

Memorandum



Date: September 10, 2026

IITC
Agenda Item No. 7(A)

To: Honorable Chairman Anthony Rodriguez
and Members, Board of County Commissioners

From: Daniella Levine Cava *Daniella Levine Cava*
Mayor

Subject: Report regarding Feasibility Reports completed pursuant to the Master Services Agreement with Florida Power & Light Services, LLC – Directive No. 241760, Feasibility Report #4 - Group 2

Executive Summary

This report is being presented in response to Resolution No. R-1090-23, sponsored by Commissioner Raquel A. Regalado, and adopted as amended by the Board of County Commissioners (Board) on December 12, 2023. Pursuant to the Board's directive, completed Feasibility Study reports shall be presented to the Board detailing the results prior to project implementation. This report includes Feasibility Report #4 – Group 2, FPL Electrical On Site Power Solutions Miami International Airport: Park 7 Dolphin, Low Terminal F (F1630 & F1634), Chiller Plant (East), and Building 845 (attached hereto as Exhibit 1). The costs associated with these projects and the delegated authority to enter into the agreements with FPL to implement these projects were approved by the Board by way of Resolution No. R-1090-23 on December 12, 2023. These projects are critical to the resilience of electrical systems at MIA, reduce electrical risks to operations, and represent necessary end of life replacement of core systems.

Background

Resolution No. R-1090-23 approved the Master Services Agreement (MSA) with Florida Power & Light (FPL) Services, LLC for a resilient infrastructure, electrical hardening, sustainability, and electric vehicle (EV) services feasibility study and implementation services thereunder through FPL under the tariff programs. The MSA is for a 20-year term with automatic renewal periods of 12 months in an amount not to exceed \$912,000,000.00. The Resolution authorized the County Mayor or County Mayor's designee to execute the MSA and exercise all provisions therein, including the execution of Statements of Work (SOW) and tariff agreements with FPL for implementation of the approved projects. Section 9 of Resolution No. R-1090-23 "Directs the County Mayor or County Mayor's designee to disclose to the Board all the projects identified in the initial Feasibility Study before implementation. Thereafter, during the 20-year term of the MSA, the County Mayor or County Mayor's designee is directed to seek prior Board approval before procuring any projects arising under the MSA not identified in the initial Feasibility Study valued at \$5,000,000.00 or more."

The implementation of the MSA by FPL will assist the County in the modernization of aging systems and help to make these systems more economical, resilient, and energy efficient. The work FPL will implement under the MSA includes all aspects of operating and maintaining the electrical infrastructure system at the sites identified for normal and emergency power, as well as EV charging stations.

For the purposes of expediting project delivery and not exhausting County resources, County staff and FPL collectively decided to segment the Feasibility Report and subsequent implementation projects into several packages. As the MSA includes a wide range of projects varying in size and

cost, the phasing of the Feasibility Reports and connected project implementation provides for the prioritization of projects and allocation of staff time and resources over time.

Resolution No. R-1090-23 further directs the Administration to provide annual written reports to the Board throughout the term of the MSA of all work projects authorized under the MSA, which shall identify implemented projects, monies spent on such projects, and the utilization of small business participation goals on projects authorized under the MSA. Such annual reports will be submitted to the Board accordingly as forthcoming Feasibility Reports and connected work advances.

This directive report includes Feasibility Report #4 – Group 2, which is to be constructed through the MSA.

Nothing in this memorandum, Feasibility Study, connected Agreements, or Statements of Work is intended to support, implement or advance a net zero policy, require any contractor or person to support a net zero policy, or provide a procurement or purchasing preference for a product or vendor on the basis that the procurement or purchase of such product or from such vendor will advance or support a net zero policy as “net zero policy” is defined in section 377.816, F.S., as may be amended from time to time, or in any way violate any applicable provision of section 377.816, F.S..

Feasibility Report #4 – Group 2

The document attached as Exhibit 1 is Feasibility Report #4 – Group 2, for the FPL Electrical On Site Power Solutions Miami International Airport (MIA): Park 7 Dolphin, Lower Terminal F (F1630 & F1634), Chiller Plant (East), and Building 845. The core objective of the feasibility report for electrical resiliency and sustainability is to evaluate the electrical distribution system at MIA to identify electrical risks that could impact operations, identify gaps in electrical resilience, and develop electrical infrastructure solutions.

This project focuses on maintenance projects for legally required backup generation systems at Park 7 Dolphin, Low Terminal F, Chiller Plant East, and Building 845. These spaces are prioritized due to aging condition of the existing electrical equipment and generators, obsolete end-of-life switchgear, and critical backup power functions served by these locations – including facility support for airport air conditioning, parking garages, terminal loads, and other passenger-oriented services. In total across Group 2’s locations there are projected to be five (5) generator replacements, four (4) switchgear unit replacements, four (4) diesel system refurbishments, and other electrical device replacements.

The work in Feasibility Report #4 - Group 2 will be implemented through the Non-Residential Optional Power Supplemental Power Services (OSPS) Agreement, Supplemental Power Services Rider Pilot, and the Non-Residential Optional Supplemental Power Services Tariff Program SOW. These agreements are available upon request.

The monthly service payments for each project are in the following ranges over the 20-year term of the OSPS Tariff Program:

- Park 7 Dolphin: \$40,367 - \$53,823
- Low Terminal F: \$157,576 - \$210,101
Chiller Plant East Rm 214: \$32,780 - \$43,707
- Building 845: \$71,636 - \$95,515

Conclusion

The SOW connected with the attached Feasibility Report is available upon request. Pursuant to rule 4.01(v) of the Board's Rules of Procedure, this report will be placed on the next available IITC meeting agenda and the next available Board of County Commissioner's meeting agenda. Pursuant to Resolution No. R-1090-23 Feasibility Reports conducted pursuant to the MSA will be reported to the IITC and Board as such Feasibility Reports become available for disclosure to the Board prior to implementation. Should you require additional information, please contact Loren Parra, Director and Chief Resilience Officer, Department of Environmental Resources Management at Loren.Parra@miamidade.gov, or Ralph Cutie, Director & CEO, Miami-Dade Aviation Department at rcutie@flymia.com.

Attachments

Exhibit 1 - Feasibility Report #4 – Group 2

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Feasibility Report #4 – Group 2

FPL Electrical On Site Power Solutions
Miami International Airport

Park 7 Dolphin
Low Terminal F (F1630 & F1634)
Chiller Plant (East)
Building 845

April 16, 2026

Written by: Jon McQuitty

MDC004

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Executive Summary

In accordance with the Master Services Agreement “MSA” - Master Agreement for Energy Related Products and Services by and between FPL Services, LLC (FPLS) and Miami-Dade County (MDC) entered on January 24, 2024 and a Feasibility Study Authorization form dated February 14, 2024, this is the fourth feasibility study for Electric Resiliency conducted at Miami International Airport (MIA). It encompasses four separate locations.

This is the fourth feasibility report for MIA by FPLS, prioritizing the needs of Miami-Dade Aviation Department (MDAD) to replace and upgrade end-of-life backup generation sources, 480V switchgear, and other essential electrical equipment components at Park 7 Dolphin Parking Garage, Low Terminal F (Rooms F1630-F1634), Chiller Plant East, and Building 845.

This report also builds on electrical system resiliency concepts established in Feasibility Reports #1 and #2, dated December 9, 2024, and April 28th, 2025, respectively. All systems follow similar system design methodology that incorporates industry best practices enabling equipment standardization, reducing total cost of ownership. At the time of writing this report, Feasibility Report #3 (Group 1) is projected to be delivered to BCC in May 2026.

The core objective of this feasibility report is to evaluate the electrical distribution system at MIA to identify risks that could impact operations and highlight gaps in electrical resiliency. Based on this assessment, the study develops infrastructure solutions to improve resiliency, enhance operational reliability, and support continuous airport operations under both normal and emergency conditions. These solutions prioritize life-safety compliance, system maintainability, and long-term operational performance while aligning with applicable codes, standards, and Miami-Dade County operational requirements.

There are fifty-two (52) electrical rooms to be evaluated as part of the FPLS scope, each with varying levels of complexity and needs, with a total airport peak demand of around 62MW. Feasibility reports #1 and #2 provide solutions for three (3) electrical spaces, while Feasibility report #3 groups another four (4) separate locations together. This Feasibility report #4 follows a similar grouping concept to report #3. Necessary scope combined from Group 2’s locations total a projected five (5) generator replacements, four (4) switchgear unit replacements, four (4) diesel system refurbishments, and other electrical device replacements.

There are two types of projects that will be submitted to MDC for review:

- 1) Maintenance Projects – Legally required backup generation systems for life/safety applications
- 2) Optional backup generation systems for operational resiliency

This report focuses on maintenance projects for legally required backup generation systems at Park 7 Dolphin, Low Terminal F, Chiller Plant East, and Building 845. These spaces are prioritized due to aging condition of the existing electrical equipment and generators, obsolete end-of-life switchgear, and critical backup power functions served by these locations – including facility support for airport air conditioning, parking garages, terminal loads, and other passenger-oriented services.

While detailed scope is specified per individual location in the Project Development sections, overall general scope is 480V switchgear (if present) and emergency generator replacement at each location. The scopes incorporate modern technology and FPL’s recommendations for design upgrades to increase resiliency, such



as main-tie-main switchgear configuration, fuel system modernization to limit leaks and optimize maintenance, and cellular based remote monitoring. In addition, the scopes include removal of all decommissioned equipment to reintroduce space for modernized equipment.

The 24/7 operational nature of MIA and criticality of Airport Operational Area (AOA) space is considered with this project work. One location falls within the AOA (Low Terminal F). As a result, its respective existing indoor spaces are required for equipment replacement to enable modern code compliance and minimize operational risk. This also applies to the other four landside locations. New switchgear units (if applicable) and generator units are projected for install in the same footprint as those existing to avoid disruption to ongoing operations.

The commercial mechanism for performing this work is through the FPL regulated tariff program called Optional Supplemental Power Services (OSPS). The tariff is resiliency-as-a-service where FPL owns, installs, and maintains the equipment for twenty (20) years, including warranty and break/fix. The cost is a fixed monthly service payment over the 20-year term, determined by actual cost incurred during construction and covering operations and maintenance by FPL throughout the contract duration. The monthly payment starts once the equipment is operational and providing the resiliency service.

The construction and implementation timeframe for Park 7 Dolphin, Chiller Plant East, and Building 845 is approximately two years from a signed agreement, subject to change based on permitting, sourcing process, and other external market factors. Low Terminal F is projected to hold a slightly longer timeframe of between 2 – 2 ½ years due to its location and more complex scope.

In addition to core resiliency objectives, the proposed infrastructure improvements incorporate practical measures that support reduced emissions impact and improved operational efficiency where feasible. These include consideration of modern generator technologies with improved particulate matter (PM) performance, optimized fuel consumption during testing and operation, and system configurations that allow for operational flexibility across multiple energy sources. These elements are evaluated strictly within the context of system reliability, code compliance, and lifecycle performance, and are not intended to introduce policy-driven sustainability requirements but rather to enhance long-term operational outcomes for Miami-Dade County.

Organizational Capabilities.

FPL is well-positioned to support Miami-Dade County's investments in electrical infrastructure that is hardened for resiliency, reliable under extreme conditions, and designed for long-term operational efficiency. Where practical, system designs incorporate commercially available technologies that can reduce particulate emissions, improve fuel efficiency, and enable operational flexibility across multiple generation types. These considerations are evaluated based on engineering merit, system performance, and lifecycle cost, ensuring alignment with applicable regulations without introducing non-operational policy drivers.

The company is an industry leader in resilient electrical infrastructure since introducing our FPL OSPS program in 2019, delivering large backup power solutions to major institutions throughout the state. Including hurricane tested systems that have successfully provided full electrical resiliency during multi-day electric utility outages caused by recent hurricanes.

FPL is the industry leader in storm response. Florida is impacted by hurricanes or other severe weather nearly every year. It's not a question of if, but when a major weather event will occur. The internal capabilities and external vendor network are fully leveraged to deliver value to OSPS customers. We design hardened



systems, but we know things will happen and our preparedness will help ensure there is no delay in the restoration process.

In addition to storm response and weather-related outages, FPL is developing solutions against momentary outages caused by faults downstream in MIA owned infrastructure with consideration that these momentary outages can be severely disruptive to airport operations. FPL is an industry leader in maintaining its infrastructure as evidenced by its low SAIDI/SAIFU/CAIDI numbers, despite having some of the most severe weather in the county.

FPL, along with its parent company NextEra Energy, is the world's largest owner and operator of solar generation systems. FPL also owns and operates several utility scale battery storage systems throughout the state. The nuances and lessons learned from past projects are included in how FPL develops solutions for MIA that improve system efficiency, reduce operational risk, and lower environmental impact where practical.

We look forward to continuing our partnership. FPL has extensive experience in deploying resilient electrical infrastructure solutions designed to meet our customers' needs, and we are happy to serve as an advisor as you navigate this process, leveraging our experience deploying robust, reliable electric infrastructure around the state.

Together, as two of Florida's largest organizations, we can help meet a growing need for resilient electrical infrastructure and position MIA for continued economic prosperity.

Evaluation Methodology

The project team has taken a wholistic approach to the evaluation of MIA with a primary focus on improving resiliency, reliability, and performance of the electrical distribution system. The evaluation considers operational factors such as fuel efficiency, emissions performance of available technologies, and system flexibility, where such considerations directly support reliability, maintainability, and long-term cost effectiveness. MIA is appropriately considered a city-within-a-city with a very large electrical distribution system that supports 24x7 operations and is a major economic engine with impact globally. The airport complex has grown with the greater Miami-Dade County region over the past nearly 100-years to what it is today. The airport complex will continue to change with major expansion projects, in various stages of development, throughout the MIA geographic footprint.

Given the magnitude and complexity of the electrical system at MIA, the evaluation process starts in documenting the existing state electrical conditions to define the problem statement. The evaluation then considers the county's long-term Capital Improvement Plan (CIP) to ensure all work supports the long-term vision of MIA. This electrical work is heavily driven by codes and standards that must be adhered to for solution development. Essentially, the evaluation process considers where we are today and where we need to be in the future.

The scope of electrical evaluation for existing state conditions focuses on the main electrical distribution panels throughout MIA for energy resiliency and operational diversity. This is the head-end switchgear and first point of disconnect from utility power. The scope does not include evaluation of secondary panels and secondary distribution.

Existing State Evaluation

Several factors are documented to define existing state conditions:

- Peak electrical demand, in terms of kilowatt demand (KWD) – this is obtained by performing utility meter analysis, going back several years, where available. Peak demand is the most important information needed to properly size electrical distribution equipment and alternative sources of energy.
- Single-line diagram (SLD) – the SLD defines how the circuit is configured. How the circuit is designed directly influences system resiliency and maintainability, among other factors. OSHA requires an accurate SLD, or equivalent (such as a panel elevation drawing), in all main electrical spaces.
- Floor Plan Layout – the floor plan layout defines physically where equipment is and isn't. It defines the space. While electrical equipment supports revenue generating operations, it does not generate revenue itself. Therefore, space used by electrical infrastructure must be minimized where possible.
 - o Space is the #1 design constraint at MIA for new work and construction planning.
- Condition assessment – the existing equipment is visually inspected for type of equipment, manufacturer, age, signs of corrosion or previous arc-flash, air-conditioning/humidity control, availability of spare parts, and other factors that contribute to the perceived level of useful life remaining and respective risk profile.

Future State Evaluation

Several factors are documented to define future state electrical needs:

- CIP Projects – The future capital projects for terminal expansion, EV infrastructure, new cargo processing facilities, major facility modifications, etc., all contribute to changes in (a) space and (b) electrical demand. All work is performed in consideration of these future, separately planned projects.
- Electric Vehicle (EV) adoption is expected to increase electrical demand at MIA over time, particularly for fleet and operational vehicles. This load growth is considered in long-term planning for electrical infrastructure capacity and system flexibility.
- EV Resiliency – While EV charging infrastructure is not currently designated as critical life-safety load, future operational needs may require resiliency for select transportation or fleet-related systems that support airport continuity during emergency conditions. Provisions may be incorporated, where practical, to allow for future integration without major system modifications.

All work must adhere to applicable codes. In addition, the environmental factors that will influence any system design:

- All solutions will adhere to all applicable codes required by the AHJ, including the wind loading requirements for generator systems in Miami-Dade County.
- Flooding and sea-level rise – All design work considers code requirements for existing base-flood elevation plus 1-foot, as well as MDC requirements for future FEMA flood projections to ensure long term resiliency.
- All projects consider salt-spray, jet wash, and other environmental factors. An example of this is the selection of aluminum enclosures instead of steel enclosures.
- The corrosion considerations of electrical systems in South Florida are significant, which contributes to strong bias to install equipment in air-conditioned spaces to prevent unplanned downtime, ensure longevity of equipment, and keep costs under control.
- Underground conduit – In South Florida, ruptured conduit is not uncommon, especially in systems over 30yrs old, which is a major construction risk for nearly every system at MIA. Because all loads are currently connected, there is no way to have assurance that new cable can be pulled through old conduit until the task is complete. As a result, the contingency planning for project work will be extensive, including plans for temporary power while permanent resolutions can be implemented.

Operational and Construction Evaluation

The operational needs of MIA and impact during construction activities also must be considered in development of the problem statement and final proposed solutions. After several meetings and conversations with MDAD Officials, FPL has captured the following operational considerations:

- MIA operates 24/7 – the new equipment must be integrated with a detailed and resilient temporary power plan that minimizes total impact and risk to operations. Including planning details around locations of temporary power equipment, timing of power transfer events, testing processes, and other details to minimize risk of unplanned outages.
- Space must be optimized for airport operations, not electrical equipment. The general goal is to work within the existing footprint of electrical equipment without taking up any new space or minimize new space taken up.
- Construction impact shall be minimized and closely coordinated. An example is underground work to trench and install new conductors within the AOA. This process would require shutting down 1-2 gates for an extended duration as the underground works down the line. This example represents risky construction processes that will be avoided wherever possible and coordinated with MDAD prior to starting construction activities.
- Underground work is risky, especially within the AOA. Underground equipment, while robust, may cause bigger risk overall than the benefit of going underground. All underground work will be evaluated for alternatives and resulting risk to operations.

The evaluation for each electrical space will include commentary for what is there currently, what is needed end-state, and how to get there.

The proposed solutions are developed in accordance with applicable federal, state, and local regulations governing emergency power systems, public infrastructure, and utility services. System design and equipment selection are based on engineering, operational, and safety requirements, including reliability, code compliance, and lifecycle performance. No design elements or procurement recommendations are based on non-operational policy preferences, and all solutions are intended to support the County's core mission of maintaining safe, continuous airport operations.

Design Concepts and Solution Development

The electrical resiliency solutions developed by FPL to support MIA incorporate best practices from utility operations and industry benchmarking. The system will be robust and secure, both physically hardened and for cyber security. The intent of this feasibility report is to utilize commercially available and proven technologies.

FPL is proposing the following design standard concepts to be incorporated into all electrical project work at MIA. The goal is to reduce total costs for spare parts via less inventory of spares, reduce training costs for having similar equipment, and ensure operational resiliency with maintainable equipment design.

In addition to standardization, the proposed design concepts incorporate equipment configurations and control strategies that support efficient operation during both testing and emergency events. Modern controls, right-sized equipment selection, and improved system visibility can reduce unnecessary fuel consumption and associated emissions, including particulate matter, over the lifecycle of the system. These benefits are achieved as a function of improved system performance and maintainability and are not independent design drivers.

The concepts and technical standards are presented by equipment type:

- Switchgear (low-voltage and medium-voltage)
 - o All switches shall be fully rated vacuum circuit breakers, equal or better.
 - i. No fused disconnect switches for critical loads.
 - ii. Breakers are typically more expensive upfront in comparison to fused disconnects. However, the cost is in operational risk and impact. A real event occurred when a 4160V fused disconnect switch blew in June 2022 in the central chiller plant resulted in over 24hrs of downtime making chilled water and resulted in the passenger area getting very hot. This scenario was exacerbated by lacking electrical monitoring and not having a specialized 4160V fuse readily available. A breaker could have been reset and system back online in minutes, or instantly with system automation.
 - o Main-tie-main configuration for all critical panels
 - i. MIA is full of radial fed switchgear (only one source). Opening this one source will cut power to all downstream loads. This makes maintenance of the main-service-disconnect switch nearly impossible due to complex outage coordination.
 - ii. A main-tie-main helps mitigate risk from breaker failure and ensure maintainability of equipment. For example, if a main breaker fails, then a technician can close the tie-breaker to restore power to connected loads while the main breaker is repaired.
 - iii. Additionally, a tie-breaker can be closed to facilitate maintenance of the main-service disconnect while downstream loads are not impacted.
 - o Main-Main configuration switchgear instead of Automatic Transfer Switches (ATS, where possible).
 - i. A main-main configuration consists of a utility source and backup generator source. The breaker of either source can be maintained while downstream loads remain online.
 - ii. ATS' are effective for loads that can take periodic outages, and sometimes code requirements will force the use of ATS's over M-M schemes. However, the mechanism of an ATS represents a single point of failure. This is mitigated by having two breakers, one for utility power and one for emergency backup generation.
 - o Remote monitoring
 - i. Cyber security measures will be implemented for all project work to ensure a private controlled network.
 - ii. All equipment shall have digital controllers with some output for monitoring electrical conditions that ties into a cellular-based remote monitoring system.
 - iii. FPL will tie-in all installed electrical equipment to a common monitoring platform.
- Generators
 - o Where applicable, multiple smaller engines in parallel can be more resilient than a single big block. Generators, like car engines, have many individual parts that can fail and cause the engine to trip offline. Multiple engines mitigate this risk.
 - o Wet stacking is avoided when load is low. Industry rule of thumb is that a diesel generator should have load greater than 30% of nameplate capacity to prevent wet stacking of diesel and prevent risk of fire. Having multiple engines allows under-utilized engines to drop offline while load is maintained with fewer engines operating at loads above target 30% or more.
- Level 1 vs Optional Backup systems
 - o The National Electric Code (NEC), Florida Building Code, and other local/state laws require certain electrical configurations and reserve capacity.

- Level 1 loads are legally required to have backup generation and governed by NEC 700 and 701. Typical examples of Level 1 loads include emergency lighting, elevators, door access, and fire-pumps.
- Operational loads are typically not legally required to have backup generation. Optional loads are governed by NEC 702. Examples of optional loads are most mechanical equipment (air-conditioning), convenience outlets, baggage handling, retail, etc.
- NEC and NFPA 110 allow for a generator system to backup Level 1 and optional loads, but with certain circuit configuration and controls.
- This benefit of backing up optional loads by the same generator system is be considered when performing Level 1 generator projects.

With design concepts created, solutions will be more tightly controlled to promote a robust system design and uniformity for all new project work.

Fuel Source Evaluation

Fuel source selection for backup generation systems at MIA is based on site-specific engineering considerations, including system reliability, required runtime, fuel availability, infrastructure constraints, maintainability, and operational risk. The selection process prioritizes the ability of each system to perform under extended outage conditions, including post-storm recovery scenarios, while maintaining compliance with all applicable codes and regulatory requirements.

Where multiple fuel options are technically feasible, the final determination will be made based on the overall reliability of fuel supply, constructability, lifecycle service requirements, and the operational criticality of the loads being served.

Engine Classification	Fuel Type	Considerations
Diesel Tier 2	Diesel Only	EPA qualified for emergency response only. Industry standard for Level 1 generator systems.
Diesel Tier 4 Final	Diesel with diesel exhaust fluid (DEF)	DEF injected into the exhaust. EPA rules require system controller to shutdown system if issue with DEF supply. Qualified for continuous duty / load control.
Natural Gas (NG)	Piped natural gas	EPA qualified for continuous duty. Dependent on natural gas infrastructure.
Liquid Propane (LP)	Stored on-site LP	Not common in large systems due to fuel limitations, high volatility and low energy density (large tanks). Can be stored long-term. Good for small systems (<100KW).
Turbine Engines	Multiple	Turbine engines are not common for backup power applications due to cost compared to alternatives and its slow response times.

Traditional generators for emergency backup power in *large industrial applications* are typically one of three types:

- 1) Tier 2 Diesel
 - a. Pro's
 - i. Established infrastructure and availability.
 - ii. Onsite fuel storage enables complete autonomy.
 - iii. Reliable performance in severe weather conditions.
 - iv. Typically, least expensive in terms of cost per KW for backup power.
 - b. Con's
 - i. Tier 2 has higher emissions compared to other fuels.
 - ii. Requires regular maintenance and environmental compliance.
 - c. Commentary:
 - i. Downside is that this is a diesel generator, burning diesel fuel. The EPA has limits on annual runtime that allows for routine testing but prevents this type of generator from participating in a demand-response program or other type of continuous duty base-load generator due to emissions. The EPA allows for this generator to run in extended emergency power outage scenarios only.
 - ii. Diesel as a fuel source is proven to be reliable long-term storage with routine fuel polishing and fuel treatments. Diesel is readily available, easy to transport, and less volatile compared to other fuel options.
 - iii. Due to high resiliency, lower cost, but with emissions that must be considered, this generator type is recommended for Level 1 legally required life/safety applications.
 - iv. Diesel burn rates are not perfectly linear and some engines are more efficient than others, however rough order of magnitude is 70gallons per hour per 1000KW.
 1. For example, a 2MW load is expected to consume around 140gal per hour.
 2. Peak demand of MIA is 62MW, which rounds to roughly 4500gal per hour.
- 2) Tier 4 Final Diesel
 - a. Pro's
 - i. Removes more harmful emissions and is “cleaner” in comparison to Tier 2 diesel.
 - ii. EPA permitted for continuous duty and demand response applications.
 - iii. Onsite fuel storage enables complete autonomy.
 - b. Con's
 - i. DEF cannot be polished and crystalizes over extended periods of time (18-24mo), requires full pump-out and replacement in backup generator applications where the tank may not be used consumed before needing to be replaced.
 - ii. DEF creates operational risk with additional sensors that create more components that could fail, resulting in greater risk of generator malfunction/downtime.
 - iii. Higher upfront and maintenance costs compared to Tier 2 diesel.
 - c. Commentary
 - i. Rough order of magnitude, DEF is consumed at around 8-9% the rate of diesel consumption.
 1. 70 gallons of diesel consumed would also require roughly 6gal of DEF
 - ii. The EPA allows for T4F generators to run continuously in demand-response and baseload applications.
 - iii. The addition of DEF requires two fluids (diesel and DEF) to be stored and maintained for the system to operate. Loss of either fluid, or component failure in any part of the respective system, will result in the generator system not operating.

