

No :
Tanggal : 20 Mei 2026
Dari : Engineering

SURAT PERMINTAAN BARANG & JASA

No	Kode Barang	Nama Barang, Tipe, Spesifikasi	Lokasi / User	Riwayat Pembelian				Jumlah Permintaan	Satuan	Target Date	Kategori		Keterangan
				Tanggal	Jumlah	No SPB	Supplier						
1	IMO10011	Jasa Pekerjaan dan Material Rewiring Control And Commissioning	Boiler 10 Ton	-	-	-	-	1	Jasa	30-06-26	1. Inventaris		Sesuai Dengan Process & Utility Distribution Unit 8B U0.6 Industrial Steam & Distribution System Untuk Boiler 10 Ton Project Aktivasi Unit 8B (LOCAL) No Inventaris Boiler : 1201-20-1-01271-2
											2. Spareparts		
											3. Consumable		
											4. Jasa	✓	
											5. Project		

PERMINTAAN JASA PEKERJAAN & MATERIAL REWIRING CONTROL AND COMMISSIONING BOILER 10 TON

Situasi :

Sejalan dengan proyek reaktivasi Unit 8, aset Boiler kapasitas 10 Ton diperlukan untuk menyuplai steam ke Unit 8.

Namun Boiler tersebut dalam kondisi menganggur (idle) dalam jangka waktu yang lama dan belum pernah melalui proses commissioning resmi.

Kondisi riil di lapangan saat ini menunjukkan ketidakpastian panel kontrol akibat tidak beroperasi dalam waktu lama, sehingga kelayakan, keamanan, dan keandalan komponen elektrik di dalam panel kontrol utama tidak dapat dipastikan.

Ada risiko tinggi terjadinya korosi pada kontak, kerusakan komponen elektronik akibat kelembapan, atau gigitan hama. Sehingga menyalakan boiler secara langsung tanpa pemeriksaan menyeluruh pada sistem kontrol sangat berbahaya, karena dapat memicu korsleting listrik, kegagalan fungsi interlock pengaman, hingga potensi kecelakaan kerja fatal pada unit bertekanan tinggi.

Target :

Melalui pengajuan proyek ini, sasaran yang ingin dicapai adalah:

- Kesiapan Pasokan Steam Unit 8: Memastikan Boiler 10 Ton siap beroperasi secara optimal dan aman guna menyuplai kebutuhan steam secara konstan saat Unit 8 resmi diaktifkan kembali.
- Kepastian Keamanan Panel & Kelistrikan 100%: Mengeliminasi seluruh keraguan dan risiko kegagalan elektrik pada panel kontrol, sehingga sistem interlock keselamatan boiler dapat berfungsi mendeteksi kondisi kritis (seperti overpressure atau low water level).

Proposal :

Untuk mencapai target tersebut dan memitigasi risiko kerusakan alat, kami mengusulkan pengerjaan Rewiring dan Commissioning Boiler 10 Ton oleh vendor spesialis dengan ruang lingkup kerja tersebut.

Tanda tangan Pemohon (nama jelas)

Ajeng Ayu D

M. Ardhanay Rafi

Tanda Tangan Mengetahui (nama jelas)

Firman Ardi Busono

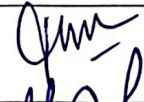
Tanda Tangan Menyetujui (nama jelas)

Hermawan Widyaprasetya

PT Mersifarma TM				
Document Title	User Requirement Specification of Rewiring Control and Commissioning Boiler 10 Ton			
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User Requirement Specification of Rewiring Control and Commissioning Boiler 10 Ton

Approvals

Name	Job Title or Role	Signature	Date (dd-mmm-yy)
The Lead Author is signing to confirm that this document has been prepared in accordance to PT Mersifarma TM standards			
M. Ardhany Rafi Zain	Engineering Utility Supervisor		13/05/26
Production, Engineering and QA is signing to confirm that the content reflects their requirements			
Firman Ardi Busono	Utility Assistant Manager		13/05/26
Hermawan Widya P	Engineering Manager		13/05/26
Sumardi	QA Manager		13/05/26
Management is signing to confirm that the content reflects their requirements			
Fina Alfiani	Deputy Director of QO		15/05/26
Adhi Susanto	Plant Director		15/05/26

