

ภาคผนวกที่ 2-14

ตัวอย่างเอกสารตรวจสอบความปลอดภัยของหม้อแปลง



TEST REPORT

PREVENTIVE MAINTENANCE

Millennium Residence
Bangkok.

ZONE POWER CO., LTD.

20-24 February 2023



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The Millenium Club House.

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◆◆◆We Sale ◆◆◆ We service ◆◆◆ We guarantee ◆◆◆
Industrial Control and Automation
LV/MV Voltage Distribution
Electrical Maintenance (LV/MV)
Installation and Commissioning
Product system service(AC/DC Drives)



Preventive Maintenance Conclusion Report.

Project:		The Millenium Condo./Club House		Function:	Electrical power preventive maintenance.	
Item:	Function & Location:	Description:		Treatment & Suggestion:		Remark:
1	Infrared Thermoscan	TR,MDB.,DB.,Busduct Plug in.		- Yearly preventive maintenance - ไม่มีจุดร้อน สามารถใช้งานได้ตามปกติ		Normal
2	MV Switch Gear.	24/630A 24KV. 16KA. Normafix		- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ		Normal
3	MV CIRCUIT BREAKER	Cele DC 400A,24KV, 16KA. Normafix		- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ - สามารถON-Offได้ตามปกติ		Normal
4	Cast Rasin Transformer. (Dry Type)	24000/416 V 1000/1400 KVA ABB		- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ชั้นฉนวนจุดต่อ และทำควาสะอาดตู้ - ตรวจเช็คอุปกรณ์ ควบคุมอุณหภูมิ		Normal
5	Main distribution board	Copper bus bar, MCCB		- Yearly preventive maintenance - Insulation Test Busbar - ชั้นฉนวนจุดต่อ และทำควาสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ		Normal
		Tested by	Approved by		Witness by	
Company		Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo./Club House
Name		Monthon Songsuk		Supachok Aksornsit		
Signature						
Date		20/2/2023		20/2/2023		20/2/2023



Preventive Maintenance Conclusion Report.

Project:		The Millenium Condo./Club House		Function:		Electrical power preventive maintenance.	
Item:	Function & Location:	Description:		Treatment & Suggestion:		Remark:	
6	Air circuit Breaker	NW16N1 1600 A Square D		- Yearly preventive maintenance - Insulation Test Busbar - ช้้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ - ระบบป้องกันสามารถทำงานตามค่า Setting		Normal	
7	Molded Case Circuit Breaker	NS800N 800 A Square D		- Yearly preventive maintenance - สามารถ On- Off ได้ตามปกติ - สามารถใช้งานได้ตามปกติ - ระบบป้องกันสามารถทำงานตามค่า Setting		Normal	
8	Capacitor Bank.	HPS-24-2-440-3P 2x25 KVAR 400/415 V. MKS.		- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ - Power factor ของระบบมีค่าเป็นปกติ		Normal	
9	Busduct Plug in Load Center & Load Panel	24NDB630L 630A 1000/1400 KVA Square D		- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ช้้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ หลอดไฟหน้าตู้ มีหลอดไฟเสีย		Normal	
10	Ground resistance	- Transformer - Main distribution board - Generator No.1-3 - Lightning arrestor		- Yearly preventive maintenance - Ground resistance หม้อแปลงไฟฟ้าในระบบมีค่าน้อยกว่า 5 Ohm		Normal	
		Tested by	Approved by		Witness by		
Company		Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo./Club House		
Name		Monthon Songsuk	Supachok Aksornsit				
Signature							
Date		20/2/2023	20/2/2023		20/2/2023		



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Club House.	Type	NORMAFIX 24./630A.24KV 16 KA.
Function	SWGR.	Serial No.	32208276

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela IS. 400A/24KV/16KA
Function	Incoming 1. Form MEA.	Serial No.	32232529

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Club House.	Type	NORMAFIX 24./630A.24KV 16 KA.
Function	SWGR.	Serial No.	32208277

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela IS. 400A/24KV/16KA
Function	Incoming 2. Form MEA.	Serial No.	32232533

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela CIS. 200A/24KV/16KA
Function	Incoming 2. Form MEA.	Serial No.	32232536

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. **50** Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Electrical room. Club House.	
Function	Out Going T1.		Serial No	32232530	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :

☐

FG 1 (green indicator)

☐

FG 2,3 (10.5 mm)

☐

IFG 4 (10.5 mm)

☐

SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐

With the 10.4 mm. shim the lamp does not Light up

☐

with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00031

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T2.		Serial No	32232531	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00033

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T3.		Serial No	32232534	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00021

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T4.		Serial No	32232535	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00033

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

Cast Rasin Transformer. (Dry Type)

Project	The Millenium Condo.				
Location	Electrical room. Club House.	Function	Transformer No.5.		
Specification Data					
Brand	ABB	Series No,	081633		
Rated	1000/1400 KVA	Rated voltage	24000/416 V		
Frequency	50 Hz	Rated current	24.1/33.7 A - 1387.9/1943.0 A		
Cooling type	AN	Insulate class	F/F	Sybol	Dyn11

1. Body compartments.

- Clean the pole unit with dry cloth.
- Clean the main cable and main bus bar.
- Check the tightness of all connected with torque wrench.
- Check the grounding connected systems.



2. Protection & Control systems.

- Clean the control box and check the wiring connected.
- Cooling fan testing by AUTO-OFF-MANUAL selector switch.



3. Testing.

High side - Ground:

Phase	Result
R - G	39.6 GΩ
S - G	39.6 GΩ
T - G	39.6 GΩ

High side - Low side:

Phase	Result
R - r	48.1 GΩ
S - s	48.1 GΩ
T - t	48.1 GΩ

Temperature:

Phase	Result
R	54 °C
S	55 °C
T	55 °C

Temperature detection	Active fan	Alarm	Trip
TEC (T154)	60/75 °C	90 °C	110 °C

Primary main cable	XLPE 24 KV	70	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Main distribution board No.5
Location :	Electrical room. Club House.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	409	412	408		235	236	236

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	4.74 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	4.41 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	4.21 GΩ	
Phase A + Ground	1000 VDC	- GΩ	2.76 GΩ	
Phase B + Ground	1000 VDC	- GΩ	2.89 GΩ	
Phase C + Ground	1000 VDC	- GΩ	2.16 GΩ	
Primary main cable	Busbar			RSTN G

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Emergency Main distribution board .
Location :	Electrical room. Club House.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	400	400	400		231	231	231

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	21.90 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	28.10 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	30.50 GΩ	
Phase A + Ground	1000 VDC	- GΩ	9.42 GΩ	
Phase B + Ground	1000 VDC	- GΩ	8.17 GΩ	
Phase C + Ground	1000 VDC	- GΩ	9.53 GΩ	
Primary main cable		-		RSTN G

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Club House.)				
Panel No	Main distribution board No.5.	Function	MAIN - CB		
1. Name Plate					
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NW16N1	Opening coil	✓	Rated voltage	1000 V
Serial No	1404095620 5	Under voltage	✓	Rated current	1600 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 6.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	0.7In	3360 A	14.455 S	Auto test	Pass
Long time delay	4S	-	-	-	-
Short time	4Ir	7040 A	0.271 S	Auto test	Pass
Short time delay	0.1 S on	-	-	-	-
Instantaneous	6In	12000 A	0.044 S	Auto test	Pass
Ground fault	A (500A)	1000 A	0.129 S	Auto test	Pass
Ground fault delay	0.1 S on	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	19 $\mu\Omega$	17 $\mu\Omega$	19 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No	GCP 1 Panel.	Function	Main From Generator No.1		
1. Name Plate					
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NW12N1	Opening coil	✗	Rated voltage	1000 V
Serial No	1404095620 6	Under voltage	✗	Rated current	1250 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1667 A	14.654 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	1.5Ir	2344 A	0.053 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	33 $\mu\Omega$	38 $\mu\Omega$	40 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No	GCP 2 Panel.	Function	Main From Generator No.2		
1. Name Plate					
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NW12N1	Opening coil	✗	Rated voltage	1000 V
Serial No	1404095620 6	Under voltage	✗	Rated current	1250 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1667 A	15.013 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	1.5Ir	2344 A	0.053 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	28 $\mu\Omega$	56 $\mu\Omega$	38 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Electrical room. Club House.)				
Panel No.	Emergency Main distribution board .	Function	Normal Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 2/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.780 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	64 $\mu\Omega$	104 $\mu\Omega$	177 $\mu\Omega$	146 $\mu\Omega$
Panel No.	Emergency Main distribution board .	Function	Emergency Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 5/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.823 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	43 $\mu\Omega$	38 $\mu\Omega$	45 $\mu\Omega$	31 $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP-3 Panel	Function	Tower To ATS 5.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	140409695285 1 5/7	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1867 A	53.548 S	Auto test.	Passed.
Long time delay	0.8 S	-	-	-	-
Short time	3lr	3000 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	67 $\mu\Omega$	82 $\mu\Omega$	101 $\mu\Omega$	- $\mu\Omega$
Panel No.	-	Function	-		
MNF	-	Closing coil	✗	Motor drive	✗
Type	-	Shunt coil	✗	Rated voltage	-
Serial no.	-	Under voltage	✗	Rated current	-
2. Protective relay test		Type	-		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	-	-	-	-	-
Long time delay	-	-	-	-	-
Short time	-	-	-	-	-
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP1 Panel.	Function	Tower To ATS 2.		
MNF	Square D	Closing coil	✗	Motor drive	✓
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404098365 2	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.956 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	196 $\mu\Omega$	144 $\mu\Omega$	107 $\mu\Omega$	- $\mu\Omega$
Panel No.	GCP1 Panel.	Function	Tower To ATS 1.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404073241 4	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.079 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	207 $\mu\Omega$	211 $\mu\Omega$	296 $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP2 Panel.	Function	Tower To ATS 4.		
MNF	Square D	Closing coil	✗	Motor drive	✓
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404097559 2	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.889 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	206 $\mu\Omega$	170 $\mu\Omega$	118 $\mu\Omega$	- $\mu\Omega$
Panel No.	GCP2 Panel.	Function	Tower To ATS 3.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404077079	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.514 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	142 $\mu\Omega$	185 $\mu\Omega$	193 $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



CAPACITOR BANK

Project :	The Millenium Condo. (Electrical room. Club House.)
Panel :	Capacitor Bank.

