

## DAFTAR ISI

ABSTRAK .....	i
ABSTRACT .....	ii
KATA PENGANTAR .....	iii
DAFTAR ISI .....	iv
DAFTAR GAMBAR .....	ix
DAFTAR TABEL .....	x
DAFTAR SINGKATAN DAN LAMBANG .....	xii
DAFTAR ISTILAH .....	xiv
DAFTAR LAMPIRAN .....	xvi
Bab I   Pendahuluan .....	1
I.1   Latar Belakang .....	1
I.2   Perumusan Masalah .....	4
I.3   Tujuan Penelitian .....	4
I.4   Batasan Penelitian .....	4
I.5   Manfaat Penelitian .....	5
I.6   Sistematika Penulisan .....	5
Bab II   Landasan Teori .....	7
II.1   Pemeliharaan .....	7
II.1.1   Preventive Maintenance .....	7
II.1.2   Corrective Maintenance .....	8
II.2   Kurva Laju Kerusakan (Failure Pattern) .....	9
II.3   System Breakdown Structure (SBS) .....	10
II.4   Risk Matrix .....	10
II.5   Life Data Analysis .....	12

II.6	Uji Anderson-Darling .....	13
II.7	Reliability System .....	13
II.7.1	Reliability Block Diagram (RBD) sistem seri .....	14
II.8	Reliability, Availability, Maintainability (RAM) analysis.....	15
II.9	Reliability (Keandalan) .....	15
II.9.1	Fungsi Keandalan.....	16
II.9.2	Fungsi laju kerusakan.....	16
II.9.3	MTTF (Mean Time To Failure).....	17
II.10	Availability (Ketersediaan).....	18
II.10.1	Inheret Availability.....	18
II.10.2	Operational Availability .....	18
II.10.3	Maintenance Key Performance Indicators (KPI) .....	19
II.11	Maintainability (Kemapurawatan).....	20
II.11.1	MTTR (Mean Time To Repair).....	20
II.12	Reliability-Centered Maintenance (RCM).....	20
II.12.1	Pengertian Reliability-Centered Maintenance (RCM) .....	20
II.12.2	Batasan Sistem .....	21
II.12.3	Deskripsi Sistem.....	21
II.12.4	Penentuan Fungsi dan Kerusakan fungsional.....	21
II.12.5	Failure Mode and Effect Analysis (FMEA) .....	21
II.12.6	Logic Tree Analysis (LTA) .....	22
II.12.7	Task Selection .....	22
II.12.8	Proactive task .....	25
II.12.9	Default actions.....	26
II.12.10	Interval Preventive Task.....	26
II.12.11	Menentukan Biaya Perawatan .....	27

II.12.12	Proses menentukan keputusan dengan RCM .....	28
II.13	Pemilihan Metode Penelitian .....	29
II.14	Perbandingan dengan Penelitian Sebelumnya .....	29
Bab III	METODOLOGI PENELITIAN .....	31
III.1	Model Konseptual.....	31
III.2	Sistematika Penyelesaian Masalah .....	34
III.2.1	Tahapan Identifikasi.....	36
III.2.2	Tahap Pengumpulan Data .....	37
III.2.3	Tahap Pengolahan Data.....	37
III.2.4	Tahap Analisis.....	40
III.2.5	Tahap Kesimpulan dan Saran.....	41
Bab IV	PENGOLAHAN DATA .....	42
IV.1	Pengumpulan Data.....	42
IV.1.1	Deskripsi Mesin Cutting .....	42
IV.1.2	Kegiatan pemeliharaan Mesin Cutting.....	42
IV.1.3	Data Upah Engineer .....	43
IV.1.4	Data Biaya Material Preventive Maintenance.....	43
IV.1.5	Data Loss of Revenue .....	45
IV.1.6	Data Time To Failure (TTF) .....	45
IV.1.7	Data Time To Repair (TTR) .....	45
IV.2	Pengolahan Data .....	46
IV.2.1	Penentuan Subsystem Kritis.....	46
IV.2.2	Penentuan Distribusi Waktu.....	48
IV.2.3	Penentuan Parameter Distribusi .....	50
IV.2.4	Penentuan Mean Time To Failure (MTTF) .....	51
IV.2.5	Penentuan Mean Time To Repair (MTTR).....	51

IV.2.6	Pemodelan Reliability Block Diagram (RBD).....	51
IV.2.7	Perhitungan Analytical Reliability.....	52
IV.2.8	Perhitungan Analytical Availability.....	53
IV.2.9	Fungsi Sistem dan Kegagalan Fungsional .....	55
IV.2.10	FMEA (Failure Mode and Effect Analysis).....	55
IV.2.11	Logic Tree Analysis (LTA).....	55
IV.2.12	Task Selection .....	56
IV.2.13	Penentuan Interval Waktu .....	56
IV.2.14	Perhitungan Biaya Perawatan Eksisting.....	58
IV.2.15	Perhitungan Biaya Perawatan Usulan .....	59
Bab V	ANALISIS.....	60
V.1	Analisis Penentuan Subsystem Kritis.....	60
V.2	Analisis Penentuan Distribusi Waktu.....	60
V.2.1	Analisis Distribusi Time To Failure.....	60
V.2.2	Analisis Distribusi Time To Repair .....	61
V.3	Analisis Reliability Block Diagram .....	61
V.4	Analisis Reliability Availability Maintainability (RAM).....	61
V.4.1	Analisis Reliability.....	61
V.4.2	Analisis Maintainability.....	62
V.4.3	Analisis Availability .....	63
V.5	Analisis Key Performance Indicator.....	65
V.5.1	Analisis Leading Indicator .....	65
V.5.2	Analisis Lagging Indicator.....	66
V.5.3	Key Performance Indicator .....	66
V.6	Analisis Reliability Centered Maintenance II .....	67
V.6.1	Analisis Interval Waktu Schedule On-Condition Task.....	67

V.6.2	Analisis Interval Waktu Schedule Restoration Dan Schedule Discard Task	68
V.6.3	Analisis Biaya Preventive Maintenance.....	69
Bab VI	KESIMPULAN DAN SARAN .....	71
VI.1	Kesimpulan .....	71
VI.2	Saran .....	73
VI.2.1	Saran Untuk Perusahaan .....	73
VI.2.2	Saran Untuk Penelitian Selanjutnya.....	73
	DAFTAR PUSTAKA .....	74
	LAMPIRAN.....	77