输煤系统检修箱由普通型更换为防爆型询比文件

Dokumen Permintaan Penawaran dan Perbandingan Harga Penggantian Kotak Pemeliharaan Sistem Pengangkutan Batubara dari Tipe Biasa menjadi Tipe Tahan Ledakan

一、基本情况

I. Informasi Umum

1. 采购人：印尼华瑞电力有限公司

1. Pihak Pembeli: PT Pembangkitan Listrik Pintar Energi

2. 联系人：(技术：马生辉)（商务：于再军）
2. Kontak: (Teknis: Ma Shenghui) (Komersial: Yu Zaijun)

3. 报价专用邮箱：7314650710@qq.com。最终报价文件只能发送该邮箱，否则不予认可，且邮件标题名称必须为“玻雅项目 XXX 采购标段报价文件（公司）”。请勿重复发送，采购人只认可最后一次报价。
3. Email Khusus Penawaran: 7314650710@qq.com . Dokumen penawaran akhir hanya dapat dikirim ke alamat email tersebut, apabila dikirim ke alamat lain maka tidak akan diakui. Judul email wajib mencantumkan:“Dokumen Penawaran Paket Pengadaan Proyek Boya XXX (Nama Perusahaan)”. Mohon tidak mengirim berulang kali, pihak pembeli hanya mengakui penawaran terakhir.

澄清专用邮箱：7314650710@qq.com。采购过程中若有疑问可发送至该邮箱，否则不予回复，且邮件标题名称必须为“玻雅项目 XXX 采购标段投标疑问（公司）”。
Email Klarifikasi: 7314650710@qq.com . Apabila terdapat pertanyaan selama proses pengadaan, dapat dikirim ke alamat email tersebut. Pertanyaan yang dikirim ke alamat lain tidak akan ditanggapi. Judul email wajib mencantumkan:“Pertanyaan Tender Paket Pengadaan Proyek Boya XXX (Nama Perusahaan)”.

4. 采购内容：详见报价表。
4. Ruang Lingkup Pengadaan: Silakan lihat lembar penawaran untuk detailnya..

5. 采购方式：公开询比。
5. Metode Pengadaan: Permintaan Penawaran Terbuka.

6. 评审方法：经评审的最低价法，按照满足采购需求且报价最低原则按顺序推荐候选成交供应商。
6. Metode Evaluasi: Metode harga terendah setelah evaluasi, yaitu merekomendasikan calon pemasok pemenang secara berurutan berdasarkan pemenuhan kebutuhan pengadaan dan harga penawaran terendah.

7. 报价截止时间：2026 年 5 月 6 日 17：00 点前（雅加达时间）。
7. Batas Waktu Penawaran: Sebelum 6 Mei 2026 pukul 17.00 WIB (Waktu Jakarta).

8. 送货地址：PLTU SUMSEL 8 Desa Tanjung Lalang, Tanjung Agung, Kabupaten Muara Enim, Sumatera Selatan。
8. Alamat Pengiriman: PLTU SUMSEL-8, Desa Tanjung Lalang, Kecamatan Tanjung Agung, Kabupaten Muara Enim, Sumatera Selatan.

9. 采购监督投诉受理邮箱：chdptplpe@gmail.com 。

9. Email Pengaduan dan Pengawasan Pengadaan: chdptplpe@gmail.com .

二、报价说明

II. Ketentuan Penawaran

1.报价人的报价包括人工费、材料费、运杂费、管理费、利润、PPN 税费、保险费以及标的物运抵到采购人指定交货地点有关的一切费用，固定价格保持不变。

1. Harga penawaran peserta harus mencakup biaya tenaga kerja, biaya material, biaya transportasi dan penanganan, biaya manajemen, keuntungan, pajak PPN, biaya asuransi, serta seluruh biaya lainnya sampai barang tiba di lokasi penyerahan yang ditentukan pihak pembeli. Harga bersifat tetap dan tidak berubah.

2. 特别注意：所报货物参数规格务必符合要求，所报产品差异应注明。

2. Perhatian Khusus: Parameter dan spesifikasi barang yang ditawarkan wajib sesuai persyaratan. Apabila terdapat perbedaan pada produk yang ditawarkan, wajib dijelaskan secara tertulis.

3. 供货周期：详见报价表。

3. Jangka Waktu Pengiriman: Mengacu pada Formulir Penawaran.

4. 资格审查资料：提供营业执照、税务登记证、法人身份证明文件。

4. Dokumen Verifikasi Kualifikasi: Menyediakan salinan izin usaha, surat pendaftaran pajak, dan dokumen identitas perwakilan sah perusahaan.

5. 付款方式：货到验收合格后通过银行转账付款，报价人应具有银行对公账户。

5. Metode Pembayaran: Pembayaran dilakukan melalui transfer bank setelah barang diterima dan dinyatakan lulus pemeriksaan. Peserta wajib memiliki rekening bank atas nama perusahaan.

6. 质保金：☐不适用。☑适用：合同总额的 3% ，期限 12 个月。

6. Jaminan Pemeliharaan: ☐ Tidak berlaku. ☐ Berlaku: Sebesar 3% dari total nilai kontrak, dengan masa berlaku 12 bulan .

7. 采购人不保证价格最低的供应商中标，也不对未中标的供应商作任何解释。对使用不符合质量要求的产品报价不予评审。

7. Pihak pembeli tidak menjamin bahwa pemasok dengan harga terendah akan ditetapkan sebagai pemenang, serta tidak berkewajiban memberikan penjelasan apa pun kepada peserta yang tidak terpilih. Penawaran yang menggunakan produk yang tidak memenuhi persyaratan mutu tidak akan dievaluasi.