Name plate :

MNF	MKS.	Kvar	2x25
Type	HPS-24-2-440-3P	Volt	400/415

Power factor controller :		Magnetic Contactor :		Circuit breaker / HRC fuse :	
MNF	MiRO	MNF	FEDERAL	MNF	MiRO
Type	PFR60	Type	FC-95K-21	Type	NHC00, 125 A

Setting :

Target cos φ	0.95 Ind	Delay time	45
C/K	0.23	Angle	-

Step	Current of capacitor (Amp)			Capacity (μ F)			Remark
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	
1	73	72	72	489	488	488	Normal capacity.
2	70	67	67	479	477	443	Normal capacity.
3	73	73	72	489	489	489	Normal capacity.
4	72	72	72	489	489	487	Normal capacity.
5	72	72	72	488	488	489	Normal capacity.
6	67	67	72	459	482	480	Normal capacity.

Remark : - Normal capacitor.

- Power factor ของระบบมีค่าเป็นปกติ

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
4	4EDB1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3		EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			175 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			CV	N	1x120	SQMM	
				G	1x16	SQMM	
5	3DB1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3		NDB630H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			500 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	2x240	SQMM	
			CV	N	2x240	SQMM	
				G	1x70	SQMM	
6	3DB2-CH	Load Panel	Main lug	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3			B-C	>2.2 GΩ	B-E	>2.2 GΩ
				A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x150	SQMM	
			CV	N	1x150	SQMM	
				G	1x25	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)	Function	Load panel.					
1. Mechanical and Electrical Inspection		Yes	No	Remark				
Body and seal		✓						
Pole and arc contact		✓						
Cleaning and lubricate of mechanism		✓						
Check & tightening cable terminal		✓						
Mechanism operation test		✓						
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.				
10	5DB-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ	
	Floor.5		NDB630L	B-C	>2.2 GΩ	B-E	>2.2 GΩ	
			500 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ	
	Cable	Incoming		RST	1x300	SQMM		
			CV	N	1x300	SQMM		
				G	1x35	SQMM		



GROUND SYSTEMS TEST

☐ RM-U ☐ Transformer ☒ LV switch board ☒ Generator ☐ Order:

Project	The Millenium Condo.		
Location	Electrical room. Club House.	Type	-
Function	Ground resistance.	Serial No.	-

1 Switch Gear.	Ground resistance.	2.79	Ω
2 Transformer.No.5	Ground resistance.	3.24	Ω
3 Main distribution board.& ATS 5	Ground resistance.	3.75	Ω
4 Gen.1	Ground resistance.	4.43	Ω
5 Gen.2	Ground resistance.	3.92	Ω
6 Gen.3	Ground resistance.	4.29	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω

Remark: - Ground resistance ในระบบไม่ควรมีค่ามากกว่า 5 Ohm

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



TEST REPORT

PREVENTIVE MAINTENANCE

Millennium Residence
Bangkok.

ZONE POWER CO., LTD.

20-24 February 2023



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The Millenium Club House.

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CHAPTER 7	7
- CAPACITOR BANKS.	
CHAPTER 8	8
- LOAD CENTER & LOAD PANEL PREVENTIVE MAINTENANCE.	
CHAPTER 9	9
- GROUND RESISTANCE.	

◆◆◆We Sale ◆◆◆ We service ◆◆◆ We guarantee ◆◆◆
Industrial Control and Automation
LV/MV Voltage Distribution
Electrical Maintenance (LV/MV)
Installation and Commissioning
Product system service(AC/DC Drives)



Preventive Maintenance Conclusion Report.

Project:	The Millenium Condo./Club House		Function:	Electrical power preventive maintenance.		Remark:
Item:	Function & Location:		Description:		Treatment & Suggestion:	Remark:
1	Infrared Thermoscan	TR,MDB,,DB.,Busduct Plug in.	- Yearly preventive maintenance - ไม่มีจุดร้อน สามารถใช้งานได้ตามปกติ			Normal
2	MV Switch Gear.	24/630A 24KV. 16KA. Normafix	- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ			Normal
3	MV CIRCUIT BREAKER	Cele DC 400A,24KV,16KA. Normafix	- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ - สามารถON-Offได้ตามปกติ			Normal
4	Cast Rasin Transformer. (Dry Type)	24000/416 V 1000/1400 KVA ABB	- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ชั้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ ควบคุมอุณหภูมิ			Normal
5	Main distribution board	Copper bus bar, MCCB	- Yearly preventive maintenance - Insulation Test Busbar - ชั้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ			Normal
		Tested by	Approved by		Witness by	
Company		Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo./Club House	
Name		Monthon Songsuk	Supachok Aksornsit			
Signature						
Date		20/2/2023	20/2/2023		20/2/2023	



Preventive Maintenance Conclusion Report.

Project:		The Millenium Condo./Club House		Function:	Electrical power preventive maintenance.		Remark:
Item:	Function & Location:		Description:	Treatment & Suggestion:			
6	Air circuit Breaker		NW16N1 1600 A Square D	- Yearly preventive maintenance - Insulation Test Busbar - ชันแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ - ระบบป้องกันสามารถทำงานตามค่า Setting			Normal
7	Molded Case Circuit Breaker		NS800N 800 A Square D	- Yearly preventive maintenance - สามารถ On- Off ได้ตามปกติ - สามารถใช้งานได้ตามปกติ - ระบบป้องกันสามารถทำงานตามค่า Setting			Normal
8	Capacitor Bank.		HPS-24-2-440-3P 2x25 KVAR 400/415 V. MKS.	- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ - Power factor ของระบบมีค่าเป็นปกติ			Normal
9	Busduct Plug in Load Center & Load Panel		24NDB630L 630A 1000/1400 KVA Square D	- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ชันแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ หลอดไฟหน้าตู้ มีหลอดไฟเสีย			Normal
10	Ground resistance		- Transformer - Main distribution board - Generator No.1-3 - Lightning arrestor	- Yearly preventive maintenance - Ground resistance หม้อแปลงไฟฟ้าในระบบมีค่าน้อยกว่า 5 Ohm			Normal
			Tested by	Approved by		Witness by	
Company			Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo./Club House	
Name			Monthon Songsuk	Supachok Aksornsit			
Signature							
Date			20/2/2023	20/2/2023		20/2/2023	



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Club House.	Type	NORMAFIX 24./630A.24KV 16 KA.
Function	SWGR.	Serial No.	32208276

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela IS. 400A/24KV/16KA
Function	Incoming 1. Form MEA.	Serial No.	32232529

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Club House.	Type	NORMAFIX 24./630A.24KV 16 KA.
Function	SWGR.	Serial No.	32208277

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela IS. 400A/24KV/16KA
Function	Incoming 2. Form MEA.	Serial No.	32232533

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Club House.	Type	Cela CIS. 200A/24KV/16KA
Function	Incoming 2. Form MEA.	Serial No.	32232536

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. **50** Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Electrical room. Club House.	
Function	Out Going T1.		Serial No	32232530	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :

☐

FG 1 (green indicator)

☐

FG 2,3 (10.5 mm)

☐

IFG 4 (10.5 mm)

☐

SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐

With the 10.4 mm. shim the lamp does not Light up

☐

with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00031

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T2.		Serial No	32232531	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00033

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T3.		Serial No	32232534	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00021

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MV CIRCUIT BREAKER / ROLLARC CONTACTORS

Project	The Millenium Condo.		Location	Club House.	
Function	Out Going T4.		Serial No	32232535	
Brands	NORMAFIX 24.		Type	Cela DC. Year. 2008	
Rating	400 A, 24 KV, 16 KA.		Supply	230 AAC	
Pole No.	R :	-	S :	-	T : -

Caution For Safety the operator must perform the following, operation with the breaker "OPEN" and Mechanism "UNCHARGED"

Maintenance : Mechanism BlockOperating Mechanism

-Grease the guides of spring / lubricate other point

Latching Mechanism

- Clean two Latches with Solvent



- Lubricate the two Latches ,joint and bearing

Geared Motor

- Lubricate the wheels



- Clean the commutator

Pole Unit

- Dust and clean insulator with dry cloth



- Remove the old grease and clean with solvent

Earthing Bus Bar

- Cleaning earthing Bus Bar with Solvent



- Grease the earthing Bus Bar

**Checking**

- LV. auxiliaries main plug/ connection of control unit



- Check the condition of earthing sliding contact



- Check the wear on the arcing contact are :



☐ FG 1 (green indicator)

☐ FG 2,3 (10.5 mm)

☐ IFG 4 (10.5 mm)

☐ SF,LF,FB (green indicator)

For Rollarc contactor mm.

