REGIONAL PROCUREMENT HUB PROGRAM – REGION 5
SUPPLEMENTAL BID BULLETIN NO. 1
FOR PB-ITB-R5-3-2025
PROCUREMENT OF SUPPLY AND DELIVERY OF CONDUCTORS

In accordance with Section 4.3.2 of Annex "B" of the NEA Memorandum No. 2025-03, this Supplemental Bid Bulletin is hereby issued to clarify, modify or amend the following items for PB-ITB-R5-3-2025:

Section/Item No.	Issue in the Bidding Documents / Technical Specifications	Clarification / Amendment
Section V. Terms of Reference		
TOR 6.1 (Detailed Technical Specifications for Items A to E)	With respect to **TOR 6.1, Lay Factor,** the applicable lay factor for Item E [Conductor, Bare, ACSR #336.4, MCM 26/7 STD (Meters)] is absent from said specifications.	The applicable lay factor for Item E shall conform to Table 5 of ASTM B232. Therefore, **TOR 6.1, Lay Factor,** is hereby ***amended*** as follows: **"For 6/1 Strand Bare Conductors (#2, #1/0, #2/0, #4/0):** The lay factor of the aluminum wire shall be not less than 12 nor more than 14.5 times the outside diameter of the conductor. The preferred lay factor is 13 times the diameter, with the lay in a right-hand direction. **For 336.4 MCM 26/7 Strand Bare Conductor:** The lay factor of the various layers of wires in a conductor shall conform to Table 5 of ASTM B232. The direction of lay of the outside of aluminum wires shall be right hand. The direction of lay of the aluminum and steel wires shall be reversed in successive layers. **Stranding** – 26/7;

		Aluminum Wire Layers: **First Layer (Outside) –** Min (10); Preferred (11); Max (13). **Second Layer –** Min (10); Preferred (13); Max (16). ***Steel Wires:*** **6 Wire –** Min (18); Preferred (25); Max (30)."
Section VII. Bid Forms		
Form No. 10 Details of Technical Specifications	Bid Form#10 (Details of Technical Specifications) requires revision to conform with the amendments to TOR 6.1 as provided above.	Bid Form#10 (Details of Technical Specifications) is ***amended*** to conform with the revisions to TOR 6.1 above. Please see revised Details of Technical Specifications Form attached herein as **Annex "A"**.

Issued this 30th day of July 2025 for the guidance and information of all concerned.

MS. IRENE C. MARTIN
Member

ENGR. EXEQUIEL T. EVALE, JR.
Member

MS. MA. YVETTE V. MUYARGAS-PALLOGAN
Member

ATTY. OSWALDO F. GABAT
Vice-Chairperson

ENGR. RAYMOND M. NAPILOT
Chairperson

CONFORME:

MR. RENATO Z. SAN JOSE
President & Authorized Procurement Representative
BECA – Confirmed Regional Association

Form#10: Details of Technical Specifications

(Letterhead of the Bidder)

Date: _____, 2025

NEA Special Bids and Awards Committee (NEA SBAC)
#57 NEA Building, NIA Road,
Barangay Pinyahan, Government Center Diliman,
Quezon City

Subject: Details of Technical Specifications of [Name of Bidder]

Detailed Technical Specifications for: Conductors (R5, Lot No. III)			
Particulars	**Specifications Prescribed in Bidding Documents**	**Statement of Compliance**	**Details of Added Technical Specifications (if any)**
Scope	• The conductors shall be bare coated steel-reinforced concentric-lay-stranded aluminum conductors (ACSR), to be used on electric cooperative distribution lines. These conductors are made of round aluminum wires wrapped around a central zinc-coated round steel-wire core. • All conductors offered must conform and passed Philippine standard certified by the Department of Trade and Industry (DTI) and Philippine Electrical Code (PEC).		
General	ACSR conductors shall conform in all respects to the dimensional and performance requirements of this document, which covers: a. Steel core wire b. Aluminum wire The ACSR conductors shall be classified as Class A as designated in ASTM B232 or IEC Standard equivalent.		

<table>
<tr><td>Steel Core</td><td>Material

The steel wire shall be fabricated from steel obtained by the open-hearth, electric furnace, of basic oxygen process and conforms to the chemical composition specified in Section 3 of ASTM B498 or IEC Standard equivalent as follows:

<table><tr><th>Element</th><th>Composition, Percent (%)</th></tr><tr><td>Carbon</td><td>0.50 to 0.85</td></tr><tr><td>Manganese</td><td>0.50 to 1.10</td></tr><tr><td>Phosphorous, max.</td><td>0.035</td></tr><tr><td>Sulphur, max.</td><td>0.045</td></tr><tr><td>Silicon</td><td>0.10 to 0.35</td></tr></table></td><td></td><td></td></tr>
<tr><td></td><td>Testing

The steel wire shall be tested in accordance with Section 5, 6 and 10 of ASTM B498 or IEC Standard Equivalent.</td><td></td><td></td></tr>
<tr><td></td><td>Corrosion Protection

• The steel wire shall be coated with Zinc to Class A requirements with coating weight described in Table 4 of ASTM B498 or IEC Standard equivalent.

