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# APPENDIX A COMPUTER PROGRAM MANUAL

สถาบันวิทยบริการ จุฬาลงกรณ์มหาวิทยาลัย

## COMPUTER PROGRAM MANUAL

Material Requirement Schedule (MRS), Production Schedule (PS) and Production Monitoring and Control (PMC) programs are developed with macro on Excel software. Macro algorithm is provided at the end of the program worksheets. While, the template of network planning model is established on Microsoft Project software.

#### Installation

All of these programs are compressed into .zip file to be stored in one diskette. Hence, it is necessary to decompress them before their applications.

- 1) Insert a disk containing .zip file
- 2) Type in "pkunzip <file name> .zip c:" this command will explode the hidden file within . zip file to drive C
- 3) Press Enter



## FACILITIES MANU IN MRS AND PMC PROGRAM

# Protect worksheet ( for MRS and PMC program )

Press Ctrl + Z

## Unprotect worksheet ( for MRS and PMC program )

Press Ctrl + X

## Hide columns ( for MRS and PMC program )

- 1. Click at top of column and drag to select required columns
- 2. Select Columns from Facilities menu
- 3. Select Hide

## Unhide columns ( for MRS and PMC program )

- 1. Click at top of column and drag to select required columns
- 2. Select Columns from Facilities menu
- 3. Select UnHide

#### Hide rows ( for MRS and PMC program )

- 1. Click at head of row and drag to select required rows
- 2. Select Rows from Facilities menu
- 3. Select Hide

# Unhide rows ( for MRS and PMC program )

- 1. Click at head of row and drag to select required rows
- 2. Select Rows from Facilities menu
- 3. Select UnHide

## Build up ending point (only for MRS program)

- 1. Click at the red cell in front of item list which is next to the last item
- 2. Select Ending Point from Facilities menu
- 3. Select Build Up, ending point will appear as black cell at selected cell

## Cancel ending point (only for MRS program)

- 1. Click at ending point
- 2. Select Ending Point from Facilities menu
- 3. Select Destroy

# Build up navigator (only for PMC program)

- 1. Click at required cell
- 2. Select Navigator from Facilities menu
- 3. Select Build Up, navigator will appear as red cell with text "Click Here to Update"

# Cancel navigator (only for PMC program)

- 1. Click at navigator
- 2. Select Navigator from Facilities menu
- 3. Select Destroy, navigator will disappear

## Move navigator forward (only for PMC program)

- 1. Click at navigator
- 2. Select Navigator from Facilities Menu
- 3. Select Forward



# Move navigator backward (only for PMC program)

- 1. Click at navigator
- 2. Select Navigator from Facilities Menu
- 3. Select Backward

# Build running bar (only for PMC program)

- 1. Click at head of required row
- 2. Select Running Bar from Facilities menu
- 3. Select Build Up, running bar will appear as blue strip along selected row

# Cancel running bar (only for PMC program)

- 1. Click at head of row of running bar
- 2. Select Running Bar from Facilities menu
- 3. Select Destroy

### MRS PROGRAM

# Build up material requirement schedule database

- 1) Copy file from MRS master program with the normal procedure by changing file name
- 2) Key information from Bill of Material (BOM) into database
  - 2.1) Select BOM from Sheets menu, BOM worksheet will appear
- 2.2) Key project information and name of production centre of that database into green area as follows:

CENTER [E4]

JOB No. [J4]

REQUISITION No. [E6]

PRODUCT [J6]

ORDER SIZE [E8]

BATCH SIZE [J8]

2.3) Key BOM information in green until complete every item as follows;

ITEM [C]

DESCRIPTION OF MATERIAL[D]

CLASS [E]

CODE [F]

COUNT [G]

USAGE / UNIT [I]

SCRAP RATE (%) [J]

REMARK [K]

- 3) Key materials status and required date into database
- 3.1) Select MRS Database from Sheets menu, MRS Database worksheet will appear
- 3.2) Key required date of each batch for that production centre into green area in row of REQUIRED DATE[11] by using information from Project Master Plan
- 3.3) Key the quantity of current stock into column of CURRENT STOCK [K], of required safety stock of into column of SAFETY STOCK[M] and of materials on delivery of each item batch by batch in the row of SCHEDULE

RECEIPT in green area until complete every item, by using information from purchasing division and warehouse.

