


**RFQ-2025-0526**

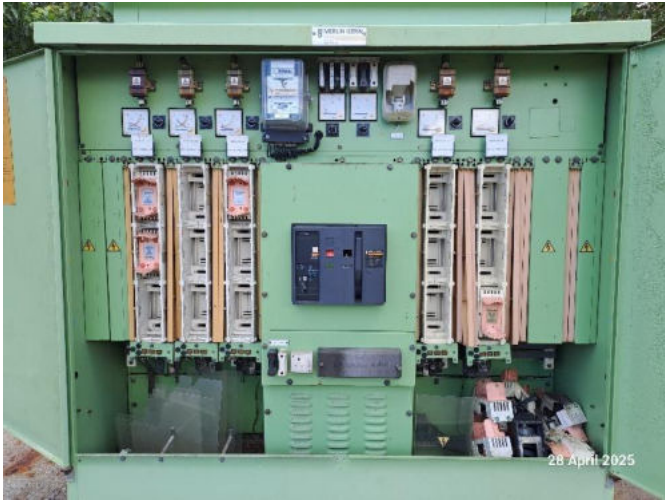
**Refurbishment of Existing 800kVA Package Unit Substation**

**Bill of Quantities**

1. The Bid shall be submitted in Brunei Dollar (BND) currency, as specified in this Bill of Quantities.
2. All rates and prices stated herein shall be deemed to include the supply, delivery, installation, transportation, all applicable duties and taxes, temporary works, and any other costs necessary for the full completion of the Works, whether expressly stated or implied.
3. All costs associated with the conduct of Routine Tests prior to and during the Factory Acceptance Test (F.A.T) shall be borne solely by the Bidder.
4. Bidders shall complete and submit the Equipment Specifications, detailed shop drawings, and a list of major component suppliers, including the country of origin for each major component, together with their bid submission.
5. Bidders are strongly advised to conduct a site visit prior to submitting their bid. No claims arising from any lack of knowledge, incomplete information, or misunderstanding of the site conditions shall be entertained after submission. For site visit arrangements, please liaise with Lisa Shukri at telephone +673-7190014.

Item	Description	Qty.	Unit	Unit Rate	Amount
A.	Refurbishment of 800 kVA Package Unit Substation				
					

Item	Description	Qty.	Unit	Unit Rate	Amount
1.	<p>Repainting of the package unit substation enclosure (internal and external). Please refer to attached Painting Specifications.</p> <p>Supply of all painting and thinning materials, skilled manpower, certified tools and equipment necessary for the complete repainting of distribution transformers. The work includes:</p> <ul style="list-style-type: none"> <li>▪ surface preparation by dry blast cleaning, manual sanding and power tool cleaning to make surface rough inclusive of cleaning surface by dry compressed air.</li> <li>▪ spray application of a layer zinc rich epoxy primer ±50 microns thick.</li> <li>▪ spray application of 2 layers (each layer ± 80 microns) of high-build epoxy undercoat;</li> <li>▪ spray application of 1 layer high-build epoxy polyurethane top coat ± 50 microns thick.</li> <li>▪ supply of associated consumables, cleaning and weather protections materials for the painting works.</li> </ul>	1	lot		
2	Repainting of the 800kVA transformer as per attached painting specifications.	1	lot		
3.	<p>Disconnect and remove the faulty 2R1T 11kV Ring Main Unit from the package unit assembly.</p> 	1	lot		
4.	<p><b>Installation of new 11kV ring main unit.</b> Provision of skilled manpower, lifting crane, transportation, testing, tools and equipment for the installation of 2R1T ring main unit.</p> <ul style="list-style-type: none"> <li>▪ Model: Schneider – Ring master RN2C-T1/21.</li> </ul> <p><i>Note: The 11kV ring main unit to be supplied and to be collected by the contractor from BPC store.</i></p>	1	lot		

Item	Description	Qty.	Unit	Unit Rate	Amount
5.	Disconnect and remove the faulty LV Distribution Feeder Pillar from the package unit assembly. 	1	lot		
6.	Supply and install new 1200A LV DFP in accordance with BPC Specification ref. BPS/LVODFP/001 Rev. A and Drawing No: BPC-03-28 101-CM. Manufacturer : ..... Country of Origin : .....	1	lot		
<b>TOTAL</b>					

BPC Required Delivery	Guaranteed Delivery Date* (inclusive of shop drawings review and Factory Acceptance Testing)
31 July 2025	

\_\_\_\_\_  
(Signature and Company Stamp)

