




## ภาคผนวกที่ 15

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เอกสารยืนยันการกำหนด/ออกแบบเครื่องจักรให้มีระดับเสียง  
ไม่เกิน 85 dB(A) และการติดป้ายเตือนให้สวมใส่อุปกรณ์ลดเสียง  
ในพื้นที่เสียงดัง

 <b>CTCI</b>		
	<b>ELECTRICAL TEST PACKAGE</b>	
PROJECT NAME : PTTAC AN AND MMA PROJECT		Page : 1 of 1 PACKAGE NO.: P-UT-018-U-AN-27-UP-2121
SYSTEM NO.: P-UT-018		DATE: 08/05/10
SYS DESCRIPTION: (WC) COOLING WATER SYSTEM		SUBCONT.NAME: EIE

Item	Description	Acceptable			Remark
		Yes	No	N/A	
A	Package Information				
1	Single Line Diagram	✓			
2	Power Layout and Grounding Layout Drawing	✓			
3	P&ID Diagram	✓			
4	Vender Motor Data Sheet	✓			
5	Cable Connection List	✓			
B	Test and Inspection Report				
1	MCC/Switchgear Function test report	✓			
2	Cable test report				
2.1	Check List for Cable Installation	✓			
2.2	Insulation Resistance and Continuity Test Record	✓			
2.3	High Voltage Test Report	✓			
2.4	Check List for Cable Termination	✓			
3	Check List for Motor	✓			
4	Motor Test report	✓			
5	Punch A completed	✓			

**Note:** - SEE GENERAL PUNCH LIST ON THE P.R. UP-212.A.

COMPLETED BY	Sub Contractor	CTCIT	Acceptable By FW/PTTAC
COMPANY	EIE	CTCIT	AN & MMA PROJECT
SIGNATURE			
NAME			
DATE	08/05/10	24 Sep 10	26 OCT. 10.

			
	<b>MV MOTOR TEST REPORT</b>		
Project Name : PTTAC AN AND MMA PROJECT		Page 2 of 4 Motor Device No. : UP-212I-LN-807-001	
3. Motor no-load running test <b>CAUTION:</b> Test and record the following item as below should be done in <i>UNCOUPLED</i> condition.			
3.1 Current and Temperature Rise			
Time Record	Current (Amp.)	Temperature (°C)	Ambient Temp. (°C)
Hr:min	Min. A B C	Frame DE = T7 NDE = T8	
10.05	Start 459.6 459.6 460.4	34.5 33.5 35	31
10.15	10 25.0 24.8 24.7	29.5 30.5 N/A	31
10.25	20 25.0 26.1 24.9	30 32.5 N/A	31
10.35	30 24.7 25.7 25.1	30 32 N/A	31
10.50	45 25.0 26.4 26.2	31.5 37.5 N/A	31
11.05	60 24.8 24.9 24.9	32 40.5 N/A	32
11.20	75 25.4 25.4 25.2	32.5 43.5 N/A	32
11.35	90 25.0 25.1 25.0	33 45.5 N/A	31
11.50	105 24.4 25.5 24.6	33 46 N/A	32
12.05	120 24.8 25.3 24.7	32.5 43 N/A	32
12.20	135 24.8 25.5 24.8	33.5 43 N/A	31
12.35	150 25.4 25.3 25.3	34.5 43.5 N/A	31
12.50	165 24.7 25.1 24.3	33.5 43 N/A	32
13.05	180 24.9 25.2 24.6	36 45.5 N/A	32
13.20	195 24.9 24.8 24.6	35.5 48 N/A	34
13.35	210 25.0 25.4 24.1	35 48.5 N/A	33
13.50	225 25.0 25.3 24.5	34.5 48.5 N/A	33
14.05	240 25.8 26.3 25.4	36.5 50 N/A	33
3.2 Speed and noise limit <i>L<sub>W</sub> = Background noise 69.2 dB. L<sub>on</sub> = 80.7 dB L<sub>off</sub> = 11.5 dB</i>			
Time (Min.)	10 20 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240		
Speed (rpm.)	999.5 999.4 999.2 1000 999.3 999.7 999.8 999.7 1000 999.8 999.5 999.1 999.8 999.6 999.4 1000 999.4		
Noise (dB.)	80.4 80.4 80.7 80.5 80.7 80 80.3 80.4 80.7 80.6 79 80.6 79.6 79.1 80 80.5 80.5		
COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)	APPROVED BY (PTTAC / FW)
		CTCI Sup. CTCI QC.	
COMPANY		CTCI	
SIGNATURE			
NAME			
DATE		11/09/2010.	11/09/2010



