Matthew R. Bernier
Associate General Counsel

April 22, 2022

VIA ELECTRONIC FILING

Adam Teitzman, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: *Fuel and purchased power cost recovery clause with generating performance incentive factor; Docket No. 20220001-EI*

Dear Mr. Teitzman:

Please find enclosed for electronic filing on behalf of Duke Energy Florida, LLC ("DEF"), the Request for Confidential Classification regarding the Direct Testimony of Anthony Salvarezza and Exhibit No. ___(AS-1), Exhibit No. ___(AS-2), and Exhibit No. ___(AS-3). The filing includes the following:

- DEF's Request for Confidential Classification
- Slip-sheet for confidential Exhibit A
- Redacted Exhibit B (two copies)
- Exhibit C (justification matrix), and
- Exhibit D (affidavit of Anthony Salvarezza)

DEF's confidential Exhibit A that accompanies the above-referenced was submitted with DEF's Notice of Intent to Request Confidential Classification on April 1, 2022, under separate cover.

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Respectfully,

s/Matthew R. Bernier

Matthew R. Bernier

MRB/mw
Enclosures

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Fuel and purchased power cost recovery clause with generating performance incentive factor.	Docket No. 20220001-EI Dated: April 22, 2022

DUKE ENERGY FLORIDA LLC'S
REQUEST FOR CONFIDENTIAL CLASSIFICATION

Duke Energy Florida, LLC ("DEF" or "Company"), pursuant to Section 366.093, Florida Statutes (F.S.), and Rule 25-22.006, Florida Administrative Code (F.A.C.), submits this Request for Confidential Classification for certain information provided in the Direct Testimony of Anthony Salvarezza and Exhibit No. ___(AS-1), Exhibit No. ___(AS-2) and Exhibit No. ___(AS-3), dated April 1, 2022, concurrently with DEF's Notice of Intent to Request Confidential Classification. This Request is timely. *See* Rule 25-22.006(3)(a)1, F.A.C. In support of this Request, DEF states:

1. The Direct Testimony of Anthony Salvarezza and Exhibit No. ___(AS-1), Exhibit No. ___(AS-2) and Exhibit No. ___(AS-3), contain information that is "confidential proprietary business information" under Section 366.093(3), Florida Statutes.

2. The following exhibits are included with this request:

(a) Sealed Composite Exhibit A is a package containing unredacted copies of all the documents for which DEF seeks confidential treatment. Composite Exhibit A was submitted separately in a sealed envelope labeled "CONFIDENTIAL" on April 1, 2022. In the unredacted versions, the information asserted to be confidential is highlighted in yellow.

(b) Composite Exhibit B is a package containing two copies of redacted versions of the documents for which the Company requests confidential classification. The specific

information for which confidential treatment is requested has been blocked out by opaque marker or other means.

(c) Exhibit C is a table which identifies by page and line the information for which DEF seeks confidential classification and the specific statutory bases for seeking confidential treatment.

(d) Exhibit D contains affidavits attesting to the confidential nature of information identified in this request.

3. As indicated in Exhibit C, the information for which DEF requests confidential classification is "proprietary confidential business information" within the meaning of Section 366.093(3), F.S. Specifically, the information at issue in the Direct Testimony of Anthony Salvarezza and Exhibit No. ___(AS-1), Exhibit No. ___(AS-2) and Exhibit No. ___(AS-3), relates to proprietary third-party drawings, evaluations, and information. Pursuant to contracts, DEF is obligated to maintain the confidentiality of this information, and therefore it qualifies for confidential classification. The disclosure of this information could adversely affect the Company's ability to contract on favorable terms. *See* § 366.093(3)(d), F.S.; Affidavit of Anthony Salvarezza at ¶¶ 4 and 5. Furthermore, disclosure of the information could detrimentally impact DEF's ability to negotiate favorable contracts, thereby harming its competitive interests, ultimately to its customers' detriment. *See* § 366.093(3)(e), F.S.; Affidavit of Anthony Salvarezza at ¶¶ 4 and 5. Accordingly, such information constitutes "proprietary confidential business information" which is exempt from disclosure under the Public Records Act pursuant to Section 366.093(1), F.S.

4. The information identified as Exhibit "A" is intended to be and is treated as

confidential by the Company. *See* Affidavit of Anthony Salvarezza at ¶ 6. The information has not been disclosed to the public, and the Company has treated and continues to treat the information at issue as confidential. *See* Affidavit of Anthony Salvarezza at ¶ 6.

6. DEF requests that the information identified in Exhibit A be classified as "proprietary confidential business information" within the meaning of section 366.093(3), F.S., that the information remain confidential for a period of at least 18 months as provided in section 366.093(4) F.S., and that the information be returned as soon as it is no longer necessary for the Commission to conduct its business.

WHEREFORE, for the foregoing reasons, DEF respectfully requests that this Request for Confidential Classification be granted.

RESPECTFULLY SUBMITTED this 22nd day of April, 2022.

s/Matthew R. Bernier
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Attorneys for Duke Energy Florida, LLC

CERTIFICATE OF SERVICE

Docket No. 20220001-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished via email this 22nd day of April, 2022, to all parties of record as indicated below.

s/Matthew R. Bernier
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Exhibit A

“CONFIDENTIAL”

(filed under separate cover on April 1, 2022)

Exhibit B

REDACTED

(two copies)

outages and steps to mitigate the risk of further outages, and ultimately to explain how the Company has at all times acted reasonably and prudently.