- iv. Due to increased risk, this type of generator is not recommended for any Level 1 system in a single engine configuration but would be a good fit for optional backup systems, especially with multiple engines in parallel.
- 3) Natural Gas
- a. Pro's
 - i. Cleaner burning fuel in comparison to diesel.
 - ii. EPA permitted for continuous duty applications and level 1 applications.
 - b. Con's
 - i. Relies on external natural gas pipelines that are reliable but not guaranteed.
 - ii. Local infrastructure may not be able to support high consumption rates.
 - iii. Higher upfront cost due to large engine size.
 - c. Commentary:
 - i. The fuel consumption rough order of magnitude is 12,000scfh per 1MW of generation.
 - 1. MIA is 62MW of peak demand, this would be roughly 750,000scfh without any safety factor for pipeline sizing.
 - ii. NG is the cleanest burning backup generator system from an emissions standpoint. The EPA also allows NG generators to run continuously and in demand response applications.
 - iii. The downside to NG is that onsite fuel storage is not practical and thus it relies on the availability of natural gas piping. There are methods of storing natural gas onsite such as compressed natural gas or liquified natural gas (LNG), but these systems are physically large, very high in maintenance, and only provide a few hours of autonomy in case of a loss of pressure in NG pipelines. Compressed NG systems or LNG systems are rare for backup power systems due to relatively high costs compared to alternatives.
 - iv. Code allows for natural gas in Level 1 systems. While traditional resiliency planning has favored liquid fuel due to on-site storage capabilities, natural gas infrastructure is present in various areas within MIA. Where present, it is generally robust and continues to improve in reliability. For locations with close proximity to existing gas lines and adequate system capacity, natural gas can represent a viable or supplemental fuel source. That said, because natural gas systems rely on external infrastructure, a site-specific evaluation of pipeline redundancy, pressure reliability, and criticality of loads is warranted. As a result, this feasibility study maintains a conservative baseline assumption around fuel selection, while recognizing that natural gas may be an appropriate and advantageous solution in certain applications, particularly where infrastructure access and overall objectives align.

Natural gas and Tier 4 diesel systems may be considered where infrastructure is readily available and where operational requirements support their use. These systems can provide advantages in certain applications, including reduced onsite fuel storage requirements or compatibility with existing utility infrastructure. However, each option will be evaluated based on reliability of fuel supply, system complexity, maintenance requirements, and overall suitability for the specific facility.

In evaluating fuel sources, emissions characteristics—including particulate matter (PM), nitrogen oxides (NOx), and overall combustion efficiency—are considered as part of the engineering assessment, particularly where differences between technologies may impact maintenance requirements, operational runtime constraints, or regulatory compliance. Lower-emission alternatives such as natural gas and Tier 4 diesel systems may provide advantages in certain applications; however, final selection is driven by reliability of fuel

supply, system complexity, and suitability for emergency operations. As such, emissions-related considerations are incorporated as a component of overall system performance rather than as standalone policy objectives.

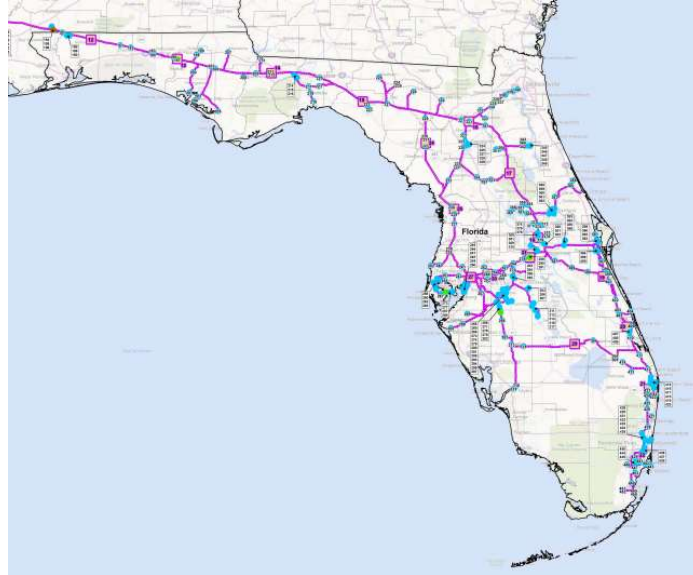


Figure 1 - Map of Natural Gas Transmission Line from Florida Gas Transmission Company, LLC

Diesel Alternatives

Generators that utilize internal combustion (ICE) engines can be powered off other fuel sources than diesel and natural gas and are discussed for viability as it relates to MIA:

Fuel Type	Pro's	Con's
Biodiesel	Renewable, biodegradable, liquid fuel alternative to diesel.	Issue with long-term storage that could cause engine malfunction, cannot be polished. Requires extensive fuel management plan.
Hydro-treated vegetable oil (HVO)	Renewable, biodegradable. Significant reduction in greenhouse gas (GHG) lifecycle emissions. Better storage than Biodiesel. Similar energy density and combustion characteristics as ultra-low sulfur diesel.	More costly than diesel (~30-50%), limited infrastructure and availability (but growing). Not enough public data on long term storage and reliability in multi-year basis.
Hydrogen	No carbon emissions in combustion.	Technology is not commercially available (yet). Expensive infrastructure for production, storage, and distribution. Fuel volatility and metallurgy issues must be overcome before mass adoption.
Ethanol	Renewable, often blended with gasoline.	Corrodes fuel lines and clogs fuel injectors.
Biogas	Renewable, common byproduct of landfills.	Limited supply

The takeaway for diesel alternatives is that these technologies are advancing in the market. Biodiesel and HVO are both drop-in fuel replacements for traditional off-road diesel used in generator systems, meaning it can be mixed with diesel without system modifications, simplifying its adoption. However, both biodiesel and HVO require extensive fuel management plans. The known operational risk of Biodiesel makes it unattractive in legally required systems due to life-safety application of the system. In optional backup power systems, biodiesel and HVO represent a viable alternative that will be considered, along with a comprehensive fuel management plan.

Renewable Energy Sources and Battery Storage

In addition to traditional internal combustion engine (ICE) systems, this feasibility study reviews commercially available alternative technologies that may provide operational diversification and supplemental system benefits. These technologies are evaluated based on their ability to support system reliability, reduce operational strain on primary generation assets, and improve overall system efficiency under certain conditions. While some technologies may offer reduced emissions profiles, including lower particulate matter output, their applicability is determined primarily by performance characteristics, constructability, and compatibility with emergency power requirements.

Fuel Type	Pro's	Con's
Solar	No emissions powered by the sun. Very low maintenance. Established technology with clear interconnection guidelines. Provides energy diversification benefits and may reduce reliance on traditional generation under certain conditions.	Solar glare must be considered for airline safety. No generation at night and issue with small clouds. No reduction in demand charges. System turns off during utility outage (grid-following).
Battery Energy Storage Systems (BESS)	Grid-forming inverters can be used in backup power applications. New battery types emerging to reduce fire-risk. Can be used for peak demand shaving.	Continuous energy losses charging, discharging, and maintaining the battery system. Increases total carbon emissions when charged by normal utility source due to losses. Difficult to maintain demand response benefits long term. Safety codes influencing design are getting much tougher.
Wind Turbine	Clean and established technology. Excellent in windy, but not too windy areas.	Not economical or reliable in Florida due to intermittent winds and sudden strong thunderstorms. Difficult to install in urban areas due to size.
Small Modular Reactors (SMR's) (discussion only)	Emerging nuclear technology that is potentially clean, hardened, and reliable. Base load considerations.	Not publicly available. Major risks and uncertainty remain on the topic. Not considered for this project work.

The takeaway for renewable energy systems is that solar is an excellent system for baseload and operational diversity. Batteries themselves are not clean but certainly have a place in certain system applications.

CIP Considerations

The Capital Improvement Plan for MIA has been considered to ensure this project does not conflict with other planned work at MIA. FPL's understanding is that all systems within Group 2 will not be impacted and remain as-is for future CIP projects.

Are areas are assumed to have electrical load growth greater than 25% during the life of the equipment with additional resiliency needed from these generator systems. The two primary drivers of load growth are:

- 1) Future CIP projects will add new loads that will be fed off this equipment and some space served by this electrical distribution is temporarily vacant. New load attributed to occupied space is difficult to estimate, reasonably 250-500KW or more of future load growth is assumed for the purpose to ensure operational resiliency.
- 2) Electric Vehicles – the generator system today will not be connected to EV chargers; however, provisions will be put in-place to enable EV resiliency later at a saving to MDC. Park 7 has available

space in vicinity to serve future EV chargers for the parking area and may serve as a focal point in future. Building 845 may serve EV chargers as well in its respective lot.

- a. The feasibility report and resulting project scope contemplates high EV adoption and resulting operational dependency on EV charging infrastructure, including future needs for resilient electric power (via backup generator) to EV chargers in case of a major grid outage event.
- 3) Capacity must be available to maintain critical life/safety operations per site, particularly at Low F which encompasses terminal/airside loads.
- 4) On the other hand, further detailed design analysis at the various site locations may call for equipment size reductions given load and demand changes from original installation, as well as potential CIP involvement. This study has assumed and followed an equal-sizing replacement based off existing infrastructure and overall CIP growth projections.

Park 7 Dolphin (MDAD EG-220)

Project Solution Development – Park 7 Dolphin

All project work will be executed in a design-bid-build turnkey project, based on estimates and design guidance established in this feasibility report. This feasibility report is concept level based on design guidance previously established and not permit level drawings or detail.

The project description for Park 7 Dolphin is the end-of-life equipment replacement/modernization of the 480V emergency generator system and main distribution switchboard replacement. The buildout of new indoor switchboards, generator(s), downstream devices/panels within scope, and related construction will occur in the main electrical and generator rooms housing the existing equipment in Park 7 (Dolphin Garage). The above-ground diesel tank will be modernized with evaluation in its existing location.



Figure 1.1 - Project Location (Park 7 Dolphin)

Condition Assessment – Park 7 Dolphin electrical/generator room

The condition of the existing equipment is *poor – risk to operations*.

- 2yr peak electrical demand, based on meter analysis, is 204KW.
- The space is original construction serving critical life & safety loads for the Dolphin Parking Garage.
- Generator Room
 - o The 750KW Caterpillar generator is at end-of-life state, commissioned over 25 years ago. The generator shows signs of wear and tear, rust, and is a strong candidate for modernization. The exhaust system points southward and towards the exterior of the building.
 - The generator includes an associated diesel day tank along the north wall of the room which appears very old and appropriate for replacement.
 - The generator holds 4 runs of 500MCM which shoot into the ground towards ATS#1
- Electrical Room
 - o 2 Switchgear Units (Switchboard A & Switchboard 2FG), and ATS#2 are at end-of-life state and replacement/modernization is needed to maintain the critical loads. The switchgear units are standalone and contain adequate room around their perimeters for general work/construction activity. Switchboard A contains 2 adjacent ATS switches along the south wall. ATS#1 on the left was recently installed while ATS#2 is very old and requires replacement. Switchboard 2FG is located nearby on the east wall. Bus stubs shoot through the south wall towards the FPL vault. Several downstream panels and some comms equipment are located on the room's south and west walls. The fuel tank room is located adjacent to the south, separating the electrical and generator rooms. The room contains lighting and does not negate additional non-electrical work to the room itself.
- Fuel tank room
 - o The fuel tank room includes a 3000-gallon diesel tank hoisted on concrete support. Necessary piping runs from the tank towards the generator room.
 - o The fuel tank room includes roll-up doors on the west and east sides.
 - o The room is not very big. It only includes enough room for the tank. General activity around the room is somewhat tight.
- Space
 - o Main electrical/generator room
 - The room contains adequate space for its existing equipment. The switchboard is located on the north wall, beside both automatic transfer switches. The switchboard 2FG is located along the east wall.
 - This existing space will be utilized to facilitate buildout of new equipment and replacement of existing. Devices will be physically removed through the main entry doors of this room to the outside.
 - Temporary conductors during construction will run thru the room's east side which faces the high vehicle parking lot. Mobile switchgear and generators have adequate space to be housed outdoors for this concept, or on garage side. The system is open transition and will require an outage during cutover.
 - o Outdoor Space
 - Space outside the rooms will need to be utilized for construction activity- including equipment movement, vehicles, and staging of temporary equipment. Parking spaces may need to be utilized outside the main entry doors of the rooms. Coordination with MDAD will need to occur on this exact location. The two lane thru-way outside the rooms may need to be partially or fully closed depending on

room required to work. Coordination with MDAD is necessary as this is an entrance/exit for the parking garage.

- The area referenced within the garage is concrete pavement.
- There is an outdoor space east of the rooms of scope that includes adjacent bushes/foilage. Behind this roughly 20ft of foliage exists an asphalt parking lot for high vehicles. This space may be a candidate to house temporary equipment.
- The space is overall suitable and generally available for activities related to electrical modernization.
- The Dolphin Parking Garage is not within the AOA. The scope is located on the garage's east side and immediately visible and accessible when entering the airport via the interior arrivals lane on ground level (Miad Cir)



Figure 1.3 – 750kW generator (taken from interior entrance)



Figure 1.5 – Angled view of generator room



Figure 1.4 – Area immediately outside of generator, fuel tank, electrical rooms on garage side. Facing north.



Figure 1.5 – 3000-gallon interior diesel tank with roll-up door in background



Figure 1.6 – Switchboard A, on north wall of electrical room. Flanked by ATS #1 (Left) & ATS #2 (Right).



Figure 1.7 – Close up view of ATS #2



Figure 1.8 – Close up view of Switchboard 2FG



Figure 1.9 – Wide-panned view of electrical room, facing north. Switchboard A, ATS #1 & 2 on north wall. Switchboard 2FG on right. Downstream panels on left and to left of photo.

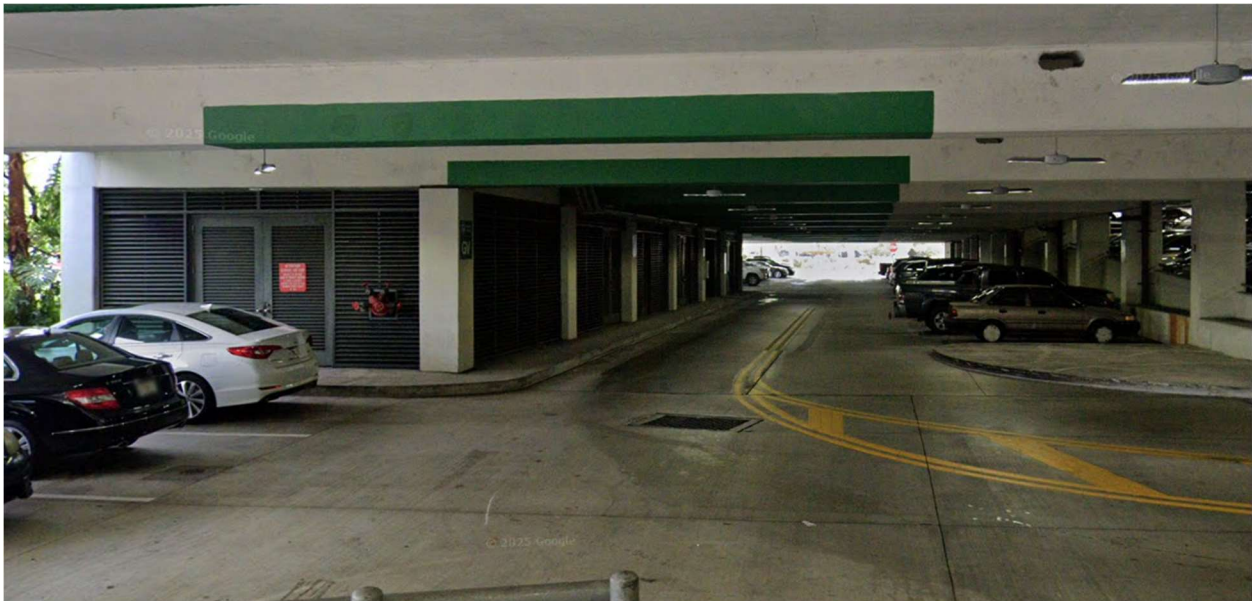


Figure 1.10 – Area outside rooms within scope, facing south. Garage side

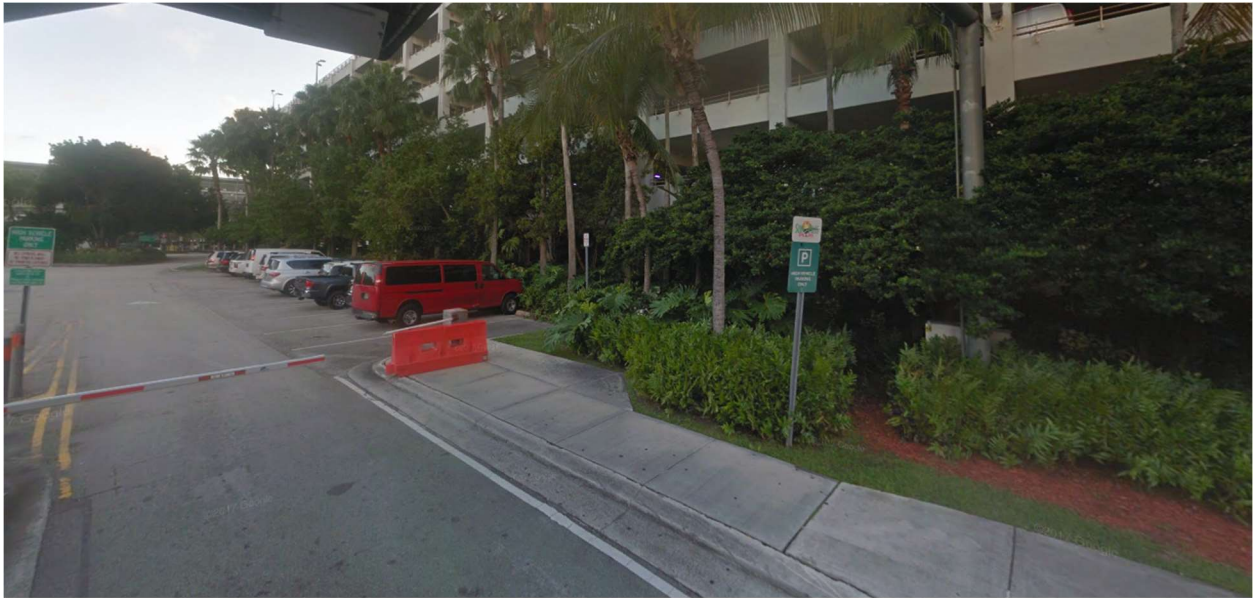


Figure 1.10 – Area outside rooms within scope, facing south. Outside. Rooms are located behind foliage on center-right, edge of garage. Parking area to potentially house equipment and vehicles.

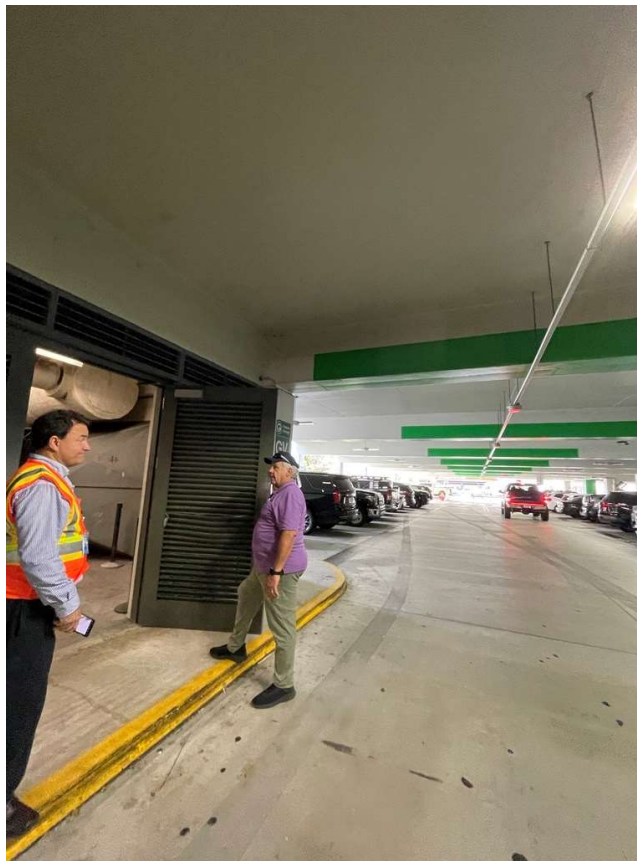


Figure 1.12 – Area outside generator room, facing south.



Project Plan – Park 7 Dolphin

To address the operational risk identified in the condition assessment and incorporating the design concepts for FPL backup generation systems at MIA, the following concept solution is proposed. This solution will be executed in a design-bid-build project plan.

Project Description – Park 7 Dolphin

Backup power service to provide an alternative source of electrical power and electrical distribution equipment to Park 7 Dolphin. Based on site installation conditions and electrical load data, Company expects to utilize 750KW of backup generation capacity, controls, and main distribution switchboards to provide service to the electrical loads, based on the historical 24-month metering data, associated with FPL Account Number 39670-65214.

Scope of Work – Park 7 Dolphin

See appendix for system drawings. The scope includes all construction and permitting by licensed contractors, per applicable codes.

The new generator system will replace the existing in the same location, like-for-like. The new generation system will serve the same electrical systems as the existing.

Electrical System

- 750KW generation system
 - o Twin-engine concept to be evaluated with associated paralleling
 - o 24-hour adjacent day tank evaluation if diesel solution pursued
 - o Battery charger/maintainer
- (2) 1600A Main Distribution Switchboard Units
 - o (1) Automatic transfer switch (ATS #2)
 - PLC controls
- Remote monitoring
 - o Generator system and ATS
 - o Cellular based
- Diesel fuel storage tank
 - o Indoor, 3000-gallon standalone tank
 - o Sized appropriately to generators
 - o Modern leak detection system

Building Upgrades

- Replacement of existing generator, switchboards, and refurbishment of existing space.
- Update and modify conduit and piping between the major electrical units and within diesel system

Temporary Power Plan

- A robust temporary power plan is intended and will be evaluated with MDAD during the detailed construction phase of the project.
- At a minimum, all loads are assumed that brief outages can be planned/coordinated with stakeholders to tie-in temporary equipment. This enables continuous operations while electrical work takes place.



- Temporary equipment can be tied in where appropriate downstream, likely at major downstream panels from the switchboards.

Schedule – Park 7 Dolphin

A project timeline is included below. This timeline reflects estimated date ranges of work to be performed. Actual dates may vary, are non-binding, and are subject to change. The below critical items are required from MDC to move forward in each phase of the project construction timeline.

Milestone	Week(s)
Signed Agreement / PO Issued	1
Procurement - Public Notice	2 - 6
Procurement - Engineering Services	6 - 8
Selection - Engineering Services	9 - 10
Engineering Phase	10 - 18
Start Procurement - Equipment & Services	16 - 22
Selection - Equipment & Services	22 - 23
Permit Submittal	22
Long Lead Sourcing / Planning / Permit Acceptance	23 - 75
Start Construction	78
Groundwork	78 - 88
Generator & Switchgear Delivery	89 - 92
Critical Event - Cutover #1 - A Side	93
Critical Event - Cutover #2 - B Side	94
Final System Commissioning / Closeout	95 - 96
Contingency	97 - 104

Performance Bonds

Single instrument Payment and Performance Bonds will be obtained for each construction project. These bonds will remain in effect for six months following construction operation date. Fees related to bond costs will be determined based on specific project requirements and risks and will be passed on to MDC at FPL cost in each applicable statement of work as part of the service fees thereunder.

Responsibility Matrix

FPL is responsible for design and proposal of backup power solutions and distribution-related service upgrades. Various departments within FPL will be involved throughout the project. Similarly, MDC has identified departments to be involved in certain key processes. A listing of the departments involved is included below.

	FPL	Miami-Dade
Technical Feasibility		
Equipment designs	Engineering & Construction (E&C)	MDAD
Service upgrades	Power Delivery (PD)	MDAD
Installation Analysis		
Agreement & SOW	Development, Legal	RER, MDAD
Procurement	E&C, Sourcing	MDAD, RER
Permitting	E&C	RER, MDAD, City of Miami
Inspections	E&C	RER, MDAD, City of Miami
Flood Zones	E&C	MDAD, RER
Sea Level Rising	E&C	MDAD, RER
Tree Removal Impacts	E&C	RER, MDAD
System designs	E&C	MDAD, RER
Service upgrades	PD	MDAD
Account set-up	Development, Customer Service	MDAD

Technical and Construction Feasibility – Park 7 Dolphin

The Park 7 Dolphin system represents a critical system to upgrade and modernize due to 24/7 operational requirements, age of the existing equipment, passenger feeds, and general life/safety loads.

No new space is required for switchboard and generator replacement. New equipment will be installed where existing equipment is housed. A new diesel tank system will replace that existing within its respective room.

The generator replacement will require replacement of the existing day tanks and all associated plumbing. Temporary equipment during construction will require some space and temporary provisions and coordination with vested parties.

Numerous unknowns exist underground. It is reasonable to anticipate potential underground FPL utility lines and other utilities in the immediate vicinity of the rooms.

The type of mechanical equipment contemplated does not trigger additional requirements for other building upgrades to adhere to LEED Silver Certification. LEED certification is not in-scope for Park 7 garage electrical system upgrades.

Permit Applications and Inspections – Park 7 Dolphin

Engineering Services – Park 7 Dolphin

Financial Feasibility – Park 7 Dolphin

OSPS Monthly Service Payment

Park 7 Dolphin	Monthly Service Payment
High Estimate	\$53,823
Low Estimate	\$40,367

No net change to fuel usage is expected as part of this project work.



- The new generator system will test and operate similarly as the existing in place. The generator will be split into twin units to improve resiliency while maintaining the same coverage.
- Fuel costs are the only variable cost that will continue to be paid by MDC.

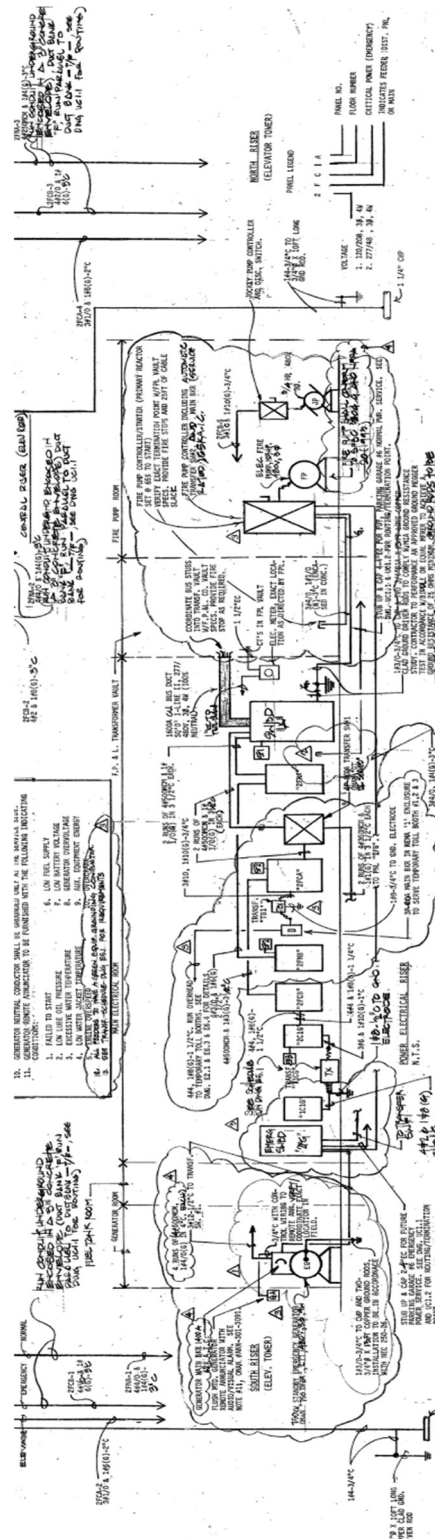
No net change to electrical consumption is expected as part of this project work.