• Additional protection for ACSR conductor against corrosion of the steel core shall be provided by use of a suitable corrosion inhibition, grease or oil.</td><td></td><td></td></tr>
<tr><td>Aluminum Wires</td><td>Material

The round aluminum wire shall be drawn from rods that conform to the chemical requirements of Table 2, ASTM B230 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td></td><td>Testing

The aluminum wire shall have tensile strengths depending on temper as shown in ASTM B233 (or its latest revision) or IEC standard equivalent.</td><td></td><td></td></tr>
</table>

<table>
<tr><td></td><td><u>Resistivity</u>

The electrical resistivity limits and values of the aluminum rods are presented in Table 4 of ASTM B230 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td></td><td><u>General</u>

The aluminum wires used shall meet the requirements of ASTM B230 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td>Lay Factor</td><td>For 6/1 Strand Bare Conductors (#2, #1/0, #2/0 and #4/0):

The lay factor of the aluminum wire shall be not less than 12 nor more than 14.5 times the outside diameter of the conductor. The preferred lay factor is 13 times the diameter, with the lay in a right-hand direction.

For 336.4 MCM 26/7 Strand Bare Conductor:

The lay factor of the various layers of wires in a conductor shall conform to Table 5 of ASTM B232. The direction of lay of the outside of aluminum wires shall be right hand. The direction of lay of the aluminum and steel wires shall be reversed in successive layers.

<table>
<tr><th rowspan="3">Stranding</th><th colspan="6">Aluminum Wire Layers</th><th colspan="3">Steel Wires</th></tr>
<tr><th colspan="3">First Layer (Outside)</th><th colspan="3">Second Layer</th><th colspan="3">6 Wire</th></tr>
<tr><th>Min</th><th>Preferred</th><th>Max</th><th>Min</th><th>Preferred</th><th>Max</th><th>Min</th><th>Preferred</th><th>Max</th></tr>
<tr><td>26/7</td><td>10</td><td>11</td><td>13</td><td>10</td><td>13</td><td>16</td><td>18</td><td>25</td><td>30</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>Construction</td><td>The number and diameter of aluminum and steel wires and the stranding shall conform to the requirements of Table 1, 2 and 3 of ASTM B232 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td>Conductor Strength</td><td>The rated strength shall be the aggregate strength of the steel and aluminum wires determined by the methods described in Section 9.1 of ASTM B232 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td>Material Density</td><td>In accordance with Section 10 of ASTM B232, the density of aluminum wire is assumed to be 2.705 gm/cm3 (0.0975 lb/in3) at 20°C on the basis of 99.45 percent purity. The density of galvanized wire is assured to be 7.78 gm/cm3 (0.281 lb/in3) at 20°C.</td><td></td><td></td></tr>
</table>

<table>
<tr><td>Weight and Electrical Resistance</td><td>The weight and electrical resistance of the stranded conductor shall be determined by the methods described in Section 11 of ASTM B233 (or its latest revision) or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td>Variation</td><td>Limits with variation of the cross section of the aluminum wires shall be described in Section 12 of ASTM B232 or IEC standard equivalent.</td><td></td><td></td></tr>
<tr><td>Characteristics</td><td>• ACSR conductors shall have the following characteristics:
<table>
<tr><th rowspan="2">SIZE AWG or MCM</th><th colspan="2">STRANDS No. & Size-Inches</th><th rowspan="2">OVERALL DIAMETER (inches)</th><th rowspan="2">DC Resistance Ohms/mile @ 25°C</th><th rowspan="2">Ultimate Strength Pounds</th></tr>
<tr><th>Aluminum</th><th>Steel</th></tr>
<tr><td>2</td><td>6x 0.1092</td><td>1 x 0.1092</td><td>0.316</td><td>1.41</td><td>2,790</td></tr>
<tr><td>#1/0</td><td>6 x 0.1327</td><td>1 x 0.1327</td><td>0.398</td><td>0.885</td><td>4,280</td></tr>
<tr><td>#2/0</td><td>6 x 0.1490</td><td>1 x 0.1490</td><td>0.447</td><td>0.702</td><td>5,345</td></tr>
<tr><td>#4/0</td><td>6 x 0.1878</td><td>1 x 0.1878</td><td>0.563</td><td>0.441</td><td>8,420</td></tr>
</table>
<table>
<tr><th rowspan="2">SIZE AWG or MCM</th><th colspan="4">STRANDS No. & SIZE-INCHES</th><th rowspan="2">OVERALL DIAMETER (inches)</th><th rowspan="2">DC Resistance Ohms/mile @ 25°C</th><th rowspan="2">Ultimate Strength Pounds</th></tr>
<tr><th>Aluminum</th><th>Layers</th><th>Steel</th><th>Layers</th></tr>
<tr><td>336.4 MCM</td><td>26 x 0.1137</td><td>2</td><td>7 x 0.0884</td><td>1</td><td>0.720</td><td>0.278</td><td>14,050</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>Finish</td><td>The conductor shall be free of imperfections, sharp protrusions and blemishes not consistent with good commercial practice.</td><td></td><td></td></tr>
</table>

