



JOSEPH T. DUENAS
CCU Chairman



JOHN M. BENAVENTE, P.E.
Interim General Manager

Telephone Nos. (671) 648-3054/55 or Facsimile (671) 648-3165

Accountability · **Impartiality** · **Competence** · **Openness** · **Value**

INVITATION FOR BID (IFB) NO.: GPA-027-15
DESCRIPTION: Transformer Insulating Oil

SPECIAL REMINDERS TO PROSPECTIVE BIDDERS

Bidders are reminded to read the Sealed Bid Solicitation and Instructions, and General Terms and Conditions attached to the IFB to ascertain that all of the following requirements checked below are submitted in the bid envelope, **one (1) original, in duplicate**, at the date and time for bid opening.

- (XX) BID GUARANTEE (no less than 15% of total bid) May be in the form of;
(NOTE: Cashier's Check or Certified Check Refunds will be ONLY be made out to the name of the Bidder.)

Reference #11 on the General Terms and Conditions

- a. Cashier's Check or Certified Check
- b. Letter of Credit or
- c. Surety Bond – Valid only if accompanied by:
 - 1. Current Certificate of Authority issued by the Insurance Commissioner;
 - 2. Power of Attorney issued by the Surety to the Resident General Agent;
 - 3. Power of Attorney issued by two (2) major officers of the Surety to whomever is signing on their behalf.

() STATEMENT OF QUALIFICATION;

() SAMPLES;

(XX) BROCHURES/DESCRIPTIVE LITERATURE;

(XX) AFFIDAVIT OF DISCLOSURE OF MAJOR SHAREHOLDERS – Affidavits must comply with the following requirements:

- a. The affidavit must be signed within 60 days of the date the bid is due;
- b. Date of signature of the person authorized to sign the bid and the notary date must be the same.
- c. First time affidavit **must** be an **original** – If copy, indicate Bid Number/Agency where original can be obtained.

(XX) NON-COLLUSION AFFIDAVIT;

(XX) NO GRATUITIES OR KICKBACKS AFFIDAVIT;

(XX) ETHICAL STANDARDS AFFIDAVIT;

(XX) WAGE DETERMINATION AFFIDAVIT;

(XX) RESTRICTIONS AGAINST SEX OFFENDERS AFFIDAVIT;

(XX) OTHER REQUIREMENTS:

A Guam Business License and/or Contractor's License with proof of Employer Identification Number (EIN) is not required in order to provide a proposal for this engagement, but is a pre-condition for entering into a contract with the Authority. Bidders MUST comply with PL 26-111 dated June 18, 2002, PL 28-165 dated January 04, 2007 and Wage Determination under the Service Contract Act (www.wdol.gov). Additionally, upon award the successful bidder must provide to GPA the most recently issued Wage Determination by the US Dept. of Labor.

The reminder must be signed and returned in the bid envelope together with the bid. Failure to comply with the above requirements will mean a disqualification and rejection of the bid.

On this _____ day of _____, 2015, I, _____, authorized representative of _____ acknowledge receipt of this special reminder to prospective bidders with the above referenced IFB.

Bidder Representative's Signature

INVITATION FOR BID

ISSUING OFFICE:
Guam Power Authority
Procurement Management Materials Supply
GPA Central Office, 1st. Floor
Gloria B. Nelson Public Service Building
688 Route 15
Mangilao, Guam 96913

[Handwritten signature] 4-9-15
JOHN M. BENAVENTE, P.E. DATE
Interim General Manager

DATE ISSUED: April 14, 2015 BID INVITATION NO.: GPA-027-15
BID FOR: Transformer Insulating Oil
SPECIFICATION: See Attached
DESTINATION: GPA Dededo Warehouse
REQUIRED DELIVERY DATE: 12-16 Weeks ARO

INSTRUCTIONS TO BIDDERS:
INDICATE WHETHER: INDIVIDUAL PARTNERSHIP CORPORATION
INCORPORATED IN:

This bid shall be submitted in duplicate and sealed to the issuing office above no later than (Time) 2:30 P.M.,
Date: April 28, 2015 and shall be publicly opened. Bid submitted after the time and date specified above
shall be rejected. See attached General Terms and Conditions and Sealed Bid Solicitation for details.

The undersigned offers and agrees to furnish within the time specified, the articles and services at the price stated opposite
the respective items listed on the schedule provided, unless otherwise specified by the bidder. In consideration to the
expense of the Government in opening, tabulating, and evaluating this and other bids, and other considerations, the
undersigned agrees that this bid remain firm and irrevocable within one hundred twenty (120) calendar days from the date
opening to supply any or all of the items which prices are quoted.

NAME AND ADDRESS OF BIDDER: SIGNATURE AND TITLE OF PERSON
AUTHORIZED TO SIGN THIS BID:

AWARD: CONTRACT NO.: AMOUNT: DATE:

ITEM NO(S). AWARDED:

CONTRACTING OFFICER:

JOHN M. BENAVENTE, P.E. DATE
Interim General Manager

NAME AND ADDRESS OF CONTRACTOR: SIGNATURE AND TITLE OF PERSON

INVITATION FOR BID NO.: GPA-027-15

Requisition No.: 27707

NO.	DESCRIPTION	QTY.	U/I	U/P:	T/P:
-----	-------------	------	-----	------	------

1.0	TRANSFORMER INSULATING OIL	2,000	Ga.	\$ _____	\$ _____
-----	-----------------------------------	-------	-----	----------	----------

Oil composition shall consist of 30% to 40% by Weight of Naphthenic Hydrocarbons. Vendor shall provide documentation for verification of composition.

Oil shall be uninhibited and is intended for use in Power Transformers.

Reference: GPA Specifications E-034 Section 8.0 for minimum characteristics.

Oil shall be delivered in 50 to 55 gallon drum containers. Vendor shall specify volume of insulating oil (in gallons) contained in each drum.

MATERIAL SAFETY DATA SHEET (MSDS):


Vendor shall provide consignee with Material Safety Data Sheet when making deliveries to avoid rejection.

DELIVERY REQUIREMENTS:

12-16 Weeks ARO

NOTE:

Notwithstanding the fact that this contract was written by one (1) party, it will be construed that it was written by two (2) parties.


4/2/15

 Ronald C. Okada Date
 Manager, Transmission & Distribution

TO BE COMPLETED BY BIDDER:

MANUFACTURED BY: _____

BRAND NAME: _____

PLACE OF ORIGIN: _____

EXPORT ABROAD: _____

TIME OF DELIVERY AFTER RECEIPT OF PURCHASE ORDER: _____

VP



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 1 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

TRANSMISSION & DISTRIBUTION SPECIFICATION

Specification No. E-034

For

POWER TRANSFORMER

OUTDOOR TYPE

34.5 KV/13.8 KV

18/24/30 MVA

Effective date: **5-16-14**

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 2 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

34.5 KV/13.8 KV 18/24/30 MVA POWER TRANSFORMER OUTDOOR TYPE

	Table of Contents	Page
1.0	SCOPE	3
2.0	SERVICE CONDITIONS	3
3.0	CONFORMANCE TO SPECIFICATIONS	3
4.0	DATA TO BE FURNISHED	5
5.0	RATINGS	9
6.0	CONSTRUCTION	12
7.0	TANK	23
8.0	TRANSFORMER OIL	24
9.0	TRANSFORMER COOLING	24
10.0	TESTS	26
11.0	LOSS EVALUATION	28
12.0	OIL PRESERVATION	28
13.0	FINISH REQUIREMENTS	29
14.0	SHIPPING REQUIREMENTS	29

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 3 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

1.0 SCOPE

This specification covers GPA's requirements for three-phase power transformer and accessories.

2.0 SERVICE CONDITIONS AND OPERATION

- 2.1 The power transformer is intended for use in an average ambient temperature of 32 degrees C with corrosive, salt air environment, sustained wind strengths of 155 MPH with gusts to 180 MPH, and subject to seismic zone 4 condition.
- 2.2 Transformer will be used for distribution step-down or generation step-up operation or both.

3.0 CONFORMANCE TO SPECIFICATION REQUIREMENTS

Transformer shall meet the requirements of the following standards and specifications, including latest revisions with respect to material, design and tests.

3.1 Applicable Standards

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

C57.12.00	General Requirements for Liquid-Immersed Distribution, Power and Regulating Transformers
C57.12.90	Test Code for Liquid-Immersed Distribution Power and Regulating Transformers and Guide for Short-Circuit Testing of Distribution and Power Transformers
C76.1 and C76.2	Requirements for Outdoor Bushing

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

TR 1-80	Transformers, Regulators and Reactors
---------	---------------------------------------

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 4 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D92-78	Flash and Fire Points by Cleveland Open Cup
D877-84	Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrode

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

70	National Electrical Code
70B-83	Electrical Equipment Maintenance

UNDERWRITER'S LABORATORIES, INC. (UL)

467-72	Grounding and Bonding Equipment
--------	---------------------------------

3.2 Deviation and Non-Conformance Requirements

- 3.2.1. Deviations from this specification or changes in materials or design after the Purchase Order has been placed must be approved by the GPA Engineering Department and acknowledged by a Purchase Order Amendment.
- 3.2.2. Units received with deviations or non-conformance which is not acknowledged as specified in Sub-Paragraph 3.2.1 are subject to rejection. The Supplier is responsible for any corrective action including but not limited to materials, labor, and transportation necessary to dispose of, or make the units conform to the specification.
- 3.2.3. Notification of defects discovered before or after installation that are believed to be inherent to manufacturing problems or workmanship shall be made and forwarded to the Supplier. The description of the item, documentation of the problem and the described information, disposition and/or follow-up (as appropriate) that GPA expects from the Supplier will be specified.

Effective date: 5-14-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 5 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

The Supplier's response shall be made within thirty (30) days unless an extension is acknowledged and approved in writing by the GPA Manager of Engineering.

3.3 Warranty

The Supplier shall warrant the satisfactory and successful operation of the apparatus furnished under this specification at the rating, under the conditions, and for the service specified. The Supplier shall further warrant the apparatus against defects of design, material and workmanship.