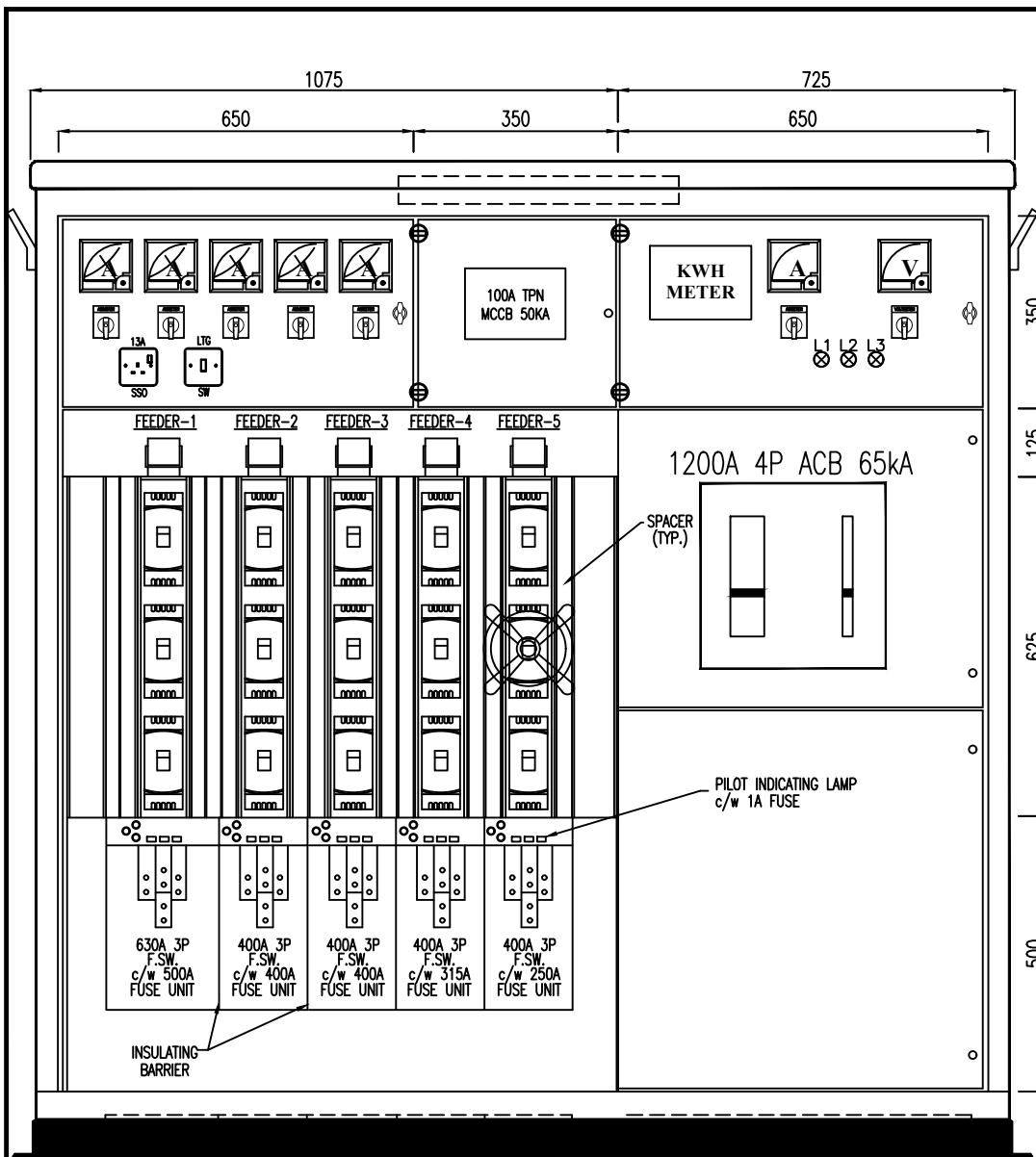
Date: \_\_\_\_\_

Name : .....

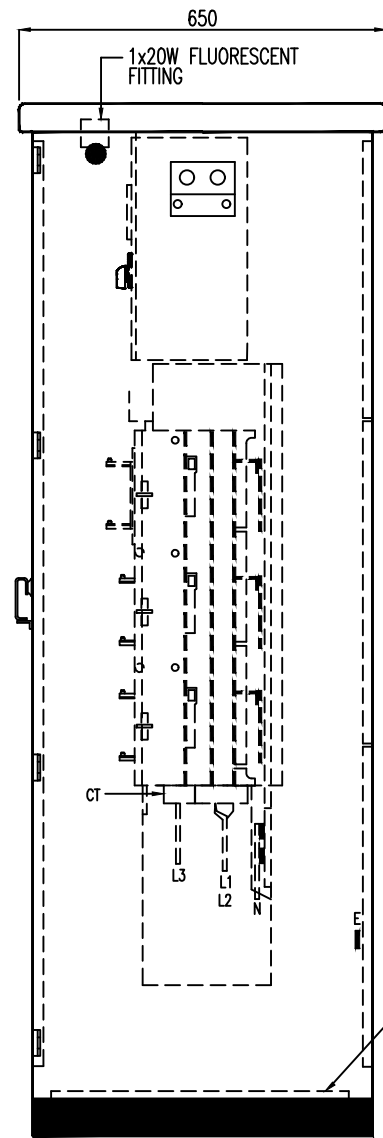
Position : .....

Company Name : .....

E-mail Address: .....



