



REPUBLIC OF THE PHILIPPINES  
NATIONAL POWER CORPORATION  
(Pambansang Korporasyon sa Elektrisidad)

## BID DOCUMENTS

Name of Project : SUPPLY AND DELIVERY OF 40MVA,  
69KV/13.8KV, 3-PHASE, 60 HZ POWER  
TRANSFORMER FOR AGUS 6 UNIT 1 &  
2

Project Location : AGUS 6 HEPP, ILIGAN CITY,  
LANAO DEL NORTE

PR No. : MG-A7C23-014

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Design and Development Department



## SECTION I

# INVITATION TO BID





# National Power Corporation

## INVITATION TO BID

### PUBLIC BIDDING – BCS 2023-0409

- The NATIONAL POWER CORPORATION (NPC), through its approved Corporate Budget of CY 2023 intends to apply the sum of **(Please see schedule below)** being the Approved Budget for the Contract (ABC) to payments under the contract. Bids received in excess of the ABC shall be automatically rejected at Bid opening.

PR Nos./PB Ref No. & Description	Similar Contracts	Pre-bid Conference	Bid Submission / Opening	ABC/ Amt. of Bid Docs
MG-A7C23-014 / PB230912-JD00257  Supply and Delivery of 40MVA, 69kV/13.8kV, 3-Phase, 60Hz Power Transformer for Agus 6 Unit 1 & 2	Supply and Delivery of High Voltage Electrical Equipment such as Power Transformers with at least same voltage level and a rating of at least 40MVA	31 August 2023 9:30 A.M.	12 September 2023 9:30 A.M.	₱ 48,000,000.00 / ₱ 25,000.00
<b>Venue: Kañao Function Room, NPC Bldg. Diliman, Quezon City</b>				

- The NPC now invites bids for Items listed above. Delivery of the Goods is required (see table below) specified in the Technical Specifications. Bidders should have completed, within (see table below) from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II. (Instruction to Bidders).

PR No/s. / PB Ref No/s.	Delivery Period / Contract Duration	Relevant Period of SLCC reckoned from the date of submission & receipt of bids
MG-A7C23-014	Two Hundred Fifty (250) Calendar Days	Fifteen (15) Years

- Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA 5183.

- Prospective Bidders may obtain further information from National Power Corporation, Bids and Contracts Services Division and inspect the Bidding Documents at the address given below during office hours (8:00AM to 5:00PM), Monday to Friday.
- A complete set of Bidding Documents may be acquired by interested Bidders from the given address and website(s) and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB. Bidding fee may be refunded in accordance with the guidelines based on the grounds provided under Section 41 of R.A. 9184 and its Revised IRR.
- The National Power Corporation will hold Pre-Bid Conference (see table above) and/or through video conferencing or webcasting which shall be open to prospective bidders.

Only registered bidder/s shall be allowed to participate in the conduct of virtual pre-bid conference. **Unregistered bidders** may attend the Pre-Bid Conference at the Kañao Room, NPC subject to the following:

- a. Only a maximum of two (2) representatives from each bidder / company shall be allowed to participate during the virtual pre-bid conference.
  - b. Wearing of Face Masks is recommended but not required in view of Proclamation No. 297 S.2023 lifting the State of Public Health Emergency Throughout the Philippines
  - c. The requirements herein stated including the medium of submission shall be subject to GPPB Resolution No. 09-2020 dated 07 May 2020
  - d. The Guidelines on the Implementation of Early Procurement Activities (EPA) shall be subject to GPPB Circular No. 06-2019 dated 17 July 2019
7. Bids must be duly received by the BAC Secretariat through (i) manual submission at the office address indicated below; (ii) online or electronic submission before the specified time stated in the table above for opening of bids. Late bids shall not be accepted.
  8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.
  9. Bid opening shall be on Kañao Function Room, NPC Head Office, Diliman, Quezon City and/or via online platform to be announced by NPC. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
  10. The National Power Corporation reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of R.A. No. 9184, without thereby incurring any liability to the affected bidder or bidders.
  11. For further information, please refer to:  
**Bids and Contracts Services Division,  
Logistics Department**  
BIR Road cor. Quezon Avenue  
Diliman, Quezon City  
Tel Nos.: 8924-5211 and 8921-3541 local 5564/5211  
Fax No.: 8922-1622  
Email: [bcسد@napocor.gov.ph](mailto:bcسد@napocor.gov.ph) /
  12. You may visit the following websites:

For downloading of Bidding Documents: <https://www.napocor.gov.ph/bcsd/bids.php>



**ATTY. MELCHOR P. RIDULME**  
Vice President, Office of the Legal Counsel and  
Chairman, Bids and Awards Committee

## SECTION II

# INSTRUCTIONS TO BIDDERS



## SECTION II – INSTRUCTIONS TO BIDDERS

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## SECTION II – INSTRUCTIONS TO BIDDERS

### 1. Scope of Bid

The National Power Corporation (NPC or NAPOCOR) wishes to receive Bids for the **SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV 3-PHASE, 60HZ POWER TRANSFORMER FOR AGUS 6 UNIT 1 & 2**, with identification number **PR NO. MG-A7C23-014**.

The Procurement Project (referred to herein as "Project") is composed of one (1) lot and will be awarded to one (1) Bidder in one complete contract, the details of which are described in Section VI (Technical Specifications).

### 2. Funding Information

2.1. The GOP through the source of funding as indicated below for CY 2023 in the amount of **₱ 48,000,000.00**.

2.2. The source of funding is the Corporate Operating Budget of the National Power Corporation.

### 3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or **IB** by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

### 4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

### 5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

- 5.2. Foreign ownership exceeding those allowed under the rules may participate when citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines.

The foreign bidder claiming eligibility by reason of their country's extension of reciprocal rights to Filipinos shall submit a certification from the relevant government office of their country stating that Filipinos are allowed to participate in their government procurement activities for the same item/product. The said certification shall be validated during the post-qualification of bidders.

- 5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to at least fifty percent (50%) of the ABC.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

## 6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under ITB Clause 18.

## 7. Subcontracts

- 7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than twenty percent (20%) of the Project.

The portions of Project and the maximum percentage allowed to be subcontracted are indicated in the **BDS**, which shall not exceed twenty percent (20%) of the contracted Goods.

- 7.2. The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in ITB Clause 5 to the implementing or end-user unit.
- 7.3. Subcontracting of any portion of the Project does not relieve the Supplier of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Supplier's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

## 8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting as indicated in paragraph 6 of the IB.

## 9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

## 10. Documents comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in Section VIII (NPCSF-GOODS-01 - Checklist of Technical and Financial Documents).
- 10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within Fifteen (15) Years prior to the deadline for the submission and receipt of bids.
- 10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.4. The Statement of the bidder's Single Largest Completed Contract (SLCC) (NPCSF-GOODS-03) and List of all Ongoing Government & Private Contracts Including Contracts Awarded but not yet Started (NPCSF-GOODS-02) shall comply with the documentary requirements specified in the **BDS**.

## 11. Documents comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in Section VIII (NPCSF-GOODS-01 - Checklist of Technical and Financial Documents).
- 11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.
- 11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.4. For Foreign-funded Procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

## 12. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

- a. For Goods offered from within the Procuring Entity's country:
  - i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);
  - ii. The cost of all customs duties and sales and other taxes already paid or payable;
  - iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and
  - iv. The price of other (incidental) services, if any, listed in the **BDS**.
- b. For Goods offered from abroad:
  - i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.
  - ii. The price of other (incidental) services, if any, as listed in the **BDS**.

## 13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2. Payment of the contract price shall be made in Philippine Pesos.

## 14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2. The Bid and bid security shall be valid for **One Hundred Twenty (120) calendar days** from the date of opening of bids. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

## 15. Sealing and Marking of Bids

Each Bidder shall submit Two (2) copies of the first and second components of its Bid, marked **Original** and photocopy. Only the original copy will be read and considered for the bid.

Any misplaced document outside of the **Original** copy will not be considered. The photocopy is ONLY FOR REFERENCE.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

Bidders must also comply with the Disclaimer and Data Privacy Notice specified in the BDS.

## 16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB**.

## 17. Opening and Preliminary Examination of Bids

17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

## 18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

## 19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*," using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.

- 19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by ITB Clause 14 shall be submitted for each lot or item separately.
- 19.3. The descriptions of the lots or items shall be indicated in **Section VI (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.
- 19.4. The Project shall be awarded to one (1) Bidder in one complete contract.
- 19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

## 20. Post-Qualification

- 20.1. Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS) and other appropriate licenses and permits required by law and stated in the **BDS**.

## 21. Signing of the Contract

- 21.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

## SECTION III

# BID DATA SHEET

### SECTION III - BID DATA SHEET

ITB Clause	
5.3	<p>For this purpose, similar contracts shall refer to supply and delivery of High Voltage Electrical Equipment such as Power Transformers with at least same voltage level and a rating of at least 40MVA.</p> <p>The Single Largest Completed Contract (SLCC) as declared by the bidder shall be verified and validated to ascertain such completed contract. Hence, bidders must ensure access to sites of such projects/equipment to NPC representatives for verification and validation purposes during post-qualification process.</p> <p>It shall be a ground for disqualification, if verification and validation cannot be conducted for reasons attributable to the Bidder.</p>
7.1	<p>Subcontracting may be allowed on transport, local/non-skilled labor under the supervision of the Bidder. The Bidder shall not be relieved from any liability or obligation that may arise from the performance of the Subcontractor.</p>
10.4	<p>The list of on-going contracts (Form No. NPCSF-GOODS-02) shall be supported by the following documents for each on-going contract to be submitted during <b>Post-Qualification</b>:</p> <ol style="list-style-type: none"> <li>1. Contract/Purchase Order and/or Notice of Award</li> <li>2. Certification coming from the project owner/client that the performance is satisfactory as of the bidding date</li> </ol> <p>The bidder shall declare in this form all his on-going government and private contracts including contracts where the bidder (either as individual or as a Joint Venture) is a partner in a Joint Venture agreement other than his current joint venture where he is a partner. Non declaration will be a ground for disqualification of bid.</p> <p>The Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid (Form No. NPCSF-GOODS-03) shall be supported by the following documents to be submitted during <b>Bid Opening</b>:</p> <ol style="list-style-type: none"> <li>1. Certificate of Acceptance; or Certificate of Completion; or Official Receipt (O.R); or Sales Invoice</li> </ol> <p>Any single bidder/s who already procured/secured the bidding documents but want to avail the Joint Venture Agreement (JVA) shall inform the BAC in writing prior to the bid opening for records and documentation purposes.</p>
10.5	<p>Bidders shall also submit the following requirements in their first envelope, Eligibility and Technical Component of their bid:</p> <ol style="list-style-type: none"> <li>1. Data and Information to be submitted with the Proposal as specified in Clause TS-8.0(a) of Section VI - Technical Specifications;</li> <li>2. Complete eligibility documents of the proposed sub-contractor, if any</li> </ol>

12	The price of the Goods shall be quoted DDP Project Site or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	<p>The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:</p> <ul style="list-style-type: none"> <li>a) The amount of not less two percent (2%) of ABC, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or</li> <li>b) The amount of not less than five percent (5%) of ABC, if bid security is in Surety Bond.</li> </ul>
15.0	<p>All bid submissions and related correspondences are confidential and for viewing only by the intended recipient/s. Any unauthorized access to review, reproduce, or disseminate the information contained therein is strictly prohibited. The National Power Corporation (NAPOCOR) does not guarantee the security of any information electronically transmitted.</p> <p>Bid submissions and related correspondences may contain personal and sensitive personal information, and are subject to the Data Privacy Act of 2012, its implementing rules, regulations and issuances of the National Privacy Commission of the Philippines ("Privacy Laws"). By viewing, using, storing, sharing and disposing (collectively "Processing"), such bids submissions and correspondences, you agree to comply with the Privacy Laws. By responding to correspondence, you consent to the Processing by NAPOCOR of the Personal Data contained in your submission/reply in accordance with NAPOCOR's Personal Data Privacy Policy which you can find at <a href="http://www.napocor.gov.ph">http://www.napocor.gov.ph</a>.</p> <p>To report any privacy issue, contact the Data Privacy Officer at <a href="mailto:dpo@napocor.gov.ph">dpo@napocor.gov.ph</a>.</p> <p>NAPOCOR is not liable for the proper and complete transmission of the information contained in bid submission/correspondences nor for any delay in its receipt.</p>
19.3	<p>The Goods are grouped together in one (1) lot and will be awarded to one (1) Bidder in one complete contract.</p> <p>Partial bid is not allowed. The Goods are grouped in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.</p> <p>The Bidders bid offer must be within the ABC of the lot. Bid offers that exceed the ABC of the lot or with incomplete price, shall be rejected.</p> <p>Bids shall also be further evaluated based on the computed Capitalized Cost of Transformer Losses. Its application and the formula are stated in Section VI – Part I Technical Specification, Clause TS – 6.3.8 (Transformer Loss Evaluation) and Section VI – Part II Technical Data Sheet, Item 8.0</p> <p>In the bid evaluation, the figures stated in the said Clauses shall be multiplied by its respective guaranteed loss value in kilowatts, and the resulting figures will be added to the bid price to give a total evaluated price for bid comparison.</p>

	<p>The corrected bid price (calculated bid) due to computational errors, omissions and discounts or its submitted bid price; PLUS: the computed Cost of Transformer Losses, shall become the total evaluated bid price, for bid comparison purposes.</p> <p>Based on the detailed evaluation of bids, those that comply with the above-mentioned requirements shall be ranked in the ascending order of their total evaluated bid prices, to identify the lowest evaluated bid price.</p> <p>It is understood however, that the award of contract shall be at the Bidder's submitted bid price or its calculated bid price due to computational errors, omissions and discount, whichever is lower, which shall be exclusive of computed cost of transformer losses.</p>
19.5	<p>If the Bidder opted to submit a Committed Line of Credit (CLC), the bidder must submit a granted credit line valid/effective at the date of bidding.</p>
20.1	<p>Additional documents to be submitted during Post-Qualification:</p> <ul style="list-style-type: none"> <li>a. Contract/Purchase Order and/or Notice of Award for the contracts stated in the List of all Ongoing Government &amp; Private Contracts Including Contracts Awarded but not yet Started (NPCSF-GOODS-02);</li> <li>b. Certification coming from the project owner/client that the performance is satisfactory as of the bidding date for all ongoing contracts stated in Form NPCSF-GOODS-02;</li> <li>c. Contract/Purchase Order for the contract stated in the Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid (Form No. NPCSF-GOODS-03)</li> <li>d. Documents to be submitted during post-qualification process as specified in TS-8.0(b) of Section VI-Technical Specifications</li> </ul> <p>Manufacturer's brochures, manuals and other supporting documents of equipment, materials, hardware and tools proposed by the bidders must comply with the technical specifications of such equipment, materials, hardware and tools. It shall be a ground for disqualification if the submitted brochures, manuals and other supporting documents are determined not complying with the specifications during technical evaluation and post-qualification process.</p> <p>Equipment, materials, hardware and tools proposed by the winning bidder to be supplied, which were evaluated to be complying with the technical specifications, shall not be replaced and must be the same items to be delivered/installed/used during the contract implementation. Any proposed changes/replacement of said items may be allowed on meritorious reasons subject to validation and prior approval by NPC.</p>
20.2	<p>The licenses and permits relevant to the Project and the corresponding law requiring it as specified in the Technical Specifications, if any.</p>
21.2	<p>Notice to Proceed.</p>



## SECTION IV

# GENERAL CONDITIONS OF CONTRACT



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## SECTION IV – GENERAL CONDITIONS OF CONTRACT

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## SECTION IV – GENERAL CONDITIONS OF CONTRACT

### 1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract (SCC)**.

### 2. Advance Payment and Terms of Payment

- 2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.
- 2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

### 3. Performance Security

- 3.1. Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.
- 3.2. The performance bond to be posted by the Contractor must also comply with additional requirements specified in the **SCC**.

