.oasis.oati.com/woa/docs/CPL/CPLdocs/DEP-DEC_Generator_Interconnection_Requirements_and_Locational_Guidance_8-5-2019_FINAL.pdf.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 13 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 14 of 55

Customers—or withdraw from the queue upon being presented with an Interconnection Agreement for execution. Under the current SC GIP serial interconnection process, once the Interconnection Customer initially assigned the Network Upgrades withdraws, the Network Upgrades are assigned to the next Interconnection Customer, which is, often, just as equally unable to fund such significant costs to interconnect. As more of these substantial Network Upgrades are triggered, there is a strong likelihood under the existing serial study process of a cascading "waterfall" of withdrawals, as one project after another is forced to exit the queue due to an inability to absorb the significant cost of such Network Upgrades.[11] The increasing inability of individual Interconnection Customers to fund the Network Upgrades required to interconnect new generation to the Companies' systems has created significant challenges to new renewable energy development in these constrained areas further supporting the need for queue reform.

b. <u>Existing queue management processes under the SC GIP are increasingly insufficient to meet current and future interconnection challenges</u>

The Commission issued Order No. 2016-191 on April 26, 2016, approving the current SC GIP. The SC GIP provides for a serial queuing and study process. The Commission also approved the Memorandum of Understanding between Duke, ORS, and

[11] The NCUC's recent *Order Approving Queue Reform* highlighted this point, explaining that

> The current serial approach to studying and processing Interconnection Requests has become problematic. In large parts of North Carolina it is not possible to add generation without the construction of expensive transmission upgrades. The current serial process assigns these upgrades to one generator, and the costs of these upgrades are typically too expensive for any one generator to absorb. The Commission agrees with parties who have stated that moving to a grouping study process is necessary in order to share the transmission upgrade costs among the multiple generation projects that contribute to the need for the transmission upgrades. The Commission determines that the revised queue reform proposal is structured to accomplish the objective of transitioning to a grouping study process.

SCSBA, incorporating a process for studying projects designated as "interdependent" on the Companies' systems, as Order Exhibit 2 to Order No. 2016-191 ("MOU").

As background, an Interconnection Customer's "queue priority" in the interconnection process is generally determined based upon timing, *i.e.*, when the Interconnection Customer establishes its Queue Number by submitting a complete Interconnection Request, relative to other Interconnection Customers. (*See* SC GIP § 1.6) Under the current serial study process, Queue Position also determines the assignment of Upgrade costs to safely and reliably interconnect the proposed generating facility relative to all other Interconnection Customers seeking to interconnect to a Utility's system. Queue position also generally determines the prioritization of study resources.

The MOU's "interdependency" prioritization standard modifies somewhat the SC GIP's purely serial "first in, first served" approach for projects seeking interconnection to the Companies' Systems.[12] Interdependency occurs where the Upgrade requirements of a particular Generating Facility are impacted by the Upgrade or Interconnection Facilities requirements of another Generating Facility with an earlier Queue Number.[13] The study of an Interdependent project may be delayed until the earlier-queued project(s) either commits to funding its Upgrades or withdraws from the queue. An interdependency has the potential to significantly delay the serial interconnection study process where, for example, multiple projects are requesting interconnection to the same distribution circuit. Thus, the "serial interdependency" queuing process approved in the MOU continues to require individual

[12] *See Order No. 2016-191, Order Exhibit 2, Attachment A.* The interdependency queuing and study processing requirements aligned the Duke study process in South Carolina with the interconnection process that had been in effect in North Carolina since May of 2015.

[13] Importantly, the interdependency queueing process only modifies Queue Position priority as to the *timing* of which projects are studied ahead of other projects. The interdependency provisions do not modify *cost assignment* prioritization, which remains serially assigned based upon the Interconnection Request's Queue Number submittal relative to other Interconnection Customers. (§ 1.7.1.)

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 15 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 16 of 55

studies for each Interconnection Request in Queue Number priority order, as well as assignment of the full costs to interconnect each individual Interconnection Customer.

In 2018 and again in 2019, the Commission also approved waivers of certain SC GIP queuing provisions to enable the Companies to deviate from the serial interdependency process for the limited purpose of administering the North Carolina Competitive Procurement of Renewable Energy ("CPRE") Program.[14] These waivers have allowed the Companies to more efficiently administer the interconnection cost evaluation process for Tranche 1 and Tranche 2 of the CPRE Program and, importantly, to allocate Upgrade costs amongst winning projects in CPRE, similar to a Cluster Study.

The current serial interdependency and the CPRE-related waivers have generally been beneficial in administering the CPRE Program and prioritizing study of the overall interconnection queue. However, these provisions have not enabled Duke to address the growing complexities of the study process as an increasing number of interdependencies have arisen on both Companies' distribution and transmission systems and the cost of required Network Upgrades to interconnect new generating facilities has increasingly exceeded the costs that a single Interconnection Customer can absorb. Accordingly, undertaking more significant queue reform by transitioning to the Definitive Interconnection Study Process is an important step in achieving the State's goals of continuing to facilitate the interconnection of new renewable energy facilities on the Companies' systems in a safe, reliable, and efficient manner.

[14] See *Amended Order Approving Tranche 1 and Granting Requested Waivers with Conditions*, Order No. 2018-803(A) Docket No 2018-202-E (Dec. 19, 2018); Order No. 2019-817, Docket No. 2018-202-E (Nov. 25, 2019).

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 17 of 55

c. Other utilities are also pursuing significant queue reform

Transitioning from a serial interconnection study process to a "first-ready, first-served" cluster study approach is a growing trend across the country. Queue reform efforts similar to the Companies' either have already occurred or are now occurring in other parts of the country where rapid growth in new renewable energy generation is occurring. These queue reform efforts have primarily occurred through reforms to FERC-jurisdictional generator interconnection processes,[15] both in regions where the generator interconnection process is administered by RTOs and ISOs as well as for non-RTO/ISO utilities administering their large and small generator interconnection processes.[16]

Cluster studies are used to administer the generator interconnection processes in RTO/ISO regions across the country including CAISO,[17] MISO,[18] PJM,[19] and ISO New England.[20] In non-RTO regions, FERC has also authorized utilities to achieve queue reform through transitioning from a traditional serial study process to a more definitive

[15] Not all states have developed robust state jurisdictional generator interconnection processes similar to the SC GIP and, therefore, rely upon utilities' FERC-approved small generator interconnection procedures ("SGIP") and large generator interconnection procedures ("LGIP") to study state jurisdictional interconnection requests.

[16] In December 2007, FERC held a technical conference on interconnection queue management, and its subsequent Order identified potential reforms that may improve interconnection queuing processes, including finding "merit in a first-ready, first-served approach, whereby customers who demonstrate the greatest ability to move forward with project development are processed first." *Order on Technical Conference*, 122 FERC ¶ 61,252 at P 18 (2008).

[17] *Order on Compliance Filing,* 170 FERC ¶ 61,112 (2020) (approving CAISO's generator interconnection process that utilizes a cluster study process).

[18] *Order Conditionally Accepting Tariff Filing*, 138 FERC ¶ 61,222 (2012) (conditionally accepting MISO's proposed revisions to its tariff to implement a "first ready, first served" generator interconnection process).

[19] *Order on Proposed Tariff Revisions,* 139 FERC ¶ 61,079 (2012) **(**approving PJM's filed modifications to its tariff to implement interconnection queue process reforms including cluster studies intended to relieve bottlenecks in the interconnection queue, improve the timeliness, quality, and significance of study results, provide for more consistent and realistic cost assessments, and increase transparency).

[20] *Order Accepting Tariff Revisions,* 161 FERC 61,123 (2017) (approving revisions to ISO New England's Open Access Transmission Tariff to incorporate a methodology for studying interconnection requests as a cluster rather than individually, as well as for allocating certain network upgrade costs needed to accommodate those interconnection requests on a clustered basis, when a specified set of conditions are present in the interconnection queue).

cluster study process. In 2011-2012, a number of utilities in the southwestern United States sought approval to reform their queue administration and Interconnection Request processing through adoption of cluster studies and other reforms.[21]

More recently, in a series of filings with FERC in 2018 and 2019,[22] Public Service Company of Colorado ("PSCo") proposed queue reform revisions to that utility's Large Generator Interconnection Procedures ("LGIP")[23] to address its queue backlog and create a more effective set of interconnection procedures by transitioning to a first-ready, first-served Cluster Study approach called the "Definitive Interconnection Study Process." In December 2019, FERC issued its Order approving PSCo's transition to the proposed Definitive Interconnection Study Process, finding that PSCo's proposed Definitive Interconnection Study Process was consistent with or superior to the *pro forma* LGIP. [24] FERC specifically found PSCo's proposed financial security and non-financial project readiness milestones options to be reasonable, finding that the "readiness milestones should help make the interconnection process more efficient for interconnection customers with projects that are ready to proceed through the queue, i.e., first-ready, first-served approach,

[21] *See, e.g., Ariz. Pub. Serv. Co.,* 137 FERC ¶ 61,099 (2011) (approving Arizona Public Service Companies' LGIP revisions implementing standardized six-month cluster studies and increasing initial deposit amounts for existing interconnection requests for which a feasibility study had not yet been commenced); *El Paso Elec. Serv. Co.*, 137 FERC ¶ 61,101 (2011) (approving El Paso Electric Company's revised LGIP implementing six-month queue cluster windows and requiring increasingly non-refundable study deposits for requests which had not executed a feasibility study agreement); *NV Energy, Inc.*, 142 FERC ¶ 61,165 (2013) (approving Nevada Power Company's proposal to create a pre-application requirement intended to ensure that interconnection customers had obtained the proper land permits for their projects, to eliminate feasibility studies, to adjust the required deposit amounts, and to group requests into standardized six-month clusters).

