

MEMORANDUM

Agenda Item No. 8(O)(2)

TO: Honorable Chairman Jose "Pepe" Diaz
and Members, Board of County Commissioners

DATE: June 1, 2022

FROM: Geri Bonzon-Keenan
County Attorney

SUBJECT: Resolution authorizing the County Mayor to enter into and execute Momentary Parallel Operation Interconnection Agreements and Applications for Momentary Parallel Operation between Miami-Dade County and Florida Power & Light for the Miami-Dade Water and Sewer Department's Alexander Orr Water Treatment Plant, Hialeah Preston Water Treatment Plant, North District Wastewater Treatment Plant, Central District Wastewater Treatment Plant, and South District Wastewater Treatment Plant; and authorizing the County Mayor to exercise all provisions contained therein

The accompanying resolution was prepared by the Water and Sewer Department and placed on the agenda at the request of Prime Sponsor Commissioner Rebeca Sosa.


Geri Bonzon-Keenan
County Attorney


GBK/jp

Memorandum



Date: June 1, 2022

To: Honorable Chairman Jose “Pepe” Diaz
and Members, Board of County Commissioners

From: Daniella Levine Cava
Mayor 

Subject: Florida Power & Light Momentary Parallel Operation Interconnection Agreements and Applications at Water & Sewer Department treatment plants.

Executive Summary

This item seeks Board of County Commissioners (BCC) approval for a general delegation of authority to the County Mayor or County Mayor’s designee to enter into Florida Power & Light (FPL) Momentary Parallel (MP) Operation Interconnection Agreements and FPL Applications for MP Operation in substantially the form attached hereto as Exhibit 1 and 2, respectively. Specifically, WASD intends to enter into these interconnection agreements and applications at the following plants:

- Alexander Orr Water Treatment Plant (AORRWTP)
- Hialeah/Preston Water Treatment Plant (HPWTP)
- North District Wastewater Treatment Plant (NDWWTP)
- Central District Wastewater Treatment Plant (CDWWTP)
- South District Wastewater Treatment Plant (SDWWTP)

In addition to providing seamless and efficient transition from the FPL electrical grid to electrical generation systems at the Miami-Dade Water and Sewer Department’s (WASD) Plants, FPL MP Agreements are necessary for the connection of new electrical distribution buildings that are being built as part of WASD’s expansion and compliance activities in connection with Florida’s Ocean Outfall Legislation, Section 403.086(10), Florida Statutes (OOL).

Recommendation

It is recommended that the Board of County Commissioners approve the attached resolution that authorizes delegation of authority to the County Mayor or County Mayor’s designee to execute FPL MP Operation Interconnection Agreements and MP Applications for operations at AORRWTP, HPWTP, SDWWTP, CDWWTP, and NDWWTP, in substantially the forms attached hereto. The MP Operation Interconnection Agreement is attached hereto as Exhibit 1, and the Application for MP Operation is attached hereto as Exhibit 2.

Scope

This item is of countywide significance. The FPL MP Agreements at water and wastewater treatment plants are necessary for the continuity of safe and reliable potable water and sewer services to the community.

Delegation of Authority

This item delegates authority to the County Mayor or County Mayor’s designee to enter into, execute and exercise the provisions of FPL MP Operation Interconnection Agreements and FPL Applications for MP Operation at AORRWTP, HPWTP, SDWWTP, CDWWTP, and NDWWTP.

Fiscal Impact/Funding Source

There is no cost to the County to enter into any FPL MP Operation Interconnection Agreement and/or apply for MP Operation.

Track Record/Monitor

Marisela Aranguiz, P.E., WASD Deputy Director for Planning Regulatory Compliance and Capital Infrastructure, will be responsible for monitoring this Agreement.

Background

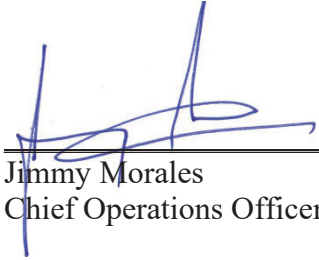
A Momentary Parallel (MP) is a closed transition transfer between the utility source and a customer owned generator source where the time the sources are in parallel does not exceed 100 milliseconds (6 cycles). Momentary overlapping transfer enables an interconnected FPL customer to transfer its facility loads from an FPL source to the customer generation in anticipation of a power interruption from FPL. The power interruption may be unplanned due to inclement weather or planned as part of a load management system. When the utility supply is once again available and stable, the momentary parallel connection allows the customer to transfer back to utility supply without an interruption in service.

MP Operation at WASD plants is necessary to help maintain system-wide pressure requirements to avoid a County-issued Boil Water Warning as well as to allow the WASD Plants to transition seamlessly for their electrical needs between FPL’s utility grid power and the Plants’ on-site back-up generation power sources.

As an example, AORRWTP operates back-up generation independently of FPL. In the event of a planned or unplanned transfer from energized utility feeders to in-house generation, AORRWTP must disconnect from the FPL grid before transferring to emergency back-up generation. This remains a risky procedure because there is a possibility of pressure loss in the WASD distribution system that could affect high service pumps and other auxiliary equipment that could trip and would then need to be brought back online. To date, pressure losses during these events have not been enough to trigger boil water orders; however, having an MP Agreement with FPL will considerably reduce any associated risk during these electrical transitions between the FPL grid and AORRWTP’s onsite generator. Similar risks exist at the HPWTP, NDWWTP, CDWWTP and SDWWTP, and will, therefore, likewise benefit from the adoption of MP operation.