# MV MOTOR TEST REPORT

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Project Name : PTTAC AN AND MMA PROJECT

Motor Device No. : UP-212I-LV-807-001

## 3.3 RTD Measurement

PT100	RTD Measurement (°C)							
	Winding Temp.						DE Temp.	NDE Temp.
	T1	T2	T3	T4	T5	T6	T7	T8
	112	112.4	111.6	111.2	112	111.6	111.6	111.6

## 3.4 Temperature Record

Temp. Rised Limit stator 80°C

Time Record		Temperature reading (°C)							
		Winding Temp.						DE Temp.	NDE Temp.
Hr:min	Min.	T1	T2	T3	T4	T5	T6	T7	T8
10.05	Start	31	32	30	29	31	30	30	30
10.15	10	34	34	33	32	34	33	32	31
10.25	20	35	36	35	34	35	35	35	32
10.35	30	36	37	36	35	36	36	37	33
10.50	45	38	39	38	37	38	38	40	38
11.05	60	40	41	39	39	39	40	45	39
11.20	75	41	42	40	40	41	41	49	40
11.35	90	42	43	41	41	42	43	51	40
11.50	105	43	44	42	42	43	43	51	39
12.05	120	44	45	43	43	43	44	50	39
12.20	135	44	45	43	43	44	45	49	39
12.35	150	45	46	44	44	45	45	48	39
12.50	165	46	46	45	45	45	46	48	38
13.05	180	46	47	45	45	45	47	49	38
13.20	195	46	47	46	45	46	47	50	39
13.35	210	47	48	47	47	47	48	49	39
13.50	225	48	49	47	47	47	48	50	40
14.05	240	48	49	48	47	48	49	50	40

COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)		APPROVED BY (PTTAC / FW)
		CTCI Sup.	CTCI QC.	
COMPANY		CTCIT.	CTCIT.	
SIGNATURE	N/A			
NAME				
DATE		11/09/2010	11/09/2010	

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# MV MOTOR TEST REPORT

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Project Name : PTTAC AN AND MMA PROJECT

Motor Device No. : UP-212I-LV-807-001

## 3.5 Vibration

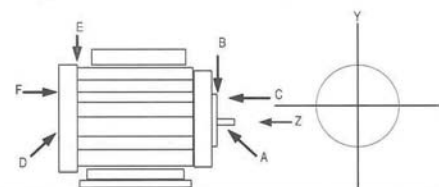
NEHA NGI

Motor Position:

H: ☒

V: ☐

		VEL Cm/s															
		Below 3.00mm/s															
Time (Hr:min)		10:15	10:25	10:35	10:45	10:55	11:05	11:15	11:25	11:35	11:45	11:55	12:05	12:15	12:25	12:35	12:45
Time (Min.)		10	20	30	45	60	75	90	105	120	135	150	165	180	195	210	225
DE	A-X	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	B-Y	0.05	0.04	0.04	0.03	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.04	0.02	0.03
	C-Z	0.06	0.12	0.12	0.09	0.07	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.05	0.04	0.03	0.04
NDE	D-X	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
	E-Y	0.04	0.04	0.07	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.04	0.03	0.03	0.04	0.02	0.02
	F-Z	0.04	0.04	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.02	0.03



## 3.6 Test Instrument

<input checked="" type="checkbox"/>	Megger	KYORITSU	Model: 3125	Serial No.: 0227916
<input checked="" type="checkbox"/>	Multi-meter	FLUKE	Model: 337	Serial No.: 13350436
<input checked="" type="checkbox"/>	Clamp-on meter	FLUKE	Model: 337	Serial No.: 13350436
<input checked="" type="checkbox"/>	Vibration meter	DIGICON	Model: TV110	Serial No.: 11501120
<input checked="" type="checkbox"/>	Temp. meter	DIGICON	Model: DP-88	Serial No.: 080421533
<input checked="" type="checkbox"/>	rpm. meter	DIGICON	Model: DT-246L	Serial No.: AD.53709
<input checked="" type="checkbox"/>	Sound level	DIGICON	Model: DS-40	Serial No.: G.33878

COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)		APPROVED BY (PTTAC / FW)
		CTCI Sup.	CTCI QC.	
COMPANY		CTCIT.	CTCIT.	
SIGNATURE	N/A			
NAME				
DATE		11/09/2010	11/09/2010	11-9-10

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 <b>CTCI</b>		
	<b>ELECTRICAL TEST PACKAGE</b>	
PROJECT NAME : PTTAC AN AND MMA PROJECT		Page : 1 of 1 PACKAGE NO.: P-UT-018-U-AN-27-UP-212J
SYSTEM NO.: P-UT-018		DATE: 08/05/10
SYS DESCRIPTION: (WC) COOLING WATER SYSTEM		SUBCONT.NAME: EIE

Item	Description	Acceptable			Remark
		Yes	No	N/A	
A	Package Information				
1	Single Line Diagram	✓			
2	Power Layout and Grounding Layout Drawing	✓			
3	P&ID Diagram	✓			
4	Vender Motor Data Sheet	✓			
5	Cable Connection List	✓			
B	Test and Inspection Report				
1	MCC/Switchgear Function test report	✓			
2	Cable test report				
2.1	Check List for Cable Installation	✓			
2.2	Insulation Resistance and Continuity Test Record	✓			
2.3	High Voltage Test Report	✓			
2.4	Check List for Cable Termination	✓			
3	Check List for Motor	✓			
4	Motor Test report	✓			
5	Punch A completed				

**Note:** - SEE GENERAL PUNCH ON THE PK. UP-212 A

COMPLETED BY	Sub Contractor	CTCIT	Acceptable By FW / PTTAC
COMPANY	EIE	CTCIT	AN & MMA PROJECT
SIGNATURE			
NAME			
DATE	08/05/10	24 Sep '10	26 Oct '10

			
	<b>MV MOTOR TEST REPORT</b>		
Project Name : PTTAC AN AND MMA PROJECT		Motor Device No. : UP-212J-LN-807-001	
Page 2 of 4			
3. Motor no-load running test <b>CAUTION:</b> Test and record the following item as below should be done in UNCOUPLED condition.			
3.1 Current and Temperature Rise			
Time Record	Current (Amp.)	Temperature (°C)	
Hr:min	Min. A B C	Frame DE = T7 NDE = T8 Ambient Temp. (°C)	
13.40	Start 455.5 442.5 454.7	31 31.5 31 31	
13.50	10 24.3 25.2 24.6	30.5 35 N/A 33	
14.00	20 24.8 24.8 25.0	33 40 N/A 33	
14.10	30 24.8 25.1 24.9	32 39.5 N/A 33	
14.25	45 24.6 25.1 24.0	32.5 41 N/A 33	
14.40	60 24.7 25.0 24.7	31.5 40 N/A 34	
14.55	75 24.8 24.5 24.8	33.5 43 N/A 33	
15.10	90 24.2 24.6 25.2	34 43 N/A 33	
15.25	105 24.3 24.7 24.2	32.5 41.5 N/A 30	
15.40	120 24.7 24.7 24.7	34.5 43 N/A 32	
15.55	135 24.8 25.2 24.3	34 42.5 N/A 32	
16.10	150 24.9 24.8 24.8	34.5 43 N/A 33	
16.25	165 24.8 25.0 24.7	33.5 42.5 N/A 32	
16.40	180 24.5 25.2 24.3	35.5 44 N/A 32	
16.55	195 24.8 24.2 24.5	35 44 N/A 32	
210			
225			
240			
3.2 Speed and noise limit L <sub>90</sub> = Background noise 76 dB L <sub>90</sub> = 80.3 dB L <sub>90</sub> - L <sub>off</sub> = 4.3 dB			
Time (Min.)	10 20 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240		
Speed (rpm.)	1000 1000 1000 1000 1000 1000 999.8 1000 999.6 999.5 1000 1000 999.6 999.7		
Noise (dB.)	80.1 80.8 80.4 80 79.9 80 80.5 80 80.3 80 80.1 80 79.3 79.5		
COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)	APPROVED BY (PTTAC / FW)
		CTCI Sup.	CTCI QC.
COMPANY		CTCIT	CTCIT
SIGNATURE			
NAME			
DATE		11/09/2010	11/09/2010



# MV MOTOR TEST REPORT

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Project Name : PTTAC AN AND MMA PROJECT

