

Company Name: _____

Maintenance Forms & Logs

Date: _____

Log ID: _____

Version: 1.0

Asset Criticality Ranking Matrix Worksheet

1.0 Form Objective & Asset Scope

This worksheet is used to systematically rank all critical manufacturing and facility assets based on their impact on production, safety, environment, and maintenance costs. The resulting criticality score determines the appropriate maintenance strategy (e.g., preventive, predictive, or run-to-failure) and resource allocation. This matrix is essential for reliability-centered maintenance (RCM) programs and compliance with internal asset management standards.

Scope includes all fixed and rotating equipment, electrical systems, HVAC, and utilities that directly or indirectly affect plant operations. Each asset is evaluated individually using the criteria defined below.

2.0 Administrative & Asset Details

Date of Assessment: _____

Assessor Name / Team Lead: _____

Asset ID / Tag Number: _____

Asset Description (e.g., Centrifugal Pump P-101): _____

Location / Area (e.g., Boiler Room, Line 2): _____

Asset Type (e.g., Rotating, Electrical, Static, Instrument): _____

3.0 Inspection / Parameter Checklist

☐ Pass ☐ Fail - Rate the asset's impact on production if it fails: 1 = No impact, 2 = Minor slowdown, 3 = Partial shutdown, 4 = Full line stop, 5 = Plant-wide outage.

☐ Pass ☐ Fail - Rate the safety risk of failure: 1 = No injury, 2 = Minor first aid, 3 = Lost time injury, 4 = Serious injury, 5 = Fatality or regulatory violation.

☐ Pass ☐ Fail - Rate the environmental consequence of failure: 1 = No release, 2 = Minor spill contained, 3 = Reportable spill, 4 = Significant environmental damage, 5 = Major regulatory fine or cleanup.

☐ Pass ☐ Fail - Rate the maintenance cost impact: 1 = <\$500, 2 = \$500-\$2,000, 3 = \$2,000-\$10,000, 4 = \$10,000-\$50,000, 5 = >\$50,000.

☐ Pass ☐ Fail - Rate the asset's redundancy: 1 = Full redundant backup, 2 = Partial backup with manual switchover, 3 = No backup but can be bypassed, 4 = No backup, single point of failure, 5 = No backup and long lead time for replacement.

☐ Pass ☐ Fail - Rate the mean time between failures (MTBF): 1 = >5 years, 2 = 2-5 years, 3 = 1-2 years, 4 = 6-12 months, 5 = <6 months.

☐ Pass ☐ Fail - Rate the mean time to repair (MTTR): 1 = <1 hour, 2 = 1-4 hours, 3 = 4-24 hours, 4 = 1-3 days, 5 = >3 days.

☐ Pass ☐ Fail - Rate the asset's criticality to quality: 1 = No effect on product quality, 2 = Minor cosmetic defect, 3 = Rework required, 4 = Scrap product, 5 = Customer complaint or recall.

☐ Pass ☐ Fail - Rate the asset's age and condition: 1 = New (<1 year), 2 = Good (1-5 years), 3 = Fair (5-10 years), 4 = Poor (10-20 years), 5 = Obsolete (>20 years or end of life).

☐ Pass ☐ Fail - Rate the availability of spare parts: 1 = In stock on-site, 2 = In stock at supplier, 3 = Available within 1 week, 4 = Available within 1 month, 5 = Custom fabrication required.

4.0 Deficiencies & Work Order Generation

Total Criticality Score (Sum of all ratings): _____

Criticality Category (Low: 10-20, Medium: 21-30, High: 31-40, Critical: 41-50):

Recommended Maintenance Strategy (e.g., Preventive, Predictive, Run-to-Failure, Redesign):

Identified Gaps or Deficiencies (e.g., no vibration monitoring, lack of redundancy):

Action Items / Work Orders Required (e.g., install vibration sensor, order spare pump):

Priority Level (1-5, with 1 being highest): _____

Target Completion Date: _____

Assigned To (Technician or Contractor): _____

5.0 Sign-off & Return to Operations

Reliability Engineer Signature: _____ Date: _____

Maintenance Manager Signature: _____ Date: _____

Operations Manager Review (if applicable): _____ Date: _____

Regulatory Disclaimer: This maintenance log is a generic template. The end-user assumes all liability for validating all inspection parameters, PM frequencies, and tolerances against specific OEM machinery manuals before active shop floor deployment.