Q. Please provide a summary of your testimony.

A. My testimony explains the reasonableness and prudence of DEF's decisions and actions in relation to discovery of latent damage to the Bartow Combined Cycle ("Bartow CC") Combustion Turbine Generators ("CTGs") and the resulting outages, given the information known or reasonably knowable by DEF at the time those decisions were made and those actions were taken. Moreover, I explain how DEF prudently operated the CTGs at all times, including during the period when DEF now believes the damage to the units was initiated, and therefore that DEF's operation of the units did not initiate the damage to the units – a conclusion fully supported by the Original Equipment Manufacturer's ("OEM") root cause analysis. Finally, I explain that the CTG damage and outages currently at issue are completely unrelated to the Commission's previous determination of imprudence related to the operation of the Bartow Steam Turbine.

As I explain in detail below, as a result of standard maintenance testing, DEF first learned in March 2020 that one of the Bartow CTGs (Unit 4B) was damaged by [redacted] years earlier. Because the temperature alarms were never triggered, DEF could not have known of the issue during this period of operation, which ended after the OEM replaced a degraded component within the CTGs. During this period, DEF followed the OEM-provided operation

- Exhibit No.__ (AS-1), Root Cause Analysis (Confidential);
- Exhibit No. __ (AS-2), Siemens Product Bulletin PB-08-5038-GN-EN-01 [redacted] (Confidential); and
- Exhibit No. __ (AS-3), Siemens Product Bulletin PB3-13-0008-GN-EN-01 [redacted] (Confidential).

These exhibits are the property of Siemens Energy, Inc., and are designated as proprietary and confidential by Siemens. Therefore, DEF is seeking confidentiality to protect the third-party's interest in these materials.

Background

Q. Can you please provide a summary and timeline of events relating to the Bartow CTG outages?

A. Yes. The Bartow CC came online in summer 2009. There are four (4) Combustion Turbines ("CT") attached to Siemens model SGen6-1000A Combustion Turbine Generators ("CTG"). During planned outages in fall 2012 and spring 2013, DEF performed an inspection of the [redacted] consistent with guidance provided by Siemens Product Bulletin PB-08-5038-GN-EN-01 (Exhibit No. __ (AS-2)) and later updated by PB3-13-0008-GN-EN-01 (Exhibit No. __ (AS-3)). DEF discovered the [redacted] were degraded and, consistent with the OEM's guidance, contracted with Siemens to install upgrades.

As I explain below, unbeknownst to DEF, operation of the CTGs with the degraded [redacted] ultimately led to a series of outages impacting each of the CTGs: Unit 4B

separate RCA was unnecessary when similar damage led to forced outages of Units 4A and 4C. That is, the same equipment and operating conditions were present in all four CTGs for the same duration, and therefore the resulting damage discovered on Unit 4B was considered likely to develop on the other units at some unknown point in the future. However, it was also clear that the damage DEF suspected had been initiated, if it existed at all, had not propagated to the same degree on Units 4A, 4C, and 4D at that time.[1]

Q. Please provide an overview of the Root Cause Analysis for the outages.

A. The outages were caused by stator bar failures. Despite the fact the temperatures of the stator core windings never triggered the OEM established RTD alarm, the stator bar failures were most likely initiated by [redacted]. The RCA determined the "main contributor" to the [redacted] was [redacted] which led to a period of operation at higher temperature levels than the [redacted]. The units' normal load cycling [redacted]

[1] The other units had each recently underwent the same maintenance hipot test at the same voltage levels and passed without any findings or engineering concerns (Unit 4A, 2019; Unit 4C, 2018; and Unit 4D, 2019).

[redacted].

Q. Can you please elaborate on the RCA findings?

A. Yes. As mentioned above, in the fall 2019, in advance of return to service from a planned outage, maintenance high potential (hi-pot) testing on Unit 4B indicated stator winding faults on the CTG. Further investigation revealed two stator winding bars of two different phases had faulted to ground [redacted]

Forensic analysis determined the [redacted] Finally, the OEM established the "main contributor" to the [redacted] as [redacted] Exhibit No. __ (AS-1), p. 1.

What all this means is that the faulted stator bars resulted from [redacted]. This failure mode naturally led to the question of what led to the relatively [redacted]. The OEM analyzed the operational life of the unit to confirm or refute as many as eleven (11) secondary level elements. Its review of data noted that the stator slot

temperatures dropped in early 2013, while the generator output (MW and MVAR) remained stable. It further found:

[redacted]

Id. at p. 20.

Thus, the OEM recognized that the [redacted] were a symptom of the degraded [redacted]. When the [redacted] were replaced with an upgrade, the operating temperature was reduced to the lower operating range while generator output remained consistent (i.e., the [redacted] were not a symptom of the units being run outside of the OEM's established operating parameters). However, unbeknownst to DEF at the time, the [redacted]. *See id.* at p. 24.