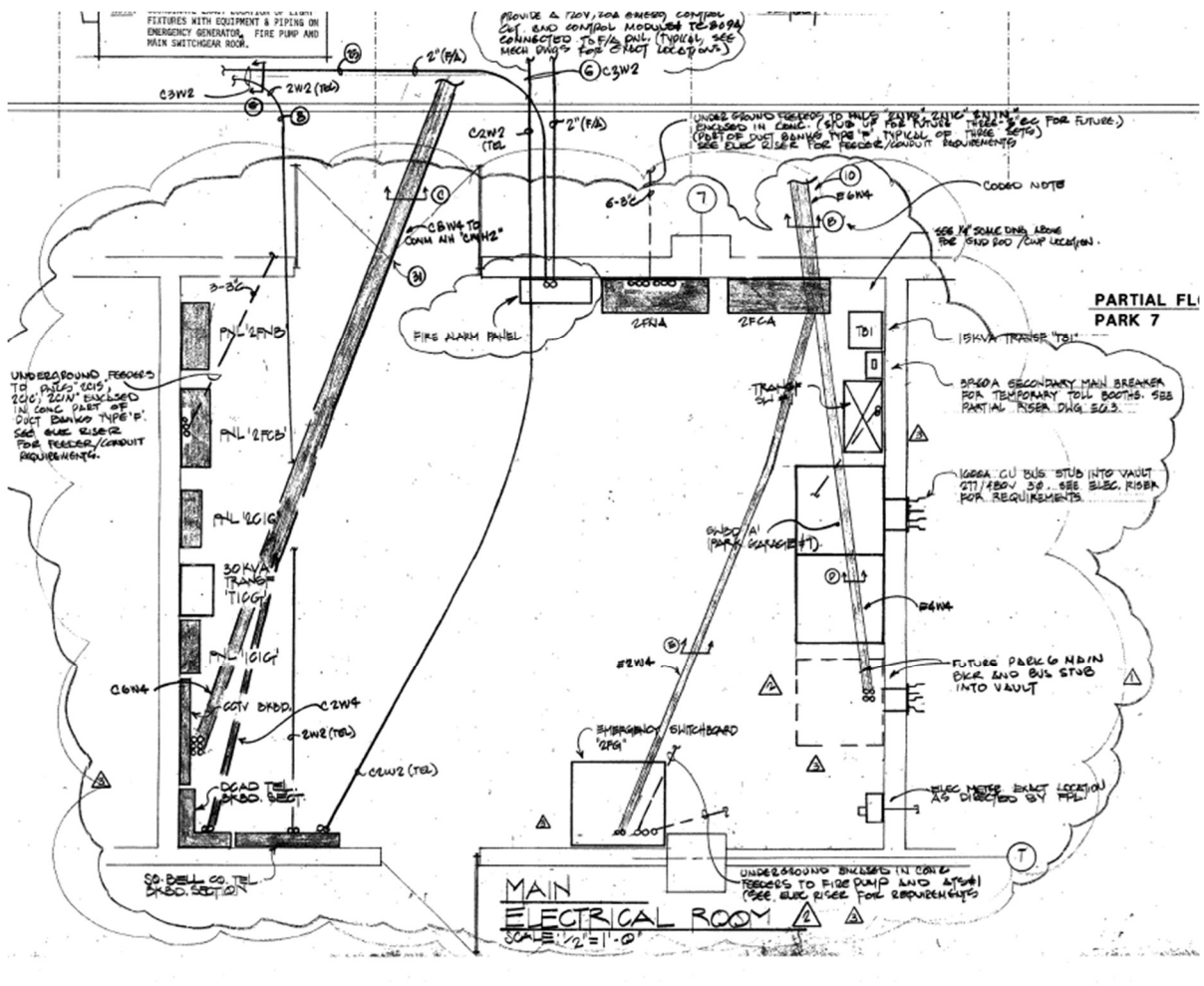
- The new generator system is emergency backup only. It does not provide baseload support.

Conclusion and Recommendations – Park 7 Dolphin

FPL recommends immediate replacement and modernization of the aging electrical infrastructure at MIA Park 7 Dolphin. Should the County proceed with a Non-Residential Backup Power Services Agreement and corresponding Statement of Work with FPL for the identified work by July 2026, FPL is prepared to support construction and installation of the equipment to be operational in Q3 2028.

Appendix – System Drawings (Park 7 Dolphin)





Low Terminal F (MDAD EG-242 & EG-243)

Project Solution Development – Low Terminal F

All project work will be executed in a design-bid-build turnkey project, based on estimates and design guidance established in this feasibility report. This feasibility report is concept level based on design guidance previously established and not permit level drawings or detail.

The project description for Low Terminal F is the end-of-life equipment replacement and modernization of the 480V emergency generator systems and associated main distribution switchgear replacement. The buildout of new generators and switchgear will occur in the identical generator/electrical rooms as existing equipment to minimize operational risk during construction. The development concept is a like-for-like replacement strategy.



Figure 2.1 - Project Location (Low Terminal F)

Condition Assessment – Low Terminal F

The condition of the existing equipment at this location is end of life and the room qualifies for a full replacement. The existing (2) 750KW generators and their respective switchgear units are at end of life.

- 2yr peak combined electrical demand, based on meter analysis, is 593KW amongst the three larger accounts respectively.
 - o Demand has reduced in recent years due to overall service efficiencies. Downstream devices, however, still maintain the same size and future capital improvement projects must be considered. For these purposes, the scope will maintain a like-for-like replacement.

- The space is original construction serving critical airside and passenger-oriented loads within lower Terminal F, the F-G wrap, and general vicinity.
- **Generator Room (F1630)**
 - The Cummins generators are at end of life and warrant replacement. They were installed in the 1980s.
 - While some remote monitoring exists, we will modernize and upgrade this piece of technology with overall generator replacement.
 - The generators' exhaust systems point outdoors towards the south wall. Removal should avoid significant complications given their existing outward placement.
 - The generators are not emissions compliant for current EPA rules for curtailable systems.
 - The generators contain overhead pipes for downstream routing to the collector bus. According to plans, these pipes include 3 sets of 600MCM. The cables and pipes will be evaluated in the design phase.
 - The engines are located side-by-side along the southeast wall of the room, with their exhaust systems pointed outdoors. Removals should avoid significant complications as the exhaust system faces outside directly.
 - A third generator was previously removed during a fire event in the past. This open position is the closest to the main doors of the three positions. Evidence of this event is found in the building and its respective refurbishment is proposed in this overall scope of work. This space will be utilized to perform work and may remain as open space at the completion of construction. A third generator is no longer necessary due to past upgrades of the others.
 - The fire pump equipment is leaking in the room. The leak and its cause will need to be addressed to limit future occurrences to electrical equipment in the vicinity. Fire equipment is located on north end of room towards the rear by the switchgear room doors.
 - The room is tight and congested and proper precautions will need to be taken for general work activities and equipment placement. There is sufficient space to replace equipment in its same position.
- **Switchgear Room (F1634)**
 - This room is located northeast on the interior of F1630. The FPL vault borders both rooms to the south. F1634 contains the major electrical equipment powering the concourse vicinity, including lighting, elevators, passenger services, fire pumps, sewage lift, and life/safety.
 - The major electrical equipment in F1634 includes 4 Switchboards, 5 Mains, 5 Automatic Transfer Switches, and various downstream panels/meters. The room layout includes a central hallway with the largescale equipment facing the walkway on each side. Meters can be found in southeast corner of room and northwest side by main doors. Major units are found side by side.
 - The visibly newer switchgear unit on the southwest side of the room will not be replaced in this scope. This unit, according to plans, serves concession-related loads, which are not backed up by the generators. The unit is in an overall better condition.
 - The room's rear doors (northeast) lead into the building's interior and machinery/baggage areas. This path may need utilized for equipment movement and temporary conductor pathing. A full assessment of the space will help configure this routing and strategy.
 - Temporary switchgear and generators will need to be placed outside the building.
 - The room is tight, and equipment will need to be strategically removed/installed to maintain electrical continuity and limit outages. New equipment will be in the same position as those existing. Pipe and cable runs which require replacement will be replaced to fully modernize the system and ensure utmost performance.

- The switchgear units include some space between their rear(s) and the respective walls for sufficient movement and agility.
- **Space**
 - Outdoors
 - Area located airside on the AOA and requires security clearance for site access.
 - Area directly outside of building to south is best suitable location for temporary equipment. There is consistent activity in immediate vicinity of local traffic, airside vehicles, etc. There is some room in vicinity for equipment and construction activity to minimize disruption to ongoing local airport operations. Coordination will be necessary between with MDAD to determine exact available space to perform work.
 - Replacement of the diesel tank may occur in same location as existing.
 - Indoors
 - No new space required within F1630 & F1634 to facilitate buildout of new equipment, apart from use of hallways to land temporary conductors. One feeder will be migrated at a time during this process for the replacement of switchgear units.
 - Equipment will be replaced in the same location.
 - Water leaks will be addressed in this scope to prevent damage to newly installed electrical equipment.



Figure 2.2 – 750 KW Generator #1 (Middle Plenum Location)



Figure 2.3 – 750 KW Generator #2 (Interior / East Plenum Location)



Figure 2.5 – Generator #2, taken from west of unit.



Figure 2.6 – Diesel day tank associated with Generator #2 (in back)

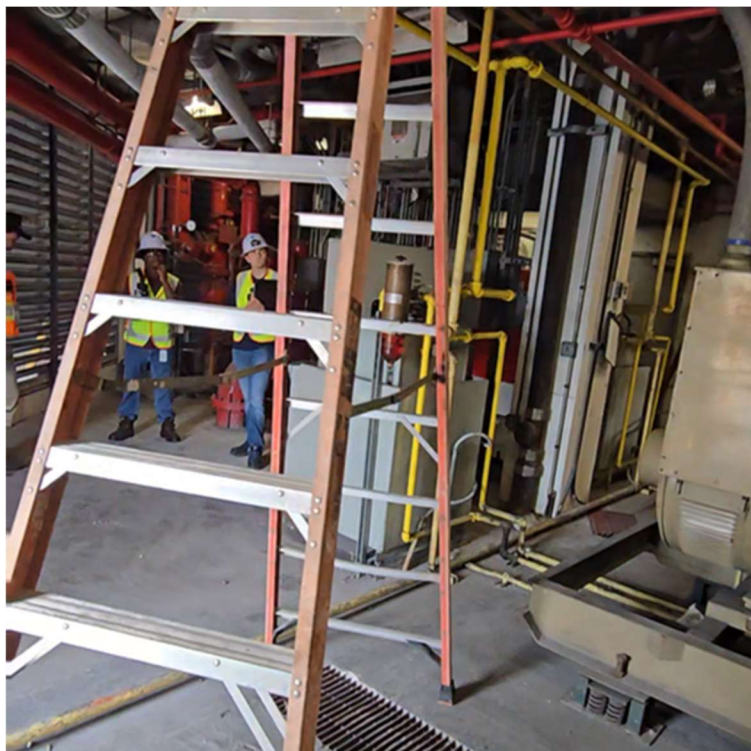


Figure 2.6 – North view of generator room – interior/to west of generators. Day tank associated with Generator #1 in middle

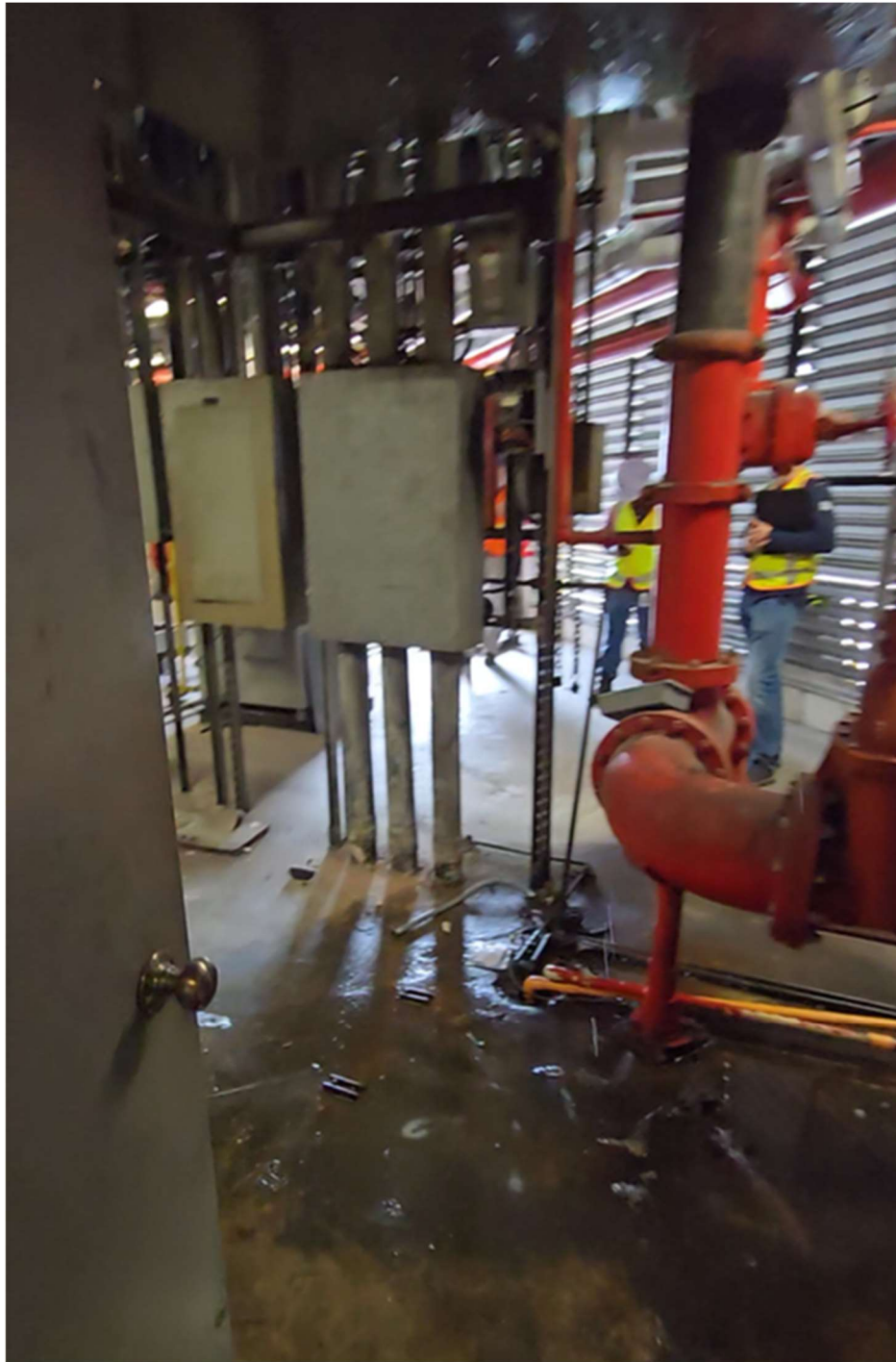


Figure 2.7 – Generator room view from Switchgear room doors (N side). Water leaks evident from pipes overhead.



Figure 2.8 – Newer switchgear unit, found on SW side of switchgear room, adjacent to generator room doors. Connected to cable tray from FPL vault. This unit will not be replaced in scope.



*Figure 2.9 – Hallway of switchgear room, facing southwest. Major switchboards, panels, and switches to be replaced.
Generator room behind doors in background.*

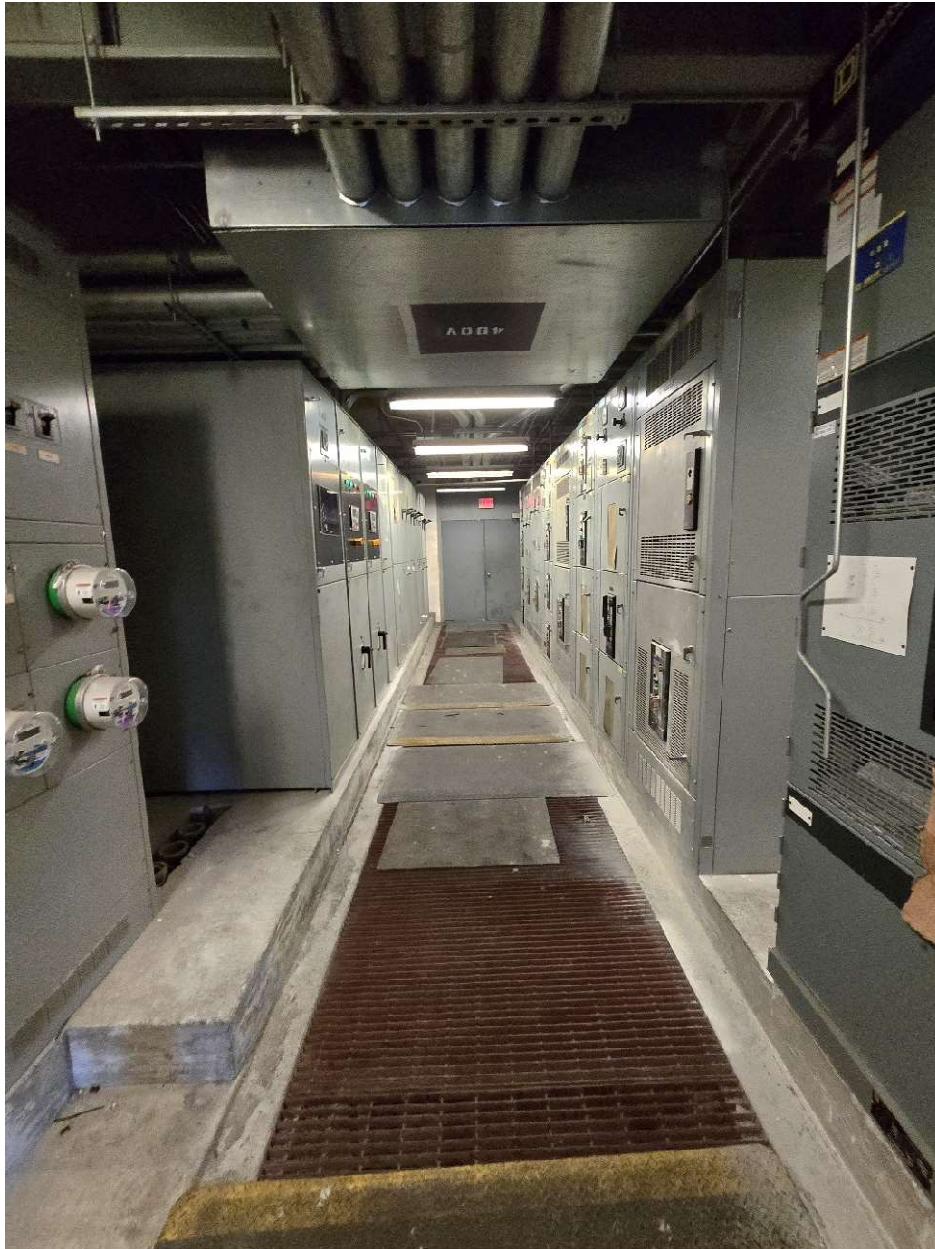


Figure 2.10 – Hallway of switchgear room with switchgear units on each side. Facing northeast, from Generator room doors.



Figure 2.11 – Hallway behind main switchgear units on east side of switchgear room (located left of photo in Fig 2.10)



Figure 2.12– Hallway behind main switchgear units on east side of switchgear room, facing northeast (opposite end POV from Figure 2.11). 5 bus duct and 1 cable tray found overhead from FPL vault behind right wall.



Figure 2.13 – CILC equipment found in southeast corner of switchgear room. Evidence for Tier 4 Generator requirement.



Figure 2.14 – Lineup of 4 ATS's. Located in NW corner of switchgear room towards interior, besides rear doors.



Figure 2.15 – Additional photo of main panel/ generator monitoring lineup in switchgear room, facing northeast (interior)

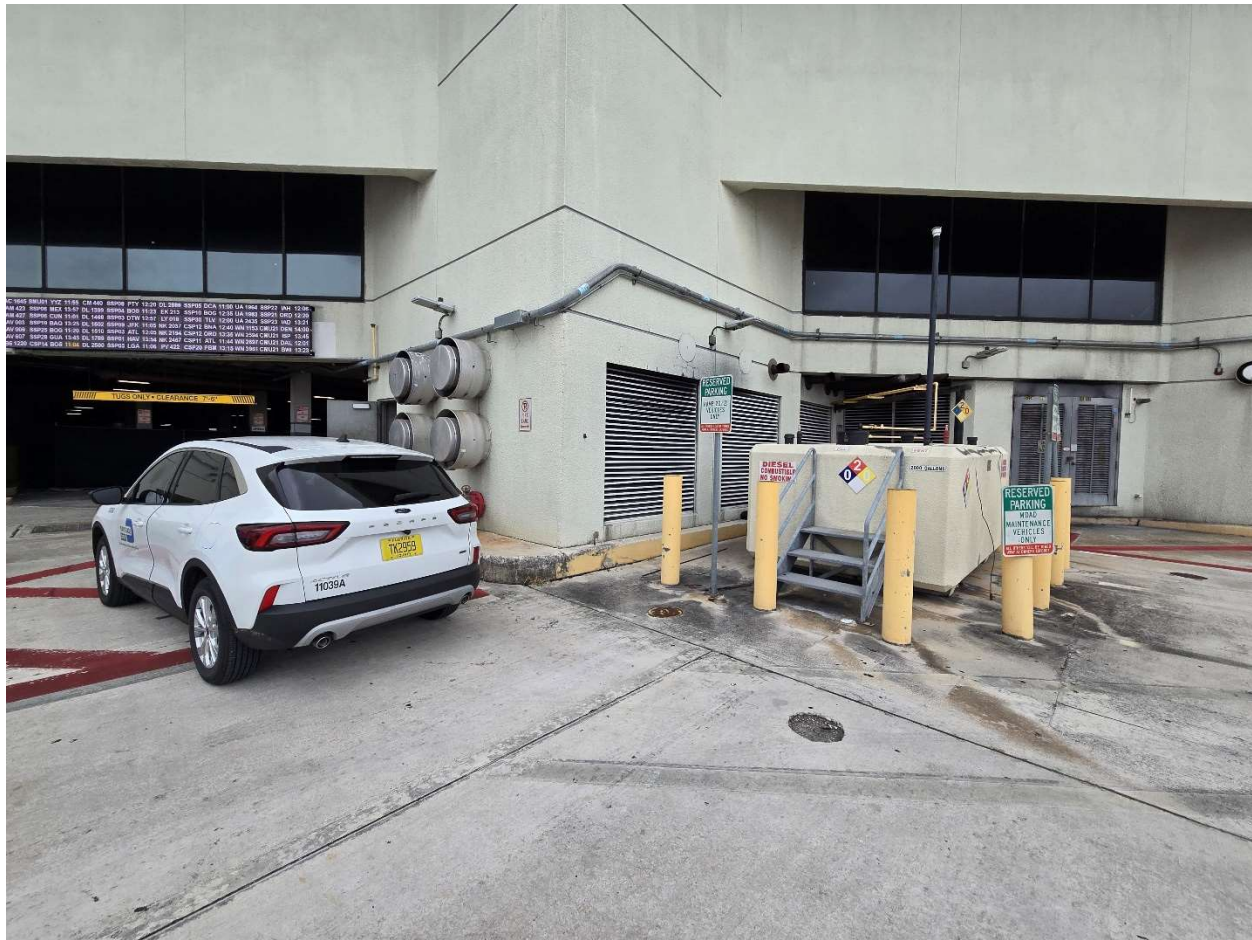


Figure 2.16 – Open paved area outside of generator room & view of diesel tank



Figure 2.17 – Open paved area outside, exterior door open behind car. Facing NW.

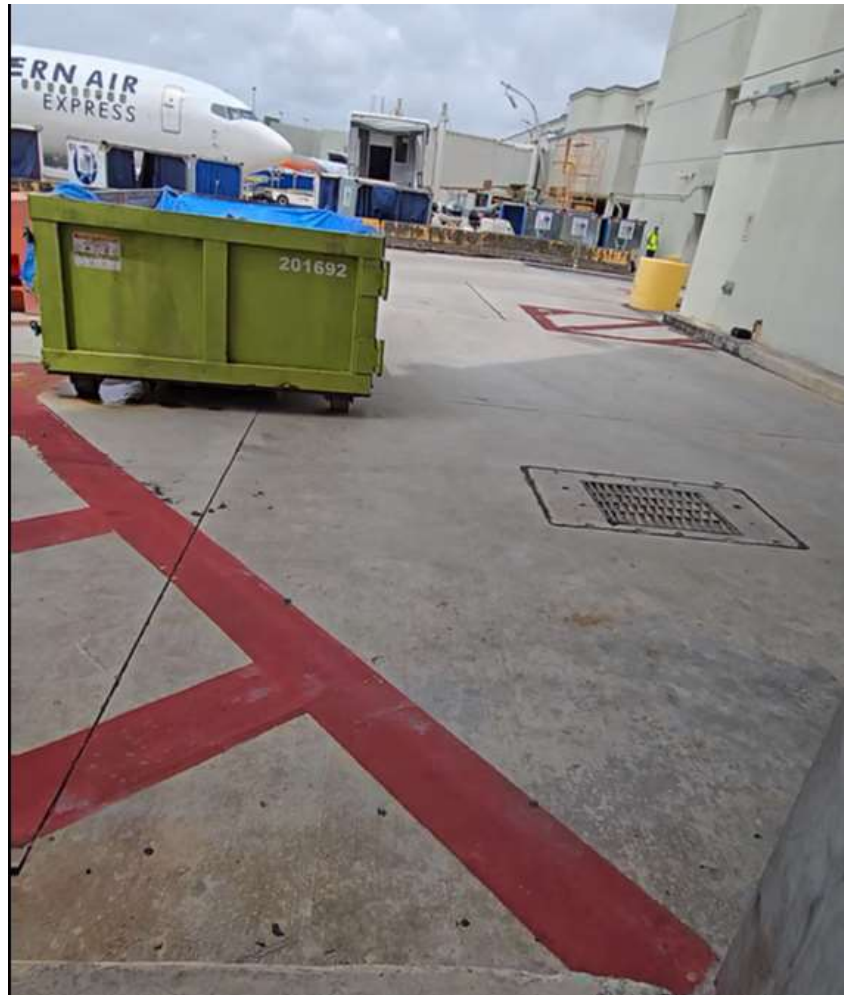


Figure 2.18 – View immediately outside generator room doors. Facing SW.

Project Plan – Low Terminal F

To address the operational risk identified in the condition assessment and incorporating the design concepts for FPL backup generation systems at MIA, the following concept solution is proposed. This solution will be executed in a design-bid-build project plan.

Project Description – Low Terminal F

Backup power service to provide an alternative source of electrical power and electrical distribution equipment to Low Terminal F. Based on site installation conditions and electrical load data, Company expects to utilize a total of 1.5MW of backup generation capacity, controls, and new main distribution switchgear to provide service to the electrical loads, based on the historical 24-month metering data, associated with FPL Account Number 79904-76496. Account is on CILC rate, which requires EPA Tier 4 diesel engines.

Scope of Work – Low Terminal F

See appendix for system drawings. The scope includes all construction and permitting by licensed contractors, per applicable codes.

The new generation systems will replace those existing in the same locations. The generator system will support and serve associated loads currently fed from F1634. The exact solution and generation type will ultimately be determined in the engineering phase, but the current plan is presented below.