☐ With the 10.4 mm. shim the lamp does not Light up

☐ with 10 mm. shim the lamp light up

Contact wear

Phase A (mm)	Phase B (mm)	Phase C (mm)	counter (time)
-	-	-	00033

Low resistance measurement

Pole	Test current	Phase A	Phase B	Phase C
Contact resistance	100 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$

Insulation resistance measurement (1 min)

Pole	Test Voltage	Phase A	Phase B	Phase C
Top and Bottom - Ground (on)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$
Top - Bottom (off)	2500 VDC	- $G\Omega$	- $G\Omega$	- $G\Omega$

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

Cast Rasin Transformer. (Dry Type)

Project	The Millenium Condo.				
Location	Electrical room. Club House.	Function	Transformer No.5.		
Specification Data					
Brand	ABB	Series No,	081633		
Rated	1000/1400 KVA	Rated voltage	24000/416 V		
Frequency	50 Hz	Rated current	24.1/33.7 A - 1387.9/1943.0 A		
Cooling type	AN	Insulate class	F/F	Sybol	Dyn11

1. Body compartments.

- Clean the pole unit with dry cloth.
- Clean the main cable and main bus bar.
- Check the tightness of all connected with torque wrench.
- Check the grounding connected systems.



2. Protection & Control systems.

- Clean the control box and check the wiring connected.
- Cooling fan testing by AUTO-OFF-MANUAL selector switch.



3. Testing.

High side - Ground:

Phase	Result
R - G	39.6 GΩ
S - G	39.6 GΩ
T - G	39.6 GΩ

High side - Low side:

Phase	Result
R - r	48.1 GΩ
S - s	48.1 GΩ
T - t	48.1 GΩ

Temperature:

Phase	Result
R	54 °C
S	55 °C
T	55 °C

Temperature detection	Active fan	Alarm	Trip
TEC (T154)	60/75 °C	90 °C	110 °C

Primary main cable	XLPE 24 KV	70	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Main distribution board No.5
Location :	Electrical room. Club House.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	409	412	408		235	236	236

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	4.74 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	4.41 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	4.21 GΩ	
Phase A + Ground	1000 VDC	- GΩ	2.76 GΩ	
Phase B + Ground	1000 VDC	- GΩ	2.89 GΩ	
Phase C + Ground	1000 VDC	- GΩ	2.16 GΩ	
Primary main cable	Busbar			RSTN G

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Emergency Main distribution board .
Location :	Electrical room. Club House.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.

A - B	B - C	A - C		A - N	B - N	C - N
400	400	400		231	231	231

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	21.90 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	28.10 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	30.50 GΩ	
Phase A + Ground	1000 VDC	- GΩ	9.42 GΩ	
Phase B + Ground	1000 VDC	- GΩ	8.17 GΩ	
Phase C + Ground	1000 VDC	- GΩ	9.53 GΩ	
Primary main cable		-		RSTN G

Remark :

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Club House.)				
Panel No	Main distribution board No.5.	Function	MAIN - CB		
1. Name Plate					
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NW16N1	Opening coil	✓	Rated voltage	1000 V
Serial No	1404095620 5	Under voltage	✓	Rated current	1600 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 6.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	0.7In	3360 A	14.455 S	Auto test	Pass
Long time delay	4S	-	-	-	-
Short time	4Ir	7040 A	0.271 S	Auto test	Pass
Short time delay	0.1 S on	-	-	-	-
Instantaneous	6In	12000 A	0.044 S	Auto test	Pass
Ground fault	A (500A)	1000 A	0.129 S	Auto test	Pass
Ground fault delay	0.1 S on	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	19 $\mu\Omega$	17 $\mu\Omega$	19 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No	GCP 1 Panel.	Function	Main From Generator No.1		
1. Name Plate					
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NW12N1	Opening coil	✗	Rated voltage	1000 V
Serial No	1404095620 6	Under voltage	✗	Rated current	1250 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1667 A	14.654 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	1.5Ir	2344 A	0.053 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	33 $\mu\Omega$	38 $\mu\Omega$	40 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No	GCP 2 Panel.	Function	Main From Generator No.2		
1. Name Plate					
MNF	Square D	Closing coil	×	Motor drive	×
Type	NW12N1	Opening coil	×	Rated voltage	1000 V
Serial No	1404095620 6	Under voltage	×	Rated current	1250 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1667 A	15.013 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	1.5Ir	2344 A	0.053 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	28 $\mu\Omega$	56 $\mu\Omega$	38 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Electrical room. Club House.)				
Panel No.	Emergency Main distribution board .	Function	Normal Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 2/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.780 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	64 $\mu\Omega$	104 $\mu\Omega$	177 $\mu\Omega$	146 $\mu\Omega$
Panel No.	Emergency Main distribution board .	Function	Emergency Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 5/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.823 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	43 $\mu\Omega$	38 $\mu\Omega$	45 $\mu\Omega$	31 $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP-3 Panel	Function	Tower To ATS 5.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	140409695285 1 5/7	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1867 A	53.548 S	Auto test.	Passed.
Long time delay	0.8 S	-	-	-	-
Short time	3Ir	3000 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	67 $\mu\Omega$	82 $\mu\Omega$	101 $\mu\Omega$	- $\mu\Omega$
Panel No.	-	Function	-		
MNF	-	Closing coil	✗	Motor drive	✗
Type	-	Shunt coil	✗	Rated voltage	-
Serial no.	-	Under voltage	✗	Rated current	-
2. Protective relay test		Type	-		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	-	-	-	-	-
Long time delay	-	-	-	-	-
Short time	-	-	-	-	-
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP1 Panel.	Function	Tower To ATS 2.		
MNF	Square D	Closing coil	✗	Motor drive	✓
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404098365 2	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.956 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	196 $\mu\Omega$	144 $\mu\Omega$	107 $\mu\Omega$	- $\mu\Omega$
Panel No.	GCP1 Panel.	Function	Tower To ATS 1.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404073241 4	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.079 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.053 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	207 $\mu\Omega$	211 $\mu\Omega$	296 $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Generator room. Club House.)				
Panel No.	GCP2 Panel.		Function	Tower To ATS 4.	
MNF	Square D	Closing coil	✗	Motor drive	✓
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404097559 2	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.889 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	206 $\mu\Omega$	170 $\mu\Omega$	118 $\mu\Omega$	- $\mu\Omega$
Panel No.	GCP2 Panel.		Function	Tower To ATS 3.	
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404077079	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	1067 A	15.514 S	Auto test.	Passed.
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test.	Passed.
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	142 $\mu\Omega$	185 $\mu\Omega$	193 $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	20/2/2023	20/2/2023		20/2/2023	



CAPACITOR BANK

Project :	The Millenium Condo. (Electrical room. Club House.)
Panel :	Capacitor Bank.

Name plate :

MNF	MKS.	Kvar	2x25		
Type	HPS-24-2-440-3P	Volt	400/415		
Power factor controller :		Magnetic Contactor :	Circuit breaker / HRC fuse :		
MNF	MiRO	MNF	FEDERAL	MNF	MiRO
Type	PFR60	Type	FC-95K-21	Type	NHC00, 125 A

Setting :

Target cos φ	0.95 Ind	Delay time	45
C/K	0.23	Angle	-

Step	Current of capacitor (Amp)			Capacity (μ F)			Remark
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	
1	73	72	72	489	488	488	Normal capacity.
2	70	67	67	479	477	443	Normal capacity.
3	73	73	72	489	489	489	Normal capacity.
4	72	72	72	489	489	487	Normal capacity.
5	72	72	72	488	488	489	Normal capacity.
6	67	67	72	459	482	480	Normal capacity.

Remark : - Normal capacitor.

