

- MEPA063 DR-4339-PR Invoices and Daily Reports
- MEPA063 DR-4339-PR PHOTOS
- MEPA063 DR-4339-PR Location Maps
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- MEPA063 DR-4339-PR Scope Notes
- MEPA063 DR-4339-PR FEMA Public Assistance: Procurement Conducted Under Exigent or Emergency Circumstances
- MEPA063 DR-4339-PR PREPA Emergency Procurement Process

The contractor's equipment rates, as stated in the invoices, were compared to the currently published FEMA Equipment Cost Codes. Analysis: The equipment rates are deemed to be reasonable.

PROJECT NOTES:

Some portions of PREPA's emergency repair work to the power distribution system included the replacement of unusable and unsafe equipment. This work will remain permanent work as it was necessary to complete the power restoration mission.

The Public Assistance Program Policy Guide (PAPPG) further clarifies emergency PREPA power work on Page 83 within the section of Emergency Temporary Emergency Repairs or Stabilization as "Temporary emergency repair or stabilization of an eligible facility is eligible as Emergency Work if it eliminates or lessens an immediate threat.207 (207 44 CFR § 206.201(b).)"

Future Project Worksheets will address HM opportunities within permanent work Category F PWs. Versions of this PW will address additional incident related emergency repair work to PREPA's distribution lines, once the PREPA Scope of Work (Work Reference Numbers) packets are received and when work is completed and contract invoices, work logs and summaries are obtained. Costs are validated by the Recipient (Commonwealth of Puerto Rico) and the FEMA PA Power Team in accordance with regulations governed by the FEMA Public Assistance Program.

Following the PA policy (PAPPG, Chapter 2 Section V), a cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person under the circumstances prevailing at the time the Applicant makes the decision to incur the cost. FEMA determines reasonableness by evaluating whether:

- The cost is of a type generally recognized as ordinary and necessary for the type of facility or work.
- The cost is comparable to the current market price for similar goods or services based on average costs in the area FEMA also consider factors that may result on escalation of costs like:
 - Shortages in equipment, materials, supplies, labor, or contractors. When escalating costs are due to shortages, FEMA considers whether the Applicant's work continued beyond the period of shortages and whether there was an opportunity for the Applicant to obtain more reasonable pricing.
 - Project-specific complexities, such as remote access or location, provision of a unique service with few providers, or elements requiring an extraordinary level of effort.

Following the above mentioned policy, FEMA, PREPA and the Commonwealth of Puerto Rico has evaluated the costs presented in the proposal and found the cost reasonable under the circumstances prevailing at the time the Applicant makes the decision to incur the cost. Materials are and will continue to be tracked on invoices and in PREPA Work Request Orders. Distribution line and electrical generation system materials are being supplied by FEMA, PREPA and U.S. Army Corps of Engineers (USACE). These materials will be further addressed in future PW versions.

-- HAZARD MITIGATION PROPOSAL: Hazard Mitigation under section 406 has been considered for this project and due to the type of work or project, effective mitigation is not feasible due to being emergency work.

--DISASTER DIRECT RESULT: By accepting this grant the Applicant to the best of their ability acknowledges that all damages described within this Sub-grant Application and all associated costs being claimed were a direct result of the declared event, and in connection with the incident period of September 5, 2017 through September 7, 2017; with the exception of requests for alternate or improved projects.

-- PROCUREMENT: The Applicant is aware that in the seeking of proposals and letting of contracts for eligible work, the Applicant must comply with its Local, State and/or Federal procurement laws, regulations, and procedures.

-- PERMITS: Federal Funding is contingent upon acquiring all necessary Federal, State and Local permits. Noncompliance with this requirement may jeopardize the receipt of federal funds. The applicant is responsible for obtaining all required permits prior to the commencement of work.

Scope of Work: -- BACKUP DOCUMENTATION: Backup documentation has and will be reviewed at a 100% sampling and will be included with this project.