Electrical System

- 1.5MW Generation System
 - o 24-hr day tank replacements
 - o Battery charger and maintainer per generator
- (2) Main Distribution Lineups to be replaced
 - o Main distribution switchgear 8-unit lineup with associated line sections and main breakers
 - Line Section 1: 2000A
 - Line Section 2: 2000A
 - Line Section 3: 2000A
 - Line Section 4: 3200A
 - Line Section 5: 3200A
 - Line Section 6: 3200A
 - Line Section 7: 3200A
 - Line Section 8: 3200A
 - All Line sections include:
 - Indoor rated
 - Breakers for generator inputs
 - Provisions for future emergency feed
 - PLC Controls for entire system
 - All feeder breakers sized to match existing equipment
 - o “FGC” = 1600A.
 - o All contain critical loads (motors, lighting, etc.)
 - o FP = 600A & hosts fire pump loads
 - o All ATS’s associated with these switchboards will be replaced
 - 4 ATS’s rated at 1200A, 1200A, 1200A, 800A
 - o Main-tie-main system
 - o PLC controls
- Generator Paralleling Switchgear
 - o Main-Main configuration fully rated.
 - o Indoor equipment
- Remote monitoring
 - o Generator system and switchgear
 - o Cellular based
- Diesel fuel storage tank (if diesel solution is pursued)
 - o Full replacement of the existing 2000-gallon diesel storage tank and associated downstream piping to the generator room with a 6500-gallon diesel storage tank or sized appropriately for fuel for 48 hours of run time.
 - o Associated 200-gallon DEF tank, sized appropriately, for 48 hours of run time.
 - o Modern leak detection system

Building Upgrades

- Removal of existing 2 generators, aging major switchgear units, transfer switches, and refurbishment of space.
- Removal of damage from past fire event
- Removal of water leaks and other unsafe conditions to perform work and for equipment to operate
- Modernization of diesel tanks and associated piping
- Replacement of subpanels and cables per need

Temporary Power Plan

- A robust temporary power plan is intended and will be evaluated with MDAD during the detailed construction phase of the project.
- At a minimum, all loads are assumed that brief outages can be planned/coordinated with stakeholders to tie-in temporary equipment. This enables continuous operations while electrical work takes place.
- Temporary switchgear and generator will need housed outside and a coordinated transfer of loads panel-by-panel will need to occur for the overall switchgear replacement. Ties may need to occur at individual tap boxes which serve individual units lighting the runway.

Schedule – Low Terminal F

A project timeline is included below. This timeline reflects estimated date ranges of work to be performed. Actual dates may vary, are non-binding, and are subject to change. The below critical items are required from MDC to move forward in each phase of the project construction timeline.

Signed Agreement / PO Issued	1
Procurement - Public Notice	2 - 6
Procurement - Engineering Services	6 - 8
Selection - Engineering Services	9 - 10
Engineering Phase	10 - 18
Start Procurement - Equipment & Services	16 - 22
Selection - Equipment & Services	22 - 23
Permit Submittal	22
Long Lead Sourcing / Planning / Permit Acceptance	23 - 75
Start Construction	78
Ground work / Site Work	78 - 98
Generator Delivery & Gen Switchgear	98 - 103
Critical Event - Cutover #1 - A Side	104
Critical Event - Cutover #2 - B Side	105
Final System Commissioning / Closeout	106-107
Contingency	107-130

Performance Bonds

Single instrument Payment and Performance Bonds will be obtained for each construction project. These bonds will remain in effect for six months following construction operation date. Fees related to bond costs will be determined based on specific project requirements and risks and will be passed on to MDC at FPL cost in each applicable statement of work as part of the service fees thereunder.



Responsibility Matrix

FPL is responsible for design and proposal of backup power solutions and distribution-related service upgrades. Various departments within FPL will be involved throughout the project. Similarly, MDC has identified departments to be involved in certain key processes. A listing of the departments involved is included below.

	FPL	Miami-Dade
Technical Feasibility		
Equipment designs	Engineering & Construction (E&C)	MDAD
Service upgrades	Power Delivery (PD)	MDAD
Installation Analysis		
Agreement & SOW	Development, Legal	RER, MDAD
Procurement	E&C, Sourcing	MDAD, RER
Permitting	E&C	RER, MDAD, City of Miami
Inspections	E&C	RER, MDAD, City of Miami
Flood Zones	E&C	MDAD, RER
Sea Level Rising	E&C	MDAD, RER
Tree Removal Impacts	E&C	RER, MDAD
System designs	E&C	MDAD, RER
Service upgrades	PD	MDAD
Account set-up	Development, Customer Service	MDAD

Technical and Construction Feasibility – Low Terminal F

The Low Terminal F systems represent critical systems to upgrade and modernize due to 24/7 operational requirements, age of the existing equipment, airside/landside loads, and equipment placement.

No new space is anticipated for new switchgear and generator placement. New equipment will be installed where existing equipment is housed. Modern NEC requirements will be adhered to.

The generator replacements will require replacement/modernization of the existing day tanks and all associated plumbing. Associated replacement activity is not expected to require new permanent space. Temporary equipment during construction will require some space and temporary provisions and coordination with vested parties.

Numerous unknowns exist underground, and existing conduits may not be suitable for reuse (high potential for collapsed conduit).

The scope does not trigger additional requirements for other building upgrades to adhere to LEED Silver Certification. LEED certification is not in-scope for Low Terminal F electrical system upgrades.

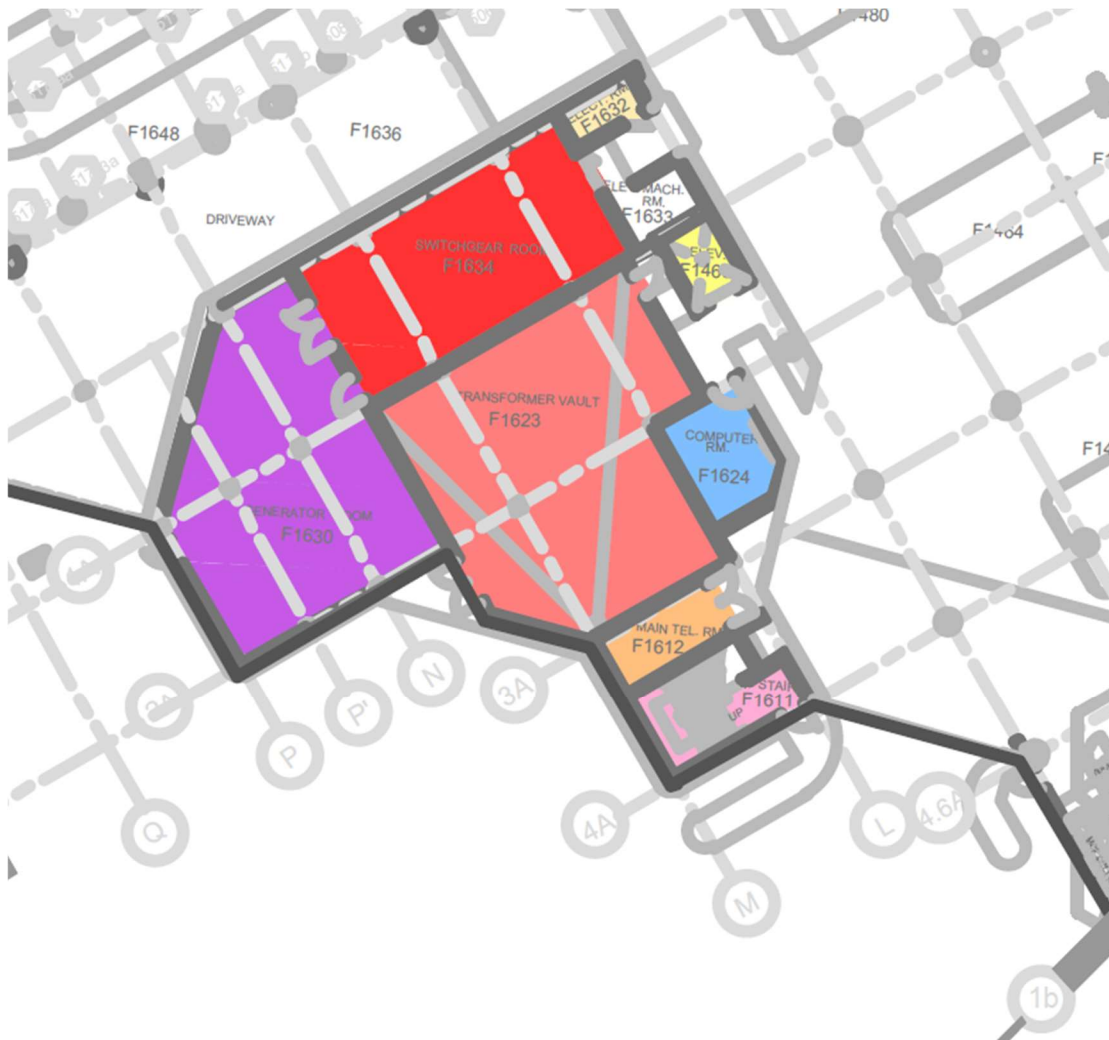


Figure 2.19 – Basic Layout Location of Low Terminal F

Permit Applications and Inspections – Low Terminal F

Permits are required for all electrical work per Florida Building Code, Miami-Dade County Code, and City of Miami code enforcement. All applicable codes will be adhered too and formalized in the design stage of the project by the Engineer of Record (EOR).

Engineering Services – Low Terminal F

No engineering services have been utilized in recent history to FPL's understanding to address the electrical system at Low Terminal F. As part of this project, we will follow the county's process for obtaining bids, selecting a contractor, and obtaining necessary drawings for the project's scope.

Financial Feasibility – Low Terminal F

The OSPS Backup Generator Monthly Service Payment for Low Terminal F is estimated based on pre-survey design and prior to equipment purchase and installation. As stated in the Statement of Work (SOW), actual costs are estimated as a range for rough order-of-magnitude planning and approval. The actual cost will be



based on 100% permit approved design and competitive bidding, based on concept developed in this feasibility report. The monthly service payment is for 20yrs, fixed, and includes all maintenance, break/fix, and emergency support costs per the SOW. The monthly payment goes on the utility bill and starts after the system is fully commissioned, helping MDC delay capital expenditures.

OSPS Monthly Service Payment

Low Terminal F	Monthly Service Payment
High Estimate	\$210,101
Low Estimate	\$157,576

No net change to fuel usage is expected as part of this project work.

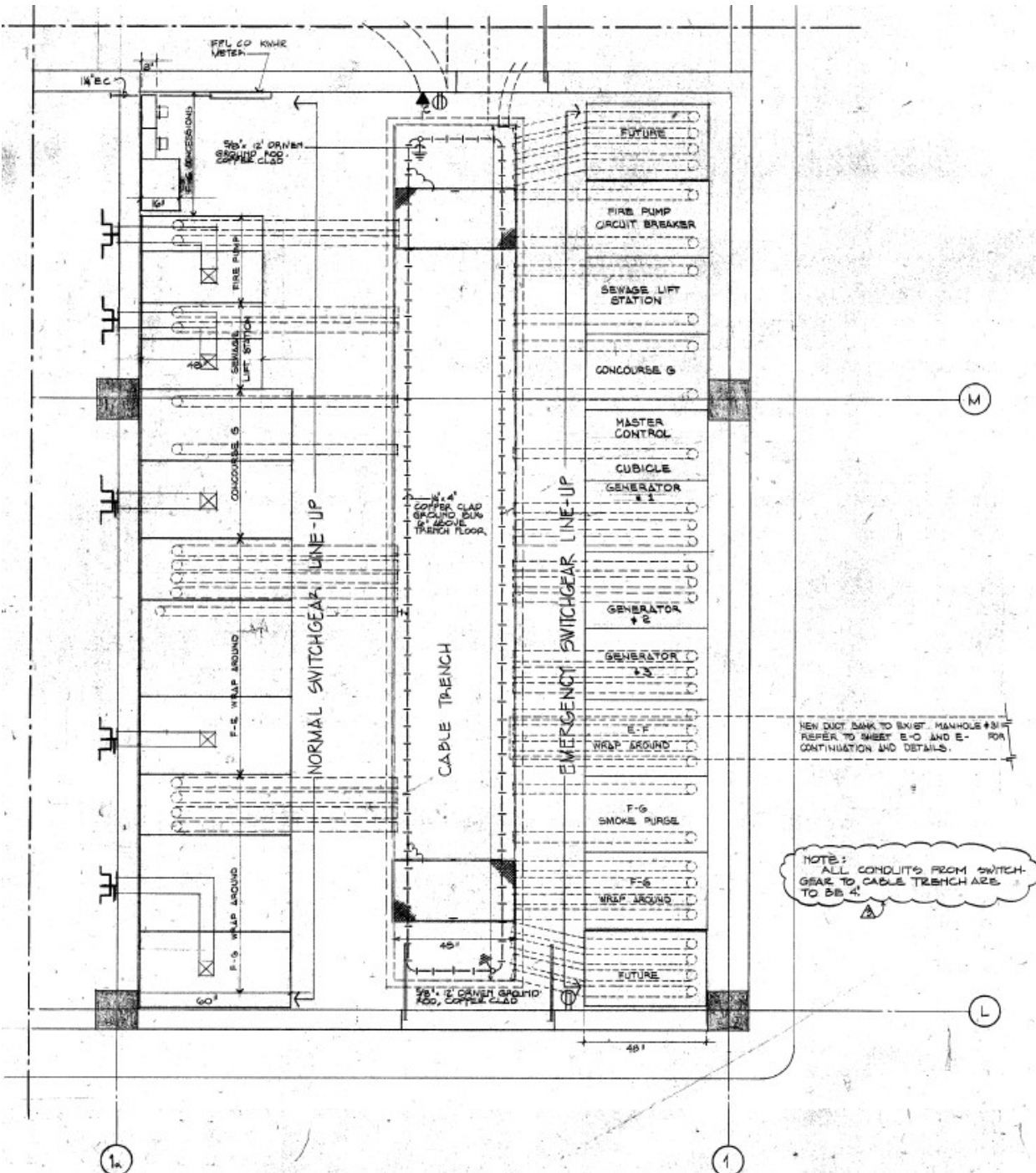
- The new generator system will test and operate similarly as the existing in place.
- Fuel costs are the only variable cost that will continue to be paid by MDC.

No net change to electrical consumption is expected as part of this project work.

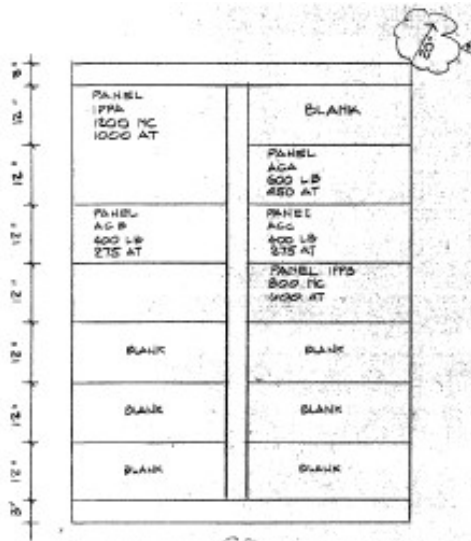
- The new generator system is emergency backup only. It does not provide baseload support.

Conclusion and Recommendations – Low Terminal F

FPL recommends immediate replacement and modernization of the aging electrical infrastructure at MIA Low Terminal F. Should the County proceed with a Non-Residential Backup Power Services Agreement and corresponding Statement of Work with FPL for the identified work by July 2026, FPL is prepared to support construction and installation of the equipment to be operational in Q1 2029.

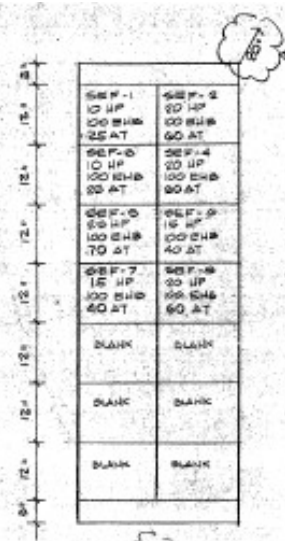


PARTIAL FLOOR PLAN - SWITCHGEAR ROOM



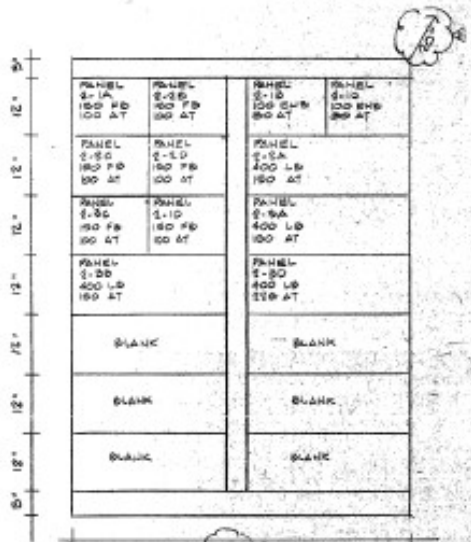
SWITCHBOARD "MACDS"

RM. 117



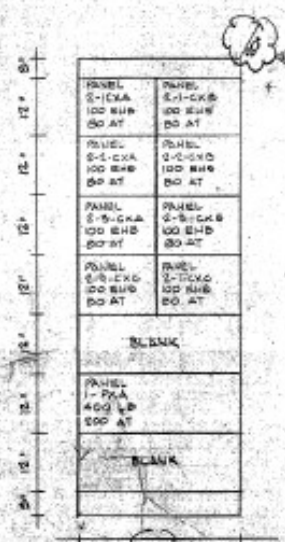
SWITCHBOARD "SE"

RM. 325



SWITCHBOARD "LGDS"

RM. 228

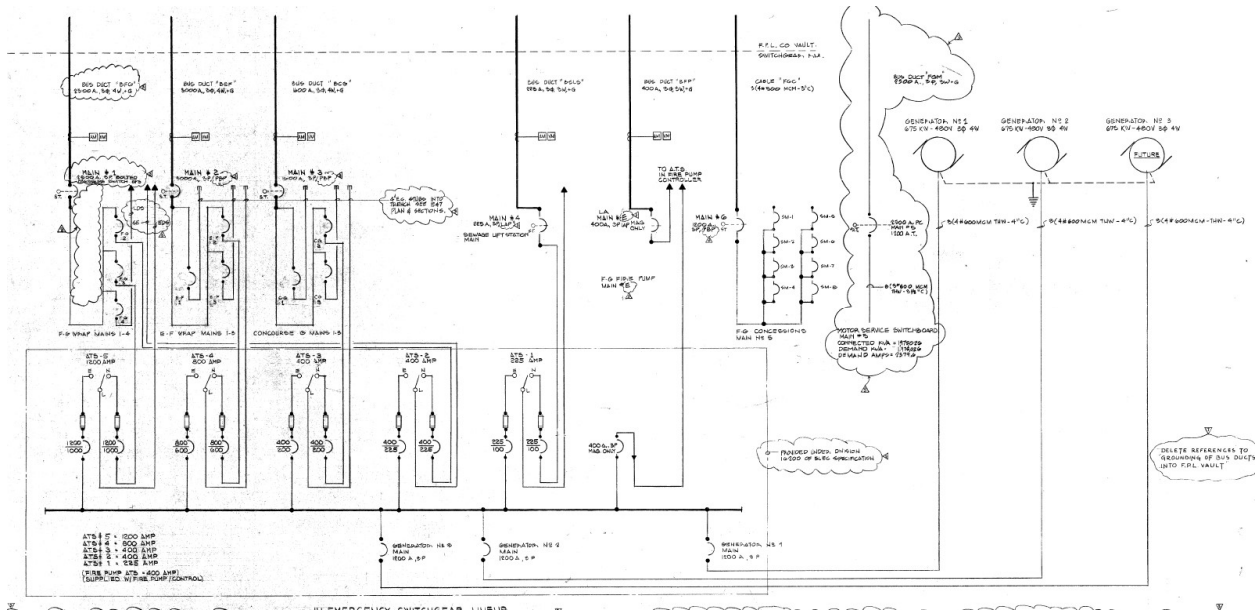


SWITCHBOARD "EDS"

RM. 228

F TO G WRAPAROUND LOAD SUMMARY									
LIGHTING DISTRIBUTION SWITCHBOARD "LGDS"									
SERVICE: 277/480V, 3Ø, 4W					MANR: 1000 MLO				
TYPE: WFF					RM: 228				
CIRCUIT NO.	IDENTIFICATION	CIRCUIT BREAKER DATA			CONNECTED LOAD VA	RECEPTACLE LOAD VA FIRST 10,000 VA & 100% OF REMAINDER @ 50% DF	CONTINUOUS LOAD VA AFTER DEMAND FACTOR OF 125%	TOTAL LOAD VA @	TOTAL LOAD AMPS @
		POLES	FRAME	TRIP					
1	PANEL 2-1A	3	100 EBF	100	55,900	11,450	54,350	70,160	85.5
2	PANEL 2-1B	3	100 EBF	80	35,200	960	36,160	41,732	50.3
3	PANEL 2-1C	3	100 EBF	80	55,675	9160	56,585	42,237.5	51.
4	PANEL 2-2A	3	400 LB	150	12,525	11,760	104,137	119,897	134.7
5	PANEL 2-2B	3	150 FB	100	65,457		81,747	81,747	98.5
6	PANEL 2-2C	3	150 FB	120	77,692	13,790	79,920	98,972.5	112.9
7	PANEL 2-2D	3	150 FB	120	71,549	15,470	72,508.5	86,665.5	103.7
8	PANEL 2-2E	3	400 LB	125	126,816	35,895	138,605	178,584	210.2
9	PANEL 2-2F	3	400 LB	150	99,990	20,515	94,269	114,784	138.3
10	PANEL 2-2G	3	150 FB	120	74,615	25,910	67,131.5	93,041	112.1
11	PANEL 2-2D	3	400 LB	125	147,955	34,410	141,491	176,342	212.5
12	PANEL 2-1D	3	150 FB	120	55,400	14,523	55,100	69,420	83.7

EMERGENCY POWER DISTRIBUTION SWITCHBOARD "EDS"									
SERVICE: 277/480V, 3Ø, 4W					MANR: 1000 MLO				
TYPE: WFF					RM: 228				
CIRCUIT NO.	IDENTIFICATION	CIRCUIT BREAKER DATA			CONNECTED LOAD VA	RECEPTACLE LOAD VA FIRST 10,000 VA & 100% OF REMAINDER @ 50% DF	CONTINUOUS LOAD VA AFTER DEMAND FACTOR OF 125%	TOTAL LOAD VA @	TOTAL LOAD AMPS @
		POLES	FRAME	TRIP					
1	PANEL 2-1-CXA	3	100 EBF	80	28,500	16,575	15,100	51,552	58.
2	PANEL 2-1-CXB	3	100 EBF	80	34,800	6180	38,980	41,590	49.8
3	PANEL 2-2-CXA	3	100 EBF	80	24,515	660	44,551	45,212	54.6
4	PANEL 2-2-CXB	3	100 EBF	80	48,680	14,820	46,325	57,145	68.9
5	PANEL 2-3-CXA	3	100 EBF	80	28,760	9000	24,700	35,700	41.
6	PANEL 2-3-CXB	3	100 EBF	80	23,900	2000	30,575	36,375	43.
7	PANEL 2-4-CXA	3	400 LB	200	154,380			154,380	186
8	PANEL 2-5-CXC	3	100 EBF	80	69,975	1,300	33,592	37,091	44.7
9	PANEL 2-1-CXC	3	100 EBF	80	24,798	23,60	27,016	35,377	42.7



IN EMERGENCY SWITCHGEAR LINEUP

MAIN NUMBER	SERVICES	CIRCUIT BREAKER DATA			FUSED	CONN. KVA	DEMAND KVA
		POLES	FRAME	TRIP			
F.G. - 1	NOT USED						
F.G. - 2	SMOKE EXH. MOTORS	3	400 LA	255	3#4#0 TW - 2 1/2" C	153.6	160.7
F.G. - 3	CRITICAL LOADS	3	1600 TBP	1000	3#4#400 MCM - 3 IN - 5" C	614.6	701.1
F.G. - 4	LIGHTING LOADS	3	1600 TBP	1400	4#4#400 MCM - 3 IN - 5" C	348.5	1100.9
SWITCHBOARD TYPE: SERVICE ENTRANCE, WF					TOTAL CONN. KVA: 1795.000		
MAIN BUS: 4000A, 3# 5W					TOTAL DEMAND MAX: 2025.000		
I.C. RATING: 800 KAC / 100 K BUS BRACING					TOTAL AMPS: 540		
REMARKS: SEE NOTE 1, 2, 3							

MAIN NUMBER	SERVICES	F.A.	L.F.A.	CIRCUIT BREAKER DATA		FUSED	CONN. KVA	DEMAND KVA
				POLES	FRAME	TRIP		
F.G. - 1	FUTURE MOTOR LOADS	3	2-BOOMER	3	TEI-PAC	600		830.0
F.G. - 2	FUTURE CRITICAL LOADS	3	800 HBP	3	TEI-PAC	600		498.0
F.G. - 3	FUTURE LIGHTING LOADS	3	980 HBP	3	TEI-PAC	600		830.0
F.G. - 4	MAIN CIRCUIT BREAKER	3	9000 TFC	3	1400			
SWITCHBOARD TYPE: SERVICE ENTRANCE, WF					MAXIMUM FUTURE KVA: 1992			
MAIN BUS: 9000A, 3# 5W					MAX FUTURE AMPS: 2400			
I.C. RATING: 100 KAC / 100 K BUS BRACING								
REMARKS: SEE NOTE 1, 2								

MAIN NUMBER	SERVICES	F.A.	L.F.A.	CIRCUIT BREAKER DATA		FUSED	CONN. KVA	DEMAND KVA
				POLES	FRAME	TRIP		
MAIN #4	2-20 HP	90	576	3	150 LAF	40	44.8	56
SWITCHBOARD TYPE: SERVICE ENTRANCE, WF					TOTAL AMPS: 54.0			
MAIN BUS: 250A, 3# 5W								
I.C. RATING: 800 KAC / 100 K BUS BRACING								
REMARKS: SEE NOTE 1								

MAIN NUMBER	SERVICES	F.A.	L.F.A.	CIRCUIT BREAKER DATA		FUSED	CONN. KVA	DEMAND KVA
				POLES	FRAME	TRIP		
MAIN #5	1-75 HP	90	576	3	400 LAF	250	54.1	79.7
SWITCHBOARD TYPE: SERVICE ENTRANCE, WF					TOTAL AMPS: 96.0			
MAIN BUS: 800A, 3# 5W								
I.C. RATING: 800 KAC / 100 K BUS BRACING								
REMARKS: SEE NOTE 1								

- NOTE:
1. ALL MAINS WITH SHUNT TRIPS.
 2. ALL MAINS 1200 AMPS OR HIGHER, WITH GROUND FAULT ALARM

NUMBER	SERVICES	CIRCUIT BREAKER DATA			FEEDER	MAX LOAD KVA
		POLES	FRAME	TRIP		
CG - 1	MOTOR LOADS	3	800 NBP TRIP-PAC	500	---	415.0
CG - 2	CRITICAL LOADS	3	400 LAF TRIP-PAC	200	---	166.0
CG - 3	LIGHTING LOADS	3	8-800 NBP TRIP-PAC	800	---	664.0
CG - 3A						
MAIN #3		3	1400 NBP TRIP-PAC	1400		
SWITCHBOARD TYPE: SERVICE ENTRANCE, WF MAIN BUS: 1000 A, 3Ø, 4W S.C. RATING: 800 KVA/100 K BUS BRACING REMARKS: SEE NOTES 1, 2						
						MAXIMUM FUTURE KVA: 1245 MAXIMUM FUTURE AMPS: 1500

MAIN NUMBER	SERVICES	CIRCUIT BREAKER DATA			FEEDER	MAX LOAD KVA
		POLES	FRAME	TRIP		
MAIN #6	SUB-MAIN 5M-1 THRU 5M-8	3	1200 POF	1000	3(4#400 MCM THW - 6" C)	796.8
5M-1	FUTURE	3	100 FBP	50	---	66.4
5M-2	FUTURE	3	100 FBP	50	---	66.4
5M-3	FUTURE	3	100 FBP	50	---	66.4
5M-4	FUTURE	3	100 FBP	50	---	66.4
5M-5	FUTURE	3	200 LAF	100	---	132.8
5M-6	FUTURE	3	200 LAF	100	---	132.8
5M-7	FUTURE	3	200 LAF	100	---	132.8
5M-8	FUTURE	3	200 LAF	100	---	132.8
MAIN SWITCH: SERVICE ENTRANCE TYPE NEMA 1 METER AND SUB-MAIN SECTIONS: 800A MAIN BUS, 3Ø, 4W S.C. RATING: 800 KVA/100 K BUS BRACING REMARKS: SEE NOTE 1, 2						
						MAXIMUM FUTURE KVA: 796.8 MAXIMUM FUTURE AMPS: 960

REVISE SHEET E-47 PLANS & SCHEDULES TO CONFORM WITH SCHEDULE REVISIONS THIS SHEET.