[22] PSCo initially petitioned FERC for approval of significant queue reform proposals in November 2018, which FERC denied by Order issued January 31, 2019. *Pub. Serv. Co. of Colo.*, 166 FERC ¶ 61,076 (2019), *reh'g denied*, 167 FERC ¶ 61,141 (2019). PSCo subsequently refiled its queue reform proposal with FERC in September 2019 in FERC Docket Nos. ER19-2774-000 and ER19-2774-001.

[23] *Pub. Serv. Co. of Colo.,* 169 FERC ¶ 61,182 (2019) ("PSCo December 2019 Order Approving Queue Reform").

[24] *See generally, PSCo December 2019 Order Approving Queue Reform,* 169 FERC ¶ 61,182.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 18 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 19 of 55

and PSCo's proposed options will provide interconnection customers with the flexibility to employ a variety of business models."[25] Finally, FERC found that imposing incrementally increasing withdrawal penalties for Interconnection Customers exiting the Definitive Interconnection Study Process and using the withdrawal penalty revenue to fund restudy costs is reasonable and would offset the significant cost of restudies for other customers caused by a customer's withdrawal.[26]

Most recently, on January 31, 2019, PacifiCorp submitted a queue reform proposal to FERC, requesting approval to transition from a serial study process to a definitive interconnection Cluster Study process similar to the process recently approved for PSCo.[27] The PacifiCorp queue reform proposal incorporated many design elements of the PSCo definitive interconnection study process.[28] PacfiCorp also proposed an annual cluster study process versus PSCo's two Cluster Studies per year.[29] On May 12, 2020, FERC issued an order approving PacifiCorp's queue reform proposal, finding that the reforms "represent a just and reasonable solution to address the backlog of generation interconnection requests in [PacifiCorp's] queue."[30]

The Companies and stakeholders have reviewed PSCo's and other utilities' queue reform initiatives and have incorporated many of these reforms into the Queue Reform Proposal in order to address the unique issues confronting the Companies' interconnection

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[25] *Id.* at P 50.
[26] *Id.* at P 51.
[27] PacifiCorp submitted its Application in FERC Docket Nos. ER20-924-000 and ER20-924-001 on January 31, 2020. *See Order on Tariff Revisions*, 171 FERC ¶ 61,112 at P 1 (2020) ("Order on PacifiCorp Queue Reform Proposal"). Due to PacifiCorp's filing occurring after Stakeholder Meeting No. 7 where Duke and stakeholders discussed Duke's detailed Queue Reform Proposal, the PacifiCorp proposal did not significantly influence Duke's Queue Reform Proposal design, although there are numerous similarities.
[28] *Order on PacifiCorp Queue Reform*, at PP 19, 68-70, 106-107, 114-123.
[29] *Id.* at PP 19, 48.
[30] *Id.* at P 7, 47. FERC's approval was conditional on PacifiCorp modifying certain aspects of its initial Proposal, as further described in the Order.

queues in the Carolinas. As explained further in Section V below, the Companies' Queue Reform Proposal incorporates much of PSCo's recently-approved Definitive Interconnection Study Process framework, but is tailored to the specific needs and concerns of DEC, DEP, and South Carolina and North Carolina stakeholders.

IV. SC GIP ENABLING REVISIONS IMPLEMENT CLUSTER STUDIES

Duke has proposed limited "enabling" revisions to the SC GIP that will allow Utilities administering the SC GIP the option to implement an alternative Cluster Study interconnection study process, and will specifically allow the Companies to implement the Definitive Interconnection Study Process through a new Duke-specific Appendix Duke CS. This approach to revising the SC GIP allows DESC to continue to process Interconnection Requests under the current serial study process and provides DESC flexibility to evaluate whether to transition to a Cluster Study Appendix (subject to the Commission's review and approval) in the future.

The enabling revisions to the SC GIP notify prospective Interconnection Customers that Duke is administering an alternative Cluster Study process through an Appendix (SC GIP §§ 1.1.4 and 4.1) and explain that the Interconnection Request deposit (SC GIP § 1.3.1.2) and Queue Number prioritization (SC GIP § 1.6) will be determined though the Cluster Study process set forth in the Utility-specific Appendix.

In sum, incorporating enabling provisions into the generally-applicable SC GIP while providing for a Utility-specific Appendix is just and reasonable as it enables Duke to proceed with a consistent Cluster Study framework across the Carolinas, while allowing DESC to continue to implement the existing serial study process with the flexibility to evaluate whether to undertake its own Cluster Study process in the future.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 20 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 21 of 55

V. DUKE ENERGY QUEUE REFORM PROPOSAL

The detailed implementation of Duke's Queue Reform Proposal is set forth in the proposed Appendix Duke CS to the SC GIP. This section addresses the objectives of Duke's Queue Reform Proposal and provides the Commission an overview of the key provisions of the Appendix Duke CS.

a. Queue Reform Objectives

The basic building block of Duke's Queue Reform framework is to evaluate the system impacts and associated upgrade costs of all Interconnection Requests entering the queue through a "Cluster Study." (*See* SC GIP Attachment 1 Glossary of Terms now defining "Cluster Study"). Unlike the current serial process, where each Interconnection Request is generally studied and assigned Upgrades serially based on the time the Interconnection Request is submitted, a Cluster Study approach enables multiple Interconnection Customers to be studied at the same time. Duke's Queue Reform Proposal is a Cluster Study approach that will better accommodate ready or near-ready projects entering the queue by implementing two complementary concepts.

First, the Definitive Interconnection Study Process will enable Duke to provide more flexibility for developers who desire to obtain interconnection and Upgrade cost information before entering the queue. Similar to PSCo, Duke's Queue Reform Proposal offers an optional Informational Interconnection Study, which will allow prospective Interconnection Customers to make more informed business decisions about the feasibility of a proposed Interconnection Request. Once an Interconnection Request is submitted and a project enters the Definitive Interconnection Study Process, Duke has also committed to a robust customer engagement process both prior to commencing the Definitive

Interconnection System Impact Study ("DISIS") and after each DISIS study phase in order to provide Interconnection Customers with increasingly detailed information regarding the timing and cost of the proposed interconnection.

Second, the Definitive Interconnection Study Process will provide greater certainty to developers that are ready to interconnect by incentivizing Interconnection Customers to submit only commercially viable "ready projects" into the Definitive Interconnection Study Process, so that all Interconnection Customers can proceed through the interconnection process with fewer delays and disruptions. The Definitive Interconnection Study Process is designed to incent such "ready projects," and thereby to improve certainty for all developers, by requiring Interconnection Customers to meet specified project milestones throughout the study process that demonstrate increasing readiness to achieve commercial operation (or increasing financial commitment where readiness cannot be demonstrated). The Definitive Interconnection Study Process also imposes increasing financial penalties for Interconnection Customers that enter the DISIS and then withdraw and harm other ready projects that are delayed and required to be restudied. By structuring the Definitive Interconnection Study Process to incentivize submission of only ready projects (and dis-incentivizing speculative or non-ready projects), the proposed Cluster Study process will group projects together to share Upgrade costs and minimize the delays that can arise from interdependencies and cascading re-studies when higher queued projects withdraw from the queue.

In sum, the Definitive Interconnection Study Process is designed to meet the queue management challenges currently being experienced in the Carolinas and will enable each Interconnection Customer to continue to refine its understanding of its own project,

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 22 of 55

individually and in relation to other potential projects in the DISIS Cluster. The Definitive Interconnection Study Process will also provide greater certainty for all Interconnection Customers by requiring increasing demonstrations of project readiness and/or financial commitments during the study process to ensure all projects within the DISIS Cluster will achieve commercial operation and pay their allocated portion of System Upgrades.

b. <u>Major Provisions of the Definitive Interconnection Study Process</u>

i. <u>Informational Interconnection Study (Appendix Duke CS § 4)</u>

Appendix Duke CS Section 4 details the optional[31] Informational Interconnection Study process available to prospective Transmission Level Interconnection Requests, which is similar in concept to the existing SC GIP Section 1.2 Pre-Application Report.[32] Pursuant to Appendix Duke CS Section 4, a prospective Transmission Level Interconnection Customer can request that Duke perform an Informational Interconnection Study at any time prior to submitting an Interconnection Request and at the Interconnection Customer's cost.[33] The prospective Interconnection Customer would submit an Informational Interconnection Request Form and then enter into an Informational Interconnection Request Agreement with the Utility. (Appendix Duke CS §§ 4.2-4.3,

[31] Although Duke offers the Informational Interconnection Study so that Interconnection Customers can evaluate their Interconnection Request prior to entering the queue, Duke does not require that Interconnection Customers must complete an Informational Interconnection Study prior to entering the Definitive Interconnection Study Process. Developers may have other means to evaluate optimal interconnection locations and may incorporate such considerations as part of their own business planning to determine whether a project is ready to enter the Definitive Interconnection Study Process.

