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DAFTAR RIWAYAT HIDUP



d. Data Personal

NIM : 202311597
Nama : Raihana Rahmhadani
Tempat/Ygl.Lahir : Perbaungan, 07 November 2002
Jenis Kelamin : Perempuan
Agama : Islam
Status Perkawinan : Belum Menikah
Program Studi : S1 Teknik Elektro
Alamat Rumah : Tanjung Maria Kec.Simangambat Kabupaten Padang Lawas Utara, Sumatera Utara, kode pos 22755
Telp : 082250371189
Email : Raihana2311597@itpln.ac.id

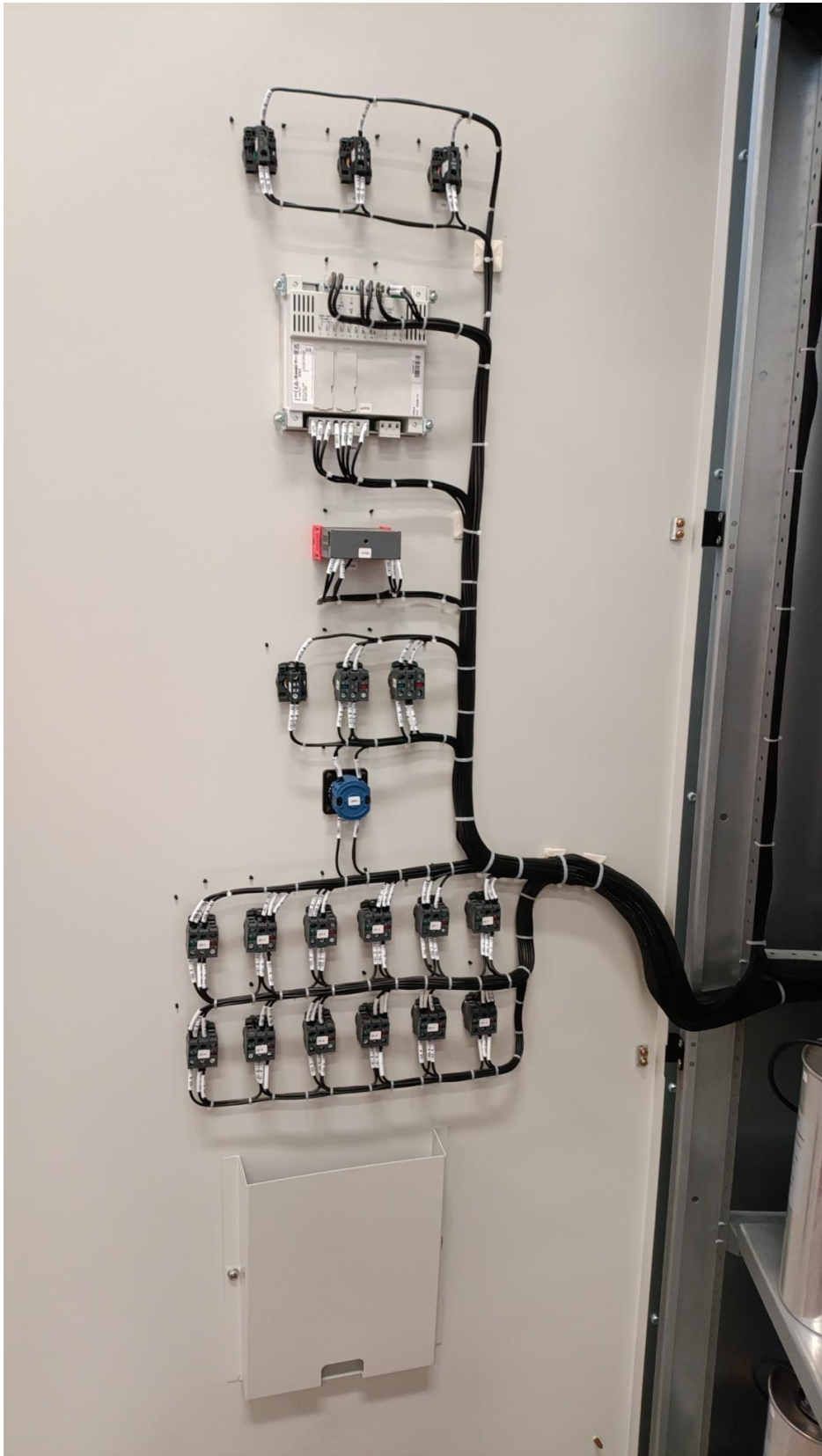
e. Pendidikan

Jenjang	Nama Lembaga	Jurusan	Tahun Lulus
SD	SDN 101750 Ulak Tano	-	2014
SMP	Pondok Pesantren Ahmadul Jariah	-	2017
SMA	MAN 2 Model Medan	IPA	2020
DIII	Institut Teknologi PLN	Teknologi Listrik	2023