- Power factor ของระบบมีค่าเป็นปกติ

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)	Function	Load panel.					
1. Mechanical and Electrical Inspection		Yes	No	Remark				
Body and seal		✓						
Pole and arc contact		✓						
Cleaning and lubricate of mechanism		✓						
Check & tightening cable terminal		✓						
Mechanism operation test		✓						
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.				
1	GEDB1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ	
	MDB Room.		EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ	
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ	
	Cable	Incoming		RST	1x120	SQMM		
			CV	N	1x120	SQMM		
				G	1x25	SQMM		
2	2P1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ	
	Floor.2		EZD100N	B-C	>2.2 GΩ	B-E	>2.2 GΩ	
			60 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ	
	Cable	Incoming		RST	1x25	SQMM		
			CV	N	1x25	SQMM		
				G	1x4	SQMM		
3	2EP1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ	
	Floor.2		EZD100H	B-C	>2.2 GΩ	B-E	>2.2 GΩ	
			50 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ	
	Cable	Incoming		RST	1x25	SQMM		
			CV	N	1x25	SQMM		
				G	1x4	SQMM		
	Tested by		Approved by		Witness by			
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.			
Name	Monthon Songsuk		Supachok Aksornsit		PPM.			
Signature								
Date	20/2/2023		20/2/2023		20/2/2023			



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
4	4EDB1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3		EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			175 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			CV	N	1x120	SQMM	
				G	1x16	SQMM	
5	3DB1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3		NDB630H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			500 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	2x240	SQMM	
			CV	N	2x240	SQMM	
				G	1x70	SQMM	
6	3DB2-CH	Load Panel	Main lug	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.3			B-C	>2.2 GΩ	B-E	>2.2 GΩ
				A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x150	SQMM	
			CV	N	1x150	SQMM	
				G	1x25	SQMM	
	Tested by		Approved by		Witness by		
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.		
Name	Monthon Songsuk		Supachok Aksornsit		PPM.		
Signature							
Date	20/2/2023		20/2/2023		20/2/2023		



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
7	4P2-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.4		EZD100N	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			30 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x16	SQMM	
			CV	N	1x16	SQMM	
				G	1x4	SQMM	
8	4P1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.4		EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			175 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			CV	N	1x120	SQMM	
				G	1x16	SQMM	
9	4EP1-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.4		EZD100H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			50 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	-	SQMM	
			CV	N	-	SQMM	
				G	-	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Club House.)	Function	Load panel.					
1. Mechanical and Electrical Inspection		Yes	No	Remark				
Body and seal		✓						
Pole and arc contact		✓						
Cleaning and lubricate of mechanism		✓						
Check & tightening cable terminal		✓						
Mechanism operation test		✓						
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.				
10	5DB-CH	Load Panel	SQUARE D	A-B	>2.2 GΩ	A-E	>2.2 GΩ	
	Floor.5		NDB630L	B-C	>2.2 GΩ	B-E	>2.2 GΩ	
			500 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ	
	Cable	Incoming		RST	1x300	SQMM		
			CV	N	1x300	SQMM		
				G	1x35	SQMM		



GROUND SYSTEMS TEST

☐ RM-U ☐ Transformer ☒ LV switch board ☒ Generator ☐ Order:

Project	The Millenium Condo.		
Location	Electrical room. Club House.	Type	-
Function	Ground resistance.	Serial No.	-

1 Switch Gear.	Ground resistance.	2.79	Ω
2 Transformer.No.5	Ground resistance.	3.24	Ω
3 Main distribution board.& ATS 5	Ground resistance.	3.75	Ω
4 Gen.1	Ground resistance.	4.43	Ω
5 Gen.2	Ground resistance.	3.92	Ω
6 Gen.3	Ground resistance.	4.29	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω
	Ground resistance.	-	Ω

Remark: - Ground resistance ในระบบไม่ควรมีค่ามากกว่า 5 Ohm

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



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The Millenium Condo A.

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Preventive Maintenance Conclusion Report.

Project:		The Millenium Condo./Tower A		Function:	Electrical power preventive maintenance.		Remark:
Item:	Function & Location:		Description:	Treatment & Suggestion:			
1	Infrared Thermoscan	TR,MDB.,DB.,Busduct Plug in.		- Yearly preventive maintenance - ไม่มีจุดร้อน สามารถใช้งานได้ตามปกติ			Normal
2	MV Switch Gear.		24/630A 24KV. 16KA. Normafix	- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ			Normal
3	MV CIRCUIT BREAKER		Cele DC 400A,24KV,16KA. Normafix	- Yearly preventive maintenance - สามารถใช้งานได้ตามปกติ - สามารถON-Offได้ตามปกติ			Normal
4	Cast Rasin Transformer. (Dry Type)		24000/416 V 1000/1400 KVA ABB	- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ชั้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ ควบคุมอุณหภูมิ -Pilot Lamp(TR.1) แจ้งสถานะ แดกชำรุด			Plan
5	Main distribution board		Copper bus bar, MCCB	- Yearly preventive maintenance - Insulation Test Busbar - ชั้นแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ - Tme delay "Schneider" MDB.1 เสีย 1 Set แนะนำเปลี่ยน			Abnormal
		Tested by		Approved by		Witness by	
Company		Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo./Tower A	
Name		Monthon Songsuk		Supachok Aksornsit			
Signature							
Date		21/2/2023		21/2/2023		21/2/2023	



Preventive Maintenance Conclusion Report.

Project:		The Millenium Condo./Club House		Function:	Electrical power preventive maintenance.		Remark:
Item:	Function & Location:		Description:	Treatment & Suggestion:			
6	Air circuit Breaker		NW16N1 1600 A Square D	- Yearly preventive maintenance - Insulation Test Busbar - ชันแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ สามารถใช้งานได้ตามปกติ - ระบบป้องกันสามารถทำงานตามค่า Setting			Normal
7	Emergency Main distribution board . Molded Case Circuit Breaker		NS800N 800 A Square D	- Yearly preventive maintenance - ระบบป้องกันสามารถทำงานตามค่า Setting - ไฟ Emer อุปกรณ์ Life ใช้งานได้ ตรวจเช็คแล้วต้องลากสายไฟ Control เพิ่มจากMDB-Life Control			Abnormal
8	Capacitor Bank.		HPS-24-2-440-3P 2x25 KVAR 400/415 V. MKS.	- Yearly preventive maintenance - Power factor ของระบบมีค่าเป็นปกติ - Capacitor bank (MDB1/1) เสื่อมสภาพ 3 Set (2*20KVAR 400 V.) เพื่อให้ระบบสมบูรณ์และป้องกันความเสียหายอื่นๆ สมควรเปลี่ยน			Abnormal
9	Busduct Plug in Load Center & Load Panel		24NDB630L 630A 1000/1400 KVA Square D	- Yearly preventive maintenance - Insulation Test สามารถใช้งานได้ตามปกติ - ชันแน่นจุดต่อ และทำความสะอาดตู้ - ตรวจเช็คอุปกรณ์ หลอดไฟหน้าตู้ มีหลอดไฟเสีย			Normal
10	Ground resistance		- Transformer - Main distribution board - Ring main Unit - Lightning arrester	- Yearly preventive maintenance - Ground resistance หม้อแปลงไฟฟ้าในระบบมีค่าน้อยกว่า 5 Ohm			Normal
			Tested by	Approved by		Witness by	
Company			Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo./Tower A	
Name			Monthon Songsuk	Supachok Aksornsit			
Signature							
Date			21/2/2023	21/2/2023		21/2/2023	



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Tower A.	Type	Cela IS. 400A/24KV/16KA
Function	Incoming . MEA T1.	Serial No.	3223746

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	- mΩ	- mΩ	- mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	-	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24. Year. 2008
Location	Electrical room. Tower A.	Type	Cela CIS. 200A/24KV/16KA
Function	Outgoing. TR1/1.	Serial No.	32232747

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. **100** Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	19.4 mΩ	18.2 mΩ	18.2 mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	70	SQMM	RST
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Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

☐ VM6 ☐ SM6 ☐ Fluair ☐ Mcset ☒ Order **Disconnecting Switch.**

Project	The Millenium Condo.	MNF	NORMAFIX 24.Year. 2008
Location	Electrical room. Tower A.	Type	Cela CIS. 200A/24KV/16KA
Function	Outgoing. TR1/2.	Serial No.	32232748

1. Cable compartments.

- Clean cable compartment ☒
- Check the tightness of main cable ☒

2. Low Voltage compartment.

- Clean low voltage compartment ☒
- Clean old grease of all mechanical parts and regrease lightly ☒

3. Bus bar compartment.

- Clean bus bar compartment ☒
- Visually check the condition and tightness of the busbar supports ☒

4. Earthing switch.

- Clean old grease of all mechanical parts and regrease lightly ☒
- Visually check the earthing switch and operation mechanism ☒

5. Rated power fuse. **100** Amp.

6. Low resistance Measurement.

Pole	Test Current	Phase A.	Phase B.	Phase C.
Fuse resistance	1 Amp.	18.8 mΩ	18.1 mΩ	17.9 mΩ
Contact resistance	100 Amp.	- μΩ	- μΩ	- μΩ

7. Insulation resistance measurement (1 min)

Phase to Phase	Test Voltage	L1-L2 : - GΩ	L2-L3 : - GΩ	L3-L1 : - GΩ
Phase to Ground	2500 VDC	L1- G : - GΩ	L2- G : - GΩ	L3- G : - GΩ

Primary main cable	XLPE 24 KV	70	SQMM	RST
--------------------	-------------------	-----------	------	-----

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	20/2/2023	20/2/2023	20/2/2023



Preventive Maintenance

Cast Rasin Transformer. (Dry Type)

Project	The Millenium Condo.		
Location	Electrical room. Tower A.	Function	Transformer No.1.

Specification Data

Brand	ABB	Series No,	-		
Rated	1600/2240 KVA	Rated voltage	24000/416 V		
Frequency	50 Hz	Rated current	38.5/53.9 A - 2225.9/3116.3 A		
Cooling type	AN / AF	Insulate class	F/F	Sybol	Dyn11

1. Body compartments.

- Clean the pole unit with dry cloth.
- Clean the main cable and main bus bar.
- Check the tightness of all connected with torque wrench.
- Check the grounding connected systems.



2. Protection & Control systems.

- Clean the control box and check the wiring connected.
- Cooling fan testing by AUTO-OFF-MANUAL selector switch.