**FRONT VIEW**  
(WITH DOOR REMOVED)



**SIDE VIEW**

LEGEND		MAKE
	AIR CIRCUIT BREAKER	TERASAKI
	FUSE SWITCH c/w FUSE UNIT	SCHNEIDER
	MOULDED CASE CIRCUIT BREAKER	SCHNEIDER
	AMMETER	GENT
	VOLTMETER	GENT
	AMMETER SELECTOR SWITCH	SALZER
	VOLTMETER SELECTOR SWITCH	SALZER
	INDICATOR LIGHTS	SALZER
	CURRENT TRANSFORMER	NITECH
	FUSE CARRIER c/w FUSE LINK	DEMEX

**FABRICATION MATERIALS USED:-**

- EXTERNAL STRUCTURE - 2mm ELECTROGALVANISED SHEET.
- INTERNAL STRUCTURE - 1.6mm ELECTROGALVANIZED SHEET
- ALL COVER FRONT - 2mm ELECTROGALVANISED SHEET.

**PAINT MATERIAL USED:-**

- ELECTROSTATIC POWDER COATING, OVENBAKED TO 200°C FOR 10 MINUTES. (50 MICRONS)
- 'OXYPLAST' UV. RESISTANCE AND CORROSION RESISTANCE POLYESTER POWDER - DARK GREY

**NOTE:-**

- DEGREE OF PROTECTION : IP 54
- WEIGHT : 545 Kgs.

**UNCONTROLLED**  
BERAKAS POWER COMPANY SDN BHD  
ENGINEERING

10 JAN 2024

*Jolly Robinson*

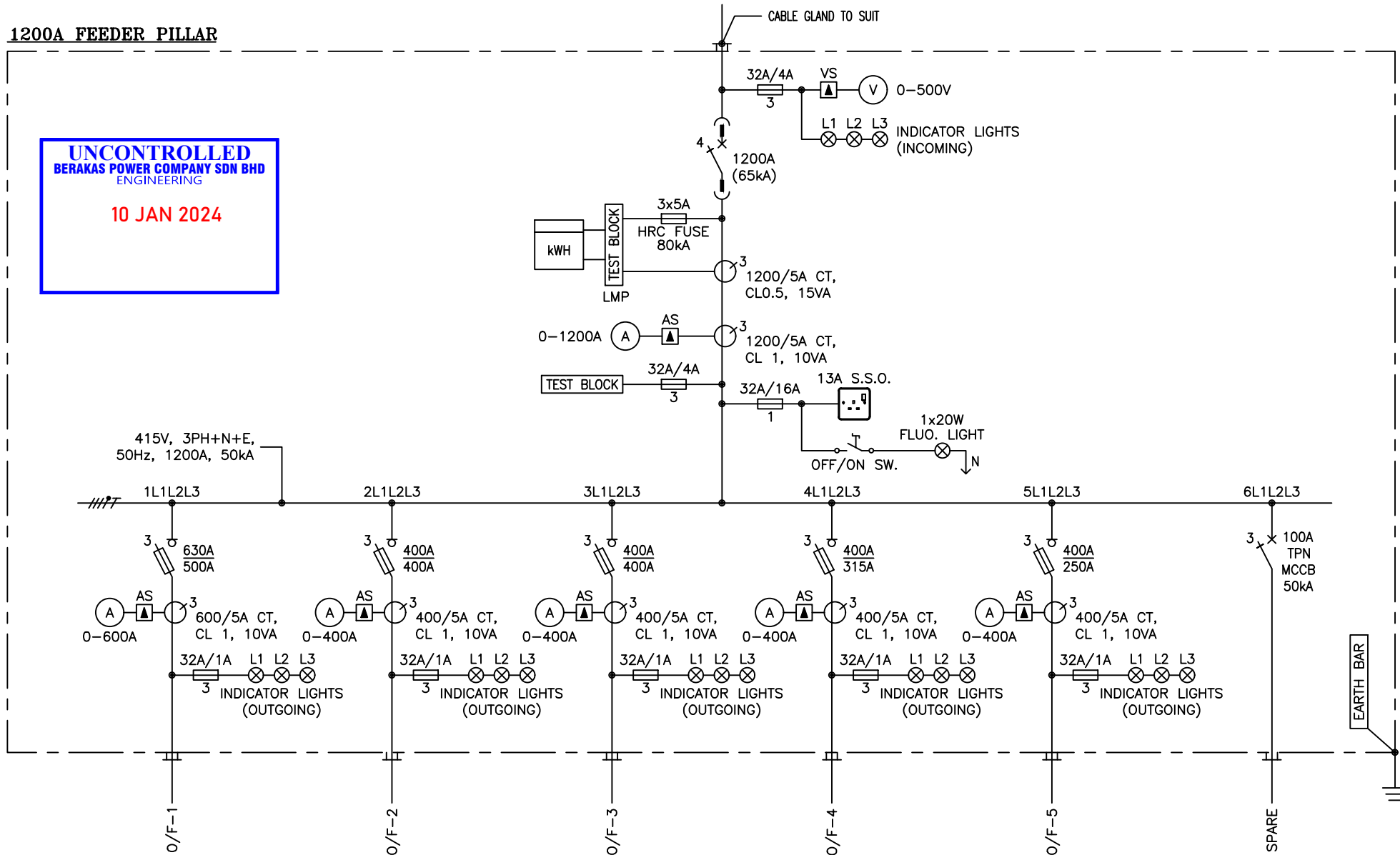
GENERAL NOTES	REV	DESCRIPTION	DATE	DWN	CHK	APPR
	A	ISSUE NEW DWG	08/01/24	D.T.Z.	Z.P.	B.C.


