The Rope Access Company

When is a Risk Assessment not a Risk Assessment? Using the EI SBT Guidelines more effectively.

Kevin Morice – Deputy Technical Authority (Pressure Systems)

Small Bore Tubing (SBT)

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The "*largest single contributor to the incidence of loss of process containment*". – Energy Institute.

Supported by: Offshore Hydrocarbon releases 2016-2021.
Supported by: Offshore Statistics & Regulatory Activity Report 2021

"We follow the Energy Institute SBT Guidelines." – Almost everyone else.

Total - 131 pages
Section 6 – Inspection and Repair - 9 pages

Client A Spreadsheet

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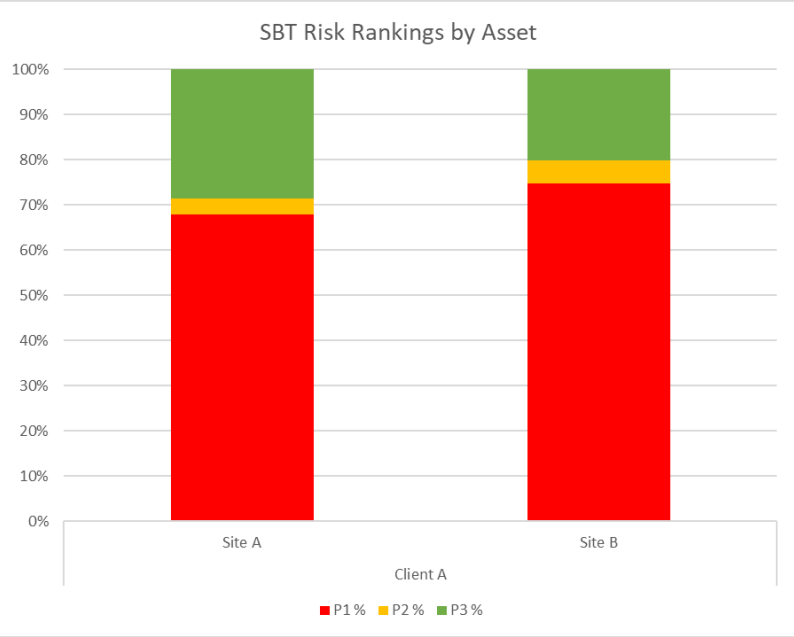
	Client A Site A	Client A Site B
P1	1,238	1,731
P2	67	119
P3	521	467
Total	1,826	2,317
P1 %	68%	75%
P2 %	4%	5%
P3 %	29%	20%



Inspection Frequencies

P1 – 12M
P2 – 24M
P3 – Ad-hoc

Example

Inspection frequency: P1 Annual P2 Bi-annual P3 *Ad-hoc*	SBT assembly prioritisation tool		
	Impact on production personnel, safety or equipment		
	Major	Significant	Minor
Hydrocarbon systems gas & liquid	P1	P1	P1
ESD systems, toxic & corrosive chemical systems, produced water, other hazardous substances	P1	P1	P2
Water service greater than 20 bar(g), high pressure fluid power service	P1	P2	P3
Utilities, low pressure water service	P1	P2	P3

Figure 8 Example of system prioritisation for inspection of SBT assemblies

Note 1: P1 being the highest priority and P3 the lowest

trac

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"We follow the Energy Institute SBT Guidelines."

This chart is only an example!

Note:
In several places throughout this document, examples provided by members of the SG have been utilised. Where these have been cited, it is implicit that there are alternative ways and methods that other users may use to meet the same objectives. Therefore, these examples are provided for guidance only and should not be regarded as a recommendation or an industry standard.

It is not a Risk Assessment, and you don't need to follow it to comply with the Guidelines.

Risk Assessment Matrix?