LAMPIRAN

LAMPIRAN 1. Poto-Poto Panel







LAMPIRAN 2. Gambar Data Sheet dan Single Line Diagram

This drawing is the sole property of PT. POWERTEK INDO ASIA and is not to be used in any way detrimental to this company.

E	28/01/25	FIM	FOR CONSTRUCTION
D	28/01/25	FIM	FOR APPROVAL
C	19/11/24	FIM	FOR APPROVAL
B	11/11/24	FIM	FOR APPROVAL
A	07/10/24	FIM	FOR APPROVAL

REV. NO. DATE/COMMITTEE NAME SIZE

PROJECT NAME:

AGPA REFINERY COMPLEX PROJECT

OWNER: PT. AGPA REFINERY COMPLEX PROJECT NO: PIA240806A

CUSTOMER: PT. TRIPATRA ENGINEER & CONSTRUCTORS CUSTOMER LOGO: [Logo]

SCALE: NTS PANEL NAME: B400-CAP-801 (20 KVAR)

PT. POWERTEK INDO ASIA PT. POWERTEK INDO ASIA
MV and LV Switchgear Experts

TITLE: -DATA SHEET
-SINGLE LINE DIAGRAM
-GENERAL ARRANGEMENT
-COMPONENT LIST

DATE	NAME	SSN	CUSTOMER DOC. REF.
28/01/25	NHR	[Signature]	
28/01/25	FIM	[Signature]	CUSTOMER DOC. NUMBER: PIA001-CL-P-2019000000-08-001
28/01/25	AHK	[Signature]	POWERTEK DOC. NUMBER: AS-E-LV-240000A-001-101

REVISION: E SHEET 1 OF 10

FOR CONSTRUCTION
Engineering Department
PT. POWERTEK INDO ASIA

This drawing is the sole property of PT. POWERTEK INDO ASIA and is not to be used in any way detrimental to this company.

CONTENT LIST

SHEET NO.	DESCRIPTION	FUNCTION							STATUS	DATE	REMARK
		A	B	C	D	E	F	G			
1	COVER	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
2	CONTENT LIST	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
3	DATA SHEET	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
4	LEGEND	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
5	SINGLE LINE DIAGRAM	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
6	SINGLE LINE DIAGRAM	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
7	GENERAL ARRANGEMENT	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
8	GENERAL ARRANGEMENT	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
9	GENERAL ARRANGEMENT	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	
10	COMPONENT LIST	X	X	X	X	X	X	X	FOR CONSTRUCTION	28/01/2025	

FOR CONSTRUCTION
Engineering Department
PT. POWERTEK INDO ASIA

1	COVER	28/01/2025	
2	CONTENT LIST	28/01/2025	
3	DATA SHEET	28/01/2025	
4	LEGEND	28/01/2025	
5	SINGLE LINE DIAGRAM	28/01/2025	
6	SINGLE LINE DIAGRAM	28/01/2025	
7	GENERAL ARRANGEMENT	28/01/2025	
8	GENERAL ARRANGEMENT	28/01/2025	
9	GENERAL ARRANGEMENT	28/01/2025	
10	COMPONENT LIST	28/01/2025	

PROJECT NAME: AGPA REFINERY COMPLEX PROJECT

OWNER: PT. AGPA REFINERY COMPLEX PROJECT NO: PIA240806A

CUSTOMER: PT. TRIPATRA ENGINEER & CONSTRUCTORS CUSTOMER LOGO: [Logo]

SCALE: NTS PANEL NAME: B400-CAP-801 (20 KVAR)

