

## Discussion Group T14: Verification of Protective Systems

### Leaders:

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- Stan Stevenson (Siemens)
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### Suggested Topics:

- Like machinery, instrument systems also have reliability limits and needs.
- How often should we test interlocks and overspeed trips? How do we do it right?
- Do interlocks sometimes fail to save a machine from a wreck? Why?
- What about risks for people if instrument systems fail?
- How safe is safe enough? Can we put numbers on instrument system reliability?
- What are layers of protection analysis (LOPA) and how can it help?
- What are safety integrity levels (SILs) and what's a PFD? How is it used?
- How are surge system (recycle/vent valves) tested before a machine is put online?
- Are X-Head vibration sufficient for shutting down major Reciprocating Compressors, and how is trip tested?
- Dependability of Level shutdown on reciprocating compressors: Guided Wave Radar level detection & shutdown versus Magnetic Float Level detection & shutdown?
- API 612 recommends shutdown on failure of governor speed sensors; how is this issue handled with mechanical/hydraulic governors?
- What is recommended practice for testing auxiliary lube oil pumps? (Who is doing what?)
- Erroneous SIS shutdowns: How are they handled?
- Are alarms and trips categorized (critical/ non-critical) and what is the frequency for testing each?
- Is anyone extending over speed trip testing frequency and what is the basis?
- Are discharge butterfly valves checked during machine overhaul and how can you rate their dependability?
- How are trips arranged for dual drivers e.g. a turbine and an expander driving a blower?
- What is the industry standard for protecting reciprocating compressors and how are these protection devices tested?