3. Testing.

High side - Ground:

Phase	Result
R - G	41.1 GΩ
S - G	41.1 GΩ
T - G	41.1 GΩ

High side - Low side:

Phase	Result
R - r	37.5 GΩ
S - s	37.5 GΩ
T - t	37.5 GΩ

Temperature:

Phase	Result
R	54 °C
S	56 °C
T	53 °C

Temperature detection	Active fan	Alarm	Trip
TEC (T154)	60/70 °C	90 °C	110 °C

Primary main cable	XLPE 24 KV	70	SQMM	RST
--------------------	------------	----	------	-----

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark : -Pilot Lamp แสดงสถานะแตก ขำรด

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



Preventive Maintenance

Cast Rasin Transformer. (Dry Type)

Project	The Millenium Condo.				
Location	Electrical room. Tower A.	Function	Transformer No.2.		
Specification Data					
Brand	ABB	Series No,	-		
Rated	1600/2240 KVA	Rated voltage	24000/416 V		
Frequency	50 Hz	Rated current	38.5/53.9 A - 2225.9/3116.3 A		
Cooling type	AN / AF	Insulate class	F/F	Sybol	Dyn11

1. Body compartments.

- Clean the pole unit with dry cloth.
- Clean the main cable and main bus bar.
- Check the tightness of all connected with torque wrench.
- Check the grounding connected systems.



2. Protection & Control systems.

- Clean the control box and check the wiring connected.
- Cooling fan testing by AUTO-OFF-MANUAL selector switch.



3. Testing.

High side - Ground:

Phase	Result
R - G	43 GΩ
S - G	43 GΩ
T - G	43 GΩ

High side - Low side:

Phase	Result
R - r	33 GΩ
S - s	33 GΩ
T - t	33 GΩ

Temperature:

Phase	Result
R	55 °C
S	60 °C
T	55 °C

Temperature detection	Active fan	Alarm	Trip
TEC (T154)	60/75 °C	90 °C	110 °C

Primary main cable	XLPE 24 KV	70	SQMM	RST
--------------------	------------	----	------	-----

Result : ☒ Passed ☒ Acceptable ☐ Defected

Remark :

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Main distribution board No.1/1
Location :	Electrical room. Tower A.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	409	412	408		235	236	236

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	8.20 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	5.60 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	6.80 GΩ	
Phase A + Ground	1000 VDC	- GΩ	6.20 GΩ	
Phase B + Ground	1000 VDC	- GΩ	6.50 GΩ	
Phase C + Ground	1000 VDC	- GΩ	7.20 GΩ	
Primary main cable	Busbar			RSTN G

Remark : **- Adjustable Delay Unit MN"Schneider" ๕๕๕ (Time Delay 200/250 Vac/Vdc)**

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Main distribution board No.1/2
Location :	Electrical room. Tower A.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	407	409	409		234	235	235

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	6.20 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	6.80 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	7.20 GΩ	
Phase A + Ground	1000 VDC	- GΩ	4.80 GΩ	
Phase B + Ground	1000 VDC	- GΩ	4.40 GΩ	
Phase C + Ground	1000 VDC	- GΩ	4.56 GΩ	
Primary main cable	Busbar			RSTN G

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

MAIN DISTRIBUTION BOARD

Project :	The Millenium Condo.
Panel No. :	Emergency Main distribution board .
Location :	Electrical room. Tower A.

Preliminary checking	Yes	No	Remark
1. Check inside and outside the switch board.	✓		
2. Use a vacuum cleaner to clean.	✓		
3. Clean old grease of all mechanical parts and re-grease lightly.	✓		
4. Visually check the bus bar.	✓		
5. Visually check the condition and tightness of bus bar supports.	✓		
6. Check the tightness of main cable.	✓		
7. General inspection.	✓		
8. Check on contact on main bus bar.	✓		
9. Check the tightness of all power and control connection.	✓		

10. Voltage measurement.	A - B	B - C	A - C		A - N	B - N	C - N
	400	400	400		231	231	231

Insulation resistance measurement (1 min)

Phase	Test Voltage	Measurement(Before)	Measurement(After)	Remark
Phase A + Phase B	1000 VDC	- GΩ	6.25 GΩ	
Phase B + Phase C	1000 VDC	- GΩ	6.41 GΩ	
Phase A + Phase C	1000 VDC	- GΩ	7.44 GΩ	
Phase A + Ground	1000 VDC	- GΩ	4.74 GΩ	
Phase B + Ground	1000 VDC	- GΩ	3.99 GΩ	
Phase C + Ground	1000 VDC	- GΩ	4.52 GΩ	
Primary main cable	3(3Cx240)(3Cx120)(1Cx120)			RSTN G

Remark : _____

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No	Main distribution board No.1/1	Function	MAIN - CB1		
1. Name Plate					
MNF	SQURAE D	Closing coil	✗	Motor drive	✗
Type	NW32H1	Opening coil	✓	Rated voltage	1000 V
Serial No	1404095620 1 3/4	Under voltage	✓	Rated current	3200 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 6.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	0.5In	3733 A	26.086 S	Auto test	Pass
Long time delay	4S	-	-	-	-
Short time	3Ir	12000 A	0.171 S	Auto test	Pass
Short time delay	0.1 S on	-	-	-	-
Instantaneous	6In	24000 A	0.036 S	Auto test	Pass
Ground fault	A (500A)	1000 A	0.135 S	Auto test	Pass
Ground fault delay	0.1 S on	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	61 $\mu\Omega$	57 $\mu\Omega$	54 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No	Main distribution board No.1/1	Function	BUSDUCT LOW 2500 A.		
1. Name Plate					
MNF	SQURAE D	Closing coil	×	Motor drive	×
Type	NW25H1	Opening coil	×	Rated voltage	1000 V
Serial No	1404095620 3 2/2	Under voltage	×	Rated current	2500 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	10833 A	0.853 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	6In	18750 A	0.053 S	Auto test	Pass
Short time delay					
Instantaneous					
Ground fault					
Ground fault delay					
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	12 $\mu\Omega$	11 $\mu\Omega$	11 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected					
Tested by		Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No	Main distribution board No.1/2	Function	MAIN - CB2		
1. Name Plate					
MNF	SQURAE D	Closing coil	✗	Motor drive	✗
Type	NW32H1	Opening coil	✓	Rated voltage	1000 V
Serial No	1404095620 1 4/4	Under voltage	✓	Rated current	3200 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 6.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	0.5In	4800 A	14.455 S	Auto test	Pass
Long time delay	4S	-	-	-	-
Short time	4Ir	12800 A	0.146 S	Auto test	Pass
Short time delay	0.1 S on	-	-	-	-
Instantaneous	6In	24000 A	0.037 S	Auto test	Pass
Ground fault	A (500A)	1000 A	0.138 S	Auto test	Pass
Ground fault delay	0.1 S on	-	-	-	-
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	17 $\mu\Omega$	18 $\mu\Omega$	17 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected 					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No	Main distribution board No.1/2	Function	BUSDUCT HIGH 2000 A.		
1. Name Plate					
MNF	SQURAE D	Closing coil	✗	Motor drive	✗
Type	NW20H1	Opening coil	✗	Rated voltage	1000 V
Serial No	1404095620 4 1/2	Under voltage	✗	Rated current	2000 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	8667 A	0.870 S	Auto test	Pass
Long time delay	0.5S	-	-	-	-
Short time	6In	15000 A	0.053 S	Auto test	Pass
Short time delay					
Instantaneous					
Ground fault					
Ground fault delay					
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	29 $\mu\Omega$	27 $\mu\Omega$	32 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected 					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

AIR CIRCUIT BREAKER

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No	Main distribution board No.1/1&1/2	Function	TIE-CB		
1. Name Plate					
MNF	SQURAE D	Closing coil	✗	Motor drive	✗
Type	NW32H1	Opening coil	✓	Rated voltage	1000 V
Serial No	1404095620 2 1/2	Under voltage	✓	Rated current	3200 A
2. Mechanical & Electrical Inspection		Yes	No	Remark	
Body and seal		✓		Fixed type	
Pole and arc contact		✓			
Cleaning and lubricate of mechanism			✓		
Cleaning and lubricate of gear motor		✓			
Check of auxiliary / limit switch		✓			
Motor charging test			✓		
Mechanism operation test		✓			
Check contact wear on arcing contact		✓			
3. Protective relay test		Type	Micrologic 2.0 A		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	7467 A	53.636 S	Auto test	Pass
Long time delay	8S	-	-	-	-
Short time	3In	12000 A	0.053 S	Auto test	Pass
Short time delay					
Instantaneous					
Ground fault					
Ground fault delay					
4. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	
Contact resistance	10 Amp	19 $\mu\Omega$	19 $\mu\Omega$	20 $\mu\Omega$	
5. Insulation resistance measurement (1 min)					
Pole	Test voltage	Phase A	Phase B	Phase C	
Top and Bottom-Ground. (on)	1000 VDC	- G Ω	- G Ω	- G Ω	
Top-Bottom. (off)	1000 VDC	- G Ω	- G Ω	- G Ω	
Remark : Result : <input checked="" type="checkbox"/> Passed <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Defected 					
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No.	Emergency Main distribution board .	Function	Normal Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 4/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	3467 A	13.845 S	Auto test	Pass
Long time delay	8 S	-	-	-	-
Short time	6Ir	6000 A	0.054 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	185 $\mu\Omega$	194 $\mu\Omega$	179 $\mu\Omega$	184 $\mu\Omega$
Panel No.	Emergency Main distribution board .	Function	Emergency Line.		
MNF	Square D	Closing coil	✓	Motor drive	✓
Type	NS800N	Shunt coil	✓	Rated voltage	1000 V
Serial no.	1404096941 1 3/6	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	2400 A	22.703 S	Auto test	Pass
Long time delay	8 S	-	-	-	-
Short time	4Ir	4000 A	0.054 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	231 $\mu\Omega$	214 $\mu\Omega$	209 $\mu\Omega$	228 $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No.	Main distribution board No1/1	Function	CAP BANK.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS1000N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404095981 2 3/3	Under voltage	✗	Rated current	1000 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	0.8In	1067 A	14.447 S	Auto test	Pass
Long time delay	0.5 S	-	-	-	-
Short time	1.5Ir	1500 A	0.054 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	27 $\mu\Omega$	49 $\mu\Omega$	17 $\mu\Omega$	- $\mu\Omega$
Panel No.	Main distribution board No1/2.	Function	CAP BANK.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS1000N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404095981 2 2/3	Under voltage	✗	Rated current	1000 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	4333 A	14.139 S	Auto test	Pass
Long time delay	8 S	-	-	-	-
Short time	6Ir	7500 A	0.054 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	51 $\mu\Omega$	72 $\mu\Omega$	85 $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