Q. Why did the Company conclude that similar damage was likely to have occurred at the other Bartow CTGs?

A. The Company reasoned that, because the other three (3) CTGs operated at similar temperatures for a similar period of time (prior to receiving the same upgrades), it

was likely that they had also suffered damage to the stator bars that would eventually require remediation – though it was unknown when that time would be.

Q. Did the stator winding temperatures observed during the 2009-2013 timeframe provide any basis for concern?

A. No. The stator winding temperature is monitored by an RTD alarm that alerts the Company if the stator winding temperature exceeds the OEM recommended threshold. The OEM alarm is based on [redacted], giving an alarm around [redacted] and unload at approximately [redacted], depending on specific ambient conditions on a particular day. It is important to note the alarm set-points allow for engineered operating margins built into generator design; for example, the alarm set-point of [redacted] is more than [redacted] below the IEEE-established failure point for Class F Insulation (the type of insulation at issue) of 311°F (155°C). The point being, given the information reasonably available to DEF during the 2009-2013 timeframe, according to the indicated stator RTD temperatures the insulation remained well below its temperature rating at all times. In fact, in 2013 when Siemens performed the [redacted] replacement discussed above, it inspected the end windings and main leads and found no signs of over-heating.

Q. Has DEF's and the OEM's understanding of the actual operating temperatures experienced during the 2009-2013 timeframe changed?

A. Yes, based on the findings of the RCA, the OEM and DEF now believe that the [redacted]. *See id.* at pp. 19-21, 23. However, as discussed above, because the Bartow CTGs never triggered the RTD alarms, and because those alarms were set at a point that provided approximately [redacted] of margin before reaching the insulation's IEEE-established temperature rating, DEF had no way of knowing the temperature likely exceeded the rating limit and no reason for concern or to seek comparison with the remainder of Siemens' fleet.

Q. Did DEF operate the Bartow CTGs within the operating parameters established by the OEM?

A. Yes, at all times DEF operated the units consistent with the OEM's instructions as provided in the operating manual. DEF reviewed the units' operating history in Pi data from 2010 to the 2012/2013 outages when the [redacted] upgrade was performed. The data, which was sampled on an hourly basis, showed zero instances of operating the generators outside the OEM ratings as defined on the generator capability curve provided in that manual.

Specifically, the generators have a maximum capability of [redacted] MW and the operating history shows the maximum output of any of the four (4) generators was 213 MW. At this output of 213 MW, the allowable reactive power (MVAR) rating

is [redacted] MVAR - the maximum MVAR output actually generated across this time period was 83 MVAR (as MW load decreases, the MVAR allowable increases). The table below provides the maximum MW and both maximum and minimum MVAR output of the four (4) CTGs over the period in question.

Unit	*Max MW*	*Max MVAR*	*Min MVAR*
4A	*211*	*80*	*-77*
4B	*209*	*71*	*-71*
4C	*210*	*77*	*-73*
4D	*213*	*83*	*-75*

Furthermore, the RCA shows that the OEM did not identify operation of the CTGs outside of their preapproved operating parameters as the cause of the damage to Unit 4B. The RCA determined that the main contributing cause of the stator bar damage was [redacted] which led to increased [redacted], but again, the OEM-established RTD temperature alarm was never triggered. The RCA also shows that after the degraded [redacted] were replaced in 2012 and 2013, the [redacted] while the generator output (MW and MVAR) remained stable. *See id.* at p. 20 & Fig. 16.

In short, DEF operated the CTGs within the OEM's defined operating parameters; hence, DEF's operation was not the cause of [redacted] and

therefore not the cause of the damage to the units. Instead, the degraded [redacted], which DEF replaced in accordance with OEM recommendations once it discovered the issue, [redacted] and caused the [redacted].

DEF's Actions to Prudently Mitigate the Risk of Failure

Q. What steps did DEF take to prudently manage the likelihood of damage at the remaining units?

A. Once DEF learned the cause of Unit 4B's damage and the likelihood that the remaining units may have experienced similar damage, the Company took several proactive steps to evaluate the remaining units, monitor unit operations to detect damage propagation (to the extent possible), and ultimately remediate the likelihood of damage to the remaining units. First, DEF reconfigured the Electromagnetic Signature Analysis ("EMSA") collars on Units 4A and 4C[2] to potentially identify insulation degradation during continued operation.[3] Second, DEF scheduled borescope inspections on Units 4A and 4C to look for any visual indications of buckled insulation.[4] Third, DEF issued procurement specifications in anticipation of a bid event for a spare set of stator bars to have on hand in case of an in-service failure or failed indicative testing of one of the remaining CTGs. Finally, DEF scheduled generator rewinds for the remaining units, notwithstanding that a rewind would not typically be required for thousands of equivalent operating hours.

[2] As noted above, Units 4A and 4D underwent hipot testing in spring and fall 2019, respectively, resulting in no negative findings or engineering concerns.
[3] DEF previously relocated the EMSA collars on Units 4B and 4D in fall 2019.
[4] Unit 4D was thoroughly inspected in fall 2019 (when the Unit 4B damage was discovered), so a borescope inspection was unnecessary.

stator rewind for Unit 4A was scheduled for the fall 2023 planned major outage, and the stator rewind for Unit 4C was scheduled for the fall 2024 planned major outage. This schedule was intended to allow DEF to take advantage of previously scheduled outages in a measured cadence to avoid concurrent CTG outages (maximizing output from the remainder of the plant by allowing for operation in 3 on 1 configuration), to minimize the number of planned outages by performing multiple maintenance tasks during the same outages, and to provide time for the OEM to manufacture the stator bars and support the outages.