 شركة كواش براكس سندريين برحد <b>BERAKAS POWER COMPANY SDN BHD</b> Providing Power and Expertise to Serve You		DRAWING No. BPC-03-28 101-CM	DATE: JAN'24
		TITLE: GENERAL PANEL LAYOUT FOR 1200A FEEDER PILLAR - TYPE 1201	REV: A
			SCALE: NTS
			SHEET NO: 01 of 02

415/230V 50Hz. SUPPLY

1200A FEEDER PILLAR

**UNCONTROLLED**  
**BERAKAS POWER COMPANY SDN BHD**  
 ENGINEERING  
 10 JAN 2024



							 شركة كواس براكس سندريين برحد <b>BERAKAS POWER COMPANY SDN BHD</b> <i>Providing Power and Expertise to Serve You</i>	
							DRAWING No.	BPC-03-28 101-CM
GENERAL NOTES	A	ISSUE NEW DWG	08/01/24	D.T.Z.	Z.P.	B.C.	TITLE:	SINGLE LINE DIAGRAM FOR 1200A FEEDER PILLAR - TYPE 1201
	REV	DESCRIPTION	DATE	DWN	CHK	APPR	SCALE:	NTS
								SHEET NO:

## SPECIFICATIONS

### PAINTING OF DISTRIBUTION TRANSFORMER

#### 1.0 General

This Specification has been prepared for the use of BPC and by their Contractors as a reference document for the on-site re-painting of transformer.

This Specification covers the minimum requirements of BPC as regards HSE, materials, personnel, surface preparation, coating application, testing and inspection requirements to be employed.

#### 2.0 Surface Preparation

For maximum paint performance it is essential that surfaces to be painted or coated shall be adequately prepared. They shall be completely dry and free from burrs, rust, loose scale, dirt, dust, grease, oil and other foreign matter before any paint is applied.

##### 2.1 Surface Preparation by Dry Blast Cleaning

Surface preparation shall preferably, for maximum coating performance reasons, be carried out by dry blast cleaning. Alternative surface preparation methods will be considered under the following minimum conditions:

- inaccessible areas
- When there is risk of damage to equipment, electrical components, small bore instrument piping, instrumentation, rotating equipment, etc., in the proximity to blasting operation. Every precaution shall be made to wrap equipment & electrical components to prevent the ingress of dust or grit during blasting.

After the surface preparation of the substrate, any grit, dust, etc., shall be removed and a layer of primer applied before any detrimental corrosion or recontamination occurs, normally within 4 hours after dry blast cleaning.

##### 2.2 Surface Preparation by Manual/Power Tool Cleaning

Manual or power-tool cleaning shall only be utilised with prior written approval of BPC using a detailed procedure indicating specific areas intended for power tool cleaning, and the method used. It shall be confined to minor areas of coating damage that are to be repaired.

Where the work areas cannot accommodate a power disc, power impact tools shall be applied (vibratory and rotary hammers, needle guns, chisels) followed by brush cleaning.

When manual or power-tool cleaning is allowed, the surface produced shall be left degreased and roughly abraded. The prepared surfaces shall never be left polished or burnished.

#### 3.0 Painting and Coating Materials

The Contractor shall submit their detailed coating system proposals to BPC for prior review and approval. The Contractor shall demonstrate to the Contract Owner both the technical soundness and life-cycle cost effectiveness of their proposed paint systems. These proposals shall include:

- the coating system detailing the type of paints to be used including the surface preparation;
- up-to-date Technical and Safety Data Sheets of the paints to be used.
- independent test reports on testing conducted .
- Reference listing and performance records of where the proposed paint systems has been applied successfully

#### 4.0 Paint Materials, Storage and Handling

All material shall be supplied in the Manufacturer's original containers, durably and legibly marked with the description of the contents. This shall include the specification numbers, the colour reference numbers, the method of application for which it is intended, the batch numbers, dates of manufacture, the shelf-life expiry date and the Manufacturer's name or recognised trademark.

The storage, handling and preparation of paints and other coating materials (e.g. thinners) shall be in strict accordance with the Manufacturer's instructions. They shall be kept in a well-ventilated and clean storage area.

Samples for testing the paint being used may be taken by the Contract Owner at any time. Should a sample fail to meet the required specification, the Contractor shall remove this paint from the equipment.

#### 5.0 Paint Application

The paint shall be applied in accordance with the paint Manufacturer's product data sheet, which shall include the mix ratio, the method of application, the use of thinners and over-coating times.

Areas with inadequate coating thickness shall be thoroughly cleaned and abraded where necessary, and additional compatible coats shall be applied until they meet the required film thickness.

Unless specifically compatible with the coating system(s), painting shall not be performed under the following conditions:

- when the relative humidity of the air is greater than 85%.
- when the surface temperature is greater than 50 °C

- when there is the likelihood of an unfavourable change in weather conditions within two hours after painting
- when there is a deposition of moisture in the form of rain, condensation, etc., on the surface,
- when the available lighting is deemed to be insufficient for painting to proceed.

If condensation, rain, dust or other foreign materials contaminate the surface of a paint coating which is not dry to the touch, the paint shall be removed, the surface re-cleaned and fresh paint applied.