4.0 DATA TO BE FURNISHED

4.1 The Bidder shall provide with his bid the following data:

1. Transformer type _____
2. High-voltage rating and type _____
3. Low-voltage rating and type _____
4. Kilovolt-ampere rating and class _____
5. Guaranteed efficiency at 1-1/4 load _____
6. Guaranteed efficiency at full load _____
7. Guaranteed efficiency at 3/4 load _____
8. Guaranteed efficiency at 1 /2 load _____
9. Guaranteed efficiency at 1/4 load _____
10. Guaranteed regulation at 100% power factor _____
11. Guaranteed regulation at 80% power factor _____
12. Guaranteed total loss at 100% voltage and load, kW _____
13. Guaranteed no-load loss at rated voltage, kW _____
14. Guaranteed maximum auxiliary power loss, kW _____
15. Guaranteed no-load loss at 110 % voltage, kW _____
16. Guaranteed exciting current at 100% voltage, A _____
17. Guaranteed exciting current at 110 % voltage, A _____
18. Guaranteed percent impedance _____
19. Calculated zero-sequence percent impedance _____
20. Guaranteed maximum average audible sound level for each stage of cooling in decibels using the "A" weighing scale _____
21. Forced Cooling:
 - a. Cooling power requirements, kW _____
 - b. Auxiliary power, volts _____

Effective date: 5-16-14

Issued:

Approved:



**GUAM
POWER
AUTHORITY**
DEDEDO, GUAM

Specification No. E-034

Page 6 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- 22. Total Auxiliary Load with cooling, LTC, and cabinet space heaters:
 - a. Power Requirements _____
 - b. Auxiliary power, volts _____
- 23. Type of oil preservation system _____
- 24. Method of mounting radiators; that is removable or integral with the tank _____
- 25. Shipping data:
 - a. Shipping weight _____
 - b. Shipping dimensions _____
 - c. Oil or gas filled _____
- 26. Earliest possible shipping date _____
- 27. Type of transformer winding material used for all windings
 - a. HV windings _____
 - b. LV windings _____
- 28. Load Tap Changer
 - a. Manufacturer _____
 - b. Current rating, A _____
- 29. Automatic Voltage Regulator
 - a. Manufacturer _____
 - b. Model _____
- 30. Fault Gas and Moisture Monitor
 - a. Manufacturer _____
 - b. Model _____
- 31. LTC Transformer Oil Filtration System
 - a. Manufacturer _____
 - b. Model _____
- 32. HV Surge Arresters
 - a. Manufacturer _____
 - b. Arrester rating (duty cycle), rms kV _____
 - c. Maximum continuous operating voltage (MCOV), rms kV, (L-N) _____
 - d. One second TOV capability, rms kV (L-N) _____
 - e. Creepage distance, inches _____
 - f. Total weight of each unit, lbs _____
- 33. LV Surge Arresters
 - a. Manufacturer _____
 - b. Arrester rating (duty cycle), rms kV _____
 - c. Maximum continuous operating voltage (MCOV), rms kV, (L-N) _____
 - d. One second TOV capability, rms kV (L-N) _____

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 7 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- e. Creepage distance, inches _____
- f. Total weight of each unit, lbs _____
- 34. Oil
- a. Manufacturer _____
- b. Type _____
- c. Amount required, main tank, gals _____
- d. Total weight, lbs _____
- e. Method of delivery _____

35. Attach list of recommended spare parts with quantities.

36. Attach list of special tools.

37. The Bidder shall include in his bid the cost for factory witness testing by the Owner.

4.2 An outline drawing shall be provided with each bid quotation. This drawing shall include the following information:

- a. Projected floor space of the transformer, including radiators and expansion tanks.
- b. Height of transformer from floor level to top of high-voltage bushing.
- c. Height of transformer from floor level to top of low-voltage bushing.
- d. Height of transformer from floor level to top of tank, and to the highest non-removable part.
- e. Weight of core and windings.
- f. Weight of tank and radiators.
- g. Number of gallons of oil and total weight of the oil.
- h. Total weight of the assembled transformer including oil.
- i. Power requirements for all control and auxiliary equipment.

4.3 Within ten (10) weeks after award of contract, the successful bidder shall provide the following drawings for GPA approval.

4.3.1 Nameplate drawing including all current transformer ratios.

4.3.2 Outline drawing including the following:

- a. Accessories and location
- b. Weights with and without oil
- c. Shipping center of gravity-shown on two views.
- d. Installed center of gravity-shown on two views.
- e. Anchoring requirements.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 8 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

4.3.3 Base drawing including anchor bolt locations, completely detailed and dimension from equipment center lines:

- a. Bushing outlines including size of stud, thread size and thread length.
- b. Surge arrester outlines.
- c. Location of radiators.
- d. Location of conservator.
- e. Control elementary and wiring diagrams.
- f. LTC control elementary and wiring diagrams.
- g. Current transformer elementary and wiring diagrams.
- h. Current transformer ratio correction factor and secondary excitation curves.

The Supplier shall supply three sets of prints of the above requirements. In addition, a list indicating the drawing number and title of each drawing shall be provided.

4.4 Drawings Approval

4.4.1 GPA shall be allowed three (3) weeks to review and approve drawings provided in Section 4.3 without affecting the shipping date.

4.4.2 Drawings returned to the Supplier as approved shall be considered authorization to proceed with the work. The approval of GPA shall in no way abrogate the requirements of this specification.

4.5 Certified Reproducible

4.5.1 At least three (3) weeks prior to shipment of the equipment the Supplier shall furnish GPA an AutoCAD file and a complete set of final certified reproducible vellum for each transformer purchased. Under no circumstances will "Typical Drawings" be accepted. This includes both schematic and wiring diagrams.

4.5.2 Final certified reproducible shall be submitted on full size, right reading, photographic Mylar. The following information shall be shown on each drawing submitted:

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 9 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- a. GPA Purchase Order
- b. Supplier's Name
- c. Description of Drawing

4.6 Instruction Books

4.6.1 At least three (3) weeks prior to delivery the Supplier shall furnish GPA five sets of complete operating and instruction books for each transformer.

4.6.2 One additional instruction book shall be attached to each transformer.

4.6.3 Each manual or instruction book shall include the following:

- a. Both schematic and wiring drawings. No typical drawings are acceptable.
- b. List of parts that were shipped loose from the transformer and to be installed in the field.
- c. A replacement parts list that includes part number identification.
- d. A list of recommended spare parts and complete packing lists of accessory items.
- e. Instruction manuals covering step-by-step installation and assembly with illustrative drawings. Each separate part shall be marked with or identification system to aid in erection.
- f. Manual recommending proper storage procedures.
- g. Operating and "troubleshooting" manual for the transformer.
- h. List of all special tools needed for installation and maintenance.

5.0 RATINGS

5.1 Description

The transformer shall be a 3-phase, oil-immersed, outdoor type unit for use on a 60 hertz effectively grounded system.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 10 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

5.2 Operations and Environment

The transformer is to be used for step-down or step-up operation, in a salt air environment near sea level with ambient temperatures ranging between 75 and 100 degrees F.

5.3 KVA Rating/Temperature Rise

The transformer shall have the following ratings:

Self cooled OA	18 MVA
1st stage fans FA	24 MVA
2nd stage fans FA	30 MVA

The average winding temperature use will not exceed 65 degree C (measured by resistance method) when operated at the OA/FA/FA rating.

5.4 Voltage Ratings and Angular Displacement

DISTRIBUTION STEP-DOWN

- 5.4.1 The primary winding (high voltage) shall be rated 34,500 volts, delta connected.
- 5.4.2 The secondary winding (low voltage) shall be rated 13,800 Y/ 7970 volts, grounded wye connected.
- 5.4.3 The angular displacement between the 34,500 volt and the 13,800 volt winding shall be 30 electrical degrees with the low voltage lagging the high voltage in a counter-clockwise phase rotation.

GENERATOR STEP-UP

- 5.4.4 The primary winding (high voltage) shall be rated 34,500 Y/19,918 grounded wye connected.
- 5.4.5 The secondary winding (low voltage) shall be rated 13,800 volts, delta connected.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 11 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

5.4.6 The angular displacement between the 34,500 volt and the 13,800 volt winding shall be 30 electrical degrees with the low voltage lagging the high voltage in a counter-clockwise phase rotation.

5.5 Basic Insulation Levels (BIL)

The BIL ratings shall be as tabulated:

High Voltage Winding	200 KV
Low Voltage Winding	110 KV
Low Voltage Neutral	110 KV

5.6 Impedance

The percent impedance voltage for the high to low voltage windings (H-X) shall be 7.5 percent on the unit's OA rating; impedance shall have tolerances as specified in ANSI Standard C5.12.00.

5.7 Sound Level

The average sound level of transformer shall be of a standard sound level or reduced sound level. Standard sound levels shall not exceed 70/72/73 db based on the transformer rating in accordance with NEMA TR-1-1971 Standards. Reduced sound level transformers shall be 12dB below the standard and shall not exceed the levels for 58/60/61dB for OA/FA/FA, OA/FA/FOA or OA/FOA/FOA ratings.

The transformer sound level shall be reduced by reducing the flux density of the core.

The Supplier shall state in his quotation the price difference between a standard sound level and a reduced sound level transformer.

5.8 Surge Arresters

Station class metal oxide surge arresters shall be provided. The maximum continuous line-to-ground operating voltage ratings shall be 29 kV for the 34.5 kV side and 12.7 kV for the 13.8 kV side, Ohio Brass type VL or equal.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 12 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

6.0 CONSTRUCTION

6.1 Bushings

- 6.1.1. High voltage bushings shall be of the paper and oil "capacitor" TYPE, ANSI Standard Inter-changeable, with visible oil level gauge at the top of each bushing. Each bushing shall be provided with a power factor test tap. Bushing color shall be ANSI 70 light gray. Threaded stud for connection of bushing to cable or straps shall be silver-plated.
- 6.1.2. Low voltage phase and all neutral bushings shall be of the dry-type, one piece porcelain body, or acceptable condenser type. Threaded stud for connection of bushing to cable or straps shall be silver-plated. The bushing color shall be ANSI 70 light gray.
- 6.1.3. All bushings minimum creepage distance is 1 inch/ kV. Bushings provided with the transformer shall be in accordance with the following:

<u>BUSHING</u>	<u>VOLTAGE CLASS KV</u>	<u>MINIMUM BIL KV</u>	<u>MINIMUM VOLTAGE CREEPAGE IN</u>	<u>LOCATION</u>
HV Phase	35	200	35	Cover Mtd.
LV Phase	15	110	11	Cover Mtd.
LV Neutral	15	110	11	Cover Mtd.

- 6.1.4. Spare bushing shall be provided one each for both high and low voltage bushing.

6.2 Bushing Current Transformers

- 6.2.1. Standard multi-ratio current transformers for Authority's use are required as follows:

Each HV Bushing	Two (2) 1200/5 relay accuracy C400.
Each LV Phase Bushing	Two (2) 2000/5 relay accuracy C400.
LV Neutral Bushing	One (1) 600/5 relay accuracy C200.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 13 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- 6.2.2. All secondary tap leads (total of five for each CT) shall be brought out of the top or side wall of the transformer through a gas and oil tight compartment and wired to identified circuit shorting terminal blocks in the transformer control cabinet. All connections between CT's and GPA connection points shall be bolted or crimped. No soldered, split or disconnecting lugs shall be used.
- 6.2.3. All CT circuits shall be terminated into an eight-pole test switch.
- 6.2.4. The manufacturer shall provide accuracy curves for the current transformers furnished.
- 6.2.5. Bushing CT Nameplates shall be provided showing connection and ratio for each tap of each current transformer. These nameplates shall be mechanically fastened and located adjacent to GPA's connection terminals.

6.3 Tap Changers

6.3.1 High Voltage De-energized Manual Taps

Externally operated, full KVA capacity, fixed taps shall be provided to regulate the high voltage + 2 1/2 % and + 5 % from the nominal voltage. The high voltage de-energized tap changer shall be operable by a wheel, crank, or lever accessible by an operator standing at ground level. The operating device shall have provisions for padlocking. Each tap position and associated voltage for that tap shall be clearly identified on a tap position nameplate mounted on the transformer wall directly adjacent to the operating device. The nameplate shall state "For De-energized Operation Only".