### 4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC, Section VI (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be

conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

## **5. Warranty**

- 5.1 In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.
- 5.2 The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

## **6. Liability of the Supplier**

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

## SECTION V

# SPECIAL CONDITIONS OF CONTRACT



**SECTION V – SPECIAL CONDITIONS OF CONTRACT**

<b>GCC Clause</b>	
1	<p><b>Delivery and Documents –</b></p> <p>The delivery terms applicable to the Contract is DDP delivered to the project site specified in the technical specifications, in accordance with INCOTERMS. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination.</p> <p>Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI – Technical Specifications. The details of shipping and/or other documents to be furnished by the Supplier are as follows:</p> <p><i>For Goods supplied from within the Philippines</i></p> <p>Upon delivery of the Goods to the Project Site, the Supplier shall notify the Procuring Entity and present the following documents to the Procuring Entity:</p> <ul style="list-style-type: none"> <li>(i) Original and four copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;</li> <li>(ii) Original and four copies of Supplier's factory test/inspection report;</li> <li>(iii) Original and four copies of the certificate of origin (for imported Goods);</li> <li>(iv) Delivery receipt detailing number and description of items received signed by the Procuring Entity's representative at the Project Site;</li> <li>(v) Certificate of Completion/Inspection Report signed by the Procuring Entity's representative at the Project Site;</li> <li>(vi) Original and four copies of the Inspection Receiving Report signed by the Procuring Entity's representative at the Project Site;</li> <li>(vii) Original and four copies of the Manufacturer's and/or Supplier's warranty certificate; and</li> <li>(viii) Documents specified in the Technical Specifications, if any.</li> </ul> <p><i>For Goods supplied from abroad:</i></p> <p>Upon shipment, the Supplier shall notify the Procuring Entity and the insurance company by e-mail the full details of the shipment, including Contract Number, description of the Goods, quantity, vessel, bill of lading number and date, port of loading, date of shipment, port of discharge etc. Upon delivery to the Project Site, the Supplier shall notify the Procuring Entity and present the following documents as applicable with the documentary requirements of any letter of credit issued taking precedence:</p>

- (i) Original and four copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) Original and four copies of the negotiable, clean shipped on board bill of lading marked "freight pre-paid" and five copies of the non-negotiable bill of lading ;
- (iii) Original and four copies of Supplier's factory test/inspection report;
- (iv) Delivery receipt detailing number and description of items received signed by the Procuring Entity's representative at the Project Site;
- (v) Certificate of Completion/Inspection Report signed by the Procuring Entity's representative at the Project Site;
- (vi) Original and four copies of the Inspection Receiving Report signed by the Procuring Entity's representative at the Project Site;
- (vii) Original and four copies of the certificate of origin (for imported Goods); and
- (viii) Original and four copies of the Manufacturer's and/or Supplier's warranty certificate including all other documents specified in the Technical Specifications, if any.

For purposes of this Clause the Procuring Entity's Representative at the Project Site is VP - Mindanao Generations.

**Incidental Services –**

The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VII - Schedule of Requirements:

- a. performance or supervision of on-site assembly and/or start-up of the supplied Goods;
- b. furnishing of tools required for assembly and/or maintenance of the supplied Goods;
- c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
- d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

- f. Additional requirements specified in Section VI – Technical Specifications, if any.

The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

**Spare Parts –**

The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

1. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and
2. in the event of termination of production of the spare parts:
  - i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and
  - ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested

The spare parts and other components required are listed in **Section VI (Technical Specifications)** and **Section VII (Schedule of Requirements/Bid Price Schedule)** and the costs thereof are included in the contract price.

The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for the period specified in the Technical Specifications.

Spare parts or components shall be supplied as promptly as possible, but in any case, within three (3) months of placing the order.

**Packaging –**

The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity.

	<p>The outer packaging must be clearly marked on at least four (4) sides as follows:</p> <p>Name of the Procuring Entity Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications</p> <p>A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.</p> <p><b>Transportation –</b></p> <p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.</p> <p>Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.</p> <p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure.</p> <p>The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.</p> <p><b>Intellectual Property Rights –</b></p> <p>The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.</p>
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2.2	<p>Advance payment not to exceed fifteen percent (15%) of the contract amount shall be allowed and paid within sixty (60) calendar days from effectivity of the contract and upon the submission to and acceptance by the Procuring Entity of an irrevocable letter of credit or bank guarantee issued by a Universal or Commercial Bank. The irrevocable letter of credit or bank guarantee must be for an equivalent amount, shall remain valid until the goods are delivered, and accompanied by a claim for advance payment.</p> <p>All progress payments shall first be charged against the advance payment until the latter has been fully exhausted.</p> <p>The terms of payment shall be as follows:</p> <p><b>1) For Supply and Delivery Contracts:</b></p> <p>(a) On Contract Effectivity: Advance payment of Fifteen percent (15%) of the total Contract Price shall be paid within sixty (60) days from effectivity of the Contract and upon submission of a claim and an irrevocable letter of credit or bank guarantee issued by a Universal or Commercial Bank for the equivalent amount valid until the Goods are delivered and in the form provided in Section VIII- Bidding Forms.</p> <p>(b) On Delivery: Eighty percent (80%) of the Contract Price of the <b>delivered Goods</b> shall be considered for payment, less the total amount of advance payment, if any and other deductions. If the amount is sufficient to fully recoup the advance payment, the remainder after deductions shall be paid to the Supplier within sixty (60) days after the date of receipt of the Goods and upon submission of the documents (i) through (vi) specified in the <u>SCC</u> provision on Delivery and Documents. Otherwise, the total delivery payment shall be charged against the advance payment and the remaining advance payment will be fully recouped from the succeeding claims.</p> <p>(c) On Acceptance: The remaining twenty percent (20%) of the Contract Price of the <b>delivered Goods</b> shall be paid to the Supplier within sixty (60) days after the date of submission of the acceptance and inspection certificate for the respective delivery issued by the Procuring Entity's authorized representative. In the event that no acceptance certificate is issued by the Procuring Entity's authorized representative within forty five (45) days after successful test and commissioning, if required, the Supplier shall have the right to claim payment of the remaining twenty percent (20%) subject to the Procuring Entity's own verification of the reason(s) for the failure to issue documents (vii) and (viii) as described in the <u>SCC</u> provision on Delivery and Documents.</p> <p><b>2) For Supply, Delivery, Installation, Test and Commissioning Contracts:</b></p> <p>(a) On Contract Effectivity: Advance payment of Fifteen percent (15%) of the total Contract Price shall be paid within sixty (60) days from effectivity of the Contract and upon submission of a claim and an irrevocable letter of credit or bank guarantee issued by a Universal or</p>
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	<p>Commercial Bank for the equivalent amount valid until the Goods are delivered and in the form provided in Section VIII- Bidding Forms.</p> <p>(b) On Delivery: Eighty percent (80%) of the price of the <b>delivered Goods</b>, excluding price for installation, test and commissioning shall be considered for payment, less the total amount of advance payment, if any and other deductions. If the amount is sufficient to fully recoup the advance payment, the remainder after deductions shall be paid to the Supplier within sixty (60) days after the date of receipt of the Goods and upon submission of the documents (i) through (vi) specified in the <u>SCC</u> provision on Delivery and Documents. Otherwise, the total delivery payment shall be charged against the advance payment and the remaining advance payment will be fully recouped from the succeeding claims.</p> <p>(c) On Acceptance: The remaining twenty percent (20%) of the price of the <b>delivered Goods</b> plus price for installation, test and commissioning shall be paid to the Supplier within sixty (60) days after the date of submission of the acceptance and inspection certificate for the respective delivery issued by the Procuring Entity's authorized representative. In the event that no acceptance certificate is issued by the Procuring Entity's authorized representative within forty five (45) days after successful test and commissioning, the Supplier shall have the right to claim payment subject to the Procuring Entity's own verification of the reason(s) for the failure to issue documents (vii) and (viii) as described in the <u>SCC</u> provision on Delivery and Documents.</p> <p><b>3) For Supply, Delivery, Installation, Test and Commissioning Contracts where Installation, Test and Commissioning prices are included in the supply price:</b></p> <p>(a) On Contract Effectivity: Advance payment of Fifteen percent (15%) of the total Contract Price shall be paid within sixty (60) days from effectivity of the Contract and upon submission of a claim and an irrevocable letter of credit or bank guarantee issued by a Universal or Commercial Bank for the equivalent amount valid until the Goods are delivered and in the form provided in Section VIII- Bidding Forms.</p> <p>(b) On Delivery: Sixty percent (60%) of the price of the <b>delivered Goods</b> shall be considered for payment, less the total amount of advance payment, if any and other deductions. If the amount is sufficient to fully recoup the advance payment, the remainder after deductions shall be paid to the Supplier within sixty (60) days after the date of receipt of the Goods and upon submission of the documents (i) through (vi) specified in the <u>SCC</u> provision on Delivery and Documents. Otherwise, the total delivery payment shall be charged against the advance payment and the remaining advance payment will be fully recouped from the succeeding claims.</p> <p>(c) On Acceptance: The remaining forty percent (40%) of the price of the <b>delivered Goods</b> shall be paid to the Supplier within sixty (60) days after the date of submission of the acceptance and inspection certificate for the respective delivery issued by the Procuring Entity's</p>
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	<p>authorized representative. In the event that no acceptance certificate is issued by the Procuring Entity's authorized representative within forty five (45) days after successful test and commissioning, the Supplier shall have the right to claim payment subject to the Procuring Entity's own verification of the reason(s) for the failure to issue documents (vii) and (viii) as described in the <u>SCC</u> provision on Delivery and Documents</p>
<p>3.2</p>	<ol style="list-style-type: none"> <li>1. The following must be indicated in the performance bond to be posted by the Contractor:             <ol style="list-style-type: none"> <li>i. Company Name</li> <li>ii. Correct amount of the Bond</li> <li>iii. Contract/Purchase Order Reference Number</li> <li>iv. Purpose of the Bond:                 <p>"To guarantee the faithful performance of the Principal's obligation to undertake <u>(Contract/Purchase Order Description)</u> in accordance with the terms and conditions of <u>(Contract No. &amp; Schedule/Purchase Order No.)</u> entered into by the parties."</p> </li> </ol> </li> <li>2. The bond shall remain valid and effective until the duration of the contract <u>(should be specific date reckoned from the contract effectivity)</u> plus sixty (60) days after NPC's acceptance of the last delivery/final acceptance of the project.</li> <li>3. In case of surety bond, any extension of the contract duration or delivery period granted to the CONTRACTOR shall be considered as given, and any modification of the contract shall be considered as authorized, as if with the expressed consent of the surety, provided that such extension or modifications falls within the effective period of the said surety bond. However, in the event that the extension of the contract duration or delivery schedule would be beyond the effective period of the surety bond first posted, it shall be the sole obligation of the CONTRACTOR to post an acceptable Performance Security within ten (10) calendar days after the contract duration/delivery period extension has been granted by NPC.</li> <li>4. Other required conditions in addition to the standard policy terms issued by the Bonding Company:             <ol style="list-style-type: none"> <li>i. The bond is a penal bond, callable on demand and the entire amount thereof shall be forfeited in favor of the Obligee upon default of the Principal without the need to prove or to show grounds or reasons for demand for the sum specified therein;</li> <li>ii. The amount claimed by the Obligee under this bond shall be paid in full and shall never be subject to any adjustment by the Surety;</li> <li>iii. In case of claim, the Surety shall pay such claim within sixty (60) days from receipt by the Surety of the Obligee's notice of claim/demand letter notwithstanding any objection thereto by the Principal.</li> </ol> </li> </ol>



4	The inspections and tests that will be conducted are specified in the Technical Specifications.
6	Aside from the Liquidated Damages, the NPC shall also impose a penalty in case the Contractor fails to meet the transformer guarantees.  The penalty to be imposed to the Supplier shall be in accordance with Clause TS-6.10 of Section VI - Part I, Technical Specifications.



## SECTION VI

# TECHNICAL SPECIFICATIONS



SECTION VI

PART I

**TECHNICAL  
SPECIFICATIONS**



**PART I - TECHNICAL SPECIFICATIONS**

**SECTION EW - ELECTRICAL WORKS**

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## Section VI – Technical Specifications

### PART I – TECHNICAL SPECIFICATIONS

#### TS-1.0 GENERAL

This specification covers the technical requirements for the **SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV, 3-PHASE, 60 HZ POWER TRANSFORMER FOR AGUS 6 UNIT 1 & 2.**

All supplied instruments and accessories shall be new and unused. They shall be suitable for the intended purpose and shall comply with all applicable regulations, quality, and dimension standards.