Extra coats of paint shall be applied on the areas where the shape and/or plane of application result in thinly applied coatings, e.g., at edges, welds, corners etc. To compensate for these effects, stripe coats of paints shall be applied (normally applied first so that they will be covered by the full coat).

The first coat of paint shall be applied within 4 hours after surface preparation, before significant rusting or contamination occurs.

Each layer of paint shall be allowed to dry/cure for a period of time within the limits prescribed by the paint manufacture before the next layer is applied. Subsequent layers of the paint system shall have a difference in tint or colour with the topcoat matching the required colour scheme (e.g., yellow for structural items).

Dry Film Thickness - The specified minimum dry film thickness shall not be exceeded by more than 50%, with the exception of areas such as welds, crevices, etc., where such a requirement is not practical.

### 5.1 Spray Application

Airless or pneumatic spray applications are the preferred method of application.

The correct spray tips, air pressures, etc., as recommended by the equipment and paint manufacturers shall be strictly followed. These equipment and fittings shall be properly cleaned and maintained for the painting activities.

Each spray coat shall overlap the previous pass, large surfaces shall always receive passes in two directions at right angles to each other. Each coat shall be applied uniformly and completely over the entire surface. All runs and sags shall be brushed out immediately or the paint shall be removed and the surface be re-sprayed.

Stripe Coating - Before spraying each coat, all areas such as corners, edges, welds, small brackets, bolts, nuts and crevices shall be pre-coated by brush to ensure that these areas have at least the minimum specified dry-film thickness.

### 5.2 Brush Application

Brush application may be used under the following circumstances:

- when areas cannot be properly coated by spraying for any reason
- above ground level when it is considered that loss of paint under prevailing conditions is excessive and progress of work has to be maintained and personnel in or near the work site or plant or equipment property, may be affected by spray particles
- for 'touch-up' or repairs to localized damaged paint or areas of incorrectly applied paint.
- For applying stripe coats of paint to corners, edges, crevices, holes, welds or other irregular surfaces prior to spray application.
- Brushes used in brush application shall be of a style and quality that will permit proper application of paint.

Brush painting shall be done in two passes that are perpendicular to each other such that a smooth coat, as nearly uniform in thickness as possible, is obtained. There shall be no deep or detrimental brush marks. Paint shall be worked into all crevices and corners. Runs and sags shall be brushed out.

Proper cleaning, drying, handling and storage of the paint brushes are essential after each painting activities. Thinners and cleaning solvents used shall be 100% compatible with the type and brand of paints used.

Painting by roller application shall not be used.

## 6.0 Colour Scheme

The final coat of a coating system shall be of a colour in accordance with the original colour scheme of the transformer to be painted.

The RAL – colour system shall be used to define the required paint colour finishes.

## 7.0 Repair of Coating Defects

The Contractor shall submit repair procedures for Contract Owner approval prior to the works being performed.

Before application of any coat of material, all damages to previous coat shall be repaired. All loose paint shall be removed to a firm and feathered edge. All surface irregularities and contaminants shall be removed. These surfaces may require abrading to obtain a suitable surface for painting.

## 8.0 Inspection and Testing

Before any painting activities commence the Contractor shall submit an inspection procedure report indicating inspections and tests to be conducted during preparation and application of the paint system for approval by the Contract Owner.

The Coating Inspector employed by the Contractor shall have minimum of 3 years working experience in the painting and coating discipline.

The following minimum coating inspections and tests shall apply:

a) *Surface Contamination* .Tests indicating the extent of substrate contamination

b) *Temperature and Relative Humidity*. The temperatures of the atmosphere and the substrate shall be measured using a calibrated thermometer. The relative humidity shall also be measured in order to determine the dew point temperature of the substrate. These measurements shall be repeated regularly within each daily shifts and particularly with changes in painting and/or weather conditions. For these measurements, a calibrated temperature gauge (e.g. Elcometer-113 or 213) and a calibrated relative humidity hygrometer (e.g. Elcometer-116 or 117) shall be used.

c) *Wet/Dry Film Thickness*. Regular spot checks shall be carried out during the course of the painting operation to ensure that film thickness is being maintained.

For maintenance painting onto existing paint coating, the minimum pull-off value of the repainted surfaces shall be 1.4 Mpa (200 psi) or 90% of the original existing paint coating adhesion values. At the discretion of the Contract Owner, this minimum pull-off value(s) may be changed on a case by case painting basis

### **8.1 Inspection Records and Reports**

During the work, daily reports shall be prepared and retained by the Contractor, giving details on weather conditions, particulars of application, e.g., surface preparation, number of coats applied, type of materials applied, testing and inspection results required by this specification

BPC shall have the right to inspect the paint work at all stages of preparation and to reject any tools, instruments, materials, equipment or work which do not conform to the minimum requirements of this Specification.

At the discretion of the Contract Owner, random paint samples may be taken for analysis and check against the paint specification.

Prior to final acceptance of the paint work an inspection shall be made. The Contractor and the Contract Owner shall both be represented and they shall sign an agreed inspection report.