Honorable Chairman Jose "Pepe" Diaz
and Members, Board of County Commissioners
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In addition to providing an efficient and safe means for transitioning power at the Plants back and forth from FPL and WASD's own electrical generation system, because the Ocean Outfalls Legislation requires all southeast Florida utilities using ocean outfalls for disposal of treated wastewater to eliminate the normal use of ocean outfalls by the end of 2025, WASD is in the process of upgrading the NDWWTP and CDWWTP. As part of the improvements being made, WASD is constructing new electrical distribution buildings, and FPL is requiring WASD to have MP Agreements in place for these new electrical distribution facilities.



Jimmy Morales
Chief Operations Officer

Exhibit 1

FLORIDA POWER & LIGHT COMPANY

Third Revised Sheet No. 9.780
Cancels Second Revised Sheet No. 9.780

FPL ACCOUNT No. TBD
FPL PREMISE No. TBD

MOMENTARY PARALLEL OPERATION INTERCONNECTION AGREEMENT

This Agreement is made this _____ day of _____, _____ by and between _____ (hereinafter called "the Customer"), located at _____ in _____, Florida and Florida Power & Light Company, a corporation organized and existing under the laws of the State of Florida (hereinafter called "FPL").

WITNESSETH:

WHEREAS, the Customer has requested that electric service requirements for the customer's load be supplied or supplemented from the Customer's generation during periods of outages of power ordinarily supplied by FPL, which condition requires the Customer's generation to operate momentarily in parallel with FPL's system to enable the Customer to transfer its load from FPL's source to the Customer's generation in order to continue the uninterrupted flow of power to the Customer's load; and

WHEREAS, FPL is willing to permit or to continue to permit such momentary parallel operation under the terms and conditions specified herein;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

1. Attached hereto as Appendix A are FPL's guidelines to the Customer delineating momentary interconnection requirements. The Customer must comply with these guidelines; however, such compliance does not constitute FPL approval of a proposed interconnection design.
2. The Customer must submit an application for permission to momentarily parallel with FPL's system (a sample application is attached hereto as Appendix B), and thereafter obtain specific and final approval from FPL of the proposed interconnection design.
3. The Customer shall be required to pay any costs deemed by FPL to be extraordinary (when compared to the guidelines in Appendix A) and related to review and approval or disapproval of the design and construction, as well as inspection and operation, of the interconnection facilities. These costs may also include installation and operation and maintenance related to any equipment required to effect a proper interconnection, both at the location of the Customer's generation and at locations on FPL's system.
4. The design requirements of the Customer interconnection configuration and equipment shall be implemented in a manner which minimizes any potential negative impacts on FPL's customers, personnel and equipment.
5. The interconnection between FPL's system and the Customer's generation shall be at distribution voltage levels (i.e., below 69 kV). Service must be three-phase, 60 hertz at the available standard distribution voltage level(s). All service supplied by FPL shall be furnished through one metering point.
6. The Customer shall operate and maintain its interconnection facilities in a safe and reliable manner and shall immediately notify FPL in the event of any hazardous or unsafe condition(s).
7. The parallel operation time between FPL's system and the Customer's generation shall not exceed 100 milliseconds.
8. The Customer's generation shall be promptly disconnected from FPL's system upon request of FPL and automatically through the operation of protective equipment.

(Continued on Sheet No. 9.781)

Issued by: S. E. Romig, Director, Rates and Tariffs
Effective: July 1, 2006

(Continued from Sheet No. 9.780)

- 9. The Customer shall provide FPL an annual test (certified by a registered engineer licensed in the State of Florida) report of the overlapping transfer time. Failure to pass the annual test may result in disconnection of power and void this Agreement.
- 10. Subject to section 2.7 Indemnity to Company, or section 2.71 Indemnity to Company – Governmental, FPL’s General Rules and Regulations, at least fifteen (15) days prior to the commencement of construction of the interconnection facilities, the Customer shall procure, or cause to be procured, a commercial general liability insurance policy, including, but not limited to, broad form contractual liability coverage and Products/Completed Operations Liability Coverage for the benefit of FPL, its parent, subsidiaries and any company of FPL Group Inc., and their respective officers, directors, employees, agents and contractors ("FPL Entities") for the term of this Agreement and for all liabilities which might arise under, or in the performance or nonperformance of, this Agreement.
- 11. Subject to section 2.7 Indemnity to Company, or section 2.71 Indemnity to Company – Governmental, FPL’s General Rules and Regulations, the policy(ies) shall be in a minimum limit of \$1,000,000 per occurrence, combined single limit, for bodily injury (including death) or property damage. FPL Entities shall be designated as either named insured or an additional named insured, and the policy(ies) shall be endorsed to be primary to any insurance which may be maintained by or on behalf of FPL Entities. The Customer shall provide evidence of the minimum coverage by providing ACORD or other certificate of insurance acceptable to FPL before any work under this Agreement begins. In the event of the Customer's failure to provide evidence of minimum coverage of insurance, FPL's failure to request evidence of such shall not release the Customer from its obligation to maintain the minimum coverage specified in this Section 11. The commercial general liability insurance policy(ies) shall not be cancelled or materially altered without at least thirty (30) days advance written notice to FPL.
- 12. Governmental entities authorized under Florida or federal law to be self-insured, in lieu of providing evidence of adequate commercial insurance, have the option of providing to the Company evidence that the applicant has established an adequate self-insurance plan to cover the obligations of indemnification referenced herein; and shall, upon request, provide such other information as the Company may deem necessary and relevant. The self-insurance plan shall not be cancelled or materially altered without at least thirty (30) days advance written notice to FPL.
- 13. In addition to the minimum coverage outlined above, the various commercial general liability insurance policies are subject to FPL's approval and, upon request, the Customer shall make certified copies of these various general liability insurance policies, and/or information regarding the self-insurance plan, available for inspection by FPL's Risk Management Department within fifteen (15) days of a request therefore. Any inspection of such plans or policies shall not obligate FPL to advise the Customer of any deficiencies in such plans or policies, and such inspection shall not relieve the Customer from, or be deemed a waiver of, FPL's right to insist on strict fulfillment of the Customer's obligations hereunder.