GIS Coordinates

Project Location	Latitude	Longitude
Site 1: PR Road 3	18.377361 18.376409	-65.918913 -65.906752
Site 2: San Isidro	18.3864438 18.388768	65.8834693 -65.878082
Site 3: PR-185	18.3716565 18.3260465	-65.900648 -65.889244

PW #	Cat.	Elig.	Cost Share	Project Amount 100%	% Compl	Inspection Date	Review Dates	Completion Dates	Obligation Dates	Bundle #
							Initial	Projected	Requested	
							Final	Actual	Processed	
PA-02-PR-4339-PW-00416(0)	B	Y	N	\$ 130,897,179.00	50		04-30-2018 05-16-2018	03-20-2018		

Optional Fields - Damage Facilities

Project Title:	MEPA113 - EPM - Peaking Generator Units
Facility Number:	1
Facility Name:	MEPA113 - EPM - Peaking Generator Units
Address 1:	
Address 2:	
City:	
State:	PR

Zip:	
Location:	<p>Multiple Sites: Location 1. Aguirre, 2 units (260 MW each) Lat. 17.949117, Long -66.231594 Location 2. Cambalache, 2 units (82.5 MW each) Lat. 18.470950, Long -66.699594 Location 3. Mayaguez, 4 units (50 MW each) Lat. 18.219448, Long -67.160700 Location 4. Daguao, 2 units (21 MW each) Lat. 18.232280, Long -65.667225 Location 5. Vega Baja, 2 units (21 MW each) Lat. 18.446168, Long. -66.392551 Location 6. Yabucoa, 2 units (21 MW each) Lat. 18.105973, Long. -65.823333 Location 7. Palo Seco, 4 units (21MW each) Lat. 18.455040, Long. -66.149796 Location 8. Jobos, 2 Units (21 MW each) Lat. 17.961936, Long. -66.138703</p>
Damage Description / Dimensions:	<p>On September 18, 2017 the island of Puerto Rico experienced the landfall of a Category 4 Hurricane (Hurricane Maria) causing widespread and catastrophic damages from hurricane force winds storm surge and island wide flooding. All essential electrical delivery services were interrupted and the entire power generation and distribution system for the island was severely damaged. The Commonwealth of Puerto Rico, through the Puerto Rico Electric Power Authority (PREPA), experienced severe damages to the electrical power distribution system as result of this event.</p> <p>The Puerto Rico Electrical Power Authority (PREPA) consists of 27 Technical District Offices that are responsible for serving different municipalities throughout the entire island. This Project Worksheet addresses the cost associated with fueling the “peaking generator units” during and through the Hurricane Maria emergency period.</p> <p>PREPA’s peaking units consist of 20 diesel fueled combustion turbine generators at 8 locations. The peaking units are specifically designed for rapid start-ups and short term use to meet peak load needs effectively. The purpose of these units is to provide temporary additional power in times of high demand. Traditionally, the units are most used during the summer period, especially during evening hours when heat and humidity create additional resistance to current flow on the power lines thus exceeding the capacity of the main power generators.</p> <p>This event (Hurricane Maria) resulted on extensive damage to PREPA’s electrical and generation system forcing the use of these peaking generators to provide power to critical facilities and functions around the island. As emergency measures (Category B), the Applicant did not use these peaking units for their intended purpose mentioned above, but rather used as base load generators to ensure the power for critical facilities.</p> <p>The location of the Peaking Generator Units are as follows:</p> <p>Location 1. Aguirre, 2 units (260 MW each) Lat. 17.949117, Long -66.231594 Location 2. Cambalache, 2 units (82.5 MW each) Lat. 18.470950, Long -66.699594 Location 3. Mayaguez, 4 units (50 MW each) Lat. 18.219448, Long -67.160700 Location 4. Daguao, 2 units (21 MW each) Lat. 18.232280, Long -65.667225 Location 5. Vega Baja, 2 units (21 MW each) Lat. 18.446168, Long. -66.392551 Location 6. Yabucoa, 2 units (21 MW each) Lat. 18.105973, Long. -65.823333 Location 7. Palo Seco, 4 units (21MW each) Lat. 18.455040, Long. -66.149796 Location 8. Jobos, 2 Units (21 MW each) Lat. 17.961936, Long. -66.138703</p> <p>The Peaking Units have been running off and on for a 135 day period since Hurricane Maria. This project worksheet has been written to reimburse the Applicant fuel costs from September 18, 2017 through February 28, 2018, and Operation & Maintenance (O&M) cost during the incident period from September 18, 2017 to November 15, 2017. Subsequent costs will be addressed in future PW versions</p>
	<p>WORK COMPLETED:</p> <p>The Applicant request reimbursement for the cost incurred on fuel or 20 peaking units the dates of September 18, 2017 through February 28, 2018, and Operation and Maintenance (O&M) cost from the dates of September 18, 2017 to November 15, 2017. As per the Public Assistance and Policy Guide (PAPPG), Chapter 2: V.B (page 27 and 28) “FEMA provides PA funding for the use of Applicant-owned equipment (force account equipment), including permanently mounted generators, based on hourly rates”, “FEMA equipment rate components include depreciation, overhead, equipment overhaul (labor, parts, and supplies), maintenance (labor, parts, and supplies), lubrication, tires, ground engaging component (if applicable), and fuel”. The applicant claim for fuel, operation and maintenance in comparison with all the components that involved the FEMA rates. FEMA to date has not established rates for this size generators capacities.</p> <p>*See the MEPA113 - DR4336 - PR - CALCULATIONS.pdf and MEPA113 - DR4339 - PR - PEAKING UNITS VALUES.pdf attachment to view the values used to get the following values.</p> <p>Here is an Example of how the fuel and O&M cost were determined for Aguirre:</p> <p>--Fuel Sept. = \$2,875,430 + Oct. = \$9,462,773 + Nov. = \$5,507,383 + Dec. = \$2,683,909 + Jan. = \$4,165,679 + Feb. = \$0 = Total for the period addressed in this PW = \$24,695,174.00.</p> <p>--O&M Variable Sept. = \$96,693 + Oct.= \$227,623 + Nov.= \$71,057= Total Variable \$395,373.00</p> <p>--O&M Fixed Sept.= \$391,820 + Oct.= \$979,551 + Nov.= \$489,776= Total Fixed \$1,861,147.00</p> <p>--Total = \$24,695,174 + \$395,373+ \$1,861,147= \$26,951,695.00</p> <p>Location 1. Aguirre, 2 units (260 MW each) \$26,951,695.00 - Fuel Costs \$24,695,174.00 - O&M Cost \$2,256,520.00</p> <p>Location 2. Cambalache, 2 units (82.5 MW each) \$22,007,391.00</p>