三、报价表

III. Formulir Penawaran

序号 No. Seri	物资名称 Nama Barang	规格/型号 Spesifikasi/Model	单位 Satuan	数量 Jumlah	单价（RP） Harga Satuan (IDR)	合价（RP） Harga Total (IDR)	到货日期 Tanggal kedatangan	备注 Catatan
1	防爆检修电源箱（每台带不锈钢安装螺丝4套） Kotak Sumber Listrik Pemeliharaan Tahan Ledakan (setiap unit dilengkapi 4 set baut pemasangan stainless steel)	防护等级：IP66（详见技术规范书） Tingkat perlindungan: IP66 (rincian mengacu pada Spesifikasi Teknis)	台 Unit	16			自中标之日起100个工作日内 Dalam waktu 100 hari kerja sejak tanggal penetapan sebagai pemenang tender.	含安装（详见技术规范书） Termasuk pemasangan (rincian mengacu pada Spesifikasi Teknis).
2	断路器 Pemutus Sirkuit (Circuit Breaker)	每个检修电源箱应设1个断路器进线回路（100A,断路器需配有脱扣线圈，配置箱外急停按钮）、一个单相断路器（6A，用于主断路器箱外脱扣按钮电源回路）、1个三相断路器馈线回路（63A、5P、航空防	套 Set	16			自中标之日起100个工作日内 Dalam waktu 100 hari kerja sejak tanggal penetapan sebagai pemenang	ABB、施耐德、西门子或同等质量品牌的厂家 Produsen merek ABB, Schneider, Siemens, atau merek

		爆防水插座）、2 个 380V 三相断路器馈线回路（32A/32A、5P、航空防爆防水插座）、2 个 220V 单相断路器馈线回路（16A/16A、3P、航空防爆防水插座）、所有断路器有箱外操作把手，每个操作把手带有防水罩，单独的断路器回路设置接线端子。 Setiap kotak sumber listrik pemeliharaan harus dilengkapi dengan 1 sirkuit masuk pemutus sirkuit (100A, pemutus sirkuit harus dilengkapi kumparan trip/shunt trip coil, serta tombol berhenti darurat di luar panel), 1 pemutus sirkuit satu fasa (6A, digunakan untuk rangkaian catu daya tombol trip eksternal pemutus					tender.	lain dengan kualitas setara. 含安装（详见技术规范书） Termasuk pemasangan (rincian mengacu pada Spesifikasi Teknis).

		utama), 1 sirkuit keluaran pemutus sirkuit tiga fasa (63A, 5P, soket aviation tahan ledakan dan tahan air), 2 sirkuit keluaran pemutus sirkuit tiga fasa 380V (32A/32A, 5P, soket aviation tahan ledakan dan tahan air), 2 sirkuit keluaran pemutus sirkuit satu fasa 220V (16A/16A, 3P, soket aviation tahan ledakan dan tahan air). Seluruh pemutus sirkuit harus dilengkapi tuas operasi di luar panel, setiap tuas operasi dilengkapi penutup tahan air, dan masing-masing sirkuit pemutus tersendiri harus dilengkapi terminal pengkabelan.						
小计 Subtotal								

PPN11%			
总计 Total			
交货期 Pengiriman tepat waktu		供应商名称 Nama Pemasok	
联系地址 Alamat Kontak			

报价人：　　（签字）　　联系方式：

Penyedia Penawaran:　(Tanda Tangan)　　Rincian Kontak:

报价单位：　　（盖章）

Organisasi Penawaran:　　(Stempel)

备注：1. 报价人应签字盖章扫描后上传到报价专用邮箱。

2. 报价人应附上营业执照、税务登记证、法人身份证明文件扫描件。

Catatan: 1. Penyedia penawaran wajib menandatangani dan menempelkan stempel, kemudian memindai dan mengunggah dokumen ke alamat email penawaran yang ditentukan.

2. Penyedia/Penawar wajib melampirkan hasil pemindaian (scan) Izin Usaha, Surat Pendaftaran Pajak, serta dokumen identitas Direktur/Penanggung Jawab Perusahaan.

印尼华瑞电力有限公司

PT PEMBANGKITAN LISTRIK PINTAR ENERGI

输煤系统检修箱由普通型更换为防爆型技术规范书

The whole factory lighting distribution box, maintenance distribution box, power control box, terminal box

Technical Agreement

批 准：

Approved：

审 核：

Reviewed：

编 写：

Prepared：

2026-03

目录

1 General Provisions 总则

1.1 This equipment technical specification applies to the replacement of conventional maintenance power supply with explosion-proof type in the coal handling system of the supercritical coal-fired generating unit of PT PEMBANGKITAN LISTRIK PINTAR ENERGI, and stipulates the technical requirements for the functional design, structure, performance, installation and test of the equipment itself and its auxiliary equipment.

1.1 本设备技术规范书适用于印尼华瑞电力有限公司超临界燃煤发电机组的输煤系统检修电源由普通型更换为防爆型，提出设备本体及其辅助设备的功能设计、结构、性能、安装和试验等方面的技术要求。

1.2 The technical requirements specified in this specification are the minimum requirements, which do not stipulate all technical details nor fully quote the provisions of relevant standards and codes. The purchaser shall provide high-quality products complying with industrial standards and this specification, and meet the mandatory requirements of laws and regulations of the project's host country (Indonesia) regarding safety, environmental protection, fire protection and special equipment.

1.2 本技术规范书提出的是最低限度的技术要求，并未对一切技术细节做出规定，也未充分引述有关标准和规范的条文，采购方应提供符合工业标准和本规范书的优质产品，并且满足本项目所在国（印尼）的法律法规及有关安全、环保、消防、特种设备等强制性要求。

1.3 When the standards used in this equipment technical specification

(implemented in accordance with the latest issued standards) are inconsistent with those implemented by the service provider, the higher standard shall prevail. If there is any contradiction between the commercial content involved in this technical specification and the "Commercial Part" of the contract, the higher requirement shall prevail. If any inconsistency is found in the technical specification, the purchaser shall determine the implementation principle based on the principle of being more conducive to equipment installation and operation and project quality.

1.3 本设备技术规范书所使用的标准（按最新颁布标准执行）如遇与服务方所执行的标准不一致时，按较高标准执行。如本技术规范书中涉及有关商务方面的内容与合同“商务部分”有矛盾时，执行较高的要求。发现技术规范书前后不一致的地方，应以更有利于设备安装运行、工程质量为原则，由采购方确定执行原则。

1.4 Matters not covered in this equipment technical specification shall be determined through negotiation between the tenderee and the bidder.

1.4 本设备技术规范书未尽事宜，由招、投双方协商确定。

1.5 After confirmed by both the buyer and the seller, this equipment technical specification shall serve as the technical appendix to the order contract and have the same legal effect as the main body of the contract.

1.5 本设备技术规范书经买、卖双方确认后作为订货合同的技术附件，与合同正文具有同等的法律效力。

1.6 After the contract is signed, the purchaser has the right to put forward supplementary requirements arising from changes in specifications, standards and procedures. Before the equipment is put into production, the service provider

shall make modifications in design without changing the price. Specific items shall be jointly determined by both parties of the bidding and tendering.

1.6 在签订合同之后，采购方有权提出因规范标准和规程发生变化而产生的一些补充要求，在设备投料生产前，服务方应在设计上给予修改，但价格不作修改。具体项目由招投标双方共同商定。

1.7 If there is any omission in the scope of supply of this technical specification, if it is necessary for the normal operation of the unit, the service provider shall provide it free of charge.