IN WITNESS WHEREOF, the Customer and FPL have executed this Agreement this _____ day of _____, 20____.

Witness for the Customer

Witness for FPL:

CUSTOMER

By _____

Title _____

FLORIDA POWER & LIGHT COMPANY

By _____

Title _____

Appendix A

FPL DESIGN AND STANDARDS

DISTRIBUTION GENERATION

MOMENTARY PARALLEL INTERCONNECTION RELAY GUIDELINES RG-3



Momentary Parallel

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1.0 Introduction

This document provides design guidelines for determining momentary parallel interconnection requirements for customer owned generation at the distribution voltage level. The information in this guideline is typical and for reference only. Compliance with these guidelines does not constitute approval or endorsement of the customer's proposed momentary interconnection design.

Momentary overlapping transfer enables an interconnected FPL customer to transfer its facility loads from an FPL source to the customer generation in anticipation of a power interruption from FPL. The power interruption may be unplanned, due to weather, or planned, as part of a load management system. When the utility supply is once again stable, the momentary parallel connection allows the customer to transfer back to utility supply without an interruption in service.

2.0 General Interconnection Philosophy

The general intent of FPL's philosophy regarding momentary parallel operation with customer owned generation sources such as standby and/or emergency generation (EG) at distribution voltage levels is to facilitate the interconnection in such a manner so as to minimize any potential negative impacts on FPL's customers, personnel, and equipment.

Therefore, the design requirements of the interconnection configuration shall be implemented to meet the necessary criteria. The following are two types of paralleling interconnections used to provide uninterrupted service to customer loads.

- a) Parallel operation of 100 milliseconds or less.
- b) Parallel operation in excess of 100 milliseconds

These guidelines describe and apply to type "a" only. The momentary overlapping transfer should enable an interconnected FPL customer to transfer the facility loads from the FPL source to the customer facility generator bus in the anticipation of storm induced power disruptions or if the FPL source is expected to be unstable or unavailable for a prolonged period.

In addition, the power interruption may be a scheduled event and implemented in accordance with the terms of service set forth in a contractual agreement between FPL and the customer.

The momentary paralleling transfer permits the customer's generation to operate momentarily in parallel with FPL's system at minimal cost and risk to other FPL customers and FPL's power systems. The paralleling time between the FPL system and the customer's generation shall not exceed 100 milliseconds.

2.1 Safety

If the emergency generator (EG) is interconnected with the FPL system, the EG will be a source of fault current to a fault on the FPL system. Therefore, adequate protective devices must be installed to isolate the EG from the fault. The design of the protective system must also include the means of disconnecting the EG from the FPL system in the event that FPL must perform maintenance or repair at or beyond the interconnection.

2.2 Economics

FPL customers and shareholders must not be put in a position of having to subsidize the EG. Therefore, any equipment additions required to effect a proper interconnection, both at the EG location and at other locations on the FPL system, will be at the expense of the customer owning the EG.

2.3 Reliability

FPL customers shall not be subjected to a decreased level of service reliability due to interconnection with an EG. Therefore, FPL equipment must be protected in such a manner that the EG interconnection will not involve a risk of increased service unavailability for FPL equipment and interruption of FPL customers served through such equipment. In addition, any operating procedures attendant to the EG interconnection must be developed with the intent of minimizing potential degradation in reliability of service to FPL customers served from the circuits involved with the EG interconnection.

2.4 Character of Service

Every effort must be made to ensure that other FPL customers served from the circuits involved in the interconnection are not subjected to fluctuations in supply voltage, frequency, and flicker beyond acceptable limits. Proper consideration should be given to possible harmonic distortion which the EG may introduce to FPL's sinusoidal voltage wave shape. Any such harmonic distortion shall not exceed acceptable limits set by IEEE Standard 519.

2.5 Customer Responsibility

It is the EG customer's responsibility to provide protective relays, surge protection, and safety devices for the customer's equipment and personnel. These devices may include but are not limited to short circuit protection, anti-motoring protection, reverse power protection, generator voltage and frequency protection, generator synchronizing, and generator differential.

The EG customer shall be solely responsible for the protection of the customer's equipment so that faults or other system disturbances, whether on the FPL system or within the EG customer's facility do not cause any damage to the customer's equipment or injury to personnel.

The EG customer must provide a safety disconnect switch for isolation of the customer's equipment during maintenance activities.

The EG customer must provide the transfer breaker pair with synchronizing capability for the purpose of synchronizing the EG with the FPL system before the overlapping transfer takes place.

The customer shall be responsible for the complete design of the EG facility and the transfer equipment therein. The customer shall meet the requirements of the NEC, state and local codes, and FPL technical and FPL contractual requirements. FPL review of the customer's design shall not be considered an endorsement of the design.