<table>
<tr><td>Test & Inspection</td><td>The manufacturer shall conduct conductor tests and inspections in accordance with Section 16 of ASTM B232 or IEC 888, in so far as applicable. The Member ECs reserve the right to witness ANY OR ALL factory tests and the Supplier shall notify the Member ECs fifteen (15) days before each test is to be conducted. The manufacturer shall also conduct conductor reel tests and inspections and submit test reports before shipment to verify that the reels and lagging comply with the requirements of the Standards provided herein. The Member ECs shall have the prerogative to inspect conductor reels at any time to ensure compliance of this standard. Non-conforming reels and lagging are unacceptable.</td><td></td><td></td></tr>
<tr><td>Packaging & Shipping</td><td>• Conductors shall be shipped on non-returnable reels manufactured from aluminum steel or export quality preservative treated wood lagging. Wood reels and all lagging shall be constructed from new lumber which shall be square sawn, be of smooth surface, with not splits, warps, crooks, loose fibers, decay or insect infestation. The lumber used for wood reels and all lagging shall be preservative treated in accordance with "American Wood Preservers Associates Standards" and as stipulated below:
<table>
<tr><th>Description</th><th>Requirements/Methods</th><th>AWPA Standards</th></tr>
<tr><td>Lumber:</td><td>All Softwood Species</td><td>C1-82, C-2-82 and C16-82</td></tr>
<tr><td>Preservatives: (any one)</td><td>Acid copper Chromate (ACC)
Ammoniacal Copper Arsenate (ACA)
Chromated Copper Arsenate Type C (CCA-C)</td><td>C1-82, C2-83 and C16-82</td></tr>
<tr><td>Treatment:</td><td>Pressure treatment after all carpentry works</td><td>C1-82, C2-83, and C16-82</td></tr>
<tr><td colspan="3">Results of Treatment:</td></tr>
<tr><td>Penetration:</td><td>Minimum 0.4 inches from the surface of any face</td><td>C16-82</td></tr>
<tr><td>Assay Zone:</td><td>0-0.6 inch zone</td><td>C16-82</td></tr>
<tr><td>Retention:</td><td>0.62 bcf for ACC, 0.40 for ACA and CCA. Copper shall be calculated as CuO, Chromium as CRO_3 and Arsenic as AS_2O_5</td><td>C1-82, C2-83, and C16-82</td></tr>
<tr><td>Tests:</td><td>1)Wet ash analysis for oxides
2)X-ray
3)Atomic Absorption</td><td>A7-75, A2-85 Section 2, 5, 6
A9-86
A7-75 and A11-83</td></tr>
</table></td><td></td><td></td></tr>
</table>

- A typical wooden reel and lagging shall have the following dimension:

Dimensions (Inches)					
Reel Designation	Flange Diameter	Drum Diameter	Width		Arbor Hole Diameter
			Inside	Outside	
NRX-30.22	30	18	22	25.5	3
NRX-42.25	42	21	28	31.5	3
NRX 60.28	60	28	28	31.5	3

ACSR CONDUCTOR		REEL SIZE	WEIGHT lbs/1000FT	NOMINAL LENGTH (FT)	WEIGHT OF NOMINAL LENGTH (LB)
AWR	OR MCM				
2	6/1	30.22	91.3	5,900	540
1/0	6/1	30.22	145.2	3,300	480
2/0	6/1	30.22	183.1	3,300	550
4/0	6/1	30.22	291.1	1,900	550
336.4	26/7	42.28	2,500	2,500	1157

- The reel shall be prepared for shipping by:

a) Nailing one-inch (1”) lagging strips to the flanges using two (2) eight-penny (8d) nails at each end.
b) Binding the lagging strips circumferentially with at least four (4) galvanized strips.

- Cutting length shall be 1,000 Meters per Reel.

- Each reel shall contain one length of conductor. The Member ECs permit a variation in length of plus or minus five percent (+/- 5%) of the nominal shipping length.

- The Member ECs shall also allow an amount of conductor not exceeding ten percent (10%) of the total weight of the order to be shipped in random lengths none of which shall be shorter that fifty percent (50%) of the nominal shipping length.

- Metal tags shall be attached to the inside and outside of the reel containing the following information:

	a) Gross and net weights; b) Conductor size, number of strands; c) Length (Feet); d) Catalog number; e) Manufacturer's name and/or identification symbol; and f) Shipping data		
Other Standards	The dimensional and performance requirements of bare ACSR conductors, based on other internationally recognized standards, are acceptable only if the requirements of such standards are equivalent to or exceed the requirements quoted in this document.		
Applicable Standards	ASTM B232 Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR). ASTM B498 Standard Specification for Zinc Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR), ASTM B230 Standard Specification for Aluminum 1350 H19 Wire for Electrical Purposes. ASTM B233 Standard Specification for Aluminum 1350 Redraw Rod for Electrical Purposes. IEC 888 Zinc-coated steel wires for stranded conductor All other applicable standards		

Company Name:

_____[Name of Bidder]_____

Authorized Representative:

_____[Name and Signature of Authorized Representative]_____

Contact Details:

_____