[32] Based upon stakeholder feedback, Duke will also continue to offer Pre-Application Reports to Transmission Level Interconnection Customers under Section 1.2. However, the information provided in a Pre-Application Report is limited to readily available System information and does not require Duke to undertake any studies or to assess the impact of interconnecting a prospective Generating Facility on the System.

[33] Allowing a prospective Interconnection Customer to contract for an Informational Interconnection Study "at any time" allows the developer to evaluate a prospective Generating Facility either during the 180 day DISIS Request Window prior to a DISIS Cluster commencing or while an earlier DISIS Cluster is underway. Duke (or its designated contractor) will evaluate the prospective Generating Facility using the current Base Case model at the time the Informational Interconnection Study request is made.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 23 of 55

Attachment 3). The Informational Interconnection Study scope may be limited, much like a traditional Feasibility Study, or may be expanded to encompass a full System Impact Study analysis that includes fully analyzing the power-flow, voltage, stability, and short circuit impacts of the proposed Generating Facility on the System. (Appendix Duke CS § 4.4.1)

Informational Interconnection Studies are non-binding and for informational purposes only (similar to a SC GIP Section 1.2 Pre-Application Report) and a prospective Interconnection Customer must still enter the interconnection queue and be studied as part of a Cluster Study in order to enter into an Interconnection Agreement. (Appendix Duke CS §4.4.1) Because of the varied scope of these studies, the actual costs and time to complete the Informational Interconnection Study may vary. As agreed to with stakeholders, and consistent with Duke's North Carolina-approved Informational Interconnection Study process, Duke proposes to require a $10,000 deposit for the Informational Interconnection Study subject to true-up based on actual costs.[34] Additionally, and at the request of stakeholders, Duke also plans to develop a standardized Informational Interconnection Study scope of work to be offered at a predetermined cost and time to complete.[35] The standardized Informational Interconnection Study scope(s) of work will be posted on the Companies' interconnection website.

[34] Duke's proposal is also consistent with PSCo's FERC-approved OATT. *Order on Tariff Filing,* 169 FERC ¶ 61,182, at P 10 (2019).

[35] Duke is currently evaluating contracting with third-party vendors to complete the Informational Interconnection Study, which will inform the cost of the standardized scope of work to be offered.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 24 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 25 of 55

ii. Definitive Interconnection Study Process Overview

Similar to the Cluster Study process recently adopted by PSCo (and the approach approved for Duke by the NCUC), Duke proposes to implement its Cluster Study process using a multi-phase Definitive Interconnection Study Process.

Duke plans to study all Interconnection Customers (SC, NC, and FERC) through the same Definitive Interconnection Study Process. However, as identified in Section I of Appendix Duke CS, net energy metering ("NEM") projects, as well as power export Interconnection Customers up to 250 kilowatts (kW) will be exempted from the Definitive Interconnection Study Process, providing a simpler and likely faster path to interconnection for such customers. All non-NEM Interconnection Customers above 250 kW will continue to be evaluated for potential Transmission System impacts through the Section III study process, and, if identified, will be informed of the need to enter the Definitive Interconnection Study Process.

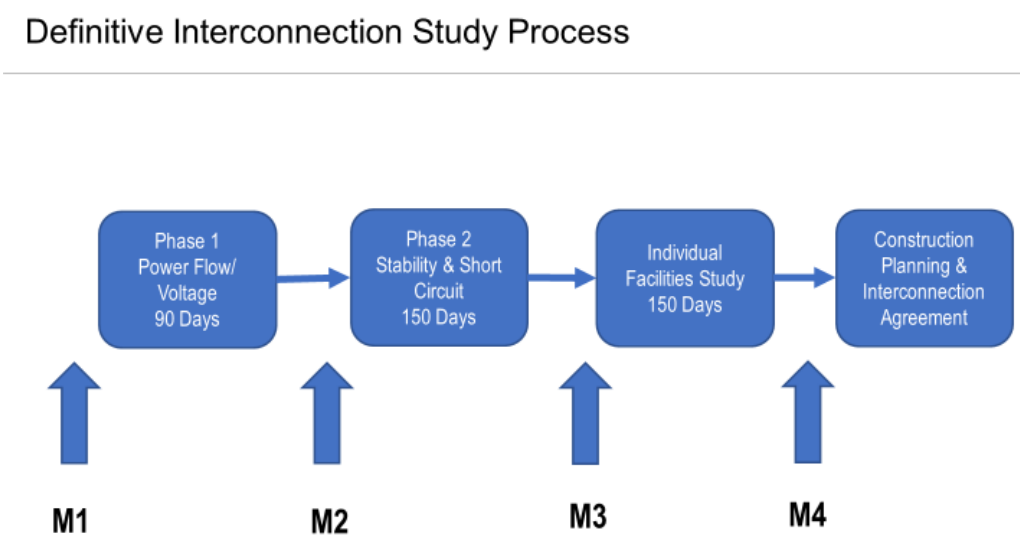
The Definitive Interconnection Study Process will occur annually and consists of four main phases: (1) the 180-Day DISIS Request Window; (2) an initial pre-DISIS Customer Engagement Window; (3) the DISIS, consisting of Phase 1, Phase, 2 and, potentially Phase 3 studies; and (4) Facilities Study.

Under the Definitive Interconnection Study Process, the risk of project delay and need to restudy Interconnection Requests is managed by requiring increasing levels of project readiness and more significant financial commitments as Interconnection Customers move through the process. As described earlier, Interconnection Customers must meet specified project milestones that demonstrate increasing readiness to achieve commercial operation (or increasing financial commitment where readiness cannot be

demonstrated) over the course of the Definitive Interconnection Study Process. The milestone or increased financial commitment must be satisfied before moving to the next phase of the DISIS or the Interconnection Request will be withdrawn from the queue (and such withdrawn Interconnection Requests may re-enter a future Cluster Study).

For example, as shown in Figure 4 below and explained in greater detail below, Readiness Milestone 1 ("M1") must be satisfied before moving to DISIS Phase 1, Readiness Milestone 2 ("M2") must be satisfied before moving to DISIS Phase 2, Readiness Milestone 3 ("M3") must be satisfied before moving to the SC GIP Section 4.5 Facilities Study and Readiness Milestone 4 ("M4") must be satisfied before moving to the SC GIP Section 5 Construction Planning and Interconnection Agreement execution phase. Figure 4, which is also proposed to be included as Appendix Duke CS Attachment 4, provides an overview of the Definitive Interconnection Study Process:

Figure 4



ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 26 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 27 of 55

1. *Customer Enrollment During DISIS Request Window (Appendix Duke CS § 5.3.1)*

Prior to commencing the DISIS, each Utility will offer enrollment into the upcoming annual DISIS Cluster during a 180-day DISIS Request Window. (Appendix Duke CS § 5.3.1) During this period, Interconnection Customers may submit Interconnection Requests to be included in the upcoming DISIS Cluster.[36] The DISIS Request Window will be open annually from January 1 to approximately June 30.[37] If one or more valid Interconnection Requests are received, Duke will commence the initial Customer Engagement Window prior to initiating the DISIS.

2. *Increased Study Deposits for Larger Interconnection Customers Entering DISIS (Appendix Duke CS § 2.2)*

To enter the Definitive Interconnection Study Process and be studied during a DISIS Cluster, Interconnection Customers must submit a valid Interconnection Request before the close of the DISIS Request Window. (Appendix Duke CS §§ 2.2, 5.3.1) Due to the increased complexity and cost of administering the Definitive Interconnection Study Process, Duke is proposing to modify the initial study deposits for the Definitive Interconnection Study Process using a tiered approach as shown in Figure 5 below:

[36] Interconnection Customers will continue to receive a Queue Number for administrative purposes; however, SC GIP Section 1.6.1 makes clear that queue priority is at the Cluster Study level such that all Interconnection Requests studied in a single Cluster Study shall be considered equally queued.

[37] As discussed above, Duke also plans to seek FERC approval to transition all Duke Interconnection Customers to a consistent Definitive Interconnection Study Process. In the interest of transparency, Duke identifies the potential that the initial DISIS Request Window may need to be extended beyond June 30, 2021, to obtain all needed regulatory approvals and to complete the transition study process. Duke plans to seek a waiver from the Commission if these circumstances arise.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 28 of 55

Figure 5

Size of Project Associated with Interconnection Request	Amount of Deposit
Less than 1 MW	$10,000+ $1/kW
Greater than 1 MW But less than 20 MW	$20,000+ $1/kW
Greater than 20 MW, But less than 50 MW	$35,000 + $1/kW
Greater than 50 MW	$50,000 + $1/kW

These deposit amounts for larger projects above 1 MW are identical the study deposits approved in North Carolina and were agreed to as part of the recent stakeholder process.[38] The tiered approach to the study deposit is designed to balance the burden of requiring a higher upfront study deposit to establish an Interconnection Request with the recognition that Interconnections Customers are obligated to pay the Utility's actual costs of implementing the Definitive Interconnection Study Process.

Duke has also incorporated clarifying language in SC GIP Section 1.2.1.2 and in Appendix Duke CS Section 2.1 that the study deposit shall be applicable towards the Utility's cost of administering the generator interconnection process.