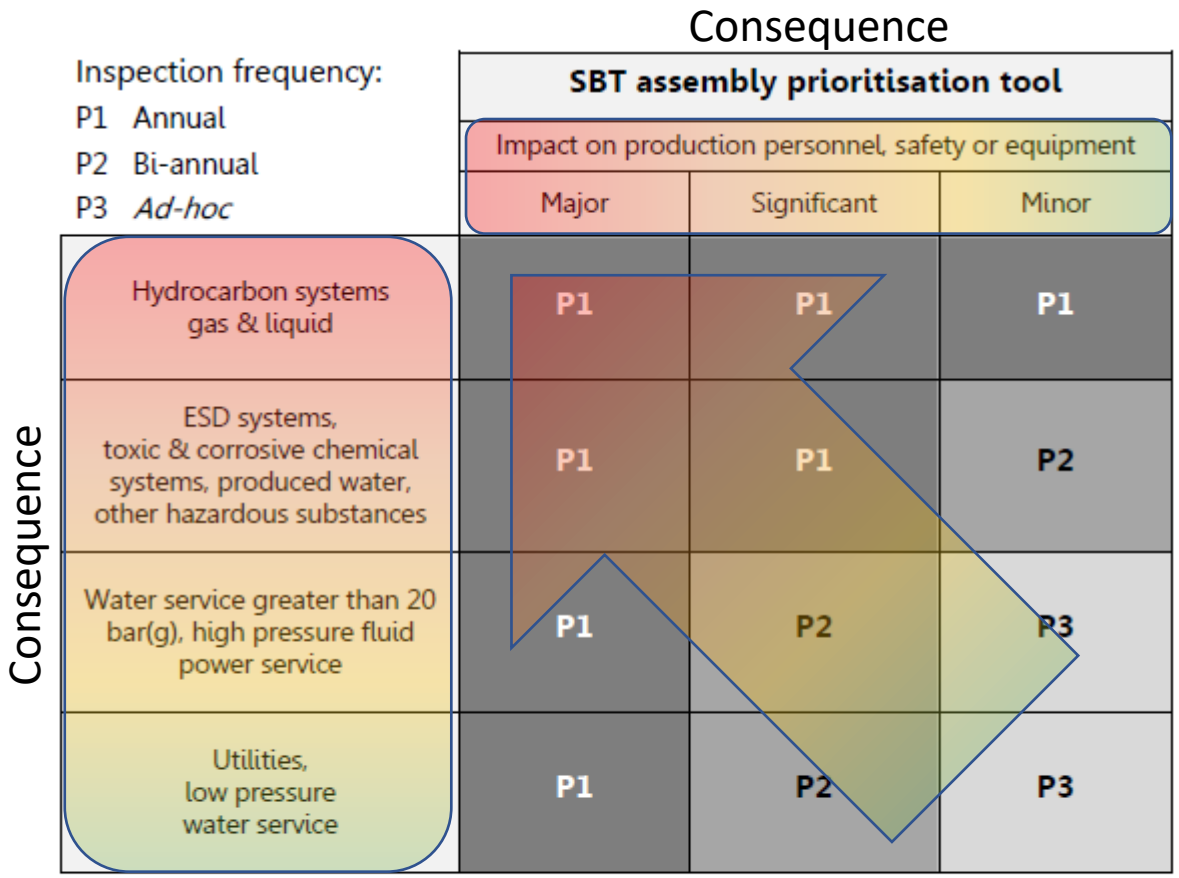

Figure 8 Example of system prioritisation for inspection of SBT assemblies

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3 x 4 Risk Matrix

'Risk' diagonal bottom right to top left

Consequence horizontal right to left Minor to Major

Consequence vertical upwards by fluid hazard

No Likelihood in this "Risk Assessment"

Weighting

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Inspection frequency: P1 Annual P2 Bi-annual P3 *Ad-hoc*	SBT assembly prioritisation tool Impact on production personnel, safety or equipment		
	Major	Significant	Minor
Hydrocarbon systems gas & liquid	P1	P1	?
ESD systems, toxic & corrosive chemical systems, produced water, other hazardous substances	P1	P1	?
Water service greater than 20 bar(g), high pressure fluid power service	P1	P2	P3
Utilities, low pressure water service	?	?	P3

Figure 8 Example of system prioritisation for inspection of SBT assemblies

Note 1: P1 being the highest priority and P3 the lowest

Very common

Less Common

Very rare / Possibly non-existent?

“We follow the Energy Institute SBT Guidelines.”