3.0 Interconnection Design

3.1 General

This section describes guidelines for the EG interconnection regarding protective equipment and protection related communications. Specific requirements for the protective systems associated with any particular EG interconnection must be developed on a site specific basis.

3.2 Requirements

There are many customer applications in which power continuity requirements are important for safety or economic reasons dictate that two or more independent sources of power are to be provided.

Certain events or conditions often require the transfer of essential loads from one source to another source. The following two methods are typically used: Dead Bus transfer and Momentary Overlapping transfer.

3.2.1 Dead Bus Transfer

This section is included for reference only. A manual or automatic transfer is initiated to transfer to the alternate source by disconnecting the first source before connecting to the alternate source.

When the FPL source is de-energized, an undervoltage relay should detect the loss of voltage and trip the FPL source breaker after a short time delay, regardless of which source is connected to the customer's loads.

After the load bus voltage has decayed well below the nominal value, the EG breaker may close and pick up the de-energized load.

When the EG source connected to the loads is de-energized, then the FPL source breaker can be closed and connected to the customer's loads. The FPL source is considered energized if the FPL source undervoltage relay is reset by greater than 80% of nominal voltage.

The undervoltage relay will prevent any closing of the FPL source breaker until the FPL source has been re-energized for at least two seconds to prevent inadvertent energization of the FPL system by customer generation.

3.2.2 Momentary Overlapping Transfer Design

This load transfer scheme is used so that no interruption to the load and no transients on the power system occur. This transfer requires continuous, "no break" power to the load.

Typically, two sources are available. Either a manual or an automatic transfer is initiated to transfer to the alternate source by first connecting the alternate source before disconnecting the first source.

Momentary overlapping transfer of the two power systems, utility and customer generation, requires two dedicated tie breakers or a transfer pair (N1 and E1). See Reference Figure 1. An overlapping transfer switch may be used in place of the breaker pair. (Section 3.2.5)

Figure 1 shows the typical one-line diagram of this transfer scheme. The transfer breaker pair or overlapping transfer switch will be furnished by the customer. One of the two breakers, N1, is used to connect the customer's load to the FPL system. The second breaker, E1, is used to connect the customer's load to the customer's own EG.

Transfer Time

The maximum momentary overlapping transfer paralleled time, including breaker time, from FPL source to customer EG is 100 milliseconds. The maximum momentary overlapping transfer time from customer EG to FPL source is 100 milliseconds.

In the event that the momentary paralleling transfer from FPL source to customer EG time exceeds 100 milliseconds due to the failure of the FPL tie breaker N1 to open, the customer emergency source breaker E1 must be re-opened within 215 milliseconds. This time includes breaker time and the normal transfer time of 100 milliseconds.

In the event that the momentary paralleling transfer from customer EG to FPL source exceeds 100 milliseconds due to the failure of the customer source breaker E1 to open, the FPL tie breaker N1 must be re-opened within 215 milliseconds. This time includes breaker time and the normal transfer time of 100 milliseconds. (See Figure 2)

The 100 millisecond parallel time is selected because it is a reasonable time period in which currently available equipment can operate. In addition, the 100 millisecond requirement plus 115 millisecond backup time is derived from utility practice of reclosing for faults. The customer EG shall implement breaker failure to transfer protection so that total overlapping time does not exceed 215 milliseconds.

Simultaneous Fault Clearing

The breaker pair required for the overlapping transfer shall isolate the EG system from the utility system without delay, if a fault is coincident on the system at the exact time that the overlapping transfer takes place.

Reclosing

Another consideration is that the distribution line breaker will open for a fault or transient condition on the distribution line then reclose within 20 cycles (333 milliseconds). This provides time for de-ionization of the fault before reclosing the distribution feeder breaker. (See Figure 2).

If the EG is in parallel with the FPL system for 100 milliseconds and the transfer fails, a backup scheme shall break parallel within an additional 115 milliseconds. Inadvertent connection of the two systems when the FPL distribution feeder breaker recloses can damage the EG and the FPL distribution system.

Synchronizing

It is recommended that the customer's EG and the transfer pair breaker control circuit shall include a generator synchronizing system. The synchronizing system matches the EG voltage and frequency to the FPL system voltage and frequency and permits the overlapping transfer to switch loads between the power systems when the two system parameters are within tolerance.

Fault Current Level

Short circuit rating of electrical equipment shall be taken into consideration when the load bus is connected to two or more power sources.

It is recommended that the customer perform a short circuit and coordination study to ensure the safe operation of the facility and proper interrupting ratings for equipment. FPL will supply available fault current

data upon request. The customer shall supply fault current data from their facility upon FPL request.

Alternate Sources

There shall not be a method by which the customer can tie two FPL sources together using the EG plant equipment. Tying two sources together could double the available fault current. The customer's EG site bus tie breaker shall be equipped with interlocks to prevent the FPL main source and FPL alternate source from being tied together.

3.2.3 Control Logic Description for Breaker Transfer Pair

Note: The following description for momentary parallel applies to breaker transfer pair applications. Automatic Transfer Switches (ATS) typically do not have the capability of the circuits described below. Refer to Section 3.2.5 for ATS applications.

FPL requires that momentary paralleling schemes that interconnect with the utility have the following four control circuits:

Primary Control

The automatic momentary overlapping transfer is normally controlled by the customer's PLC (programmable logic controller) or control circuit. This control is the primary transfer function. The timing for the primary control overlapping transfer shall not exceed 100 milliseconds.