3. Pre-DISIS Customer Engagement Window (Appendix Duke CS § 5.3.1)

The initial Customer Engagement Window offers Interconnection Customers additional Cluster-specific information in order to inform their ongoing decision-making about whether to enter the DISIS. During this Customer Engagement Window, Duke will work with Interconnection Customers to verify data and obtain all information needed to

[38] The deposits are also lower than the initial deposit amounts required under the PSCo Definitive Study Process. PSCo's study deposit amounts are as follows: $75,000 for requests between 20 MW and 50 MW; $150,000 for requests 50 MW and greater, but less than 200 MW; and $250,000 for requests of 200 MW and greater. *PSCo December 2019 Order Approving Queue Reform*, 169 FERC ¶ 61,182, at P 31.

build study models, cure any deficiencies in the Interconnection Request(s), and generally prepare for the start of the DISIS. (Appendix Duke CS §§ 2.3, 5.2, 5.3.1)

During the initial Customer Engagement Window, Duke will hold a Scoping Meeting for all current Interconnection Customers that entered the queue during the DISIS Request Window. The purpose of the Scoping Meeting is to discuss the upcoming DISIS Cluster, including evaluating alternative interconnection options; to exchange information, including any available transmission data that would reasonably be expected to impact such interconnection options; to review such information; and to determine the potential feasible Points of Interconnection. At the close of this Scoping Meeting, the objective is for each Interconnection Customer to have a definitive project size and Point of Interconnection to facilitate an efficient Cluster Study. Specifically, an Interconnection Customer must select a single definitive Point of Interconnection to be studied no later than the execution of the Definitive System Impact Study Agreement. (Appendix Duke CS § 4.2.5) In addition, an Interconnection Customer must also provide affirmation of site control for the proposed Generating Facility site and for all required Interconnection Facilities to the designated Point of Interconnection no later than commencement of Phase 1 of the DISIS process described in Appendix Duke CS Section 5.3.7.1.

During this preliminary phase of the process, the Interconnection Customer has submitted an Interconnection Request and study deposit but has not signed a DISIS Agreement or committed to M1 and, therefore, is not subject to a potential Withdrawal Penalty for exiting the queue. An Interconnection Customer withdrawing during the initial Customer Engagement Window would receive a refund of its initial Study deposit under Appendix Duke CS Section 5.6, subject only to assigned initial overhead and queue

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 29 of 55

administration costs.[39] Prior to the conclusion of the initial Customer Engagement Window, Duke will provide an updated estimate on the anticipated allocated cost of completing the DISIS[40] and all Interconnection Customers electing to proceed into the DISIS Cluster must: (i) execute a Definitive System Impact Study Agreement; (ii) provide initial security equal to one (1) times the study deposit; and (iii) achieve the M1 readiness milestone or provide increased financial security (2 times the initial study deposit) in lieu of demonstrating readiness. (Appendix Duke CS §§ 5.31, 5.3.10, 5.311)

4. DISIS (Appendix Duke CS §§ 5.3.5 – 5.3.7)

Appendix Duke CS Section 5.3 describes the implementation of the DISIS Cluster Study process for DEC and DEP. Appendix Duke CS Section 5.3 begins by outlining the procedures necessary for the initiation of a DISIS Cluster and allows for the implementation of the DISIS Request Window and Customer Engagement Window that occurs prior to the DISIS study phases.

Pursuant to Appendix Duke CS Section 5.3.5, an Interconnection Customer must execute a DISIS Agreement (included as Attachment 5 to Appendix Duke CS) no later than the close of the Customer Engagement Window or its Interconnection Request will be withdrawn. Once executed and the initial security and/or M1 commitments are made, an Interconnection Customer proceeds to the first phase of the DISIS.

Appendix Duke CS Section 5.3.6 describes the scope of the DISIS. The DISIS consists of three discrete phases: (1) Phase 1 is an initial 90-day power-flow and voltage

[39] Currently, the pre-System Impact Study overhead and queue administration costs are $3,000. These costs will likely increase due to the more robust customer engagement and scoping meeting process contemplated prior to the DISIS.

[40] The allocated cost to complete the DISIS is dependent upon how many Interconnection Customers enter the DISIS Cluster. Study cost allocation is addressed in Appendix Duke CS Section 5.3.3 and is discussed further below.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 30 of 55

study, (2) Phase 2 is a detailed 150 day stability and short circuit study, and (3) Phase 3 provides for restudying of the power flow/voltage analysis, short circuit analysis, and/or a stability analysis, as needed, if an Interconnection Customer(s) withdraws from the DISIS Cluster or otherwise modifies its Interconnection Request such that the results of the DISIS are no longer accurate.[41]

Appendix Duke CS Section 5.3.7 outlines the procedures Duke must follow to implement each phase of the DISIS and describes the ongoing customer engagement and reporting process that will occur after Phase 1, Phase 2, and Phase 3 (if necessary), culminating in a final Post-DISIS Report and Report Meeting. Appendix Duke CS Section 5.3.7 also identifies the required timing for the Readiness Milestones applicable to Interconnection Customers proceeding through DISIS to Facilities Study. These Readiness Milestones are discussed in detail in section V.B.8 below.

Pursuant to Appendix Duke CS Section 5.3.8, at the close of the final phase of the DISIS, Duke will furnish a final DISIS study report to Interconnection Customers within the DISIS Cluster and post the report on Duke's website. In addition, Duke will convene an open meeting to discuss the study results and will make itself available for individual Interconnection Customer meetings as well. At this point, the DISIS will be completed and those Interconnection Customers wishing to proceed to Facilities Study may do so. Interconnection Customers proceeding to Facilities Study will be studied independently similar to the process that exists today.[42]

[41] If the Cluster is stable (e.g., no changes to the modeling assumptions), and if no Interconnection Requests withdraw after the Phase 2 study report is published, then the Cluster Study will omit the Phase 3 study. *See* Appendix Duke CS § 5.3.7.2.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 31 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 32 of 55

5. Expedited DISIS for Distribution-Level Interconnection Customers Not Causing or Contributing to Network Upgrades during Phase 1 (Appendix Duke CS § 5.3.7.1)

Duke has also designed the DISIS to accommodate distribution-level Interconnection Customers determined during the initial Phase 1 study not to cause or contribute to the need for Network Upgrades.[43] (Appendix Duke CS § 5.3.7.1) Duke will notify the Interconnection Customer during the post-Phase 1 Customer Engagement Window and offer to complete an individual distribution-level System Impact Study instead of proceeding further to Phase 2 of the DISIS. Under this process, such identified Interconnection Customers can more expeditiously proceed to Facilities Study and an Interconnection Agreement versus awaiting completion of the more detailed Phase 2 Study (and potential Phase 3 re-studies) required through the DISIS Cluster Study. These projects also avoid DISIS costs after Phase 1 and will be directly assigned only their study costs to complete the distribution-level System Impact Study. (Appendix Duke CS § 5.3.3)

6. Resource Solicitation Cluster (Appendix Duke CS § 5.3.2)

In addition to the general DISIS Cluster Process, Duke has also incorporated an alternative Resource Solicitation Cluster process similar to North Carolina and the PSCo DISIS process to govern the initiation and administration of a Resource Solicitation Cluster under a Commission-approved Competitive Resource Solicitation. The inclusion of Resource Solicitation Cluster option will allow Duke flexibility to separately administer a cluster study specific to the North Carolina CPRE Program (or any other Commission-

[43] Phase 1 is a high level power-flow and voltage analysis that preliminarily identifies the Network Upgrades required to interconnect all Generating Facilities within the DISIS Cluster. The results from DISIS Phase 1 provide the Interconnection Customer with an initial look at its costs to interconnect before determining whether to proceed to Phase 2 and provide Readiness Milestone M2.

approved Resource Solicitation), in the event the necessary timing of the solicitation does not align with an annual DISIS Cluster.

7. *Allocation of Study Costs and Interconnection Facilities and Upgrade Costs to Interconnection Customers (Appendix Duke CS § 5.3.3 - 5.3.4)*

Under the current SC GIP, one hundred percent (100%) of study costs as well as the costs of Interconnection Facilities and Upgrades are directly assigned to the individual Interconnection Customer being studied and causing the costs to interconnect. Transitioning to a Cluster Study process where multiple Interconnection Customers are being studied and are contributing to the need for System Upgrades necessitates allocation of (1) the costs of completing the DISIS amongst Interconnection Customers within a DISIS Cluster (i.e., "study costs"); and (2) the costs of common Upgrades required to interconnect multiple Interconnection Customers proceeding through the DISIS Cluster.

Appendix Duke CS Section 5.3.3 describes the allocation of study costs for the DISIS Cluster. For the clustered DISIS portion of the Definitive Interconnection Study Process, study costs are allocated as follows: (1) ten percent (10%) of the applicable study costs to Interconnection Customers on a per capita basis based on number of Interconnection Requests included in the applicable Cluster; and (2) ninety percent (90%) of the applicable study costs to Interconnection Customers on a pro-rata basis based on requested megawatts included in the applicable Cluster.[44] Therefore, under Appendix Duke CS, the costs of completing the DISIS amongst Interconnection Customers within a

[44] Duke's proposed allocation of study costs is designed to allocate greater costs to larger Interconnection Customers within the Cluster and to thereby reduce the study costs allocated to smaller Interconnection Customers. For comparison, PSCo's Definitive Interconnection Study Process weighted both the per capita and pro-rata megawatt components equally at 50%. *See PSCo December 2019 Order Approving Queue Reform*, 169 FERC ¶ 61,182, at P 32.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 33 of 55

DISIS Cluster and the costs of common Upgrades required to interconnect multiple Interconnection Customers proceeding through the DISIS Cluster will be shared, as opposed to allocated 100% to a single Interconnection Customers as is the case under the serial study process.