These reports shall include as a minimum:

a) *General*

- Names of the Contractor and the responsible personnel.
- Dates when work was carried out.

b) *Materials preparation*

- Equipment and techniques used.
- Materials receipt condition.
- Type and calibration of instruments used.

c) *Environmental conditions*

- Weather and ambient conditions.
- Painting periods

d) *Surface preparation*

- Condition of surface before preparation.
- Tools and methods used to prepare surface.
- Condition after preparation.

e) *Paints and painting*

- Information on systems being applied.
- Mixing and testing prior to application.
- Paint application techniques.

f) *Testing*

- Type of quality control checks carried out, and results.
- Compliance or otherwise with specification.

### **9.0 Health, Safety and Environment**

Prior to start of painting work, the painting Contractor shall submit for BPC approval their detailed Risk Assessment and Method Statement (RAMS).

All relevant requirements of BPC shall be met. Of particular importance are the requirements for dry/wet blasting and power tool cleaning and for scaffolding access platform. Environmental pollution, e.g., lead concentration in the air and ground associated with blast cleaning of existing lead/chromate containing paints, shall be controlled.

The recommendation for personal protection and for protective equipment shall be followed.

Spray guns and accessories shall be properly maintained, operated and earthed to prevent them from building up an electrostatic charge by the movement of paint.

Storage, handling, mixing, and application of the paints and coating materials shall be done strictly in accordance with manufacturers' recommended procedures and hardware of assurance of personal safety. Safety precautions shall be clearly described on the technical data sheets of paints and coating materials supplied, as well as on the paint containers.

Lead containing paints, coal-tar containing epoxy and/or urethane paints shall not be used because of the associated health and environmental concerns.

Paints and other coatings specified in this Specification shall not contain any components which are considered to be carcinogenic or toxic (e.g. isocyanates) which can be released during application, in service or during removal.

Statutory requirements for levels of VOCs (volatile organic compounds) are to be met.

#### **10.0 Painting Contractor Responsibilities**

The painting Contractor shall be responsible for:

- Their quality of workmanship, which shall be performed in accordance with this Specification and all other relevant documents such as site regulations, safety rules, referred standards and codes, etc. Deviation shall not be allowed unless duly authorized in writing by BPC.
- The protection of all equipment, structures and any other areas from e.g. mechanical damage, environmental damage, paint droppings, or overspray.
- Earthing of all painting and electrical equipment and accessories.
- Taking all necessary precautions to avoid or minimise interference with the execution of other contractors' work in the affected vicinity.
- Maintenance of their painted works until completion of the contract. This shall include the repair of any damages.
- The characteristics and performance of their paints and paint materials obtained from the paint Manufacturer. The characteristics shall be obtained via the provision of separate technical, and health and safety data sheets.
- Provision of all painting, thinning and cleaning materials, tools, site accommodation, transport services, and competent supervision, necessary for the satisfactory completion of the works.
- Use of qualified surface preparation operators (e.g. blast clean, power or hand tool clean and UHP water clean) and qualified painters. The Contractor shall conduct necessary trade tests to qualify their surface preparation operators and painters
- Use of qualified Coating Inspectors to minimum of 3 years coatings/painting work experience.
- Supply each coating inspector with all necessary inspection and test equipment/tools for the performance of the works
- The calibration of all inspection and test equipment/tools shall be in accordance with the manufacturers' recommendations.
- Control and safe disposal of waste resulting from the Contractor's painting and coating activities, in accordance with site regulations and specific contract requirements.
- Maintaining all facilities, tools and equipment in a good, clean and operable condition. Spray guns, brushes, mini blast pots, paint pots and the like shall be regularly cleaned and shall be suitable for their purpose.
- The supply of all necessary equipment and weather protection for the painting works.
- The storage and preparation of paints and other coating materials shall be in accordance with the manufacturer's instructions.

#### **11.0 Painting Procedure Qualification**

Before commencing, the Contractor shall submit his painting procedure to BPC for approval and qualification testing.

The qualification of a painting procedure shall involve:

- Submission by the Contractor of a written painting procedure for BPC's approval. The procedure shall state the coating system, the paint manufacturer, the paint technical and safety data sheets, the standard of surface preparation, the application techniques, the equipment involved, and the methods of inspection.
- The Contractor shall also submit independent test reports, reference listings and performance reports to demonstrate where this proposed paint system has been used successfully within other similar industrial companies.
- Upon approval of the written painting procedure and at the discretion of the Contract Owner, a procedural qualification test shall be conducted by the Contractor (at their own cost), following the written procedure and using the specified contractor's equipment, and simulating as close as practical the anticipated prevailing conditions during actual painting job.



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**BERAKAS POWER COMPANY SDN BHD**

*Providing Power and Expertise to Serve You*

## **Technical Specification**

**For**

**Low Voltage**

**Outdoor Distribution Feeder Pillars**

**Important note:**

Copyright of all text, drawings and other information within this specification remains with BPC. Copies should not be circulated to third parties without the prior written consent of BPC. BPC reserve the right to alter, change or withdraw this specification from time to time without informing third parties.

Supplier reference

Company stamp

**Introduction**

This specification is intended to give a clear / descriptive definition of the requirements for the supply of Low Voltage Distribution Feeder Pillars.