The Supplier shall accept full responsibility for his work including documentation, preparation for shipment, inspection, warranty provisions, and compliance with the applicable codes and standards and the requirements of this Specification.

#### TS-2.0 SCOPE OF WORK

The scope of works shall cover but not be limited to the following:

1. Supply of complete manual, single line diagrams, and as-built drawings including inventory lists of parts and components of the Power transformer.
2. Supply and Delivery of the new 40MVA, 69kV/13.8kV, 3-Phase, 60Hz Power Transformer including its auxiliaries and all necessary protection devices/relays.
3. Supply and Delivery of Transformer Oil contained in accordance with the Spill Prevention, Control, and Countermeasures standard.
4. Conduct of Factory Acceptance Test.

The following shall be included in the Supplier's scope of work:

1. The Supplier shall be responsible for visiting the delivery site and take particular reference to its accessibility, means of transportation, and all other factors that should be considered in carrying out the contract.
2. Provide equipment, tools, instruments, and consumables necessary during equipment testing for satisfactory completion of the work; and
3. Submission of pertinent documents as per TS-8.0 Drawings and Documentation to be Submitted.



**TS-3.0 DELIVERY PERIOD AND LOCATION**

The delivery period shall be **TWO HUNDRED FIFTY (250) CALENDAR DAYS** from receipt of NTP.

The materials to be supplied shall be delivered to **Agus 6/7 HPPC, Maria Cristina, Fuentes, Iligan City, Lanao Del Norte.**

**TS-4.0 CODES AND STANDARD**

This specification aims to incorporate the Organization for Economic Co-operation and Development (OECD) requirements into the project, ensuring compliance with OECD guidelines and principles.

The manufacturer responsible for supplying major equipment for the project shall be a member of the Organization for Economic Co-operation and Development (OECD). This requirement ensures that the manufacturer aligns with international standards and practices promoted by the OECD, signifying their commitment to adhere to OECD guidelines and principles.

The equipment furnished shall be by, but not limited to, the latest issues of the following codes and standards, including all addenda, in effect at the time of purchase order unless otherwise stated in this specification:

1. American National Standards Institute	ANSI
2. Institute of Electrical and Electronic Engineers	IEEE
3. American Society for Testing and Materials	ASTM
4. National Electrical Manufacturer's Association	NEMA
5. Underwriters Laboratory	UL
6. International Electro-Technical Commission	IEC
7. International Organization for Standardization	ISO
8. National Electrical Code	NEC
9. National Electrical Safety Code	NESC
10. Philippine Electrical Code	PEC
11. Illuminating Engineering Society	IES
12. Philippine National Standards	PNS

The latest edition of each standard shall mean the latest edition available at the date of contract signing.

In addition to the above codes and standards mentioned, the Supplier shall comply with all National and local laws, codes, regulations, statutes, and ordinances.

Equipment or materials meeting other internationally accepted standards, which ensure an equal or higher quality than the standards mentioned, will also be accepted.

In the event of any apparent conflict among standards, codes, or this specification, the Supplier shall refer the conflict to NPC for written resolution before the start of fabrication. The final decision regarding the acceptance of proposed standards is the prerogative of NPC.



Standards listed in the equipment specification are used mainly for NPC's references. Other internationally known standards, however, shall also apply, provided such standards are equivalent in all respect to the standard prescribed and to the specific requirements described in the individual equipment specification. The Supplier shall submit copies of such standards for NPC's review and approval.

#### **TS-5.0 WORKMANSHIP**

Workmanship shall be of first-class quality and by the best modern engineering practice for the manufacture, assembly, and test of equipment. All works shall be done by personnel skilled in the related professions and trades. All parts shall be made accurately to standard gauges to facilitate replacement and repairs. All special gauges and templates necessary for filed erection shall become the property of NPC.

The parts or components shall be designed and arranged so that they can be easily inspected, cleaned, erected, and dismantled without involving large-scale dismantling. They shall be designed and manufactured by the latest recognized rules of workmanship and modern engineering practice.

The Supplier shall be responsible for all the damages that occurred during the implementation of the project. Any equipment (existing and/or new) and facilities that will be damaged shall be replaced and/or repaired by the Supplier at no additional cost to NPC.

#### **TS-6.0 TECHNICAL REQUIREMENTS**

##### **TS-6.1 General**

This specification covers the technical and associated requirements for the Power Transformer and accessories for use in the electric generating station. The requirements of the project are indicated in the Technical Data Sheets for Power Transformer and the equipment details are in the same section and volume of the Specification.

It is not NPC's intent to specify all technical requirements nor to set forth those requirements adequately covered by applicable codes and standards. The Supplier shall furnish a high-quality Power Transformer meeting the requirements of the specification and industry standards.

##### **TS-6.2 Standard**

The equipment furnished shall be by, but not limited to, the latest issues of the following codes and standards, including all addenda, in effect at the time of purchase order unless otherwise stated in this specification:

ANSI/IEEE	American National Standards Institute and/or Institute of Electrical & Electronic Engineers
C57.12.00	General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers



- C57.19.00 Standard General Requirements and Test Procedure for Outdoor Power Apparatus Bushings
- C57.12.70 Terminal Markings and Connections for Distribution and Power Transformers
- C57.12.90 Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformer
- C57.91 Guide for Loading Mineral Transformers
- C57.98 Guide for Transformer Impulse Tests
- C57.106 Guide for Acceptance and Maintenance of Insulating Oil in Equipment
- C57.109 Guide for Transformer Through-Fault-Current Duration
- IEEE Std.80 Guide for Safety in AC Substation Grounding
- IEEE Std. 979 Guide for Substation Fire Protection
- IEEE Std. 980 Guide for Containment and Control of Oil Spills in Substations

- ASTM American Society for Testing and Materials**
- A344 Electrical and Mechanical Properties of Magnetic Materials
  - A153 Zinc coating (hot-dip) on iron and steel hardware
  - B432 Copper and Copper Alloy Clad Steel Plate

- NEMA National Electrical Manufacturers Association**
- 107 Methods of Measurement of Radio Influence Voltage of High-Voltage Apparatus

- SSPC Steel Structure Painting Council**
- SP1 Solvent Cleaning
  - SP3 Power Tool Cleaning
  - PA1 Shop, Filed and Maintenance Painting
  - PA2 Measurement of Dry Paint Thickness with Magnetic Gages

- UL Underwriters Laboratories, Inc. (all parts apply)**
- 44 Rubber-Insulated Wires and Cables

- IEC International Electro-Technical Commission**
- 60071 Insulation Coordination
  - 60076 Power Transformers, Parts 1-5
  - 60137 Bushings for Alternating Voltages above 1000V
  - 60270 Partial Discharge Measurements
  - 60354 Loading Guide for Oil-immersed Power Transformers
  - 60551 Determination of Transformer and Reactor Sound Levels
  - 60599 Interpretation of the analysis of gases in transformers and other oil-filled electrical equipment in service
  - 60606 Application guide for Power Transformers
  - 60616 Terminals and tapping markings for power transformers
  - 60722 Guide to the lightning and switching impulse testing of power transformers and reactors

- NFPA National Fire Protection Association**

- ISO International Standards Organization**
- 9001 Quality System Model for Quality Assurance in Design/Development, Manufacture, and Testing



9002                    **Quality System Model for Quality Assurance in Production,  
Installation & Servicing**

These codes and standards set forth the minimum requirements which may be exceeded by the Supplier, if, in the Supplier's judgment and with NPC's acceptance, superior or more economical designs or materials are available for successful and continuous operation of the Supplier's equipment as required by this specification.

**TS-6.3                    Design Requirements**

**TS-6.3.1                Ratings**

The transformer rating specified in the Technical Data Sheets shall be the basis of the Supplier's guarantee as to performance and temperature rise. The ratings indicated are based on actual load requirements at the service and operating conditions specified herein.

**TS-6.3.2                Operation Above Rated Voltage and/or Below Rated Frequency**

The transformer shall be capable of continuous service without damage under conditions of over-fluxing as described in IEC 60076-1 or equivalent ANSI/IEEE C57.12-2015 Standard.

**TS-6.3.3                Frequency**

The frequency for operation shall be 60 Hertz.

**TS-6.3.4                Overload Requirement**

The overload rating and operation shall be by all cyclic loading duties as specified in IEC 60354. The overload capability of any auxiliary equipment such as bushings, LTCs, CTs, oil expansion tanks, leads, etc. shall not be less than the transformer overload rating. If other considerations will limit the overload capability of the transformer, the Supplier shall specify these limitations in his proposal.

**TS-6.3.5                Short Circuit Capability**

The transformer, including its accessories such as, but not limited to, bushings, current transformers, tap changers, etc., shall be designed to withstand without damage the combined thermal and dynamic effects of external short circuits under the conditions specified in IEC 60076 or equivalent ANSI/IEEE C57.12.00 Standard.

The thermal and mechanical capability of the transformer and its accessories shall meet or exceed the requirements listed in IEC 60076 or ANSI C57.12.00.

The system impedance shall be obtained from the system fault capacity as specified in the Technical Data Sheets. The duration of the short circuit is limited to 2 seconds.



The transformer shall be designed so that the maximum permissible average temperature of the winding reached at the end of the specified short circuit shall not exceed 250°C for copper conductors. Such condition shall not in any way cause any annealing of the conductor, without causing insulation damage and gas generation from oil or solid insulation. It shall be assumed that before and after the short circuit, the transformer is loaded at its maximum nameplate rating and the ambient temperature is the specified maximum.

The sudden pressure relay and other alarm-initiating devices shall respond to the effects of the fault short circuit current.

#### **TS-6.3.6 Impedance**

The impedance between winding will generally vary with changes in transformer turns ratio. Limitations on this change of impedance shall apply to all fully-rated taps on all main power windings, but not to auto-transformers. These limitations are, in part, defined in terms of the tested impedance on the fully-rated tap nearest the middle of the fully-rated tap range. This impedance is called the mid-tap impedance.

- a. The percent deviation of impedance on the extreme taps shall not be greater than the mid to extreme tap voltage range expressed as a percentage of rated voltage and the lowest impedance value shall be related to the highest current tap.

#### **TS-6.3.7 Audible Sound Level**

The average sound power level LpA of the transformer shall not exceed the values specified in the Technical Data Sheets when measured by the conditions outlined in the latest ANSI/IEEE C57.12.90 or IEC 60076-10.

#### **TS-6.3.8 Transformer Loss Evaluation**

The Supplier is required to fill in all the information for the transformer losses in the Technical Data Sheets for the transformer for NPC to fully determine the most cost-effective of the proposed transformer(s) to be supplied considering both the cost of losses and first cost.

Failure of the Supplier to complete and fill in all the information needed for proper evaluation shall be a ground for rejection of the bid.

In considering the capitalized cost of transformer losses, and for purposes of comparing bids, the losses will be evaluated using the values (USD/kW loss) specified in the Technical Data Sheets. In the bid evaluation procedure, each loss evaluation figure listed in the Technical Data Sheets will be multiplied by its respective guaranteed loss value in kilowatts, and the resulting figures will be added to the bid price to give a total evaluated price for bid comparison.

The transformer shall be designed for the most economical loss ratio (copper loss/iron loss) for the application of capitalized cost as specified in the Technical Data Sheets for the transformer.



**TS-6.3.9 Tolerances**

Tolerances on certain guaranteed values i.e, losses, voltage ratio, impedance, and no-load current shall be as specified in IEC 60076-1 or in ANSI/IEEE C57.12.00-2015 Standard.

**TS-6.3.10 Temperature Rise**

The average winding temperature rise above ambient temperature shall not exceed 65°C when measured by resistance, and the winding hottest-spot temperature rise shall not exceed 80°C.

**TS-6.3.11 External Clearances**

External clearances between energized parts and ground and spacing between adjacent phases shall be coordinated with the transformer internal insulation class.

**TS-6.3.12 Transformer Insulating Oil**

The insulating oil shall be of such a quality that it is, suitable as an insulant and coolant for transformers for use in a power-generating plant.

The oil shall be new and naphthenic-based mineral oil. It shall be free from moisture, acid alkali, and sulfur compounds and shall not form a deposit at normal operating temperature. Except for inhibitors, no additives are permitted.

The oil furnished shall be compatible with other oils meeting the requirements of ASTM D3487 and this specification. The oil shall be suitable for mixing with other insulating oils in any combination and the mixture shall still meet the required functional properties of this specification.

The oil shall accept 2, 6-ditertiary-butyl-paracresol (DBPC) as an oxidation inhibitor, added as necessary to bring inhibitor content of the oil to the required ASTM D3487, Type I or II value. The Supplier shall state if any other type of oxidation inhibitor is acceptable and if so, its advantages over DBPC.

The oil insulation power factor shall not exceed 0.005 at 90°C as determined by IEC 60247.

Containers for oil shall be so designed that, with the indicated level for initial filling at 25°C, the oil will not fall below a safe operating level, nor rise to such a height as to overflow or leak.

If the transformer oil will be delivered in containers or drums, these shall be approved by NPC. The containers and/or drums shall be well-cleaned internally and shall otherwise be in such a condition that there is no risk of endangering the oil quality.

Upon the arrival of the transformer oil onsite, it shall undergo hot oil circulation and must be filtered at least four (4) times.



The Supplier shall also submit Certification from the Manufacturer of the transformer that the transformer oil does not contain polychlorinated biphenyl (PCB), and conduct laboratory analysis for PCB of the transformer oil by a DENR-accredited laboratory.

**TS-6.3.13 Nitrogen Gas Blanketing and Use of Crate Impact Recorder**

To prevent moisture absorption, each core and coil unit of the power transformers shall be securely shipped in a nitrogen gas atmosphere.

Furthermore, the core and coil units, along with their respective tanks, shall be shipped as a complete unit. During storage and transportation, the power transformers are protected by implementing Nitrogen Blanketing, which creates a nitrogen gas environment to prevent moisture ingress.

Additionally, the use of Crate Impact Recorders ensures accurate monitoring and recording of any potential impacts or mishandling incidents that may occur.

**TS-6.4 Design and Construction Features**

**TS-6.4.1 General**

The construction of the transformer shall provide for successful transportation so that on arrival at the destination, the transformer shall be in condition for immediate permanent operation after having installed all the accessories and coolant have been added if required.

