



BPWHA1 Preventive Maintenance Plan for Mechanical Section 2024-2028

[illegible]







 <b>B.GRIMM</b> SINCE 1878	<b>B.Grimm Power WHA1. LTD</b>	Page : 1
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<b>Maintenance Forms</b>
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**Applied to : Main Transformer**

**Maintenance Type : Quarterly Inspection**

Site : B.Grimm Power (WHA) 1 Limited	Location : SWITCH YARD
System : 115 kV	KKS Number : 11BAT10
Manufacture : DAIHEN	Equipment Name : GTG # 11 GSUT
Type : ONAN/ONAF1/ONAF2	Rated : 58.80 MVA
Serial no : PP0454B01	Vector group : YNd11
Volume of oil : 5.5	Winding alarm : 90 °C
Service tap : 3	Oil Temp alarm : 70 °C

High side : 120 kV	High current : 283 Amp
Low side : 11 kV	Low current : 3086 Amp
% Z : 12.39	Ohm

**1. General Condition Check**

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Cooling system condition and function check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.9 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

**2. Measurement check Cooling fans**

Item	Current (A)		
	L1	L2	L3
FM1	1.19	1.22	1.20
FM2	1.15	1.24	1.20
FM3	1.16	1.19	1.19
FM4	1.17	1.25	1.23
FM5	1.16	1.21	1.17
FM6	1.20	1.26	1.23
FM7	1.18	1.25	1.21
FM8	1.16	1.11	1.13
FM9	1.11	1.24	1.19
FM10	1.13	1.19	1.16
FM11	1.16	1.19	1.16
FM12	1.12	1.18	1.16
FM13	1.13	1.20	1.17
FM14			
FM15			
FM16			

Phase	Voltage (V)		
	L1 - L2	L2 - L3	L3 - L1

MW 119.6	Mvar 137
L1 119.6 V	L2 119.6 V
L1 119.6 V	L2 119.6 V
L1 119.6 V	L2 119.6 V

Check list	Operating Range	Item	Result
Winding Temperature	90	Alarm	72
	100	Trip	
Oil Temperature	70	Alarm	58
	80	Trip	
Cooling Fan	75	Group1	
	80	Group2	

Surge Counter			
U 12	V 12	W 11	

level 5

Remark.....

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	
Date	22/5/24	-	

 <b>B.GRIMM</b> SINCE 1878	<b>B.Grimm Power WHA1. LTD</b>	Page : 1
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<b>Maintenance Forms</b>
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**Applied to : Main Transformer**

**Maintenance Type : Quarterly Inspection**

Site : B.Grimm Power (WHA) 1 Limited	Location : SWITCH YARD
System : 115 kV	KKS Number : 12BAT10
Manufacture : DAIHEN	Equipment Name : GTG # 12 GSUT
Type : ONAN/ONAF1/ONAF2	Rated : 58.80 MVA
Serial no : PP0454B02	Vector group : YNd11
Volume of oil : 5.5	Winding alarm : 90 °C
Service tap : 3	Oil Temp alarm : 70 °C

High side : 120 kV	High current : 283 Amp
Low side : 11 kV	Low current : 3086 Amp
% Z : 12.45	Ohm

**1. General Condition Check**

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Cooling system condition and function check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.9 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

**2. Measurement check Cooling fans**

Item	Current (A)		
	L1	L2	L3
FM1	1.14	1.17	1.13
FM2	1.17	1.21	1.17
FM3	1.17	1.23	1.21
FM4	1.19	1.24	1.21
FM5	1.16	1.19	1.16
FM6	1.18	1.25	1.21
FM7	1.21	1.17	1.13
FM8	1.22	1.11	1.13
FM9	1.21	1.20	1.17
FM10	1.15	1.11	1.16
FM11	1.22	1.20	1.16
FM12	1.21	1.19	1.15
FM13	1.20	1.18	1.18
FM14			
FM15			
FM16			

Phase	Voltage (V)		
	L1 - L2	L2 - L3	L3 - L1

MW 119.6	Mvar 119.7
L1 119.6 V	L2 119.6 V
L1 119.6 V	L2 119.6 V
L1 119.6 V	L2 119.6 V


Check list	Operating Range	Item	Result
Winding Temperature	90	Alarm	79
	100	Trip	
Oil Temperature	70	Alarm	60
	80	Trip	
Cooling Fan	70	Group1	
	75	Group2	

Surge Counter			
U 11	V 12	W 12	


level 5

Remark.....