The manufacturer must complete the “Manufacturer’s Guarantee” section ensuring that all information given is correct and clearly stated. Any misunderstanding should be raised with Berakas Power Company (BPC) to ensure compliant with the specification.

**Requirement**

BPC requires the design, manufacture, routine tests, sample tests, supply and delivery of Low Voltage Distribution Feeder Pillars as per this specification and any other drawings or documentation stated in the Bid Document.

Item	Particular	Specified requirement	Manufacturer’s Guarantee	Units
<b>A</b>	<b>Standards</b>	Latest issues of:	State latest issue date	
A1	Low voltage switchgear & control gear assemblies	IEC 61439-1		
A2	Busbar	BS 159		
A3	Degree of protection provided by enclosures	IEC 60529		
A4	Wires and wiring	BS 6231		
A5	Galvanising	BS 443 & 729		
A6	HRC fuse link	BS 88		
A7	Current transformer	BS 3938		
A8	Fuse switch	IEC 60947-3		
A9	Instruments	BS 89		
<b>B</b>	<b>Service conditions</b>			
B1	Location	Tropical		
B2	Temperature			
B2a	Ambient temperature range	0 to + 40		°C
B2b	Daily, monthly & yearly average temperature	+30		°C
B3	Altitude	Up to 1000		m
B4	Relative Humidity	Max 99.5		%
B5	Maximum end temperature of busbars, droppers, connections and contacts at continuous in-panel rating at site reference	IEC 496, Table V		
<b>C</b>	<b>Technical Specification</b>			
C1	Rated normal voltage	600		V
C2	System voltage			
	• Single Phase	240		V Ph-E
	• Three Phase	400		V Ph-Ph
C3	System frequency	50		Hz
C4	Rated one minute power frequency withstand voltage	2500		Volts

<b>Supplier reference</b>	<b>Company stamp</b>
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C5	Rated short time withstand current and duration of short circuit withstand	30		KA for 1s																														
C6	Minimum rated breaking capacity of fuse switch	50		KA for 1s																														
C7	Minimum rated breaking capacity of fuse links	80		KA																														
C8	Moulded case circuit breaker (MCCB)																																	
C8a	Rated service breaking capacity ( $I_{cs}$ ) of short circuit current as per IEC 60947-2 - For MCCBs up to 800 Amp	50		KA																														
C8b	No. of poles	4																																
C8c	Operating mechanism	Manually operated with padlockable rotary operating handle																																
C8d	Protection release (built-in) required for	Long time short time instantaneous																																
C8e	Bypass facility for instantaneous protection	Required																																
C9	Air circuit breaker (ACB)																																	
C9a	Rated service breaking capacity $I_{cs}$ of short circuit current as per IEC 60947-2 for ACBs rated 1200 and 1600A	65		KA																														
C9b	No. of poles	4																																
C9c	Operating mechanism	Spring charged, manually operated with 'CLOSE' and 'TRIP' push buttons (lockable)																																
C9d	Protection release (built-in) required for	Long time short time instantaneous																																
C9e	Bypass facility for instantaneous protection	Required																																
C10	800A incoming spring-charged disconnecter according to IEC60947-3 with utilization category of AC-22B	Yes																																
C11	Distribution Outgoing Feeder Unit Fuse Switch and Fuse Link Rating BPC requirement as follows, and in line with Table 1																																	
	<table border="1"> <thead> <tr> <th>Outgoing Feeder Unit</th> <th>Fuse Switch Rating (A)</th> <th>Fuse Link Rating</th> </tr> </thead> <tbody> <tr> <td>O/F1</td> <td>800 Amp</td> <td>800 Amp</td> </tr> <tr> <td>O/F2</td> <td>600 Amp</td> <td>500 Amp</td> </tr> <tr> <td>O/F3</td> <td>600 Amp</td> <td>400 Amp</td> </tr> <tr> <td>O/F4</td> <td>600 Amp</td> <td>250 Amp</td> </tr> <tr> <td>O/F4</td> <td>600 Amp</td> <td>100 Amp</td> </tr> </tbody> </table>	Outgoing Feeder Unit	Fuse Switch Rating (A)	Fuse Link Rating	O/F1	800 Amp	800 Amp	O/F2	600 Amp	500 Amp	O/F3	600 Amp	400 Amp	O/F4	600 Amp	250 Amp	O/F4	600 Amp	100 Amp		<table border="1"> <thead> <tr> <th>Fuse Switch Rating</th> <th>Fuse Link Rating</th> </tr> </thead> <tbody> <tr> <td>Amp</td> <td>Amp</td> </tr> <tr> <td>Amp</td> <td>Amp</td> </tr> <tr> <td>Amp</td> <td>Amp</td> </tr> <tr> <td>Amp</td> <td>Amp</td> </tr> <tr> <td>Amp</td> <td>Amp</td> </tr> </tbody> </table>	Fuse Switch Rating	Fuse Link Rating	Amp	Amp	Amp	Amp	Amp	Amp	Amp	Amp	Amp	Amp	
Outgoing Feeder Unit	Fuse Switch Rating (A)	Fuse Link Rating																																
O/F1	800 Amp	800 Amp																																
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<b>Supplier reference</b>	<b>Company stamp</b>
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<b>D Construction</b>			
D1	Manufacturer's name	<i>Manufacturer to state</i>	
D2	Manufacturer's type (If assigned)	<i>Manufacturer to state</i>	
D3	Country of manufacture	<i>Manufacturer to state</i>	
D4	Feeder pillar drawing number	<i>Manufacturer to state</i>	
D5	Degree of protection for complete feeder pillar	IP54	
D6	Degree of protection when the feeder pillar door is opened	IP2X (min.)	
D7	Installation	Suitable for outdoor installation	
D8	Corrosion resistant surface	Required	
D9	Material of enclosure and thickness	Bidder to specify	
D10	Paint shade	RAL 7032	
D11	Current transformer for metering		
a	Construction	Encapsulated epoxy resin moulded	
b	Secondary current	5	Amps
c	Class of accuracy	0.5	
d	VA burden	10VA	
<b>I Indication</b>			
I1	All high-voltage switch positions to be clearly marked on the front of the switchgear	Yes	
I2	A clear mimic diagram on the front of the switchgear which indicates the different functions	Yes	
I3	The lever operation for all high-voltage devices shall be clearly labelled on the front of the switchgear	Yes	
I5	Capacitor indicator:		
I5a	Capacitor indicators should be fitted to indicate whether or not there is voltage on the cables	Yes	
I5b	Capacitive voltage dividers to supply low voltage power to sockets at the front of the unit.	Yes	
I5c	One socket per phase on each switchgear (circuit) panel (3 total)	Yes	
I5d	External plug-in neon indicators should be used to indicate live cables.	Yes	
I5e	One plug-in neon indicators to be supplied with each switchgear.	Yes	
I6	Nameplate, the following should apply:		