- 4) Build up ending point with the procedure of Build up ending point
- 5) Update data of every item in database by selecting MRS Update from Facilities menu
- 6) Select All Database (if this command is selected without building ending point, program will up-date all database and consumes long time. However, it may be interrupted by pressing Ctrl + Pause Break)
- 7) Select Save from File menu to save file
- 8) Select Close from File menu to close file
- 9) Repeat step 1-8 for other production centres until completed

# Revise material requirement schedule database by item

- 1) Revise data
- 1.1) In case that data about required date, current stock, safety stock or materials on delivery is required to be revised
- 1.1.1) Select MRS Database from Sheets menu, MRS Database worksheet will appear
- 1.1.2) Revise data of the required item in green area only one item at a time
  - 1.2) In case that other data are required to be revised
    - 1.2.1) Select BOM from Sheets menu

1.2.2) Revise data of the required item in green area only one item at a time

# 2) Update data

- 2.1) Select MRS Database from Sheets menu, MRS Database worksheet will appear
  - 2.2) Click at red cell [B] in front of revised item
  - 2.3) Select MRS Update from Facilities menu
  - 2.4) Select One Item
- 3) Repeat step 1 to 2 for other required items until complete
- 4) Select Save from File menu to save database

#### Remarks:

In case of updating data without clicking red cell in front of item list at worksheet MRS database, program will show error. However, it can be corrected as follows:

- 1) Click End at warning dialogue box
- 2) In MRS Database worksheet, click at red cell in front of item which is required to update
  - 3) Select MRS Update from Facilities menu
  - 4) Select One Item

# PMC PROGRAM and PS PROGRAM

# Build up daily production schedule

- 1) Copy file from PMC master program with the normal procedure by changing file name
- 2) Key weight of each process
  - 2.1) Select Production Target from Over Views menu
  - 2.2) Select Input Table, Production Target(Table) worksheet will appear
  - 2.3) Press Ctrl + X to cancel protection
  - 2.4) Key weight of each process into green area of column Weight[D]
- 3) Set up working day of the company
- 3.1) Key working day of the company into green area of row Date[6] beginning in the first left cell as a few days before starting project in the project master plan to spare for starting project ahead of plan. Dates in the following cells will automatically change in sequence for instance project starting date on 12/3/97, 10/3/97 should be keyed in the first left cell. Date in following cells will be changed to 10,11, 12, 13, 14, 15, 16, 17, 18, 19, 20/3/97, ... respectively.

In case where 14-17/3/97 are non-working days, key 18/3/97 into cell which represents 14/3/97. The working day will change to 10, 11, 12, 13, 18,19, 20/3/97,... respectively. Repeat this step until exceeding the project completion date for a while in order to spare for project delay.

3.2) Click at navigator

- 4) Schedule daily production target
  - 4.1) Open PS master program with the normal procedure
- 4.2) Key information about order size and batch size into green cells of ORDER SIZE [E7] and BATCH SIZE [E9] respectively.
- 4.3) Key production capacity per day of a production centre which is required for scheduling, in green cells of PRODUCTION RATE [E5]
- 4.4) Key number of beginning and finishing batch continuously into green cells of START BATCH [G14], and TO [G16] respectively
- 4.5) Click and drag to select range of daily production schedule which has been computed automatically in row of DAILY TARGET [26] from the first date to the last date.
  - 4.6) Select Copy from Edit menu
  - 4.7) Switch to Production Target(Table) worksheet in PMC program
- 4.8) According to Project Master Plan, place active cell at the intersection of starting date of the computed batch(es) and its production centre.
- 4.9) Select Past Special from Edit menu, dialogue box Paste Special will appear
  - 4.10) Select Value in section of Paste
  - 4.11) Select None in section of Operation
- 4.12 ) Click OK., daily production target of that production centre will be set.
  - 4.13) Switch to PS program
- 4.14) Repeat step 4.4 to 4.13 until completing every batch of that production centre
  - 4.15) Repeat step 4.3 to 4.14 until completing every production centre
  - 4.16) Click at navigator
  - 4.17) Switch to Production Target(Table) worksheet in PMC program
  - 4.18) Press Ctrl + Z to protect worksheet