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	
Date	22/5/24	-	

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Serial no : PP0455B01	Vector group : YNd11	Low side : 11 kV. Low current : 2598 Amp																																																																																																															
Volume of oil : 5.5	Winding alarm : 95 °C	Winding trip : 105 °C % Z : 14.06 Ohm																																																																																																															
Service tap : 3	Oil Temp alarm : 70 °C	Oil temp trip : 80 °C Year MNF : 2015																																																																																																															
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DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	12.8 MAY 2024
Date	22/5/24	-	Jakkapan.S ESM

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<b>Applie to : Unit Aux. Transformer</b>																													
<b>Maintenance Type : Quarterly Inspection</b>																													
Site : B.Grimm Power (WHA) 1 Limited		Location : E & C Building																											
System : 6.6kV		KKS Number : 11BBT10																											
Manufacture : DAIHEN		Equipment Name : Unit Aux. Transformer 1																											
Type : ONAN	Rated : 11 kVA	High side : 11 kV. High current : 577 Amp																											
Serial no : PP0456B01	Vector group : Dyn 1	Low side : 6.9 kV. Low current : 920 Amp																											
Volume of oil : 5.3	Winding alarm : 100 °C	Winding trip : 110 °C % Z : 7.3 Ohm																											
Service tap : -	Oil Temp alarm : 80 °C	Oil temp Trip : 90 °C Year MNF : 2015																											
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Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	12.8 MAY 2024
Date	22/5/24	-	Jakkapan.S ESM



Maintenance Forms

Applied to : Unit Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	6.6kV	KKS Number :	12BBT10
Manufacture :	DAIHEN	Equipment Name :	Unit Aux. Transformer 2
Type :	ONAN	Rated :	11 kVA
Serial no :	PP0456B02	High side :	11 kV. High current : 577 Amp
Volume of oil :	5.3	Low side :	6.9 kV. Low current : 920 Amp
Service tap :	-	Winding alarm :	90 °C
		Winding trip :	100 °C % Z : 7.26 Ohm
		Oil Temp alarm :	80 °C
		Oil temp trip :	90 °C Year MNF : 2015

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 On Load Tap Change check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.9 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

1.10 Outer OLTC

Check list	Operating Range	Item	Result
Widing Temperature	100	Alarm	40
	110	Trip	
Oil Temperature	80	Alarm	40
	90	Trip	

kW	kVar
L1-L2 66.1 V	L1-A
L2-L3 66.6 V	L2-A
L3-L1 66.6 V	L3-A

Remark

OLTC tank 5  
Maintank 4

Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	12.8 MAY 2024
Date	22/5/24	-	Jakkapan S ESM

Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	MAIN SWGR	KKS Number :	01BFT10
Manufacture :	TIRATHAI	Equipment Name :	Aux. Transformer # 1
Type :	LH 18	Rated :	1700 kVA
Serial no :	5810101	High side :	6.6 kV. High current : 148.7 Amp
Volume of oil :	0.6	Low side :	400 V. Low current : 2454 Amp
Service tap :	3	Winding alarm :	100 °C
		Winding trip :	110 °C % Z : 8.22 Ohm
		Oil Temp alarm :	80 °C
		Amb. temp :	90 °C Year MNF : 2015

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	100	Alarm	38
	110	Trip	
Oil Temperature	80	Alarm	38
	90	Trip	

kW	kVar
L1 V	L1 20.8 A
L2 V	L2 21.3 A
L3 V	L3 20.5 A

Remark

Oil level 0.2

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	12.8 MAY 2024
Date	22/5/24	-	Jakkapan S ESM



# B.Grimm Power WHA1. LTD

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## Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	MAIN SWGR	KKS Number :	01BFT20
Manufacture :	TIRATHAI	Equipment Name :	Aux.Transformer # 2
Type :	LH 18	Rated :	1700 kVA
Serial no. :	5810102	High side :	6.6 kV. High current : 96.2 Amp
Volume of oil :	0.7	Vector group :	Dyn 5
Winding alarm :	100 °C	Low side :	400 V. Low current : 1588 Amp
Winding trip :	110 °C	% Z :	8.23 Ohm
Service tap :	3	Oil Temp alarm :	80 °C
Oil temp trip :	90 °C	Year MNF :	

### 1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	100	Alarm	40
	110	Trip	
Oil Temperature	80	Alarm	38
	90	Trip	

kW	kVar
L1 V L1 0.00 A	
L1 V L2 0.00 A	
L1 V L3 0.00 A	

Remark .....