Transformer and accessory design, manufacture, and assembly shall minimize vibration and shall prevent damage by inherent vibration and stress during operation, transportation, and short circuits.

Wheels, if specified in the Technical Data Sheets for the transformer to facilitate transformer movement, shall be rust and corrosion-resistant and shall be lubricated for the lifetime of the transformer.

The assembled transformer including its accessories shall withstand the wind forces specified in the Technical Data Sheets.

Current carrying joints and splices shall be welded, brazed, or made by compression fittings so that the contact resistance remains unchanged during the life of the transformer. Soldered connections shall not be used.

All leads not brought directly to bushing terminals or tap changers shall be brought to terminal boards, constructed over insulating material, and substantially and rigidly supported inside of the case.

The core shall be grounded to the tank cover at one point only through removable links in an appropriate terminal box, placed in an accessible position on the tank cover and which, by disconnection, will enable the insulation between the core and transformer tank, etc., to be tested at voltages up to 2.5. kV to check deterioration during service.



Jacking facilities shall be by ANSI C57.12.10. The jacking pads provided for the transformer tank shall be located at least 300 mm above the service level with the open space in front of the attaching plates or pads at least one meter above the service level.

#### **TS-6.4.2 Cores**

Cores for the transformer shall be constructed of the highest quality, non-aging high permeability grain-oriented silicon steel and the magnetic flux density shall not exceed the value given at the Technical Data Sheets at rated voltage and frequency. The steel shall be in thin lamination, annealed after cutting, and rolled to ensure a smooth surface at the edges.

The laminations must be free from impurities and must receive stress relief treatment after punching. The lamination shall be accurately flattened, especially at the edges, and insulated by suitable procedures with the long-life heat-resistant insulating coat.

Both sides of each sheet shall be insulated with durable heat-resistant insulation. The core shall be held firmly by a core clamp and braced to ensure adequate mechanical strength to support the winding and to withstand without damage or deformation, the forces caused by short circuit stresses, transportation, or handling to prevent shifting of the core laminations.

The core shall be solidly grounded to the tank and shall be provided with approved lifting devices or lifting lugs at suitable points of the core assembly for core lifting.

#### **TS-6.4.3 Windings**

Windings for the transformer shall be of the best modern design conductor having constant cross-section along the whole windings and shall have uniform insulation or graded insulation as required. In the case of graded insulation, the AC withstand voltage level for neutral points shall be at least one-third of that as applied for the related line terminals to withstand all AC voltage stresses caused by the application of any of the short-time induced AC withstand tests to be performed by the applicable standard. All windings and their leads shall be designed and arranged such as to withstand all kinds of transferred over-voltages.

The design, construction, and treatment of windings shall give proper consideration to all service factors, such as high dielectric and mechanical strength of insulation, coil characteristics, uniform electrostatic flux distribution, prevention of corona formation, and minimum restriction to free oil circulation.

Winding conductors shall be free from scale, burrs, and splinters and shall be uniformly insulated. Permanent current-carrying joints for splices shall be welded or brazed, properly formed and finished, and insulated to conform to the basic insulation.

The completed winding assembly shall be securely held in place so that there will be no derangement or deformation by stresses incident to shipment.



The completed assembly of core and coils shall be vacuum dried, immediately impregnated, and immersed in dry oil. They shall be adequately braced to withstand ocean shipment, short circuit forces, and earthquakes with seismic coefficients specified in the Technical Data Sheets.

The windings shall be designed to permit practically no change or very small change in transformer impedance regardless of tap position.

#### **TS-6.4.4 Bushing**

All porcelain used in bushing shall be a wet process, homogenous, and free from cavities or other flaws. The glazing shall be uniform in color and free from blisters, burrs, and other defects. All porcelain parts shall be in one piece.

The bushings of the same rating shall be interchangeable.

Bushings shall have the continuous current-carrying capacity necessary to carry the full 65°C rise current. The bushing shall also be capable of carrying overload currents per Section EW-3.5.4.

Bushing shall be by ANSI C57.19.01 & 101 or IEC 60137 standard. Strike distances over those to meet the standard will be specified in the Technical Data Sheets for the transformer.

The terminal pads shall be of high conductivity bronze or copper and shall be plated with hot flowed electro silver or electro-tin to a thickness of not less than 0.0127 mm (0.005 in.), or an aluminum alloy with hardness Hb minimum of 750N/mm<sup>2</sup>.

Whenever a larger terminal pad is required for a higher current rating, the mounting holes shall conform to NEMA Standards.

All oil-filled bushings shall be leak-proof and equipped with an oil level gauge. The oil-filled bushing may either be the sealed type or provided with an oil sampling drain valve.

All bushings shall be arranged on the tank top cover in such a manner, that removal of the same is possible without lowering the oil to such a level where the windings are exposed to the atmosphere. Appropriate bushing turrets shall be provided for all of the bushings. The horizontal bushing arrangement is not permitted.

All bushings shall be designed for storage in a horizontal position without any restriction.

#### **TS-6.4.5 Gaskets**

Gaskets shall be unaffected by hot insulating oil, retain their resiliency during the life of the associated equipment, and be unaffected by weather while maintaining oil and gas tightness. Nitrile rubber gaskets are acceptable. Gaskets of neoprene and/or any kind of impregnated/bonded cork or cork only are not acceptable. Gasket flanges shall have grooves or metal stops to



prevent the over-compression of gaskets. All bolted transformer tanks or accessory openings shall be gasketed.

Hatches in the tank cover and sides, intended to be opened several times (e.g. connection and inspection hatches), shall have gaskets that can be reused after opening (rubber type, not glued).

#### **TS-6.4.6 Tank**

All seams required in the fabrication of the main tank, including those for the cover, shall be welded. All joints, which may be opened from time to time in the course of operation, shall be designed to be oil-tight in re-assembly.

The tank shall be capable of withstanding, without leakage or permanent distortion, an internal gas pressure of 1 kilogram per square centimeter (measured at the top of the tank), and a vacuum of 76 cm of mercury and shall be designed and constructed for vacuum filling in the field.

The transformer tank and its accessories shall be designed without pockets wherein gas may collect. For bushing turrets, etc., pipes shall be provided to vent the gas into the main expansion pipe. The vent pipes shall have a minimum inside diameter of 25 mm.

All valves, fittings, and pipings shall be designed and constructed for such vacuum filling.

The upper side of the tank shall be designed in such a way as to avoid water deposits on top of the tank.

Covers for manholes and handholes shall be provided with two lifting handles each.

The tank shall be provided with a fabricated or structural steel base designed and built to allow skidding or moving on wheels or rollers. The wheels or rollers, if required in the Technical Data Sheets can be turned at a right angle, thereby eliminating the need for a traverser for turning the transformer. The dimensions of the wheel must conform with the existing transformer rails.

The jacking pads provided for the transformer tank shall be located at least 300 mm above the service level with the open space in front of the attaching plates or pads at least one meter above the service level.

Oil conservators or expansion tanks shall be of rugged design and of sufficient capacity to maintain an oil seal through a standard top oil temperature range or greater if required by the upper and lower limits of ambient or water temperature specified in the Technical Data Sheets for the transformer. Each such tank shall be equipped with a weatherproof silica gel breather in which only blue silica gel (pink colored when wet) has been filled as a dehydrating agent, an oil level indicator easy to see from the ground level with alarm contact for the low level and with isolating cock and a sump with a drain valve. The pipe connection between the main transformer case and the conservator or expansion tank shall include a shutoff valve to limit the circulation of oil and shall be arranged with a flanged joint or pipe union connection between the main transformer case and shutoff valve. Conservator or expansion tanks shall be mounted to permit their removal.



A vacuum application valve and vacuum equalizing valves, one for the diaphragm and one for the LTC conservator shall be installed at a convenient floor height between the air expansion pipes to the silica gel breathers.

The pipes connecting the conservator to the main tank shall be provided with:

- a. A Buchholz relay with alarm and trip contacts for the transformer main conservator which shall be free from operation due to vibration and pump surges (if the transformer is provided with forced oil cooling)
- b. An adequate isolating valve for each relay on the conservator side, easily accessible from the tank cover, to permit the removal of each relay

#### **TS-6.4.7 Filter Sampling and Drain Connectors**

Drain filter and sampling valves shall be provided as specified in ANSI C57.12.10 Standard, except for the following

- Any pockets or loops provided for collecting moisture (such as in the conservator-type transformer), shall be equipped with suitable draw-off valves, located at the lowest points of the pockets or loops.

All drain and oil sampling, filling, and filtering valves as well as vacuum application and vacuum equalizing valves shall be mounted at convenient floor height and shall be equipped with rigid padlocking facilities and padlocks provided with a master key system separate for every transformer unit.

#### **TS-6.4.8 Radiators and Coolers**

Self-cooled or forced-cooled transformers shall be equipped with removable radiators or coolers for heat radiation. Clearances shall permit the painting and maintenance of tanks, tubes, and radiators. Radiators and coolers shall be designed to withstand the same pressures and vacuum as the main tank.

Removable radiators and coolers shall be fastened to the transformer case with bolted flange connections. The transformer cooling system shall be the aero refrigerant. Butterfly valves or other suitable devices shall be provided to permit the ready installation and removal of radiators, and drainage of oil from radiators without drawing oil from the transformer tank. Radiators and coolers shall be equipped with lifting eyes, and so designed that they may be handled without the addition of special bracing. Cooler units shall be of corrosion-resistant metals and shall be designed to permit the replacement of individual cooler tube groups. Welds shall be smooth to facilitate cleaning.

Forced-cooled transformers shall be provided with at least two completely independent groups of cooling equipment. The forced-cooled ratings should be obtained by the use of single-stage fans (Class OA/FA) or two stages fans (Class OA/FA/FA), single-stage fans and oil pumps (Class OA/FOA), or two stages fans and oil pumps (Class OA/FOA/FOA or OA/FA/FOA) or any combination thereof as specified in the Technical Data Sheets. However, the number of fans shall not be less than four (4) fan units.



- a. Each cooler pump combination for OFAF, OFWF, and ONAN/OFAF/OFAF types shall be mounted independently of the other and provided with valves on the tank side so that each cooler can be removed or replaced while the transformer remains in service.
- b. Cable leads to cooling fans and pumps shall be connected to the power source through weather-tight and vibration-resistant plugs and connections in such a manner that the leads may be easily removed without shutting down the complete power source
- c. For transformers with two stages of cooling, it should be that the transformer self-cooled "ONAN" rating be increased by 33.3% and 66.6% respectively with the addition of forced cooling units.
- d. The forced cooling system of the transformer shall be designed in such a way that the loss of any two fans, or any fan plus any oil pump, or any oil pump plus any water pump shall not reduce the output of the transformer by more than 20% with temperature rise maintained within specified limits.

Indicating shutoff valves shall be located at the inlet and outlet connections to the transformer and shall be welded directly to the tank. No gasketed joints are allowed between the shutoff valves and the tank.

Valves shall be located between the transformer tank and the pump and between the pump and radiator or cooler to permit pump removal without draining oil from the radiator, cooler, or tank. The valves used shall be of a type that offers a minimum restriction of oil flow and shall be provided with an adjustable stuffing gland.

Oil-tight blank flanges shall be provided for all valves for use when oil lines are disconnected (e.g. valves at coolers, sample valves, fill valves, etc.).

The fan motors and pump motors shall be enclosed, suitable for operation in wind-driven rain. Motor bearings shall be designed for continuous as well as intermittent duty. The bushings and bearings shall withstand end thrust when required.

Fan and pump motor leads shall be a part of the motor assembly and shall be weatherproof or enclosed in flexible weatherproof conduit and shall terminate in a weatherproof, locking-type plug and receptacle located near the motors. The motor supply circuits shall then be routed to the cooling equipment control cabinet through a rigid galvanized steel conduit.

The design of pumps shall be such that it will preclude any possibility of air infiltration into the insulating oil. Protective measures must also be made to prevent impurities due to pump wear. Simultaneous operation of oil pumps either starting or stopping, shall not cause any misoperation of the fault pressure relay and/or Buchholz relay.

Fans mounted off the horizontal shall be provided with a "rain shield" mounted on the motor shaft where it emerges from the motor housing. Fan blades shall be of SUS 316 stainless steel or aluminum alloy and shall have surfaces



designed to keep fan noise to a minimum. Fan blades of any kind of plastic are not acceptable. Mechanical protection against touching the fan blades shall be provided by galvanized round wire mesh guards on both sides of the fan blades.

The forced-cooling equipment shall include protective and control devices assembled in a single control cabinet.

Circuit breakers shall be provided for manual switching of each cooling group. Fuses are not acceptable.

All cooling units shall be identical and interchangeable with one another.

#### **TS-6.4.9 Auxiliary Power and Control Wiring (As Applicable)**

Power and control wiring shall be 600 Volt insulation, heat, moisture, and flame resistant cross-linked polyethylene insulation or alternate acceptable to NPC. The flame test shall be conducted by UL 44. Where flexibility is required, a 19-strand wire shall be used. Wirings shall be free of abrasions and tool marks. All wiring shall be adequately supported to prevent sagging and breakage caused by vibration in transit. The minimum bending radius of the wires shall not be less than 4 times its overall diameter. All wiring shall be brought out to a control terminal cabinet.

Wire shall be of adequate rating for the current to be carried. All current transformer circuits shall use nothing smaller than No. 5.5 mm. sq. wire with copper tape shielding and cooling control circuits shall use nothing smaller than 2.0mm. sq. wire. On other circuits except for current transformer secondary circuits where the maximum current does not exceed 5 amperes, No. 2.0 mm. sq. wire may be used.

Wiring shall not be affected by transformer oil or its fumes.

Separate terminal blocks shall be provided for power and control wiring with metal barriers in both fixed and removable sections to separate the two wiring classes. They shall be rated not less than 25 amperes, 600 Volts. Each terminal block shall be provided with barriers, marking strips, and terminal screws. Each terminal point shall be marked with the designation shown on Supplier's wiring diagrams. Each terminal block, for external cable, shall have 12 points. Terminal blocks shall be located so that they are accessible and in full view.

The Supplier's wiring shall be terminated on terminal blocks or equipment terminals with insulated terminals. Spade or intended spade-type terminals with insulation grip shall be used. Ring-type terminals of approved type will also be acceptable. Splicing of wires is not acceptable.

No solder or "push-on" or "quick" type connectors shall be used in connection with any wiring.

