Sample Criticality Analysis Guide

LIFE CYCLE INSTITUTE

Mission Impact

How will failure affect the facility's ability to meet mission requirements?

1 = < 10%
2 = 10% - 14%
3 = 15% - 19%
4 = 20% - 29%
5 = 30% - 39%
5 = 40% - 49%
6 = 50% - 59%
7 = 60% - 69%
8 = 70% - 79%
9 = 80% - 89%
10 = >90%

Safety Impact

Will failure have the potential to cause an accident that results in injury or death?

0 = No potential
10 = Potential for injury*

**Each organization defines an impact scale for their operations.*

Environmental Impact

Will a failure result in or have the potential to result in a reportable event?

0 = No potential
10 = Potential for reportable incident*

**Each organization defines an impact scale for their operations.*

Single Point Failure

Is there a way to minimize loss caused by failure?

1 = Automatic fail-over
2 = Redundant train (manual switch-over)
2 = Easy work-around available
3 = Inconvenient
4 = Moderate work-around
5 = Significant
6 = Difficult
7 = Very difficult, but possible
8 = Possible, but impacts capacity or quality
9 = Possible, but severely impacts capacity or quality
10 = No work-around possible

Preventive Maintenance History

Annual cost for preventive maintenance

1 = <$1,000
2 = $1,000 - $1,999
3 = $2,000 - $2,999
4 = $3,000 - $3,999
5 = $4,000 - $4,999
6 = $5,000 - $5,999
7 = $6,000 - $6,999
8 = $7,000 - $7,999
9 = $8,000 - $8,999
10 = >$9,000

Corrective Maintenance History

Use total maintenance cost to determine the average cost/year for each asset.

1 = <$1000
2 = $1,000 - $3,999
3 = $4,000 - $7,999
4 = $8,000 - $11,999
5 = $12,000 - $14,999
6 = $15,000 - $18,999
7 = $19,000 - $21,999
8 = $22,000 - $25,999
9 = $26,000 - $29,999
10 = >$30,000

Reliability

Use historical data to determine the number of breakdowns or number and frequency of breakdowns and/or emergencies for this asset.

1 = No breakdowns/corrective/emergency activity
2 = 1 breakdown/emergency every 7-9 years
3 = 1 breakdown/emergency every 4-6 years
4 = 1 breakdown/emergency every 2-3 years
5 = 1 breakdown/emergency each year (1/year)
6 = 1 breakdown/emergency every six months (2/year)
7 = 1 breakdown/emergency per quarter (4/year)
8 = 1 breakdown/emergency per month (12/year)
9 = 1 breakdown/emergency per week (52/year)
10 = >2 breakdowns/emergencies per week

Spares Lead Time

How long does it take to order and receive replacement parts for this asset?

1 = In stock and readily available
2 = <1 day
3 = 1 day
4 = 1 week or less
5 = 1 - 6 weeks
6 = 6 - 16 weeks
7 = 16 - 20 weeks
8 = 21 - 26 weeks
9 = >26 weeks
10 = Obsolete, no longer available

Asset Replacement Value

Estimated cost to replace asset, including installation

1 = <$1,000
1 = $1,000 - $2,999
2 = $3,000 - $5,999
3 = $6,000 - $9,999
4 = $10,000 - $19,999
5 = $20,000 - $39,999
6 = $40,000 - $59,999
7 = $60,000 - $79,999
8 = $80,000 - $99,999
9 = $100,000 - $249,999
10 = >$250,000

Planned Utilization

How often will the asset be required to support mission or business plan? Expressed as percentage of full utilization (i.e. 8760 hours/year).

1 = <10%
2 = 10% - 19%
3 = 20% - 29%
4 = 30% - 39%
5 = 40% - 49%
6 = 50% - 59%
7 = 60% - 69%
8 = 70% - 79%
9 = 80% - 89%
10= >90%

Decommissioning

When the asset has reached the end of its useful life, what will it cost to decommission it?

1 = <$5,000
2 = $5,000 - $9,999
2 = $10,000 - $19,999
3 = $20,000 - $29,999
4 = $30,000 - $39,999
5 = $40,000 - $49,999
6 = $50,000 - $59,999
7 = $60,000 - $69,999
8 = $70,000 - $79,999
9 = $80,000 - $89,999
10= >$90,000

Raw Value

The sum of the 11 values, divided by the number of criteria counted; the value will be between 1-10.

Criticality Ranking

Determine a multiplier that will raise the asset with the highest raw value to 100. Apply that multiplier to all assets.

Example: Assets with raw values of 40, 60 and 80 have the following Criticality Rankings:

Raw Value	Multiplier	Criticality Ranking
80	1.25	100
60	1.25	75
40	1.25	50