- Fuel Costs \$21,154,725.00
 - O&M Cost \$852,666.00

Location 3. Mayaguez, 4 units (50 MW each) \$22,696,432.00
 - Fuel Costs \$20,187,792.00
 - O&M Cost \$582,240.00

Location 4. Daguao, 2 units (21 MW each) \$16,620,388.00
 - Fuel Costs \$16,271,157.00
 - O&M Cost \$349,230.00

Location 5. Vega Baja, 2 units (21 MW each) \$102,495.00
 - Fuel Costs \$59,107.00
 - O&M Cost \$43,388.00

Location 6. Yabucoa, 2 units (21 MW each) \$5,272,855.00
 - Fuel Costs \$5,177,210.00
 - O&M Cost \$199,688.00

Location 7. Palo Seco, 4 units (21 MW each) \$37,017,593.00
 - Fuel Costs \$35,718,846.00
 - O&M Cost \$1,298,476.00

Location 8. Jobos, 2 Units (21 MW each) \$228,330.00
 - Fuel Costs \$175,643.00
 - O&M Cost \$193,787.00

PEAKING UNIT FULE COST: \$130,897,179.00

Fuel consumption and fuel prices are based on the Fuel Oil Consumption report prepared by the PREPA Finance Department. The J-28 Report is based on measurements taken at generation facilities as well as invoice data and/or data provided by the Fuel Office. See attached

PREPA has also documented the cost of peaking unit depreciation during this hurricane response period declared. The calculation is based on capitalized cost in PREPA's fixed asset system, and is recorded on a monthly basis before, during and following the event. However, FEMA DOES NOT consider reimbursement for the depreciation of the peaking units an eligible expense and views the issue of permanently mounted generators as one of ownership, built into the cost of operating the facility. Please refer to FEMA appeal determination, City of Lima, Ohio (appeal brief/283772), attached.