Appendix Duke CS Section 5.3.3 also provides that an Interconnection Customer electing to exit the DISIS prior to Phase 2 commencing would only be responsible for its allocated share of study costs for completing Phase 1; however, the exiting Interconnection Customer would potentially be subject to a Withdrawal Penalty which would then be used to fund study costs of other Interconnection Customers remaining in the DISIS Cluster.[45] Where an Interconnection Customer proposes non-material changes to its Interconnection Request requiring limited project-specific restudy within the Cluster, those costs shall be directly assigned to the requesting Interconnection Customer.

Appendix Duke CS Section 5.3.4 establishes the allocation procedures that Duke will use to equitably allocate Upgrade costs (and potentially the cost of joint Interconnection Facilities) to Interconnection Customers within the Cluster based on the relative contribution of the Interconnection Customer to the need for the Upgrades. The cost of Interconnection Facilities continue to be directly assigned to Interconnection Customer(s) using such facilities, unless multiple Interconnection Customers are connecting to the Utility's System through shared Interconnection Facility(ies), which shall be allocated based on the number of Generating Facilities sharing that Interconnection

[45] As mentioned in Section V.B.5 above, a distribution-level Interconnection Customer that does not cause or contribute to Network Upgrades and that elect to proceed with a distribution-only System Impact Study would also be treated as exiting the DISIS Cluster after Phase 1 and would only be allocated its Phase 1 study costs. The remainder of its System Impact Study costs would be directly assigned similar to the process today.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 34 of 55

Facility on a per capita basis.

8. Readiness Milestones (Appendix Duke CS § 5.3.10)

The Definitive Interconnection Study Process requires Interconnection Customers to demonstrate increasing project readiness as part of the interconnection process to show that they are making sufficient progress toward achieving commercial operation. Duke has developed the proposed Readiness Milestones with the goal of allowing all viable projects seeking interconnection under the Definitive Interconnection Study Process to move through the queue, while also providing developers with the flexibility to demonstrate readiness in a variety of ways. Additionally, providing both non-financial project readiness demonstrations as well as an increased financial security option in lieu of project readiness affords Interconnection Customers flexibility to pursue a variety of business models and to elect the timing of when and how to definitively commit to a project, while also protecting other Interconnection Customers from the risk of non-ready projects withdrawing from the Cluster Study and causing time consuming and expensive restudies.

Appendix Duke CS Section 5.3.10 describes the options available for Interconnection Customers to provide the Readiness Milestones (M1, M2, M3, and M4) that must be satisfied (unless additional financial security is provided) as Interconnection Customers progress through the Definitive Interconnection Study Process.

At M1, all Interconnection Customers electing to enter the DISIS must provide initial security equal to 1 multiplied by their Appendix Duke CS Section 2.1 study deposit amount as well as provide an initial demonstration of non-financial project readiness (or additional financial security in lieu of demonstrating readiness as discussed further below).

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 35 of 55

To satisfy non-financial project readiness for M1 and M2, the Readiness Milestone options are consistent and allow an Interconnection Customer to demonstrate readiness by providing evidence of one of the following:

a) Executed term sheet (or comparable evidence of legally enforceable obligation) related to a contract, binding upon the parties to the contract, for sale of the Generating Facility's energy, where the term of sale is not less than five (5) years, or

b) Reasonable evidence the project has been selected by the Utility in a Resource Plan or is offering to sell its output through a Resource Solicitation Process.

The first readiness demonstration option at M1 allows a project to satisfy readiness by showing a definitive intent to enter into a long-term contract for sale of the Generating Facility's output over a period of five years or longer. An Interconnection Customer with an executed term sheet (such as under the Green Source Advantage Program) or that has established a legally enforceable obligation via a Commission-approved Notice of Commitment Form to sell its output to Duke under PURPA, would meet this requirement.[46] Similarly, an Interconnection Customer that is offering to sell its output through a Resource Solicitation Process, such as the CPRE Program, also meets these readiness requirements along with a Generating Facility that has been selected by the Utility under its most recent Integrated Resource Plan ("IRP").[47] Achieving these initial readiness demonstrations

[46] Stakeholders have identified that potential inconsistencies exist between the South Carolina Notice of Commitment form (and the standard for establishing a "legally enforceable obligation" as set forth therein) and standard Large QF power purchase agreement approved by the Commission and this readiness milestone provision to enter Phase 1. Duke plans to evaluate the South Carolina Notice of Commitment Form and Large QF PPA, in consultation with stakeholders, prior to the initial Transitional Cluster Study, and to request Commission approval for any necessary revisions to these documents prior to initiating the first DISIS cluster.

[47] Duke anticipates that there will only be limited circumstances where interconnection of a Duke-owned generating facility will be subject to the Commission's jurisdiction and be studied under the SC GIP. However, including this IRP-based readiness option to proceed through DISIS is consistent with PSCo's queue reform structure and should be included where a Duke-owned distribution-level interconnection is studied under the SC GIP. *See PSCo December 2019 Order Approving Queue Reform,* 169 FERC ¶ 61,182, at P 39.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 36 of 55

would allow an Interconnection Customer to satisfy the Readiness Milestones up through the completion of the DISIS prior to proceeding to a Facilities Study without any increase in financial security beyond its initial security required to enter the DISIS.

The M3 readiness milestone (or increased security in lieu of demonstrating readiness) is required at the end of the DISIS Cluster prior to Interconnection Customers executing a Facilities Study Agreement. (Appendix Duke CS § 5.3.7.6) At this point in the process, Duke has (i) completed the Phase 1 and more detailed Phase 2 studies; (ii) completed any Phase 3 restudies that are required as a result of project withdrawals or other changes to projects that occurred during the DISIS; (iii) issued a Phase 1 Report, a Phase 2 Report and a final DISIS Report detailing the Upgrades and Interconnection Facilities allocated or assigned to each project in the Cluster; and (iv) held three Customer Engagement periods to discuss the progress of the DISIS Study and to review the interim study reports and final DISIS Report with all Interconnection Customers within the Cluster. In short, significant work has been undertaken to complete the DISIS and significant time—approximating 300 days or more if restudy is required—has passed since the Interconnection Customers initially entered the Cluster. Therefore, it is of great importance at this stage of the process for Interconnection Customers to further increase their readiness commitment to achieving commercial operation (or to provide increased financial security in lieu of demonstrating readiness) in order to minimize the potential for future withdrawals after the Facilities Study commences. Accordingly, the M3 readiness milestone requires projects showing readiness to either have executed a long-term contract for the sale of the Generating Facility's energy or to have received a contract award in a Resource Solicitation Process, such as the CPRE Program. A Utility-sponsored project selected in the Utility's

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 37 of 55

most recent IRP would continue to demonstrate readiness at M3 by provide reasonable evidence that the project has been selected by Duke in a Resource Plan, and, if required, has filed an application for a Certificate of Public Convenience and Necessity from the Commission or has received a contract award in a Resource Solicitation process.

The options to show definitive readiness required at M3 are also required at M4, which effectively allows a project that could not demonstrate readiness at M3 (and provided financial security in lieu of demonstrating readiness) to reduce its financial security by demonstrating readiness at M4. (Appendix Duke CS § 5.3.10.4) M4 is required within ten (10) Business Days of the Utility's issuance of the Facilities Study Report. At M4, all Interconnection Customer must provide increased financial security equal to the greater of 100% of the assigned System Upgrades in the Facilities Study Report or a minimum deposit based upon the Interconnection Customer's nameplate capacity prior to the Utility commencing the Construction Planning and IA development process in Appendix Duke CS Section 5.5. The minimum deposit amounts were agreed to through the stakeholder process and increase based upon the nameplate capacity of the Interconnection Customer's proposed Generating Facility. The minimum deposit levels as identified in Figure 6 (the "Minimum Deposits") are also used in the Transitional Serial and Transitional Cluster process discussed in Section V below.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 38 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 39 of 55

Figure 6

Size of Project Associated with Interconnection Request	Minimum Deposit Amount
Greater than 1 MW, But less than 5 MW	$100,000
Greater than 5 MW, But less than 10 MW	$150,000
Greater than 10 MW, But less than 20 MW	$200,000
Greater than 20 MW, But less than 50 MW	$500,000
Greater than 50 MW	$800,000

9. Financial Security Requirements Under the Definitive Interconnection Study Process (Appendix Duke CS §§ 5.3.1 and 5.3.11)