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Inspection frequency: P1 Annual P2 Bi-annual P3 *Ad-hoc*	**SBT assembly prioritisation tool**		
	Impact on production personnel, safety or equipment		
	Major	Significant	Minor
Hydrocarbon systems gas & liquid	P1	P1	P1
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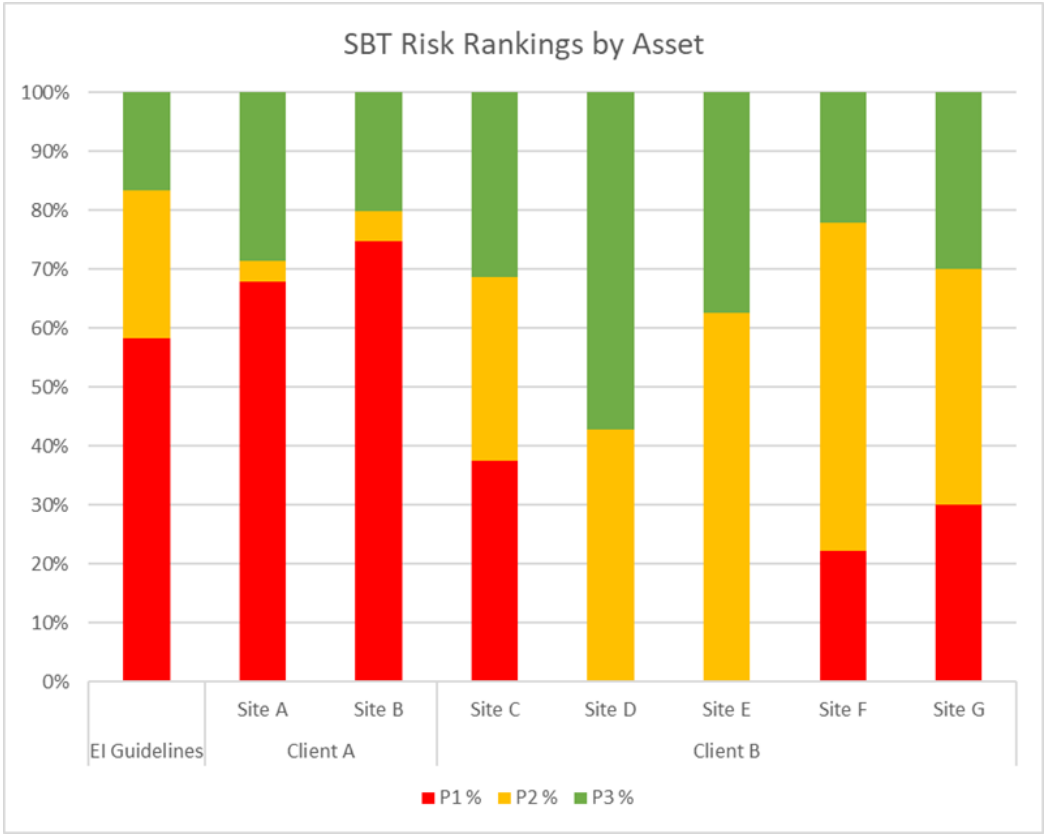

Can we overlay a Likelihood?

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Anomaly Type	%age
Under-tightening of SBT connection	31.8%
Corrosion/damage of support clamps or clamp fittings	14.4%
Inadequate support	8.7%
Improper assembly of connection	7.4%
Fretting (with structures/components)	5.7%
Mechanical Damage	4.5%
Pitting corrosion	3.8%
Damaged or Incorrect Clamp	3.1%
Missing valve handles	2.9%
Crevicing / scoring	2.6%
Galvanic Corrosion	1.8%
Leaks, weeps and seeps	1.8%
Mixture of components from different manufacturers	0.8%
Vibration (likely to lead to fatigue failure)	0.8%
Improper system tagging (relevant to P&ID)	0.3%
Bend anomalies	0.1%
Inadequate length to the first bend	0.1%
Interchange of materials	0.1%
Interchanging of metric or imperial connectors	0.0%
Poor quality helixes	0.0%
Stress Corrosion Cracking	0.0%
See comments	9.3%

Client A Anomaly distribution

Location	Percentage
Fittings	68.2%
Supports	17.5%
Tubing	4.7%
Other	9.6%

HSE Recordable incidents

Location	Percentage
Fittings	75.0%
Supports	4.2%
Tubing	8.3%
Other	12.5%

Offshore Hydrocarbon releases 2016-2021.
Offshore Statistics & Regulatory Activity Report 2021

Ask yourselves

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What is your Likelihood of an SBT failure?

What is your subsequent Risk from that failure?