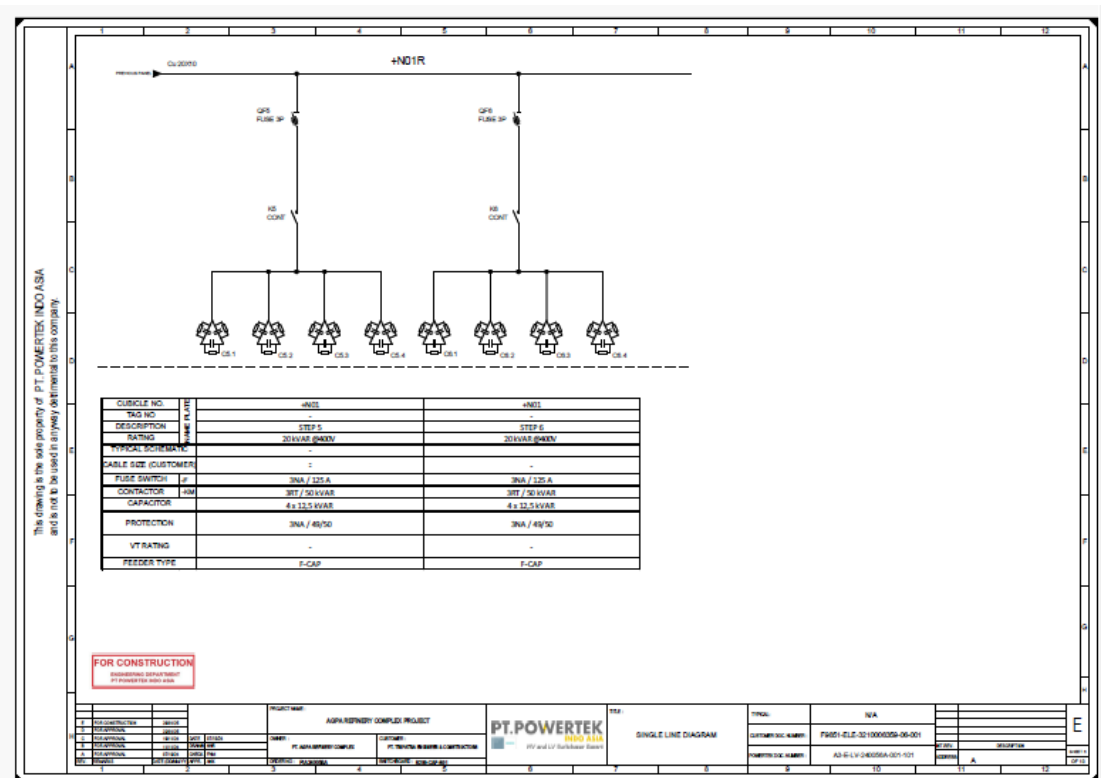
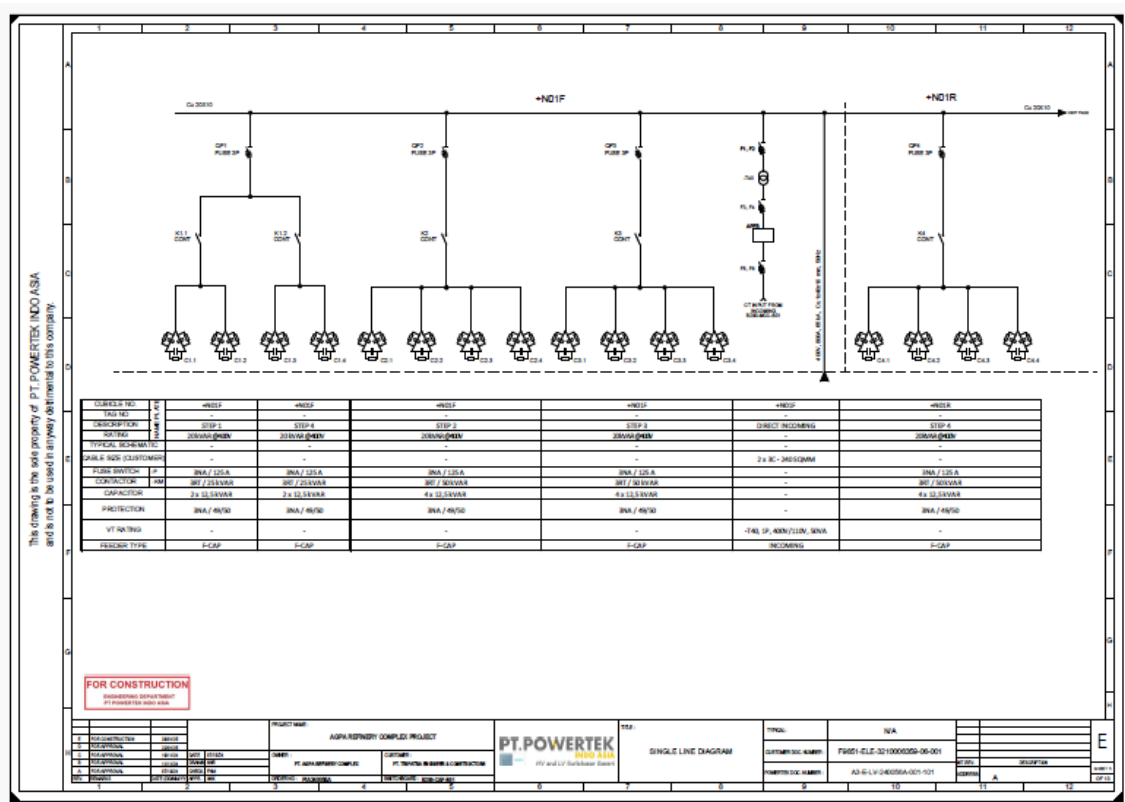
PT. POWERTEK INDO ASIA PT. POWERTEK INDO ASIA
MV and LV Switchgear Experts