1.7 本技术规范书供货范围如有遗漏，若为机组正常运行所必须的，服务方应无偿提供。

1.8 The national legal measurement units of China shall be used. The language of technical data and drawings must be both Chinese and English. The drawings and data provided by the foreign party shall be translated into Chinese and submitted to the purchaser together with the original text. The drawings and data shall be subject to English, with the format of English first and Chinese second.

1.8 计量单位应使用中国国家法定计量单位。技术资料和图纸的文种必须为中、英文两种。外方提供的图纸和资料应翻译成中文后随同原文一并提交采购方，图纸资料以英文为准，格式为英文在前，中文在后。

1.9 This project adopts the power plant identification coding system, which goes down to the component level. The power plant identification system code shall be provided by the purchaser.

1.9 本工程采用电厂标识编码系统，深度到部件级。电厂标识系统编码由采购方

提供。

1.10 The project site belongs to a tropical climate type with heavy rainfall, humid environment and strong ultraviolet radiation. The product equipment and supporting product equipment provided by the service provider shall meet the requirements for use in a high-temperature, high-heat and rainy environment.

1.10 本项目厂址属热带气候类型，降雨量大，环境潮湿，紫外线辐射强，服务方提供的产品设备及配套的产品设备均应满足在高温高热且多雨的环境使用要求。

1.11 The service provider shall be fully responsible for the complete set of equipment (including auxiliary equipment, accessories, etc.), including subcontracted (or externally purchased) products, as well as subcontracted (or purchased) equipment and components.

1.11 服务方对成套设备（含辅助设备、附件等）负有全责，即包括分包（或对外采购）的产品。包括分包（或采购）的设备和零部件。

1.12 The equipment shall consider salt spray corrosion protection during marine transportation.

1.12 设备应考虑海上运输过程的盐雾腐蚀保护。

1.13 The seismic intensity at the project location is 8 degrees, and the electrical equipment shall be designed for 9 degrees of seismic fortification.

1.13 本项目所在地地震烈度为8度，电气设备按9度设防。

2 Engineering Conditions and Equipment Operating Environment 工程条件及设备运行环境

2.1 Voltage of Auxiliary Power System

High-voltage auxiliary power system: voltage level is 10kV, three-phase, 50Hz, low-resistance grounding system.

Low-voltage auxiliary power system (including emergency power supply): 380V, 50Hz, three-phase four-wire system, neutral point direct grounding system.

2.1 厂用电系统电压

高压厂用电系统：电压等级为10kV、三相、50Hz，低阻接地系统。

低压厂用电系统（包括保安电源）：380V、50Hz、三相四线制，中性点直接接地系统。

2.2 The frequency range required by the Indonesian power grid for the unit to operate safely and continuously is shown in the following table:

2.2 印尼电网要求的机组能安全连续运行的频率范围如下表所示：

No.	Frequency Range		Duration of Excursion
a.	47.5 Hz to 52.0 Hz	:	Not allowed to disconnect from PLN’s Grid System
b.	49.0 Hz to 51.0 Hz	:	Normal continuous operation at its declared NDC
c.	＜47.5 or ＞52.0 Hz	:	Immediate trip

The service provider guarantees that within the above power grid frequency range, the functions and various performances of the supplied equipment can meet the requirements of this technical specification.

The site is located about 3.5km southeast of Darmo Town, south of Muara Enim Regency, Indonesia (straight-line distance, the same below), about 1.6km east of Central Banko Coal Mine, Highway 25 passes from north to south about 550.0m west of the site, and Enim River flows from south to north about 1.0km west of the site.

服务方保证在上述电网频率范围内，所供设备的功能和各项性均能满足本技术规范书的要求。

场址位于印尼 MUARA ENIM 县以南 Darmo 镇东南约 3.5km 处（直线距离，下同），东距 CENTRAL BANKO 煤矿约 1.6km，25 号公路在厂址以西约 550.0m 由北向南通过，Enim 河在厂址以西约 1.0km 由南向北流过。

2.3 Meteorological Conditions

The area where the project is located belongs to a tropical climate zone with distinct dry and wet seasons. The dry season starts in May or June, lasts for about 6 months and ends in October or November, and the rest is the wet season.

Average annual precipitation over the years: 3226mm

Average annual number of rainy days over the years: 202 days

Maximum annual rainfall over the years: 4046 mm

Minimum annual rainfall over the years: 1851 mm

The monthly temperature variation range in the region over the years is 21～33℃, with an average of 26.9℃. The coldest months are December and January, and the hottest months are from May to September. The relative humidity variation range is 30%～90%. The minimum relative humidity usually occurs in December,

while the maximum relative humidity usually occurs in May.

Average annual atmospheric pressure: 97.94kPa.

Pollution class: Class e;

2.3 气象条件

本工程所在区域属干湿季明显的热带气候区。干季始于5或6月，持续约6个月到10或11月结束，其余为湿季。

多年年平均降水量为：3226mm

多年年平均降水日数为：202天

历年最大年降雨量：4046 mm

历年最小年降雨量：1851 mm

区域多年逐月气温的变化范围为21～33℃，均值为26.9℃，最冷月为12月和1月，5月到9月为最热月，相对湿度变化范围为30%～90%，最小相对湿度常发生在12月，而最大相对湿度常发生在5月。

多年平均大气压力：97.94kPa。

污秽等级：e级；

2.4 Seismic Intensity

The basic seismic intensity within the site is 8 degrees according to Chinese seismic intensity standards, and seismic load design shall be carried out accordingly. The peak horizontal ground acceleration is 0.286 g. Electrical equipment shall be designed for 9 degrees of seismic fortification.