## 5) Key project information

- 5.1) Select Project Information from Over Views menu, Project Information worksheet will appear
  - 5.2) Key project information into green cells as follows:

JOB No. [G5]

PRODUCTION NAME [G7]

ORDER SIZE [G9]

UPPER CONTROL LIMIT [G11]

LOWER CONTROL LIMIT [G13]

- 6) Identify project duration
  - 6.1) Click at green cell of BASEDLINE DURATION [G15]
  - 6.2) Key in " = " symbol
  - 6.3) Select Production Target(Table) worksheet by clicking at its label
- 6.4) Click at cell which represents the ending date of project in row of DATE[6]
  - 6.5) Key in "-" symbol
  - 6.6) Select Production Target(Table) worksheet by clicking at its label
- 6.7) Click at cell which represents the starting date of project in row of DATE [6]
  - 6.7) Press Enter, project duration will be shown
- 7) Key delivery date
  - 7.1) Select Delivery Contract from Over Views menu
- 7.2) According to delivery contract, key the cumulative number of distribution transformers which must be delivered in green area of Delivery Contract [13]
- 8) Key items of Insulation production centre
  - 8.1) Select Insulation By Items from Centres menu

- 8.2) Select Daily Pieces, Insulation Daily (Pieces) worksheet will appear
- 8.3) Press Ctrl + X to cancel protection
- 8.4) Key description of insulation and quantity which is required for one unit of distribution transformer in green area of column DESCRIPTION [B] and PIECES / UNIT [C] respectively until completing every item
  - 8.5) Press Ctrl + Z to protection
  - 8.6) Click at navigator
- 9) Key items of Core cutting production centre
  - 9.1) Select Core Cutting By Items from Centres menu
  - 9.2) Select Daily Pieces, Core Cutting Daily(Pieces) worksheet will appear
- 9.3) Key size of silicon steel slit and quantity which is required for one unit of distribution transformer in green area of column WIDTH (m.m.) [A] and PIECES / UNITS [C] respectively until completing every item
  - 9.4) Click at navigator
- 10) Select Save from File menu to save database
- 11) Select Daily Update from Facilities menu to start program before keying actual production result
- 12) Select Save from File menu to save database

## Update daily production result

- 1) Open file, which is required to update, with normal procedure
- 2) Key daily actual production result of Insulation production centre
  - 2.1) Select Insulation By Items from Centres menu

- 2.2) Select Daily Pieces, Insulation Daily(Pieces) worksheet will appear
- 2.3) Key daily actual production result of Insulation production centre item by item in green area until every item is completed
  - 2.4) Click at navigator
- 3) Key daily actual production result of Core cutting production centre
  - 3.1) Select Core Cutting By Items from Centres menu
  - 3.2) Select Daily Pieces, Core Cutting Daily(Pieces) worksheet will appear
- 3.3) Key daily actual production result of Core cutting production centre item by item in green area until every item is completed
  - 3.4) Click at navigator
- 4) Key daily actual production result of other production centres
  - 4.1) Select Actual Production from Over Views menu
  - 4.2) Select Input Table, Actual Production(Table) worksheet will appear
- 4.3) Key daily actual production result of each production centre into green area except Insulation production and Core cutting
  - 4.4) Click at navigator
- 5) Select Save from File menu to save database
- 6) Update database
- 6.1) Check every worksheet to ensure that navigator in each worksheet has been clicked already
  - 6.2) Select Daily Update from Facilities menu
- 7) Identify delay or progress plan
  - 7.1) Select Completion Day Forecast from Over Views menu