Terminals for external connections shall be arranged for consecutive connection of conductors within one cable. Not more than one external wire will be connected to each outgoing terminal point.



In the Supplier's internal wiring, not more than one wire shall be connected to one terminal block point, except where jumper wires are needed, in which case two wires may be connected for internal wiring.

If accidental short-circuiting of certain wires can result in a malfunction of equipment, such as closing or tripping of a breaker, these wires shall not be terminated on adjacent terminal board points.

Detail wiring diagrams shall be made using a cross-indexing notation.

All current transformer terminal blocks shall have shorting provisions with all parts provided with the terminal blocks. Short-circuiting of any of the terminals of any one current transformer shall not short-circuit the terminals of any other current transformer. Current transformer cables shall have a sufficient service loop so as not to interfere with the removal of other devices in the cabinet.

Each current transformer circuit shall be arranged and terminated for external connections, as a two-wire circuit and each set arranged with Phases 1, 2, 3, and N from top to bottom, left to right, and front to back.

The required grounding of each circuit shall be by connection to the internal ground bus, provided by the Supplier.

Wire raceway space around terminal blocks shall have a minimum cross-section of 100 cm. sq. which shall be equally distributed on both sides of the terminal blocks for ease in terminating the wires.

All power and control wiring external to the control cabinets shall be installed by the Supplier in non-corroding metal cable raceway systems. When not feasible, flexible conduit may be used.

The Supplier shall provide a weatherproof terminal cabinet for terminating all external auxiliary wiring. This cabinet shall be provided with external sunshade sheets of stainless steel rigidly fixed by appropriate spacers at a certain distance not exceeding 20 mm around the cabinet and onto the front door. The bottom of the terminal cabinet shall be equipped with a removable blank cover plate on which four (4) knock-out type holes suitable for 80 mm rigid steel conduit shall be provided. The sufficient length of these uPVC conduits shall be included in the scope of supply by the Supplier. The holes shall be provided with conduit bushing to insulate and protect the cable from abrasion. Cable entries shall be provided with sealant to prevent the entry of pests and rodents inside the control cubicle.

Space heaters shall be provided in each cabinet, including cabinets for the annunciator and potential devices. The heaters shall be sized to provide a minimum temperature rise of 5°F above ambient temperature. Low-high temperature alarms shall be provided as well as a high-temperature cut-off. Heaters should be protected against unintended touch.

All equipment installed in the cabinets shall be designed for a cubicle inside temperature of at least 70°C. Grounding wires for cabinets and related doors shall be of highly flexible stranded copper having a cross-section of at least 3.5mm<sup>2</sup>.



Rigid pockets (drawing holders) for storing all related drawings shall be securely fixed on the inner side of the front doors of the cabinets.

A separate circuit breaker shall be furnished to supply 230 voltage AC power to all transformer space heaters as well as one 20-watt fluorescent lamp and one duplex convenience outlet 15 A, 250 V, 2-poles in the main control cabinet.

Circuit breakers shall be manually operated, trip-free, fitted with thermal-magnetic trip elements, and auxiliary contacts, and shall have the specified interrupting capacity.

DC coils, lamps, and other devices shall be designed to withstand the battery equalizing voltage (112% of battery voltage) continuously without malfunctioning.

The circuit breaker shall be compliant with IEC 60947 standards.

## **TS-6.5 Relays, Instrumentation, and Control**

### **TS-6.5.1 General**

The Supplier shall provide all standard relays, instrumentation, and control as well as the devices specified hereunder. Whenever specified, the Supplier shall provide alarm contacts and shall wire them to the annunciator.

### **TS-6.5.2 Relays and Instrumentation**

#### *Buchholz Relay*

If a conservator tank is used, a Buchholz relay shall be mounted in the pipe connecting the conservator to the transformer tank.

This relay shall have two sets of contacts, completely and electrically isolated from each other. One set is intended for alarm and shall close for slow gas flow. The other is intended for transformer tripping or de-energization and shall close for rapid gas flows and oil rushing resulting from a heavy fault. Contacts shall be ungrounded, and normally open.

This relay shall be so arranged and designed that its active parts are accessible for inspection, repairs, and replacement even when the transformer is in operation, and shall be of the type that will not operate during an earthquake having seismic coefficient value specified in the Technical Data Sheets.

#### *Sudden Pressure Relay*

A sudden pressure relay shall be provided when required in the Technical Data Sheet of the transformer or elsewhere in the specification. This shall detect a rapid rise of pressure rather than absolute pressure and shall react faster than the pressure relief valve to sudden abnormally high pressures.

When mounted below the minimum oil level, it shall not be affected by the normal internal pressure fluctuation caused by the operation of the oil pump.



### Gas Monitoring System

When specified in the Technical Data Sheets, the transformer shall be equipped with an Intelligent On-Line Continuous Gas-in-Oil Incipient Fault Monitor and shall include an Intelligent Transmitter with no moving parts and pumps to detect and continuously monitor the possible existence of composite value of hydrogen, carbon monoxide, acetylene and another form of gases in the insulating oil. It shall also include a communication controller, to provide remote and local communications, dual-level visual alarm indicators, and a continuous ppm display. The sensing instrument shall be suitable for the tropical climate with high humidity and ambient temperature of up to 55°C. All accessories necessary to have this device operate in extremely hot and humid climates shall be provided. The device shall operate on a system voltage specified in the Technical Data Sheet. The device shall provide visual indication and/or operate a closing contact to initiate an alarm when the percentage of total combustible gas reaches a predetermined level (adjustable).

The monitoring system shall be mounted in a suitable location with no internal restriction or in a place where good convection flow exists. It shall not be affected by vibration and oil flow surges resulting from the operation of oil coolers.

### Pressure Relief Device

A pressure relief valve shall be provided as a standard protective measure for the main tank.

Pressure relief vents for the pressure relief valve shall be provided on both the main tank and diverter switch compartment. The vents shall have the highest part not less than the height of their conservators and shall be designed to have the vent outlets face toward the ground with a height about 50 centimeters above the ground level to protect splash-over of oil in case the pressure relief valve is operated.

The device shall be provided with weatherproof hand reset contacts for alarm and tripping.

### Oil and Winding Temperature Detector

When specified in the Technical Data Sheet, winding hot spot temperature detectors of the copper resistance type 10 ohms at 25°C or equivalent shall be furnished together with necessary accessories arranged for remote indication for use with temperature monitoring/recording equipment. The heater for the detector shall be connected to the secondary of a current transformer winding and shall be located in the oil near the top of the transformer. Leads from RTDs and/or from thermocouples shall be brought out to terminal block(s) for Supplier's terminal connections. The Supplier shall supply descriptions and details of the oil and winding temperature detector equipment.



### Annunciator

When specified in the Technical Data Sheet, the Supplier shall furnish a solid state annunciator in a separate NEMA Type 3R cabinet. The rain hood shall prevent the entrance of rain at a level higher than the lowest live part. The cabinet shall contain the annunciator externally operable lamp test and reset controls; two external indicating lamps and one nameplate for each alarm point; and a thermostatically controlled cabinet heater.

A transparent window shall be provided in the control cabinet so that all individual trouble indicated on the annunciator panel can be visualized without opening the control cabinet cover. Spares complete with accessories of four annunciator windows shall be provided in addition to the windows required.

When any trouble contact is closed, the corresponding auxiliary relay of at least two independent contacts, one for the signal lamp on the annunciator panel and the other for remote indication shall be energized and self-held which shall be reset by the reset push button only if the fault has cleared.

Separate terminals shall be provided for each contact for remote indication. If there is more than one fault occurring simultaneously, windows shall be annunciated correctly and only a fault that has been cleared can be reset with the reset push button.

The tripping circuit part shall be independent of the annunciator circuit part so that tripping is still possible while the annunciator circuit is off.

#### **TS-6.6 Accessories**

The Supplier shall furnish all standard accessories as well as the equipment described herein.

##### **TS-6.6.1 Surge Arresters**

Surge Arrester shall be supplied according to ratings and requirements specified in the Technical Data Sheets of the transformer.

When surge arresters are mounted on the transformer, all hardware and tubing for connecting arresters to bushing terminals shall be provided by the Supplier. Connections between transformer bushings and surge arresters shall be sized to carry the full rating of the transformer continuously.

The height of the bracket shall be adjusted so that the top of the arrester is at about the same elevation as the bushing terminal, but such that the lowest porcelain will be at least 2300 mm above the base of the transformer.

##### **TS-6.6.2 No-Load Tap Changer**

When specified in the Technical Data Sheets, tap changers shall be mechanically and electrically rugged, arranged to provide for convenient inspection and maintenance without the necessity for un-tanking, and provided with an external mechanism for manual operation. The tap changer, as well as the arrangement of leads and connections thereto, shall be



designed for transient voltage conditions. The external mechanism shall be protected against the authorized operation and provided with a positive indication of the tap in use and so located that it may be observed without the need for unlocking the mechanism. Its location shall be on the wall of the tank so that inspection is permitted without de-energizing any circuit.

To prevent misoperation of the off-load tap changer while the transformer is still energized, two (2) sets of interlocking contacts, one for alarm and the other for tripping off the circuit breaker with the provision that the circuit breaker shall be tripped before the possible operation of the off-load tap changer, shall be provided. The interlocking mechanism shall be provided with a steel cover and/or padlock.

The tap changing mechanism shall be designed so that it can be operated conveniently by a man standing on the same level as the transformer base and shall include an operating handle, indicating pointer and dial and means for locking the tap changer in any desired position. The locking device shall be arranged to prevent locking the tap changer in an intermediate position.

The mark to indicate the position of the tap changer shall also be provided at the transformer tank where the tap change mechanism shall enter the transformer tank so that if the shaft linkage is broken or loosened, the top position is evident.

#### **TS-6.6.3 Anti-Earthquake Clamping Device**

To keep the transformer from moving during an earthquake, the Supplier shall provide a clamping device that is fixed to the existing foundation. The bolts for this clamp will be embedded in the concrete foundation so that the transformer, when positioned properly, may be fixed securely. The transformer can be fixed to, or unfastened from these bolts as desired.

#### **TS-6.6.4 Silica Breathers**

The conservator vessel shall be fitted with two parallel breathers in which only blue silica gel (pink colored when wet) has been filled as a dehydrating agent. The containers for the dehydrating agent and the oil trap shall not be of transparent plastics.

The parallel breathers shall be connected to the air expansion pipes via two-position three-way valves with captive screwed caps. The three-way valves shall control the breathers in such a manner that each of the two parallel breathers can be in service while the other breather is in stand-by position, i.e. it must be possible to switch off each of the two parallel silica gel breathers of the same group individually while the other one is still in operation. Any position other than that specified above shall be mechanically interlocked.

Given the excessive humidity, the breathers shall be larger in size and shall be provided with an oil trap. The silica gel filling capacity of each breather shall be dependent on the size of the transformer. The silica gel breathers and the three-way valves shall be rigidly fastened at an accessible position at



a convenient floor height. For this purpose, the breathers shall be also fixed onto the tank by solid mounting brackets at the lower ends.

#### **TS-6.6.5 Other Transformer Accessories**

The transformer shall be equipped with the following accessories:

a. **Terminal Connectors**

Outdoor HV shall be provided with standard NEMA 4-hole drilled pads for copper or aluminum conductors.

Low-voltage bushings shall be mounted on the tank wall and shall be enclosed in a terminal compartment. The compartment shall have space and mounting provisions for terminating power cables or bus bars.

b. **Ground Connector**

Two copper ground pads with standard 2-hole NEMA drilling shall be provided near the bottom of the transformer tank.

c. **Neutral Connection**

At least 120 mm<sup>2</sup> green PVC-jacketed copper cable shall be provided and shall extend from the neutral bushing to the transformer ground pads.

d. **High Voltage Winding Neutral Current Transformer**

The design and construction shall conform to the requirements of IEC Recommendation No. 76 or ANSI C57. The current transformer shall be adequately supported and braced to withstand all electrical, mechanical, and thermal stresses set up under short circuit conditions. The current transformer shall comply with IEC standards with the ratings to be agreed upon during detailed engineering.

e. **Terminals**

Contact surfaces of external studs and pads shall be silver-plated, using pure silver free from copper, and the thickness of the silver coating shall be not less than 25 micrometers.

f. **Anchor Bolts**

Anchor bolts to be embedded in the concrete foundation and clamps for securing the transformer to its foundation to prevent movement in case of earthquake shall be furnished.

g. **Nameplate**

A nameplate shall be located in an easily observed position. Nameplates mounted outdoors shall be polished stainless steel of top quality. The transformer nameplate shall contain the information outlined in ANSI C57.12.00.



**h. Valves**

Approved valves shall be provided, as required, for:

1. Draining the tank
2. Sampling oil in the extreme bottom of the tank
3. Lower filter press connection and complete drain
4. Upper filter press connection
5. Isolating each cooling unit
6. Draining oil from each cooling unit
7. Air venting or relief from each radiator
8. Isolation of Buchholz relay (if used)
9. Conservator
10. Nitrogen
11. Air venting valve for the top of the tank, mounted for access from floor level
12. Oil valves shall be specially designed according to DIN for use with insulating oil and shall hold oil or gas without leaking

**i. Insulating Shroud**

The HV and LV terminations shall be fitted with a suitable insulating shroud. The insulating shrouds shall be manufactured through the dip molding process and shall be made from flexible polyvinyl chloride (PVC) material, suitable for low-voltage to high-voltage applications. The insulating shroud shall be flame retardant, conforming with the UL 94 Standards. They shall be type tested for electric strength by IEC 60243 - 1 or approved equivalent standards.

**TS-6.7 Painting**

All exterior metal parts including tanks and radiators shall be hot-dipped galvanized and be provided with adequate durable and weatherproof coat paint finish.

The paint shall be suitable for tropical areas and shall include protection against fungus growth.

The color shall be as directed (Munsell N 7/0 or equivalent). All finished metalwork shall be suitably wrapped or otherwise protected from damage during shipment. At least 10 liters of finish paint, in at least 2 containers, shall be shipped with the transformer for use in touching-up damaged surfaces after erection.

**TS-6.8 Test****TS-6.8.1 Factory Acceptance and Test**

Before shipping and final inspection, Factory Acceptance Test (FAT) shall be conducted by the Supplier at the manufacturer's plant to be witnessed by NPC representatives. Test results report shall also be submitted to NPC.