6.3.2 Low Voltage Automatic Load Tap Changer

1. Location: Low voltage winding
2. Regulating Range: 10 percent above to 10 percent below rated voltage in 16 steps of 5/8 percent in each direction.
3. Rating: Delivered full kVA capacity at all LTC positions and at all combinations of LTC positions.
4. Tap Selector Switch and Mechanism:

Effective date: 5-14-14

Issued: 

Approved: 



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 14 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- a. Mount in oil-filled compartment separate from main transformer tank.
 - b. Maintain physical isolation so it is not necessary to drain oil or break seal of main transformer tank when servicing LTC.
 - c. Tank Accessories:
 - i. Hinged maintenance door with oil-resistant gasket.
 - ii. Drain, filter, and separating valves.
 - iii. Magnetic level indicator with low level 125 vdc alarm contacts.
 - iv. Breather.
 - v. Manhole for inspection of contacts without lowering oil level.
5. Controls:
- a. Type: Automatic, solid state.
 - b. Features:
 - i. Adjustable bandwidth and voltage level.
 - ii. High limit/ low limit blocking.
 - iii. Line drop compensation.
 - iv. Proper operation when operated isolated or in parallel and for real and reactive power flow in both directions through transformer.
 - v. Controls for reduction in regulated output voltage of 2-1/2 or 5 percent, either manually at transformer control cabinet or remotely from supervisory control equipment.
 - vi. Local and remote LTC control capability.
 - c. Equipment:
 - i. Current transformer for line drop compensation.
 - ii. Position indicator with drag hands to indicate maximum travel.
 - iii. Limit switches and stops to prevent travel beyond extreme tap position.
 - iv. Crank or hand wheel for manual operation during maintenance.
 - v. Positioning devices and off-position contacts.
 - vi. Operation counter.
 - vii. Potentiometer for remote position indication to Control Room. Provide potentiometer with 1, 280 ohms total resistance and 40 ohms resistance with each LTC step.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 15 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- viii. Form C dry contacts wired to RTU for lower limit, upper limit, and hung-up alarms.
- ix. Control circuit protective devices.
- x. Control switches for RAISE-LOWER, AUTOMATIC-MANUAL, and LOCAL-REMOTE.
- xi. OFF-Position contact wired to indicating light in main cabinet.
- xii. Remote control switches for RAISE-LOWER, AUTOMATIC-MANUAL, and a Selsyn type indicator for mounting on the Owner's remote Control Panel.

6.4 Drain, Isolating, Vacuum and Filter Valves

A two inch, globe type, combination drain and lower filter valve shall be provided. This valve shall have a built-in 3/8 inch sampling device. A one inch upper filter valve shall also be provided.

If transformer is designed for vacuum filling, provision shall be made on the top of the tank for a vacuum connection.

Isolating valves and other necessary devices shall be provided to allow ready installation and removal of radiators and drainage of oil from radiators without draining oil from the main tank. Drain, filter, vacuum valves and their hand wheel shall be made of bronze.

6.5 Lifting Facilities

Lifting facilities shall be provided for lifting the cover separately and for lifting the core and coil assembly from the tank using four lifting cables.

Lifting facilities shall also be provided for lifting the complete transformer using four slings. The bearing surface shall be free from sharp edges.

6.6 Jacking Facilities

Jacking facilities shall be located near the extreme ends of the junctions of the transformer segments. Minimum dimensions and clearances for jacking provisions shall be specified on the outline drawing.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 16 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

6.7 Pulling Facilities

Pulling eyes shall be provided for pulling the transformer along center line.

6.8 Transformer Base

6.8.1 The transformer base shall be designed to permit rolling or skidding of the transformer in any direction. The base shall be designed so that the transformer center of gravity, as normally prepared for shipment, shall not fall outside the base support for a tilt of the base of 15 degrees from the horizontal, with or without oil in the transformer.

6.8.2 The base shall be fabricated with an adequate number of anchor bolt holes designed to put the transformer base in direct contact, shear and tension, with the transformer concrete foundation at all anchor bolt locations.

Anchorage shall be designed to utilize simple ASTM A-307 anchor bolts with heads embedded 12 inches in concrete with an ultimate compressive strength of 3000 pounds per square inch. Anchor bolts shall be supplied by manufacturer.

6.9 Nameplate

A diagram nameplate shall be furnished and shall be located near eye level above the base of the transformer. The information furnished shall be in accordance with nameplate 1980 American National Standard 057.12.00, Section 5.12. The Supplier shall also stamp on the nameplate the GPA P.O. Number.

6.10 Liquid Thermometer

The transformer shall have top oil gauges with alarm contacts and a 0-1 mA output shall be provided for top oil temperature.

6.11 Liquid Level Indicator

A magnetic liquid level indicator to indicate the level of the insulating liquid. Two electrically separate, normally open alarm contacts shall be provided to indicate both high and low liquid levels.

A third contact shall be provided to trip for low liquid level. This contact shall be

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 17 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

electrically isolated from the alarm contacts and shall be set so that the trip operation is at a lower liquid level than the low level alarm.

6.12 Hot Spot Thermometer

A three-stage hottest spot winding temperature indicator relay shall be provided in each winding. The second stage contacts shall be wired in parallel to an auxiliary relay to obtain two (2) normally open contacts in addition to fan control contacts. A 0-1 mA output shall be provided for winding temperature.

The loss of cooling and over temperature trip and alarm scheme shall contain the items listed below.

- a. Auxiliary contacts from second stage of winding temperature relay.
- b. Loss of voltage relay (Device 27-1)
- c. Timing relay to allow enough time for a source transfer before operation (Device 95)
- d. Timing relay with instant transfer auxiliary switch self-resetting, 6-60 minutes, time delay pickup (Device 2-2). The equipment will be used to give an alarm with loss of voltage and high temperature and de-energize the transformer after a set period of time.
- e. Auxiliary time delay relay to give alarm upon loss of voltage to pumps and or fans (Device 27-2).

6.13 Sudden Pressure Relay

A sudden pressure relay shall be provided. This relay shall be factory calibrated for the transformer on which the relay is to be used. The relay shall be provided with two electrically separated contacts for alarm and control. The sudden pressure relay shall be provided with an auxiliary lockout relay with hand reset. The auxiliary relay shall have a normally closed contact from the sudden pressure relay shunting the operating coil of the auxiliary lockout relay. The relay shall be suitable for 125 VDC operation. Relay assembly and location shall allow removal with the transformer energized.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 18 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

6.14 Mechanical Pressure Relief Device

A self-sealing, mechanical pressure relief device shall be located on the cover. The relief device shall be furnished with alarm contacts and a visual operation indicator. The indicator shall be resettable with hot-sticks from ground level without the necessity of de-energizing the transformer.

6.15 Automatic Voltage Regulator (AVR)

Digital tap changer device shall be Beckwith Electric's M-2001D or newer version. The device shall be used to control and monitor the transformer LTC. AVR and associated devices shall be located in a cabinet inside the control room. The AVR shall have the following features:

- a. Line Drop Compensation by R, X, or Z
- b. Harmonic Analysis
- c. Sequence of Events Recording
- d. Source PT Voltage Input
- e. Supports DNP 3.0, Modbus, and IEC 61850 Protocols
- f. Tap Position Knowledge
- g. LCD Display
- h. Transformer Paralleling
- i. RS232 and Ethernet Connections

6.16 Fault Gas and Moisture Monitor

Fault gas and moisture monitor shall be GE Power Systems' HYDRAN M2 or newer version. The dissolved gas monitor (DGA) shall be used for continuous and on-line monitoring of moisture and gas-in-oil for the transformer. The DGA shall have the following features:

- a. Monitoring capability for H₂, CO, C₂H₂, C₂H₄, and H₂O.
- b. Hourly and daily trend with alarm features
- c. History logging of Data and Events
- d. Dry Contacts for alarms
- e. RS232 and Ethernet Connections
- f. DNP 3.0 Protocol
- g. NEMA 4X Enclosure
- h. Analog and Digital Input/Output Card

6.17 LTC Transformer Oil Filtration System

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 19 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

The load tap changer filtration system shall be OIL FILTRATION SYSTEMS' LTCFS-15-S510/2-2-120B or newer version. The LTC filtration system shall be used for continuous online filtration of dielectric oil of a load tap changer transformer featuring:

- a. High Efficiency Particulate/ Carbon Removal Filter Element, which can remove particles as small as ½ micron in single pass.
- b. Water Removal Element, capable of removing up to 0.25 gals of water.
- c. Element Plugged Indication.
- d. Variable Operation, system can be run continuously or at 1-4 intervals per day via solid state timer.
- e. Automatic Safety Shut-Down and Isolation, if a leak is detected.
- f. Cabinet Oil Leak Detection device.
- g. Stainless Steel Cabinet.
- h. Hour meter.
- i. Inlet Make-Oil Adder Valve.
- j. Flow Sight.
- k. Acid Removal Filter.

6.18 Core Ground

It is preferred that the core ground connection be above the oil and accessible from a manhole to facilitate testing of the core to tank insulation without lowering the oil. The connector shall be the slotted type with a captive nut connection. The location of the core ground should be indicated on the transformer outline drawing.

6.19 Auxiliary Power Source

The auxiliary power will be single-phase 120/240 volt, 60 HZ A/C. The Supplier shall design the transformer cooling system including fans and pumps, LTC motor, controls and accessories to operate on both voltages. The Supplier shall inform GPA of the power requirements needed at the transformer. The terminals provided by the Supplier shall be adequate to receive GPA furnished A/C service conductors.

A 120 VAC, 15 ampere convenience outlet with ground fault protection shall be provided.

Provisions shall be made for an ungrounded 125 VDC incoming supply. All tripping, alarm, and associated devices shall be rated 125 VDC operation.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 20 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

6.20 Centralized Termination and Control Devices Requirement

All equipment alarms, controls, protection and current transformers shall be brought to individual identified terminals centralized in a weather-proof control cabinet mounted on the equipment tank at a center of cabinet to base height of 5 feet 6 inches. Oil thermometer gauge, high voltage winding temperature gauge, and low voltage winding gauge shall also be located inside the weather proof cabinet. Adequate hinged doors shall be provided with weatherproof latching facilities. The latching assemblies shall be operated by handles that can be reached by an operator standing at ground level. Each handle shall have provisions for padlocking and be acceptable for weather-proofing the doors in the closed position.

All meters and instruments which require resetting shall be mounted less than six (6) feet above the base of the transformer.

Alarm contacts shall be electrically separate, open during normal conditions, self-resetting, suitable for closing 5 amperes, carrying 3 amperes continuously, and opening 3 amperes at 125 volts DC.

Control contacts shall be electrically separate, open during normal conditions, self-resetting, suitable for closing 30 amperes, carrying 10 amperes continuously, and opening 3 amperes at 125 volts DC.

All alarm and control contacts shall be individually wired to an electromagnetic Target Type Fault Indicators TK Series, Fuji Electric Ind. Co. Ltd. or approved equal. The fault indicator shall have combinations of contacts that are utilized for output, a plug-in type indicating element with visible indication plate, and resettable button.

6.21 Instrument and Control Wiring

6.21.1 THW or THWN wires used by the Supplier shall be of the machine-tool type with 3/64" polyvinyl chloride insulation rated 600 volts, 90 degree C. Other wires with insulation having characteristics which equal or exceed the above requirements for machine-tool type wire are acceptable. Control wire used by the

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 21 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

Supplier shall be suitable for wet and dry location, flame retardant, moisture and heat resistant.