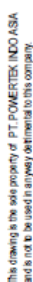
TITLE: CONTENT LIST

CUSTOMER DOC. NUMBER: PIA001-CL-P-2019000000-08-001

POWERTEK DOC. NUMBER: AS-E-LV-240000A-001-101

REVISION: E SHEET 1 OF 10





LAMPIRAN 3. 6 lembar Check Sheet

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet)		Doc. No. F-QAQC-27, Rev. B	
Test Schedule for Routine Verification by IEC 61439-1					
Project No. :	PIA240056A	Customer Name :	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name :	AGPA REFINERY COMPLEX PROJECT	Line Up :	B400-CAP-B01 (350 kVAR)		
Owner Name :	PT. AGPA REFINERY COMPLEX				
No.	SEQUENCE TEST AND INSPECTION PLANS	APPLICABLE STANDARD / DOCUMENT	RESULT		COMMENTS
			PASS	FAIL	
1	General Inspection	Approved Drawing	✓		
2	Design and Visual Check	Approved Drawing & IEC 11.2	✓		
3	Mechanical Function Test	Approved Drawing & IEC 11.8	✓		
4	Insulation Resistance Test	Approved Drawing & IEC 11.9	✓		
5	Electrical Function Test	Approved Drawing & IEC 11.10	✓		
6	Protection Relay and Metering Test	Approved Drawing & Customer Specified	N/A		
Remark :					
Q-Inspector :	Adi Saputra	Witnessed by :	Idi Febriongah	Witnessed by :	NORMAN MUSAWIN
Signature :	<i>Adi</i>	Signature :	<i>Idi</i>	Signature :	<i>Norman</i>
Date :	31 okt 2025	Date :	31 okt 2025	Date :	1 NOV 2025
Status :	Pass				

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet)		Doc. No. F-QAQC-27, Rev. B	
Test Schedule for Routine Verification by IEC 61439-1					
Project No. :	PIA240056A	Customer Name :	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name :	AGPA REFINERY COMPLEX PROJECT	Line Up :	B400-CAP-B01 (350 kVAR)		
Owner Name :	PT. AGPA REFINERY COMPLEX				
No.	GENERAL INSPECTION	APPLICABLE STANDARD / DOCUMENT	RESULT		COMMENTS
			PASS	FAIL	
1	General Appearance line up	Approved Drawing	✓		
2	All labels are complete.	Approved Drawing	✓		-QFC belum ada
3	The connecting bolts (between frames) are fully installed.	Approved Drawing			
4	Anchor bolts are permanently installed.	Approved Drawing	✓		
5	Standard alignment line panel of 1 mm/m has been met.	Approved Drawing	✓		
6	The roof panels have been installed.	Approved Drawing		✓	Tripatra akan order ulang
7	All compartments are clean and dust-free.	Approved Drawing	✓		Dibersihkan sebelum energize
8	No damage or loss of components during delivery.	Approved Drawing		✓	Canopy missing 1 pcs
Remark :					
Q-Inspector :	Adi Saputra	Witnessed by :	Idi Febriongah	Witnessed by :	NORMAN MUSAWIN
Signature :	<i>Adi</i>	Signature :	<i>Idi</i>	Signature :	<i>Norman</i>
Date :	31 okt 2025	Date :	31 okt 2025	Date :	1 NOV 2025
Status :	Pass				