FIELD SERVICE REPORT

Molded Case Circuit Breaker

Project	The Millenium Condo. (Electrical room. Tower A.)				
Panel No.	Main distribution board No1/2	Function	To ATS.		
MNF	Square D	Closing coil	✗	Motor drive	✗
Type	NS800N	Shunt coil	✗	Rated voltage	1000 V
Serial no.	1404095284 11 1/1	Under voltage	✗	Rated current	800 A
2. Protective relay test		Type	Micrologic 2.0		
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	1In	3467 A	13.861 S	Auto test	Pass
Long time delay	8 S	-	-	-	-
Short time	6lr	6000 A	0.054 S	Auto test	Pass
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	57 $\mu\Omega$	152 $\mu\Omega$	185 $\mu\Omega$	- $\mu\Omega$
Panel No.		Function			
MNF		Closing coil		Motor drive	
Type		Shunt coil		Rated voltage	
Serial no.		Under voltage		Rated current	
2. Protective relay test		Type			
Type of protection	Setting	Testing	Result	Theory	Trip indicator
Long time	-	-	-	-	-
Long time delay	-	-	-	-	-
Short time	-	-	-	-	-
Short time delay	-	-	-	-	-
Instantaneous	-	-	-	-	-
Ground fault	-	-	-	-	-
Ground fault delay	-	-	-	-	-
3. Low resistance measurement					
Pole	Test Current	Phase A	Phase B	Phase C	Phase N
Contact resistance	10 Amp	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$	- $\mu\Omega$
	Tested by	Approved by		Witness by	
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.		The Millenium Condo.	
Name	Monthon Songsuk	Supachok Aksornsit		PPM.	
Signature					
Date	21/2/2023	21/2/2023		21/2/2023	



CAPACITOR BANK

Project :	The Millenium Condo. (Electrical room. Tower A.)
Panel :	Capacitor Bank. (MDB 1/1)

Name plate :

MNF	MKS.	Kvar	2x20		
Type	HPS-24-2-440-3P	Volt	400/415		
Power factor controller :		Magnetic Contactor :	Circuit breaker / HRC fuse :		
MNF	MiRO	MNF	FEDERAL	MNF	MiRO
Type	PFR120	Type	FC-95DK-21	Type	NHC00, 100 A

Setting :

Target cos ϕ	1 Ind	Delay time	45
C/K	0.1	Angle	240

Step	Current of capacitor (Amp)			Capacity (μ F)			Remark
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	
1	59	58	59	397	396	397	Normal capacity.
2	59	59	59	406	407	406	Normal capacity.
3	57	55	56	392	379	391	Normal capacity.
4	56	57	58	391	395	395	Normal capacity.
5	58	44	44	392	261	353	Abnormal capacity.
6	57	57	58	395	394	395	Normal capacity.
7	60	60	60	407	406	407	Normal capacity.
8	0	0	0	OL	OL	OL	Abnormal capacity. Cap ว่าง
9	57	57	57	395	395	396	Normal capacity.
10	57	57	57	395	395	395	Normal capacity.
11	57	44	44	392	265	352	Abnormal capacity.
12	55	57	55	411	428	426	Normal capacity.

Remark : - Abnormal capacity.3 Step

- Power factor ของระบบมีค่าเป็นปกติ

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



CAPACITOR BANK

Project :	The Millenium Condo. (Electrical room. Tower A.)
Panel :	Capacitor Bank. (MDB 1/2)

Name plate :

MNF	MKS.	Kvar	2x20		
Type	HPS-24-2-440-3P	Volt	400/415		
Power factor controller :		Magnetic Contactor :	Circuit breaker / HRC fuse :		
MNF	MiRO	MNF	FEDERAL	MNF	MiRO
Type	PFR120	Type	FC-95DK-21	Type	NHC00, 100 A

Setting :

Target cos ϕ	0.90 Ind	Delay time	45
C/K	0.1	Angle	240

Step	Current of capacitor (Amp)			Capacity (μ F)			Remark
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	
1	58	57	58	397	397	397	Normal capacity.
2	58	47	49	380	391	377	Normal capacity.
3	59	54	56	395	393	395	Normal capacity.
4	54	46	50	395	379	395	Normal capacity.
5	55	49	56	367	387	396	Normal capacity.
6	57	57	57	395	396	396	Normal capacity.
7	58	57	58	397	397	397	Normal capacity.
8	58	57	57	397	395	397	Normal capacity.
9	57	57	58	396	396	396	Normal capacity.
10	57	57	58	397	397	397	Normal capacity.
11	57	57	58	397	398	397	Normal capacity.
12	58	58	58	397	398	398	Normal capacity.

Remark : - Normal capacity.All Step

- Power factor ของระบบมีค่าเป็นปกติ

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
1	8DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.8	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
2	9DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.9	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
3	10DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.10	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
4	10PDB1/T1	Load Panel	SQD	A-B	>2.2 GΩ	A-E	1.7 GΩ
	Floor.10		EZD100N	B-C	>2.2 GΩ	B-E	1.6 GΩ
			100A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x50	SQMM	
			THW	N	1x50	SQMM	
				G	1x16	SQMM	
5	10PEDB1/T1	Load Panel	SQD	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.10		EZD100N	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			50A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x25	SQMM	
			THW	N	1x25	SQMM	
				G	1x16	SQMM	
6	11DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.11	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
7	12DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.12	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
8	AADB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.13	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
9	14DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.14	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
10	15DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.15	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
11	16DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.16	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
12	17DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.17	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
	Tested by		Approved by		Witness by		
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.		
Name	Monthon Songsuk		Supachok Aksornsit		PPM.		
Signature							
Date	21/2/2023		21/2/2023		21/2/2023		



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
16	21DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.21	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
17	22DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.22	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
18	23DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.23	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
19	24DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.24	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
20	25DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.25	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
21	25PDB1/T1	Plug In	SQD	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.25	Load Panel	EZD100N	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			100A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x35	SQMM	
			THW	N	1x35	SQMM	
				G	1x6	SQMM	
	Tested by		Approved by			Witness by	
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.			The Millenium Condo.	
Name	Monthon Songsuk		Supachok Aksornsit			PPM.	
Signature							
Date	21/2/2023		21/2/2023			21/2/2023	



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand		Insulation test 1000 VDC.		
22	25PEDB1/T1	Plug In	SQD		A-B	>2.2 GΩ	A-E >2.2 GΩ
	Floor.25	Load Panel	EZD100N		B-C	>2.2 GΩ	B-E >2.2 GΩ
			50A		A-C	>2.2 GΩ	C-E >2.2 GΩ
	Cable	Incoming			RST	1x25	SQMM
			THW		N	1x25	SQMM
					G	1x6	SQMM
23	25DB1/T1	Plug In	Merlin Gerin		A-B	>2.2 GΩ	A-E >2.2 GΩ
	Floor.25	Load Panel	NS250H		B-C	>2.2 GΩ	B-E >2.2 GΩ
			200 A		A-C	>2.2 GΩ	C-E >2.2 GΩ
	Cable	Incoming			RST	1x120	SQMM
			THW		N	1x120	SQMM
					G	1x16	SQMM
24	26DB1/T1	Plug In	Merlin Gerin		A-B	>2.2 GΩ	A-E >2.2 GΩ
	Floor.26	Load Panel	NS250H		B-C	>2.2 GΩ	B-E >2.2 GΩ
			200 A		A-C	>2.2 GΩ	C-E >2.2 GΩ
	Cable	Incoming			RST	1x120	SQMM
			THW		N	1x120	SQMM
					G	1x16	SQMM
	Tested by		Approved by			Witness by	
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.			The Millenium Condo.	
Name	Monthon Songsuk		Supachok Aksornsit			PPM.	
Signature							
Date	21/2/2023		21/2/2023			21/2/2023	



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
25	27DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.27	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
26	28DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.28	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
27	29DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.29	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
28	30DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.30	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
29	31DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.31	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
30	32DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.32	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
31	33DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.33	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
32	34DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.34	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM
33	35DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.35	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120		SQMM
			THW	N	1x120		SQMM
				G	1x16		SQMM