- 6.21.2 All secondary wire, regardless of type, shall be stranded. Wire shall have adequate current-carrying capacity. No. 12 AWG shall be used for control circuits, #10 for CT circuits and #18 for SCADA indication.
- 6.21.3 Those portions of any secondary wiring in the control box, or those portions of any secondary or control wiring or cable which pass through conduit, shall not be spliced. However, junction boxes with terminal blocks as specified above may be used to extend secondary wiring passing through conduits.
- 6.21.4 Ring-tongue terminals shall be used for secondary wiring. Spade, slotted spade, flanged spade, and hook terminals are not acceptable. Ring-tongue terminals shall be sufficiently strong to prevent their breakage under conditions of vibration inherent in the equipment in which they are installed.
- 6.21.5 Terminals shall have insulated ferrules whenever the spacing between the terminals, or their projection above or below the terminal board, or both, is such that they can make contact with one another.
- 6.21.6 All wires for external connection shall be properly identified and terminated at conveniently located, easily accessible terminal blocks. All terminal blocks furnished by the Supplier shall have No. 10 screws. The screws shall be secured directly into the contact strips and not into nuts embedded in the terminals blocks. The contact strips shall have sufficient thickness to assure that torque applied to the No. 10 screws to hold the terminal to the contact strips will not damage the threads in the tapped holes. The screws shall be firmly secured to the blocks and shall be separated by insulated barriers. Terminal blocks with clamp type fittings are not acceptable.
- 6.21.7 Ring-tongue terminals shall be fastened to the contact strips of terminal blocks with machine screws. Barriers shall separate the contact strips.

Effective date: 5-14-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 22 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

All circuits shall be protected by molded case circuit breakers. Breakers are to be ambient compensated. The breaker size, supplier's name and catalog number are to be shown on the drawings.

- 6.21.8 All control, power, alarm, and auxiliary equipment shall be completely wired at the factory.
- 6.21.9 Hinge wiring and wiring that will be subjected to bending during maintenance or other operations shall be arranged such that the bending or twisting will be around the longitudinal axis of the wire.
- 6.21.10 Wiring shall not be spliced or tapped. All connections shall be made at the device terminals or on terminal blocks.
- 6.21.11 All future, spare, and unused contacts and devices shall be wired to terminal blocks.
- 6.21.12 A minimum of ten percent (10%) spare terminal points shall be provided.
- 6.21.13 All wiring external to enclosures or cabinets shall be in rigid steel conduits.
- 6.21.14 All wiring from the transformer components to the cabinets, which may require removal for shipment, shall be installed in place and in such a manner that it is only necessary to connect the wires to the cabinets after they are installed on the transformer.
- 6.21.15 Wiring Format
- a. All terminals shall be numbered, and the numbers shall correspond to the numbers on the wiring diagram.
 - b. All wires shall be identified at their termination points with the opposite end designation identification by labeled plastic sleeves or equal. Identification shall correspond to

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 23 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

the lettered device, numbered terminal format of the wiring diagrams.

- 6.21.16 **System Phase Rotation.** The system phase rotation for the island-wide system is GPA C-B-A or NEMA 1-2-3 and all equipment purchased under this contract shall be wired and connected NEMA 1-2-3. All phase markings shall be NEMA 1-2-3. Instrument and relay arrangement shall be 1-2-3 left to right with neutral relays underneath phase grouping. GPA will make the external connections of the incoming and outgoing lines such that GPA C-B-A is connected to NEMA 1-2-3. Phase markings C-B-A shall be reserved for GPA's use.

7.0 **TANK**

- 7.1 The main transformer tank shall be designed to withstand, without permanent deformation, pressures 25 % greater than the maximum operating pressures resulting from the system of oil preservation used. The maximum operating pressures (positive and negative) which the transformer tank is designed to withstand shall be indicated on the nameplate.

7.2 **Vacuum Filling**

If tank is designed for vacuum filling (essentially full vacuum) radiators and auxiliary compartments such as expansion tanks, when not designed for full vacuum filling, shall be so designated and isolating valves shall be provided.

7.3 **Manholes**

Provide one or more circular handholes and at least two circular manholes in the transformer top with neoprene or better gasket material and bolted covers. These facilities must be of sufficient size to allow removal of bushing current transformers and to allow entrance of a person into the transformer tank (18 inch minimum manhole).

7.4 **Ground Pads**

In addition to the surge arrester grounds pads, two ground pads, drilled and tapped for NEMA four-hole (1/2 inch bolts on 1-3/4 inch centers) connectors, shall be installed on diagonally opposite corners of the base. If the base is removable, the

Effective date: 5-14-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 24 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

two pads shall be installed on the transformer tank wall near the base. Ground pads shall be copper-faced steel, stainless steel, or nonferrous pads brazed or welded to the transformer.

8.0 TRANSFORMER OIL

The Supplier shall furnish an adequate quantity of oil for the first fill of each transformer. Oil designated as "10-C" by the General Electric Corporation, or equivalent, which may be freely mixed with either, shall be used in the transformer. All oil furnished shall be inhibited with DBPC (DI TERT BUTYL PARA CRESOL). The oil shall have the following minimum characteristics:

- a. Flash Point: Cleveland Open Cup 132 Degrees C.
- b. Fire Point: Cleveland Open Cup 145 Degrees C.
- c. Specific Gravity at 60 Degree F: 0.865 to 0.910.
- d. Viscosity: Saybolt Universal at 100 Degree F - 55 - 63 sec.
- e. Acidity: 0.02 Mg KOH/gm 0.1 max.
- f. Pour Point: -40 Degree F.
- g. Corrosive Sulfur: None
- h. Dielectric Strength (ASTM D877): 26 kV Min.
- i. Power Factor at 68 Degree F: 0.0% Max.
- j. Interfacial Tension: 40 Dynes/CM.
- k. Non-PCB (Polychlorinated Biphenyl) Contaminated:
Manufacturer is to mark in a permanent manner that the dielectric fluid is "Non-PCB". Certified test report on residual oil remaining in the transformer after factory testing that indicates that the oil is free of PCB.

9.0 TRANSFORMER COOLING

9.1 Cooling Control

- 9.1.1 A hot-spot dial type thermometer shall be supplied to indicate the maximum hot-spot temperature of the windings. The instrument shall have adjustable alarm contacts and shall be placed at a convenient location, easily readable from ground level. The two stages of cooling shall be activated by the contacts on the dial type hot-spot thermometer. The contacts for cooling control within the hot-spot temperature device shall be readily accessible. This can be accomplished by providing all temperature device windings, oil, etc., with split removable bezel rings.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 25 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

9.1.2 A manual-off-automatic selector switch shall be provided for the control of each stage of cooling equipment. In the "Automatic" position, the cooling equipment shall be activated by the temperature control. In the "manual" position the cooling circuit shall be energized. A contact shall be provided to indicate loss of power to cooling circuits for remote alarm purposes. The contact shall be wired to a terminal strip in the control cabinet for GPA's connection. A selector switch shall be provided to allow either cooling stage to be used as the first or preferred system.

9.1.3 Operation of the cooling system shall not be made by motor starting switches. If a capacitor is needed for starting, then the motor shall be capacitor start and run.

9.2 Heat Exchangers

Heat exchangers must have sufficient capacity to prevent a temperature rise in excess of that specified for each rating of the transformer. Due to severe corrosion problems, GPA prefers heat exchangers made of copper tube and copper fin construction. Aluminum heat exchangers are not acceptable. Heat exchangers shall be removable from the main tank without the need to drain oil from the main tank.

9.3 Radiators

No accessories or pipes shall be installed above the radiators for easy installation and removal during maintenance.

Material of radiator: Cold rolled Steel, SS41, 1.0mm thickness

Internal painting: Coating with Celerol reaction primer

Surface preparation: Grit blasting to Sa 2.5 (SVENSK STANDARD SIS 0559081967) ASTM 2200 D IS 1477 PART 1

Exterior paint:	Hot-Dip Galvanizing as per ISO-1461	60 Microns
	Epoxy Primer	20 Microns
	Epoxy Intermediate Coat	40 Microns
	Polyurethane Top Coat	<u>40 Microns</u>
	Total Thickness	160 Microns

9.4 Cooling Fans

All cooling fans shall be of the low speed type to reduce wind noise levels. Each

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 26 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

fan shall be multi-bladed or multi-lobed with one common hub. Fans with more than one hub are not acceptable. Control of the cooling fans shall contain no motor starting switches and shall be plug-in type with an identified separate conductor case ground. Metal to metal ground for fans is not acceptable.

10.0 TESTS

- 10.1 The Supplier shall make his plant available to GPA Personnel to inspect the transformer during construction, testing and/or packaging for shipment.

A factory test plan complete with acceptable reading values shall be submitted to GPA for approval. The factory test equipment and test methods used shall conform to the applicable requirements of ANSI, NEMA, ASTM, NFPA, and UL standards. Factory tests will be witnessed by two (2) GPA Personnel.

Manufacturer's technical representative shall be on island to verify transformer connections and acceptance tests.

- 10.2 Five (5) copies of certified test reports shall be supplied for the following tests:

- a. Standard Routine tests shall be performed as listed in the latest revision of ANSI C57.12.00, including Supplement C57.12.00a-1977.
- b. Dielectric Tests
 1. Impulse test shall be performed in accordance with ANSI/IEEE C57.12.90. Oscillographic records of the test shall be included in the test reports. The minimum height of each individual tract (at maximum deflection) shall be 30 millimeters.

Lightning Impulse Test shall be performed in accordance with ANSI/IEEE C57.12.90.
 2. Low Frequency test shall be performed in accordance with ANSI/IEEE C57.12.90.
- c. Audible Sound Level test in accordance with NEMA TR-1 shall be performed for each stage of cooling.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 27 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

d. Partial Discharge (Corona) test at full induced-test voltage level. The RIV shall not exceed 150 microvolts. Equipment and general method used shall be in accordance with ANSI/IEEE C57.12.14, C57.12.90, and C57.113, except that measurements shall be taken in microvolts.

e. Regulation, Efficiency, and Losses. The regulation of each transformer shall be determined for unity (1.0), nine-tenths (0.9) power factor lagging, and eight-tenths (0.8) power factor lagging.

The efficiency and losses of each transformer shall be determined as indicated in the bid data. The guaranteed efficiency and tested total losses shall include losses in all windings.

f. Bushing Tests.

1. Design Tests. Certification that each type, style, and model bushing furnished has passed the test requirements of ANSI C76.1 shall be furnished.

g. Other Tests.

1. Temperature Tests. Temperature tests will not be required, but calculated temperature rise data based on tests of similar units of previous manufacture shall be furnished.
2. Insulation Power Factor Tests shall be performed in accordance with ANSI/IEEE C57.12.90.
3. Insulation Resistance Test shall be performed for each winding.
4. Winding Resistance Tests shall be performed for each winding. The resistance shall be measured and recorded with hot and cold windings.
5. Dew Point of the air (or gas) in the tank shall be determined just prior to shipment and at the final shipping destination.

10.3 The Supplier shall state in his proposal whether or not impulse and corona tests are included among the quality assurance tests.