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet)		Doc. No. F-QAQC-27, Rev. B	
Test Schedule for Routine Verification by IEC 61439-1					
Project No.	PIA240056A	Customer Name	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name	AGPA REFINERY COMPLEX PROJECT	Line Up	B400-CAP-B01 (350 KVAR)		
Owner Name	PT. AGPA REFINERY COMPLEX				

No.	DESIGN AND VISUAL CHECK	APPLICABLE STANDARD / DOCUMENT	RESULT		COMMENTS
			PASS	FAIL	
1	Cubicle No. And compartment -size and -allocation as specified	Approved Drawing	✓		
2	Bottom and roof plates are installed according to specified degree of protection	Approved Drawing		✓	Canopy missing 1 pcs
3	Foils and foamed rubbers are fixed on frames, doors and other parts	Approved Drawing	✓		
4	Enclosure, cable entrances and closures appropriate to specified degree of protection.	Approved Drawing	✓		
5	Internal separation & end cover of cubicle as specified	Approved Drawing	✓		
6	Tightening torques of copper terminations / joints and cable connections observed and marked, phase arrangement correct.	Approved Drawing	✓		
7	External ground cable has been installed.	Approved Drawing	✓		Ground cable belum ada
8	Interconnect cables and control circuit cables have been correctly installed, and the tightness has been checked.	Approved Drawing	N/A		
9	Cables are securely installed within the confines of the compartment.	Approved Drawing	✓		
Remark :					

Q-Inspector	: Adi Saputra	Witnessed by	: Idfi Febranyah	Witnessed by	: Norman Mursalin
Signature	: <i>[Signature]</i>	Signature	: <i>[Signature]</i>	Signature	: <i>[Signature]</i>
Date	: 31 okt 2025	Date	: 31 okt 2025	Date	: 1 NOV 2025
Status	: Pass				

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet)		Doc. No. F-QAQC-27, Rev. B	
Test Schedule for Routine Verification by IEC 61439-1					
Project No.	PIA240056A	Customer Name	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name	AGPA REFINERY COMPLEX PROJECT	Line Up	B400-CAP-B01 (350 KVAR)		
Owner Name	PT. AGPA REFINERY COMPLEX				

No.	MECHANICAL FUNCTIONAL TEST	APPLICABLE STANDARD / DOCUMENT	RESULT		COMMENTS
			PASS	FAIL	
1	Door locks working properly, Door operating mechanism OK	Approved Drawing	✓		
2	Mechanical operated module, connected- test- and disconnected position works properly.	Approved Drawing	N/A		
3	Manual operation module, closing-opening of breaker works properly	Approved Drawing	N/A		
4	Mechanical operated ACB, connected- test- and disconnected position works properly.	Approved Drawing	N/A		
5	Mechanical operated ACB, manual charging, manual closing & opening works properly.	Approved Drawing	N/A		
Remark :					

Q-Inspector	: Adi Saputra	Witnessed by	: Idfi Febranyah	Witnessed by	: Norman M.
Signature	: <i>[Signature]</i>	Signature	: <i>[Signature]</i>	Signature	: <i>[Signature]</i>
Date	: 31 Oktober 2025	Date	: 31 okt 2025	Date	: 1 NOV 2025
Status	: Pass				