In an effort to prudently address and mitigate the risks to the other units suggested by the Unit 4B RCA, while also attempting to retain the benefits of Bartow's low-cost generation for customers by spacing the scheduling of planned major outages, DEF scheduled these stator rewinds to occur much earlier in the units' operating life than the Duke Energy fleet standard recommendation of [redacted] equivalent hours for this type of air-cooled unit. Specifically, Unit 4D was planned for a rewind at ~103,000 equivalent hours, Unit 4A at ~109,000 equivalent hours, and Unit 4C at ~116,000 equivalent hours.

Q. Was DEF able to maintain the schedule of proactive outages discussed above?

A. No, Unit 4A experienced an unexpected in-service failure in January 2021 that required a forced outage lasting into April 2021; as discussed above, due to the nature of the suspected damage and the limitations on available testing, DEF could not have anticipated when such a failure may occur (if at all). As a result of this outage, DEF accelerated the scheduled Unit 4C planned outage up to fall 2023.

However, shortly after Unit 4A's return to service, Unit 4C also experienced an in-service failure in May 2021.

Q. Did these unexpected occurrences further alter DEF's plan?

A. Yes. Given the two in-service failures in a short period of time, DEF determined that this new information required a strategy shift. Therefore, the Company accelerated the planned outage of Unit 4D from spring 2022 to June 2021. DEF completed the stator rewinds and returned Units 4C and 4D to service in November and October 2021, respectively.

Q. You indicated that the two forced outages in a short period of time was "new information" that led to DEF's strategy change. Given that DEF determined in March 2020 that there was a likelihood of latent damage to the remaining units, how did the in-service failures constitute "new information"?

A. The new information I was referring to is the speed at which the [redacted], which was thought but not definitively known to exist, was propagating on the remaining units notwithstanding operation within the OEM-provided parameters and the normal fleet operating temperatures. Recall that DEF became aware of the main contributing cause of the damage to Unit 4B in March 2020. At that time, the units had been operating for approximately seven (7) years after the [redacted] is believed to have occurred without an in-service failure known to have resulted from the damage identified in the RCA; that is, DEF had only its experience and did not have any means to formulate a trend or projection for when subsequent failures may

plant). Said differently, the prior order concerned operation of the Bartow Steam Turbine and contained no discussion regarding the operation of the CTGs. In fact, the Commission specifically noted "that this case is highly fact specific and for that reason will have limited precedential value."[5]

Conclusion

Q. In your opinion, has DEF acted prudently?

A. Yes. First, as I have explained above, the Company's operation of the units did not initiate the damage to the units, rather it was a function of [redacted] that the Company simply could not have contemporaneously known about. When DEF later determined the damage was likely present on the other units, it was confronted with a lack of information about: a) whether the other units (or some subset of those units) were actually damaged, and if so to what degree; and b) if the units were damaged, at what point the damage would be identifiable via available testing or when the units may experience a failure. Given this dearth of information, DEF made the reasonable decision to continue operating the units (benefitting customers by the continued generation of low-cost energy) and prudently took steps intended to mitigate the risk of future in-service failure. What we now know, but could not have known at the time, was the relatively short period in which the hypothesized damage would manifest. As I have explained above, as the Company learned additional facts, it prudently incorporated the new information into its analysis and made reasonable adjustments where possible. When making operations decisions in

[5] Order No. PSC-2020-0368A-FOF-EI, at p. 22.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-1)

REDACTED
Pages 1 through 26
are confidential in their entirety.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-2)

REDACTED
Pages 1 through 6
are confidential in their entirety.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-3)

REDACTED
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outages and steps to mitigate the risk of further outages, and ultimately to explain how the Company has at all times acted reasonably and prudently.

Q. Please provide a summary of your testimony.

A. My testimony explains the reasonableness and prudence of DEF's decisions and actions in relation to discovery of latent damage to the Bartow Combined Cycle ("Bartow CC") Combustion Turbine Generators ("CTGs") and the resulting outages, given the information known or reasonably knowable by DEF at the time those decisions were made and those actions were taken. Moreover, I explain how DEF prudently operated the CTGs at all times, including during the period when DEF now believes the damage to the units was initiated, and therefore that DEF's operation of the units did not initiate the damage to the units – a conclusion fully supported by the Original Equipment Manufacturer's ("OEM") root cause analysis. Finally, I explain that the CTG damage and outages currently at issue are completely unrelated to the Commission's previous determination of imprudence related to the operation of the Bartow Steam Turbine.