Motor Device No. : UP-212J-LN-802-001

## 3.3 RTD Measurement

PT100	RTD Measurement (°C)							
	Winding Temp.						DE Temp.	NDE Temp.
	T1	T2	T3	T4	T5	T6	T7	T8
	113.9	113.2	113.6	113.9	113.6	113.6	113.6	113.2

## 3.4 Temperature Record

Time Record		Temperature reading (°C)							
		Winding Temp.						DE Temp.	NDE Temp.
Hr:min	Min.	T1	T2	T3	T4	T5	T6	T7	T8
13.40	Start	36	34	35	36	35	35	35	34
13.50	10	39	37	38	39	37	38	38	36
14.00	20	40	39	39	40	39	39	41	37
14.10	30	41	40	40	42	41	40	43	40
14.25	45	43	42	42	43	42	42	45	42
14.40	60	45	44	44	45	44	44	47	43
14.55	75	46	45	46	46	45	45	48	43
15.10	90	47	46	46	47	46	46	49	42
15.25	105	47	47	48	48	47	47	48	42
15.40	120	47	47	48	48	47	47	48	42
15.55	135	49	48	48	49	48	47	49	41
16.10	150	49	49	49	50	48	48	49	41
16.25	165	49	49	50	50	49	49	49	41
16.40	180	50	49	50	50	49	49	49	41
16.55	195	51	50	50	51	50	49	49	41
	210								
	225								
	240								

COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)		APPROVED BY (PTTAC / FW)
		CTCI Sup.	CTCI QC.	
COMPANY		CTCI	CTCI	
SIGNATURE	N/A			
NAME				
DATE		11/09/2010	11/09/2010	

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# MV MOTOR TEST REPORT

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Project Name : PTTAC AN AND MMA PROJECT

Motor Device No. : UP-212J-LN-802-001

## 3.5 Vibration

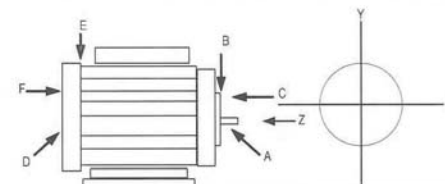
N/A N/A  
Below 3.0 mm/s

Motor Position:

H: ☒

V: ☐

		VEL Cm/s															
Time (Hr:min)		13:50	14:00	14:10	14:25	14:40	14:55	15:10	15:25	15:40	15:55	16:10	16:25	16:40	16:55	-	-
Time (Min.)		10	20	30	45	60	75	90	105	120	135	150	165	180	195	210	225
DE	A-X	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.03		
	B-Y	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.02		
	C-Z	0.21	0.18	0.19	0.17	0.16	0.15	0.15	0.13	0.13	0.10	0.10	0.11	0.12	0.12		
NDE	D-X	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.04	0.03	0.04	0.03	0.03		
	E-Y	0.06	0.06	0.05	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.03		
	F-Z	0.07	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.02	0.02	0.03	0.04	0.04		



## 3.6 Test Instrument

<input checked="" type="checkbox"/>	Megger	KYORITSU	Model:	3125	Serial No.:	0227916
<input checked="" type="checkbox"/>	Multi-meter	FLUKE	Model:	337	Serial No.:	13350436
<input checked="" type="checkbox"/>	Clamp-on meter	FLUKE	Model:	337	Serial No.:	13350436
<input checked="" type="checkbox"/>	Vibration meter	DIGICON	Model:	TV110	Serial No.:	11501120
<input checked="" type="checkbox"/>	Temp. meter	DIGICON	Model:	DP-88	Serial No.:	080421533
<input checked="" type="checkbox"/>	rpm. meter	DIGICON	Model:	DT-246L	Serial No.:	AD.53709
<input checked="" type="checkbox"/>	Sound level	DIGICON	Model:	DS-40	Serial No.:	G.33878

COMPLETED BY	SUB-CONTRACTOR	WITNESS BY (CTCI)		APPROVED BY (PTTAC / FW)
		CTCI Sup.	CTCI QC.	
COMPANY		CTCI	CTCI	
SIGNATURE	N/A			
NAME				
DATE		11/09/2010	11/9/2010	11-9-10

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การติดป้ายเตือนการสวมใส่อุปกรณ์ป้องกันเสียงในบริเวณพื้นที่ที่ระดับเสียงดัง ตั้งแต่ 85 เดซิเบลเอ และควบคุมให้พนักงานสวมใส่อุปกรณ์ป้องกันเสียงดัง เมื่อต้องเข้าไปในพื้นที่ที่มีเสียงดัง