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet) Test Schedule for Routine Verification by IEC 61439-1		Doc. No. F-QAQC-27, Rev. B	
Project No. :	PIA240056A	Customer Name :	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name :	AGPA REFINERY COMPLEX PROJECT	Line Up :	B400-CAP-B01 (350 kVAR)		
Owner Name :	PT. AGPA REFINERY COMPLEX				
No.	ELECTRICAL FUNCTIONAL TEST	APPLICABLE STANDARD / DOCUMENT	RESULT		COMMENTS
			PASS	FAIL	
1	Correct Functionality of control circuit, indicators and interlocking system (mechanical and electrical) as schematic diagram. (Function Test by Voltage)	Approved Drawing	✓		
2	Function of all lighting panel and anti condensation heater OK	Approved Drawing	✓		
Remark :					
Q-Inspector : Adi Saputra		Witnessed by : Irfi Febriansyah		Witnessed by : Nopman M.	
Signature : <i>Adi</i>		Signature : <i>Irfi</i>		Signature : <i>Nopman</i>	
Date : 31 okt 2025		Date : 31 okt 2025		Date : 1 Nov 2025	
Status : Pass					

PT. POWERTEK INDO ASIA MV and LV Switchgear Expert		SITE ACCEPTANCE TEST (LV Switchgear - Check Sheet) Test Schedule for Routine Verification by IEC 61439-1		Doc. No. F-QAQC-27, Rev. B	
Project No. :	PIA240056A	Customer Name :	PT. TRIPATRA ENGINEER & CONSTRUCTORS		
Project Name :	AGPA REFINERY COMPLEX PROJECT	Line Up :	B400-CAP-B01 (350 kVAR)		
Owner Name :	PT. AGPA REFINERY COMPLEX	Panel :	+N01		
1. Instrument data's					
Insulation Tester Inst No : Kyoritsu 3125A					
Insulation Tester Cal Date : 16 Mei 2025					
Panel No : +N01					
2. Insulation Resistance Test IEC 11.9					
Before performing Insulation Resistance test.					
					Yes No
- Close all ACB in service position.					N/A
- Isolate the VT's and short circuit the 2 nd secondary of all the feeders.					✓
- Open all Fuse and isolated all electronic component of measuring & control equipment to avoid damage.					✓
- Confirm that all equipment or cable that is not to be tested is isolated.					✓
- Neutral connection that directly connect to Busbar to be dismantled.					✓
- Apply at least 500 VDC Insulation Tester among each phase in succession and the earthed one for 1 minute.					✓
- The test is satisfactory if the insulation resistance between circuits and exposed conductive parts is at least 1000 Q/V					✓
3. Test Result :					
No.	Connection	Insulation Resistance (Ω)		Result (Pass/Fail)	
1	L1 (L2-L3-N to earth)	194	MΩ	Pass	
2	L2 (L1-L3-N to earth)	169	MΩ	Pass	
3	L3 (L1-L2-N to earth)	201	MΩ	Pass	
4	N (L1-L2-L3 to earth)	N/A		N/A	
Remark :					
Q-Inspector : Adi Saputra		Witnessed by : Irfi Febriansyah		Witnessed by : Nopman M.	
Signature : <i>Adi</i>		Signature : <i>Irfi</i>		Signature : <i>Nopman</i>	
Date : 31 okt 2025		Date : 31 okt 2025		Date : 1 Nov 2025	
Status : Pass					



Nama Mahasiswa : Raihana Rahmahdani
 Nim : 202311597
 Program studi : S1 Teknik Elektro
 Nama dosen pembimbing : Andi Makkulau, ST.M.Ikom,MT
 Judul Skripsi : Analisis Panel Kapasitor Bank sebagai Peningkatan Faktor Daya dan Efisiensi Energi pada Panel Distribusi Industri

No.	Tanggal	Materi Bimbingan	Tanda tangan
1	06/10/2025	Membahas judul yang akan dilakukan penelitian	
2	07/10/2025	Membahas penyusunan bab 1	
3	08/10/2025	Bimbingan revisi bab 1	
4	09/10/2025	Bimbingan penyusunan bab 2 dan bab 3	
5	10/10/2025	Diskusi hasil revisi diskusi dari bimbingan sebelumnya di proposal skripsi	
6	24/10/2025	Membahas revisi proposal skripsi	
7	06/11/2025	Diskusi penyusunan bab 4	
8	19/11/2025	Diskusi penyusunan bab 4, di hasil	
9	27/11/2025	Diskusi bab 4, di hasil dan pembahasan	
10	04/12/2025	Diskusi bab 4, hasil dan pembahasan	
11	19/12/2025	Pengumpulan hasil revisi bab 4, hasil dan pembahasan	
12	29/12/2025	Diskusi hasil revisi bab 4, dan bahas bab 5	
13	08/01/2026	Pengumpulan/ pengiriman hasil revisi bab 4 dan bab 5 dan diskusi penyusunan abstrak	
14	21/01/2025	Diskusi Hasil revisi bab 4 dan penulisan	
15	29/01/2025	Diskusi hasil revisi typo, flowchart, dan pendiskrisian peneliti sebelumnya	