TRAC Energy SBT Risk Assessment

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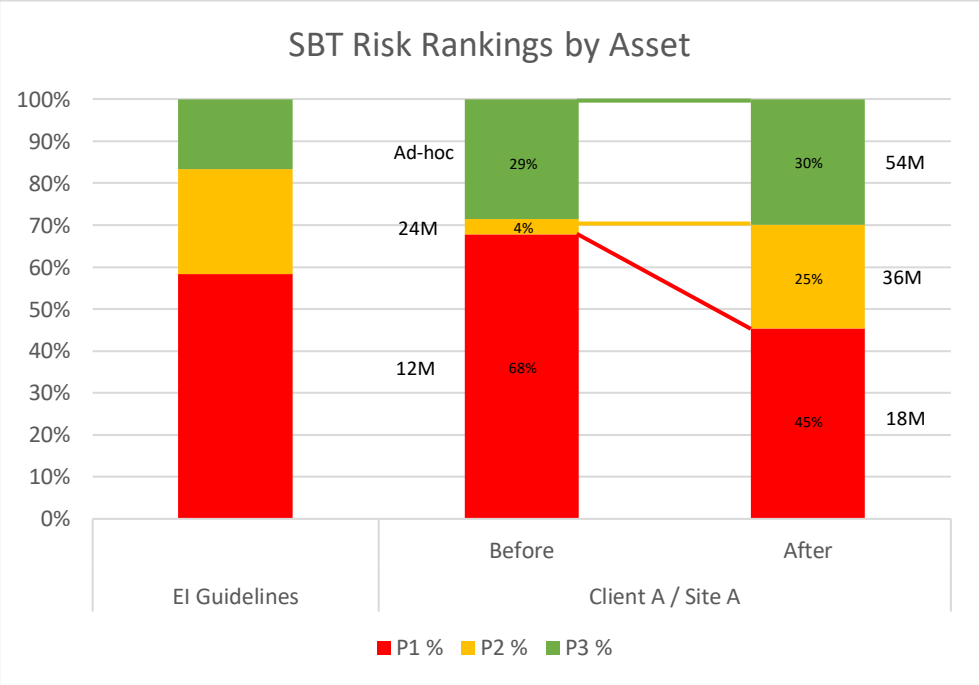
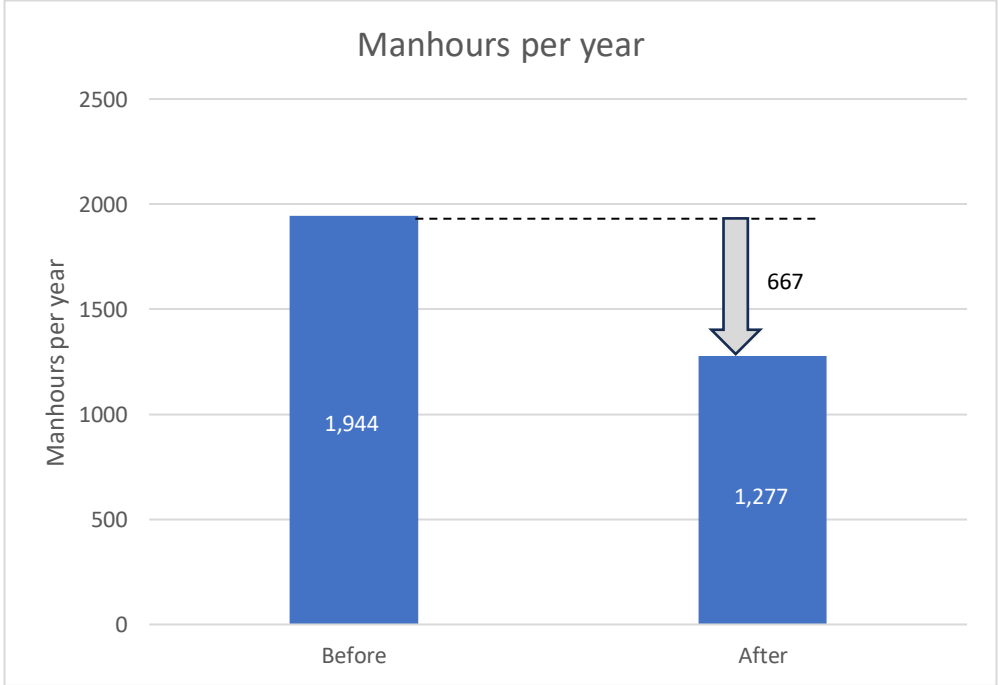
It still allows you to say “We follow the Energy Institute Guidelines.”

…but having restructured their Risk prioritisation, it has reduced Client A’s SBT inspection burden by ~33%, and so far has resulted in 3 years with Zero SBT failures on any of our SBT managed assets.





Contact us

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Kevin Morice
Deputy Technical Authority – Pressure Systems
kevin.morice@trac.com

TRAC Energy
energy@trac.com
01224 725800