

## DAFTAR ISI

<b>ABSTRAK</b> .....	<b>i</b>
<b>ABSTRACT</b> .....	<b>ii</b>
<b>KATA PENGANTAR</b> .....	<b>iii</b>
<b>DAFTAR ISI</b> .....	<b>v</b>
<b>DAFTAR GAMBAR</b> .....	<b>ix</b>
<b>DAFTAR TABEL</b> .....	<b>x</b>
<b>DAFTAR SINGKATAN DAN LAMBANG</b> .....	<b>xi</b>
<b>DAFTAR ISTILAH</b> .....	<b>xii</b>
<b>DAFTAR LAMPIRAN</b> .....	<b>xiii</b>
<b>BAB I PENDAHULUAN</b> .....	<b>1</b>
I.1 Latar Belakang.....	1
I.2 Rumusan Masalah .....	5
I.3 Tujuan Penelitian .....	5
I.4 Batasan Masalah.....	5
I.5 Manfaat Penelitian .....	6
I.6 Sistematika Penulisan .....	6
<b>BAB II LANDASAN TEORI</b> .....	<b>8</b>
II.1 Manajemen Perawatan .....	8
III.1.1 <i>Preventive Maintenance</i> .....	8
II.1.1.1 <i>Time Directed Maintenance</i> .....	8
II.1.1.2 <i>Condition Based Maintenance</i> .....	9
II.1.1.3 <i>Failure Finding</i> .....	9
II.1.1.4 <i>Run to Failure</i> .....	9
II.1.2 <i>Corrective Maintenance</i> .....	9
II.2 Tujuan Maintenance .....	10
II.3 Pola Kerusakan ( <i>Failure Pattern</i> ) .....	10
II.4 Reliability.....	11
II.4.1 Fungsi Reliabilitas.....	11
II.4.2 Definisi Reliabilitas .....	12
II.4.3 Fungsi Laju Kegagalan.....	12
II.5 <i>Mean Time To Failure (MTTF)</i> .....	12
II.6 <i>Mean Time To Repair (MTTR)</i> .....	13
II.7 <i>Maintainability</i> .....	14

II.8 <i>Risk Matrix</i> .....	14
II.9 <i>Reliability Centered Maintenance (RCM)</i> .....	16
II.9.1 <i>System Breakdown Structure</i> .....	17
II.9.2 Pemilihan Sistem dan Pengumpulan Informasi.....	17
II.9.3 Definisi Batasan Sistem.....	17
II.9.4 Deskripsi Sistem Terpilih.....	18
II.9.5 <i>Failure Mode Effect Analysis (FMEA)</i> .....	18
II.9.5.1 Fungsi dan Kinerja Standar.....	18
II.9.5.2 Kegagalan Fungsional.....	18
II.9.5.3 Model Kegagalan.....	19
II.9.5.4 Dampak Kegagalan.....	19
II.9.6 <i>Logic Tree Analysis (LTA)</i> .....	19
II.9.7 <i>Task Selection</i> .....	20
II.9.8 <i>Preventive Tasks</i> .....	22
II.9.9 <i>Default Actions</i> .....	23
II.9.10 Interval <i>Preventive Task</i> .....	24
II.9.11 Proses Penentuan Keputusan dengan RCM.....	27
II.10 <i>Cost Of Unreliability (COUR)</i> .....	28
II.11 Model <i>Cost Of Unreliability (COUR)</i> .....	28
II.12 Studi Literatur.....	32
<b>BAB III METODOLOGI PENELITIAN.....</b>	<b>34</b>
III.1 Model Konseptual.....	34
III.2 Sistematisa Penyelesaian Masalah.....	36
III.2.1 Tahap Pendahuluan.....	38
III.2.2 Tahap Pengumpulan Data.....	38
III.2.3 Tahap Pengolahan Data.....	39
III.2.4 Tahap Analisis.....	43
III.2.5 Tahap Kesimpulan dan Saran.....	43
<b>BAB IV PENGUMPULAN DAN PENGOLAHAN DATA.....</b>	<b>44</b>
IV.1 Pengumpulan Data.....	44
IV.1.1 <i>Risk Matrix</i> .....	44
IV.1.2 Deskripsi Mesin 1110 JC.....	47
IV.1.3 Kegiatan Perawatan Mesin 1110 JC.....	48
IV.1.4 Data Biaya <i>Engineer</i> .....	48
IV.1.5 Data Biaya Peralatan dan Material.....	48
IV.1.6 Data Harga Komponen.....	49