Oil level 0.47

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	Jakkapan.S
Date	22/5/24	-	12.8 MAY 2024



# B.Grimm Power WHA1. LTD

Page : 1

## Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	SUB SWGR	KKS Number :	01BFU10
Manufacture :	TIRATHAI	Equipment Name :	Aux.Transformer # 3
Type :	LH 11	Rated :	1500 kVA
Serial no. :	5810099	High side :	6.6 kV. High current : 131.2 Amp
Volume of oil :	0.6	Vector group :	Dyn 5
Winding alarm :	95 °C	Low side :	400 V. Low current : 2165 Amp
Winding trip :	105 °C	% Z :	8.01 Ohm
Service tap :	3	Amb. temp :	90 °C
Temp alarm :	80 °C	Year MNF :	2015

### 1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	95	Alarm	44
	105	Trip	
Oil Temperature	80	Alarm	42
	85	Trip	

kW	kVar
L1 V L1 45.7 A	
L1 V L2 46.0 A	
L1 V L3 46.5 A	

Remark .....

Oil level 0.25

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	Jakkapan.S
Date	22/5/24	-	12.8 MAY 2024



Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	SUB SWGR	KKS Number :	01BFU20
Manufacture :	TIRATHAI	Equipment Name :	Aux.Transformer # 4
Type :	LH 11	Rated :	1500 kVA
Serial no :	5810100	High side :	kV. High current : 131.2 Amp
Volume of oil :	0.7	Vector group :	Dyn 5
Service tap :	3	Low side :	kV. Low current : 2165 Amp
		Winding alarm :	95 °C
		Winding trip :	105 °C % Z : 7.91 Ohm
		Oil Temp alarm :	80 °C
		Oil temp trip :	85 °C Year MNF : 2015

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	95	Alarm	42
	105	Trip	
Oil Temperature	80	Alarm	40
	85	Trip	

kW	kVar
L1 V L1 19.0 A	
L1 V L2 19.0 A	
L1 V L3 15.6 A	

Remark .....

Oil level 0.2

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	1. BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	23 MAY 2024
Date	22/5/24	-	Jakkapan S

Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	ESSANTIAL	KKS Number :	01BFV10
Manufacture :	TIRATHAI	Equipment Name :	Aux.Transformer # 5
Type :	LH 13	Rated :	1200 kVA
Serial no :	5810097	High side :	6.6 kV. High current : 105 Amp
Volume of oil :	0.6	Vector group :	Dyn 5
Service tap :	3	Low side :	400 V. Low current : 1732 Amp
		Winding alarm :	95 °C
		Winding trip :	105 °C % Z : 7.7 Ohm
		Oil Temp alarm :	80 °C
		Oil temp trip :	85 °C Year MNF : 2015

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	95	Alarm	38
	105	Trip	
Oil Temperature	80	Alarm	38
	85	Trip	

kW	kVar
L1 V L1 12.6 A	
L1 V L2 12.6 A	
L1 V L3 12.1 A	

Remark .....

Oil level 0.2

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	12 MAY 2024
Date	22/5/24	-	Jakkapan S



Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	E & C Building
System :	ESSANTIAL	KKS Number :	01BFV20
Manufacture :	TIRATHAI	Equipment Name :	Aux.Transformer # 6
Type :	LH 13	Rated :	1200 kVA
Serial no :	5810098	High side :	6.6 kV. High current : 105 Amp
Volume of oil :		Low side :	400 kV. Low current : 1732 Amp
Service tap :	3	Winding alarm :	110 °C
		Winding trip :	120 °C % Z : 7.79 Ohm
		Oil Temp alarm :	80 °C
		Oil temp trip :	85 °C Year MNF : 2015

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Check list	Operating Range	Item	Result
Widing Temperature	110	Alarm	38
	120	Trip	
Oil Temperature	80	Alarm	38
	85	Trip	

kW	kVar
L1 V L1 9.0 A	
L1 V L2 10.9 A	
L1 V L3 10.4 A	

Remark .....