- 7.2) Select Table
- 7.3) Click at green cell in the row of Acc. Current Delay [9]
- 7.4) Key in " = " symbol
- 7.5) Click at the label of %Completion & Performance Ratio worksheet,
  Percentage Completion Performance Ratio table will appear
- 7.6) At the row of ACC. ACTUAL % COMPLETION [7], verify that how much percentage the project actually completes at current date
- 7.7) Focus at the row of ACC. TARGET % COMPLETION [8] to compare that when actual percentage completion from 7.6 should be completed. Then click at cell in the row of DATE [6] which represents that date
  - 7.8) Key in "-" symbol
- 7.9) Click at the label of %Completion & Performance Ratio worksheet,
  Percentage Completion Performance Ratio table will appear
  - 7.9) Click at cell in the row of DATE [6] which represents the current date 7.10) Press Enter
- 8) Select Save from File menu to save database

#### Remarks:

In case where there is at least one worksheet in which its navigator is not clicked, when using *Daily Update* command, program will show error and show warning dialogue box. Worksheet which appears at that time is the worksheet that causes error. Because its navigator is not clicked. Hence, click *End* at dialogue box and correct the error by using these following procedures.

### Close File without keeping database

- 1) Select Close from File menu, dialogue box Close will appear
- 2) Click No, because database which is not completely updated is not needed to be kept
- 3) Open file with normal procedure again
- 4) Check every worksheet, there must be at least one worksheet which its navigator is not clicked (worksheet which appears during error). Once found, correct it by clicking at navigator.
- 5) Repeat step 6 to 8 of the procedure of Update daily production result

This method is quick and less complex. Thus, it should be adopted as the first corrective action. But if file is saved while closing it in step 2, error can be corrected by reopening file again and using the Move navigator backward procedure as follows:

#### Move navigator backward

- 1) Check each worksheet to seek worksheets which have been updated already
- 2) When worksheets which have been updated already are found, follow the procedure of Move navigator backward
- 3) For worksheets which have not been updated, click at navigator and pass through other worksheets
- 4) Repeat step 6 to 8 of procedure of Update daily production result

# APPENDIX B DAILY PRODUCTION REPORTS

Table B.1 Daily production report for Insulation production

	·.	Daily	Produc	etion	Report				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	105	IMAMAII/IMI	Product	Distributi	on Transformer	***************************************	<b>A</b>	kV	Phase
roduction Centre	Insulation TF.		JOB NO.	папынынына	rem (40) - 44 - 17 to Laboration Bosson (10-resp. ) ( 244 (4		NO.	разнопанняющего	
Operator	. Perdugin (4 ) (4 de reconsesses en reconses de reconses de la consession de la consession de la consession de	**************************************	***************************************	пын-шчи-		Date	mande	***************************************	1001feest691\H200011002000111122
					<u> </u>				
Part 1	n	ption of Raw Materi	ialy		Amount	Τ	Wor	king Period	<del></del> 1
	Descrip	NION OF ENW MINICE	1419		MINOUN	Normal		O.T.	
						+			
						<del>                                     </del>			
						+			
						<del>                                     </del>			<del></del>
						$\dagger$			
						+			
					· · · ·	<del> </del>		•	
Part 2									
Pari 2	Description of Insul	ations		Pro	duction Result	<u> </u>		Working Pe	riod
Part 2	Description of Insul	ations		Pro	duction Result	Norm	nal		eriod D.T.
Parl 2	Description of Insul	ations				Norm	nal		
Part 2	Description of Insul	ations				Norm	181		
Part 2	Description of Insul	ations				Norm	181		
Parl 2		ations				Norm	nai l		
Part 2		ations		Good		Norm	181		
Parl 2		eliona		Good		Norm	181		
Part 2		alions		Good		Norm	181		
Parl 2		ations		Good		Norm	181		
		alions		Good			sal .		
Production Result		lations		Good			181		
roduction Result				Good			ral .		