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
34	36DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.36	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
35	37DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.37	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
36	38DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.38	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
37	39DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.39	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
38	40DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.40	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
39	40PDB1/T1	Load Panel	SQD	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.40		EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			175 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x50	SQMM	
			THW	N	1x50	SQMM	
				G	1x16	SQMM	
	Tested by		Approved by		Witness by		
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.		
Name	Monthon Songsuk		Supachok Aksornsit		PPM.		
Signature							
Date	21/2/2023		21/2/2023		21/2/2023		



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
40	40PEDB1/T1	Plug In	SQD	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.40	Load Panel	NBD630H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			500A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	2x185	SQMM	
			THW	N	2x185	SQMM	
				G	2x35	SQMM	
41	41DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.41	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
42	42DB1/T1	Plug In	SQD	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.42	Load Panel	EZD250F	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
	Tested by		Approved by		Witness by		
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.		
Name	Monthon Songsuk		Supachok Aksornsit		PPM.		
Signature							
Date	21/2/2023		21/2/2023		21/2/2023		



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)	Function	Load panel.
1. Mechanical and Electrical Inspection	Yes	No	Remark
Body and seal	✓		
Pole and arc contact	✓		
Cleaning and lubricate of mechanism	✓		
Check & tightening cable terminal	✓		
Mechanism operation test	✓		

Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
43	43DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.43	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
44	44DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.44	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
45	45DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.45	Load Panel	NS100H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			100 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x50	SQMM	
			THW	N	1x50	SQMM	
				G	1x10	SQMM	

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



FIELD SERVICE REPORT

Load Center & Load Panel Preventive Maintenance.

Project	The Millenium Condo. (Tower A.)			Function	Load panel.		
1. Mechanical and Electrical Inspection			Yes	No	Remark		
Body and seal			✓				
Pole and arc contact			✓				
Cleaning and lubricate of mechanism			✓				
Check & tightening cable terminal			✓				
Mechanism operation test			✓				
Item	Name & Function	Type panel	Brand	Insulation test 1000 VDC.			
46	46DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.46	Load Panel	NS250H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			200 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x120	SQMM	
			THW	N	1x120	SQMM	
				G	1x16	SQMM	
47	47DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.47	Load Panel	NS100H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			100 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x50	SQMM	
			THW	N	1x50	SQMM	
				G	1x10	SQMM	
48	48DB1/T1	Plug In	Merlin Gerin	A-B	>2.2 GΩ	A-E	>2.2 GΩ
	Floor.48	Load Panel	NS100H	B-C	>2.2 GΩ	B-E	>2.2 GΩ
			100 A	A-C	>2.2 GΩ	C-E	>2.2 GΩ
	Cable	Incoming		RST	1x50	SQMM	
			THW	N	1x50	SQMM	
				G	1x10	SQMM	
	Tested by		Approved by		Witness by		
Company	Zone Power Co., Ltd.		Zone Power Co., Ltd.		The Millenium Condo.		
Name	Monthon Songsuk		Supachok Aksornsit		PPM.		
Signature							
Date	21/2/2023		21/2/2023		21/2/2023		



GROUND SYSTEMS TEST

☒ RM-U ☒ Transformer ☒ LV switch board ☐ Generator ☐ Order:

Project	The Millenium Condo.		
Location	Electrical room. Tower A.	Type	-
Function	Ground resistance.	Serial No.	-

1 Switch Gear. RMU.

Ground resistance.

1.72

Ω

2 Transformer.No.1/1

Ground resistance.

1.74

Ω

3 Transformer.No.1/2

Ground resistance.

1.75

Ω

4 Main distribution board.No.1/1

Ground resistance.

1.75

Ω

5 Main distribution board.No.1/2

Ground resistance.

1.74

Ω

6 Emergency Main distribution board.

Ground resistance.

1.77

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

Ω

Ground resistance.

-

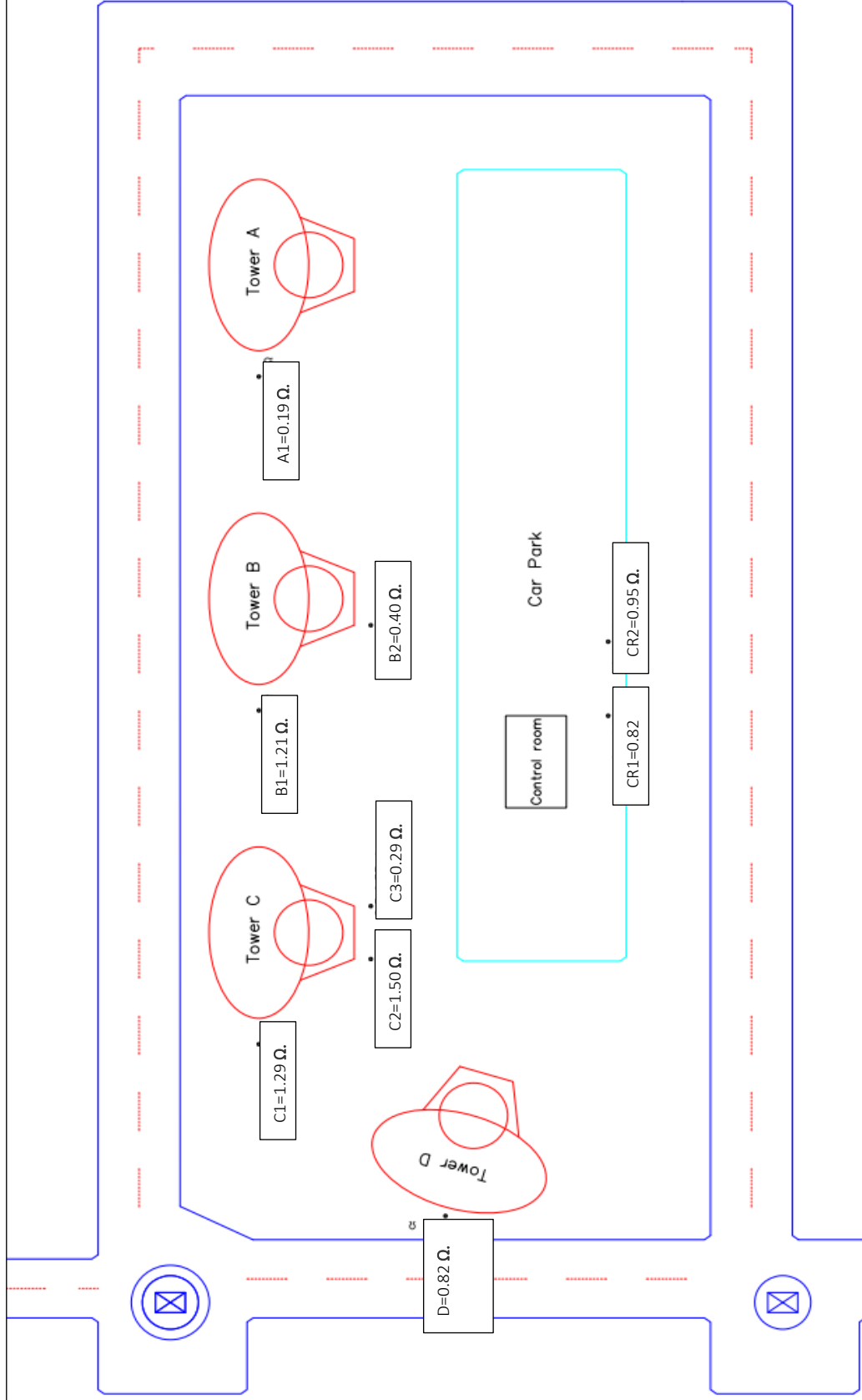
Ω

Remark: - Ground resistance ในระบบไม่ควรมีค่ามากกว่า 5 Ohm

	Tested by	Approved by	Witness by
Company	Zone Power Co., Ltd.	Zone Power Co., Ltd.	The Millenium Condo.
Name	Monthon Songsuk	Supachok Aksornsit	PPM.
Signature			
Date	21/2/2023	21/2/2023	21/2/2023



Ground resistance Lightning-arrester The Millennium Condo.2023



Company	Zone Power Co., Ltd.	Approved by	Zone Power Co., Ltd.	Witness by	The Millennium Condo.
Name	Monthon Songsuk		Supachok Aksornsit		PPM.
Date	24/2/2023		24/2/2023		24/2/2023



INDEX

.....

The Millenium Condo Club house, Condo A-D.

.....

- MV SWITCH GEAR.
- CAST RASIN TRANSFORMER. (DRY TYPE) .
- MAIN DISTRIBUTION BOARD.
- AIR CIRCUIT BREAKER.
- MOLDED CASE CIRCUIT BREAKER.
- BUSDUCT PLUG-IN & LOAD PANEL.
- CAPACITOR BANKS.
- GROUND RESISTANCE.