Oil level 0.2

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	<i>TSS, NCS</i>	-	<i>12.8 MAY 2024</i>
Date	22/5/24	-	Jakkapan.S ESM

Maintenance Forms

Applied to : Main Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	SWITCH YARD
System :	22 kV	KKS Number :	10BCT10
Manufacture :	DAIHEN	Equipment Name :	22kV Main Transformer
Type :	ONAN/ONAF	Rated :	25.00 MVA
Serial no :	PP0756B01	High side :	115 kV. High current : 126 Amp
Volume of oil :	5.5	Low side :	22 kV. Low current : 628 Amp
Service tap :	OLTC	Winding alarm :	105 °C
		Winding trip :	115 °C % Z Tap9 : 12.87 Ohm
		Oil Temp alarm :	80 °C
		Oil temp trip :	85 °C

1. General Condition Check

1.1 Body and seal check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.2 Oil leakage check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.3 Check siliga gel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.4 Bushing and termination	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.5 Oil level check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.6 Grounding connection check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.7 Check and Clean Local Control Panel	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.8 Cooling system condition and function check	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
1.9 Check Bushing and insulator	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

2. Measurement check Cooling fans

Item	Current (A)		
	L1	L2	L3
FM1	1.49	1.55	1.51
FM2	1.45	1.51	1.43
FM3	1.42	1.49	1.40
FM4			
FM5			
FM6			
FM7			
FM8			
FM9			
FM10			
FM11			
FM12			
FM13			
FM14			
FM15			
FM16			

Voltage (V)		
Phase		
L1 - L2	L2 - L3	L3 - L1
391.6	392.2	292.3

MW	Mvar
L1 V L1 A	
L1 V L2 A	
L1 V L3 A	

0.826 0.923 PF

3.4314

Check list	Operating Range	Item	Result
Widing Temperature	105	Alarm	36
	115	Trip	
Oil Temperature	80	Alarm	40
	85	Trip	

Surge Couter		
U 20	V 20	W 20

Remark .....

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	<i>TSS, NCS</i>	-	<i>12.8 MAY 2024</i>
Date	22/5/24	-	Jakkapan.S ESM

Maintenance Forms

Applied to : Main Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	SWITCH YARD
System :	22 kV	KKS Number :	10BCT20
Manufacture :	DAIHEN	Equipment Name :	22kV Main Transformer
Type :	ONAN/ONAF	Rated :	25.00 MVA
Serial no :	PP0756B02	Vector group :	Dyn11
Volume of oil :	5.5	Winding alarm :	105 °C
Service tap :	OLTC	Oil Temp alarm :	80 °C

1. General Condition Check

- 1.1 Body and seal check
- 1.2 Oil leakage check
- 1.3 Check siliga gel
- 1.4 Bushing and termination
- 1.5 Oil level check
- 1.6 Grounding connection check
- 1.7 Check and Clean Local Control Panel
- 1.8 Cooling system condition and function check
- 1.9 Check Bushing and insulator

<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

2. Measurement check Cooling fans

Item	Current (A)		
	L1	L2	L3
FM1	1.48	1.52	1.46
FM2	1.45	1.51	1.45
FM3	1.48	1.57	1.51
FM4			
FM5			
FM6			
FM7			
FM8			
FM9			
FM10			
FM11			
FM12			
FM13			
FM14			
FM15			
FM16			

Voltage (V)		
Phase		
L1 - L2	L2 - L3	L3 - L1
391.5	391.5	391.5

MW	Mvar
0.900	0.900

Check list	Operating Range	Item	Result
Winding Temperature	105	Alarm	
	115	Trip	36
Oil Temperature	80	Alarm	
	85	Trip	42

Surge Couter		
U	V	W
20	20	20

Remark : .....

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	Jakkapan
Date	22/5/24	-	12.8 MAY 2024

Maintenance Forms

Applied to : Aux. Transformer

Maintenance Type : Quarterly Inspection

Site :	B.Grimm Power (WHA) 1 Limited	Location :	SWITCH YARD
System :	22 kV	KKS Number :	93BFT10
Manufacture :	TIRATHAI	Equipment Name :	Aux. Transformer
Type :	LH 33	Rated :	250 kVA
Serial no :	6410118	Vector group :	Dyn 11
Volume of oil :		Winding alarm :	- °C
Service tap :	3	Oil Temp alarm :	- °C

1. General Condition Check

- 1.1 Body and seal check
- 1.2 Oil leakage check
- 1.3 Check siliga gel
- 1.4 Bushing and termination
- 1.5 Oil level check
- 1.6 Grounding connection check
- 1.7 Check and Clean Local Control Panel
- 1.8 Check Bushing and insulator

<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	

Remark : .....

DESCRIPTION	INSPECTED BY	WITNESSED BY	APPROVED BY
Company Name	BWCE	-	BWCE
Name-Surname	Mr.Teerasak. S/Mr.Numchoke. S	-	Mr. Jakkapan. S
Signature	TSS, NCS	-	Jakkapan
Date	22/5/24	-	12.8 MAY 2024