**BACKGROUND**
Recent events have propelled major oil & gas companies to work towards an evergreen functional safety management plan, including monitoring the performance of protection layers. Work has been done to synchronize:

<table>
<thead>
<tr>
<th>Process Hazard Analysis</th>
<th>Layer of Protection Analysis</th>
<th>SIL Calculations &amp; Verification</th>
<th>Safety Requirements Specification</th>
</tr>
</thead>
</table>

**WHAT EVENT(S) AM I PREVENTING?**
- SAFETY: single fatality+
- COMMERCIAL: $5–100 million
- ENVIRONMENT: restoration ⇒ 1 year

**HOW AM I PREVENTING?**
- **10x** less likely with a SIL 1 SIF
- **100x** less likely with a SIL 2 SIF

**5 YEARS**
Until now the customer was unable to compare process historian data with design intention. During the 5 year review of the SIS

**5 DAYS EFFORT**
Day 1 – interface design with historian
Day 2 – import historical trip events
Day 3 – analyze and identify bad actors
Day 4 – take action to fix inoperable SIFs
Day 5 – update MoC to handle in future

**2 BAD ACTORS**
- ZERO – the number of test records on SIFs with excessive trip devices. Maintenance dispatched to test and replace immediately
- SIL 1 SIF – unable to perform as required
- SIL 2 SIF – unable to perform as required

**$100+ MILLION**
Previously invisible risk removed from the business. Without the SIFs in place, loss of containment events with significant safety, environmental, and/or commercial impacts were more probable.

**Monitor.**
**Identify.**
**Sustain.**

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