As I explain in detail below, as a result of standard maintenance testing, DEF first learned in March 2020 that one of the Bartow CTGs (Unit 4B) was damaged by [redacted] years earlier. Because the temperature alarms were never triggered, DEF could not have known of the issue during this period of operation, which ended after the OEM replaced a degraded component within the CTGs. During this period, DEF followed the OEM-provided operation

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As I explain below, unbeknownst to DEF, operation of the CTGs with the degraded [redacted] ultimately led to a series of outages impacting each of the CTGs: Unit 4B

separate RCA was unnecessary when similar damage led to forced outages of Units 4A and 4C. That is, the same equipment and operating conditions were present in all four CTGs for the same duration, and therefore the resulting damage discovered on Unit 4B was considered likely to develop on the other units at some unknown point in the future. However, it was also clear that the damage DEF suspected had been initiated, if it existed at all, had not propagated to the same degree on Units 4A, 4C, and 4D at that time.[1]

Q. Please provide an overview of the Root Cause Analysis for the outages.

A. The outages were caused by stator bar failures. Despite the fact the temperatures of the stator core windings never triggered the OEM established RTD alarm, the stator bar failures were most likely initiated by [redacted]. The RCA determined the "main contributor" to the [redacted] was [redacted] which led to a period of operation at higher temperature levels than the [redacted]. The units' normal load cycling [redacted]

[1] The other units had each recently underwent the same maintenance hipot test at the same voltage levels and passed without any findings or engineering concerns (Unit 4A, 2019; Unit 4C, 2018; and Unit 4D, 2019).

[redacted].

Q. Can you please elaborate on the RCA findings?

A. Yes. As mentioned above, in the fall 2019, in advance of return to service from a planned outage, maintenance high potential (hi-pot) testing on Unit 4B indicated stator winding faults on the CTG. Further investigation revealed two stator winding bars of two different phases had faulted to ground [redacted]

Forensic analysis determined the [redacted] Finally, the OEM established the "main contributor" to the [redacted] as [redacted] Exhibit No. __ (AS-1), p. 1.

What all this means is that the faulted stator bars resulted from [redacted]. This failure mode naturally led to the question of what led to the relatively [redacted]. The OEM analyzed the operational life of the unit to confirm or refute as many as eleven (11) secondary level elements. Its review of data noted that the stator slot

temperatures dropped in early 2013, while the generator output (MW and MVAR) remained stable. It further found:

[redacted]

Id. at p. 20.

Thus, the OEM recognized that the [redacted] were a symptom of the degraded [redacted]. When the [redacted] were replaced with an upgrade, the operating temperature was reduced to the lower operating range while generator output remained consistent (i.e., the [redacted] were not a symptom of the units being run outside of the OEM's established operating parameters). However, unbeknownst to DEF at the time, the [redacted]. *See id.* at p. 24.

Q. Why did the Company conclude that similar damage was likely to have occurred at the other Bartow CTGs?

A. The Company reasoned that, because the other three (3) CTGs operated at similar temperatures for a similar period of time (prior to receiving the same upgrades), it

was likely that they had also suffered damage to the stator bars that would eventually require remediation – though it was unknown when that time would be.

Q. Did the stator winding temperatures observed during the 2009-2013 timeframe provide any basis for concern?

A. No. The stator winding temperature is monitored by an RTD alarm that alerts the Company if the stator winding temperature exceeds the OEM recommended threshold. The OEM alarm is based on [redacted], giving an alarm around [redacted] and unload at approximately [redacted], depending on specific ambient conditions on a particular day. It is important to note the alarm set-points allow for engineered operating margins built into generator design; for example, the alarm set-point of [redacted] is more than [redacted] below the IEEE-established failure point for Class F Insulation (the type of insulation at issue) of 311°F (155°C). The point being, given the information reasonably available to DEF during the 2009-2013 timeframe, according to the indicated stator RTD temperatures the insulation remained well below its temperature rating at all times. In fact, in 2013 when Siemens performed the [redacted] replacement discussed above, it inspected the end windings and main leads and found no signs of over-heating.

Q. Has DEF's and the OEM's understanding of the actual operating temperatures experienced during the 2009-2013 timeframe changed?

A. Yes, based on the findings of the RCA, the OEM and DEF now believe that the [redacted]. *See id.* at pp. 19-21, 23. However, as discussed above, because the Bartow CTGs never triggered the RTD alarms, and because those alarms were set at a point that provided approximately [redacted] of margin before reaching the insulation's IEEE-established temperature rating, DEF had no way of knowing the temperature likely exceeded the rating limit and no reason for concern or to seek comparison with the remainder of Siemens' fleet.

Q. Did DEF operate the Bartow CTGs within the operating parameters established by the OEM?

A. Yes, at all times DEF operated the units consistent with the OEM's instructions as provided in the operating manual. DEF reviewed the units' operating history in Pi data from 2010 to the 2012/2013 outages when the [redacted] upgrade was performed. The data, which was sampled on an hourly basis, showed zero instances of operating the generators outside the OEM ratings as defined on the generator capability curve provided in that manual.

Specifically, the generators have a maximum capability of [redacted] MW and the operating history shows the maximum output of any of the four (4) generators was 213 MW. At this output of 213 MW, the allowable reactive power (MVAR) rating

is [redacted] MVAR - the maximum MVAR output actually generated across this time period was 83 MVAR (as MW load decreases, the MVAR allowable increases). The table below provides the maximum MW and both maximum and minimum MVAR output of the four (4) CTGs over the period in question.