IV.1.7 Data <i>Loss of revenue</i> .....	50
IV.1.8 Data <i>Time To Failure</i> .....	50
IV.1.9 Data <i>Time To Repair</i> .....	50
IV.1.10 Data <i>Downtime</i> .....	51
IV.2 Pengolahan Data.....	51
IV.2.1 Pengujian Kecocokan Distribusi <i>Time To Failure</i> .....	51
IV.2.2 Penentuan Parameter <i>Time To Failure</i> Yang Mewakili.....	52
IV.2.3 Penentuan MTTF ( <i>Mean Time To Failure</i> ).....	52
IV.2.4 Pengujian Kecocokan Distribusi <i>Time To Repair</i> .....	53
IV.2.5 Penentuan Parameter <i>Time To Repair</i> Yang Mewakili.....	54
IV.2.6 Penentuan MTTR ( <i>Mean Time To Repair</i> ).....	54
IV.2.7 Pengujian Kecocokan Distribusi <i>Downtime</i> .....	55
IV.2.8 Penentuan Parameter <i>Downtime</i> Yang Mewakili .....	56
IV.2.9 Penentuan MDT ( <i>Mean Down Time</i> ) .....	56
IV.3 Pengolahan dan Perhitungan Data <i>Reliability Centered Maintenance (RCM)</i> .....	57
IV.3.1 Fungsi Sistem dan Kegagalan Fungsional .....	57
IV.3.2 FMEA ( <i>Failure Mode and Effect Analysis</i> ).....	57
IV.3.3 <i>Logic Tree Analysis (LTA)</i> .....	57
IV.3.4 <i>Task Selection</i> .....	58
IV.3.5 Penentuan Interval waktu .....	58
IV.3.6 Perhitungan Interval Waktu Perawatan <i>Scheduled on Condition</i> .....	58
IV.3.7 Perhitungan Interval Waktu Perawatan <i>Scheduled Restoration</i> dan <i>Discard</i> .....	59
IV.3.8 Perhitungan Biaya Perawatan <i>Existing</i> .....	60
IV.3.9 Perhitungan Biaya Perawatan Usulan.....	61
IV.4 Perhitungan <i>Cost of unreliability (COUR)</i> .....	62
IV.4.1 Perhitungan <i>Failure Rate</i> .....	62
IV.4.2 Perhitungan <i>Time Lost</i> .....	62
IV.4.3 Perhitungan <i>Money Lost</i> .....	63
<b>BAB V ANALISIS</b> .....	<b>67</b>
V.1 Analisis Penentuan Sistem Kritis dengan <i>Risk Matrix</i> .....	67
V.2 Analisis Penentuan Distribusi <i>Time To Failure</i> .....	67
V.3 Analisis Penentuan Distribusi <i>Time To Repair</i> .....	68
V.4 Analisis Penentuan Distribusi <i>Downtime</i> .....	68
V.5 Analisis Interval Waktu Perawatan.....	68
V.6 Analisis Interval Waktu Perawatan <i>Scheduled On-Condition Task</i> .....	68
V.6 Analisis Interval Waktu Perawatan <i>Scheduled Restoration</i> dan <i>Discard Task</i> .....	69

V.7 Analisis Biaya Perawatan .....	70
V.8 Analisis <i>Failure Rate</i> .....	70
V.9 Analisis <i>Time Lost</i> .....	71
V.10 Analisis <i>Money Lost</i> .....	73
<b>BAB VI KESIMPULAN</b> .....	<b>76</b>
VI.1 Kesimpulan .....	76
VI.2 Saran .....	76
VI.2.1 Saran Perusahaan.....	76
VI.2.2 Saran Penelitian Selanjutnya.....	76
<b>DAFTAR PUSTAKA</b> .....	<b>78</b>