Table B.2 Daily production report for Low voltage coil winding

Division	105	Product	Distribution	n Trunsformer	kVA		Phase
Production Centre		JOB NO.	***************************************	***************************************	LOT N	O.	·
Operator			***************************************		Date	**************************************	***************************************
		<u>. And m</u>					
·							
Part 1	Description of Raw Mai	terials / Intermediate Products		Antount	ļ	Working Period	
					Normal	О.Т.	
	1. Paper Cover Round Copper Wire dia.	m.m. (Kg.)			1		
;	2. LV, Thermopox (rolls)				1 1		
	3. LV. Channel (pieces)				-	ч	
					1		
					<del>                                     </del>	<del> </del>	
					-		
					<del>                                     </del>		
			1				
					1		
		AVAICAAIIA			<del> </del>		
,		(1888) (10) (10) (10) (10)					
•					<u> </u>		
Part 2		ช่วงเวลาทำงาน	T.	roduction Result			
<del>-</del>			Good	D	efect		
	m *	Normal		7111			
	20		1				
		О.Т.					
	<u> </u>	IDOVOIS	18	005			
	<u> </u>	<u> </u>					
		0			0		
oduction Result	A1964-07-042-043 (0420-14-0-1-0-1-0-1-0-1-0-1-0-1-0-1-0-1-0-1	**************************************	***************************************				
	M I DA M I I (	DOWN /		714	1 64 (		

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Table B.3 Daily production report for High voltage coil winding

		Daily Produc	ction l	Report			
Division Production Centre Operator	105 High Voltage Winding TF	Product  JOB NO.	Distributio	n Trunsformer	kVA LOT NO.	kV	Phase
Part 1	Description of Raw Mate	erials / Intermediate Products		Amount		Working Period	
					Normal	О.Т.	
	I. Copper Conductor dis. m.m. (K	ų.)					
	2. Tap Tube						
	3. HV. Thermopox						
	4. HV. Chunnel						
	5. HV, End Insulation	1/12/62/6			<del> </del>		
					<del> </del>		
					<del> </del>		
					<b>-</b>		
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				- t-st	<del>  </del>		
		BOWN SOLVE					
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Part 2		Working Period		Production Result			
			Good	l De	fect		
		Normal					
	Z 0 0 0 1 10	о.т.					
		4 1 1 KI					
Production Result	<b>Name</b>		***************************************	ทย	าลัย	J	
Reporter		•	D	Atc			
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Table B.4 Daily production report for Core cutting

***************************************	105	***************************************	Product	Distribution	Transformer		/A	kV	Phase
Production Cents	e Core Cutting TF	<del>101100101000000000000</del> 0000000000000000	JOB NO.		······		NO.	***************************************	······································
Operator		***************************************	·	***********		Date	***************************************		
								<del> </del>	
Part 1									
	Descr	iption of Silicon Stee	t Slic		Amount		. Wot	rking Period	
			¥ .			Normal		О.Т.	
	1. Silicon Steel Plate	Width m.n	n.						
	2. Silicon Steel Plate	Width m.n	n.						
	3. Silicon Steel Plate	Width m.n	n.						
	4. Silicon Steel Plate	Width m.n	n.						
	5. Silicon Steel Plate	Width man	1.						
	6. Silicon Steel Plate	Width m.n	1.			li			
Part 2		1 2 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6							
Part 2	Developing of Silicon	Steal Distr.		Dodu	tion David			Washing Dai	
Part 2	Description of Silicon	Steel Plates			tion Result	Non	nul	Working Peri	
Part 2		Steel Plates		Produc Good	tion Result Defect	Non	nal	Working Peri	
	cl Plate Width					Non	nal		
I. Silicon Ste	el Plate Width	m.m.				Non	nai		
Silicon Ste     Stein Stein Stein	cel Plate Width cel Plate Width cel Plate Width	m.m. m.ni.				Non	nal		
Silicon Ste     Silicon Ste     Silicon Ste	cl Plate Width cl Plate Width cl Plate Width cl Plate Width	m.m. m.m.				Non	nal		
Silicon Ste     Silicon Ste     Silicon Ste     Silicon Ste	cel Plate Width	m.m. m.m. m.m.				Non	nai		
1. Silicon Ste 2. Silicon Ste 3. Silicon Ste 4. Silicon Ste 5. Silicon Ste	cel Plate Width	m.m. m.m. m.m. m.m.				Non	nal		
1. Silicon Ste 2. Silicon Ste 3. Silicon Ste 4. Silicon Ste 5. Silicon Ste 6. Silicon Ste	cel Plate Width	m.m. m.m. m.m. m.m.				Non	nal		
1. Silicon Ste 2. Silicon Ste 3. Silicon Ste 4. Silicon Ste 5. Silicon Ste	cel Plate Width	m.m. m.m. m.m. m.m.				Non	nal		