2.4 地震烈度

厂址内的基本地震烈度为中国地震烈度的 8 度，设计中将依此进行地震荷载设计。水平地震动峰值加速度为 0.286 g。电气设备按照 9 度地震设防。

2.5 Ambient Air Temperature

2.5 周围空气温度

2.5.1 Maximum temperature: 37.2 ℃

2.5.1 最高温度： 37.2 ℃

2.5.2 Minimum temperature: 17.6 ℃

2.5.2 最低温度： 17.6 ℃

2.5.3 Average temperature: 26.9 ℃

2.5.3 平均气温 26.9 ℃

2.5.4 Average temperature of the hottest month: 27.4 ℃

2.5.4 最热月平均气温： 27.4 ℃

2.5.5 Average temperature of the coldest month: 26.1 ℃

2.5.5 最冷月平均气温： 26.1 ℃

2.5.6 Daily temperature difference: / ℃

2.5.6 日温差： / ℃

2.6 Maximum wind speed: 23.6 m/s, corresponding wind pressure: 0.35 kN/m².

2.6 最大风速： 23.6 m/s,相应风压 0.35 kN/m²。

2.7 Altitude: <100 m

2.7 海拔高度： <100 m

2.8 Average annual ambient relative humidity: 83.8%

2.8 环境相对湿度多年平均值： 83.8%

2.9 Basic seismic intensity: 8 degrees, electrical equipment shall be designed for 9 degrees of seismic fortification

2.9 基本地震烈度： 8 度，电气设备按 9 度设防

2.10 Pollution class: Class e

2.10 污秽等级： e 级

Creepage distance: 31 mm/kV (relative to the maximum line voltage)

爬电距离： 31 mm/kV（相对最高线电压）

2.11 Maximum snow depth: 0 mm

2.11 最大积雪厚度： 0 mm

2.12 Ice thickness: 0 mm

2.12 覆冰厚度： 0 mm

2.13 Maximum number of thunderstorm days over the years: 142 days.

2.13 累年最多雷暴日数 142 天。

3 Equipment Specifications 设备规范

3.1 The contract equipment includes all accessories and equipment purchased by the service provider from other manufacturers. These accessories

and equipment shall comply with the requirements of the latest version or its amendment of the corresponding standards, specifications or regulations, including any amendments and supplements effective during the bidding period unless otherwise specified.

3.1 合同设备包括服务方向其他厂商购买的所有附件和设备，这些附件和设备应符合相应的标准规范或法规的最新版本或其修正本的要求，除非另有特别说明，将包括在投标期内有效的任何修正和补充。

3.2 Unless otherwise specified in the contract, all shall comply with the latest Chinese National Standards (GB), International Electrotechnical Commission (IEC) standards and International System of Units (SI) standards. If joint venture or cooperative products are adopted, the national standards of the cooperative party shall also be complied with. When the above standards are inconsistent, the higher standard shall prevail.

All bolts, studs, threads, pipe threads, bolt clamps and nuts shall comply with the standards of the International Organization for Standardization (ISO) and the International System of Units (SI).

3.2 除非合同另有规定，均须遵守最新的中国国家标准（GB）和国际电工委员会(IEC)标准以及国际单位制(SI)标准。如采用合资或合作产品，还应遵守合作方国家标准，当上述标准不一致时按高标准执行。

所有螺栓、双头螺栓、螺纹、管螺纹、螺栓夹及螺母均应遵守国际标准化组织(ISO)和国际单位制(SI)的标准。

3.3 Technical Standards

3.3 技术标准

3.3.1 Main current standards to be followed (including but not limited to the following standards)

IEC60529 "Degrees of Protection Provided by Enclosures (IP Code)"

IEC 60947-1~7 "Low-Voltage Switchgear and Controlgear"

GB 156 "Standard Voltage"

GB 7251 "Low-Voltage Switchgear and Controlgear" (IDT IEC 60439)

GB 14048.1~21 "Low-Voltage Switchgear and Controlgear"

GB 20641 "General Requirements for Empty Enclosures for Low-Voltage Switchgear and Controlgear" (IDT IEC 62208)

GB2423.1- 4 "Basic Environmental Testing Procedures for Electrical and Electronic Products" (IDT IEC 60068)

GB50171-92 "Code for Construction and Acceptance of Panel, Cabinet and Secondary Circuit Wiring of Electrical Installation Engineering"

GB4942.2 "Low-Voltage Electrical Appliances - Degrees of Protection of Enclosures"

GB50150 "Standard for Handover Test of Electrical Equipment in Electrical Installation Engineering"

GB3047 "Basic Dimensions of Panels, Racks and Cabinets"

GB10233 "Basic Test Methods for Low-Voltage Switchgear and Electric Control Equipment"

GB/T 3836.1-2021 "Electrical Equipment for Explosive Gas Atmospheres -

Part 1: General Requirements"

GB/T 3836.2-2021 "Electrical Equipment for Explosive Gas Atmospheres - Part 2: Flameproof Enclosures "d""

GB/T 3836.3-2010 "Electrical Equipment for Explosive Gas Atmospheres - Part 3: Increased Safety "e""

DL/T5153 "Technical Code for Design of Auxiliary Power Supply in Thermal Power Plants"

DL/T5222-2021"Technical Specification for Selection and Design of Conductors and Electrical Appliances"

ISO 780 "Graphical Symbols for Packaging - Storage and Handling"

IEC standards and national standards of the country of origin

"Twenty-Five Key Requirements for Preventing Power Production Accidents (2023 Edition)"

China Huadian Corporation 2024 Edition "Power Safety Work Regulations"

State Administration of Work Safety "Guidelines for Safety Acceptance Evaluation"

"Mandatory Provisions of Engineering Construction Standards"

Local power grid requirements in Indonesia

All the above standards shall be implemented in their latest versions.

These laws and standards put forward the most basic requirements, including but not limited to the above standards. If, according to the service provider's

opinions and accepted by the user, a better or more economical design or material is used, and the service provider's equipment can operate well and continuously under the conditions specified in this specification, these standards can be exceeded by the service provider.

3.3.1 应遵循的主要现行标准（包括但不局限于以下标准）

IEC60529 《外壳防护等级（IP 规定）》

IEC 60947-1~7 《 低压开关设备和控制设备》

GB 156 《标准电压》

GB 7251 《低压成套开关设备和控制设备》(IDT IEC 60439)

GB 14048.1~21 《 低压开关设备和控制设备》

GB 20641 《低压成套开关设备和控制设备空壳体的一般要求》(IDT IEC 62208)

GB2423.1- 4《电工电子产品基本环境试验规程》(IDT IEC 60068)

GB50171-92 《电气装置安装工程盘、柜及二次回路结线施工及验收规范》

GB4942.2 《低压电器 外壳防护等级》

GB50150 《电气装置安装工程电气设备交接试验标准》

GB3047 《面板、架和柜的基本尺寸》

GB10233 《低压成套开关设备和电控设备基本试验方法》

GB/T 3836.1-2021 爆炸性气体环境用电气设备 第 1 部分：通用要求

GB/T 3836.2-2021 爆炸性气体环境用电气设备 第 2 部分：隔爆型“d”

GB/T 3836.3-2010 爆炸性气体环境用电气设备 第 3 部分：增安型“e”

DL/T5153 《火力发电厂厂用电设计技术规程》

DL/T5222-2021 《导体和电器选择设计技术规定》

ISO 780 《包装储存图示标志》

IEC 标准和原生产国的国家标准

《防止电力生产事故的二十五项重点要求（2023 版）》

中国华电集团 2024 版《电力安全工作规程》

国家安全生产监督管理局《安全验收评价导则》

《工程建设标准强制性条文》

印尼当地电网要求。

以上标准均执行最新版本。

这些法则和标准提出了最基本要求，包括但不局限于以上标准，如果根据服务方的意见并经用户接受，使用优于或更为经济的设计或材料,并能使服务方设备良好地、连续地在本规范所规定的条件下运行时，则这些标准也可以由服务方超越。

3.3.2 When there is a contradiction between standards and specifications, the service provider shall submit the contradiction to the purchaser to formulate a solution before starting production. In principle, the highest standard or the principle most conducive to the project shall be implemented.