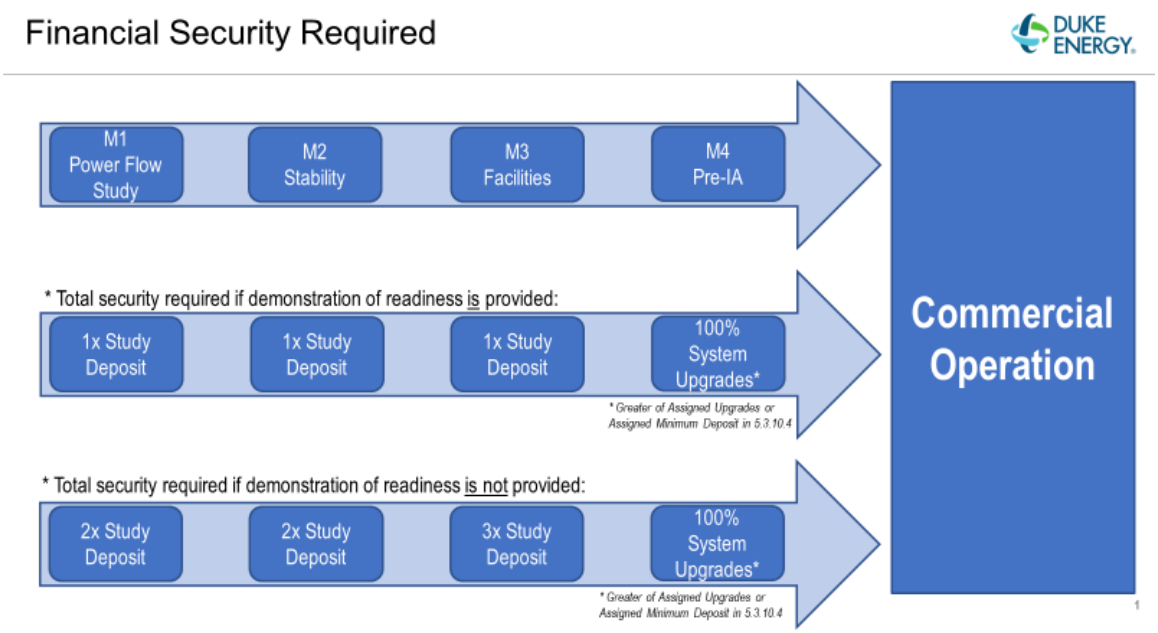
As described above, the Definitive Interconnection Study Process allows Interconnection Customers to determine when and how to definitively commit to achieving interconnection and commercial operation of a proposed Generating Facility, including by providing for increasing Financial Security for non-ready projects in conjunction with the imposition of Withdrawal Penalties in lieu of demonstrating project readiness.

Security equal to one times the study deposit amount is required for all Interconnection Customers at M1 upon entering the Definitive Interconnection Study Process. (Appendix Duke CS § 5.3.1) This security is fully refundable to the Interconnection Customer when it reaches commercial operation or upon withdrawal (subject to settlement of all final invoices for which the security is being held).[48] The security must be in the form of an irrevocable letter of credit upon which the Utility may draw or cash.

[48] If the customer withdraws prior to commercial operation, the security is returned after settling final invoices, which would include any applicable Withdrawal Penalty described in Section V.B.10 below. To the extent the final invoices are not paid, the security may be used to offset any unpaid amounts and the balance is returned to the Interconnect Customer.

Where an Interconnection Customer cannot satisfy a Readiness Milestone during the study phases of the Definitive Interconnection Study Process, Appendix Duke CS Section 5.3.11 provides for incrementally increasing security requirements at each milestone for an Interconnection Customer to continue to progress through the Definitive Interconnection Study Process. For entities that do not provide a demonstration of readiness, Duke proposes total security requirements, inclusive of the initial M1 security required for all Interconnection Customers to enter the Definitive Interconnection Study Process equal to 2x, 2x and 3x the study deposit for Readiness Milestones M1, M2, and M3 respectively. (Appendix Duke CS § 5.3.11) Figure 7 provides a comparison of the total security required as an Interconnection Customer progresses from M1 through M4, depending on whether readiness is provided.

Figure 7



Duke and stakeholders engaged in significant discussion regarding the appropriate amount of security at M4, which is required within ten (10) Business Days of the date the

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 40 of 55

Facilities Study is issued. (Appendix Duke CS § 5.1.1) For both ready and non-ready projects, the security required at M4 is equal to the greater of 100% of the System Upgrade costs identified in the Interconnection Customer's Facilities Study Report or the Minimum Deposit amount.[49] (Appendix Duke CS §§ 5.3.10.4; 5.3.11) Importantly, for non-ready projects, the security for System Upgrades provided at M4 becomes non-refundable at this phase of the process as all other Interconnection Customers in the Cluster will be relying upon the Upgrades assigned to the Interconnection Customer in their Interconnection Agreements and would be significantly harmed if those Upgrades are not constructed.[50] For ready projects, the non-refundable prepayment obligation is capped by the Withdrawal Penalty at two million dollars. (Appendix Duke CS § 5.6.3.1(3)) This difference in treatment is based upon Duke's and stakeholder's expectation that an Interconnection Customer that makes the significant M4 readiness commitment and delivers a deposit of 100% of its System Upgrades is highly likely to achieve commercial operation.

10. Withdrawal Penalty (Appendix Duke CS § 5.7)

In conjunction with requiring Interconnection Customers to demonstrate increasing levels of readiness or to provide increased financial security as they progress through the interconnection process, the proposed Definitive Interconnection Study Process also promotes compliance with its "first ready, first studied" framework through imposition of a Withdrawal Penalty where an Interconnection Customer exits the queue and causes harm

[49] Requiring the Minimum Deposit establishes an increased level of security from M3 for both ready and non-ready projects, and is designed to minimize the risk to other Interconnection Customers that an Interconnection Customer that is assigned minimal System Upgrades through the Definitive Interconnection Study Process proceeds to an Interconnection Agreement without an increased demonstration of readiness or financial commitment and subsequently withdraws.

[50] *See* Appendix Duke CS § 5.6.3.2(4) (". . . Withdrawal Penalty shall be higher of the non-refundable pre-payment for the estimated System Upgrades allocated to the Interconnection Customer in the Facilities Study Report or five (5) times the Interconnection Customer's actual allocated cost of the Definitive Interconnection Study Process. There is no cap on the M4 Withdrawal Penalty amount for non-ready projects.")

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 41 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 42 of 55

to other Interconnection Customers. (Appendix Duke CS § 5.7.3) The Withdrawal Penalty structure is based upon the PSCo process and Duke's NC-approved Definitive Interconnection Study Process and is designed to balance the interests of all Interconnection Customers to make the business decision to withdraw from the study process while providing redress for other Interconnection Customers that are adversely impacted by another Interconnection Customer's withdrawal.[51]

To achieve this balance, there are a number of circumstances where a Withdrawal Penalty would not be imposed under Appendix Duke CS Section 5.7. If an Interconnection Customer reaches commercial operation, there is no withdrawal and, therefore, no Withdrawal Penalty is assigned. Similarly, if the Interconnection Customer's withdrawal does not harm other Interconnection Customers within the Cluster (such as by requiring restudy or shifting costs to other Interconnection Customers), then there is no Withdrawal Penalty. There would also be no Withdrawal Penalty imposed where the Interconnection Customer is faced with a significant increase in Upgrade costs exceeding 25% between DISIS phases or between the DISIS Report and Facilities Study Report.

Calculation of the Withdrawal Penalty amount is dependent on (1) whether a demonstration of readiness was provided, and (2) the phase of the Definitive Interconnection Study Process that the Interconnection Customer is in at the time of withdrawal. (Appendix Duke CS §§ 5.7.3.1-5.7.3.2) Where a Withdrawal Penalty is assigned—requiring a determination that other Interconnection Customers in the Cluster are negatively affected by the Interconnection Customer's withdrawal—Withdrawal Penalty revenues for Interconnection Customers withdrawing after M1 and before M4 will

[51] The Withdrawal Penalty concept and structure is closely modeled on the PSCo process. *See PSCo December 2019 Order Approving Queue Reform*, 169 FERC ¶ 61,182, at PP 44-46, 51.

be used to fund study costs. If a ready customer exits after M4, the Withdrawal Penalty will also be used to fund study costs if the Interconnection Customer's assigned Upgrade Costs exceed the two million cap. If this unlikely circumstance arises, the Utility will also not be required to construct the Upgrades and restudy will likely by required. Where a non-ready Interconnection Customer withdraws after M4, there is no cap on the Withdrawal Penalty, and they will be used to fund the Upgrades that were previously assigned to the withdrawing Interconnection Customer.[52] (Appendix Duke CS § 5.7)

11. Dispute Resolution

To further facilitate an efficient Definitive Interconnection Study Process, Appendix Duke CS Section 5.6 addresses the resolution of disputes that may arise under the Definitive Interconnection Study Process. Under Appendix Duke CS Section 5.6, if an Interconnection Customer opting to participate in a DISIS Cluster initiates a dispute pursuant to SC GIP Section 6.2, that Interconnection Customer shall remain obligated to comply with the requirements of Appendix Duke CS governing the DISIS process (such as completing Readiness Milestones) if it elects to continue to be considered a part of the DISIS Cluster.