Unit	*Max MW*	*Max MVAR*	*Min MVAR*
4A	*211*	*80*	*-77*
4B	*209*	*71*	*-71*
4C	*210*	*77*	*-73*
4D	*213*	*83*	*-75*

Furthermore, the RCA shows that the OEM did not identify operation of the CTGs outside of their preapproved operating parameters as the cause of the damage to Unit 4B. The RCA determined that the main contributing cause of the stator bar damage was [redacted] which led to increased [redacted], but again, the OEM-established RTD temperature alarm was never triggered. The RCA also shows that after the degraded [redacted] were replaced in 2012 and 2013, the [redacted] while the generator output (MW and MVAR) remained stable. *See id.* at p. 20 & Fig. 16.

In short, DEF operated the CTGs within the OEM's defined operating parameters; hence, DEF's operation was not the cause of [redacted] and

therefore not the cause of the damage to the units. Instead, the degraded [redacted], which DEF replaced in accordance with OEM recommendations once it discovered the issue, [redacted] and caused the [redacted].

DEF's Actions to Prudently Mitigate the Risk of Failure

Q. What steps did DEF take to prudently manage the likelihood of damage at the remaining units?

A. Once DEF learned the cause of Unit 4B's damage and the likelihood that the remaining units may have experienced similar damage, the Company took several proactive steps to evaluate the remaining units, monitor unit operations to detect damage propagation (to the extent possible), and ultimately remediate the likelihood of damage to the remaining units. First, DEF reconfigured the Electromagnetic Signature Analysis ("EMSA") collars on Units 4A and 4C[2] to potentially identify insulation degradation during continued operation.[3] Second, DEF scheduled borescope inspections on Units 4A and 4C to look for any visual indications of buckled insulation.[4] Third, DEF issued procurement specifications in anticipation of a bid event for a spare set of stator bars to have on hand in case of an in-service failure or failed indicative testing of one of the remaining CTGs. Finally, DEF scheduled generator rewinds for the remaining units, notwithstanding that a rewind would not typically be required for thousands of equivalent operating hours.

[2] As noted above, Units 4A and 4D underwent hipot testing in spring and fall 2019, respectively, resulting in no negative findings or engineering concerns.
[3] DEF previously relocated the EMSA collars on Units 4B and 4D in fall 2019.
[4] Unit 4D was thoroughly inspected in fall 2019 (when the Unit 4B damage was discovered), so a borescope inspection was unnecessary.

stator rewind for Unit 4A was scheduled for the fall 2023 planned major outage, and the stator rewind for Unit 4C was scheduled for the fall 2024 planned major outage. This schedule was intended to allow DEF to take advantage of previously scheduled outages in a measured cadence to avoid concurrent CTG outages (maximizing output from the remainder of the plant by allowing for operation in 3 on 1 configuration), to minimize the number of planned outages by performing multiple maintenance tasks during the same outages, and to provide time for the OEM to manufacture the stator bars and support the outages.

In an effort to prudently address and mitigate the risks to the other units suggested by the Unit 4B RCA, while also attempting to retain the benefits of Bartow's low-cost generation for customers by spacing the scheduling of planned major outages, DEF scheduled these stator rewinds to occur much earlier in the units' operating life than the Duke Energy fleet standard recommendation of [redacted] equivalent hours for this type of air-cooled unit. Specifically, Unit 4D was planned for a rewind at ~103,000 equivalent hours, Unit 4A at ~109,000 equivalent hours, and Unit 4C at ~116,000 equivalent hours.

Q. Was DEF able to maintain the schedule of proactive outages discussed above?

A. No, Unit 4A experienced an unexpected in-service failure in January 2021 that required a forced outage lasting into April 2021; as discussed above, due to the nature of the suspected damage and the limitations on available testing, DEF could not have anticipated when such a failure may occur (if at all). As a result of this outage, DEF accelerated the scheduled Unit 4C planned outage up to fall 2023.

However, shortly after Unit 4A's return to service, Unit 4C also experienced an in-service failure in May 2021.

Q. Did these unexpected occurrences further alter DEF's plan?

A. Yes. Given the two in-service failures in a short period of time, DEF determined that this new information required a strategy shift. Therefore, the Company accelerated the planned outage of Unit 4D from spring 2022 to June 2021. DEF completed the stator rewinds and returned Units 4C and 4D to service in November and October 2021, respectively.

Q. You indicated that the two forced outages in a short period of time was "new information" that led to DEF's strategy change. Given that DEF determined in March 2020 that there was a likelihood of latent damage to the remaining units, how did the in-service failures constitute "new information"?