3.3.2 当标准、规范之间出现矛盾时，服务方应将矛盾情况提交采购方，以便在开始生产前制定解决方案。原则上以最高标准或最有利工程的原则执行。

4 Engineering Conditions 工程条件

4.1 System Conditions

System voltage: 380/220V

Maximum system voltage: 420V

System rated frequency: 50Hz

System neutral point grounding method: direct grounding

4.1 系统条件

系统电压：380/220V

系统最高电压：420V

系统额定频率：50Hz

系统中性点接地方式：直接接地

4.2 Installation location: Indoor

Installation method: Surface-mounted.

4.2 安装地点：户内

安装方式：明装。

5 Technical Requirements 技术要求

5.1 Each maintenance power supply box shall be equipped with 1 circuit breaker incoming circuit (100A, the circuit breaker shall be equipped with a trip coil and an external emergency stop button), 1 single-phase circuit breaker (6A, used for the power circuit of the external trip button of the main circuit

breaker), 1 three-phase circuit breaker feeder circuit (63A, 5P, aviation explosion-proof and waterproof socket), 2 380V three-phase circuit breaker feeder circuits (32A/32A, 5P, aviation explosion-proof and waterproof socket), 2 220V single-phase circuit breaker feeder circuits (16A/16A, 3P, aviation explosion-proof and waterproof socket). All circuit breakers shall have external operation handles, each operation handle shall be equipped with a waterproof cover, and a separate terminal shall be set for each circuit breaker circuit. The electrical components in the maintenance power supply box shall be selected from ABB, Schneider, Siemens or manufacturers of equivalent quality, and the components in the box shall be selected according to the same parameters. The box size is 600*800*180, and the incoming line method is bottom incoming line.

5.1 每个检修电源箱应设 1 个断路器进线回路（100A,断路器需配有脱扣线圈，配置箱外急停按钮）、一个单相断路器（6A，用于主断路器箱外脱扣按钮电源回路）、1 个三相断路器馈线回路（63A、5P、航空防爆防水插座）、2 个 380V 三相断路器馈线回路（32A/32A、5P、航空防爆防水插座）、2 个 220V 单相断路器馈线回路（16A/16A、3P、航空防爆防水插座）、所有断路器有箱外操作把手，每个操作把手带有防水罩，单独的断路器回路设置接线端子。检修电源箱内电气元器件选用 ABB、施耐德、西门子或同等质量品牌的厂家，并将箱内元件按相同参数进行选择。箱体尺寸 600*800*180，进线方式下进线。

5.2 The power incoming line is 380/220V, and the incoming line switch is 100A 3P+N switch. All feeder switches are equipped with electromagnetic leakage protection.

5.2 电源进线为 380/220V，进线开关选用 100A 3P+N 开关。所有馈线开关带电磁式漏电保护。

5.3 Explosion-proof performance requirements for maintenance power supply box: Adopt composite structure, the main cavity is flameproof type (d), the wiring cavity is increased safety type (e), with clear explosion-proof mark Ex t. The site is a dust environment in the coal conveyor belt area, and the box body shall be made according to the standard of dust explosion-proof power supply box.

5.3 检修电源箱防爆性能要求：采用复合型结构，主腔为隔爆型（d），接线腔为增安型（e），有明确的防爆标识 Ext，现场为输煤皮带区粉尘环境，根据粉尘防爆型电源箱标准进行箱体制作。

5.4 Protection level of maintenance power supply box: IP66, corrosion protection level WF1.

5.4 检修电源箱防护等级：IP66，防腐等级 WF1。

5.5 Box inlet specification: The maintenance box shall allow 3 incoming cables (3*35+1*16mm² copper core cables) to be transferred in the box. The connection of incoming and outgoing lines shall be convenient and shall not reduce the protection level of the maintenance box. It supports steel pipe wiring or cable wiring and is equipped with explosion-proof cable entry devices.

5.5 箱体引入口规格:检修箱应允许 3 根进线 3*35+1*16mm² 铜芯电缆在箱内转接，进出线的引接应方便且不降低检修箱的防护等级。支持钢管布线或电缆布线，配备隔爆型电缆引入装置。

5.6 Electrical Performance Requirements:

5.6 电气性能要求：

5.6.1 Insulation resistance: ≥10MΩ (measured with 500V megohmmeter).

5.6.1 绝缘电阻：≥10MΩ（500V 兆欧表测量）。

5.6.2 Withstand voltage strength: 2U+1000V (U is the rated voltage), no breakdown or flashover for 60s.

5.6.2 耐电压强度：2U+1000V（U 为额定电压），持续 60s 无击穿、闪络现象。

5.6.3 Electrical clearance and creepage distance: The electrical clearance shall not be less than 5～6.3mm, and the creepage distance shall not be less than 8～10mm, which complies with the provisions of GB/T 3836.1-2021.

5.6.3 电气间隙与爬电距离:电气间隙不小于5～6.3mm,爬电距离不小于8～10mm,符合 GB/T 3836.1-2021 规定。

5.6.4 Grounding continuity: The grounding loop impedance ≤0.1Ω, and the box body is equipped with a reliable grounding device to ensure reliable grounding under normal and fault conditions.

5.6.4 接地连续性：接地回路阻抗≤0.1Ω，箱体设有可靠接地装置，确保正常及故障状态下可靠接地。

5.6.5 Protection function: It has overload and short-circuit protection, and the shunt switch has leakage protection function.

5.6.5 保护功能：具备过载、短路保护、分路开关具有漏电保护功能。

5.7 Structural Design of Explosion-Proof Maintenance Power Supply Box

5.7 防爆检修电源箱的结构设计

5.7.1 Shell material: High-quality aluminum alloy high-pressure die-casting or high-quality steel plate welding forming to ensure compliance with strength requirements. The surface is subjected to shot blasting and then

high-voltage electrostatic spraying. The exposed fasteners are made of stainless steel, and the stainless steel fasteners meet the corrosion protection level requirements.