The incident period for Hurricane Maria was from September 18, 2018 to November 15, 2018. This PW will reimburse the cost associated with Operations and Maintenance (O&M) for that period due to the emergency situation/seriousness of the circumstances taking place during the 68 day incident period. Our determination for the reimburse of this O&M follows PAPPG Chapter 2 VI. B. 2. pp 61 and 62, where establish that "...additional costs are only eligible if costs are for a limited period of time based on the exigency of the circumstances...". The O&M costs are based on the 2015 Integrated Resource Plan (IRP) prepared by Siemens Industry Inc. PREPA have his own IRP which is update every three years. The variable and fixed O&M costs were calculated adding a 2.3% per year to the nominal rates in the 2015 IRP (Appendix B. page 167-175). The fixed O&M costs were based on the total capacity of each location. Typically fixed costs include labor costs for the plant staff, indirect costs for insurance and taxes, lease payments and any other ongoing costs that do not change with varying levels of operations. The variable costs were calculated using actual kilowatts generated per hour. Variable O&M costs typically include: consumables (sorbents, lubricating oils, and water treatment chemicals), repair costs and other costs that are not capitalized.

Definitions on the IRP 2015:

-Fixed operations and maintenance expenses (FOM): Expenses incurred as a result of operations and maintenance that do not vary with operations.
 -Variable operations and maintenance expenses (VOM): Operations and maintenance expenses that vary as a function of the amount of energy that is being produced.

PROJECT NOTES:

The J-28 Report produced monthly by the Finance Department is based on measurements taken at the generation facilities as well as invoice data and/or data provided by the Fuel Office. Fuel is accounted for on a weighted average price basis for consumption and inventory.

Following the PA policy (PAPPG, Chapter 2 V. page 23), a cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person under the circumstances prevailing at the time the Applicant made the decision to incur the cost.

FEMA also consider factors that may result on escalation of costs like:

- Shortages in equipment, materials, supplies, labor, or contractors. When escalating costs are due to shortages, FEMA considers whether the Applicant's work continued beyond the period of shortages and whether there was an opportunity for the Applicant to obtain more reasonable pricing.
- Project-specific complexities, such as environmental or historic issues, remote access or location, provision of a unique service with few providers, or elements requiring an extraordinary level of effort.

SCOPE NOTES:

406 HAZARD MITIGATION PROPOSAL (Emergency Work): No measures have been considered due to the project being for emergency work, thus Hazard Mitigation is not applicable.

DISASTER DIRECT RESULT: By accepting this grant the Applicant to the best of their ability acknowledges that all damages described within this Sub-grant Application and all associated costs being claimed were a direct result of the declared event, and in connection with the incident period of September 17, 2017 through November 15, 2017; with the exception of requests for alternate or improved projects.

PROCUREMENT: The Applicant is aware that must comply with its Local, State and/or Federal procurement laws, regulations, and procedures.

PERMITS: Federal Funding is contingent upon acquiring all necessary Federal, State and Local permits. Noncompliance with this requirement may jeopardize the receipt of federal funds. The applicant is responsible for obtaining all required permits prior to the commencement of work.

BACKUP DOCUMENTATION: Backup documentation has and will be reviewed at a 100% sampling and will be included with this project.

RETENTION REQUIREMENTS FOR RECORDS: As per 2 C.F.R. 200.333, financial records, supporting documents, statistical records, and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three years from the date of submission of the final expenditure report. Wherein the non-Federal entity (NFE) is notified in writing by FEMA, the cognizant agency for audit, oversight agency for

Scope of Work:

audit, cognizant agency for indirect costs, or pass-through entity to extend the retention period, non-Federal entities must keep records for as long as indicated in the notification, which may be longer than three years. FEMA or pass-through entity retains the right to disallow costs and recover funds on the basis of a later audit or other review after closeout.

PERMITS: Federal funding is contingent upon the Sub-recipient acquiring all necessary Federal, State, and Local permits. Non-compliance with this requirement and failure to follow and meet local codes and standards may jeopardize the receipt of Federal funds. The Sub-recipient is responsible for obtaining all required permits prior to the commencement of work. Copies of permits should be retained in the project files for closeout reconciliation.