Primary Breaker Failure Control

If during the overlapping transfer, the circuit breaker required to open fails to open, the primary failure to transfer control shall re-open the last closed circuit breaker. This function is typically initiated by the customer's PLC or primary control circuit. Total overlapping transfer time of this control shall not exceed 215 milliseconds, including breaker time.

Secondary Control

A redundant automatic transfer scheme is required due to the possibility of failure in the primary transfer scheme. The secondary control circuit shall be independent of the primary control circuit. It may be controlled by a redundant PLC or by using "advance" auxiliary contacts from the transfer pair. The timing for secondary control overlapping transfer shall not exceed 100 milliseconds.

Secondary Breaker Failure Control

The secondary breaker failure to transfer scheme is required due to the possibility the primary breaker failure circuit may fail to operate. If during the overlapping transfer, the circuit breaker required to open fails to open, the secondary failure to transfer control shall re-open the last closed circuit breaker. This function is typically initiated by the customer's

redundant PLC or secondary control circuit. Total overlapping transfer time of this control shall not exceed 215 milliseconds, including breaker time.

The backup breaker failure to transfer tripping output contacts are typically connected in parallel with the primary breaker failure control circuit.

3.2.4 Closed Transition/Test/Return to Normal

If both the FPL source and the emergency generator source are available, then the load can be transferred from one source to the other and then back to the first source in a test mode with two no-break transitions being accomplished. The synchronism checks both systems and allows the overlapped closing of both breakers, resulting in a “hot” transfer of the load. The paralleling of the two systems is only for 100 milliseconds.

The breaker pair is part of the customer’s transfer system. By agreement between FPL and the customer, the customer shall provide FPL a final certified test, including oscillogram showing the actual operating time of the overlapping transfer circuits before the scheme is placed in service.

The certified test report shall include the following:
(Refer to Form 6.2)

- a. The overlapping transfer time using the primary control circuit.
- b. The overlapping transfer time using the secondary control circuit.
- c. The overlapping transfer time resulting from the failure to normal transfer using the primary or secondary control circuit. This will be the operation time of the primary breaker failure control circuit.
- d. The overlapping transfer time resulting from the failure to transfer by the primary or secondary control circuits and the loss of the primary breaker failure circuit. This will be the operation time of the secondary breaker failure control circuit.

3.2.5 Fast Closed-Transition Automatic Transfer Switches (ATS)

Fast closed transition transfer switches are an acceptable alternative in momentary paralleling applications in place of a breaker transfer pair. These transfer switches provide a “make before break” switching action and utilize a momentary paralleling of both sources (< 100 mS) during the transfer period. Since the overlap time is very short, voltage and frequency transients may be imposed on the system.

To limit system transients, it is recommended that loads are transferred sequentially and that each switch load is limited to a percentage of the generator rating.

Extended Parallel Time/Extended Overlap

Note: It is preferable that ATS applications conform to the control logic scheme for a breaker transfer pair, as outlined in Section 3.2.3. As an alternate, ATS applications may apply extended overlap protection as outlined below.

The ATS shall have extended overlap protection. In the event the paralleling time exceeds 100mS, the ATS controls should automatically open the emergency or normal main contacts. In addition, the ATS should be supplied with two independent auxiliary timers.

Timer 1 is an extended overlap protection relay that provides a trip contact which operates in the event the normal and emergency contacts remain overlapped for longer than 100mS. This timer typically operates its contact to shunt trip the emergency source after an approximate 135mS delay.

Timer 2 is an extended overlap protection relay that provides a trip contact which operates in the event the normal and emergency contacts remain overlapped for longer than 100mS and Timer 1 has not operated. This timer typically operates its contact to shunt trip the normal source supply after an approximate 170mS delay.

A control circuit for the extended parallel protection should be in place so that in the event Timer 1 successfully breaks parallel operation, Timer 2 is shut down before it operates to trip the normal source supply.

By agreement between FPL and the customer, the customer shall provide FPL a final certified test, including oscillogram showing the actual operating time of the ATS before the scheme is placed in service.

The certified test report shall include the following:
(Refer to Form 6.3)

- a. The transfer time from normal supply to emergency supply.
- b. The transfer time from emergency supply to normal supply.
- c. The extended parallel time resulting from the failure of a normal transfer. This will be the shunt trip time of the emergency source by Extended Overlap Timer 1.

- d. The extended parallel time resulting from the failure of a normal transfer and the failure of Extended Overlap Timer 1. This will be the shunt trip time of the normal source by Extended Overlap Timer 2.

3.2.6 Backfeed Protection of the FPL System

Standard Protective Relaying

Three phase voltage detection relays are required on the FPL side of the EG customer's utility tie breaker to prevent backfeed into de-energized FPL lines. The undervoltage relay will trip and prevent closing of the EG customer utility tie breaker until the FPL source has been energized for at least two seconds.

Only when the FPL source is available and stable should the EG customer utility tie breaker be closed. The FPL source is considered energized if the undervoltage relay detects greater than 80% of nominal voltage for at least two seconds. The voltage relay shall be furnished by the customer.

Reverse Power Protective Relaying

Additional relaying supplied by the customer may be required in some instances. A sensitive three phase directional power relay is recommended when the level of generation paralleled exceeds 1MW and is required when the level of generation paralleled exceeds 2MW. If a reverse power condition is detected, the relay should trip the generator breaker with a time delay not to exceed 120mS, to prevent current from flowing onto the FPL system.