10.4 The Supplier shall include the following information in the test report.

a. Winding hot spot temperature rise in degree C over the average winding temperature rise at the 30 MVA, 65 degree C rating.

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 28 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- b. Winding Thermal Time Constant.
- c. Type of material used in the primary and secondary winding.

11.0 LOSS EVALUATION

11.1 Each bidder shall submit with his bid the guaranteed average load and no-load losses on each transformer submitted on this bid. Guaranteed load losses shall be provided at the transformer's self-cooled (OA) rating and a reference temperature of 85 degree C (65 degree rise + 20 degree C ambient). The requirements and definitions of ANSI Standard C57.12.00-1987, Sections 5.9 and 9.3, shall apply unless excepted by this specification.

11.2 Guaranteed losses will be evaluated by the Authority in accordance with the Bidding Schedule to determine the equivalent first cost for owning and operating each bid item. Losses will be evaluated at the following rates:

No-Load	\$6,640/KW
Load Losses	\$3,610/KW

Note: Load Losses = Total Losses – No Load Losses

11.3 The Manufacturer shall test each transformer for load and no-load losses. This test data shall be certified as correct and submitted to the Authority prior to or at the time of shipment.

11.4 The Authority will review and consider actual load and no-load losses for each transformer. In the event that the average evaluated losses for like units exceed the average guaranteed losses, the Manufacturer will be penalized at the above rates for the differences. Load and no-load loss penalties will be assessed independently. Bonuses will not be awarded for actual average losses which are less than guaranteed. In addition, any transformer with no-load losses or total losses greater than the tolerances indicated in ANSI Standard C57.12.00-1987, Section 9.3, may be rejected by the Authority.

12.0 OIL PRESERVATION SYSTEM

Effective date: 5-14-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 29 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

- 12.1 The transformer shall have a conservator (expansion tank) type oil preservation system.
- 12.2 There shall be no contact between oil in the expansion tank and air. This shall be accomplished by use of a nitrile air cell (diaphragm not allowed) vented to the outside air. The expansion tank shall be of sufficient volume to operate through an ambient temperature range of minus 35 degree C to plus 50 degree C without causing the low oil level alarm contacts to close at the lower limit and without exceeding the recommended full oil level at the upper limit. A shut-off valve, capable of holding the full head of oil in the expansion tank, shall be provided in the oil line between the expansion tank and the main transformer tank.

13.0 FINISH REQUIREMENTS

All metal surfaces shall be thoroughly cleaned of rust, welding scale, and grease, and shall be treated to effect a bond between the metal and paint which will prevent the formation of rust under the paint. A priming coat shall be applied immediately after the bonding treatment. A final finish shall consist of two coats of paint. The exterior final coat shall be ANSI 70 Gray.

14.0 SHIPPING REQUIREMENTS

- 14.1 Because of severe transportation conditions, the Supplier shall pay particular attention to the proper packaging and bracing of the apparatus to assure its safe arrival. Manufacturer shall install a tilt monitor prior to shipping and results should be within safe recommendations.
- 14.2 The Supplier shall prepare all materials and equipment for shipment in such a manner as to protect from damage in transit. All small parts and unit components shall be separately boxed or bundled to prevent galling due to rubbing of one part against another. Each item, box or bundle shall be plainly and individually identifiable for content according to item number, GPA P.O. Number, and Supplier's Identifying Number.
- 14.3 A complete itemized Bill of Lading, which clearly identifies and inventories each assembly, sub-assembly, carton, package, envelope, etc., shall be furnished and enclosed with each item or items at the time of shipment.
- 14.4 Openings in the transformer tank or radiators resulting from the removal of parts for shipment shall be identified and securely sealed against the entrance of

Effective date: 5-16-14

Issued:

Approved:



GUAM
POWER
AUTHORITY
DEDEDO, GUAM

Specification No. E-034

Page 30 of 30
Revision No. 3
Date: 05/16/2014

PREPARED BY ENGINEERING DEPARTMENT

moisture and foreign materials. Covers shall be of sufficient strength to resist puncture.

14.5 Delivery of transformer shall be straight to the jobsite.

Effective date: 5-14-14

Issued:

Approved:



GUAM POWER AUTHORITY

ATURIDÄT ILEKTRESEDÄT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Edward J.B. Calvo
Governor

Telephone Nos. (671) 648-3054/55 Fax: 648-3165

Raymond S. Tenorio
Lieutenant Governor

BID BOND

NO.: _____

KNOW ALL MEN BY THESE PRESENTS that _____, as

Principal Hereinafter called the Principal, and (Bonding Company), _____
A duly admitted insurer under the laws of the Territory of Guam, as Surety, hereinafter called the Surety are
Held firmly bound unto the Territory of Guam for the sum of _____ Dollars
(\$ _____), for Payment of which sum will and truly to be made, the said Principal and the said
Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly
by these presents.

WHEREAS, the Principal has submitted a bid for (identify project by number and brief description)

NOW, THEREFORE, if the Territory of Guam shall accept the bid of the Principal and the Principal shall
enter into a Contract with the Territory of Guam in accordance with the terms of such bid, and give such bond or
bonds as my be specified in bidding or Contract documents with good and sufficient surety for the faithful
performance of such Contract Documents with good and sufficient surety for the faithful performance of such
Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event
of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the
Territory of Guam the difference not to exceed the penalty hereof between the amounts specified in said bid
and such larger amount for which the Territory of Guam may in good faith contract with another party to perform
work covered by said bid or an appropriate liquidated amount as specified in the Invitation for Bids then this
obligation shall be null and void, otherwise to remain full force and effect.

Signed and sealed this _____ day of _____ 2015.

(PRINCIPAL) (SEAL)

(WITNESS)

(TITLE)

(MAJOR OFFICER OF SURETY)

(TITLE)

(TITLE)

(RESIDENT GENERAL AGENT)

SEE INSTRUCTIONS FOR SUPPORTING DOCUMENTS REQUIRED.

INSTRUCTION TO PROVIDERS:

NOTICE to all Insurance and Bonding Institutions:

The Bond requires the signatures of the Vendor, two (2) major Officers of the Surety and Resident General Agent, if the Surety is a foreign or alien surety.

When the form is submitted to the Guam Power Authority, it should be accompanied with copies of the following:

1. Current Certificate of Authority to do business on Guam issued by the Department of Revenue and Taxation.
2. Power of Attorney issued by the Surety to the Resident General Agent.
3. Power of Attorney issued by two (2) major officers of the Surety to whoever is signing on their behalf.

Bonds, submitted as Bid Guarantee, without signatures and supporting documents are invalid and Bids will be rejected.



GUAM POWER AUTHORITY

ATURIDAT ILEKTRESEDAT GUAHAN
P O BOX 2977, AGANA, GUAM 96932-2977

SPECIAL PROVISION FOR MAJOR SHAREHOLDERS DISCLOSURE AFFIDAVIT

All Bidders/Offerors are required to submit a current affidavit as required below. Failure to do so will mean disqualification and rejection of the bid/rfp.

5 GCA §5233 (Title 5, Section 5233) states:

"Section 5233 Disclosure of Major Shareholders. As a condition of submitting a bid or offer, any partnership, sole proprietorship or corporation doing business with the government of Guam shall submit an affidavit executed under oath that lists the name and address of any person who has held more than ten percent (10%) of the outstanding interest or shares in said partnership, sole proprietorship or corporation at any time during the twelve (12) month period immediately preceding submission of a bid, or, that it is a not for profit organization that qualifies for tax exemption under the Internal Revenue Code of the United States or the Business Privilege Tax law of Guam, Title 12, Guam Code Annotated, Section 26203[©]. With the exception of not for profit organizations, the affidavit shall contain the number of shares or the percentage of all assets of such partnership, sole proprietorship or corporation which have held by each such person during the twelve (12) month period. In addition, the affidavit shall contain the name and address of any person who has received or is entitled to receive a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid or offer and shall also contain the amounts of any such commission, gratuity or other compensation. The affidavit shall be open and available to the public for inspection and copying."

1. If the affidavit is a copy, indicate the BID/RFP number and where it is filed.
2. Affidavits must be signed within 60 days of the date the bids or proposals are due.

MAJOR SHAREHOLDERS OF DISCLOSURE AFFIDAVIT

TERRITORY OF GUAM)

HAGATNA, GUAM)

I, undersign, _____,
(partner or officer of the company of, etc.)

being first duly sworn, deposes and says:

- That the person who have held more than ten percent (10%) of the company's shares during the past twelve (12) months are as follows:

<u>Name</u>	<u>Address</u>	<u>Percentage of Shares Held</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Total number of shares		_____

- Persons who have received or are entitled a commission, gratuity or other compensation for procuring or assisting in obtaining business related to the bid/rfp for which this Affidavit is submitted are as follows:

<u>Name</u>	<u>Address</u>	<u>Amount of Commission Gratuity or other Compensation</u>
_____	_____	_____
_____	_____	_____

Further, affiant sayeth naught.

Date: _____

Signature of individual if bidder/offeror is a sole Proprietorship; Partner, if the bidder/offeror is a Partnership Officer, if the bidder/offeror is a corporation.

Subscribe and sworn to before me this _____ day of _____,
20_____.

Notary Public _____

In and for the Territory of Guam

My Commision expires _____.

NON-COLLUSION AFFIDAVIT

Guam)
)ss:
Hagatna)

I, _____ first being duly sworn, depose and say:
(Name of Declarant)

1. That I am the _____ of _____.
(Title) (Name of Bidding/RFP Company)
2. That in making the foregoing proposal or bid, that such proposal or bid is Genuine and not collusive or sham, that said bidder/offeror has not colluded, Conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham or to refrain from bidding or submitting a proposal and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid of affiant or any other bidder, or to secure any overhead, project or cost element of said bid price, or of that of any bidder, or to secure any advantage against the GUAM POWER AUTHORITY or any person interested in the proposed contract; and
3. That all statements in said proposal or bid are true.
4. This affidavit is made in compliance with Guam Administrative Rules and Regulations §§3126(b).

(Declarant)

SUBSCRIBED AND SWORN to me before this _____ day of _____, 2015.

)Seal(

Notary Public

ETHICAL STANDARDS AFFIDAVIT

AFFIDAVIT

(Proposer)

TERRITORY OF GUAM)

)

SS:

HAGATNA, GUAM)

)

_____, being first duly sworn, deposes and says:

That I am (the Sole Proprietor, a Partner or Officer of the Offeror)

That Offeror making the foregoing Proposal, that neither he or nor of the Offeror's officers, representatives, agents, subcontractors, or employees of the Offeror have knowingly influenced any government of Guam employee to breach any of the ethical standards set forth in 5 GCA Chapter 5 Article 11, and promises that neither he nor any officer, representative, agent, subcontractor, or employee of Offeror will knowingly influence any government of Guam employee to breach any ethical standard set for in 5 GCA Chapter 5 Article 11.

Signature of Individual if Proposer is a Sole Proprietorship;
Partner, if the Proposer is a Partnership;
Officer, if the Proposer is a Corporation

SUBSCRIBED AND SWORN to before me this ____day of _____, 2015.