DIRECT ADMINISTRATIVE COSTS: The Sub-recipient requested DIRECT ADMINISTRATIVE COSTS (DAC) that are directly chargeable to this project. Per the FEMA Public Assistance Program and Policy Guide (PAPPG) V3, January 2018, page 39: "If the Recipient or Sub-recipient incurs administrative costs that it tracks, charges, and accounts for directly to a specific eligible project, the costs are eligible as Direct Administrative Costs (DAC). The Recipient or Sub-recipient cannot charge costs to a project if it previously allocated similar costs incurred for the same purpose in like circumstances to indirect costs.". FEMA provides PA funding for DAC at the same cost-share provisions applicable to the declaration (as described in Chapter 1:I.E, page 4).

ATTACHMENTS:

- MEPA113 - DR4336 - PR - ANALYSIS 2016-2017.pdf
- MEPA113 - DR4336 - PR - CALCULATIONS.pdf
- MEPA113 - DR4336 - PR - CONSUMPTION GRAPH.pdf
- MEPA113 - DR4336 - PR - DEP EXPENSE 17.pdf
- MEPA113 - DR4336 - PR - DEP EXPENSE 18.pdf
- MEPA113 - DR4336 - PR - DETAILS.pdf
- MEPA113 - DR4336 - PR - FUEL EXPLANATION.pdf
- MEPA113 - DR4336 - PR - FUEL.pdf
- MEPA113 - DR4336 - PR - IRP 2015.pdf
- MEPA113 - DR4336 - PR - IRP INFLATION RATES.pdf
- MEPA113 - DR4336 - PR - IRP.pdf
- MEPA113 - DR4336 - PR - RESTORATION DATES.pdf
- MEPA113 - DR4336 - PR - RESTORATION MAP.pdf
- MEPA113 - DR4336 - PR - USE EXPLANATION.pdf
- MEPA113 - DR4339 - PR - APPLICANT REPRESENTATIVE CHANGE.pdf
- MEPA113 - DR4339 - PR - DDD & SOW.pdf
- MEPA113 - DR4339 - PR - PEAKING UNITS VALUES.pdf
- MEPA113 - DR4339 - PR - PHOTO.pdf
- MEPA113 - DR4339 - PR - PREPA IRP Volume I - Draft for PREC review.pdf
- MEPA113 - DR4339 - PR - UPDATED SUMMARY.pdf
- MEPA113 - DR4336 - PR - 2016 2017

PROJECT COSTS:

Item	Code	Narrative	Quantity/Unit	Unit Price	Cost
1	9003	Contract Fuel Cost/Invoices	1/LS	\$ 130,897,179.00	\$130,897,179.00

TOTAL COST: \$130,897,179.00

Footnote: Cost Codes and/or equipment rates addressing megawatt generators have not established by FEMA; therefore, in their absence this PW will utilize the costing documentation provided by the sub-recipient and vetted by FEMA.

GIS Coordinates

Project Location	Latitude	Longitude
Location 1. Aguirre, 2 units (260 MW each)	17.949117	-66.231594
Location 2. Cambalache, 2 units (82.5 MW each)	18.47095	-66.699594
Location 3. Mayaguez, 4 units (50 MW each)	18.219448	-67.1607
Location 4. Daguao, 2 units (21 MW each)	18.23228 18.23228	-65.667225 -65.667225
Location 5. Vega Baja, 2 units (21 MW each)	18.446168	-66.392551
Location 6. Yabucoa, 2 units (21 MW each)	18.105973	-65.823333
Location 7. Palo Seco, 4 units (21MW each)	18.45504	-66.149796
Location 8. Jobos, 2 Units (21 MW each)	17.961936	-66.138703

Optional Fields - Conditions

Condition Name	Review Name	Condition Type	Monitored	Description
Standard Condition #3	Final Review	EHP	No	If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
Executive Order 11990 - Wetlands	Final Review	EHP	No	The Applicant shall ensure best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. To ensure that wetlands are not adversely impacted, per the Clean Water Act and Executive Order 11990, equipment storage and staging of construction materials and machinery should be in a location that would prevent erosion and sedimentation.
Executive Order 11988 - Floodplains	Final Review	EHP	No	Permanent disposal of debris is not exempt and must comply with applicable local, state and federal rules and requirements.
Standard Condition #1	Final Review	EHP	No	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
Standard Condition #2	Final Review	EHP	No	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.

PW #	Cat.	Elig.	Cost Share	Project Amount 100%	% Compl	Inspection Date	Review Dates	Completion Dates	Obligation Dates	Bundle #
							Initial	Projected	Requested	
							Final	Actual	Processed	