4.0 Metering Requirements

4.1 Metering

FPL does not normally require metering equipment above what is installed for normal revenue load metering when emergency generator momentary overlapping transfer schemes are applied.

Since the paralleling of the EG to the utility is brief, very little power should flow onto the FPL system.

The EG customer may elect to install its own metering at the interconnection point.

5.0 Design Information on Facility

The customer shall provide to FPL the following information regarding the EG design. FPL reviews this documentation to ensure the facility complies with FPL requirements. FPL review shall not be considered an endorsement of the design.

- a) Location of the safety disconnect switch. A safety disconnect switch is required for isolation of the customer's equipment during maintenance activities.
- b) A system one line diagram showing the configuration of the customer's electrical system.
- c) A detailed description of the equipment and sequence of operation which shall include the following:
 - i. Equipment Description
 - ii. Operating Modes, Normal and Emergency
 - iii. Description of Sequence of Transfer Operation, Normal to Emergency and Emergency to Normal
 - iv. Description of the transfer schemes operation and control.
 - v. A copy of the Application Checklist, Form 6.1.

6.0 Customer Information Documentation

6.1 Application Checklist

Use form 6.1.

6.2 Momentary Parallel Transfer Pair Breaker Test Form

Use form 6.2

6.3 Automatic Transfer Switch (ATS) Test Form

Use form 6.3

6.1 Application Checklist

The application checklist should be submitted with the Momentary Parallel application. The following requirements are met for submittal of the Momentary Parallel Application.

- _____ Three phase voltage detection relays are located on the utility side of the tie breaker. The voltage relay time delay is set for _____ seconds.
- _____ The voltage detection relays trip and block closing of the utility tie breaker if utility voltage is not present.
- _____ A safety disconnect switch is provided to isolate the customer equipment from the FPL source
- _____ A primary transfer scheme is in place and set for a maximum paralleling time of 100 milliseconds.
- _____ A secondary transfer scheme is in place and set for a maximum paralleling time of 100 milliseconds.
- _____ A primary breaker failure transfer scheme is in place and set for a total overlapping time of 215 milliseconds or less.
- _____ A secondary breaker failure transfer scheme is in place and set for a total overlapping time of 215 milliseconds or less.
- _____ If the customer generation site has a bus tie breaker, the bus tie breaker has interlocks to prevent the primary FPL source and the alternate FPL source from being tied together.
- _____ Reverse Power Relay installed (if required)
- _____ ATS application has accessory Timer 1 installed
- _____ ATS application has accessory Timer 2 installed
- _____ Description of Sequence of Operations is included
- _____ Main One Line Diagram of plant system is included

**Momentary Parallel/Overlapping Transfer
Test with Breaker Transfer Pair Logic**

6.2 Test Form

The purpose of this test is to verify that the transfer times comply with FPL specifications before placing the paralleling scheme in service. (See Figure 3).

The paralleling time shall be measured using a device capable of recording the three phase currents of the transfer pair. The transfer breaker's auxiliary contacts do not provide a true indication of the breaker main contact position. It is recommended that both current flowing from the utility and from the customer's generation to the customer's load be monitored. This provides an accurate representation of the paralleling time between the two sources. The presence of both current sources shall last less than 100 milliseconds for normal transfer operations and less than 215 milliseconds for breaker failure-to-transfer operations.

Each of the four control circuits shall be tested individually, both transfer directions, for a total of eight tests.

From FPL source to Customer Generation

Normal primary control transfer time is _____

Secondary control transfer time is _____

Breaker failure-to-transfer primary control circuit transfer time is _____

Breaker failure-to-transfer secondary control circuit transfer time is _____

From Customer Generation to FPL source

Normal primary control transfer time is _____

Secondary control transfer time is _____

Breaker failure-to-transfer primary control circuit transfer time is _____

Breaker failure-to-transfer secondary control circuit transfer time is _____

Tested By _____

**Momentary Parallel/Overlapping Transfer using ATS
With Extended Parallel Logic**

6.3 Test Form

The purpose of this test is to verify that the transfer times comply with FPL specifications before placing the paralleling Automatic Transfer Switch (ATS) in service.

The paralleling time shall be measured using a device capable of recording the three phase currents. Auxiliary contacts do not provide a true indication of the main contact position. It is recommended that both current flowing from the utility and from the customer's generation to the customer's load be monitored. This provides an accurate representation of the paralleling time between the two sources. The presence of both current sources shall last less than 100 milliseconds for normal transfer operations and less than 215 milliseconds for ATS failure operations.

Each of the control circuits shall be tested individually.