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Product system service(AC/DC Drives)

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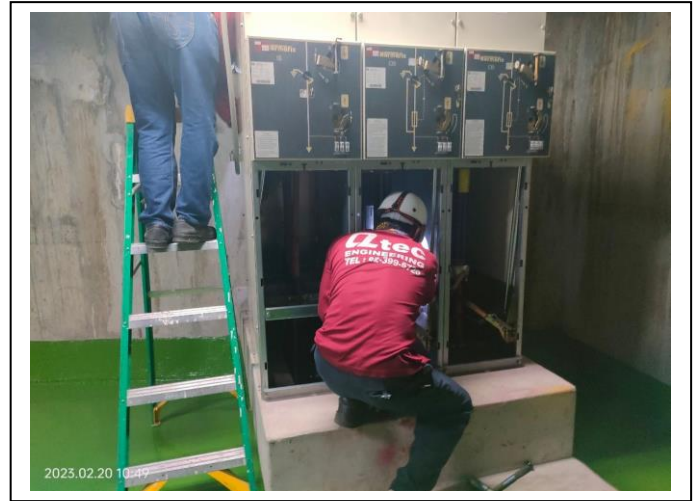
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E mail: zone.power@hotmail.com



Picture 1: Ring main Unit and preventive maintenance.



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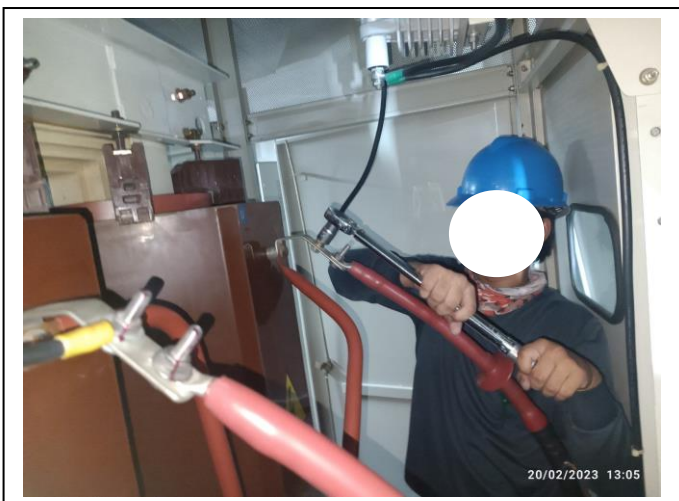
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Picture 2: Cast resin Dry type Transformer and preventive maintenance.



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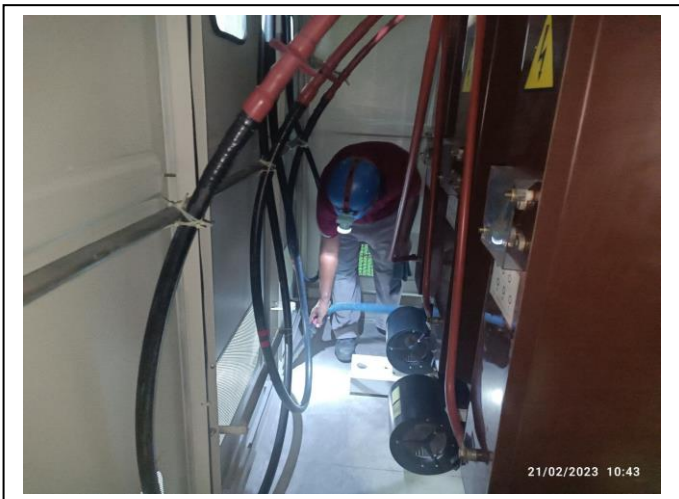
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Picture 3: Cast resin Transformer and preventive maintenance.



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Picture 4: Main distribution board and preventive maintenance.



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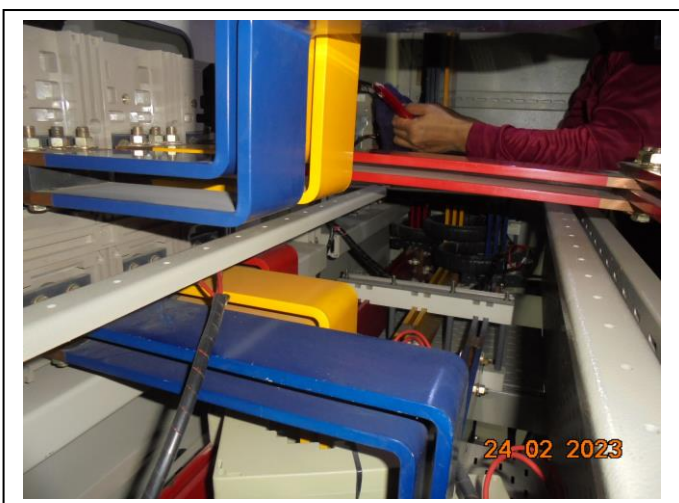
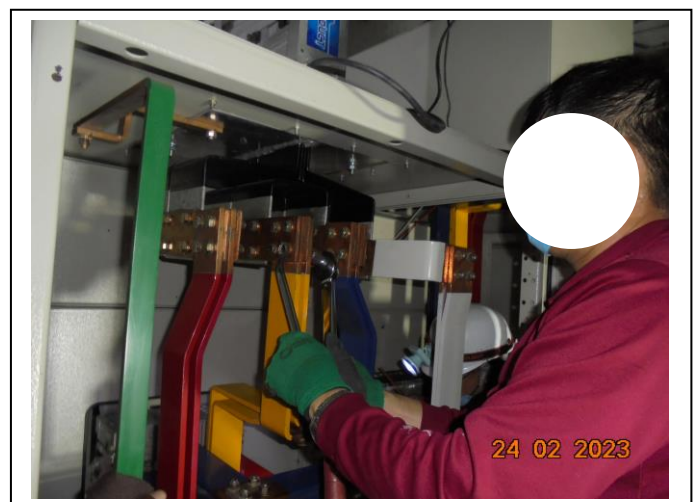
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Picture 5: Main distribution board and preventive maintenance.



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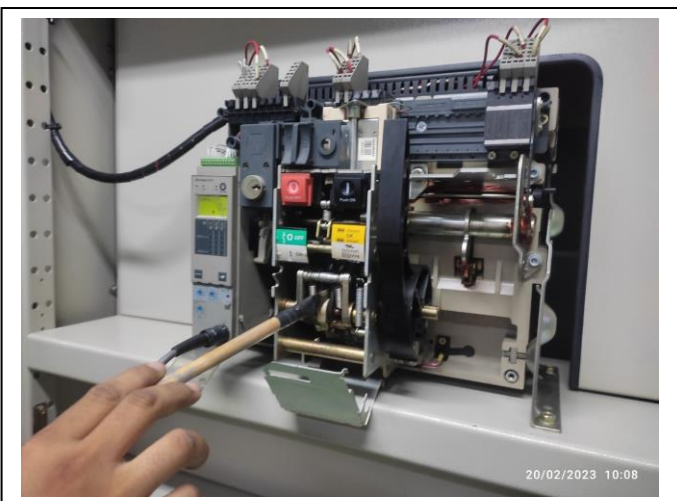
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Picture 6: Air circuit Breakers and preventive maintenance.



Picture 7: Air circuit Breakers and preventive maintenance.



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Picture 8: Molded Case circuit Breakers and preventive maintenance.



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Picture 9: Ground & Capacitors Banks Preventive maintenance.



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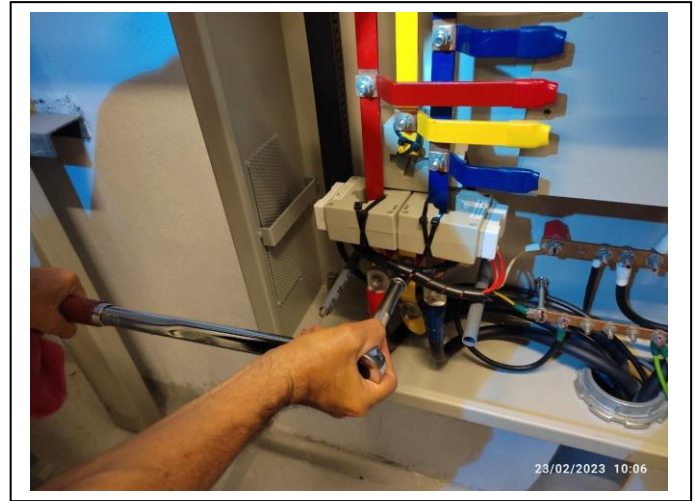
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Picture 10: Distribution Board., Busduct Plug in & Preventive maintenance



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Picture 12: Capacitors Banks Preventive maintenance.



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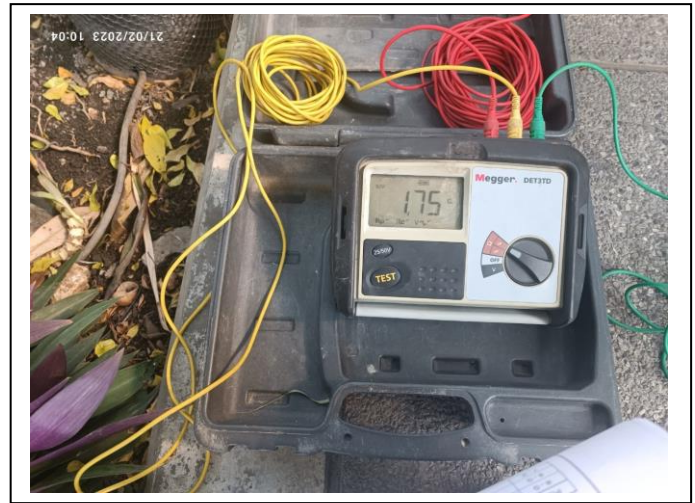
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Picture 12: Ground System Preventive maintenance.



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Picture 13: Grounding System, Lightning-Arrester Check.



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