The unit shall be completely assembled and adjusted at the factory and perform the manufacturer's Routine, Shop Tests, and other tests as specified herein. All parts shall be properly marked for ease of assembly in the field. Test reports on the design and routine tests performed by ANSI/ IEEE and/or IEC standards shall be submitted to NPC for evaluation and approval.

All test certificates shall include the manufacturer's serial number

**TS-6.8.2 Routine Test**

Routine tests shall be performed by IEC 60076 and/or equivalent ANSI/IEEE C57.12.00-2000 Standards.

**TS-6.8.3 Design Test**

Type test shall be performed by IEC 60076 and/or equivalent ANSI/IEEE C57.12.00-2000 and ANSI C57.12.90 Standards.

**TS-6.9 Failure to Meet Guarantees**

**TS-6.9.1 Losses**

If the transformer losses, as determined by the test, at rated voltage, frequency, and 100% rated KVA (on principal tapping) exceed the guaranteed total losses, the excess in losses shall be evaluated at the following rates and the resulting amount shall be deducted from the contract price.

$$S = 2 [(N_{L-L}) (N_{LM1} - N_{LG1}) + (L_L) (L_{LM1} - L_{LG1}) + (AUX_{L1}) (AUX_{LM1} - AUX_{LG1}) + (AUX_{L2}) (AUX_{LM2} - AUX_{LG2})]$$

where:

- S = amount to be deducted from contract price expressed in US \$
- N<sub>L-L</sub> = price in US\$/kW for the no-load losses
- L<sub>L</sub> = price in US\$/kW for the load losses
- AUX<sub>L1</sub> = price in US\$/kW for the auxiliary cooling losses for stage 1 cooling
- AUX<sub>L2</sub> = price in US\$/kW for the auxiliary cooling losses for stage 2 cooling
- N<sub>LM1</sub> = measured no-load losses expressed in kW
- N<sub>LG1</sub> = guaranteed no-load losses expressed in kW
- L<sub>LM1</sub> = measured load losses expressed in kW
- L<sub>LG1</sub> = guaranteed load losses expressed in kW
- AUX<sub>LM1</sub> = measured auxiliary cooling losses for stage 1 cooling expressed in kW
- AUX<sub>LM2</sub> = measured auxiliary cooling losses for stage 2 cooling expressed in kW
- AUX<sub>LG1</sub> = guaranteed auxiliary cooling losses for stage 1 cooling expressed in kW
- AUX<sub>LG2</sub> = guaranteed auxiliary cooling losses for stage 2 cooling expressed in kW



When the excess of the total losses reaches five percent (5%), NPC shall have the right to reject the transformer for which such excess is verified during the factory acceptance test.

Successful Supplier shall promptly provide NPC with one (1) original and three (3) certified copies of all test data and reports on the transformer.

**TS-6.9.2 Temperature Rise**

The temperature rise of windings shall be determined by type tests. If, according to the results of the tests carried out within the scope of the contract, the measured temperature rise exceeds the guaranteed value, the price for all transformers of the same type to be paid to the Supplier shall be reduced by compensation for decreased life expectancy. The compensation shall be computed as follows:

Temperature rise over the permissible limit of K (°C)	Compensation of percent of the total FOB price for the transformer
0-1.99	0
2-2.99	4.5
3-3.99	9.0
4-5.00	13.5

**TS-6.9.3 Rejection**

NPC representatives may, during tests at the factory, reject a power transformer for the following reasons:

- a. if the tolerance limit specified for core loss has been exceeded and any of the losses have reached ten percent (10%) more than the guaranteed losses;
- b. if the impedance voltage exceeds ten percent (10%) of the guaranteed value;
- c. if the temperature rise exceeds the permitted values of more than 5K.

For each rejected transformer, NPC may, at his judgment, direct the Supplier to make any necessary corrections or alterations to it or to replace it forthwith. Any expenses that might result from the supply and installation of new parts or by the modification of existing parts any expenses resulting in additional tests made necessary by the failure of equipment to meet the guarantees and other requirements of the Specifications shall be borne by the Supplier.

**TS-6.10 Training Requirements**

The Supplier shall provide Local Training (on-site or in the designated facilities by the Supplier) to be attended by at least three (3) NPC personnel. The Supplier shall consider the training in the bid proposal and include it in the cost of the equipment.

The Supplier shall provide training in the form of drawing instructions and/or audiovisuals.



The training material shall include but not be limited to the following topics:

1. Handling and Storage
2. Installation, Operation, and Maintenance
3. Environmental Performance
4. Electrical and Mechanical Performance
5. Basic Troubleshooting and Disposal

The Supplier shall also provide local training regarding the proper use and maintenance of the equipment.

#### **TS-7.0 ACCEPTANCE CRITERIA**

The Supplier shall perform at his own expense all inspections required to ensure the adequacy of design, material, workmanship, and conformance of the supplied instruments and accessories to the requirements of the specifications and standards.

The equipment/component shall be subjected to the Manufacturer's Standard Factory Tests before delivery.

Upon the arrival of the instruments and accessories at the delivery site, NPC and the Supplier or their authorized representatives shall jointly verify the instruments and accessories following the steps below:

- a. Inspection and verification of the packing list;
- b. Visual inspection of the condition of the packing and its surfaces; and
- c. Partial opening of the crates/boxes and plastic sheet protection of instrument to verify the content and its physical condition and to check pilferage or damage during shipment and storage.

A record shall be prepared carefully noting all eventual shortages, defects, or damages, signed by the Supplier and concurred by NPC. All shortages and damages noted shall be immediately replaced by the Supplier at his own cost and shall ensure the timely delivery of replacement without affecting the agreed overall contract implementation schedule.

Acceptance certificate shall be issued only upon completion of the following:

- a. The required equipment/component is satisfactorily inspected and delivered to Agus 6/7 HPP. Inspection result is acceptable to NPC's authorized plant personnel;
- b. Submission of documents as specified hereto in Clause TS-8.0.

If the equipment delivered failed to pass inspection, NPC may at his judgment, direct the Supplier to make necessary replacements.

**TS-8.0 DRAWINGS AND DOCUMENTS TO BE SUBMITTED**

a. To be submitted with the bid/proposal for evaluation:

- a.1 Filled out Technical Data Sheets (TDS);
- a.2 Original Copy of Manufacturer/Distributor Authorization to Bid, directly addressed to the BAC-NPC, indicating therein the PR/Reference number.

In case of authorized Distributor issues the authority to bid, it shall be accompanied by a Certificate of Authorized Distributorship from the Manufacturer.

Note: Authorization to bid and Certificate of Distributorship from the Manufacturer shall be current and valid on the date of bid opening as advertised.

b. To be submitted during post-qualification:

- b.1 Letter of Confirmation from the Manufacturer that a local agent or representative is available to provide "After Sales Service" to the supplied components/parts/accessories during and after the warranty period. Name, address, and contact number shall be provided;
- b.2 Certificate from their customer (End-user) duly addressed to the Supplier that the supplied equipment of the same brand to be offered has performed satisfactorily in service. The certification must indicate in the PR/Reference Number and date of issuance.

Note:

1. *Authorization to bid shall be current and valid for at least Six (6) months from the date of bid opening as advertised.*

b.3 Manufacturer's brochures/catalogues.

c. To be submitted before or upon delivery:

- c.1 "Certificate of Origin" from the Manufacturer;
- c.2 "Warranty Certificate" for one (1) year against factory defects/workmanship;
- c.3 Outline drawings of Power Transformer and accessories including Schematic and Wiring Diagrams;
- c.4 User/Instruction and Installation Manual in Three (3) copies;

The instruction manual to be provided shall include the following:



- A schematic diagrams and component layout of all printed circuit boards
  - A detailed list of all components and parts including manufacturers part numbers
  - A detailed description of the circuit operation including block diagrams
  - A comprehensive trouble-shooting guide to assist in fault-finding
- c.5 Manufacturer's Brochures/Catalogues/Drawings which contain information/data to support the Supplier's submitted and filled-out Technical Data Sheet;
- c.6 Calibration Certificate Traceable to National/International Standards;
- c.7 Characterization Curve / Calibration Data;
- c.8 Duly signed Routine Test Results; and
- c.9 Field Test to be performed and Certified Test and Inspection Reports duly signed and witnessed by NPC representative.

Note: All documents in **Clause TS-8.0** shall be submitted to the **Plant Manager – Agus 6 & 7 HEPP** for evaluation and/or approval before the issuance of the acceptance certificate.

#### **TS-9.0 GUARANTEE**

The Supplier shall guarantee to complete the repair, and/or replacement within **Thirty (30) Calendar Days**, of the supplied instruments and accessories at his own expense against defects in design, workmanship, and materials for a period of **One (1) Year** after acceptance by NPC. The Supplier must guarantee that the unit will perform in the manner outlined in the manual and the Contract.

The Supplier shall submit a Warranty Certificate **At Least One (1) Year** effective from the date of acceptance by NPC. After-sales support on spare parts shall also be available for **Five (5) Years** after the warranty period.

After the lapse of the warranty period, provided that there are no defects found and/or pending repair works, NPC shall release the warranty security/certificate.

#### **TS-10.0 MEASUREMENT OF PAYMENT**

Payment will be made at the contract unit price for each corresponding item in the Schedule of Requirements. Payment thereof shall constitute the full compensation for the supply, delivery, installation, testing, and commissioning of the equipment/ component including accessories.

SECTION VI

PART II

**TECHNICAL DATA SHEETS**



## SECTION VI - Technical Specifications

### Part II – Technical Data Sheets

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SECTION	DESCRIPTION	PAGE
1.0	<b>SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV, 3-PHASE, 60 Hz POWER TRANSFORMER FOR AGUS 6 UNIT 1 &amp; 2</b>	VI-TDS-1

## SECTION VI - Technical Specifications

### Part II – Technical Data Sheets

#### SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV, 3-PHASE, 60HZ POWER TRANSFORMER FOR AGUS 6 UNIT 1 & 2

- a. The Bidder shall complete this technical data sheet and submit the filled-up form with the technical proposal. The Bidder shall use continuation sheets as necessary for any other additional information keeping to the format shown herein or by reproducing the same.
- b. NPC reserves the right to reject Bids without proper and/or specific data and information as required herein.
- c. The data required are technical features and characteristics of the Equipment/ component/material to be provided by the bidder. Bidder's proposal shall at least be equal or superior to the requirements specified by NPC.

#### 1.0 POWER TRANSFORMER

ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
1.	Manufacturer	By Contractor	
2.	Place of Manufacture	By Contractor	
3.	Transformer Model	By Contractor	
4.	Minimum Rated Capacity, kVA	40,000	
5.	No. of Phase	3	
6.	Rated Voltage		
	a. Primary, kV	75	
	b. Secondary, kV	15	
7.	Transformer Guaranteed Losses at Rated kVA, Voltage, Frequency, and Temperature		
	a. No-Load Losses, Watts	By Contractor	
	b. Load Losses, Watts	By Contractor	
	c. Total Losses (a+b), Watts	By Contractor	
8.	Capitalized Cost for Transformer Losses		
	a. No load loss at 100% of rated voltage on mid-tap, (NL-L)		\$4,500/kW
	b. Load loss related to 85°C, (LL)		\$3,200/kW

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS		SUPPLIER'S DATA
	c. Auxiliary Loss for Stage 1 Cooling, (AuxL1)	\$1,750/kW		
	d. Auxiliary Loss for Stage 2 Cooling, (AuxL2)	\$1,300/kW		
9.	Type of Cooling	ONAN/ONAF		
10.	Cooler Type	Mineral-Oil Filled		
11.	Type	Two-winding Transformer		
12.	Class	Outdoor		
13.	Percent Overload,%	By IEC 60076		
14.	Type of Overload Capability	by IEC 60354 normal cyclic loading		
15.	Temperature			
	a. Ambient Temperature	40°C		
	b. Temperature Rise	65°C		
16.	Core Type	Yes		
17.	Core Material	Silicon Steel		
18.	Neutral	Solidly ground		
19.	Winding Connections			
	a. H-Winding	Wye with Neutral		
	b. X-Winding	Delta		
20.	Insulation Level			
21.	Nominal Voltage Level (kV)			
	a. H-Winding	69		
	b. X-Winding	13.8		
22.	Highest Voltage Level (kV)			
	a. H-Winding	75		
	b. X-Winding	15		
23.	Power Frequency Withstand Voltage (kV)			
	a. H-Winding	140		
	b. X-Winding	50		
24.	Lightning Impulse Withstand Voltage (kV)			
	a. H-Winding	320		
	b. X-Winding	125		
25.	Winding Material	100% Copper		
26.	Vector Group	YNd1		
27.	% Impedance at Rated MVA	10%		
28.	Average Audio Sound Level, not more than, dB when measured at the factory by (specify applied standard)	< 90dB when measured at the factory and 100% excitation based on ANSI/IEEE C57.12.90		
29.	Short Circuit Capability	40kA, 1sec in the high side and 50kA, 1sec in the low side		
30.	Bushings			
	High Voltage and Neutral	HV	Neutral	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS		SUPPLIER'S DATA
	Terminal			
	a. Rated Current, A	800	800	
	b. Rated Voltage, kV	72.5	52	
	c. Power Frequency Voltage, kV	140	105	
	d. Lightning Impulse withstand Voltage, kV	350	250	
	e. Creepage length, mm	1220	890	
	f. Standard Used	IEC 60137		
	g. Color	Brown		
	h. With test taps	Yes		
	Low Voltage Terminal			
	a. Rated Current, A	2000		
	b. Rated Voltage, kV	24		
	c. Power Frequency Voltage (wet & dry)	50kV, 1 min.		
	d. Lightning Impulse withstand Voltage	125kV, 1.2 ms		
	e. Standard Used	IEC 60137		
	f. Creepage length, mm	430		
	g. Color	Brown		
	h. With test taps	Yes		
	i. Height from the ground must conform to the existing bus 13.8kV bar height	Yes		
31.	Current Transformers			
	High Voltage Side			
	a. Rated Primary Current	450 A		
	b. Rated Secondary Current	1 A		
	c. Number of Cores	Two (2)		
	d. Accuracy Class/Burden			
	d.1. Metering	0.2S,FS10/15VA		
	d.2. Relaying	5P20/30VA		
	Low Voltage Side			
	a. Rated Primary Current	2000 A		
	b. Rated Secondary Current	1 A		
	c. Number of Cores	Two (2)		
	d. Accuracy Class/Burden			
	d.1. Metering	0.2/15VA		
	d.2. Relaying	5P20/30VA		
	Neutral Bushing			
	a. Rated Primary Current	250 A		
	b. Rated Secondary Current	1 A		
	c. Number of Cores	One (1)		
	d. Accuracy Class/Burden			