<b>Supplier reference</b>	<b>Company stamp</b>
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I6a	Metal nameplate shall be mounted on the inside of the LV compartment in each switchgear (circuit) panel where it can be read.	Yes		
I6b	The following information should appear on the name plate: 1. Manufacturer 2. Year of manufacture 3. Manufacturer's type designation 4. Serial number 5. Rated voltage ( $U_r$ ) 6. Rated lightning impulse withstand voltage ( $U_p$ ) 7. Rated short-duration power-frequency withstand voltage ( $U_d$ ) 8. Rated normal current ( $I_r$ ) 9. Rated short-time withstand current ( $I_k$ ) 10. Rated peak withstand current ( $I_p$ ) 11. Rated frequency ( $f_r$ ) 12. Rated duration of short circuit ( $t_k$ ) 13. Rated auxiliary voltage ( $U_a$ )  For switching devices IEC62271-103 Table 2 should be used	Yes		
<b>L</b>	<b>Type tests</b>			
L1	Type tests carried out by an International Independent Testing Authority, i.e., KEMA, ASTA, KERI or CESI only, for similar equipment	<i>Manufacturer to state testing authority</i>		
L2	Type tests as per IEC 60840	Yes		
L3	Type test reports/ certificates			
L3a	Short time withstand current test.	Certificate required		
L3b	Temperature rise test.	Certificate required		
L3c	Degree of protection test	Certificate required		
L3d	Voltage withstand up to 25kV	Certificate required		
L4	Test for terminal block for CT	Yes		
<b>R</b>	<b>Quality</b>			
R1	Manufacturer to provide the following:			
R1a	Copy of the ISO 9001 certificate	Certificate required		
R1b	Proof that the manufacturer uses a quality manual approved and signed by top management	Yes		
R1c	Proof that the quality manual is kept up-to-date	Yes		

<b>Supplier reference</b>	<b>Company stamp</b>
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<b>S</b>		<b>Country of Origin</b>	
S1	Country of Origin of Feeder Pillar	<i>Manufacturer to state</i>	
S2	Factory address	<i>Manufacturer to state</i>	
<b>T</b>		<b>Non-compliance</b>	
T1	The manufacturer should state all of the points within this specification where they do not comply	<i>Manufacturer to state</i>	

<b>Supplier reference</b>	<b>Company stamp</b>
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**A Standards**

The manufacturer must state the latest IEC standard that the equipment complies to e.g. (2012-05) as indicated on the front of the relevant IEC. If this standard is different to the latest version, then an explanation should be submitted.

**B Service conditions**

This section states the service condition where the equipment specified is intended for used.

**L Type tests**

Type tests are tests made before supplying, on a general commercial basis, of this equipment, in order to demonstrate satisfactory performance characteristics to meet the intended application. These tests are of such a nature that, after they have been made, they need not be repeated, unless changes are made in the equipment materials or design of manufacturing process, which might change the performance characteristics.

Type tests shall be carried out by an independent international testing authority i.e. KEMA, ASTA, CESI or KERI. Type test certificates to be supplied as per section L.

**R Quality**

The manufacturer must be ISO 9001 certified and they must use a quality manual approved and signed by top management along with proof that the quality manual is kept up-to-date.

**T Non-compliance**

The manufacturer should state all of the points within this specification where they do not comply. This will streamline the tender evaluation process.

**Note: Manufacturers must provide detailed calculations, showing all steps, stating all formulas used and the IEC clauses referred, where relevant.**

<b>Supplier reference</b>	<b>Company stamp</b>
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