- Change location of fire pump normal switchboard to south-west corner of switchgear room where future cubical for emergency switchgear is presently shown. Delete future cubical. Extend F.P. switchboard bus duct approx. 22' to new location.
- F.G. Service Switchboard.
 - Delete motor submain #FC-1.
 - Provide a new motor service switchboard "WP" type, with 2500 amp FC main breaker. Switchboard to be located at center of south-west wall of switchgear room adjacent to door opening to generator room.
 - Provide a new 680 volt, 3 Ø bus duct from vault to new motor switchboard. Capacity shall be 2500 Amps copper. Approximate length to be 27'.
- F.G. Concessions Service Equipment:
 - Change location to south-west wall of switchgear room with main section located adjacent to new motor switchboard main. Meter sections to line-up east of main.
 - Change location of KV.HR meter to exterior wall of F.P.L. vault, provide 1-1/4" conduit nipple into vault.
 - All switchgear equipment is to be front-accessible and are to line-up on the front face.
 - Switchgear layouts on Sheet E-47 are to conform with these schedules. Switchgear indicated is based on Westinghouse. Approved equal substitutions by other manufacturers may be used in strict accordance with specifications. Shop drawings are to be submitted for engineers approval with final layout which is to meet N.E.C. and South Florida Building Department requirements.

- The spaces are original construction serving the eastern area of the Chiller Plant and nearby toll plaza.
- Major Spaces
 - Chiller Room 214
 - The 750kW Kato light generator is the primary unit in this room, located on the south end. It is at end-of-life state, now approaching 30 years in operation. It contains an analog setup with limited remote monitoring communication. The generator shows signs of aging, wear and tear, rust, and some retrofits.
 - The generator's exhaust system points south through the concrete wall and out of the building. This is the most accessible location for generator removal. A crane will be needed as this is located on the second floor.
 - The room contains adequate space for construction activity and for equipment replacement.
 - The diesel day tank is located adjacent to the generator, in the middle of the room. Diesel piping runs along the ground from the tank to the generator, and upstream to the larger 10,000-gallon tank outside.
 - The generator's associated piping runs visibly overhead along the east wall of the room to a bolted tray, downstream to two separate circuits (including breakers & ATS's).
 - Downstream from the tray along the west wall of the room is found a 1000A ATS and EDP combo. Pipes connect upstream via overhead roughly 10ft in height and downstream out of the room. These devices are located on the right side as you enter the room from the main doors.
 - The walls of the room are fairly congested with pipes, panels, and aforementioned major equipment but there is sufficient capacity for work to occur.
 - The room is accessible from the main doors, as there is a large elevator within the facility. This may prove useful for smaller equipment movement and general mobility.
 - Adjacent Switchgear Room
 - The emergency main switchgear unit is housed along the wall immediately behind the ATS/EDP combo described in the previous section within Chiller Room 214.
 - The switchgear unit is rated at 3200A main bus and 1600A section bus. The room includes several other pieces of switchgear-related equipment not included in this scope. It hosts emergency feed incoming from overhead and utility feed, presumably, from beneath. Doors to the room are located beside doors leading into Room 214 and the unit is located directly in front when entering the space.
 - Chiller Plant First Floor
 - Downstream panels do exist from the emergency electrical circuit, but are not considered for replacement in this scope on the building's first floor.
 - The first floor includes major chiller equipment which supplies cooling to the airport. The first floor includes an assessable hallway to the elevators, for access to the second floor. Coordination will need to occur with MDAD to limit disruption to any ongoing operations.
 - The utility vault is located directly underneath the switchgear room. The utility source comes into the emergency main on the second floor from this space.
 - Outdoor Space
 - Outside Room 214, there is some green space for a crane and construction equipment beside the building for equipment movement and temporary facilities.

Miad circle is located nearby and coordination with MDAD is necessary if some space of this two-lane one way road needs to be utilized.

- There are parking areas on the west and east sides of the building to house vehicles and construction equipment if needed. Coordination with MDAD is necessary to utilize this space.
- Chiller Plant East's full scope is landside; no AOA credentials are necessary. The building is best accessed from Miad Circle and is near the main airport exit
- The room, and building, are well cooled such that no HVAC work or other disciplines are needed. The room is intended to be refurbished upon equipment replacement.



Figure 2.2 – Side view of generator



Figure 3.3 – Alternative frontal view of generator

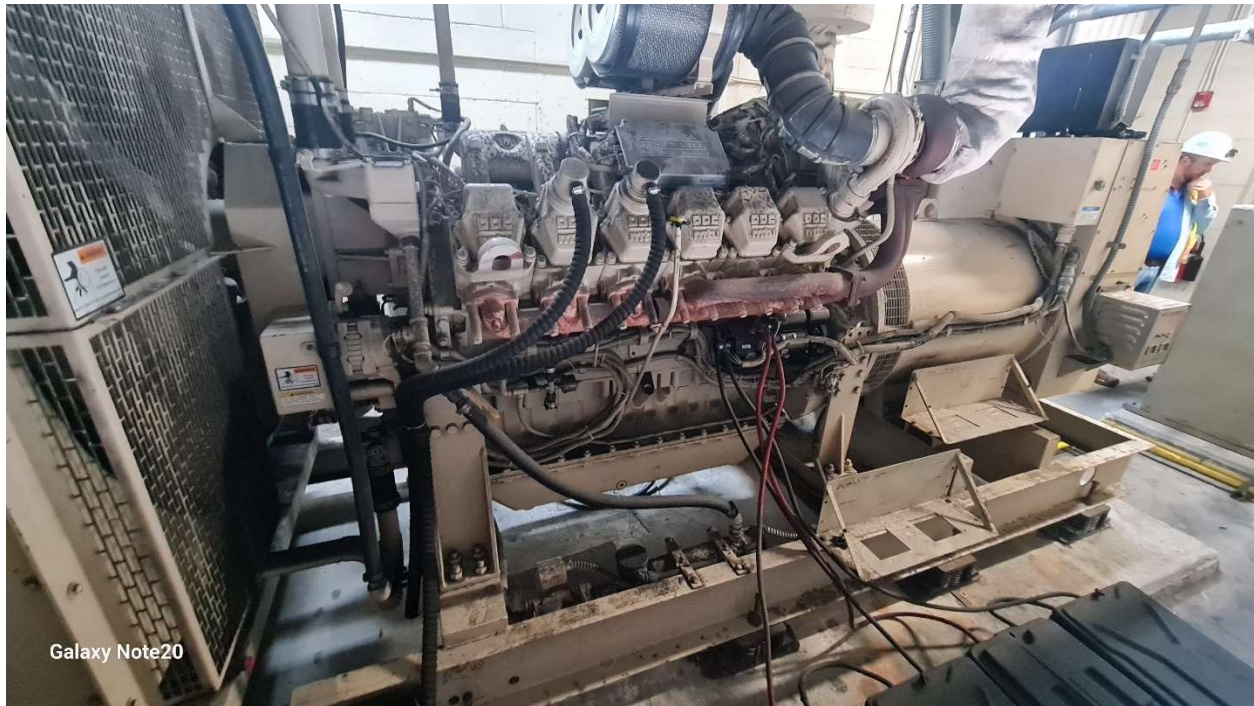


Figure 3.4 – Side view of generator



Figure 4.5 – Diesel tank and breaker in Room 214. Generator in back.



Figure 5.6 – Diesel tank to left, generator in back, EDP and ATS found on right



Figure 6.7 – Cable tray, 400A circuit breaker for fire pump and associated piping. East wall of room.



Figure 3.8 – 1000A Panel EDP with the ATS located on left. West wall of room.



Figure 3.9 – 1000A Panel EDP with the ATS located on left. Expanded view.

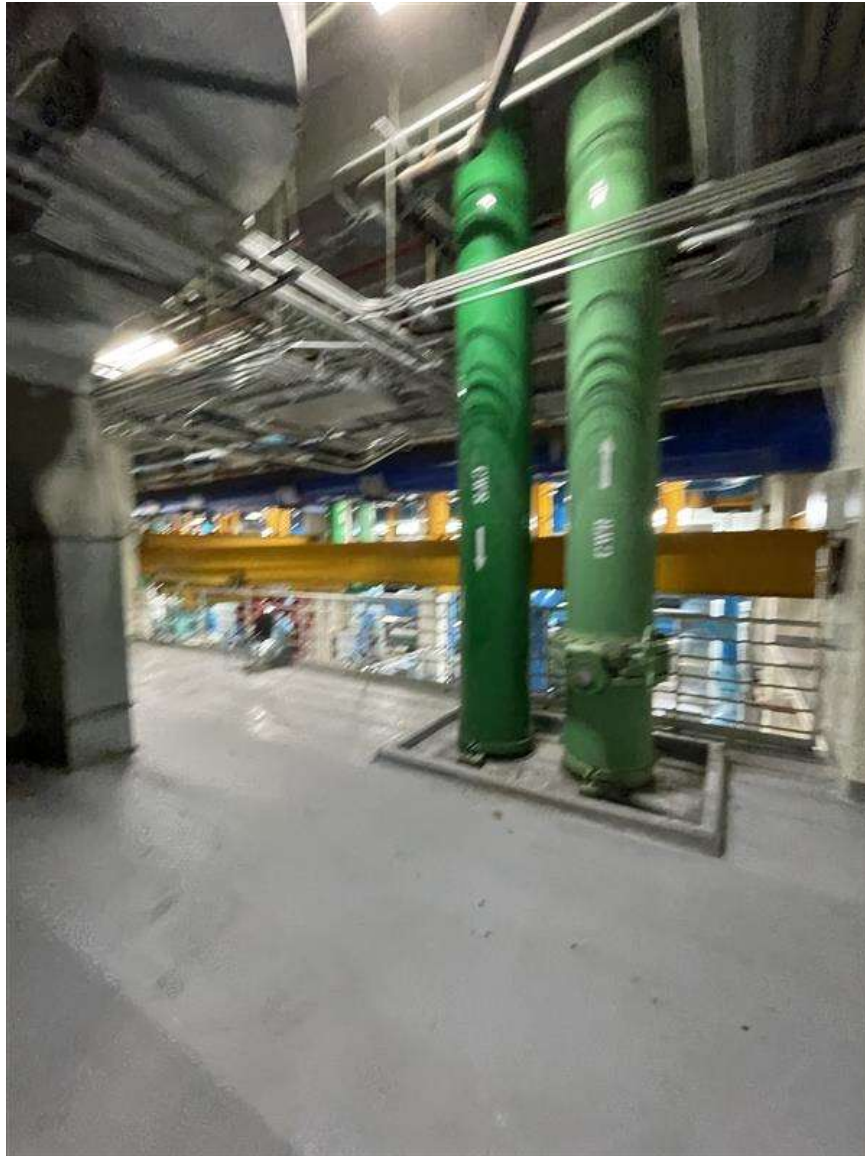


Figure 3.10 – Area outside main room doors on interior. Accessible 2nd floor hallway leads to elevators.

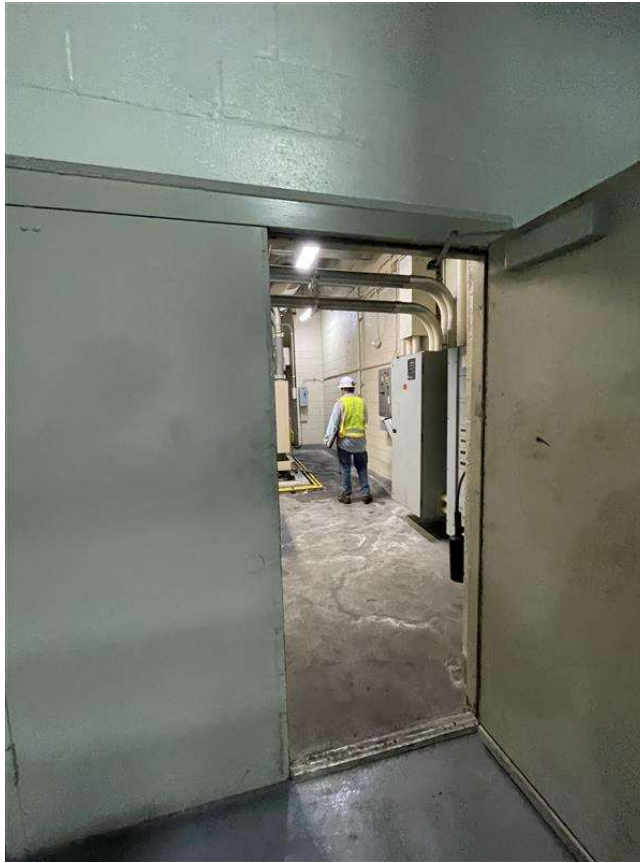


Figure 3.11 – Image of Room 214's main doors



Figure 3.12 – Google earth view of outdoor area outside Rm 214. Exhaust pipes stick out of wall in middle – room location



Figure 3.13 – Google Earth view of parking area on west side of Chiller Building



Figure 3.14 – Google Earth view of parking area on east side of Chiller Building



Figure 3.15 – Emergency Main Switchgear in Switchgear Room. Entrance doors to left.



Figure 3.16 – Emergency Main Switchgear in Switchgear Room. Side view.



Figure 3.17 – Emergency Main in Switchgear Room. Entrance doors to left.

Project Plan – Chiller Plant East

To address the operational risk identified in the condition assessment and incorporating the design concepts for FPL backup generation systems at MIA, the following concept solution is proposed. This solution will be executed in a design-bid-build project plan.

Project Description – Chiller Plant East

Backup power service to provide an alternative source of electrical power and electrical distribution equipment to Chiller Plant East. Based on site installation conditions and electrical load data, Company expects to utilize 750KW of backup generation capacity, controls, and new main distribution switchgear to provide service to the electrical loads, based on the historical 24-month metering data, associated with FPL Account Number 79924-70448. The generator(s) supply emergency load only.

Scope of Work – Chiller Plant East

See appendix for system drawings. The scope includes all construction and permitting by licensed contractors, per applicable codes.

The new generator system will replace the existing in the same location. The new generator system will serve the same electrical systems as the existing, represented as a like-for-like replacement. Downstream panels and other switchboards will be replaced like-for-like per need and existing condition.

Electrical System

- 750kW generation system
 - o Battery charger and maintainer
 - o Modern remote monitoring capabilities, cellular based
- Emergency Main Switchgear
 - o Main bus rated at 3200A & section bus rated at 1600A
 - o Like-for-like replacement with main-tie-main configuration
- 1000A ATS & EDP
 - o Modern, high-reliability breakers that meet current electrical codes and safety standards
 - o Integrated advanced control & monitoring features to support automatic operation & protective relaying
- 600A ATS & Panel for Fire Pump
 - o Modern, high-reliability breakers that meet current electrical codes and safety standards
 - o Integrated advanced control & monitoring features to support automatic operation & protective relaying
- 10000-gallon diesel fuel storage tank, if diesel solution maintained
 - o Modernization & refurbishment of existing diesel system
 - o Exterior tank with pipe modernization. Potential replacement will be evaluated.
 - o Sized appropriately to generator, like-for-like with existing, and to generator in West Rm 207.
 - o Modern leak detection system
 - o Diesel fuel storage day tank
 - Indoors, adjacent to generator

Building Upgrades

- Removal of existing generators, downstream devices with scope, and refurbishment of existing space.
- Update and modify routing of conduits/piping to better adhere to standards and improve the general flow/layout.
- Evaluate & modernize diesel pipe routing from diesel tank. Update piping as necessary in and around the generator.

Temporary Power Plan

- A robust temporary power plan is intended and will be evaluated with MDAD during the detailed construction phase of the project.
- At a minimum, all loads are assumed that brief outages can be planned/coordinated with stakeholders to tie-in temporary equipment. This enables continuous operations while electrical work takes place.
- Temporary equipment can be tied in at downstream panels
- Significant planning will need to occur given the criticality of the emergency loads supplying the chiller plant, and exact location of temporary equipment within the building and its vicinity

Schedule – Chiller Plant East

A project timeline is included below. This timeline reflects estimated date ranges of work to be performed. Actual dates may vary, are non-binding, and are subject to change. The below critical items are required from MDC to move forward in each phase of the project construction timeline.

Milestone	Week(s)
Signed Agreement / PO Issued	1
Procurement - Public Notice	2 - 6
Procurement - Engineering Services	6 - 8
Selection - Engineering Services	9 - 10
Engineering Phase	10 - 18
Start Procurement - Equipment & Services	16 - 22
Selection - Equipment & Services	22 - 23
Permit Submittal	22
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Start Construction	78
Groundwork	78 - 88
Generator, Switchgear, & Equipment Delivery	89 - 92
Critical Event - Cutover #1 - A Side	93
Critical Event - Cutover #2 - B Side	94
Final System Commissioning / Closeout	95 - 96
Contingency	97 - 104

Performance Bonds

Single instrument Payment and Performance Bonds will be obtained for each construction project. These bonds will remain in effect for six months following construction operation date. Fees related to bond costs will be determined based on specific project requirements and risks and will be passed on to MDC at FPL cost in each applicable statement of work as part of the service fees thereunder.

Responsibility Matrix

FPL is responsible for design and proposal of backup power solutions and distribution-related service upgrades. Various departments within FPL will be involved throughout the project. Similarly, MDC has identified departments to be involved in certain key processes. A listing of the departments involved is included below.

	FPL	Miami-Dade
Technical Feasibility		
Equipment designs	Engineering & Construction (E&C)	MDAD
Service upgrades	Power Delivery (PD)	MDAD
Installation Analysis		
Agreement & SOW	Development, Legal	RER, MDAD
Procurement	E&C, Sourcing	MDAD, RER
Permitting	E&C	RER, MDAD, City of Miami
Inspections	E&C	RER, MDAD, City of Miami
Flood Zones	E&C	MDAD, RER
Sea Level Rising	E&C	MDAD, RER
Tree Removal Impacts	E&C	RER, MDAD
System designs	E&C	MDAD, RER
Service upgrades	PD	MDAD
Account set-up	Development, Customer Service	MDAD

Technical and Construction Feasibility – Chiller Plant East

The Chiller Plant East system represents a critical system to upgrade and modernize due to 24/7 operational requirements, age of the existing equipment, and emergency backup for the airport's main chiller facility.

No new space is required for equipment replacement. New equipment will be relocated where existing equipment is housed.

Temporary equipment during construction will require some space. Temporary provisions will require coordination with vested parties.

Numerous unknowns exist, such as pipe routing downstream from the room to subpanels. Extra precautions are necessary for general movement through the building with such large pieces of machinery in vicinity.

The type of mechanical equipment contemplated does not trigger additional requirements for other building upgrades to adhere to LEED Silver Certification. LEED certification is not in-scope for Chiller Plant East system upgrades.



Figure 3.15 – South view of Chiller Plant, taken from toll plaza.

Permit Applications and Inspections – Chiller Plant East

Permits are required for all electrical work per Florida Building Code, Miami-Dade County Code, and City of Miami code enforcement. All applicable codes will be adhered too and formalized in the design stage of the project by the Engineer of Record (EOR).

Engineering Services – Chiller Plant East

No engineering services have been utilized in recent history to FPL's understanding to address the emergency electrical system in Room 214. As part of this project, we will follow the county's process for obtaining bids, selecting a contractor, and obtaining necessary drawings for the project's scope.

Financial Feasibility – Chiller Plant East

The OSPS Backup Generator Monthly Service Payment for Chiller Plant East is estimated based on pre-survey design and prior to equipment purchase and installation. As stated in the Statement of Work (SOW), actual costs are estimated as a range for rough-order-of-magnitude planning and approval. The actual cost will be based on 100% permit approved design and competitive bidding, based on concept developed in this feasibility report. The monthly service payment is for 20yrs, fixed, and includes all maintenance, break/fix, and emergency support costs per the SOW. The monthly payment goes on the utility bill and starts after the system is fully commissioned, helping MDC delay capital expenditures.

OSPS Monthly Service Payment

Chiller Plant East	Monthly Service Payment
High Estimate	\$43,707
Low Estimate	\$32,780

The primary driver for the high range is uncertainties in global supply chains and high operational risk mitigation cost. All cost elements will follow MDC's approved sourcing method in the SOW.

No net change to fuel usage is expected as part of this project work.

- The new generator system will test and operate similarly as the existing in place.
- Fuel costs are the only variable cost that will continue to be paid by MDC.

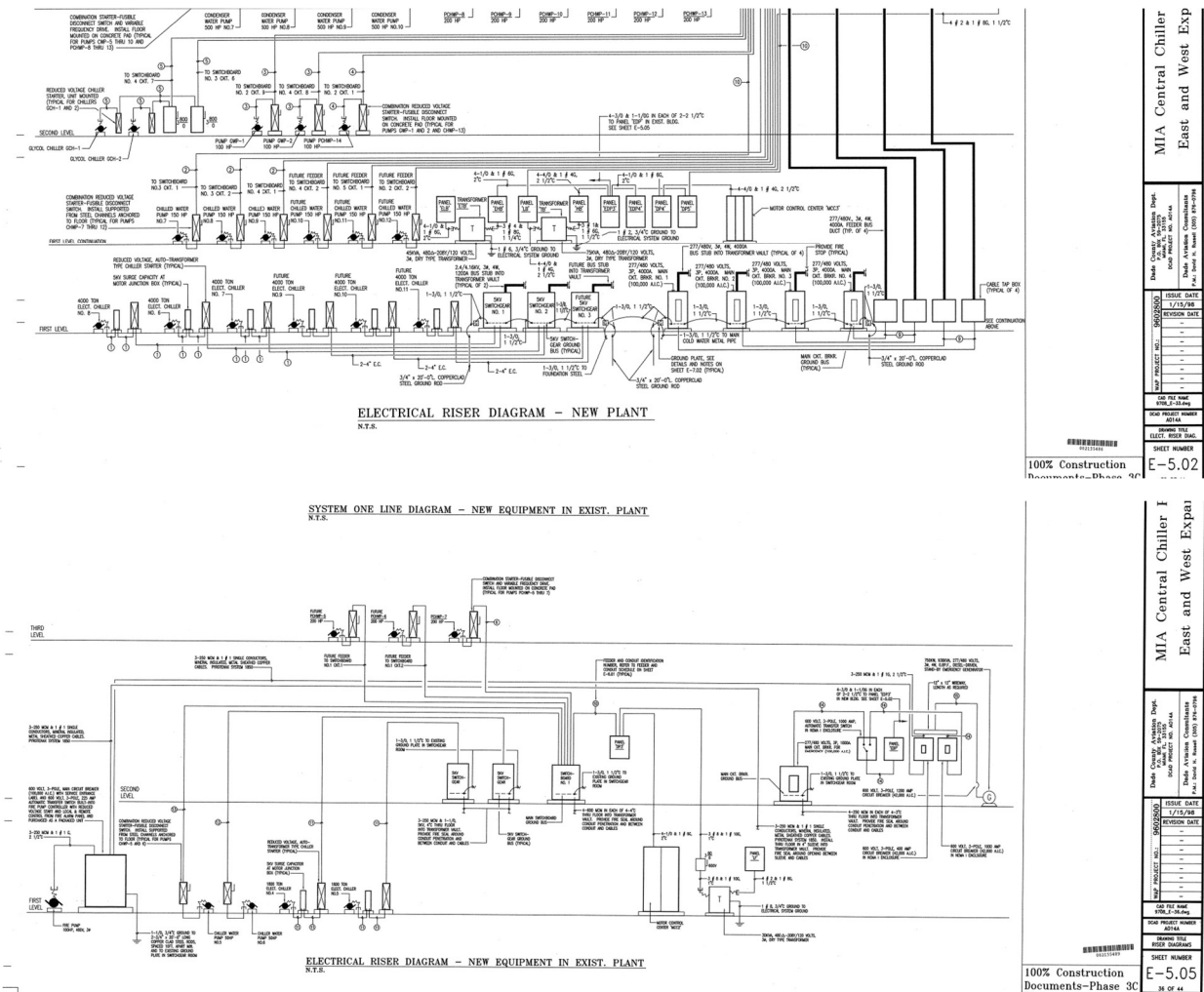
No net change to electrical consumption is expected as part of this project work.

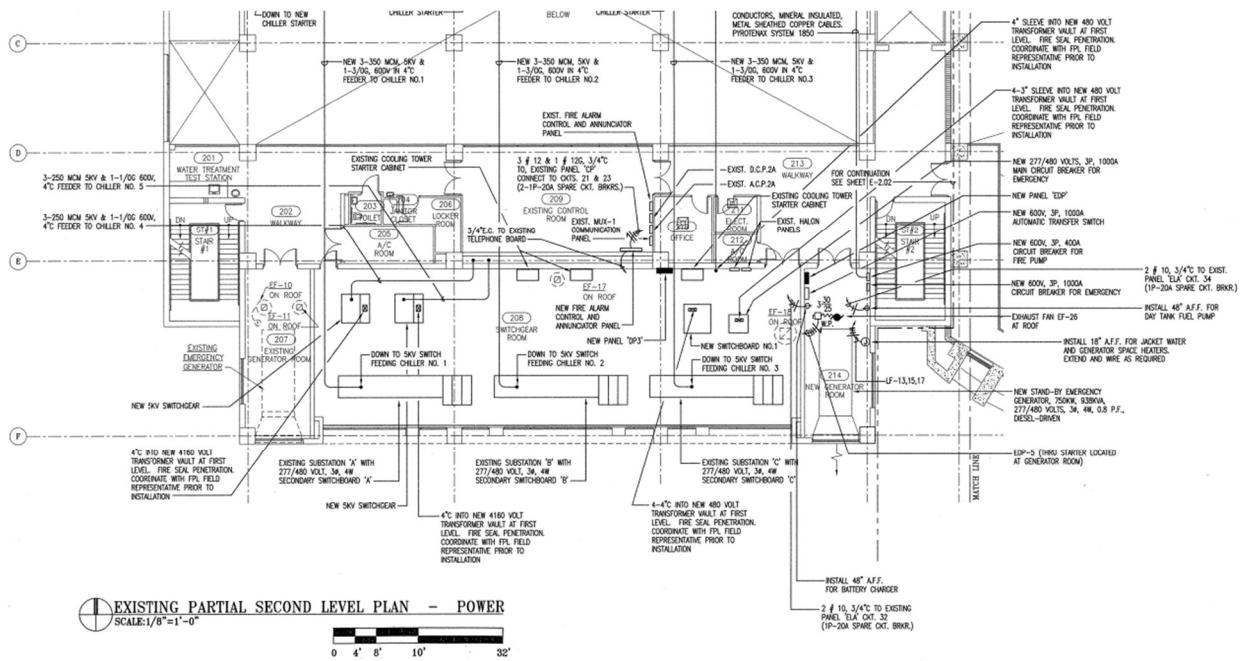
- The new generator system is emergency backup only. It does not provide baseload support.