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
	d.1. Relaying (both cores)	5P20/30VA	
32.	Cooling		
	a. Cooling Medium	Air and Oil	
	b. Temperature		
	b.1 Temperature of cooling air, not to exceed	40°C	
	b.2 Average temperature of the cooling air	30°C	
33.	Surge Arrester mounted on Transformer		
	a. Rated Current	Station	
	b. Discharge Counter	To be provided	
	c. Mounting Provisions	Yes	
	d. Solidly grounded to the transformer pad	Yes	
	e. Remote indication of discharge current registers and leakage current to be provided	Yes	
34.	Temperature Indicator		
	a. Supply of dial-type winding temperature indicator mounted on the transformer for top oil and hot spot temperature	Yes	
	b. DCS ready for future SCADA	Yes	
	c. Oil Temp. Indicator	One (top oil thermometer) with four switches (2nd stage cooling ON, 2nd cooling OFF, alarm, and trip)	
	d. Winding Temp. Indicator	One per phase with four switches (2nd stage cooling ON, 2nd stage cooling OFF, alarm, and trip)	
	e. Height from ground	Must conform to IEC 60076	
35.	Local Annunciator	To be provided	
36.	Sudden Pressure Relay	To be provided	
37.	An annunciator is to be provided in the transformer monitoring and control system	Yes	
38.	Taps	69 kV ± 2x2.5%	
	a. Tap Positions with the middle as the rated voltage	5 Tap Positions	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_

ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
	b. Type	NLTC	
	c. Rated Current	To match the maximum MVA rating plus 120% overload	
39.	Oil Preservation System		
	a. Conservator type of oil preservation system of the transformer	Diaphragm	
	b. Buchholz relay will be provided as a leakage detector for the diaphragm of the airbag	Yes	
	c. A non-return valve with trip contact and automatic closing action for the conservator, isolating the conservator when backflow to the transformer corresponding to the breathing action is exceeded shall be provided	Yes	
40.	Insulating Oil		
	d. Insulating Oil shall be mineral oil by ASTM D3487	Yes	
	e. Additional Properties		
	b.1 Min. Flash Point, °C (ASTM D92)	145	
	b.2 Pour point, max °C (not higher than)	-40	
	b.3 Kinematic, Viscosity at 40°C	Max 9.5 mm <sup>2</sup> /s	
	b.4 Elect. Breakdown limit	As per IEC 60156 (before treatment) and IEC 60296 (after treatment)	
	b.5 Corrosive Sulfur	Non-corrosive	
	b.6 Guaranteed Oil Temperature Rise	55°C	
	b.7 Acidity	<0.01 mg KOH/g	
	b.8 Oxidation Stability at 120°C	164 h	
	b.9 Total Acidity	0.7 mg KOH/g	
	b.10 Sludge	0.15 wt%	
	b.11 Water content	<20 mg/kg	
	b.12 Density at 20°C	0.868 kg/dm <sup>3</sup>	
	b.13 DDF at 90°C	<0.001	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
	b.14 Interfacial Tension at 25°C	≥48 mN/m	
	f. Polychlorinated Biphenyls (PCBs) free	Yes	
	g. Oil Test Results shall be submitted to NPC (PCB analysis and Electrical & Physical Test)	Yes	
41.	To be provided with a standard skid base of heavy steel with wheels	Yes	
42.	Wheels shall be removable type and bi-directional	Yes	
43.	Weight of Oil, kg	Manufacturer's Data	
44.	Total Weight, kg	Manufacturer's Data	
45.	Dimension	To be referred to the existing power transformer and to be coordinated with Plant Head / End-User	
46.	Spares and Spare Parts		
	a. Bushing (HV Side)	1 unit	
47.	Ground Terminal Connection	Suitable for 100 mm <sup>2</sup> copper conductor	
48.	Auxiliary Power Supply		
	a. Ac Power Supply	480Vac & 115Vac With MCB at the transformer cabinet	
	b. Motor	480Vac, 3-Phase, 60Hz	
	c. Provided with 115Vac Heater & Lighting for transformer cabinet	Yes	
	d. DC Supply	125Vdc With MCB at transformer cabinet	
	e. Control Transformer, Vac	480:120	
49.	Electrical Protection		
	a. Multifunction transformer relay with the following functions:		
	a.1. Percentage Type Harmonic Restraint Differential (87T)	To be provided	
	a.2. Restricted Earth Fault (64T)	To be provided	
	a.3. Overcurrent Relay (50/51T)	To be provided	
50.	Tools and Appliances		
	a. Manually operated jacks	1 set (4 units)	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
	of ample capacity for lifting the transformer to place or position steel rollers during installation at the job site (number of set/s)		
	b. Set of any special tools, wrenches, and equipment that may be necessary or convenient for assembling/disassembling the transformer (number of set/s)	1	
	c. Set of slings enough to lift 105% of the transport weight of the transformer	1	
51.	Spare Parts to be supplied with the transformer		
	a. High Side Bushing	1 set	
	b. Low Side Bushing	1 set	
	c. Neutral Bushing	1 set	
	d. Cooling System Controller Spare Kit	1 set	
	e. Cooling Fan Motor Set	2 sets	
	f. Buchholz Relay	1 set	
	g. Sudden Pressure Relay	1 set	
	h. Oil Temperature Indicator	1 set	
	i. Winding Temp. Indicator with three auxiliary switches	1 set	
	j. Pressure Relief Device	1 set	
	k. Magnetic Oil Level Gauge	1 set	
	l. Dehydrating Breather (Silica Gel, container)	1 set	
	m. Gaskets for cover, manhole, hand holes, and piping connection	1 set	
52.	Test Requirements		
	a. Certified Design and Routine Test Reports being submitted	Yes	
	b. Routine Tests to be Performed	Yes	
	c. Factory Acceptance Test (Routine) to be	Yes	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



ITEM	DESCRIPTION	NPC REQUIREMENTS	SUPPLIER'S DATA
	witnessed by NPC Representative		
	d. Required No. of NPC Personnel to witness the Factory Acceptance Test	3	
53.	Manufacturer's Experience		
	a. The manufacturer should have been in the business of manufacturing the equipment for not less than years	20	
	b. Must have been able to supply, install, and commission oil-filled power transformers with the same climactic conditions of the Philippines	Yes	

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_



## SECTION VII

# SCHEDULE OF REQUIREMENTS

**SECTION VII - SCHEDULE OF REQUIREMENTS**  
**SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV, 3-PHASE, 60 HZ**  
**POWER TRANSFORMER FOR AGUS 6 UNIT 1 & 2**  
**PR. NO. MG-A7C23-014**

ITEM NO.	DESCRIPTION	QTY.- UNIT	C O D E	UNIT PRICE FOR GOODS AND RELATED SERVICES TO BE SUPPLIED AND DELIVERED						TOTAL PRICE
				Unit Price of Goods Delivered up to Philippine Port +(Phil. Peso)	Import Duties & other Levies imposed by Phil. Govt. (Phil. Peso)	Value Added Tax and other Taxes imposed by Phil. Govt. (Phil. Peso)	Local Transport from Port to Delivery Site <(Phil. Peso)	Labor (Installation, Testing and Commissioning) >(Phil. Peso)	Total Unit Price (E+F+G+H+I)	Local Currency (Phil. Peso) (K = J x C)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1.0	Supply and Delivery of 40MVA, 69KV/13.8KV, 3-Phase, 60 Hz Power Transformer For Agus 6 Unit 1 & 2 including all other works and services as specified in the Technical Specifications.	1 Lot								
	— Nothing Follows —									

- Bidders shall enter a code representing the Country of Origin of all imported Equipment, Materials and Accessories
- + Cost of equipment, freight, insurance, etc. up to Phil. port of entry
- < Unit Price for Local Transportation, insurance and other local costs incidental to delivery of the goods from the Phil port of entry to final delivery site
- > Unit Price for Local Transportation, insurance and other local costs incidental to delivery of the goods from local source to final delivery site

Code	Country of Origin

Name of Bidder: \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_

Note: Final delivery site of the equipment shall be at:

**Agus 6 HEP Plant, Iligan, Lanao Del Norte**



## SECTION VIII

# BIDDING FORMS

## SECTION VIII – BIDDING FORMS

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Standard Form No: NPCSF-GOODS-01

### **Checklist of Technical & Financial Envelope Requirements for Bidders**

#### **A. THE 1<sup>ST</sup> ENVELOPE (TECHNICAL COMPONENT) SHALL CONTAIN THE FOLLOWING:**

##### **1. ELIGIBILITY DOCUMENTS**

###### **a. (CLASS A)**

###### **➤ Any of the following:**

- PhilGEPS Certificate of Registration and Membership under Platinum Category in accordance with Section 8.5.2 of the IRR;

###### **OR:**

- The following updated and valid Class "A" eligibility documents enumerated under "Annex A" of the Platinum Membership:
  - Registration Certificate from the Securities and Exchange Commission (SEC) for corporations, Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives;
  - Mayor's/Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas.  
In cases of recently expired Mayor's/Business permits, it shall be accepted together with the official receipt as proof that the bidder has applied for renewal within the period prescribed by the concerned local government unit, provided that the renewed permit shall be submitted as a post qualification requirement in accordance with Section 34.2 of the Revised IRR of RA 9184.
  - The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission.
  - Tax clearance per Executive Order 398, Series of 2005, as finally reviewed and approved by the BIR or as stated under GPPB NPM-039-2014, for Non-Resident Foreign Corporation (NRFC) and Non-Resident Alien Not Engaged in Trade or Business (NRANETB), a Delinquency Verification Certificate may be submitted as a form of Tax Clearance;

###### **OR:**

- A combination thereof
- Statement of all its ongoing government and private contracts if any, whether similar or not similar in nature and complexity to the contract to be bid (*NPCSF-GOODS-02*)
- The Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, and whose value, adjusted to current prices using the Philippine Statistics Authority (PSA) consumer price index, must be at least 50% of the ABC (*NPCSF-GOODS-03*) complete with the following supporting documents:
  1. Certificate of Acceptance; or Certificate of Completion; or Official Receipt (O.R); or Sales Invoice

*(The Single Largest Completed Contract (SLCC) as declared by the bidder shall be verified and validated to ascertain such completed contract. Hence, bidders must ensure access to sites of such projects/equipment to NPC representatives for verification and validation purposes during post-qualification process.*

*It shall be a ground for disqualification, if verification and validation cannot be conducted for reasons attributable to the Bidder.)*

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- Duly signed computation of its Net Financial Contracting Capacity (NFCC) at least equal to the ABC (NPCSF-GOODS-04) or a Committed Line of Credit (CLC) at least equal to ten percent (10%) of the ABC, issued by a Universal or Commercial Bank; If the Bidder opted to submit a Committed Line of Credit (CLC), the bidder must submit a granted credit line valid/effective at the date of bidding.
- b. (CLASS B)**
- For Joint Venture (if applicable), any of the following:
  - Valid Joint Venture Agreement (NPCSF-GOODS-05)  
**OR**
  - Notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA, if awarded the contract
- Certification from the relevant government office of their country stating that Filipinos are allowed to participate in their government procurement activities for the same item/product (*For foreign bidders claiming eligibility by reason of their country's extension of reciprocal rights to Filipinos*)

## 2. Technical Documents

- Bid Security, any one of the following:
  - Bid Securing Declaration (NPCSF-GOODS-06c)  
**OR**
  - Cash or Cashier's/Manager's check issued by a Universal or Commercial Bank – 2% of ABC;  
**OR**
  - Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: (NPCSF-GOODS-06a) - 2% of ABC;  
**OR**
  - Surety Bond callable upon demand issued by a reputable surety or insurance company (NPCSF-GOODS-06b) - 5% of ABC, with
    - Certification from the Insurance Commission as authorized company to issue surety
- Duly signed, completely filled-out and notarized Omnibus Sworn statement (Revised) (NPCSF-GOODS-07), complete with the following attachments:
  - For Sole Proprietorship:
    - Special Power of Attorney
  - For Partnership/Corporation/Cooperative/Joint Venture:
    - Document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)
- Data and Information to be submitted with the Bid/Proposal as specified in Clause TS-8.0(a) of Section VI - Technical Specifications
- Complete eligibility documents of the proposed subcontractor, if any

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**B. THE 2<sup>ND</sup> ENVELOPE (FINANCIAL COMPONENT) SHALL CONTAIN THE FOLLOWING:**

- Duly signed Bid Letter indicating the total bid amount in accordance with the prescribed form (NPCSF-GOODS-08)
- Duly signed and completely filled-out Schedule of Requirement (Section VII) indicating the unit and total prices per item and the total amount in the prescribed Price Schedule form.
- For Domestic Bidder claiming for domestic preference:
  - Letter address to the BAC claiming for preference
  - Certification from DTI as Domestic Bidder in accordance with the prescribed forms provided

**CONDITIONS:**

1. Each Bidder shall submit one copy of the first and second components of its Bid. NPC may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.
2. In the case of foreign bidders, the eligibility requirements under Class "A" Documents (except for Tax Clearance) may be substituted by the appropriate equivalent documents, if any, issued by the country of the foreign bidder concerned. The eligibility requirements or statements, the bids, and all other documents submitted to the BAC must be in English. If the eligibility requirements or statements, the bids, and all other documents submitted to the BAC are in foreign language other than English, it must be accompanied by a translation of the documents in English. The documents shall be translated by the relevant foreign government agency, the foreign government agency authorized to translate documents, or a registered translator in the foreign bidder's country; and shall be authenticated by the appropriate Philippine foreign service establishment/post or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines.  
*These documents shall be accompanied by a Sworn Statement in a form prescribed by the GPPB stating that the documents submitted are complete and authentic copies of the original, and all statements and information provided therein are true and correct. Upon receipt of the said documents, the PhilGEPS shall process the same in accordance with the guidelines on the Government of the Philippines – Official Merchants Registry (GoP-OMR).*
3. A Bidder not submitting bid for reason that his cost estimate is higher than the ABC, is required to submit his letter of non-participation/regret supported by corresponding detailed estimates. Failure to submit the two (2) documents shall be understood as acts that tend to defeat the purpose of public bidding without valid reason as stated under Section 69.1.(i) of the revised IRR of R.A. 9184.