5.7.1 外壳材质：采用优质铝合金高压压铸或优质钢板焊接成型，确保符合强度要求，表面经抛丸处理后高压静电喷塑，外露紧固件为不锈钢材质，不锈钢紧固件满足防腐等级要求。

5.7.2 Box structure: Modular design, each circuit can be freely combined, and the cover plate is equipped with hinges to facilitate cover opening and maintenance.

5.7.2 箱体结构：模块化设计，各回路可自由组合，盖板加装合页，便于开盖检修。

5.7.3 Sealing performance: The entry device is equipped with high-quality and durable oil rubber sealing ring, which ensures dynamic sealing performance after compression.

5.7.3 密封性能：引入装置配备优质耐用油橡胶密封圈，压紧后确保动态密封性能。

5.7.4 Operating mechanism: Adopt optimized operating mechanism with simple structure, strong versatility and convenient operation. Equipped with a padlock metal handle to prevent misoperation. The operation handle is installed with a waterproof box.

5.7.4 操作机构：采用优化操作机构，结构简洁、具有较强通用性强、操作方便，配备挂锁金属手柄，防止误操作。操作把手安装防水盒。

5.7.5 Internal layout: The components in the box are reasonably arranged,

with sufficient heat dissipation space reserved. The terminals are selected from Weidmüller SAK series or TC series, which are convenient for wiring and maintenance.

5.7.5 内部布局：箱体内元件布局合理，预留足够散热空间，接线端子选用魏德米勒 SAK 系列或 TC 系列，便于布线和维护。

5.7.6 Indicator light configuration: Equipped with explosion-proof indicator light to show the power-on status, and the explosion-proof level of the indicator light is consistent with that of the box body.

5.7.6 指示灯配置：配备防爆指示灯，显示电源接通状态，指示灯防爆等级与箱体一致。

5.7.8 The main switch is equipped with an external explosion-proof emergency stop button with a waterproof cover, which is used to disconnect the main switch in case of emergency.

5.7.8 总开关配备带防水罩的箱外防爆急停按钮，用作紧急情况下断开总开关。

6 Acceptance Standards 验收标准

6.1 Equipment identification: The English and Chinese descriptions of the equipment identification shall be sprayed in the center along the top of the box body. All internal wiring of the cabinet shall be equipped with identification rings (number tubes), and the component and wiring identification must be consistent with the provided drawings. Components requiring manual operation such as air switches, buttons and changeover switches shall have

English and Chinese comparative identification.

6.1 设备标识：箱体顶部沿居中喷印设备标识的英、中文描述。柜内所有接线都要有标识环（号码管），元器件、接线标识必须与提供的图纸一致。空开、按钮、转换开关等需人员操作的元件需有英、中文对照标识。

6.2 Grounding: The control cabinet is equipped with independent PE grounding copper bar and N-phase copper bar. The copper bar is drilled with holes and equipped with sufficient bolts. The N-phase copper bar is installed and fixed with the box body by insulators. The outside of the box body shall have a grounding point (including bolts and other accessories) for connecting to the public grounding grid, and the grounding point shall have an obvious "⏚" mark. A soft copper conductor or copper braided wire not less than 4 square millimeters shall be used for grounding jumper between the box door and the box body.

6.2 接地：控制柜内设有独立的 PE 接地铜排和 N 相铜排，铜排上开孔，配置足够的螺栓，N 相铜排与箱体间用绝缘子安装固定。箱体外部应有接地点（含螺栓等配件）供接入公共地网，接地点要有明显“⏚”标识。箱门和箱本体间用不小于 4 平方的软铜导线或铜编织线作接地跨接。

6.3 Space: The internal wiring of the box is standardized and neat, and sufficient space shall be reserved to facilitate wiring, bus connection and routing. All terminals shall be reasonably configured with cable routing space to ensure that at least 15% of the surplus space (including the inside of terminals and trunking) remains in the cabinet after all cable wiring is completed. All terminal wirings must be neat and orderly, with no vertical or horizontal deviation. The terminal blocks are selected from Phoenix, Weidmüller and WAGO products.

6.3 空间：箱内内接线规范整齐，应预留充足的空间，能方便地接线、汇线和布线；所有接线端子应合理配置电缆布线空间，确保所有电缆接线完成后柜内仍留有至少15%的富余空间（包括端子和槽盒内部）。所有的端子接线，必须整齐有序，纵向无偏差，横向无偏差。端子排选用凤凰、魏德米勒、万可（WAGO）产品。

6.4 Assembly and Wiring

6.4 组装配线

(1) Terminal number: Terminal identification plates (sleeves) must be 100% hung and accurate. All identification plate names are identified with accurate power plant identification system codes, using PVC white number tubes, computer-printed, white background and black font, permanent.

（1） 端子号：端子标识牌（套管）等必须100%悬挂，并保证准确，所有的标识牌名称采用准确的电厂标识系统编码标识，采用PVC白色线号管，电脑打印，白底黑色字体，永久性。

(2) The arrangement of electrical appliances on the power supply box shall comply with the requirements for the spacing of electrical appliances and instruments. When there are strong electric power circuits, strong electric control circuits and weak electric control circuits in the control box/cabinet, the supplier shall separate the control components, terminal blocks and connecting wires associated with various circuits, and take measures to prevent strong electric circuits from interfering with weak electric signal circuits, which is conducive to operation and maintenance safety.

(2) 电源箱上的电器布置应符合电器、仪表排列间距要求。当控制箱柜内并存强电动力回路、强电控制回路和弱电控制回路时，供方应将各种回路关联的控制器件、端

子排和连接导线分隔布置，采取防止强电回路干扰弱电信号回路的措施，利于运行、检修安全。

(3) The secondary wiring shall adopt black wires, with sleeves for numbering, and the wire diameter shall be in accordance with the manufacturer's standard.

(3) 二次配线均采用黑色线，加套管编序，线径按厂家标准。

(4) The switch terminals shall match the wire cross-section, and there shall be at least one empty terminal isolation between terminals of different voltage levels, different natures and AC/DC loads.

(4) 开关接线端子应与导线截面匹配，不同电压等级、不同性质、交直流负荷端子之间至少应有一个空端子隔离。

(5) Power distribution box wires; if multi-core copper wires are used, they must be crimped with sleeves or wire lugs and tinned.

(5) 配电箱导线；如多芯铜线须采用套管或线鼻压接，并做好搪锡。

(6) After the electrical appliances are installed, the wiring shall be arranged neatly, bound into bundles with nylon ties or laid in special trunking, and clamped at the back of the board or the mounting frame in the cabinet. The wiring shall be left with an appropriate length.