ATS Transfer Times

Normal transfer time from FPL to Customer Generation _____

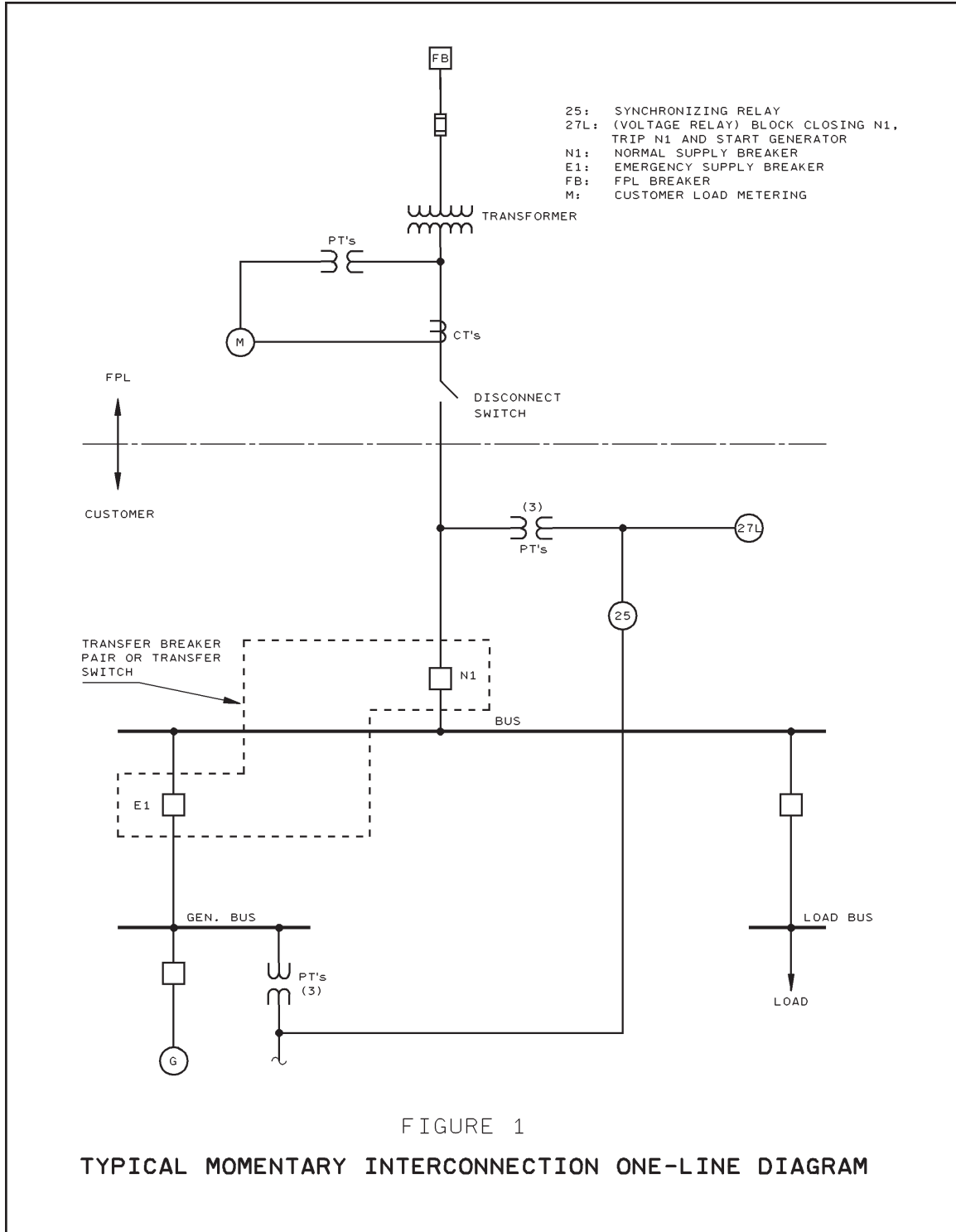
Normal transfer time from Customer Generation to FPL _____

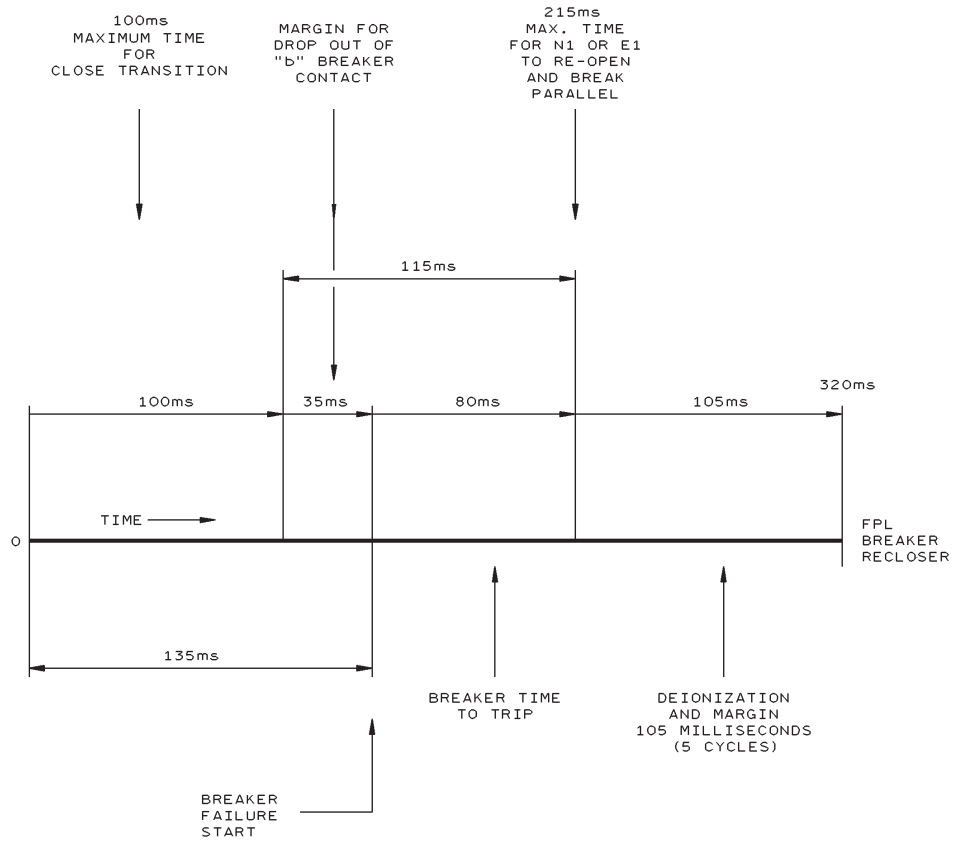
Extended overlap protection Timer 1 trip _____