A. The new information I was referring to is the speed at which the [redacted], which was thought but not definitively known to exist, was propagating on the remaining units notwithstanding operation within the OEM-provided parameters and the normal fleet operating temperatures. Recall that DEF became aware of the main contributing cause of the damage to Unit 4B in March 2020. At that time, the units had been operating for approximately seven (7) years after the [redacted] is believed to have occurred without an in-service failure known to have resulted from the damage identified in the RCA; that is, DEF had only its experience and did not have any means to formulate a trend or projection for when subsequent failures may

plant). Said differently, the prior order concerned operation of the Bartow Steam Turbine and contained no discussion regarding the operation of the CTGs. In fact, the Commission specifically noted "that this case is highly fact specific and for that reason will have limited precedential value."[5]

Conclusion

Q. In your opinion, has DEF acted prudently?

A. Yes. First, as I have explained above, the Company's operation of the units did not initiate the damage to the units, rather it was a function of [redacted] that the Company simply could not have contemporaneously known about. When DEF later determined the damage was likely present on the other units, it was confronted with a lack of information about: a) whether the other units (or some subset of those units) were actually damaged, and if so to what degree; and b) if the units were damaged, at what point the damage would be identifiable via available testing or when the units may experience a failure. Given this dearth of information, DEF made the reasonable decision to continue operating the units (benefitting customers by the continued generation of low-cost energy) and prudently took steps intended to mitigate the risk of future in-service failure. What we now know, but could not have known at the time, was the relatively short period in which the hypothesized damage would manifest. As I have explained above, as the Company learned additional facts, it prudently incorporated the new information into its analysis and made reasonable adjustments where possible. When making operations decisions in

[5] Order No. PSC-2020-0368A-FOF-EI, at p. 22.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-1)

REDACTED
Pages 1 through 26
are confidential in their entirety.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-2)

REDACTED
Pages 1 through 6
are confidential in their entirety.

Duke Energy Florida, LLC
Docket No. 20220001
Witness: Salvarezza
Exhibit No. ___(AS-3)

REDACTED
Pages 1 through 6
are confidential in their entirety.

Exhibit C

DUKE ENERGY FLORIDA
Confidentiality Justification Matrix

DOCUMENT/RESPONSES	PAGE/LINE	JUSTIFICATION
Direct Testimony of Anthony Salvarezza dated April 1, 2022	**Page 3** **Line 19:** All information before "years earlier" is confidential. **Page 5** **Line 3:** All information before "(Confidential)" **Line 6:** all information on before "(Confidential)" **Line 17**: all information after "of the" and before "consistent" **Line 20:** All information after "the" and before "were degraded" **Line 23:** All Information before "ultimately". **Page 7** **Lines 12-**The remaining information after "initiated by". **Line 13:** All information in its entirety. **Line 14:** The information before "The RCA", after "to the". **Line 15:** The information before "was", and the remainder of the sentence after "was". **Line 16: T**he information before which led **Line 17:** The information after "than the" and before "The units". **Line 18:** The remaining information after "cycling" **Lines 19 and 20:** in their	§366.093(3)(d), F.S. The document in question contains confidential information, the disclosure of which would impair DEF's efforts to contract for goods or services on favorable terms. §366.093(3)(e), F.S. The document in question contains confidential information relating to competitive business interests, the disclosure of which would impair the competitive business of the provider/owner of the information.

	entirety. **Page 8** **Lines 1 and 2**: All information in their entirety. **Line 8:** the information after "ground" **Line 9**: The information in its entirety **Line 10**: the information after "determined the" **Lines 11 and 12**: the information in its entirety **Line 13**: The information before **Line 14**: The information after "to the", before "as" after "as" **Line 15**: The information in its entirety. **Line 16**: The information before "Exhibit" after "from" and before "This", after "relatively" and before "The OEM". **Page 9** **Lines 3-10,** all information in its entirety **Lines 13:**The information after "that the" and before "were" **Line 14**: The information after "degraded" and before "When", after "the" and before "were replaced" **Line 16**:The remaining information after "the" **Line 18**: the remaining information after "the" Line 19: all information in its entirety Line 20:All information before "See" **Page 10**	

	Line 8: The remaining information after "based on" **Line 9**; The information before "giving", after "around", and before "and" **Line 10**: The information after "approximately" and before "depending" **Line 12**: The information after "set-point of" and before "is more" **Line 13:** The information before "below" **Line 17**: The information after "the" **Line 18**: The information before "replacement" **Page 11** **Line 1:** The information after "that the". **Lines 2-5**: All information in its entirety. **Line 6**: All information before "See". **Line 8:** The information after "approximately" and before "of margin". L**ine 17: The information** after "when the" and before "upgrade". **Line 21:** The information after "capability of" and before MW" **Page 12** **Line 1**: the information after "is" and before "MVAR" **Line 10:** The remaining information after "was" **Line 11**: The information before "which led", and after "increased". **Line 13:** The information after "degraded" and before "were"	

	Line 14: The remaining information after "the" **Line 15:** The information before "while" **Line 18:** The information after "cause of" and before "and". **Page 13** **Line 1**: the information after "degraded" **Line 3**: The information after "issue" and before "and caused" and the remaining sentence after "the". **Page 16** **Line 13**: The information after "of" and before "equivalent" **Page 17** **Line 15**: The remaining information after "which the". **Line 20**: The information after "after the" and before "is". **Page 21** **Line 9**: The information after "function of" and before "that"	
DOCUMENT/RESPONSES	**PAGE/LINE**	**JUSTIFICATION**
Exhibit No. ___(AS-1) to the Direct Testimony of Anthony Salvarezza	Pages 1 through 26 are confidential in their entirety.	§366.093(3)(d), F.S. The document in question contains confidential information, the disclosure of which would impair DEF's efforts to contract for goods or services on favorable terms. §366.093(3)(e), F.S. The document in question contains confidential