Standard Form Number: NPCSF-GOODS-03

**The Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid**

Business Name : \_\_\_\_\_  
 Business Address : \_\_\_\_\_

Name of Contract	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a.Amount at Award b.Amount at Completion c.Duration	a. Date Awarded b. Contract Effectivity c. Date Completed
			Description	%		

- Notes: 1. The bidder must state only one (1) Single Largest Completed Contract (SLCC) similar to the contract to be bid.  
 2. Supporting documents such as any of the following: Certificate of Acceptance; or Certificate of Completion; or Official Receipt (O.R); or Sales Invoice for the contract stated above shall be submitted during Bid Opening.

Submitted by : \_\_\_\_\_  
 (Printed Name & Signature)  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_

Standard Form Number: NPCSF-GOODS-04

**NET FINANCIAL CONTRACTING CAPACITY (NFCC)**

- A. Summary of the Supplier's/Distributor's/Manufacturer's assets and liabilities on the basis of the income tax return and audited financial statement for the immediately preceding calendar year are:

		Year 20__
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

- B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current assets minus current liabilities) x 15] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started coinciding with the contract for this Project.

NFCC = P \_\_\_\_\_

Herewith attached is certified true copy of the audited financial statement, stamped "RECEIVED" by the BIR or BIR authorized collecting agent for the immediately preceding calendar year.

Submitted by:

\_\_\_\_\_  
Name of Supplier / Distributor / Manufacturer

\_\_\_\_\_  
Signature of Authorized Representative

Date : \_\_\_\_\_

Standard Form Number: NPCSF-GOODS-05

**JOINT VENTURE AGREEMENT**

**KNOW ALL MEN BY THESE PRESENTS:**

That this JOINT VENTURE AGREEMENT is entered into by and between: \_\_\_\_\_, of legal age, *(civil status)* \_\_\_\_\_, authorized representative of \_\_\_\_\_ and a resident of \_\_\_\_\_.

- and -

\_\_\_\_\_, of legal age, *(civil status)* \_\_\_\_\_, authorized representative of \_\_\_\_\_ a resident of \_\_\_\_\_.

That both parties agree to join together their capital, manpower, equipment, and other resources and efforts to enable the Joint Venture to participate in the Bidding and Undertaking of the hereunder stated Contract of the **National Power Corporation**.

**NAME OF PROJECT**

**CONTRACT AMOUNT**

\_\_\_\_\_  
That the capital contribution of each member firm:

NAME OF FIRM	CAPITAL CONTRIBUTION
1.	P
2.	P

That both parties agree to be jointly and severally liable for their participation in the Bidding and Undertaking of the said contract.

That both parties agree that \_\_\_\_\_ and/or \_\_\_\_\_ shall be the Official Representative/s of the Joint Venture, and are granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the Joint Venture in the Bidding and Undertaking of the said contract, as fully and effectively and the Joint Venture may do and if personally present with full power of substitution and revocation.

That this Joint Venture Agreement shall remain in effect only for the above stated Contract until terminated by both parties.

\_\_\_\_\_  
*Name & Signature of Authorized Representative*

\_\_\_\_\_  
*Official Designation*

\_\_\_\_\_  
*Name of Firm*

\_\_\_\_\_  
*Name & Signature of Authorized Representative*

\_\_\_\_\_  
*Official Designation*

\_\_\_\_\_  
*Name of Firm*

*Witnesses*

1. \_\_\_\_\_

2. \_\_\_\_\_

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*

Standard Form Number: NPCSF-GOODS-06a

**FORM OF BID SECURITY (BANK GUARANTEE)**

WHEREAS, *(Name of Bidder)* \_\_\_\_\_ (hereinafter called "the Bidder") has submitted his bid dated *(Date)* \_\_\_\_\_ for the *[name of project]* (hereinafter called "the Bid").

KNOW ALL MEN by these presents that We *(Name of Bank)* \_\_\_\_\_ of *(Name of Country)* \_\_\_\_\_ having our registered office at \_\_\_\_\_ (hereinafter called "the Bank" are bound unto National Power Corporation (hereinafter called "the Entity") in the sum of *[amount in words & figures as prescribed in the bidding documents]* for which payment well and truly to be made to the said Entity the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

THE CONDITIONS of this obligation are that:

- 1) if the Bidder withdraws his Bid during the period of bid validity specified in the Bidding Documents; or
- 2) if the Bidder does not accept the correction of arithmetical errors of his bid price in accordance with the Instructions to Bidder; or
- 3) if the Bidder, having determined as the LCB, fails or refuses to submit the required tax clearance, latest income and business tax returns and PhilGEPs registration certificate within the prescribed period; or
- 4) if the Bidder having been notified of the acceptance of his bid and award of contract to him by the Entity during the period of bid validity:
  - a) fails or refuses to execute the Contract; or
  - b) fails or refuses to submit the required valid JVA, if applicable; or
  - c) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

we undertake to pay to the Entity up to the above amount upon receipt of his first written demand, without the Entity having to substantiate its demand, provided that in his demand the Entity will note that the amount claimed by it is due to the occurrence of any one or combination of the four (4) conditions stated above.

The Guarantee will remain in force up to 120 days after the opening of bids or as it may be extended by the Entity, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE \_\_\_\_\_ SIGNATURE OF THE BANK \_\_\_\_\_

WITNESS \_\_\_\_\_ SEAL \_\_\_\_\_

\_\_\_\_\_  
*(Signature, Name and Address)*

Standard Form Number: NPCSF-GOODS-06b

**FORM OF BID SECURITY (SURETY BOND)**

BOND NO.: \_\_\_\_\_ DATE BOND EXECUTED: \_\_\_\_\_

By this bond, We (*Name of Bidder*) \_\_\_\_\_ (hereinafter called "the Principal") and (*Name of Surety*) \_\_\_\_\_ of (*Name of Country of Surety*) \_\_\_\_\_, authorized to transact business in the Philippines (hereinafter called "the Surety") are held and firmly bound unto National Power Corporation (hereinafter called "the Employer") as Obligee, in the sum of (*amount in words & figures as prescribed in the bidding documents*), callable on demand, for the payment of which sum, well and truly to be made, we, the said Principal and Surety bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

SEALED with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_

WHEREAS, the Principal has submitted a written Bid to the Employer dated the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_, for the \_\_\_\_\_ (hereinafter called "the Bid").

NOW, THEREFORE, the conditions of this obligation are:

- 1) if the Bidder withdraws his Bid during the period of bid validity specified in the Bidding Documents; or
- 2) if the Bidder does not accept the correction of arithmetical errors of his bid price in accordance with the Instructions to Bidder; or
- 3) if the Bidder, having determined as the LCB, fails or refuses to submit the required tax clearance, latest income and business tax returns and PhilGEPs registration certificate within the prescribed period; or
- 4) if the Bidder having been notified of the acceptance of his bid and award of contract to him by the Entity during the period of bid validity:
  - d) fails or refuses to execute the Contract; or
  - e) fails or refuses to submit the required valid JVA, if applicable; or
  - f) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

then this obligation shall remain in full force and effect, otherwise it shall be null and void.

PROVIDED HOWEVER, that the Surety shall not be:

- a) liable for a greater sum than the specified penalty of this bond, nor
- b) liable for a greater sum than the difference between the amount of the said Principal's Bid and the amount of the Bid that is accepted by the Employer.

*Standard Form Number: NPCSF-GOODS-06b  
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This Surety executing this instrument hereby agrees that its obligation shall be valid for 120 calendar days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived.

PRINCIPAL \_\_\_\_\_ SURETY \_\_\_\_\_

SIGNATURE(S) \_\_\_\_\_ SIGNATURES(S) \_\_\_\_\_

NAME(S) AND TITLE(S) \_\_\_\_\_ NAME(S) \_\_\_\_\_

SEAL \_\_\_\_\_ SEAL \_\_\_\_\_

Standard Form No: NPCSF-GOODS-06c

REPUBLIC OF THE PHILIPPINES )  
CITY OF \_\_\_\_\_ ) S.S.**BID-SECURING DECLARATION**  
**SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV 3-PHASE, 60HZ POWER**  
**TRANSFORMER FOR AGUS 6 UNIT 1 & 2 (PR NO. PR NO. MG-A7C23-014)**To: **National Power Corporation**  
BIR Road cor. Quezon Ave.  
Diliman, Quezon CityI/We<sup>1</sup>, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the Procuring Entity for the commission of acts resulting to the enforcement of the Bid Securing Declaration under Sections 23.1 (b), 34.2, 40.1 and 69.1, except 69.1 (f) of the IRR of R.A. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:
  - (a) Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
  - (b) I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right;
  - (c) I am/we are declared as the bidder with the Lowest Calculated and Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/we have hereunto set my hand this \_\_\_\_ day of \_\_\_\_  
20\_\_\_\_ at \_\_\_\_\_, Philippines.\_\_\_\_\_  
[Name and Signature of Bidder's Representative/  
Authorized Signatory]  
[Signatory's legal capacity]  
Affiant**[Jurat]**

[Format shall be based on the latest Rules on Notarial Practice]

<sup>1</sup> Select one and delete the other. Adopt same instruction for similar terms throughout the document.

Standard Form No: NPCSF-GOODS-07

### Omnibus Sworn Statement (Revised)

REPUBLIC OF THE PHILIPPINES )  
CITY/MUNICIPALITY OF \_\_\_\_\_ ) S.S.

#### AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

*[If a sole proprietorship:]* I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

*[If a partnership, corporation, cooperative, or joint venture:]* I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

*[If a sole proprietorship:]* As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

*[If a partnership, corporation, cooperative, or joint venture:]* I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

*[If a sole proprietorship:]* The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*[If a partnership or cooperative:]* None of the officers and members of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee

(BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*[If a corporation or joint venture:]* None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
  - a. Carefully examining all of the Bidding Documents;
  - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
  - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

**IN WITNESS WHEREOF**, I have hereunto set my hand this \_\_\_ day of \_\_\_, 20\_\_ at \_\_\_\_\_, Philippines.

*[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*

Standard Form No: NPCSF-GOODS-08

**BID LETTER**

Date: \_\_\_\_\_

To: **THE PRESIDENT**  
 National Power Corporation  
 BIR Road cor. Quezon Ave.  
 Diliman, Quezon City

Gentlemen:

Having examined the Bidding Documents including Bid Bulletin Numbers *[insert numbers]*\_\_\_\_\_, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to perform **SUPPLY AND DELIVERY OF 40MVA, 69KV/13.8KV 3-PHASE, 60HZ POWER TRANSFORMER FOR AGUS 6 UNIT 1 & 2 (PR NO. MG-A7C23-014)** in conformity with the said Bidding Documents for the sum of *[total Bid amount in words and figures]*\_\_\_\_\_ or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to supply and deliver the goods and perform other services, if required within the contract duration and in accordance with the scope of the contract specified in the Schedule of Requirements and Technical Specifications.

If our Bid is accepted, we undertake to provide a performance security in the form, amounts, and within the times specified in the Bidding Documents.

We agree to abide by this Bid for the Bid Validity Period specified in Bid Documents and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the Lowest Calculated Bid or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements pursuant to the Bidding Documents.

We likewise certify/confirm that the undersigned, *[for sole proprietorships, insert: as the owner and sole proprietor or authorized representative of [Name of Bidder]*\_\_\_\_\_ has the full power and authority to participate, submit the bid, and to sign and execute the ensuing contract, on the latter's behalf for the *[Name of Project]*\_\_\_\_\_ of the National Power Corporation *[for partnerships, corporations, cooperatives, or joint ventures, insert: is granted full power and authority by the [Name of Bidder]*\_\_\_\_\_ to participate, submit the bid, and to sign and execute the ensuing contract on the latter's behalf for *[Name of Project]*\_\_\_\_\_ of the National Power Corporation.

We acknowledge that failure to sign each and every page of this Bid Letter, including the attached Schedule of Requirements (Bid Price Schedule), shall be a ground for the rejection of our bid.

\_\_\_\_\_  
*[name and signature of authorized signatory]*

\_\_\_\_\_  
*[in the capacity of]*

Duly authorized to sign Bid for and on behalf of \_\_\_\_\_  
*[name of bidder]*

**Bank Guarantee Form for Advance Payment**

To: **THE PRESIDENT**  
National Power Corporation  
BIR Road cor. Quezon Ave.  
Diliman, Quezon City

*[name of Contract]*

Gentlemen and/or Ladies:

In accordance with the Advance Payment Provision, of the General Conditions of Contract, *[name and address of Supplier]* (hereinafter called the "Supplier") shall deposit with the PROCURING ENTITY a bank guarantee to guarantee its proper and faithful performance under the said Clause of the Contract in an amount of *[amount of guarantee in figures and words]*.

We, the *[name of the universal/commercial bank]*, as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the PROCURING ENTITY on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding *[amount of guarantee in figures and words]*.

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the PROCURING ENTITY and the Supplier, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date the advance payment is received by the Supplier under the Contract and until the Goods are accepted by the PROCURING ENTITY.

Yours truly,

Signature and seal of the Guarantors

\_\_\_\_\_  
*[name of bank or financial institution]*

\_\_\_\_\_  
*[address]*

\_\_\_\_\_  
*[date]*

**CERTIFICATION AS A DOMESTIC BIDDER**

This is to certify that based on the records of this office, (Name of Bidder) is duly registered with the DTI on \_\_\_\_\_.

This further certifies that the articles forming part of the product of (Name of Bidder) which are/is (Specify) are substantially composed of articles, materials, or supplies grown, produced or manufactured in the Philippines. (Please encircle the applicable description/s).

This certification is issued upon the request of (Name of Person/Entity) in connection with his intention to participate in the bidding for the (Name of Project) of the National Power Corporation (NPC).

Given this \_\_\_ day of \_\_\_\_\_ 20\_\_ at \_\_\_\_\_, Philippines

\_\_\_\_\_  
Name

\_\_\_\_\_  
Position

\_\_\_\_\_  
Department of Trade & Industry