Extended overlap protection Timer 2 trip _____

Tested By _____

7.0 FIGURES





PRIMARY CONTROL TIMING = 100ms
 SECONDARY CONTROL TIMING = 100ms
 PRIMARY BREAKER FAILURE = 215ms
 SECONDARY BREAKER FAILURE = 215ms

FIGURE 2
 OVERLAPPING TRANSFER TYPICAL TIME LINE



Application for Momentary Parallel (M.P.) Operation of Customer-Owned Generation

OWNER / APPLICANT INFORMATION

Company: _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____ Representative: _____

PROJECT DESIGN / A&E FIRM (as applicable)

Company: _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____ Representative: _____

ELECTRICAL CONTRACTOR (as applicable)

Company: _____
Mailing Address: _____
City: _____ County: _____ State: _____ Zip Code: _____
Phone Number: _____ Representative: _____

GENERATOR DATA

Manufacturer (if available) _____ Model: _____
Type: Synchronous Induction Phases: Single Three Frequency (Hz): _____
KVA Inverter

Rated Output: _____ Kilowatt _____ KVA _____
Rated Power Factor (%): _____ Rated Voltage (Volts): _____ Rated Amperes: _____
Energy Source (diesel, gas, steam, hydro, etc): _____

ESTIMATED LOAD INFORMATION

The following information will be used to help properly design the FPL-customer interconnection. This information is not intended as a commitment or contract for billing purposes.

Minimum anticipated load (generation not operating)
_____ (kW) _____ (kVA)

Maximum anticipated load (generation not operating)
_____ (kW) _____ (kVA)



MEMORANDUM
(Revised)

TO: Honorable Chairman Jose "Pepe" Diaz
and Members, Board of County Commissioners

DATE: June 1, 2022

FROM: 
Gen Bonzon-Keenan
County Attorney

SUBJECT: Agenda Item No. 8(O)(2)

Please note any items checked.

- "3-Day Rule" for committees applicable if raised
- 6 weeks required between first reading and public hearing
- 4 weeks notification to municipal officials required prior to public hearing
- Decreases revenues or increases expenditures without balancing budget
- Budget required
- Statement of fiscal impact required
- Statement of social equity required
- Ordinance creating a new board requires detailed County Mayor's report for public hearing
- No committee review
- Applicable legislation requires more than a majority vote (i.e., 2/3's present ____, 2/3 membership ____, 3/5's ____, unanimous ____, CDMP 7 vote requirement per 2-116.1(3)(h) or (4)(c) ____, CDMP 2/3 vote requirement per 2-116.1(3)(h) or (4)(c) ____, or CDMP 9 vote requirement per 2-116.1(4)(c)(2) ____) to approve
- Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(O)(2)
6-1-22

RESOLUTION NO. _____

RESOLUTION AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO ENTER INTO AND EXECUTE MOMENTARY PARALLEL OPERATION INTERCONNECTION AGREEMENTS AND APPLICATIONS FOR MOMENTARY PARALLEL OPERATION BETWEEN MIAMI-DADE COUNTY AND FLORIDA POWER & LIGHT FOR THE MIAMI-DADE WATER AND SEWER DEPARTMENT'S ALEXANDER ORR WATER TREATMENT PLANT, HIALEAH PRESTON WATER TREATMENT PLANT, NORTH DISTRICT WASTEWATER TREATMENT PLANT, CENTRAL DISTRICT WASTEWATER TREATMENT PLANT, AND SOUTH DISTRICT WASTEWATER TREATMENT PLANT; AND AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO EXERCISE ALL PROVISIONS CONTAINED THEREIN

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board authorizes the County Mayor or County Mayor's designee to enter into and execute Momentary Parallel Operation Interconnection Agreements and Applications for Momentary Parallel Operation between Miami-Dade County and Florida Power & Light for the Miami-Dade Water and Sewer Department's Alexander Orr Water Treatment Plant, Hialeah Preston Water Treatment Plant, North District Wastewater Treatment Plant, Central District Wastewater Treatment Plant, and South District Wastewater Treatment Plant, in substantially the form attached to the accompanying County Mayor's Memorandum; and authorizes the County Mayor or County Mayor's designee to exercise all provisions contained therein.

The foregoing resolution was offered by Commissioner , who moved its adoption. The motion was seconded by Commissioner and upon being put to a vote, the vote was as follows:

- | | |
|---------------------------------------|------------------------|
| Jose "Pepe" Diaz, Chairman | |
| Oliver G. Gilbert, III, Vice-Chairman | |
| Sen. René García | Keon Hardemon |
| Sally A. Heyman | Danielle Cohen Higgins |
| Eileen Higgins | Joe A. Martinez |
| Kionne L. McGhee | Jean Monestime |
| Raquel A. Regalado | Rebeca Sosa |
| Sen. Javier D. Souto | |

The Chairperson thereupon declared this resolution duly passed and adopted this 1st day of June, 2022. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By: _____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

SED

Sarah E. Davis