Conclusion and Recommendations – Chiller Plant East

FPL recommends immediate replacement and modernization of the aging electrical infrastructure at MIA Chiller Plant Rm 214. Should the County proceed with a Non-Residential Backup Power Services Agreement and corresponding Statement of Work with FPL for the identified work by July 2026, FPL is prepared to support construction and installation of the equipment to be operational in Q3 2028.

Appendix – System Drawings – Chiller Plant East





MANUFACTURE: GENERAL ELECTRIC		MAIN BUS: 1000 AMPS	
VOLTAGE: 277/480 VOLTS		NEUTRAL: 1000 AMPS	
SERVICE: 3ø, 4W		WARNING: LIVES ONLY	
MOUNTING: SURFACE		LOCATION: TOP	

CIR. NO.	EQUIPMENT PROTECTED	LOAD		VOLT	#	POLES	CIRCUIT BREAKER			WIRE	CONDUIT	REMARKS
		KVA	A/W				FRAME	A.I.C.	TRIP			
1	EDL FAN EF-19	17.4	21.0	480	3	3	100A	42K	3DA	3/4"		
2	EDL FAN EF-22	11.6	14.0	480	3	3	100A	42K	3DA	3/4"		
3	PANEL 'EDP'	217.8	262.4	480	3	3	400A	42K	400A	2-2 1/2"		
4	TOLL PLAZA	115.0	138.6	480	3	3	225A	42K	225A	---	---	FUTURE
5	EDL FAN EF-26	9.1	11.0	480	3	3	100A	42K	3DA	3/4"		
6	SPARE	120.0	144.6	480	3	3	225A	42K	225A	---	---	
7	SPARE	120.0	144.6	480	3	3	225A	42K	225A	---	---	
8	SPARE	50.0	60.2	480	3	3	100A	42K	100A	---	---	
9	SPARE	50.0	60.2	480	3	3	100A	42K	100A	---	---	
10	SPACE											
11												
12												
13												
14												
15												
16												
17												
18												

CONNECTED LOAD: 710.9 KVA	FEEDER: 4-250 MCM & 1-1/0G IN EACH OF 4-3"2
DEMAND LOAD: 710.9 KVA = 854.5 A/W	FED FROM: AUTOMATIC TRANSFER SWITCH

FEEDER AND CONDUIT SCHEDULE			
I.D. NO.	FEEDER SIZE	CONDUIT SIZE	REMARKS
①	2 SETS OF 3-350 MCM, 5KV & 1-3/0G, 600V	2-4"	
②	3-600 MCM & 1 # 2G	3 1/2"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
③	3-350 MCM & 1 # 4G	3"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
④	3-3/0 & 1 # 6G	2"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑤	3 SETS OF 3-400 MCM & 1-1/0G	3-3"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑥	2 SETS OF 3-250 MCM & 1-1/0G	2-2 1/2"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑦	3 SETS OF 3-400 MCM & 1-1/0G	3-3"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑧	2 SETS OF 3-500 MCM & 1-1/0G	2-3 1/2"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑨	10 SETS OF 4-600 MCM & 1-3/0G	10-4"	
⑩	2 SETS OF 4-3/0 & 1-1/0G	2-2 1/2"	
⑪	3-250 MCM, 5KV & 1-1/0G, 600V	4"	
⑫	3-300 MCM, 5KV & 1-3/0G, 600V	4"	
⑬	3-1/0 & 1 # 6G	2"	COORDINATE WIRING WITH EQUIPMENT SHOP DRAWINGS
⑭	4 SETS OF 4-250 MCM & 1-1/0G	4-3"	
⑮	3 SETS OF 4-600 MCM & 1-1/0G	3-4"	

Building 845/100 Pan-Am (MDAD EG-206)

Project Solution Development – Building 845 (Formerly Building 100)

All project work will be executed in a design-bid-build turnkey project, based on estimates and design guidance established in this feasibility report. This feasibility report is concept level based on design guidance previously established and not permit level drawings or detail.

The project description for Building 845 (Pan-Am Building) is the end-of-life equipment replacement/modernization of the 480V emergency generator system, main distribution switchgear, and other emergency backup equipment. This building was formerly referred to as Building 100 and is now designated as Building 845. The buildout of new indoor switchgear units, generator, downstream devices within scope, and related construction will occur in the existing generator room, located on the 2nd floor, and switchgear room located underneath. A new above-ground diesel tank will replace the existing tank, located west of the main building on airside, as well as downstream piping replacement to the day tank/generator. Potential disruption to operations is limited to Building 845 & the adjacent fire station. Coordination will need to occur regarding service continuity to the adjacent fire station, a critical facility, which is electrically served from this building's switchgear room.



Figure 5.1 - Project Location (Building 100/845)

Condition Assessment – Building 845 electrical/generator room

The condition of the existing equipment is *end of life – risk to operations*.

- 2yr peak electrical demand, based on meter analysis, is 953KW combined for both accounts served from this space. The general building account reaches 532KWD and will be associated with this project. The generator itself serves life/safety loads for Building 845, it does not back up the entire demand load.

- The spaces currently serve Building 845 (Pan-Am building). This includes flight simulators and aviation offices at 5650 NW 36th St, a large multi-story building. The fire station adjacent to the west is fed from this same electrical room, named appropriately on its main. The fire station itself hosts a generator, separate from scope in this section.
- Major Spaces
 - Generator Room
 - The 600 kW Caterpillar generator is at end-of-life state, with over 40 years in operation. It is in a deteriorating condition, notably containing a faulty radiator. It contains an analog setup with limited remote monitoring communication. The generator shows signs of aging and general wear and tear.
 - The generator is open and accessible in the center of the room.
 - The exhaust pipes converge with exhaust output from the adjacent fire pump. One end points out of the room towards the north/exterior wall. The generator room is on the 2nd floor and will require a crane for hoisting.
 - Space in the room is sufficient for accessibility and construction-related activity. The main door is on the east wall and is adjacent to a large communications/mechanical room. The generator room is not very accessible. It requires building entry, then use of a elevator to the 2nd floor, with possible entry through multiple areas to access this space.
 - The day tank is in the SE corner of the room. A full replacement is needed of all associated electrical devices in this space, which fall within scope. The day tank's replacement is dependent on if a diesel solution is pursued.
 - The generator's associated downstream piping (bundle of 3) runs overhead to a 1200A emergency distribution panel (GSB) along the west wall. Three associated pipes then run from panel GSB overhead and out of the room's southwest corner, two overhead and one near ground level. This runs below to the switchgear room on the first floor but first runs straight through a nearby electrical room (room 267) on the 2nd floor (accessed from hallway). There are no associated pipe connections in Room 267.
 - The walls of the generator room are mostly clear. Piping from the diesel system runs along the south wall.
 - Switchgear Room
 - The generator room is located above on the 2nd floor. The FPL vault is located on the first floor adjacent to the north from the switchgear room (with exterior access). Bus stubs and a few conduits connect the FPL vault/source power to the switchgear.
 - The room is overall quite congested with pipe runs and electrical equipment. Extra precaution and preparation is necessary to navigate this room's complexities, especially closer towards the room's ceiling. Switchgear hoisting multiple MDP's falls within scope for replacement and modernization. The ATS downstream of the generator is quite new, in the southwest corner of the room. This unit does not appear to need replaced.
 - Multiple bus stubs run overhead into the north wall from the switchgear, which is sourced from the FPL vault on the other side
 - The room includes (1) 3000A switchgear unit in the center with 4 downstream mains. The unit is GE brand and at end of life.
 - Mains #1 thru #3 are held in the switchgear unit, labeled.

- Main #4 is in the room's northwest corner and feeds the adjacent fire station. This is noteworthy for the critical service but this run is independent from the switchgear and appears to not be affected by a future cutover event.
- The GE switchgear supplies power to the largescale building, hosting unique, heavy loads such as flight simulators and chillers. Loads run downstream from each main. These loads will need migrated, served from temporary power, and re-migrated before full switchgear replacement.
- The large switchgear unit commands the center of the room. Several downstream breakers and panels populate the room's south wall. Dozens of pipes run overhead, and the room clearance is quite tall. The generator room is located above.
- The switchgear room does not have direct access to the outside. The room's east wall includes a single door into the adjacent mechanical/chiller room. The mechanical room is quite large and includes considerable open space which may prove pivotal for construction-related activities. This room includes wide doors to the outside (via north wall) and is likely the most viable path/option for work to be completed.
- Temporary conductors during construction will run through these doors into the switchgear room. Temporary equipment may be based in the chiller room, pending MDAD coordination. If equipment is based outside this space, it will still likely need to run through the chiller room.
- Outdoor Space
 - There is limited space immediately outside the generator & chiller room for construction activity - including equipment movement, vehicles, and staging of temporary equipment.
 - A double-wide one-way lane runs outside the rooms E-W in front of the rooms. The thru way is low on traffic and a lane of the road could be utilized to stage, with coordination from the MDAD team (barring fire/emergency or AHJ rules otherwise).
 - The double-wide lane is not airside and can be accessed from NW 36th St.
 - The diesel tank is located on the west side of the building, a few hundred feet away from the generator. The yellow pipes run along the building's exterior on the north side, visible from the frontal road. The diesel tank is located airside, behind a concrete wall with respect to the building's north perimeter. It contains decent open space around its perimeter and sits on concrete. Access to this space is served by nearby security gates, of which can be accessed from NW 36th St.



Figure 5.2 – Side of angle of generator



Figure 5.3 – Frontal view of generator with adjacent day tank and analog monitoring setup

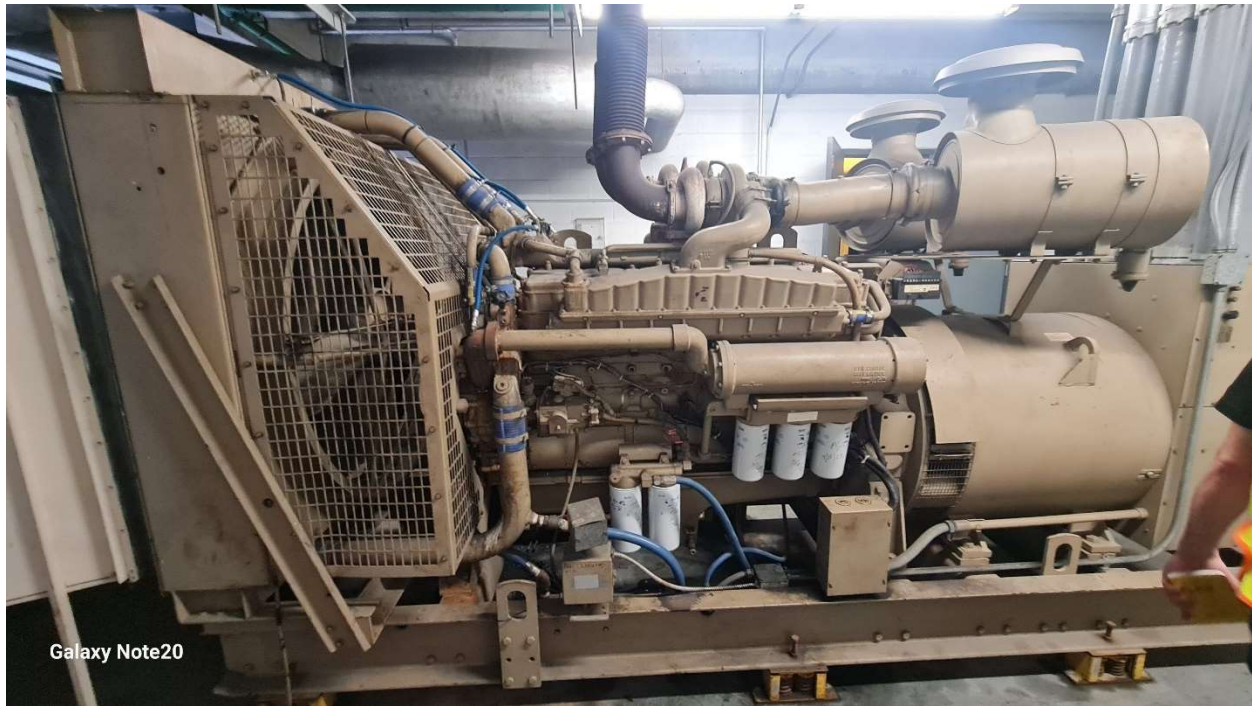


Figure 5.4 – Side view of generator



Figure 5.5 – Main emergency disconnect (GSB) and analog setup on west wall of generator room.



Figure 5.6 – Main emergency disconnect (GSB) frontal view

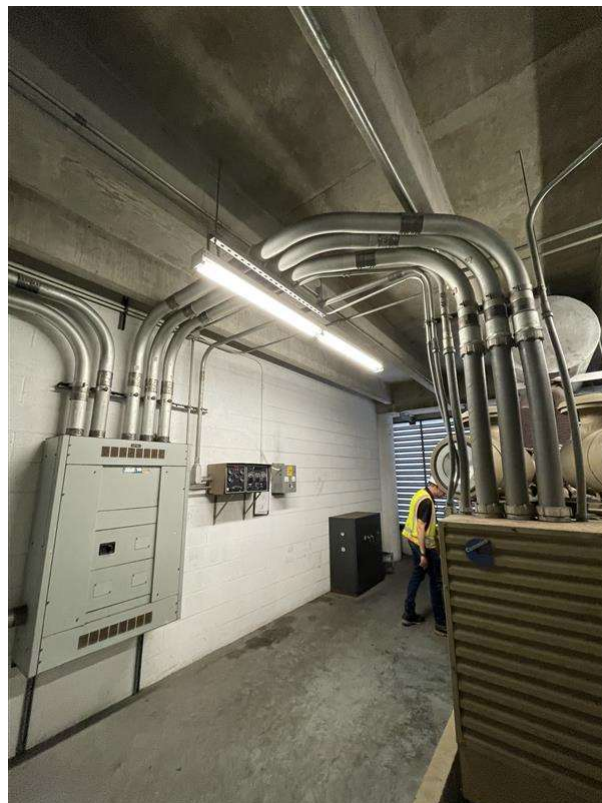


Figure 5.7 – Wide angle view of conduit run from generator to GSB

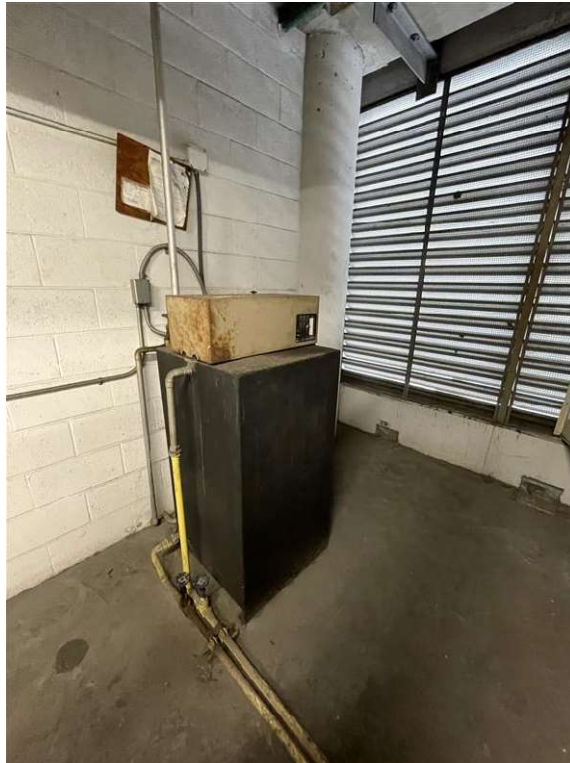


Figure 5.8 – Diesel Day tank in generator room corner



Figure 5.9 – Side view of diesel day tank



Figure 5.10 – Day tank for adjacent fire pump. Beside main entrance doors.

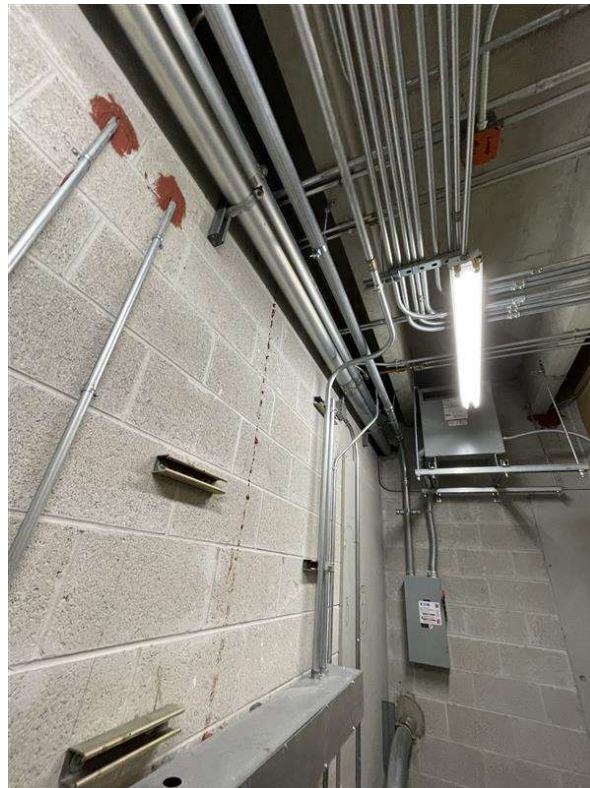


Figure 5.11 – Conduit run from GSB to downstream switchgear room, routing through nearby electrical room 267



Figure 5.12 – Frontal side view of vertical conduit run, main switchgear unit, and Main #4 on left (serving fire station)



Figure 5.13 – Main switchgear unit

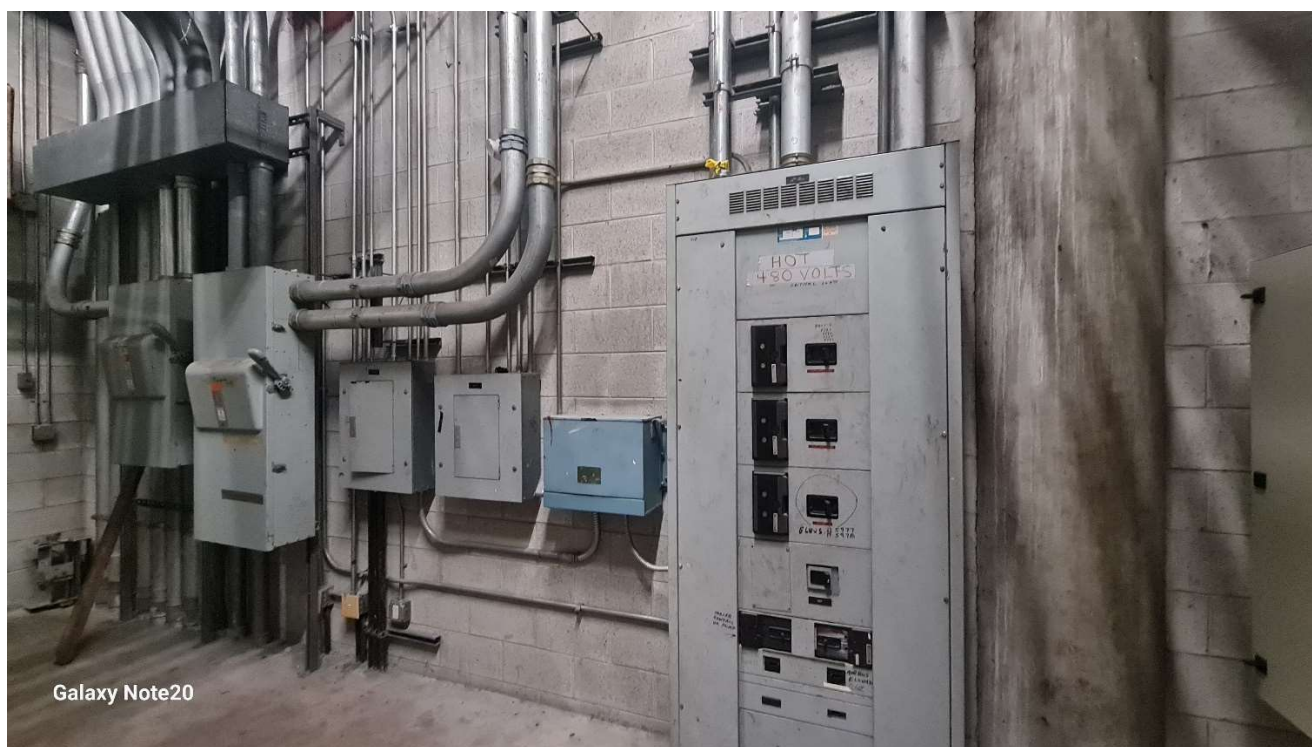


Figure 5.14 – South wall of switchgear room – includes several downstream panels and breakers



Figure 5.15 – South wall of switchgear room – wide angle



Figure 5.16 – Switchgear room aerial view of piping configuration from above



Figure 5.17 – Generator ATS & panel in southwest corner of switchgear room.



Figure 5.18 – Exterior view of generator room (2nd floor) and FPL vault (1st floor). Chiller room entrance to left in photo.



Figure 5.19 – Exterior frontal view of generator room (2nd floor) and FPL vault (1st floor).



Figure 5.20 – Roadside view outside mechanical room doors, facing east. FPL vault and generator room to right of photo.



Figure 5.21 – Mechanical room view to doors leading into generator room (2nd floor)

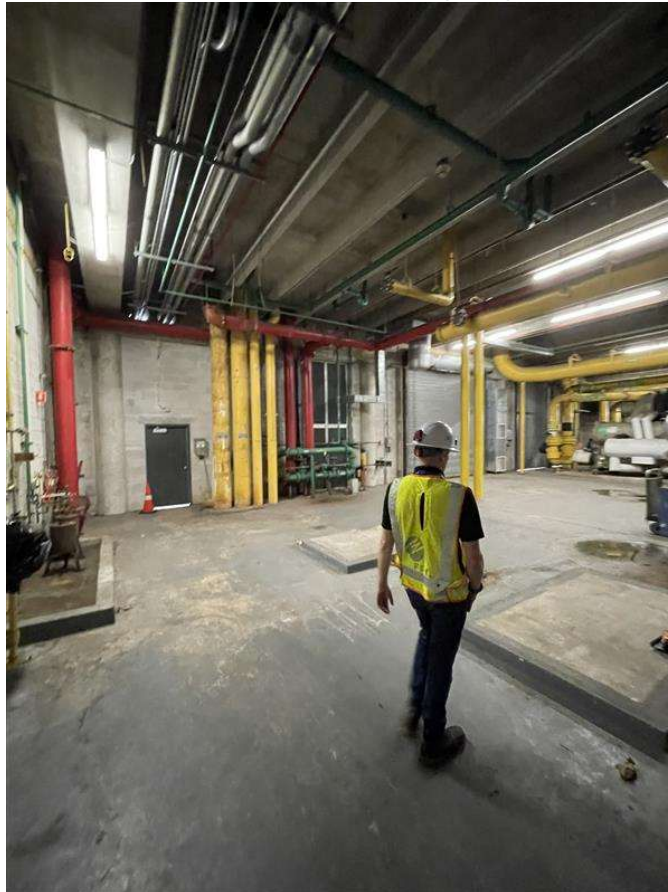


Figure 5.22 – View of mechanical room from switchgear room exterior doors



Figure 5.23 – Mechanical room, adjacent to switchgear room. Exit doors to outside on left.

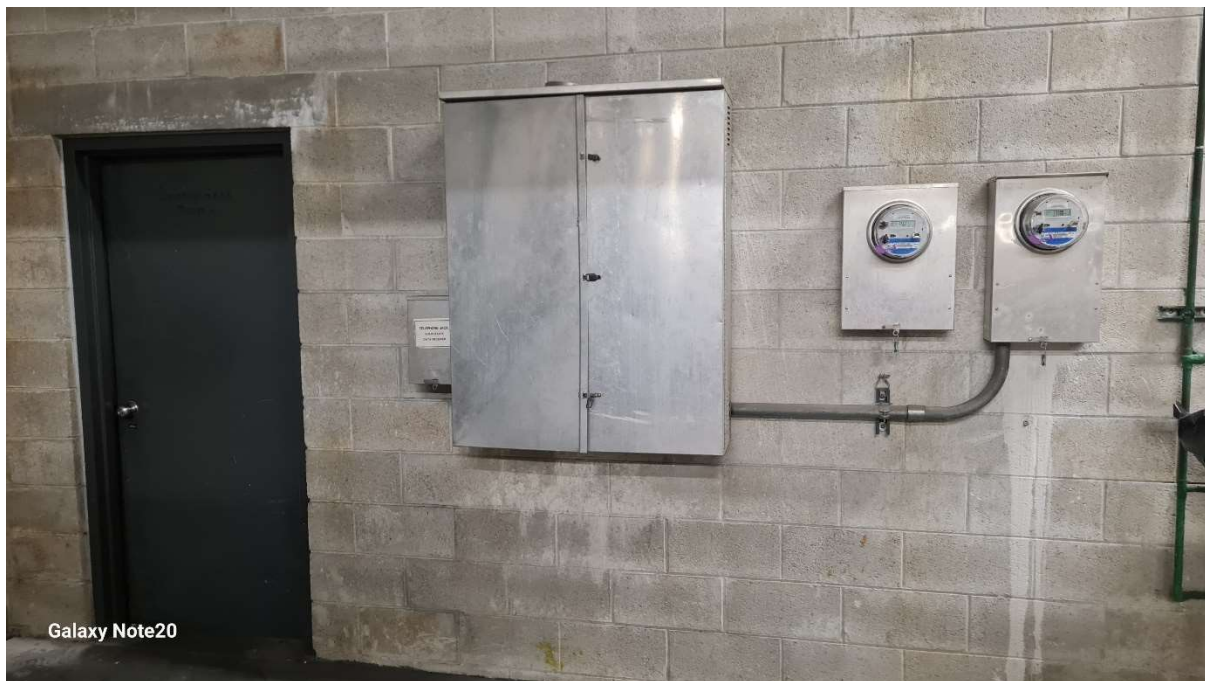


Figure 5.24 – Meter enclosures in mechanical room beside switchgear room door



Figure 5.25 – 500-gallon diesel tank



Figure 5.26 - Diesel tank system with equipment in vicinity. Airside.



Project Plan – Building 845

To address the operational risk identified in the condition assessment and incorporating the design concepts for FPL backup generation systems at MIA, the following concept solution is proposed. This solution will be executed in a design-bid-build project plan.

Project Description – Building 845

Backup power service to provide an alternative source of electrical power and electrical distribution equipment to Building 845. Based on site installation conditions and electrical load data, Company expects to utilize 600 KW of backup generation capacity, controls, and new main distribution switchgear to provide service to the electrical loads, based on the historical 24-month metering data, associated with FPL Account Number 97061-74464.

Scope of Work – Building 845

See appendix for system drawings. The scope includes all construction and permitting by licensed contractors, per applicable codes.