[52] Withdrawal Penalty revenue will be distributed to Interconnection Customers in a specific cluster in a similar way as study costs are allocated. This distribution will appear as a bill credit on the Interconnection Customers' study invoice, but will not exceed the study amount for which the customer is responsible and will not be distributed to the withdrawing customer. To the extent there are additional Withdrawal Penalty revenues after funding not-yet-invoiced studies (e.g. restudies) for other customers in the same cluster, the Withdrawal Penalty revenue will be distributed to not-yet-invoiced studies for subsequent clusters. (Appendix Duke CS § 5.7.4)

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 43 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 44 of 55

VI. TRANSITIONAL PROCESS

a. Overview

Transitioning the interconnection process from a serial process to a Cluster Study process will be critical in implementing Duke's Queue Reform Proposal. To achieve an effective transition, Duke must know for certain that all Interconnection Customers queued ahead of a future DISIS Cluster are definitively committed to interconnection. Put another way, a transition process that allows speculative or non-ready Interconnection Customers to remain in the serial queue will cause an uncertain or unstable Base Case[53] resulting in cascading restudies under the transition process and the initial DISIS Cluster. This result would both clog the queue and frustrate the purpose of queue reform implementation. To solve for these issues, Duke proposes a transitional study process to occur prior to the initiation of the Definitive Interconnection Study Process in order to move as many definitively ready Interconnection Requests to commercial operation as possible or, conversely, to move as many speculative Interconnection Requests from the current serial process into the upcoming Definitive Interconnection Study Process.

Duke's objective, and the goal of many stakeholders, is to provide a fair and orderly transition that allows DEP and DEC to complete the transitional serial process and progress through the Transitional Cluster study prior to the initial DISIS Request Window closing on June 30, 2021, and the annual DISIS study beginning thereafter. Accomplishing an efficient transition to the Definitive Interconnection Study Process will require significant commitments from Interconnection Customers, efficient administration by Duke, and the

[53] The "Base Case" is the base power flow, short circuit, and stability data bases used by the Utility for completing interconnection studies for the Interconnection Customer.

minimization of the potential for late stage withdrawal or restudy of Interconnection Requests electing to enter the transitional study process.

To accomplish this objective, Duke proposes an expedited transition process for ready Interconnection Customers in the current queue by providing three options: (1) a Transitional Serial Study Process; (2) a Transitional Cluster Study Process, or (3) withdrawal from the queue and the option reenter the queue and participate in a future DISIS Cluster. Any Interconnection Customer that has received a Queue Number but has not executed an Interconnection Agreement prior to the effective date of Appendix Duke CS may elect to be studied under the Transition Procedures by meeting the requirements to enter either the Transitional Serial study process or Transitional Cluster study process, as described further herein. (Appendix Duke CS § 3) An Interconnection Customer electing to complete the transitional process must notify the Utility and meet all readiness milestone requirements within 60 Calendar Days of the later of the effective date of Appendix Duke CS or the Utility's delivery of written notice of the Utility's commencement of transition to the Definitive Interconnection Study Process. (Appendix Duke CS § 3) If a currently-queued Interconnection Customer elects not to transition using either the Transitional Serial or Transitional Cluster process, as further described below, then that Interconnection Customer will be withdrawn from the queue and will have the option to reenter through a future DISIS Cluster.

b. <u>Eligibility for Transitional Process</u>

An existing Interconnection Customer is eligible for the Transitional Serial process if it is in advanced stages of the interconnection process, meaning the Interconnection Customer has completed System Impact Study (resulting in a determination of system

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 45 of 55

impacts and associated assignment of System Upgrades) and has executed a Facilities Study Agreement as of the date that Queue Reform is approved. However, where an Interconnection Customer has not completed System Impact Study and its System Upgrades are not definitively determined, the Interconnection Customer may elect to enter into the Transitional Cluster study process or to withdraw. Importantly, the vast majority (if not all) of the projects situated in this manner are subject to interdependency and/or are subject to constraints due to the need for substantial Transmission Network Upgrades, which is one of the key impediments under the serial study process and which, as discussed above, will be addressed by the transition to a Cluster Study approach. The Companies' transition process eligibility requirements are consistent with the eligibility requirement recently proposed by PSCo and approved by FERC, as well as those approved by the NCUC. Duke's proposed one-time transitional process will also be similar to the Commission's approval of waivers to the SC GIP implemented for purposes of CPRE Tranche 1 to allow "late-stage proposals" (*i.e.,* Interconnection Customers that had already completed a System Impact Study and executed a Facilities Study Agreement) to have the option of (1) retaining their serial queue position and paying their assigned system upgrade costs, or (2) joining the utility-sponsored queue number and potentially share in an imputed allocation of system upgrade costs. Duke's proposed transitional process to implement queue reform similarly provides increased optionality to late stage projects that have completed System Impact Study and been definitively assigned Upgrades to continue with the serial process or to transition to the new cluster study approach.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 46 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 47 of 55

c. Transitional Serial Study Process (Appendix Duke CS § 3.1)

The Transitional Serial Process is designed for Interconnection Customers that have received definitive information about their project's assigned Network Upgrades and are prepared to fund the costs of those Network Upgrades and move forward under a binding contract to sell the output of their facility the Companies. An Interconnection Customer is eligible to enter the Transitional Serial Process if the Interconnection Customer has (a) a final System Impact Study Report identifying the Interconnection Facilities and any required Upgrades to interconnect, and (b) a Facilities Study Agreement executed by the Interconnection Customer prior to the effective date of Appendix Duke CS.

The financial and non-financial readiness requirements in Appendix Duke CS Section 3.1 are designed to ensure that only ready and non-speculative projects proceed through the Transitional Serial process. First, because these Interconnection Customers know the Upgrades and associated costs required to interconnect, the Interconnection Customers opting to enter the Transitional Serial Process must make a supplemental, non-refundable deposit equal to the greater of (a) one hundred percent (100%) of the System Upgrade costs identified in the System Impact Study Report or (b) the Minimum Deposit identified in Figure 6 above based upon the Interconnection Customers' nameplate capacity identified in the Interconnection Request. If the Interconnection Customer withdraws the Interconnection Request or otherwise does not reach Commercial Operation, the supplemental deposit amount shall be forfeited to the Utility, and the deposited amounts used to construct the Upgrades identified in the Interconnection Customer's System Impact Study Report, except where the cost of System Upgrades identified in the Facilities Study Report (i) exceeded the Interconnection Customer's Section Minimum Deposit amount;

and (ii) increased by more than twenty-five percent (25%) compared to the costs identified in the Interconnection Customer's System Impact Report. (Appendix Duke CS § 5.7.3) Any amounts not required by the Utility for construction of System Upgrades shall be treated as a Withdrawal Penalty and distributed to fund future Cluster Study costs pursuant to Appendix Duke CS Section 5.7.4.

In addition to the deposit, Transitional Serial projects must also demonstrate exclusive Site Control for the entire Generating Facility and the Interconnection Customer's Interconnection Facilities up to the Point of Interconnection to the Utility's System. This requirement is reasonable because projects that are sufficiently advanced in the study process and definitively ready to interconnect should have full Site Control for their Generating Facility to deliver the Generating Facility to the Point of Interconnection to the Utility's System.

Last, and in addition to the deposit on Upgrades and demonstration of full Site Control, Interconnection Customers opting to enter the Transitional Serial process must provide either:

(i) A contract, binding upon the parties to the contract, for sale of the Generating Facility's energy where the term of sale is not less than five (5) years, or

(ii) Reasonable evidence that the Generating Facility is included in a Utility's Resource Plan or has received a contract award in a Resource Solicitation Process.

These requirements to transition are just and reasonable because they provide evidence that the transitional projects are truly ready to proceed to an Interconnection Agreement and commercial operation.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 48 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 49 of 55

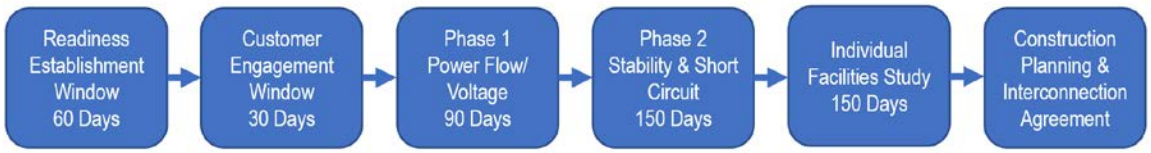
d. Transitional Cluster Study Process (Appendix Duke CS § 3.2)

The Transitional Cluster Process is designed to provide existing Interconnection Customers that are willing to demonstrate readiness an expedited process to transition into the Definitive Interconnection Study Process prior to Duke opening the initial DISIS Cluster. To enter the Transitional Cluster Study, Interconnection Customers must (1) have an assigned Queue Position prior to the effective date of the Appendix; (2) meet the transitional cluster readiness requirements prescribed in Appendix Duke CS Section 3.2.1, and (3) execute a Transitional Cluster Study Agreement. All Interconnection Requests that opt for this path will be considered to have an equal Queue Position and be studied in a single Transitional Cluster. The costs of the study and the identified facilities will be allocated in the same manner as costs are allocated for DISIS Clusters pursuant to Section 5.3.3 of the Appendix Duke CS.

The Transitional Cluster study process will begin with a thirty (30) calendar day Customer Engagement period for all Interconnection Customers electing to enter the Transitional Cluster. Section 3.2.1 of Appendix Duke CS specifies the readiness and other requirements for projects to be included in the Transitional Cluster. In response to stakeholder feedback, Duke has significantly redesigned the Transitional Cluster to a multi-phase study process where more significant readiness commitments are not required until the Interconnection Customer elects to proceed to Phase 2 or to Facilities Study (similar to the full DISIS process). Figure 8 presents a process overview of the Transitional Cluster Study.