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Revision History:

Document Info:			
User Requirement Specification			
Rewiring Control and Commissioning Boiler 10 Ton			
Revision	Issue Description	By	Date
00	New issue	M. Ard hany Rafi Zain	13-05-26

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1 Introduction

This User Requirement Specification (URS) outlines the functional and technical requirements for the activation and commissioning of a new Industrial Boiler system. This system is critical for providing a consistent and reliable supply of thermal energy (steam) required for manufacturing processes within the facility. The system's start up, performance testing, and final integration must comply with all relevant Safety Standards, and Pressure Vessel Regulations where applicable. The primary objective is to ensure operational safety, optimize combustion efficiency, and guarantee that steam quality meets the required process specifications while mitigating risks associated with high-pressure operations.

1.1 Scope

The objective of this project is to execute a complete rewiring and control system restoration for the 10-Ton Boiler. This ensures that the system provides a consistent supply of thermal energy while complying with Safety Standards.

1.2 Definitions and abbreviations

The list given below includes definitions of specific technical and functional terms which may be used in this document.

Term	Definition
Must / Mandatory / M	The requirement is mandatory and compliance with it is non-negotiable. Essential to meet GMP or business critical requirements.
Should / Desirable / D	Optional requirement. The requirement is not mandatory, but any departure from compliance with it is subject to Mersifarma's prior written approval.
Not Applicable / NA	Where a section is not applicable
URS	User Requirements Specification

2. General Description

2.1 Delivery Scope

The supplier or service provider shall provide a fully integrated system for the control panel restoration and rewiring project using brands that are widely available in Indonesia, covering the following scope:

- Control Panel Rewiring & Hardware Upgrade: Execute a complete overhaul of the internal panel wiring using industrial-grade, heat-resistant cables. All wiring must be organized within cable ducts and clearly identified with standardized ferrules for future maintenance.
- Water Level Control System Integration: Installation and integration of an automated water level control system to manage the feed water pumps. This system must include a hard-wired safety interlock to prevent dry-firing conditions.
- Burner Controller Optimization: Implementation of a Burner Control System that supports "fully modulating" mode. The controller must precisely manage the fuel-to-air ratio based on real-time feedback from pressure transmitters/switches.
- Safety Interlock & Alarm System: Integration of a comprehensive protection system covering High-Pressure Cut-off, Low Water Level Trip, Flame Failure, and Emergency Stop conditions.
- Documentation & Schematics: Submission of updated "As-Built" electrical drawings, control logic diagrams, and an updated operation manual for the new control configuration.

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2.2 Functional Requirements (Control Logic)

The boiler is a fire-tube type requiring precise control to support manufacturing processes. The following control logic must be strictly implemented:

1. Water Level Management:
 - The system shall monitor the water level in real-time via level probes/sensors.
 - Pump Interlock: Feed water pumps must trigger automatically based on defined level setpoints.
 - Safety Cut-out: Should the water level reach the "Extra Low" threshold, the system must instantly cut power to the burner and trigger an audible/visual alarm.
2. Pressure-Based Modulating Burner:
 - The combustion sequence must be slaved to the pressure fluctuations within the vessel.
 - As the pressure approaches the operational setpoint, the controller must signal the burner to modulate down (Low Fire) to maintain steam stability and fuel efficiency.
3. Gas Burner Control Sequence:
 - The gas control system must follow a standardized safety sequence: Pre-purge, Ignition, Flame Detection, and Run.
 - In the event of a "No Flame" signal during start-up or operation, the system must initiate an immediate safety shutdown..

2.3 Service

The scope of services delivered by the Supplier includes:

- Electrical Design & Rewiring: Engineering of cable routes and re-assembly of internal panel components.
- Programming & Commissioning: PLC/Controller programming and on-site functional testing of all interlocks.
- Site Acceptance Test (SAT): Performance testing to ensure the burner and pumps respond accurately to instrument signals.
- Operator Training: Technical training for staff regarding the new panel schematics and troubleshooting procedures.
- Documentation: Delivery of updated P&IDs, electrical schematics, and verified parts lists.