# Table B.5 Daily production report for Punching

Division 105		Product		Transformer	kVA	kV Phase	
roduction Centre Punching TF	***************************************	JOB NO.	<del>den</del> amentum manusarun eta eta ibratuarun		LOT NO.		
perator			40000000000000000000000000000000000000	***************************************	Date		
		A A A	<u> </u>				
Description of Sili	icon Steel Plate		Amau	nt (pieces)	·	Working Period	_
positive of our	con sicci i laic		Good	Defect	Normal	O.T.	ᅱ
1. Silicon Steel Plate Width	m.m.						ᅱ
2. Silicon Steel Plate Width	m.m.				1		ㅓ
3. Silicon Steel Plate Width	m.m.						
4. Silicon Steel Plate Width	m.m.	16,600			1		_
5. Silicon Steel Plate Width	m.m.						
6. Silicon Steel Plate Width	m.m.	(C)					
		186					
		126					
		VALALA					
						·	
				<u> </u>			_
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oduction Result							
1.74	4110						
porter							

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Table B.6 Daily production report for Core stacking

Division	106	Product	Distribution	Trunsform	ner kV	'A kV	Phase
Production Centre		JOB NO.			LOT		
Operator	10 10 10 10 10 10 10 10 10 10 10 10 10 1		***************************************		Date	(HILIPET RATES WITH THE	*, ***, -**) (****) - ************
•						***************************************	
Part 1	Description of Raw M	faterials / Intermediate Product		Amount		Working Period	
					Normal	О.Т.	
	I. Silicon Steel Plate Width	m.m.					
	2. Silicon Steel Plate Width	ı m.m.					
	3. Sificon Steel Plate Width	m.m.					
	4. Silicon Steel Plate Width	m.m.					
	5. Silicon Steel Plate Width	in.m.					
	6. Silicon Steel Plate Width	m.m.					
	7. Polyester Rod dis. m.m. (rods						
	N. Core Clamp						
	9. Yoke Bolt dia, m.m.						
	10. Winding Bolt dis, m.n.						
		1135633212121111111111111111111111111111					
		201100000000000000000000000000000000000	-				
Part 2		Working Period	Р	roduction R	esuli		
		<b>U</b>	Good		Defect		
		Normal					
	200		· .				
	2	O.T.					
	สภาย	9179/1619	115	กก	5		
	6/1 6 1 1	10 0 M U			0		
		6			0		
roduction Result	***************************************	\$\$\$\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	The 200 set to \$100 set to \$100 set	9/19	เกล		
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Reporter		•	Da	te			

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Table B.7 Daily production report for Core and coil assembly

vision	108	Product	Distribution Trans	former k\	'A kV	Phase
duction Centr	e Core and Coil Assembly	JOB NO.	M:946:1911:111:111:111:111:111:111:111:111:1	LOT	NO.	
erator	.,,;.,,;.,,	<del>(44.49</del> ,(4)(4		Date	enemene proposition of	
	**************************************	(A)	MARKET HELT-		Manufacture (Manufacture )	
Part I	Description of Raw Ma	terials / Intermediate Products	Ami	ount	Working Period	
				Normal	о.т.	
	I, Core					
	2. Coit					
	3. Insulution Strip, Big					
	4. Insulation Strip, Small					]
	5. Yuke Insulation					]
	6, Wooden Rod dia. m.m.	/				
	7. W/I Spacer Winding thick m.m.					
	8, W/I Spacer Clamping thick m.m.					
	9, Wood thick m.m.					
	10. Polyesier Angle Spucer	WALAIGE IL				
	11, Sieci Plaic m.m.					
	12. Siect Plate m.m.					
	13. Steel Plate m.m.					
	14. Steel Plate m.m.					
<u>.</u>				1		
Part 2	44	Working Period	Production	n Result		
			Good	Defect .		
		Normal				
	97	О.Т.				
	200	1797619	1521	15		
	6461101			10		
		. 5				
luction Resul	<u> </u>					
	A TOA ATT	0 0 10001 7 1	1011	U 101		
				-		