The new generator system will replace the existing in the same location. The generator may be served via natural gas based on available infrastructure in the vicinity, and this determination will be made in the engineering phase. The new generator system will serve the same electrical systems as the existing from the same room. All switchgear units will represent a like-for-like replacement. Downstream panels and other switchboards will be evaluated for their condition.

Electrical System

- (1) 600 KW Diesel Tier 2 or Natural Gas Generator, or generation system of similar capacity.
 - o 277/480V, 3PH
 - o Like-for-like size replacement
 - o Associated diesel day tank(s) in room to be replaced with diesel solution
 - o Battery system and maintainer
- (1) 3000A 480V Main distribution switchgear
 - o Main-Tie-Main configuration, fully rated
 - o PLC platform & controls
 - o Modern, high-reliability breakers that meet current electrical codes and safety standards
 - o Integrated advanced control & monitoring features to support automatic operation & protective relaying
 - o Remote monitoring and command capability
 - Coordination with load management and protection schemes
 - o Like-for-like replacement of mains and panels included in switchgear unit
- (1) 1200A Main Emergency Disconnect Panel (“GSB”) – 3PH, 277/480V
- Remote monitoring
 - o Generator system and switchgear
 - o Cellular based
- Diesel fuel storage tank evaluation (if diesel solution pursued)
 - o Tank to be modernized and sized accordingly for supporting systems
 - o Existing tank is 500 gallons and may be replaced for resiliency and refurbishment
 - o Footprint necessary to accommodate a 48-hour backup supply
 - o Pipe replacement/modernization
 - o Modern leak detection system

Building Upgrades

- Removal of existing generator, switchgear, and emergency disconnect with refurbishment of existing space.
- The rooms will be restored to condition prior to construction – in the context of holes in walls, etc. Lighting in the rooms and air ventilation appeared sufficient, and mechanical work is not necessary in this job scope. The rooms will be left in a condition appropriate for new electrical equipment.
- Modernize diesel pipe routing from the replaced tank into the generator room if diesel solution pursued. Update conduit as necessary in and around the generator(s) downstream to the switchgear unit. Update conduit as necessary throughout the switchgear room to various downstream units.

Temporary Power Plan

- A robust temporary power plan is intended and will be evaluated with MDAD during the detailed construction phase of the project.
- Loads will need to be migrated in between devices as switchgear equipment is removed and installed.
- At a minimum, all loads are assumed that brief outages can be planned/coordinated with stakeholders to tie-in temporary equipment. This enables continuous operations while electrical work takes place.
- Temporary equipment can be tied in at the EDP for life-safety loads, and individual panels per load may tie into temporary switchgear.
- Appropriate planning will need to occur given the size and sensitivity of the loads for the building.

Schedule – Building 845

A project timeline is included below. This timeline reflects estimated date ranges of work to be performed. Actual dates may vary, are non-binding, and are subject to change. The below critical items are required from MDC to move forward in each phase of the project construction timeline.

Milestone	Week(s)
Signed Agreement / PO Issued	1
Procurement - Public Notice	2 - 6
Procurement - Engineering Services	6 - 8
Selection - Engineering Services	9 - 10
Engineering Phase	10 - 18
Start Procurement - Equipment & Services	16 - 22
Selection - Equipment & Services	22 - 23
Permit Submittal	22
Long Lead Sourcing / Planning / Permit Acceptance	23 - 75
Start Construction	78
Ground work	78 - 88
Generator, Switchgear, & Equipment Delivery	89 - 92
Critical Event - Cutover #1 - A Side	93
Critical Event - Cutover #2 - B Side	94
Final System Commissioning / Closeout	95 - 96
Contingency	97 - 104

Performance Bonds

Single instrument Payment and Performance Bonds will be obtained for each construction project. These bonds will remain in effect for six months following construction operation date. Fees related to bond costs will be determined based on specific project requirements and risks and will be passed on to MDC at FPL cost in each applicable statement of work as part of the service fees thereunder.

Responsibility Matrix

FPL is responsible for design and proposal of backup power solutions and distribution-related service upgrades. Various departments within FPL will be involved throughout the project. Similarly, MDC has identified departments to be involved in certain key processes. A listing of the departments involved is included below.

	FPL	Miami-Dade
Technical Feasibility		
Equipment designs	Engineering & Construction (E&C)	MDAD
Service upgrades	Power Delivery (PD)	MDAD
Installation Analysis		
Agreement & SOW	Development, Legal	RER, MDAD
Procurement	E&C, Sourcing	MDAD, RER
Permitting	E&C	RER, MDAD, City of Miami
Inspections	E&C	RER, MDAD, City of Miami
Flood Zones	E&C	MDAD, RER
Sea Level Rising	E&C	MDAD, RER
Tree Removal Impacts	E&C	RER, MDAD
System designs	E&C	MDAD, RER
Service upgrades	PD	MDAD
Account set-up	Development, Customer Service	MDAD

Technical and Construction Feasibility – Building 845

The Building 845 system represents a significant system to upgrade and modernize due to the age of existing equipment, critical loads serving the building, and unconventional equipment layout.

While no new space is required for new switchgear, diesel tank, or generator replacement, the increased size in the diesel tank, if necessary, will call for a larger footprint. Space is available. New equipment will be relocated where existing equipment is housed across the spaces.

The generator replacement may include replacement of diesel tank, day tank, and associated plumbing as deemed necessary. Temporary equipment during construction will require some space. Temporary provisions and coordination must occur with vested parties. Coordination with MDAD is necessary for potential partial/full road closures on building perimeter, and/or use within the mechanical/chiller room adjacent to the switchgear.

Numerous unknowns exist such as pipe condition between rooms and various runs to downstream devices and underground utilities pre-existing along the single lane outside. Associated electrical plans, albeit dates, reveal location of various underground facilities in site vicinity.



The type of mechanical equipment contemplated does not trigger additional requirements for other building upgrades to adhere to LEED Silver Certification. LEED certification is not in-scope for Building 845 system upgrades.

Permit Applications and Inspections – Building 845

Permits are required for all electrical work per Florida Building Code, Miami-Dade County Code, and City of Miami code enforcement. All applicable codes will be adhered to and formalized in the design stage of the project by the Engineer of Record (EOR).

Engineering Services – Building 845

No engineering services have been utilized in recent history to FPL's understanding to address the electrical systems in these fuel storage, generator, or switchgear rooms. As part of this project, we will follow the county's process for obtaining bids, selecting a contractor, and obtaining necessary drawings for the project's scope.

Financial Feasibility – Building 845

The OSPS Backup Generator Monthly Service Payment for Building 100 is estimated based on pre-survey design and prior to equipment purchase and installation. As stated in the Statement of Work (SOW), actual costs are estimated as a range for rough-order-of-magnitude planning and approval. The actual cost will be based on 100% permit approved design and competitive bidding, based on concept developed in this feasibility report. The monthly service payment is for 20yrs, fixed, and includes all maintenance, break/fix, and emergency support costs per the SOW. The monthly payment goes on the utility bill and starts after the system is fully commissioned, helping MDC delay capital expenditures.

OSPS Monthly Service Payment	
Building 100	Monthly Service Payment
High Estimate	\$95,515
Low Estimate	\$71,636

The primary driver for the high range is uncertainties in global supply chains and high operational risk mitigation cost. All cost elements will follow MDC's approved sourcing method in the SOW.

Fuel usage is expected as part of this project work and dependent on a natural gas or diesel solution.

- With a diesel solution, the new generator system will test and operate similarly as the existing in place. A natural gas solution will operate similarly and likely will lower overall emissions.
- Fuel costs are the only variable cost that will continue to be paid by MDC.

No net change to electrical consumption is expected as part of this project work.

- The new generator system provides emergency backup.

Conclusion and Recommendations – Building 845

FPL recommends immediate replacement and modernization of the aging electrical infrastructure at Building 845. Should the County proceed with a Non-Residential Backup Power Services Agreement and corresponding Statement of Work with FPL for the identified work by July 2026, FPL is prepared to support construction and installation of the equipment to be operational in Q3 2028.

Appendix – System Drawings – Building 845

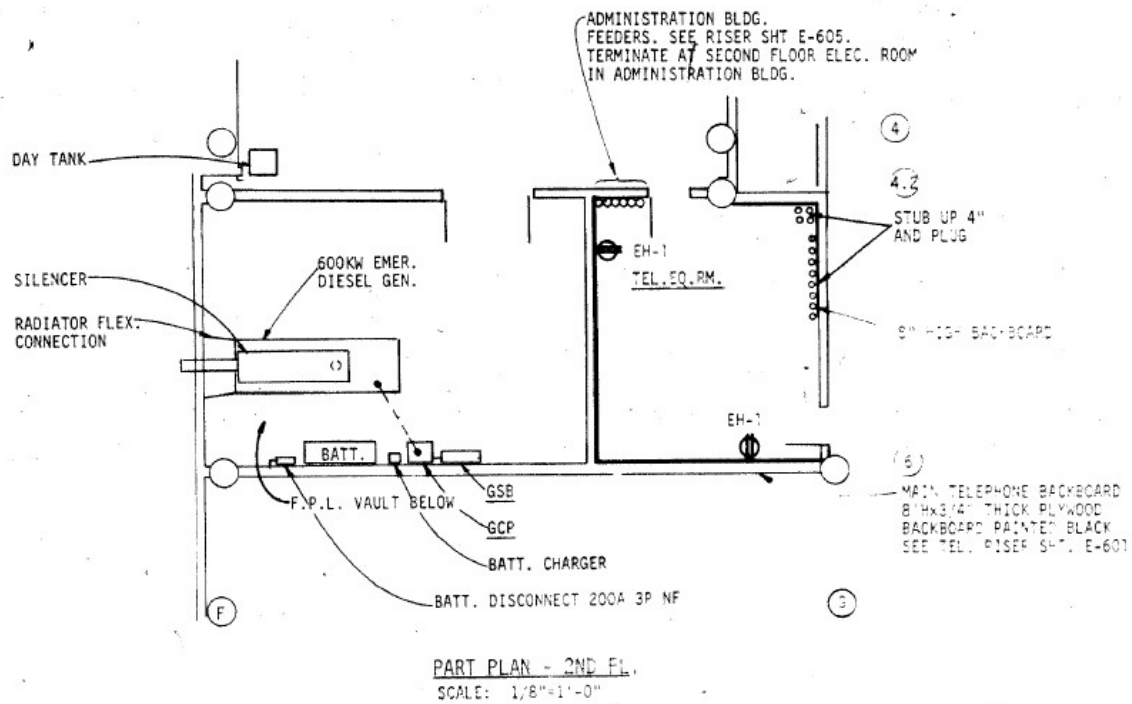


Figure 5.27 – Diagram of generator room, found from obtained MDAD plans. Dated 1982.

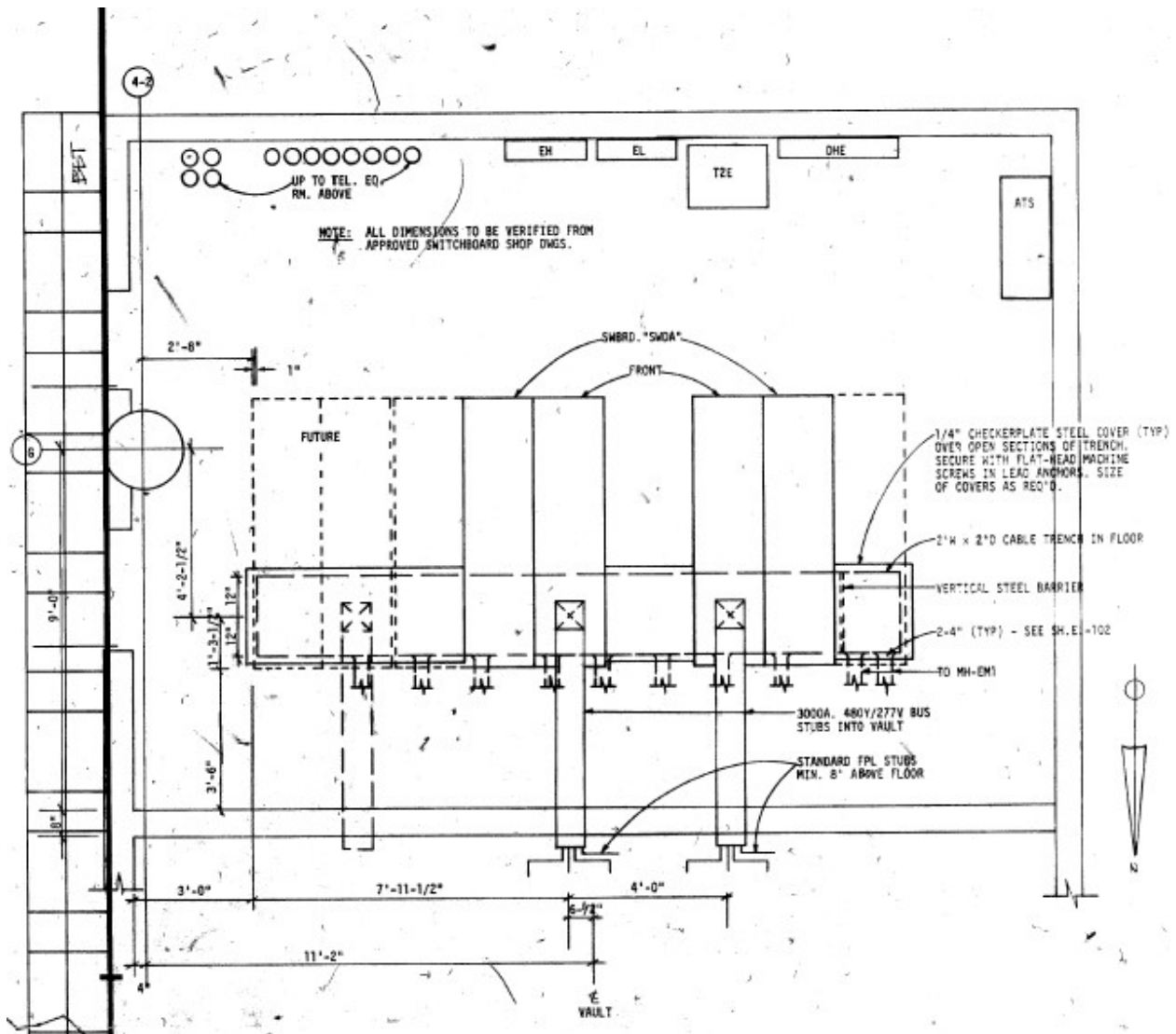


Figure 5.28 – Switchgear room diagram, found from obtained MDAD plans. Dated 1982.

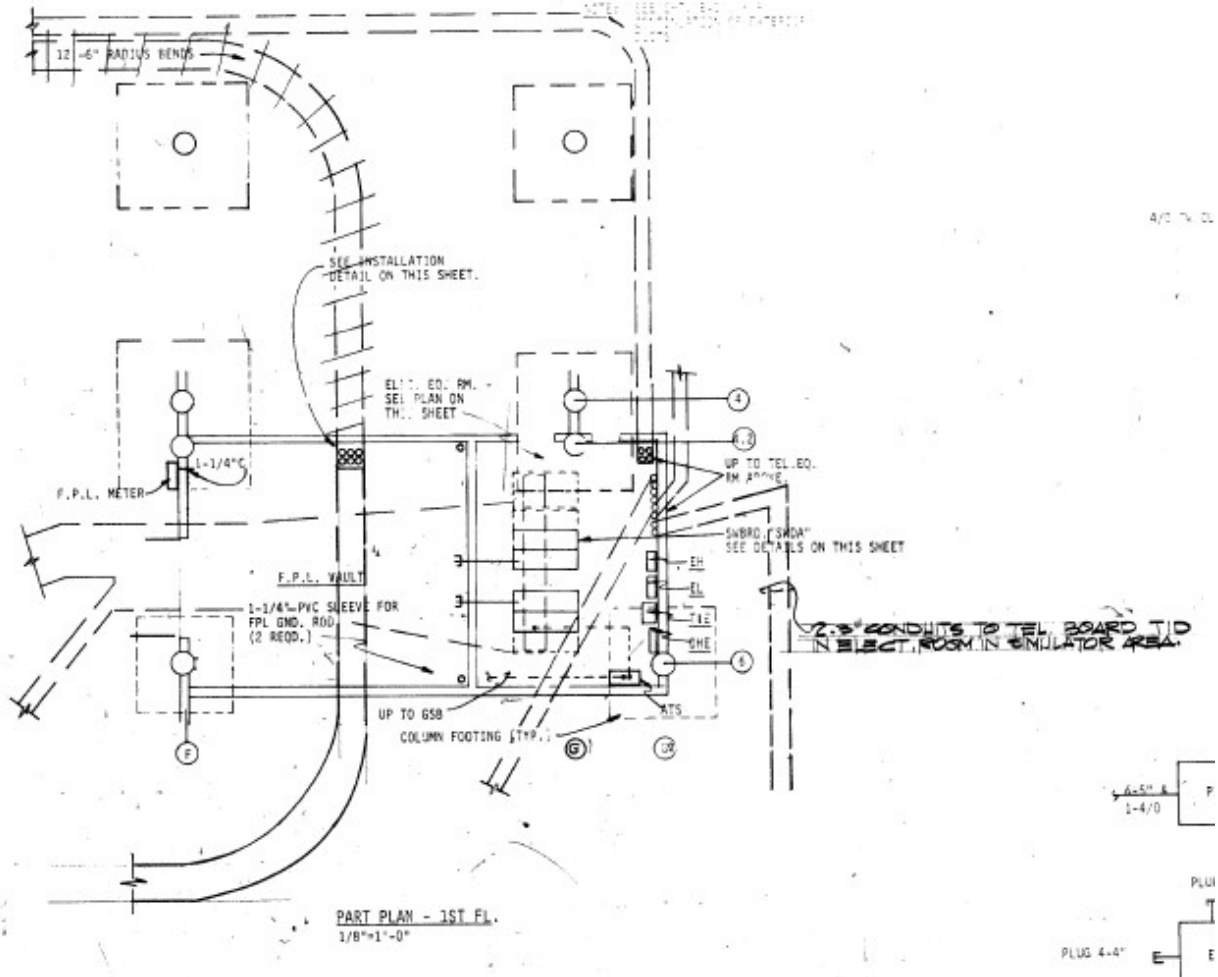
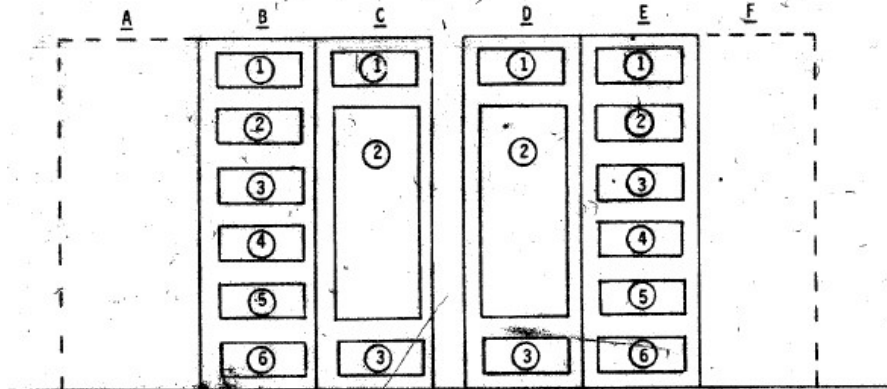


Figure 5.29 – Partial floor plan



SWBD, "SWDA" ELEVATION
N.T.S.

SWITCHBOARD "SWDA" SCHEDULE							
COMPMT.	CONTAINS	Ø	VOLTS	FRAME	TRIP	KVA	REMARKS
B-1	BLANK SPACE	3	480				
B-2	PNL. DHE FDR. BKR.			800	800	604	CUBICLE B TO BE
B-3	CHILLER NO. 1 FDR. BKR.			800	600	285	BUSSED FOR FUTURE
B-4	CHILLER No. 2 FDR. BKR.			800	600	285	ADDITION
B-5	MCC "A" FEEDER BKR.			800	500	372	
B-6	SPARE BKR.			800	800	500	
C-1	VOLTMETER & AMMETER			-	-	-	WITH 3Ø SELECTOR SWS.
C-2	MAIN BKR.			3000	3000	1940	
C-3	BLANK SPACE			-	-	-	
D1	VOLTMETER & AMMETER			-	-	-	WITH 3Ø SELECTOR SWS.
D2	MAIN BKR.			3000	3000	2211	
D3	BLANK SPACE			-	-	-	
E1	BLANK SPACE			-	-	-	
E2	PNL. MDHA FDR. BKR.			800	800	549	CUBICLE E TO BE
E3	PNL. MDHB FDR. BKR.			800	800	571	BUSSED FOR FUTURE
E4	PNL. DH1B FDR. BKR.			800	800	276	ADDITION.
E5	MULTI-USE BLDG. FDR. BKR.			800	350	245	
E6	COOLING TWR FDR. BKR.			800	250	135	

Figure 5.30 – Switchboard Panel Schedule, obtained from MDAD plans dated 1982

DIST. PANEL "D11A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	PML "H1B"	-	10.8	277/480	3	FA	30	3		
2	PML "H1C"	-	10.8	277/480	3	FA	30	3		
3	PML "H1D"	-	35.6	277/480	3	FA	60	3		
4	PML "H1A"	-	45	480	3	FA	70	3		
5	TRASH COMP.	5	-	480	3	FA	15	3		
6	SPACE	-	9.0	-	-	FA	-	-		

DIST. PANEL "D13A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H3B"	-	15.5	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H3C"	-	15.5	277/480	3	FA	30	3		
5	TRANSF T3A	-	45.0	480	3	FA	70	3		
6	PML "H3D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D15A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H4B"	-	16.4	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H4C"	-	16.4	277/480	3	FA	30	3		
5	TRANSF "T4A"	-	45.0	480	3	FA	70	3		
6	PML "H4D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D17A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H5B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H5C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T5A"	-	45.0	480	3	FA	70	3		
6	PML "H5D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D19A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H6B"	-	16.4	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H6C"	-	16.4	277/480	3	FA	30	3		
5	TRANSF "T6A"	-	45.0	480	3	FA	70	3		
6	PML "H6D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D21A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H7B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H7C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T7A"	-	45.0	480	3	FA	70	3		
6	PML "H7D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D23A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H8B"	-	16.4	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H8C"	-	16.4	277/480	3	FA	30	3		
5	TRANSF "T8A"	-	45.0	480	3	FA	70	3		
6	PML "H8D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D25A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H9B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H9C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T9A"	-	45.0	480	3	FA	70	3		
6	PML "H9D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D27A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H10B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H10C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T10A"	-	45.0	480	3	FA	70	3		
6	PML "H10D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D29A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H11B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H11C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T11A"	-	45.0	480	3	FA	70	3		
6	PML "H11D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D31A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H12B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H12C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T12A"	-	45.0	480	3	FA	70	3		
6	PML "H12D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D33A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H13B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H13C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T13A"	-	45.0	480	3	FA	70	3		
6	PML "H13D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D35A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H14B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H14C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T14A"	-	45.0	480	3	FA	70	3		
6	PML "H14D"	-	21.8	277/480	3	FA	40	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "D37A"										
SQUARE "D" TYPE "HON"					225A, MLO					
SURFACE MOUNTED					277/480V, 3Ø, 4W					
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	TRIP	POLE	REMARKS	
1	A/C UNIT	15	-	480	3	FA	40	3		
2	PML "H15B"	-	15.9	277/480	3	FA	30	3		
3	A/C UNIT	15	-	480	3	FA	40	3		
4	PML "H15C"	-	15.9	277/480	3	FA	30	3		
5	TRANSF "T15A"	-	45.0	480	3	FA	70	3		
6	PML "H15D"	-	21.8	277/480	3	FA</				

DIST. PANEL "DH6A"										
SQUARE "D" TYPE "HCN"				225A, MLO						
SURFACE MOUNTED				277/480V, 3Ø, 4W						
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH	TRIP	POLE	REMARKS	
1	A/C UNIT "1B"	15	-	480	3	FA	40	3		
2	PNL "H6C"	-	8.47	277/480	3	FA	30	3		
3	A/C UNIT "7A"	15	-	480	3	FA	40	3		
4	PNL "H6B"	-	12.0	277/480	3	FA	30	3		
5	TRANSF. "T6A"	-	45.0	480	3	FA	50	3		
6	PNL "H6D"	-	23.5	277/480	3	FA	50	3		
7	SPACE	-	4.5	-	-	FA	-	-		
8	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "H6B"										
SQUARE "D" TYPE "HCN"				800A, MLO						
SURFACE MOUNTED				277/480V, 3Ø, 4W						
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH	TRIP	POLE	REMARKS	
1	DIST. PNL "DH6A"	-	121.5	277/480	3	KA	225	3		
2	PNL "H2B"	-	141.8	277/480	3	KA	225	3		
3	PNL "H2C"	-	15.5	277/480	3	FA	30	3		
4	PNL "H2D"	-	15.5	277/480	3	FA	30	3		
5	A/C #9A	15	-	480	3	FA	40	3		
6	A/C #9B	15	-	480	3	FA	40	3		
7	A/C #10A	15	-	480	3	FA	40	3		
8	A/C #10B	15	-	480	3	FA	40	3		
9	TRANSF. "T2A"	-	45.0	480	3	KA	70	3		
10	SPACE	-	50	-	-	KA	-	3		
11	SPACE	-	50	-	-	FA	-	3		
12	SPACE	-	2.9	-	-	FA	-	3		
13	SPACE	-	2.9	-	-	FA	-	3		
14	SPACE	-	2.9	-	-	FA	-	3		

DIST. PANEL "H6C"										
SQUARE "D" TYPE "HCN"				800A, MLO						
SURFACE MOUNTED				277/480V, 3Ø, 4W						
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH	TRIP	POLE	REMARKS	
1	DIST. PNL "DH6A"	-	143.4	277/480	3	KA	225	3		
2	DIST. PNL "DH6A"	-	142.5	277/480	3	KA	225	3		
3	DIST. PNL "DH6A"	-	132.5	277/480	3	KA	225	3		
4	SPACE	-	50	-	-	KA	-	3		
5	PNL "H6E"	-	2.0	-	-	FA	-	3		
6	SPACE	-	1.0	-	-	FA	-	3		
7	SPACE	-	1.0	-	-	FA	-	3		
8	SPACE	-	1.0	-	-	FA	-	3		

DIST. PANEL "DL5A"										
SQUARE "D" TYPE "HCN"				3P-200A N-BKR						
SURFACE MOUNTED				120/208V, 3Ø, 4W						
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH	TRIP	POLE	REMARKS	
1	PNL "L5P"	-	4.52	277/480	3	FA	40	3		
2	PNL "L5D"	-	4.52	277/480	3	FA	40	3		
3	PNL "L5B"	-	9.09	277/480	3	FA	50	3		
4	PNL "L5C"	-	9.09	277/480	3	FA	50	3		
5	PNL "L5G"	-	15.7	277/480	3	FA	60	3		
6	SPACE	-	4.5	-	-	FA	-	-		

DIST. PANEL "DL6A"										
SQUARE "D" TYPE "HCN"				3P-200A N-BKR						
SURFACE MOUNTED				120/208V, 3Ø, 4W						
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH	TRIP	POLE	REMARKS	
1	PNL "L6P"	-	4.52	277/480	3	FA	40	3		
2	PNL "L6D"	-	6.85	277/480	3	FA	40	3		
3	PNL "L6B"	-	6.85	277/480	3	FA	40	3		
4	PNL "L6C"	-	6.84	277/480	3	FA	40	3		
5	PNL "L6G"	-	23.67	277/480	3	FA	40	3		
6	SPACE	-	4.5	-	-	FA	-	-		

AS BU

"As Built" revisions incorporated

Figure 5.32 – Panel schedules on various Switchboard loads, dated 1982.