(6) 电器安装后的配线须排列整齐，用尼龙带绑扎成束或敷于专用线槽内，并卡固在板后或柜内安装架处，配线应留适当长度。

(7) For various switches and relays installed in the power distribution box, when in the open state, the movable part should not be live; when installed

vertically, the upper end is connected to the power supply and the lower end to the load; when installed horizontally, the left end is connected to the power supply and the right end to the load. (Refers to facing the power distribution device).

(7) 配电箱所装的各种开关、继电器，当处于断开状态时，可动部分不宜带电；垂直安装时上端接电源，下端接负荷，水平安装时，左端接电源，右端接负荷。（指面对配电装置）。

(8) The wiring in the power distribution box shall be color-coded according to the phase sequence of the design drawings. The power bus in the power distribution box/cabinet shall have color phase markers. The color standards are as follows:

（8） 配电箱内的配线须按设计图纸相序分色。配电箱、柜内的电源母线，应有颜色分相标志。颜色标准如下：

a. AC three-phase four-wire system

a、交流三相四线系统

Phase / 相别	Phase A / A 相	Phase B / B 相	Phase C / C 相	N Phase (Neutral Line) / N 相（中性线）	Ground Line (PEN Line) / 地线（PEN 线）
Color / 颜色	Yellow / 黄色	Green / 绿色	Red / 红色	Black / 黑色	Yellow-Green Alternate / 黄绿相间

(9) All copper bus connections shall be tinned, the exposed parts shall be sprayed with black paint and pasted with color markers.

（9） 所有铜母线连接处做搪锡处理，裸露部分均喷黑漆，贴色标。

(10) The wiring is neat and clear, and the wire insulation is good. When the wire passes through the iron mounting hole and panel, a rubber or plastic sheath shall be added.

（10） 配线整齐、清晰，导线绝缘良好。导线穿过铁制安装孔、面板时要加装橡皮或塑料护套。

(11) The N line and PE line in the power distribution box must be equipped with bus bars, the size of the bus bars must comply with the requirements of relevant specifications, and the wires shall not be coiled into a spring shape.

（11） 配电箱内的N线、PE线必须设汇流排，汇流排的大小必须符合有关规范要求，导线不得盘成弹簧状。

(12) The PE line uses BVR wire, and the wire diameter is selected in accordance with GB 50303-2002.

（12） PE线用BVR线，线径选择按GB 50303-2002。

(13) The box body and panel of the power distribution box must have obvious and non-falling design numbers consistent with the drawings (the box body is marked with the box number by steel stamping).

（13） 配电箱的箱体、面板均须有明显而不易脱落的与图纸相符的设计编号（箱体、用钢字打出箱编号）。

(14) The PE wires in the power distribution box/cabinet shall not be

connected in series. The PE wire connected to the moving parts must be a tinned copper flexible braided wire through a transparent plastic pipe. At most one PE wire can be crimped on the same grounding terminal, and the cross-section of the PE wire shall comply with the requirements of the construction specification.

（14） 配电箱、柜内的PE线不得串接，与活动部件连接的PE线必须采用铜质涮锡软编织线穿透明塑料管，同一接地端子最多只能压一根PE线，PE线截面应符合施工规范要求。

(15) Two wires with unequal cross-sections are strictly prohibited from being crimped on one terminal. For wires with equal cross-sections (below 6mm²), at most two wires can be crimped on one terminal.

(15) 不等截面的两根导线严禁压在一个端子上。等截面的导线（6mm2以下）一个端子上最多只能压两根。

7 Scope of Supply 供货范围

7.1 General Requirements

7.1 一般要求

7.1.1 This technical agreement specifies the scope of supply of the contract equipment. The service provider guarantees that the supplied equipment is new, advanced, mature, complete, safe and reliable, and the technical and economic performance of the equipment meets the requirements.

7.1.1 本技术协议规定了合同设备的供货范围，服务方保证提供设备为全新的、先

进的、成熟的、完整的和安全可靠的，且设备的技术经济性能符合要求。

7.1.2 The service provider shall provide a detailed supply list, which shall indicate the model, quantity, place of origin, manufacturer and other contents in sequence. For the components necessary for the operation and construction of the complete set of equipment, even if they are not listed in the annex to this contract and/or the quantity is insufficient, the service provider shall still supplement them free of charge during the performance of the contract.

7.1.2 服务方应提供详细供货清单，清单中依此说明型号、数量、产地、生产厂家等内容。对于属于整套设备运行和施工所必需的部件，即使本合同附件未列出和/或数目不足，服务方仍须在执行合同时免费补足。

7.2 Scope of Supply

7.2 供货范围

7.2.1 Including: complete set of explosion-proof maintenance power supply boxes, supporting accessories, and removal of old equipment and installation of new equipment.

7.2.1 包括：整套防爆检修电源箱、配套附件，及进行拆旧装新。

Explosion-proof maintenance power supply box:

防爆检修电源箱：

No. / 序号	Name / 名称	Specification and Model / 规格和型号	Unit / 单位	Quantity / 数量	Remarks / 备注
1	Explosion-proof maintenance power supply box (each with 4 sets of stainless steel mounting screws) / 防爆检修电源箱（每台带不锈钢安装螺丝 4 套）	To be filled in by the service provider / 服务方填写	Unit / 台	16	IP66/WF1, explosion-proof type, complete set of male and female aviation explosion-proof and waterproof sockets / IP66/WF1，防爆型，航空防爆防水插座公母成套

Notes:

注：

(1) Provide a complete set of installable software for commissioning, setting and maintenance.

（1） 提供调试、整定和维护等可安装的全套软件。

(2) If the equipment provided by the supplier fails to realize the functions described in this agreement, the demander has the right to require the supplier to supply beyond the scope of this supply free of charge until the device can realize the functions required by the demander.