Keterangan:

1. Konsultasi minimal 12 (dua belas) kali pertemuan termasuk konsultasi Proposal
2. Meliputi: Konsultasi Judul/Tema, Materi, Metode Penyelesaian, Pengujian, Analisis Hasil, Kesimpulan.
3. Setiap Konsultasi lembar ini harus dibawa dan di Paraf oleh Pembimbing.

	INSTITUT TEKNOLOGI PLN	Kode	FO-PD-A03-2-003-03-008
		Tanggal	10 Februari 2025
	NILAI SIDANG SKRIPSI	Level	2
		Revisi ke-	3

PERBAIKAN NASKAH SKRIPSI

Tanggal Ujian Sidang : Kamis, 12 Feb 2026
 Nama Mahasiswa : RAIHANA RAHMAHDANI
 NIM : 202311597
 Program Studi : S1 Teknik Elektro
 Fakultas/Sekolah : Ketenagalistrikan dan Energi Terbarukan
 Judul Skripsi : ANALISIS PANEL KAPASITOR BANK SEBAGAI PENINGKATAN FAKTOR DAYA DAN EFISIENSI ENERGI PADA PANEL DISTRIBUSI INDUSTRI

Saran perbaikan naskah skripsi adalah sebagai berikut :

1. Berikan keterangan data besarnya kapasitas Kapasitor Bank yang dipakai pada Panel Kapasitor tersebut pada pembahasan Bab IV !

Jangka waktu untuk perbaikan naskah skripsi diatas harus diselesaikan paling lambat satu minggu setelah tanggal ujian yakni pada tanggal.....

Apabila dalam jangka waktu tersebut mahasiswa tersebut diatas tidak dapat menyelesaikan **REVISI** skripsinya, maka mahasiswa harus kembali mengulang sidang.

Mahasiswa



RAIHANA RAHMAHDANI

Ketua Penguji



Juara Mangapul, S.T., M.Si.

Skripsi telah selesai diperbaiki pada tanggal 16 Februari 2026

Mahasiswa



RAIHANA RAHMAHDANI

Ketua Penguji



Juara Mangapul, S.T., M.Si.

	INSTITUT TEKNOLOGI PLN	Kode	FO-PD-A03-2-003-03-008
		Tanggal	10 Februari 2025
	NILAI SIDANG SKRIPSI	Level	2
		Revisi ke-	3

PERBAIKAN NASKAH SKRIPSI

Tanggal Ujian Sidang : Kamis, 12 Feb 2026
 Nama Mahasiswa : RAIHANA RAHMAHDANI
 NIM : 202311597
 Program Studi : S1 Teknik Elektro
 Fakultas/Sekolah : Ketenagalistrikan dan Energi Terbarukan
 Judul Skripsi : ANALISIS PANEL KAPASITOR BANK SEBAGAI PENINGKATAN FAKTOR DAYA DAN EFISIENSI ENERGI PADA PANEL DISTRIBUSI INDUSTRI

Saran perbaikan naskah Skripsi adalah sebagai berikut :

1. Tambahkan Jurnal Novi Gusti Pahiyanti ke dalam daftar pustaka minimal 5 judul lalu disitasi

Jangka waktu untuk perbaikan naskah skripsi diatas harus diselesaikan paling lambat satu minggu setelah tanggal ujian yakni pada tanggal.....
 Apabila dalam jangka waktu tersebut mahasiswa tersebut diatas tidak dapat menyelesaikan **REVISI** skripsinya, maka mahasiswa harus kembali mengulang sidang.

Mahasiswa



RAIHANA RAHMAHDANI

Skripsi telah selesai diperbaiki pada tanggal 16 Februari 2026

Mahasiswa



RAIHANA RAHMAHDANI

Anggota Penguji 1



Novi Gusti Pahiyanti, S.T., M.T

Anggota Penguji 1



Novi Gusti Pahiyanti, S.T., M.T