3. General Requirements

3.1 Performance parameter			
This section defines the user requirements and machine performance parameter			
Req. No.	Requirement		M/D/NA
3.1.1	Operating Pressure	6-8 Bar	M
3.1.2	Fuel	Dual Fuel (CNG and Diesel)	M
3.1.3	Implementing energy efficiency	Modulating Burner based on pressure vessel boiler	M
3.1.4	Implementing water level interlock	Water pump interlock with water level sensors	M
3.1.5	Gas Burner Control Sequence	Follow standarized safety sequence	M
3.1.6	Monitoring water level display	Visible using minimum 2 set sight glass (right and left position)	M

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3.2 Instrument and meter

This section defines general operational user requirements

Req. No.	Description	Requirement	M/D/NA
3.2.1.	Water Level Monitoring Control	Electrode Probe or Magnetic Float Level Switch interlock with automatic pump control	M
3.2.2.	Water Level Monitoring Display Manual	Double Sight Glass (right and left position)	M
3.2.3.	Steam Pressure Control	Pressure transmitter connected to display	M
3.2.4.	Steam Pressure Display Manual	Pressure gauge up to 16 Bar, size minimum 6 inch	M

3.3 Control System

This section defines any special requirements for the control system

Req. No.	Item	Requirement	M/D/NA
3.3.1	Control Panel	PLC and HMI inside with Panel Box	M
3.3.2	Operational Logic	Automatic system and able to switch to manual system	M

3.4 Safety and E-Stop

This section defines any requirements that relate to operational safety and environmental expectations.

Req. No.	Item	Requirement	M/D/NA
3.4.1	Emergency button	Easy to access, Eye catching	M
3.4.2	Electrical protection	MCB incoming and TOR for motor	M
3.4.3	Alarm and warnings	Sirine and/or Buzzer	D
3.4.4	Steam Pressure Safety	Interlock with at least 2 pcs pressure switch	M
3.4.5	Water Level Safety	Interlock with water level electrode probe and/or magnetic float level switch	M

3.5 Interfaces

This section defines any requirements for how the system is to be interfaced with other equipment or systems.

Req. No.	Item	Requirement	M/D/NA
3.5.1	Electrical	The system shall require a 3-phase 380VAC or 1-phase 220VAC, 50Hz power supply.	M

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4. Documentation

<u>4.1 Documentation</u>		
Req. No.	Requirement	M/D/NA
4.1.1	Electrical Drawing	M
4.1.2	Operation Manual	M
4.1.3	Spare Part List	M

5. Training

<u>5.1 Training</u>		
Req. No.	Requirement	M/D/NA
5.1.1	Conduct training to all related person	M
5.1.2	Training material provided	M
5.1.3	Training certificate	D



PT. ALVA JAYA TEKNINDO

Bintaro Business Center, Jl. RC Veteran No. 1 - i, Bintaro, Jakarta 12330, Indonesia

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Fax. : 021 7362 583

E-mail : info@alvajayateknindo.com

Website : www.alvajayateknindo.com

Quotation

Quotation Number : 19052026.86-BH-MT

Date : 19 Mei 2026

Kepada Yth.

PT. Mersifarma Tirmaku

Jalan Raya Pelabuhan No.Km. 18, Cikembar,

Kec. Cikembar, Jawa Barat

Up Bapak muhammad Zain

Email : muhammad.zain@mersifarma.com

Dengan hormat,

Memenuhi permintaan bersama ini kami mengajukan penawaran sebagai berikut:

(Terlampir)

NOTE : Tidak termasuk spare parts apabila ada yang rusak atau di perlukan.
Solenoid valve dan accessories Gas Menggunakan existing.

Harga tersebut belum termasuk PPN 11% dan PPH yang berlaku.