Notary Public
In and for the Territory of Guam
My Commission Expires:

DECLARATION RE-COMPLIANCE WITH U.S. DOL WAGE DETERMINATION

Procurement No.: _____

Name of Offeror Company: _____

_____ hereby certifies under penalty of perjury:

- (1) That I am _____ (the offeror, a partner of the offeror, an officer of the offeror) making the bid or proposal in the foregoing identified procurement;
- (2) That I have read and understand the provisions of 5 GCA § 5801 and § 5802 which read:

§ 5801. Wage Determination Established.

In such cases where the government of Guam enters into contractual arrangements with a sole proprietorship, a partnership or a corporation ('contractor') for the provision of a service to the government of Guam, and in such cases where the contractor employs a person(s) whose purpose, in whole or in part, is the direct delivery of service contracted by the government of Guam, then the contractor shall pay such employee(s) in accordance with the Wage Determination for Guam and the Northern Mariana Islands issued and promulgated by the U.S. Department of Labor for such labor as is employed in the direct delivery of contract deliverables to the government of Guam.

The Wage Determination most recently issued by the U.S. Department of Labor at the time a contract is awarded to a contractor by the government of Guam shall be used to determine wages, which shall be paid to employees pursuant to this Article. Should any contract contain a renewal clause, then at the time of renewal adjustments, there shall be made stipulations contained in that contract for applying the Wage Determination, as required by this Article, so that the Wage Determination promulgated by the U.S. Department of Labor on a date most recent to the renewal date shall apply.

§ 5802. Benefits.

In addition to the Wage Determination detailed in this Article, any contract to which this Article applies shall also contain provisions mandating health and similar benefits for employees covered by this Article, such benefits having a minimum value as detailed in the Wage Determination issued and promulgated by the U.S. Department of Labor, and shall contain provisions guaranteeing a minimum of ten (10) paid holidays per annum per employee.

- (3) That the offeror is in full compliance with 5 GCA § 5801 and § 5802, as may be applicable to the procurement referenced herein;

 Signature of Individual if Proposer is a Sole Proprietorship;
 Partner, if the Proposer is a Partnership;
 Officer, if the Proposer is a Corporation

SUBSCRIBED AND SWORN to before me this ____ day of _____, 2015.

 Notary Public
 In and for the Territory of Guam
 My Commission Expires:



GUAM POWER AUTHORITY

ATURIDAT ILEKTRESEDAT GUAHAN
P O BOX 2977, AGANA, GUAM 96932-2977

SPECIAL PROVISIONS

Restriction against Sex Offenders Employed by Service Providers to Government of Guam from Working on Government of Guam Property

GCA 5 §5253(b) restricts the OFFEROR against employing convicted sex offenders from working at Government of Guam venues. It states:

(b) All contracts for services to agencies listed herein shall include the following provisions: (1) warranties that no person providing services on behalf of the contractor has been convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA, or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry; and (2) that if any person providing services on behalf of the contractor is convicted of a sex offense under the provisions of Chapter 25 of Title 9 GCA or an offense as defined in Article 2 of Chapter 28, Title 9 GCA or an offense in another jurisdiction with, at a minimum, the same elements as such offenses, or who is listed on the Sex Offender Registry, that such person will be immediately removed from working at said agency and that the administrator of said agency be informed of such within twenty-four (24) hours of such conviction.

Signature of Bidder Date

Proposer, if an individual;
Partner, if a partnership;
Officer, if a corporation.

Subscribed and sworn before me this _____ day of _____, 2015.

Notary Public



GUAM POWER AUTHORITY

ATURIDÁT ILEKTRESEDÁT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Edward J.B. Calvo
Governor

Telephone Nos. (671) 648-3054/55 Fax: 648-3165

Raymond S. Tenorio
Lieutenant Governor

Accountability · Impartiality · Competence · Openness · Value

LOCAL PROCUREMENT PREFERENCE APPLICATION

Based on the law stipulated below, please place a checkmark or an "X" on the block indicating the item that applies to your business:

5GCA, Chapter 5, Section 5008, "Policy in Favor of Local Procurement" of the Guam Procurement Law states:

All procurement of supplies and services shall be made from among businesses licensed to do business on Guam and that maintains an office or other facility on Guam, whenever a business that is willing to be a contractor is:

- () (a) A licensed bonafide manufacturing business that adds at least twenty-five percent (25%) of the value of an item, not to include administrative overhead, suing workers who are U.S. Citizens or lawfully admitted permanent residents or nationals of the United States, or persons who are lawfully admitted to the United States to work, based on their former citizenship in the Trust Territory for the Pacific Islands; or
- () (b) A business that regularly carries an inventory for regular immediate sale of at least fifty percent (50%) of the items of supplies to be procured; or
- () (c) A business that has a bonafide retail or wholesale business location that regularly carries an inventory on Guam of a value of at least one half of the value of the bid or One Hundred Fifty Thousand Dollars (\$150,000.0) whichever is less, of supplies and items of a similar nature to those being sought; or
- () *(d) A service actually in business, doing a substantial business on Guam, and hiring at least 95% U.S. Citizens, lawfully admitted permanent residents or national of the Unites States, or persons who lawfully admitted to the United States to work, based on their citizenship in any of the nations previously comprising the Trust Territory of the Pacific Islands.

- Bidders indicating qualification under (d) may be considered QUALIFIED for the Local Procurement Preference only if the Government's requirement is for service. Service is defined Pursuant to 5 GCA Government Operations Subparagraph 5030 entitled DEFINITIONS under Chapter 5 of the Guam Procurement Law.

1. I _____, representative for _____, have read the requirements of the law cited above and do hereby qualify and elect to be given the LOCAL PROCUREMENT PREFERENCE for Bid No.: GPA _____.
By filling in this information and placing my signature below, I understand that the Guam Power Authority will review this application and provide me with a determination whether or not the 15% preference will be applied to this bid.
2. I _____, representative for _____, have read the requirements of the law cited above, and do not wish to apply for the Local Procurement Preference for Bid No.: GPA _____.

Bidder Representative Signature

Date

NOTE:

Prospective Bidders not completing this form will automatically be not considered for Local Procurement Preference. Non-completion of this form is not a basis for rejection of the bid or proposal.

GOVERNMENT OF GUAM

GENERAL TERMS AND CONDITIONS

SEALED BID SOLICITATION AND AWARD

Only those Boxes checked below are applicable to this bid.

- [X] 1. **AUTHORITY:** This solicitation is issued subject to all the provision of the Guam Procurement Act (5GCA, Chapter 5) And the Guam Procurement Regulations (copies of both are available at the Office of the Complier of laws, Department of Law, copies available for inspection at the Guam Power Authority). It requires all parties involved in the Preparation, negotiation, performance, or administration of contracts to act in good faith.
- [X] 2. **GENERAL INTENTION:** Unless otherwise specified, it is the declared and acknowledged intention and meaning of these General Terms and conditions for the bidder to provide the Government of Guam (Government) with specified services or with materials, supplies or equipment completely assembled and ready for use.
- [X] 3. **TAXES:** Bidders are cautioned that they are subject to Guam Income Taxes as well as all other taxes on Guam Transactions. Specific information on taxes may be obtained from the Director of Revenue and Taxation.
- [X] 4. **LICENSING:** Bidders are cautioned that the Government will not consider for award any offer submitted by a bidder who has not complied with the Guam Licensing Law. Specific information on licenses may be obtained from the Director of Revenue and Taxation.
- [X] 5. **LOCAL PROCUREMENT PREFERENCE:** All procurement of supplies and services where possible, will be made from among businesses licensed to do business on Guam in accordance with section 5008 of the Guam Procurement Act (5GCA, Chapter 5) and Section 1-104 of the Guam Procurement Regulations.
- [X] 6. **COMPLIANCE WITH SPECIFICATIONS AND OTHER SOLICITATION REQUIREMENTS:** Bidders shall comply with all specifications and other requirements of the Solicitation.
- [] 7. **“ALL OR NONE” BIDS:** Unless otherwise allowed under this Solicitation. “all or none” bids may be deemed to be non-responsive. If the bid is so limited, the Government may reject part of such proposal and award on the remainder.
- NOTE:** By checking this item, the Government is requesting all of the bid items to be bided or none at all. **The Government will not award on an itemized basis.** Reference: Section 3-101.06 of the Guam Procurement Regulations.
- [X] 8. **INDEPENDENT PRICE DETERMINATION:** The bidder, upon signing the Invitation for Bid, certifies that the prices in his bid were derived at without collusion, and acknowledge that collusion and anti-competitive practices are prohibited by law. Violations will be subject to the provision of Section 5651 of that of the Guam Procurement Act. Other existing civil, criminal or administrative remedies are not impaired and may be in addition to the remedies in Section 5651 of the Government code.
- [X] 9. **BIDDER’S PRICE:** The Government will consider not more than two (2) (Basic and Alternate) item prices and the bidder shall explain fully each price if supplies, materials, equipment, and/or specified services offered comply with specifications and the products origin. Where basic or alternate bid meets the minimum required specification, cost and other factors will be considered. Failure to explain this requirement will result in rejection of the bid.
- [X] 10. **BID ENVELOPE:** Envelope shall be sealed and marked with the bidder’s name, Bid number, time, date and place of Bid Opening.
- [X] 11. **BID GUARANTEE REQUIREMENT:** Bidder is required to submit a Bid Guarantee Bond or standby irrevocable Letter of Credit or Certified Check or Cashier’s Check in the same bid envelope to be held by the Government pending award. The Bid Guarantee Bond, Letter of Credit, Certified Check or Cashier’s Check must be issued by any local surety or banking institution licensed to do business on Guam and made payable to the Guam Power Authority in the amount of fifteen percent (15%) of his highest total bid offer. The Bid Bond must be submitted on Government Standard Form BB-1 (copy enclosed). Personal Checks will not be accepted as Bid Guarantee. If a successful Bidder (contractor) withdraws from the bid or fails to enter into contract within the prescribed time, such Bid guarantee will be forfeited to the Government of Guam. Bids will be disqualified if not accompanied by Bid Bond, Letter of Credit, Certified Check or Cashier’s check. Bidder must include in his/her bid, valid copies of a Power of Attorney from the Surety and a Certificate of Authority from the Government of Guam to show proof that the surety company named on the bond instrument is authorized by the Government of Guam and qualified to do business on Guam. For detailed information on bonding matters, contact the Department of Revenue and Taxation. Failure to submit a valid Power of Attorney and Certificate of Authority on the surety is cause for rejection of bid. (GPR Section 3-202.03.3) **Pursuant to Public Law 27-127, all competitive sealed bidding for the procurement of supplies or services exceeding \$25,000.00 a 15% Bid Security of the total bid price must accompany the bid package.**
- [X] 12. **PERFORMANCE BOND REQUIREMENT:** The Bidder may be required to furnish a Performance Bond on Government Standard Form BB-1 or standby irrevocable Letter of Credit or Certified Check or Cashier’s Check payable to the Guam Power Authority issued by any of the local Banks or Bonding Institution in the amount equal to Fifteen Percent (15%) of the contract prices as security for the faithful performance and proper fulfillment of the contract. In the event that any of the provisions of this contract are

violated by the contractor, the Chief Procurement Officer shall serve written notice upon both the contractor and the Surety of its intention to terminate the contract. Unless satisfactory arrangement or correction is made within ten (10) days of such notice the contract shall cease and terminate upon the expiration of the ten (10) days. In the event of any such termination, the Chief Procurement Officer shall immediately serve notice thereof upon the Surety. The Surety shall have the right to take over and perform the contract, provided, however, that if the Surety does not commence performance thereof within 10 days from the date of the mailing of notice of termination, the Government may take over and prosecute the same to complete the contract or force account for the account and at the expense of the contractor, and the contractor and his Surety shall be liable to the Government for any excess cost occasioned the Government thereby (GPR Section 3-202.03.4).