（2） 如果供方提供的设备不能实现本协议书描述的功能，则需方有权要求供方无偿超出本供货范围供货，直到装置能够实现需方所要求的功能。

7.2.2 Spare Parts and Special Tools

7.2.2 备品备件及专用工具

7.2.2.1 Random Spare Parts (for two units, the cost is included in the total contract price)

7.2.2.1 随机备品备件（两台机组，费用进入合同总价）

No. / 序号	Name / 名称	Specification and Model / 规格和型号	Unit / 单位	Quantity / 数量	Place of Origin / 产地	Manufacturer / 生产厂家	Price / 价格	Remarks / 备注
	External	Same as the main	Piece/each	5	Same	Same as the		

No. / 序号	Name / 名称	Specification and Model / 规格和型号	Unit / 单位	Quantity / 数量	Place of Origin / 产地	Manufacturer / 生产厂家	Price / 价格	Remarks / 备注
	operation handle of circuit breaker / 断路器箱外操作把手	body / 同本体	model / 个/每种型号		as the main body / 同本体	main body / 同本体		
2	Male or female aviation explosion-proof and waterproof socket / 航空防爆防水插座公头或母头	63A/5P/380V, same as the main body / 63A/5P/380V，同本体	Piece / 个	5	Same as the main body / 同本体	Same as the main body / 同本体		Side not installed with the main body / 未随本体安装侧

No. / 序号	Name / 名称	Specification and Model / 规格和型号	Unit / 单位	Quantity / 数量	Place of Origin / 产地	Manufacturer / 生产厂家	Price / 价格	Remarks / 备注
3	Male or female aviation explosion-proof and waterproof socket / 航空防爆防水插座公头或母头	32A/5P/380V, same as the main body / 32A/5P/380V，同本体	Piece / 个	10	Same as the main body / 同本体	Same as the main body / 同本体		Side not installed with the main body / 未随本体安装侧
4	Male or female aviation explosion-proof and waterproof socket /	16A/3P/220V, same as the main body / 16A/3P/220V，同本体	Piece / 个	10	Same as the main body / 同本体	Same as the main body / 同本体		Side not installed with the main

No. / 序号	Name / 名称	Specification and Model / 规格和型号	Unit / 单位	Quantity / 数量	Place of Origin / 产地	Manufacturer / 生产厂家	Price / 价格	Remarks / 备注
	航空防爆防水插座公头或母头				本体			body / 未随本体安装侧

Note: The service provider shall make supplements according to its own specific circumstances.

注：服务方应根据自己的具体情况进行增补。

8 Delivery Schedule 交货进度

The purchaser requires the equipment to arrive at the delivery location within 1 month after the signing of the contract. The specific delivery time of all equipment shall be subject to the purchaser's notice, and the service provider must meet the purchaser's on-site installation requirements. In addition to meeting the delivery period requirements, the service provider shall not increase the cost accordingly, and shall not put forward requirements such as price increase or standard reduction on the grounds of raw material price increase during the contract execution period, which will affect the purchaser's

interests and project progress.

采购方要求到达交货地点的时间为合同签订后 1 个月交货。所有设备具体交货时间以采购方的通知为准，服务方必须满足采购方现场安装要求。服务方除满足交货期要求以外,并不因此而增加费用,同时在合同执行期阶段不以原材料涨价为由提出涨价、降低标准等影响采购方利益和工程进展的要求。

The following table shows the latest delivery time (the delivery time is the time when all parts of the equipment arrive at the delivery location):

下表为最迟交货时间（交货时间为设备该部件全部到达交货地点的时间）：

No. / 序号	Name and Model of Equipment/Component / 设备/部件名称、型号	Shipping Location / 发运地点	Delivery Time / 交货时间	Remarks / 备注
1	Explosion-proof maintenance power supply box and its accessories / 防爆检修电源箱及其附件			
2				
3				

Notes:

注：

1. Spare parts and special tools shall be provided together with the delivery of equipment/components.

1.备品备件和专用工具随设备/部件交货时一起提供。

2. Delivery Location: PT. Huadian Bukit Asam Power.

2、交货地点：玻雅公司。

9 Qualification Requirements 资质要求

9.1 The service provider is a unit registered in Indonesia, with independent legal person qualification, holds a valid business license, and is able to independently bear civil liability.

9.1 服务方是印度尼西亚注册单位，具有独立法人资格，持有有效营业执照， 能够独立承担民事责任。

10 Liability for Breach of Contract 违约责任

10.1 The construction personnel of the service provider shall be stationed on site permanently. The catering shall be arranged by the service provider itself. The purchaser shall provide free office, maintenance venues and temporary accommodation, including only water, electricity, air conditioning and bedding (excluding daily necessities).

10.1 服务方施工人员常驻现场，就餐由服务方自行解决，采购方免费提供办公、检修场所及临时住宿用房，只含水、电、空调、床上用品（不含生活用品）。

10.2 The service provider shall obey the purchaser's on-site management (safe and civilized construction, construction process quality, construction period control, personnel supply). For personal injury caused by poor management of the service provider or illegal operation of the service provider's employees, the service provider shall

handle it by itself and bear full liability; for equipment damage caused by man-made reasons of the service provider's employees, the service provider shall bear all compensation liabilities arising therefrom.

10.2 服务方应服从采购方现场（安全文明施工、施工工艺质量、工期控制、人员供应）管理，因服务方管理不善或因服务方员工违章操作造成的人身伤害，由服务方自行处理并承担全部责任；因服务方员工人为原因造成的设备损坏由服务方承担由此引发的一切赔偿责任。

10.3 If the service provider fails to obey the purchaser's management and work arrangement during the work, thereby affecting the normal development of on-site normal maintenance work, a penalty of Rp1,000,000-Rp10,000,000 shall be imposed each time according to the severity of the circumstances.

10.3 服务方在工作中不服从采购方的管理和工作安排，由此而影响现场正常维护工作的正常开展，视情节轻重每次考核 Rp1,000,000-Rp10,000,000。

10.4 After the maintenance is completed, the work site shall be cleaned, with all materials removed and the site tidy. A penalty of Rp3,000,000 shall be imposed for each unqualified item.

10.4 检修结束做到工完料净场地清，不合格之处每处考核 Rp3,000,000。

10.5 Construction materials such as waste inclined pipes and pipes shall not be piled up randomly. A penalty of Rp2,000,000 shall be imposed for each place that affects others' construction or blocks the passage.

10.5 施工材料如废旧斜管、管材不准乱堆乱放，影响他人施工、堵塞通道的每处考核 Rp2,000,000。

10.6 If quality problems occur during construction and are handled and covered up

by the service provider itself, a penalty of Rp2,000,000 shall be imposed each time.

10.6 施工中发生质量问题，自行处理并掩盖的，每次考核 Rp2,000,000。

10.7 If phenomena such as fire and high-altitude fall occur due to improper on-site construction measures, a penalty of Rp4,000,000 shall be imposed for each item.

10.7 现场施工因措施不当，发生火灾、高空坠落等现象，每项考 Rp4,000,000。

10.8 If the construction party damages equipment, components, meters, instruments, cables, wires, etc. during construction, a penalty of Rp4,000,000 shall be imposed for each item.

10.8 施工方在施工中如损坏设备、元件、仪表、仪器、电缆、电线等，每项考核 Rp4,000,000。