DIST. PANEL "DHEA"										
SQUARE "D" TYPE "HON"										
SURFACE MOUNTED										
400A, MLO										
277/480V, 3Ø, 4W										
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	FRAME TRIP	POLE	REMARKS	
3	GUTTER "A"	100	-	480	3	KA	175	3	ELEVATORS 40 25HP	
4	PNL EA	-	50.5	277/480	3	FA	100	3		
5	PNL EB	-	46.2	277/480	3	FA	90	3		
6	SPACE	-	50	-	-	KA	-	3		
7	SPACE	-	20	-	-	FA	-	3		
DIST. PANEL "DHIC"										
SQUARE "D" TYPE "HON"										
SURFACE MOUNTED										
350A M. BKR.										
277/480V, 3Ø, 4W										
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	FRAME TRIP	POLE	REMARKS	
4	PNL HTF	-	76.4	277/480	3	FA	40	3		
5	TRANSF "TIF"	-	13.0	480	3	FA	30	3		
6	PNL "EK"	-	23.4	277/480	3	FA	50	3		
7	OVERHEAD DOOR W	5	-	480	3	FA	15	3		
8	CHILLER	-	33.9	480	3	FA	70	3		
9	AMU #11 & 12	201V	-	480	3	FA	15	3		
10	DUCT HTR	-	28	480	3	FA	50	3		
11	DUCT HTR	-	16	480	3	FA	30	3		
12	MU #1	3/4	-	480	3	FA	15	3		
13	OVERHEAD DOOR E	-	50	-	-	KA	-	3		
14	SPACE	-	50	-	-	KA	-	3		
15	SPACE	-	20	-	-	FA	-	3		
DISTRIBUTION PANEL "DHE"										
SQUARE "D" TYPE "HON"										
SURFACE MTD										
800A, MLO										
277/480V, 3Ø, 4W										
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	FRAME TRIP	POLE	REMARKS	
1	DIST PNL DHEA	-	287	277/480	3	KA	400	3	ELEV MTRS. 40 HP, 25 HP	
2	GUTTER "B"	65	-	480	3	KA	150	3		
3	DIST PNL DHEB	-	204.6	277/480	3	KA	300	3		
4	TRANSF "TIE"	-	15	480	3	KA	30	3		
5	PNL "EL"	-	12.6	277/480	3	KA	30	3		
6	SPACE	-	20	-	-	KA	-	3		
DIST. PANEL "DHEB"										
SQUARE "D" TYPE "HON"										
SURFACE MTD										
400A, MLO										
277/480V, 3Ø, 4W										
CKT NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	BRANCH CKT	FRAME TRIP	POLE	REMARKS	
7	TRANSF TID	-	15	480	3	FA	30	3		
8	PNL "ED"	-	45.2	277/480	3	FA	70	3		
9	PNL "EC"	-	26.7	277/480	3	FA	50	3		
10	EF #9	5	-	480	3	FA	15	3		
11	EF #10	5	-	480	3	FA	15	3		
12	EF #11	5	-	480	3	FA	15	3		
13	EF #12	5	-	480	3	FA	15	3		
14	EF #13	5	-	480	3	FA	15	3		
15	EF #14	5	-	480	3	FA	15	3		
16	EF #15	5	-	480	3	FA	15	3		
17	EF #16	5	-	480	3	FA	15	3		
18	EF #7	7-1/2	-	480	3	FA	20	3		
19	EF #8	7-1/2	-	480	3	FA	20	3		
20	EF #11	7-1/2	-	480	3	FA	20	3		
21	EF #12	7-1/2	-	480	3	FA	20	3		
22	LIFT STATION	2010	-	480	3	FA	50	3		
23	SPACE	-	10	-	-	FA	-	3		
24	SPACE	-	10	-	-	FA	-	3		

Figure 5.33 – Panel schedules on various Switchboard loads, dated 1982.

DISTRIBUTION PANEL "GSE"									
SQUARE "D" TYPE "HMD"					800A, MLO				
SURFACE MOUNTED					277/480V, 3Ø, 4W				
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	FRAME	TRIP	POLE	WIRE COND'T REMARKS
1	PAN. #1022	-	106.4	277/480	3	KA	175	3	
2	PAN. #1022	-	101.4	277/480	3	KA	175	3	
3	PAN. #1022	-	101.4	277/480	3	KA	175	3	
4	PAN. #1022	-	106.4	277/480	3	KA	175	3	
5	PAN. #1022	-	126.4	277/480	3	KA	225	3	
6	PAN. #1022	-	114.6	277/480	3	KA	200	3	
7	ANAL. #14	2	-	180	3	FA	15	3	
8	SPARE	-	10	-	-	FA	-	-	

PANEL "GSE"									
SQUARE "D" TYPE "HMD"					1200A, MLO				
SURFACE MOUNTED					277/480V, 3Ø, 4W				
NO.	EQUIPMENT SERVED	HP	KVA	VOLTS	PHASE	FRAME	TRIP	POLE	WIRE COND'T REMARKS
1	FUTURE	-	200	277/480	3	MA	600	3	EQUIPPED SPACE
2	FUTURE	-	200	-	-	MA	600	3	EQUIPPED SPACE

Figure 5.34 – Panel schedules on various Switchboard loads, dated 1982.

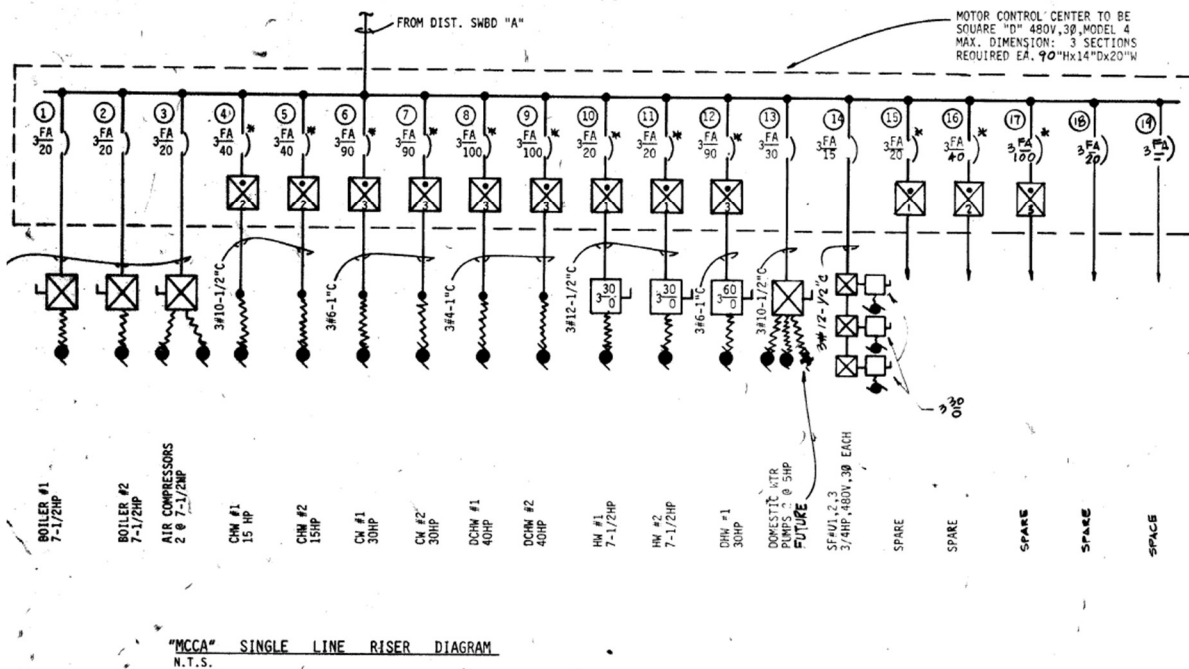


Figure 5.35 – Panel schedules on various Switchboard loads, dated 1982.

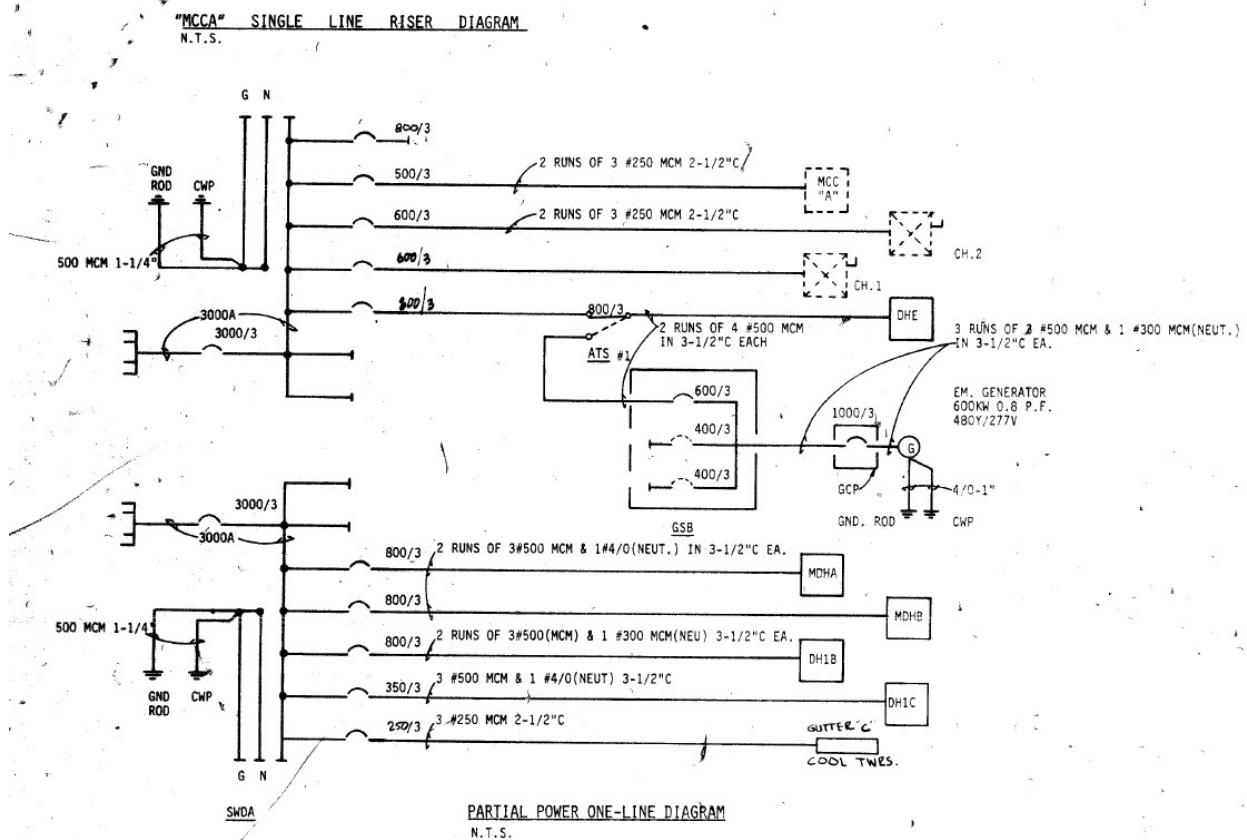
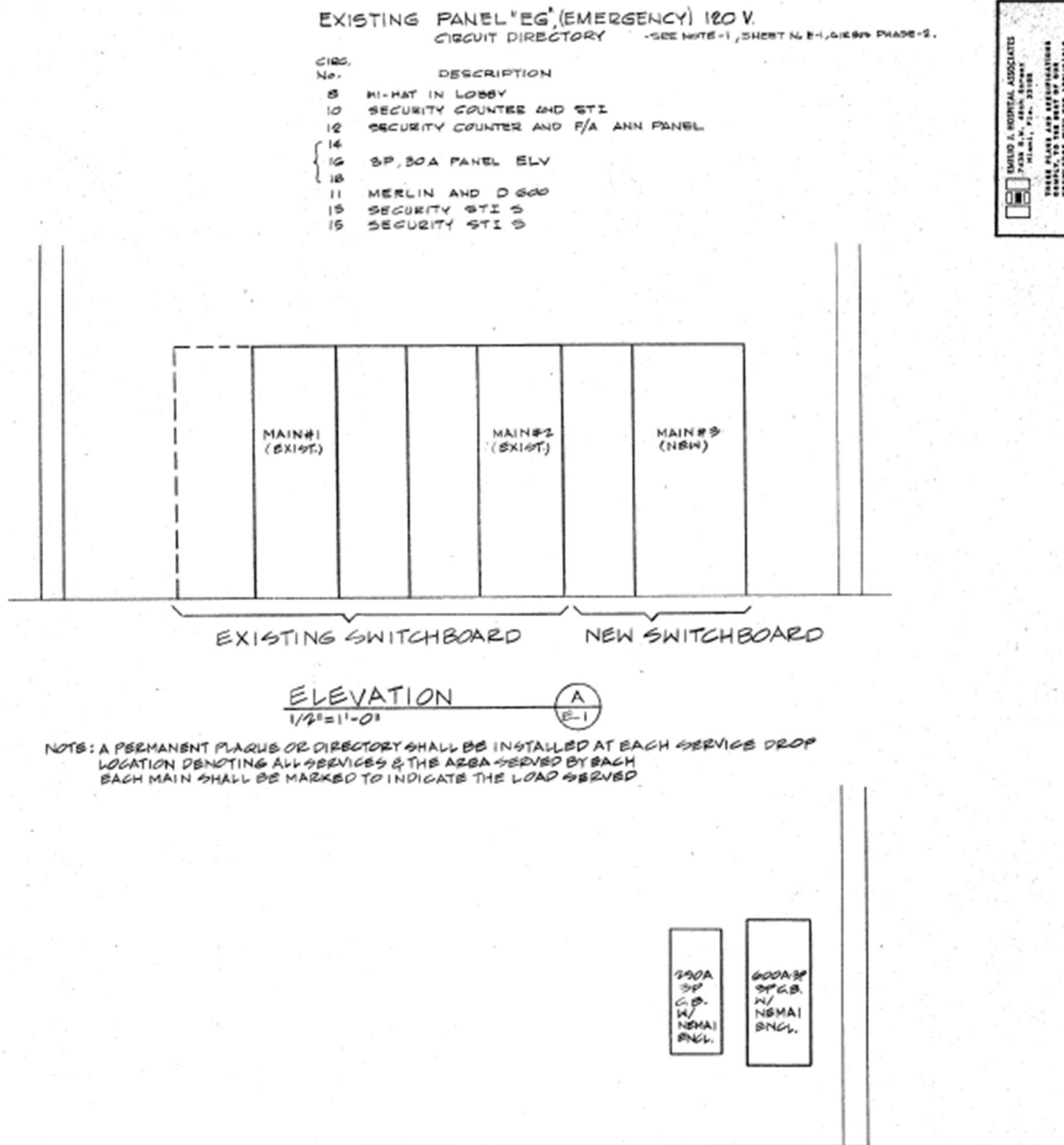


Figure 5.36 – Partial Power One-Line Diagram, dated 1982.

MDC118

MDC119



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Figure 5.40 Switchboard Diagram.

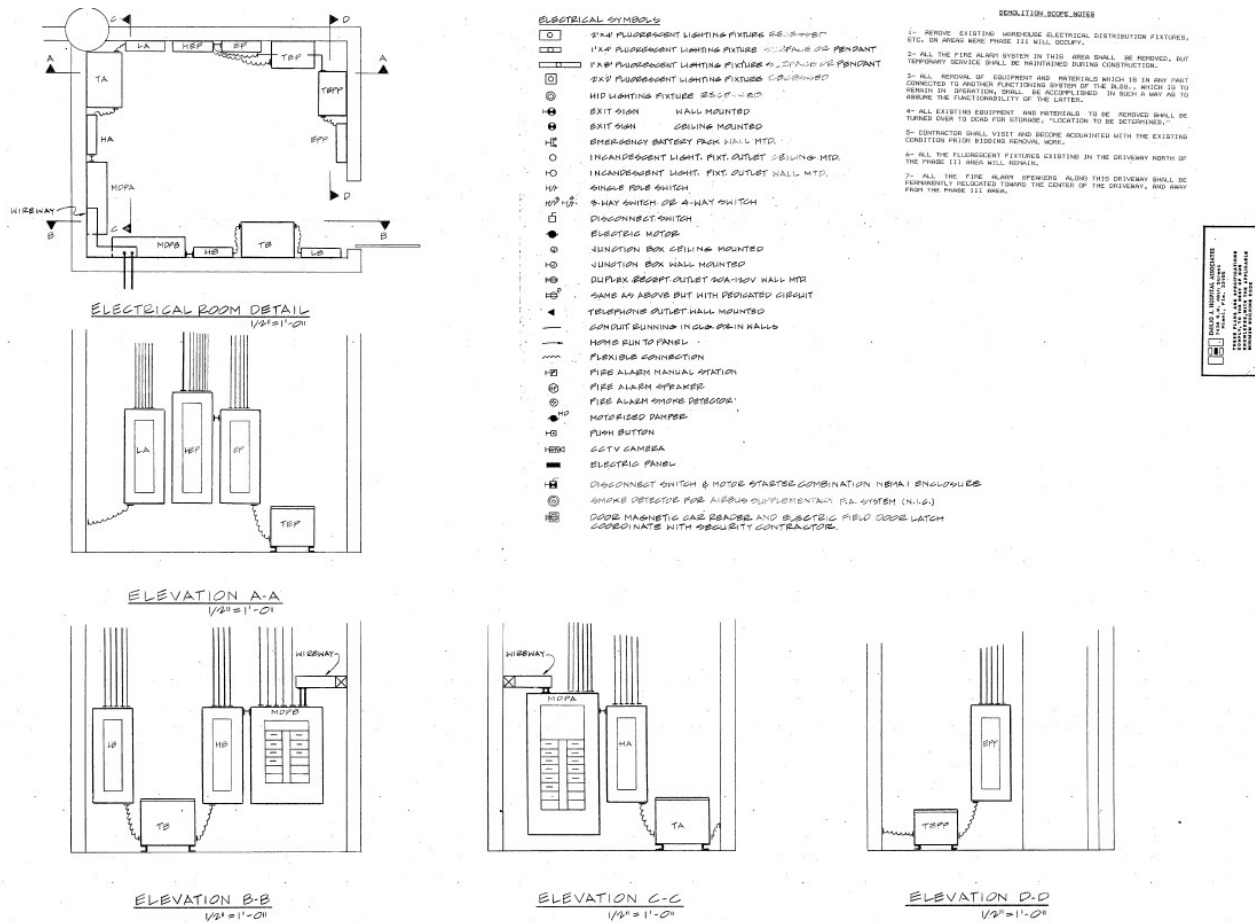


Figure 5.41 Switchgear Room details/diagrams.

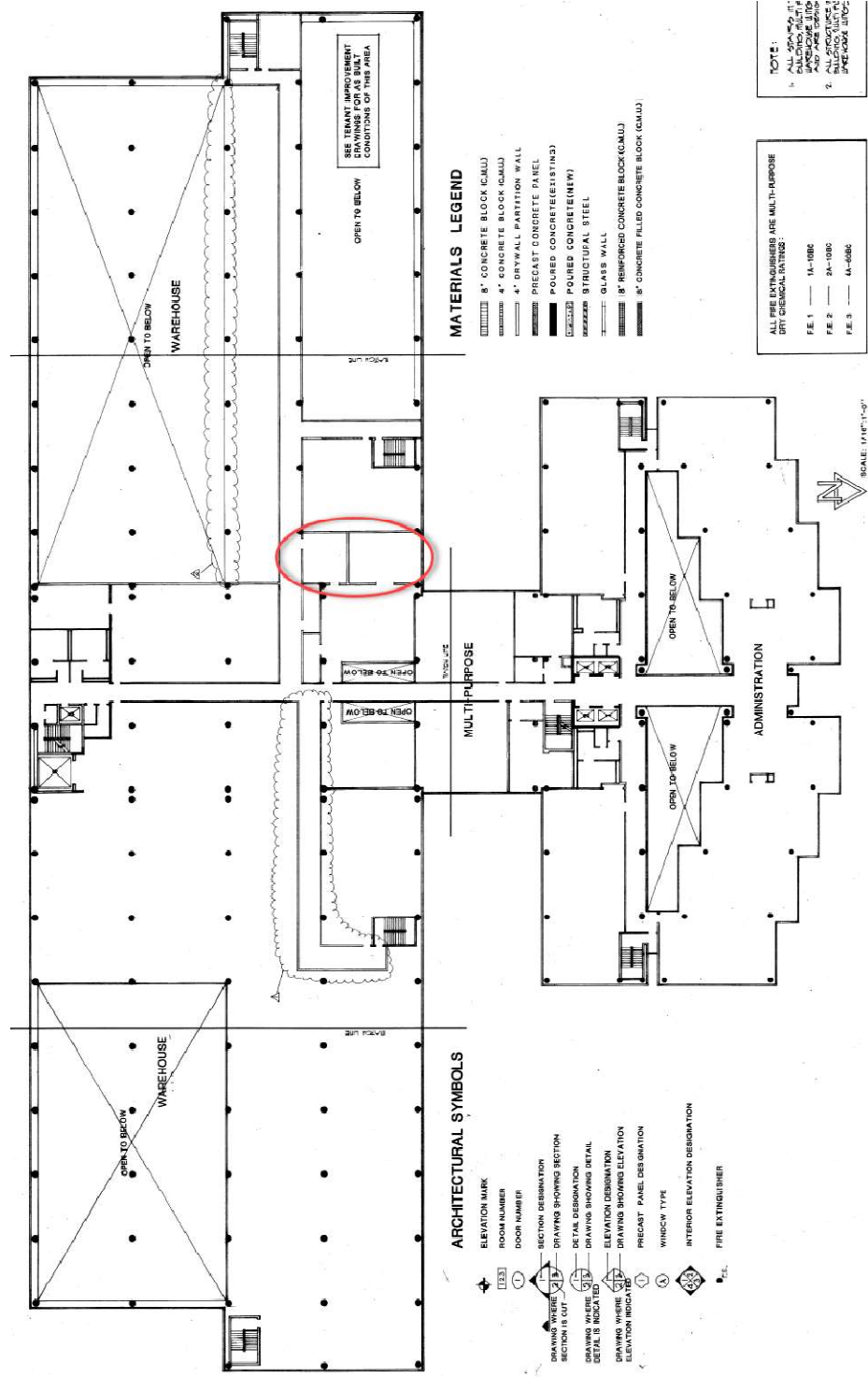


Figure 5.43 Site layout of 5600 NW 36th St. Switchgear room and FPL vault circled.

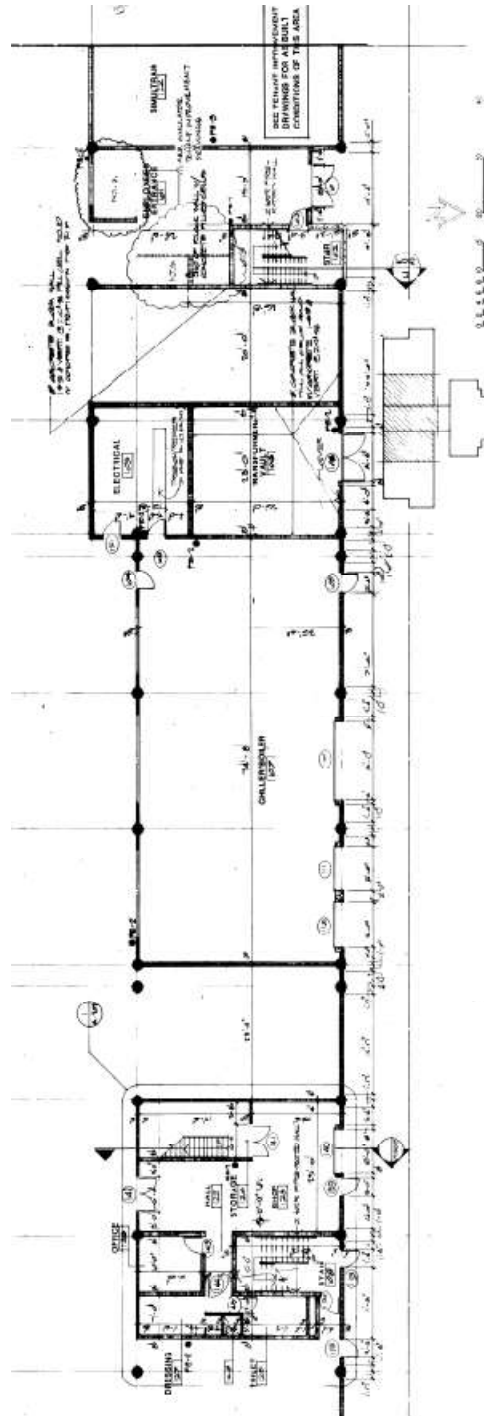


Figure 5.44 Site layout of Bldg 845 (Ground Level)

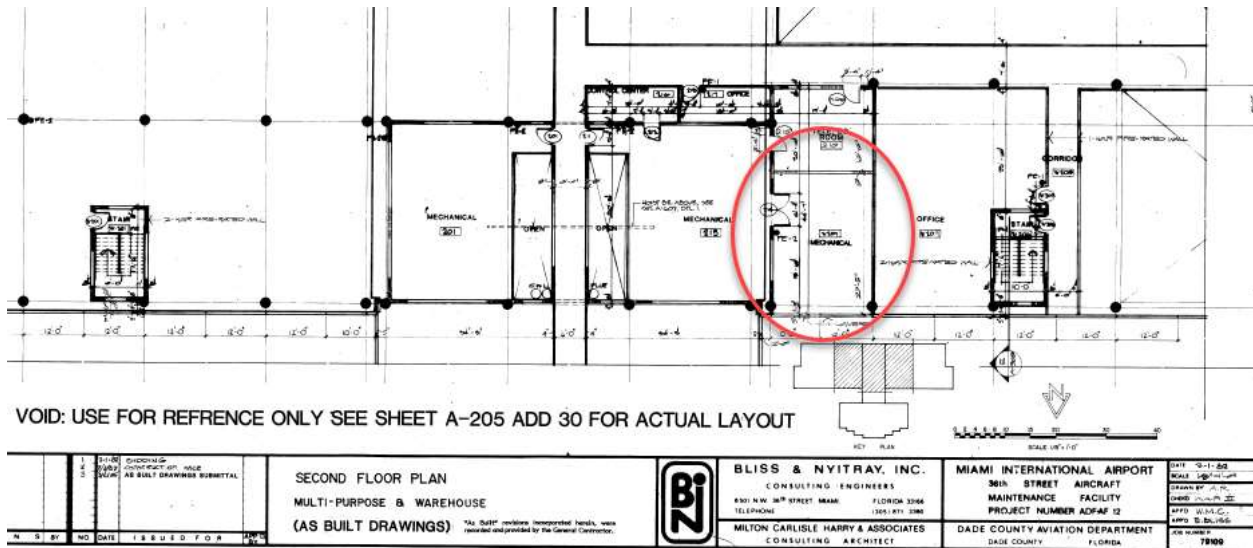


Figure 5.45 Site layout of Bldg 845 (2nd Floor) generator room circled