- [X] 13. **PERFORMANCE GUARANTEE:** Bidders who are awarded a contract under this solicitation, guarantee that goods will be delivered or required services performed within the time specified. Failure to perform the contract in a satisfactory manner may be cause for suspension or debarment from doing business with the Government and to enforce Section 23 of these General Terms and Conditions. In addition, the Government will hold the Vendor liable and will enforce the requirements as set forth in Section 41 of these General Terms and Conditions.
- [X] 14. **SURETY BONDS:** Bid and Performance Bonds coverage must be signed or countersigned in Guam by a foreign or alien surety's resident general agent. The surety must be an Insurance Company, authorized by the government of Guam and qualified to do business in Guam. Bids will be disqualified if the Surety Company does not have a valid Certificate of Authority from the Government of Guam to conduct business in Guam.
- [X] 15. **COMPETENCY OF BIDDERS:** Bids will be considered only from the such bidders who, in the opinion of the Government, can show evidence of their ability, experience, equipment, and facilities to render satisfactory service.
- [X] 16. **DETERMINATION OF RESPONSIBILITY OF BIDDERS:** The Chief Procurement Officer reserves the right for securing from bidders information to determine whether or not they are responsible and to inspect plant site, place of business; and supplies and services as necessary to determine their responsibility in accordance with Section 15 of these General Terms and Conditions (GPR Section 3-401).
- [X] 17. **STANDARD FOR DETERMINATION OF LOWEST RESPONSIBLE BIDDER:** In determining the lowest responsible offer, the Chief Procurement Officer shall be guided by the following:
- a) Price of items offered.
 - b) The ability, capacity, and skill of the Bidder to perform.
 - c) Whether the Bidder can perform promptly or within the specified time.
 - d) The quality of performance of the Bidder with regards to awards previously made to him.
 - e) The previous and existing compliance by the Bidder with laws and regulations relative to procurement.
 - f) The sufficiency of the financial resources and ability of the Bidder to perform.
 - g) The ability of the bidder to provide future maintenance and services for the subject of the award.
 - h) **The compliance with all of the conditions to the Solicitation.**
- [X] 18. **TIE BIDS:** If the bids are for the same unit price or total amount in the whole or in part, the Chief Procurement Officer will determine award based on Section 3.202.15.2, or to reject all such bids (GPR Section 3-202.15.2).
- [] 19. **BRAND NAMES:** Any reference in the Solicitation to manufacturer's Brand Names and number is due to lack of a satisfactory specification of commodity description. Such preference is intended to be descriptive, but not restrictive and for the sole purpose of indicating prospective bidders a description of the article or services that will be satisfactory. Bids on comparable items will be considered provided the bidder clearly states in his bid the exact articles he is offering and how it differs from the original specification.
- [X] 20. **DESCRIPTIVE LITERATURE:** Descriptive literature(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The literature furnished must clearly identify the item(s) in the Bid. The descriptive literature is required to establish, for the purpose of evaluation and award, details of the product(s) the bidder proposes to furnish including design, materials, components, performance characteristics, methods of manufacture, construction, assembly or other characteristics which are considered appropriate. Rejection of the Bid will be required if the descriptive literature(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the descriptive literature(s) by the time specified in the Solicitation will require rejection of the bid.
- [] 21. **SAMPLES:** Sample(s) of item(s) as specified in this solicitation must be furnished as a part of the bid and must be received at the date and time set for opening Bids. The sample(s) should represent exactly what the bidder proposes to furnish and will be used to determine if the item(s) offered complies with the specifications. Rejection of the Bid will be required if the sample(s) do not show that the product(s) offered conform(s) to the specifications and other requirements of this solicitation. Failure to furnish the sample(s) by the time specified in the Solicitation will require rejection of the Bid.
- [] 22. **LABORATORY TEST:** Successful bidder is required to accompany delivery of his goods with a Laboratory Test Report indicating that the product he is furnishing the Government meets with the specifications. This report is on the bidder's account and must be from a certified Testing Association.
- [X] 23. **AWARD, CANCELLATION, & REJECTION:** Award shall be made to the lowest responsible and responsive bidder, whose bid is determined to be the most advantageous to the Government, taking into consideration the evaluation factors set forth in this solicitation. No other factors or criteria shall be used in the evaluation. The right is reserved as the interest of the Government may require to waive any minor irregularity in bid received. The Chief Procurement Officer shall have the authority to award, cancel, or reject bids, in whole or in part for any one or more items if he determines it is in the public interest. Award issued to the lowest responsible bidder within the specified time for acceptance as indicated in the solicitation, results in a bidding contract without further action by either party. In case of an error in the extension of prices, unit price will govern. It is the policy of the Government to award contracts to qualified local bidders. The government reserves the right to increase or decrease the quantity of the items for award and make additional awards for the same type items and the vendor

agrees to such modifications and additional awards based on the bid prices for a period of thirty (30) days after original award. No. award shall be made under this solicitation which shall require advance payment or irrevocable letter of credit from the government (GPR Section 3-202.14.1).

- [X] 24. **MARKING:** Each outside container shall be marked with the Purchase Order number, item number, brief tem description and quantity. Letter marking shall not be less than 3/4" in height.
- [X] 25. **SCHEDULE FOR DELIVERY:** Successful bidder shall notify the Guam Power Authority Dededo Warehouse at (671) 653-2073 and/or Guam Power Authority Cabras Warehouse at (671) 475-3319, at least twenty-four (24) hours before delivery of any item under this solicitation.
- [X] 26. **BILL OF SALE:** Successful supplier shall render Bill of Sale for each item delivered under this contract. Failure to comply with this requirement will result in rejection of delivery. The Bill of Sale must accompany the items delivered but will not be considered as an invoice for payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.
- [X] 27. **MANUFACTURER'S CERTIFICATE:** Successful bidder is required, upon delivery of any item under this contract, to furnish a certificate from the manufacturer indication that the goods meet the specifications. Failure to comply with this request will result in rejection of delivery payment. Supplier shall bill the Government in accordance with billing instructions as indicated on the Purchase Order.
- [X] 28. **INSPECTION:** All supplies, materials, equipment, or services delivered under this contract shall be subject to the inspection and/or test conducted by the Government at destination. If in any case the supplies, materials, equipment, or services are found to be defective in material, workmanship, performance, or otherwise do not conform with the specifications, the Government shall have the right to reject the items or require that they be corrected. The number of days required for correction will be determined by the Government.
- [] 29. **MOTOR VEHICLE SAFETY REQUIREMENTS:** The Government will only consider Bids on motor vehicles which comply with the requirements of the National Traffic and Motor Vehicle safety Act of 1966 (Public Law 89-563) and Clean Air Act as amended (Public Law 88-206), that are applicable to Guam. Bidders shall state if the equipment offered comply with these aforementioned Federal Laws.
- [] 30. **SAFETY INSPECTION:** All motor vehicles delivered under this contract must pass the Government of Guam Vehicle Inspection before delivery at destination.
- [X] 31. **GUARANTEE:**
- a) **Guarantee of Vehicle Type of Equipment:**
The successful bidder shall guarantee vehicular type of equipment offered against defective parts, workmanship, and performance, for a period of not less than one (1) year after date of receipt of equipment. Bidder shall also provide service to the equipment for at least one (1) year. Service to be provided shall include, but will not be limited to tune ups (change of spark plugs, contact points and condensers) and lubrication (change of engine and transmission oil). All parts and labor shall be at the expense of the bidder. All parts found defective and not caused by misuse, negligence or accident within the guarantee period shall be repaired, replaced, or adjusted within six (6) working days after notice from the Government and without cost to the Government. Vehicular type of equipment as used in this context shall include equipment used for transportation as differentiated from tractors, backhoes, etc.
- b) **Guarantee of Other Type of Equipment:**
The successful bidder shall guarantee all other types of equipment offered, except those mentioned in 31a, above, against defective parts, workmanship, and performance for a period of not less than three (3) months after date of receipt of equipment. Bidder shall also provide service to the equipment for at least three (3) months. All parts found defective within that period shall be repaired or replaced by the Contractor without cost to the Government. Repairs, adjustments or replacements of defective parts shall be completed by the contractor within six (6) working days after notice from the Government.
- c) **Compliance with this Section is a condition of this Bid.**
- [X] 32. **REPRESENTATION REGARDING ETHICS IN PUBLIC PROCUREMENT:** The bidder or contractor represents that it has not knowingly influenced and promises that it will not knowingly influence a Government employee to breach any of the ethical standards and represents that it has not violated, is not violating, and promises that it will not violate the prohibition against gratuities and kickbacks set forth on Chapter 11 (Ethics in Public Contracting) of the Guam Procurement Act and in Chapter 11 of the Guam Procurement Regulations.
- [X] 33. **REPRESENTATION REGARDING CONTINGENT FEES:** The contractor represents that it has not retained a person to solicit or secure a Government contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business (GPR Section 11-207).
- [X] 34. **EQUAL EMPLOYMENT OPPORTUNITY:** Contractors shall not discriminate against any employee or applicant of employment because of race, color, religion, se, or national origin. The contractor will take affirmative action to ensure that employees are treated equally during employment without regards to their race, color, religion, sex, or national origin.
- [X] 35. **COMPLIANCE WITH LAWS:** Bidders awarded a contract under this Solicitation shall comply with the applicable standard, provisions, and stipulations of all pertinent Federal and/or local laws, rules, and regulations relative to the performance of this contract and the furnishing of goods.
- [] 36. **CHANGE ORDER:** Any order issued relative to awards made under this solicitation will be subject to and in accordance with the provisions of Section 6-101-03.1 of the Guam Procurement Regulations.
- [] 37. **STOP WORK ORDER:** Any stop work order issued relative to awards made under this solicitation

will be subject to and in accordance with the provisions of Section 6-101-04.1 of the Guam Procurement Regulations.

- [] 38. **TERMINATION FOR CONVENIENCE:** Any termination order for the convenience of the Government issued relative towards made under this solicitation will be subject to and in accordance with the provisions of Section 6-101.10 of the Government Procurement Regulations.

- [X] 39. **TIME FOR COMPLETION:** It is hereby understood and mutually agreed by and between the contractor and the Government that the time for delivery to final destination or the timely performance of certain services is an essential condition of this contract. If the contractor refuses or fails to perform any of the provisions of this contract within the time specified in the Purchase Order (from the date Purchase Order is acknowledged by vendor), then the contractor is in default. Defaults will be treated subject to and in accordance with the provisions of Section 6-101-08 of the Guam Procurement Regulations.