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Table B.8 Daily production report for Tanking and oil filling

,		Daily Product	tion F	Report			
Division	105	Product	Distribution	n Transformer	kVA	***************************************	Phase
Production Centre	e Tunking und Oil Filli	ng JOB NO.	***************************************		LOT N	XO.	
Operator	***************************************	NES COLUMN TOUR STATE STATE OF STATE OF THE PROPRESS OF THE SECOND STATE OF THE STATE OF THE STATE OF THE SECOND STATE OF THE	armaneg,		Date	Hitterienementenentranen.	, apo 3 papo 1 - 147 h lago 1 (140 h l l l l l l l l l l l l l l l l l l
	·						
Part I	Description of Ray	w Materials / Intermediate Products		Amount		Working Period	
•					Normal	о.т.	
	1. Heated Intermediate Distribution	Trunkformer			<u> </u>		
	2. Trunsformer Tunk				<u> </u>	·	
	3. LV. Bushing						
	4. LV.connecting bolt						
	5. HV. Bushing						
	6. HV, connecting bolt						
	7. Drain Valve						
	N. Oil (line)						
	9, Oil Level Gauge	1 3. 15T. C) 77T. A					
	10, Accessory, Nut (set)	A STANKING L					
						=	
		Marie Commence					
					<del>-1</del>		
	Q	Walia Bala	r	Production Result			
Part 2		Working Period	Goo		Defect		
			000		elect		
		Normal					
		О.Т.					
	2000	10 1000016	12	005	_	•	
	616111						
Production Resul	t			ทย	าล	اع	

Table B.9 Daily production report for Final assembly

		Daily Pro	duction	Repo	rt					
Division	105	Product	Distr	bution Trans	sformer	k۷	/A	kV	Phase	
Production Centre	Final Assembly	JOB NO.				LOT	NO.			
Operator						Date	шышыны	11.H1.H1.H1.H4H1.H1H4H.H		(*)
		<u> </u>								-
Part 1	Description of Ras	w Materials / Intermediate Pr	roducts	Am	nount		Worki	ng Period		]
						Normal		о.т.		]
	1. Tested Intermediate Distribution	Тикибостег						·		]
	2. L.V. Terminal Connector									.]
	3. H.V. Terminal Connector									_
	4. Name Plate									1
	5. Company Plate									
	G. Air Beather									_
	7. Siliga Gel (kg.)	/// a Ton								_
	K, Bird Guard Cap									
	9. Arcing & Lower Horn									
	10. L.V. & Earthing Terminal	/ Mayara								
		ANNOLONO	444							
		Manage (G) S)				<u> </u>				
Part 2		Working Period		Productio	on Result					
				Good	De	lect				
		Normal								
•		О.Т.	<u> </u>							
	000			20	06					
	61611									
·						0	,			
Production Result	tuninianinia iliinininininininininininininininininin					าล				
	7 4 1 0 4 4 1			0 7		I U				
Reporter	4			Date						
керопеі			İ	Date						
							PEAA D	W 03 04 BF1	•	

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Weekly Production Re	eport
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Division 105	Product	Distribution	Transformer	kVA	kV
JOB NO.	Lot NO			Date	
Opera	ations				
1. Core Production	Core Cutting				
	Core Stacking				
2. Insulation Production					
3. Coil Production	Low Voltage				
	High Voltage				
	Core & Coil Assembly	1220	เริกร		
I. Assembly	Tanking & Oil Filling	มท	าวิทยา	าลย	## #27
	Final Assembly				a
Reporter			,	Date	West of the

# **VITA**



Assadej Vanichchinchai was born on January 13, 1973 in Bangkok, Thailand. He obtained his Bachelor's Degree in Industrial Engineering from Chulalongkorn University in 1994 academic year and continued to pursue his graduate study in Engineering Management at The Regional Centre for Manufacturing Systems Engineering at the same university in 1996.