Figure 8

Transitional Cluster Process



After the Transitional Cluster Customer Engagement Window, Phase 1 will consist of a power flow and voltage analysis occurring over a ninety (90) calendar day period. Thereafter, Duke will issue a Transitional Cluster Study Phase 1 Report for Interconnection Customers to evaluate whether to proceed through Phase 2, or withdraw from the queue. In response to stakeholders the Companies have agreed to provide a second, thirty (30) calendar day customer engagement window and host a meeting to discuss the results of the Transitional Cluster Study Phase 1 Report. By providing this second customer engagement window, Interconnection Customers will receive additional time to decide whether to make the more significant financial commitments to proceed through Phase 2 of the Transitional Cluster and meet the increasing Readiness Milestones necessary to complete the Transitional Study Process.

An Interconnection Customer electing to withdraw prior to the Phase 2 study will be assigned only its allocated Transitional Cluster Study Phase 1 study costs and will not be subject to any Withdrawal Penalty. An Interconnection Customer electing to proceed with Phase 2 of the Transitional Cluster is viewed as definitively committed and will be required to submit a non-refundable supplemental deposit equal to the Minimum Deposit amount identified in Figure 6. If an Interconnection Customer withdraws after Phase 2 commences or otherwise does not reach Commercial Operation, the supplemental deposit amount provided after Phase 1 will be assessed under the Appendix Duke CS Section 5.7

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 50 of 55

Withdrawal Penalty process and, if a Withdrawal Penalty is required, distributed to fund future Cluster Study costs pursuant to Appendix Duke CS Section 5.7.4.

Transitional Cluster Study Phase 2 will consist of an updated power flow/voltage analysis (if necessary), stability analysis and short circuit analysis completed pursuant to Appendix Duke CS Section 5.3.7.3 and within one-hundred and fifty (150) calendar days. The results of this analysis will be summarized in the Transitional Cluster Study Phase 2 Report which will identify the Interconnection Facilities and Network Upgrades expected to be required for the Transitional Cluster to interconnect, and will also provide a non-binding good-faith estimate of cost responsibility and a non-binding good-faith estimated time to construct for each transitional Interconnection Customer.

Pursuant to Appendix Duke CS Section 3.2.5, within thirty (30) calendar days of Duke's publication of the Transitional Cluster Study Phase 2 Report, each Interconnection Customer within the Transitional Cluster Study shall meet the following definitive readiness requirements:

(a) submit a non-refundable deposit equal to one hundred percent (100%) of the System Upgrade costs identified in the Transitional Cluster Study Phase 2 Report, that would be borne by the Interconnection Customer under a future Interconnection Agreement. The deposit shall be in the form of an irrevocable letter of credit upon which the Utility may draw or a cash deposit;

(b) Demonstrate definitive readiness by providing

i. a contract, binding upon the parties to the contract, for sale of the Generating Facility's energy to the Utility, where the term of sale is not less than five (5) years; or

ii. providing reasonable evidence that the Generating Facility is included in a Utility's Resource Plan and, if required, has filed an application for a Certificate of Public Convenience and Necessity from the Commission or has received a contract award in a Resource Solicitation Process; and

(c) execute a Facilities Study Agreement to proceed with Facilities Study under Section 4.5.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 51 of 55

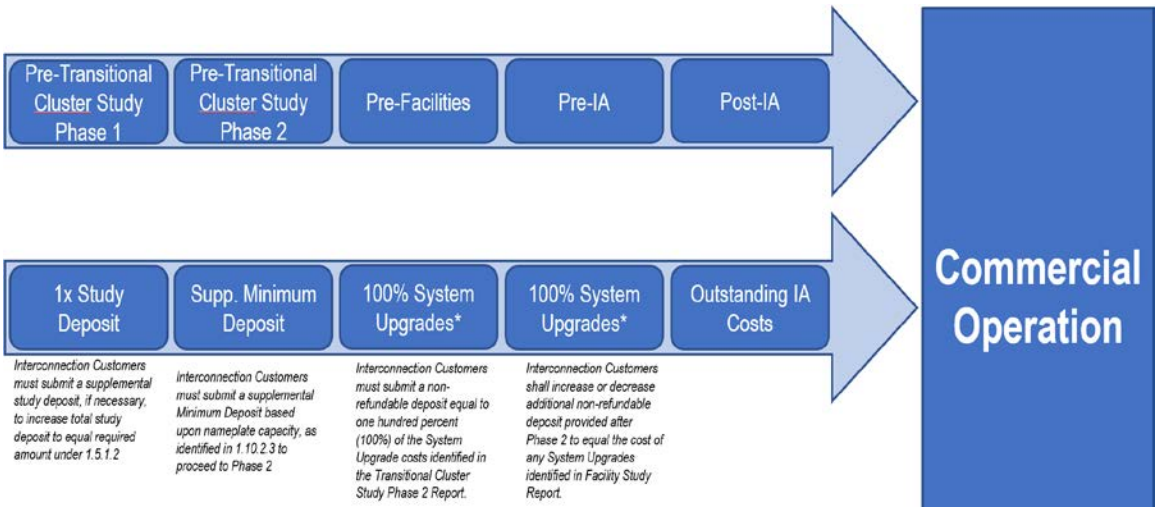
If an Interconnection Customer fails to meet any of the above requirements, that Interconnection Customer shall be deemed withdrawn from the queue and subject to the Withdrawal Penalty identified in Appendix Duke CS Section 3.2.4.

Duke will determine whether re-study of the Transitional Cluster is required pursuant to the procedures outlined in Appendix Duke CS Section 5.3.7.5 prior to executing the Facilities Study Agreement and returning it to the Interconnection Customers. However, Duke does not envision any re-studies of the Transitional Cluster as all projects entering Phase 2 of the Transitional Cluster are required to demonstrate readiness equal to M4 under the Definitive Interconnection Study Process before entering the Transitional Cluster Facilities Study.

Duke will complete Facilities Study for all Transitional Cluster projects pursuant to SC GIP Section 4.4. Within ten (10) business days of issuance of the Facilities Study Report, the Interconnection Customer will be required to either increase or decrease its additional non-refundable deposit provided after Phase 2 of the Transitional Cluster Study to equal the cost of any System Upgrades identified in in the Transitional Cluster Study that would be borne by the Interconnection Customer under a future IA or be deemed withdrawn. At this point in time, Duke will follow the SC GIP Section 5 Construction Planning and Interconnection Agreement process, except that M4 required in Appendix Duke CS Section 5.5.1 will not apply to Interconnection Customers participating in the Transitional Cluster Study. Figure 9 provides a process map of the increasing readiness and/or security required for interconnection Customers to proceed through the Section 3.2 Transitional Cluster process.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 52 of 55

Figure 9



The increasing readiness requirements are just and reasonable for the Transitional Cluster study process and are designed to ensure other ready projects included in the Transitional Cluster or future DISIS Clusters will not be harmed by withdrawals late in the Transitional Cluster process. The interests of potentially withdrawing projects will also be protected as a Withdrawal Penalty will not be imposed where assigned Upgrades exceed the Minimum Deposit and a Withdrawal Penalty would not be imposed under Section 6.3.5 of the Definitive Interconnection Study Process.

e. Option to Withdraw and Reenter DISIS Cluster 1

It is also important to identify that Interconnection Request withdrawal and reentry into the Definitive Interconnection Study Process is another viable option for projects who determine they are not fully ready to proceed with the transitional process. Because study priority and cost assignment will no longer be serial and will now be administered through a Cluster Study process, this option allows Interconnection Customers a clear path forward in 2021 through the regular DISIS process.

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 53 of 55

ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 54 of 55

VII. REQUEST TO TERMINATE INTERDEPENDENCY MOU

As described in Section V, the Definitive Interconnection Study Process is a fundamentally different Cluster Study process than the prior serial interdependency study process that Duke administers today. Therefore, upon transitioning to the Definitive Interconnection Study Process, the substantive terms and requirements of the interdependency MOU approved by Order No. 2016-191 will no longer be applicable. Accordingly, Duke requests that the Commission terminate the interdependency MOU.

VIII. CONCLUSION

WHEREFORE, and based on the foregoing, Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC respectfully request that the Commission issue a directive by January 20, 2021, approving the Companies' Application and granting such other relief as may be appropriate.

Respectfully submitted, this the 17th day of November 2020.

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ELECTRONICALLY FILED - 2020 November 17 4:39 PM - SCPSC - Docket # 2019-326-E - Page 55 of 55

CERTIFICATION

I, Kenneth J. Jennings, state and attest, under penalty of perjury, that I have reviewed the attached Application of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for Approval of Modifications to South Carolina Generator Interconnection Procedures to Implement Queue Reform and Appendix Duke CS, and, in the exercise of due diligence, have made reasonable inquiry into the accuracy of the information and representations provided therein; and that, to the best of my knowledge, information, and belief, all information contained therein is accurate and true and contains no false, fictitious, fraudulent or misleading statements; that no material information or fact has been knowingly omitted or misstated therein, and that all information contained therein has been prepared and presented in accordance with all applicable South Carolina general statutes, Commission rules and regulations, and applicable Commission Orders. Any violation of this Certification may result in the Commission initiating a formal review proceeding. I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment by contempt.

_____

Name: Kenneth J. Jennings
Title: General Manager, Distributed Energy Technologies Renewable Integration and Operations, Duke Energy Carolinas, LLC and Duke Energy Progress, LLC