- [X] 40. **JUSTIFICATION OF DELAY:** Bidders who are awarded contracts under this Solicitation, guarantee that the goods will be delivered to their destination or required services rendered within the time specified. If the bidder is not able to meet the specified delivery date, he is required to notify the Chief Procurement Officer of such delay. Notification shall be in writing and shall be received by the Chief Procurement Officer at least twenty-four (24) hours before the specified delivery date. Notification of delay shall include an explanation of the causes and reasons for the delay including statement(s) from supplier or shipping company causing the delay. The Government reserves the right to reject delay justification if, in the opinion of the Chief Procurement Officer, such justification is not adequate.

- [X] 41. **LIQUIDATED DAMAGES:** When the contractor is given notice of delay or nonperformance as specified in Paragraph 1 (Default) of the Termination for Default Clause of this contract and fails to cure in the time specified, the contractor shall be liable for damages for delay in the amount of one-fourth of one percent (1%) of outstanding order per calendar day from date set for cure until either the territory reasonable obtains similar supplies or services if the contractor is terminated for default, or until the contractor provides the supplies or services if the contractor is not terminated for default. To the extent that the contractor's delay or nonperformance is excused under Paragraph 40 (Excuse for Nonperformance or Delayed Performance) of the Termination for Default Clause of this contract, liquidated damages shall not be due the territory. The contractor remains liable for damages caused other than by delay (GPR Section 6-101-09.1).

- [X] 42. **PHYSICAL LIABILITY:** If it becomes necessary for the Vendor, either as principal, agent or employee, to enter upon the premises or property of the Government of Guam in order to construct, erect, inspect, make delivery or remove property hereunder, the Vendor hereby covenants and agrees to take, use, provide and make all proper, necessary and sufficient precautions, safeguards and protections against the occurrence of any accidents, injuries or damages to any person or property during the progress of the work herein covered, and to be responsible for, and to indemnify and save harmless the Government of Guam from the payment of all sums of money by reason of all or any such accidents, injuries or damages that may occur upon or about such work, and fines, penalties and loss incurred for or by reasons of the violations of any territorial ordinance, regulations, or the laws of Guam or the United States, while the work is in progress. Contractor will carry insurance to indemnify the Government of Guam against any claim for loss, damage or injury to property or persons arising out of the performance of the Contractor or his employees and agents of the services covered by the contract and the use, misuse or failure of any equipment used by the contractor or his employees or agents, and shall provide certificates of such insurance to the Government of Guam when required.

- [X] 43. **CONTACT FOR CONTRACT ADMINISTRATION:** If your firm receives a contract as a result of this Solicitation, please designate a person whom we may contact for prompt administration.

Name: _____ Title: _____

Address: _____ Telephone: _____

GOVERNMENT OF GUAM

SEALED BID SOLICITATION INSTRUCTIONS

1. **BID FORMS:** Each bidder shall be provided with two (2) sets of Solicitation forms. Additional copies may be provided upon request. Bidders requesting additional copies of said forms will be charged per page in accordance with Section 6114 of the Government Code of Guam. All payments for this purpose shall be by cash, certified check or money order and shall be made payable to the Guam Power Authority.

2. **PREPARATIONS OF BIDS:**
 - a) Bidders are required to examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at bidder's risk.
 - b) Each bidder shall furnish the information required by the Solicitation. The bidder shall sign the solicitation and print or type his name on the Schedule. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent are to be accompanied by evidence of this authority unless such evidence has been previously furnished to the issuing office.
 - c) Unit price for each unit offered shall be shown and such price shall include packing unless otherwise specified. A total shall be entered in the amount column of the Schedule for each item offered. In case of discrepancies between a unit price and extended price, the unit price will be presumed to be correct.
 - d) Bids for supplies or services other than those specified will not be considered. Time, if stated as a number of days, means calendar days and will include Saturdays, Sundays, and holidays beginning the day after the issuance of a Notice to Proceed. Time stated ending on a Saturday, Sunday or Government of Guam legal holiday will end at the close of the next business day.

3. **EXPLANATION TO BIDDERS:** Any explanation desired by a bidder regarding the meaning or interpretation of the Solicitation, drawings, specifications, etc., must be submitted in writing and with sufficient time allowed for a written reply to reach all bidders before the submission of their bids. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective bidder concerning a Solicitation will be furnished to all prospective bidders in writing as an amendment to the Solicitation if such information would be prejudicial to uninformed bidders.

4. **ACKNOWLEDGEMENT OF AMENDMENTS TO SOLICITATIONS:** Receipt of an amendment to a Solicitation by a bidder must be acknowledged by signing an acknowledgement of receipt of the amendment. Such acknowledgement must be received prior to the hour and date specified for receipt of bids.

5. **SUBMISSION OF BIDS:**
 - a) Bids and modifications thereof shall be enclosed in sealed envelopes and addressed to the office specified in the Solicitation. The bidder shall show the hour and date specified in the Solicitation for receipt, the Solicitation number, and the name and address of the bidder on the face of the envelope.
 - b) Telegraphic bids will not be considered unless authorized by the Solicitation. However, bids may be modified or withdrawn by written or telegraphic notice, provided such notice is received prior to the hour and date specified for receipt (see paragraph 6 of these instructions).
 - c) Samples of items, when required, must be submitted within the time specified, unless otherwise specified by the Government, at no expense to the Government. If not destroyed by testing, samples will be returned at bidder's request and expense, unless otherwise specified by the Solicitation.
 - d) Samples or descriptive literature should not be submitted unless it is required on this solicitation. Regardless of any attempt by a bidder to condition the bid, unsolicited samples or descriptive literature will not be examined or tested at the bidder's risk, and will not be deemed to vary any of the provisions of this Solicitation.

6. **FAILURE TO SUBMIT BID:** If no bid is to be submitted, do not return the solicitation unless otherwise specified. A letter or postcard shall be sent to the issuing office advising whether future Solicitations for the type of supplies or services covered by this Solicitation are desired.

7. **LATE BID, LATE WITHDRAWALS, AND LATE MODIFICATIONS:**
 - a) Definition: Any bid received after the time and date set for receipt of bids is late. Any withdrawal or modification of a bid received after the time and date set for opening of bids at the place designated for opening is late (Guam Procurement Regulations Section 3-202)
 - b) Treatment: No late bid, late modification, or late withdrawal will be considered unless received before contract award, and the bid, modification, or withdrawal would have been timely but for the action or inaction of territorial personnel directly serving the procurement activity.

8. **DISCOUNTS:**
 - a) Notwithstanding the fact that prompt payment discounts may be offered, such offer will not be considered in evaluating bids for award unless otherwise specified in the Solicitation. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.

b) In connection with any discount offered, time will be computed from date of delivery and acceptance of the supplies to the destination as indicated in the purchase order or contract. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the Government check.

9. **GOVERNMENT FURNISHED PROPERTY:** No material, labor or facilities will be furnished by the Government unless otherwise provided for in the Solicitation.
10. **SELLERS' INVOICES:** Invoices shall be prepared and submitted in quadruplicate (one copy shall be marked "original") unless otherwise specified. Invoices shall be "certified true and correct" and shall contain the following information: Contract and order number (if any), item numbers, description of supplies or services, sizes, quantities, unit prices, and extended total. Bill of lading number and weight of shipment will be shown for shipments made on Government bills of lading.
11. **RECEIPT, OPENING AND RECORDING OF BIDS:** Bids and modifications shall be publicly opened in the presence of one or more witnesses, at the time, date, and place designated in the Invitation for Bids. The name of each bidder, the bid price, and such other information as is deemed appropriate by the Procurement Officer, shall be read aloud and recorded, or otherwise made available. The names and addresses of required witnesses shall be recorded at the opening. The opened bids shall be available for public inspection except to the extent the bidder designates trade secrets or other proprietary data to be confidential as set forth in accordance with Section 12 below. Material so designated shall accompany the bid and shall be readily separable from the bid in order to facilitate public inspection of the non-confidential portion of the bid. Prices, makes and models or catalogue numbers of the items offered, deliveries, and terms of payment shall be publicly available at the time of bid opening regardless of any designation to the contrary (Guam Procurement Regulations Section 3-202.12.2).
12. **CONFIDENTIAL DATA:** The Procurement Officer shall examine the bids to determine the validity of any requests for nondisclosure of trade secrets and other proprietary data identified in writing. If the parties do not agree as to the disclosure of data, the Procurement Officer shall inform the bidders in writing what portions of the bid will be disclosed and that, unless the bidders protest under Chapter 9 of the Guam Procurement Act (P.L. 16-124), the bids will be so disclosed. The bids shall be opened to public inspection subject to any continuing prohibition on the disclosure of confidential data (Guam Procurement Regulations Section 3-202.12.3).
13. **MULTI-STEP SEALED BIDDING:**
- a. It is defined as two-phase process consisting of a technical first-phase composed of one or more steps in which bidders submit unpriced technical offers to be evaluated by the territory, and a second-phase in which those bidders whose technical offers are determined to be acceptable during the first-step have their priced bids considered. It is designed to obtain the benefits of competitive sealed bidding by award of a contract to the lowest responsive, responsible bidder, and at the same time obtained the benefits of the competitive sealed proposals procedure through the solicitation of technical offers and the conduct of discussions to evaluate and determine the acceptability of technical offers.
 - b. In addition to the requirements set forth in the General Terms and Conditions and the Special provisions, the following applies:
 - 1). only unpriced technical offers are requested in the first phase;
 - 2). priced bids will be considered only in the second phase and only from bidders whose unpriced technical offers are found acceptable in the first phase;
 - 3). the criteria to be used in the evaluation at those specified in the Special Provisions and the General Terms and Conditions;
 - 4). the territory, to the extent the Procurement Officer finds necessary, may conduct oral or written discussion of the unpriced technical offers;
 - 5). the bidders, may designate those portions of the unpriced technical offers which contain trade secrets or other proprietary data which are to remain confidential; and,
 - 6). the service being procured shall be furnished generally in accordance with bidder's technical offer as found to be finally acceptable and shall meet the requirements of the Invitation for Bids.
 - c. **RECEIPT AND HANDLING OF UNPRICED TECHNICAL OFFERS.**
Unpriced technical offers shall not be opened publicly, but shall be opened in front of two or more procurement officials. Such offers shall not be disclosed to unauthorized persons. Bidders may request nondisclosure of trade secrets and other proprietary data identified in writing.
 - d. **EVALUATION OF UNPRICED TECHNICAL OFFERS.**
The unpriced technical offers submitted by bidders shall be evaluated solely in accordance with the criteria set forth in the Invitation for Bids. The unpriced technical offers shall be categorized as:
 - 1). acceptable;
 - 2). potentially acceptable, that is, reasonably susceptible of being made acceptable; or
 - 3). unacceptable. The Procurement Officer shall record in writing the basis for finding an offer unacceptable and make it part of the procurement file.

The Procurement Officer may initiate Phase Two of the procedure if, in the Procurement Officer's opinion, there are sufficient acceptable unpriced technical offers to assure effective

price competition in the second phase without technical discussions. If the Procurement Officer finds such is not the case, the Procurement Officer shall issue an amendment to the Invitation for Bids or engage in technical discussions as set forth in Subsection 3-202.20.5 of this Section.

- e. Upon the completion of Phase One, the Procurement Officer shall invite each acceptable bidder to submit a price bid. Upon submission of prices, the Procurement Officer shall prepare the final evaluation and reconsideration for the Chief Procurement Officer's approval.