LEVERING : Sesuai kesepakatan

PEMBAYARAN : I. 50% Down Payment
II. 50% saat pekerjaan selesai.

SIFAT : Penawaran ini bersifat tidak mengikat, harga sewaktu-waktu dapat berubah.

Demikianlah Penawaran dari kami. Atas perhatian dan kerjasamanya kami ucapkan terima kasih.

Hormat kami,

PT ALVA JAYA TEKNINDO



PT. ALVA JAYA TEKNINDO

BUDI HARIAWAN

Hp.081318292388

Email : info@alvajayateknindo.com
alvajayateknindo@gmail.com

No	Jenis Barang	Jumlah	Harga Satuan		Total	
A	1 (Satu) Lot Jasa Rewiring Panel Boiler Operation dan Burner	1	Rp.	115.000.000	Rp.	115.000.000
	Include :					
	Box Panel 1,8 mm Powder Coating					
	Rewiring panel boiler 10 ton standart burner Gas					
	Dengan Control LFL 230 Volt dan Base Plate					
	Rewiring jalur water level					
	Presure Switch otomatis load firing					
	Pressure Controler Jumo					
	Safety Temperature Chimney					
	Pressure Transmitter Jumo Midas / Setara 0-10 Bar					
	Rewiring Star Delta Motor Burner					
	Rewiring Star Delta Feed Water Pump 2 set					
	Presure Gauge 10 "					
	Consumable					
	Alarm					
	Selector Switch Feed Water Pump					
	Selector Load					
	Selector Burner Operation					
	Indicator Lamp Operation					
	Indicator Lamp Fault					
	Interlocking					
	Dokument Wiring					
	Material Kabel Kontrol Burner to panel Max 15 meter					
	Material Kabel Kontrol Panel to motor burner					
	Material Kabel Kontrol Panel to Feed Water Pump					
	Material Kabel Kontrol Panel to asesories Gas					
	Material Kabel Silicon dari Panel to asesories presure Switch					
	Material Kabel Silicon dari Kontrol Panel to Level electrode					
	Material Kabel Silicon dari Kontrol Panel to Presure Transmitter					
	Note :					
	Bisa menggunakan part Existing yg masih bisa digunakan untuk mengurangi Biaya					
B	Jasa Instalasi Burner dan Comisining Boiler 10 Ton	1	Rp.	45.000.000	Rp.	45.000.000
	Sekup :					
	Pemasangan Panel					
	Instalasi Kabel Burner to Panel					
	Instalasi Kabel Burner to asesories Gas					
	Instalasi Kabel Panel to asesoris Boiler Intrument					
	Instalasi Kabel Panel to asesoris Feed Pump					
	Koreksi Jalur Gas Train (Diluar pipa Instalatur)					
	Gasket,seal,conection dan Consumable					
	Commisioning Burner dengan Gas					
	Pengetesan Interlocking Burner					
	Ccommisioning Boiler					
	Pengetesan Interlocking Low Water .dan lainnya					
	Pengetesan Safety Valve					
	Pengecekan Apendages					
	Combution Test Emisi CO,CO2. Efisiensi					
	Pengetesan steam dengan proses Report					
C	High Presure Regulator Kapasitas Boiler 10 Ton	1	Rp.	39.500.000	Rp.	39.500.000
	Pmax : 5 Bar P Outlate : 110 - 210 Mbar					
	DN 80					
D	Level Gauge - LG 40 CS Size VII DN 20 PN 40	2	Rp.	37.000.000	Rp.	74.000.000
	Center to Center 35 cm					
	Exclude :					
	* Pipa Gas					
	* Feed Water Pump (menggunakan Existing)					
	* PJK3/ Perijinan					
	* Jalur Air dan Jalur Steam					
E	Mob Demob	1	Rp.	15.000.000	Rp.	15.000.000
	*Mob Demob Peralatan					
	*Akomodasi teknisi selama pekerjaan 7 Hari					
	* Meal dan penginapan					
			TOTAL		Rp.	288.500.000

PROCESS & UTILITY DISTRIBUTION - UNIT 8B