		information relating to competitive business interests, the disclosure of which would impair the competitive business of the provider/owner of the information.
DOCUMENT/RESPONSES	**PAGE/LINE**	**JUSTIFICATION**
Exhibit No. ___(AS-2) to the Direct Testimony of Anthony Salvarezza	Pages 1 through 6 are confidential in their entirety.	§366.093(3)(d), F.S. The document in question contains confidential information, the disclosure of which would impair DEF's efforts to contract for goods or services on favorable terms. §366.093(3)(e), F.S. The document in question contains confidential information relating to competitive business interests, the disclosure of which would impair the competitive business of the provider/owner of the information.
DOCUMENT/RESPONSES	**PAGE/LINE**	**JUSTIFICATION**
Exhibit No. ___(AS-3) to the Direct Testimony of Anthony Salvarezza	Pages 1 through 6 are confidential in their entirety.	§366.093(3)(d), F.S. The document in question contains confidential information, the disclosure of which would impair DEF's efforts to contract for goods or services on favorable terms. §366.093(3)(e), F.S. The document in question contains confidential information relating to competitive business interests, the disclosure of which would impair the competitive business of the provider/owner of the information.

Exhibit D

AFFIDAVIT OF ANTHONY SALVAREZZA

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Fuel and purchased power cost recovery Clause with generating performance incentive Factor	Docket No. 20220001-EI Dated: April 22, 2022

AFFIDAVIT OF ANTHONY SALVAREZZA IN SUPPORT OF DUKE ENERGY FLORIDA'S REQUEST FOR CONFIDENTIAL CLASSIFICATION

STATE OF FLORIDA

COUNTY OF PINELLAS

BEFORE ME, the undersigned authority duly authorized to administer oaths, personally appeared Anthony Salvarezza, who being first duly sworn, on oath deposes and says that:

1. My name is Anthony Salvarezza. I am over the age of 18 years old, and I have been authorized by Duke Energy Florida (hereinafter "DEF" or the "Company") to give this affidavit in the above-styled proceeding on DEF's behalf and in support of DEF's Request for Confidential Classification (the "Request"). The facts attested to in my affidavit are based upon my personal knowledge.

2. I am the General Manager of Regional Services. I am responsible for leading and directing project engineering, project management, outage management, business planning and specialized maintenance in Regulated and Renewable Energy. My major duties and responsibilities include providing safe, reliable, efficient, economic, environmental, and regulatory compliant maintenance activities through the development and implementation of processes and programs.

3. DEF is seeking confidential classification for certain information contained in my direct testimony and Exhibit No. ___(AS-1), Exhibit No.___(AS-2), and Exhibit No.___(AS-3). The confidential information at issue is contained in confidential Exhibit A to DEF's Request and is outlined in DEF's Justification Matrix that is attached to DEF's Request as Exhibit C. DEF is requesting confidential classification of this information because it contains sensitive business information, the disclosure of which would impair the Company's competitive business interests and ability to contract for goods and services on favorable terms.

4. The confidential information at issue relates to proprietary third-party and technical information regarding the third-party's proprietary component design and operation parameters, the disclosure of which would impair the third-party's competitive business interests, and if disclosed, the Company's competitive business interests and efforts to contact for goods or services on favorable terms. In order to contract with third-party vendors on favorable terms, DEF must keep third-party proprietary information confidential.

5. Further, if DEF cannot demonstrate to its third-party vendors and others that may enter contracts with DEF in the future, that DEF has the ability to protect those third parties' confidential and proprietary business information, third parties will be less likely to provide that information to DEF – harming DEF's ability to prudently operate its business. DEF has not publicly disclosed the information. Without DEF's measures to maintain the confidentiality of this sensitive business information, DEF's ability to contract with third parties could detrimentally impact DEF's ability to negotiate favorable contracts, as third parties may begin to demand a "premium" to do business with DEF to account for the risk that its proprietary information will become a matter of public record, thereby harming DEF's competitive interests and ultimately its customers' financial interests.

6. Upon receipt of its own confidential information, strict procedures are established and followed to maintain the confidentiality of the terms of the documents and information provided, including restricting access to those persons who need the information to assist the Company, and restricting the number of, and access to the information and contracts. At no time since receiving the information in question has the Company publicly disclosed that information. The Company has treated and continues to treat the information at issue as confidential.

7. This concludes my affidavit.

Further affiant sayeth not.

Dated the 19th day of April, 2022.

(Signature)
Anthony Salvarezza
General Manager – Regional Services

THE FOREGOING INSTRUMENT was sworn to and subscribed before me this 19th day of April, 2022 by Anthony Salvarezza. He is personally known to me or has produced his _____ driver's license, or his _____ as identification.

DEANNA LEE CARVER
Commission # GG 239923
Expires July 18, 2022
Bonded Thru Troy Fain Insurance 800-385-7019

(AFFIX NOTARIAL SEAL)

(Signature)
Deanna Lee Carver
(Printed Name)
NOTARY PUBLIC, STATE OF FL
July 18, 2022
(Commission Expiration Date)
(Serial Number, If Any)