

## Discussion Group T6: Overspeed Trip Systems

### Leaders:

- Bruce Bayless (Valero)
- Kevin Yates (Dow)

### Suggested Topics:

- Electronic overspeed detection system (speed sensors and logic devices)
  - Number, logic
  - Speed sensing gear
  - Sensor type
- Electro-hydraulic solenoid valves
  - De-energize to shutdown (API default)
  - Number, location, orientation (vertical or horizontal)
  - Built in position sensor
  - Detection system to alarm on failure of the coil; change online
  - Capable of on-line testing without defeating trip protection
- Emergency trip valve(s)/combined trip and throttle valve(s)
  - “Mechanical latch type” and “Oil operated/actuated type”
  - Periodic online exercising - partial stroke test (frequency)
  - Full instrument loop “proof” test (frequency)
  - Valve overhaul (repair shop, overhaul frequency, etc.)
  - Systems with duplicate trip valves arranged in parallel
  - OEM upgrades (i.e. metallurgy, etc.)
- Non-return valve on extraction turbines
  - Overspeed initiates a signal to close non-return valve
  - Types (spring-loaded hydraulic actuated cylinder; pneumatic actuated cylinder)
  - Valve overhaul (repair shop, overhaul frequency, etc.)
  - Testing
- Mechanical overspeed system
  - Test frequency
- Exhaust vacuum breaker
- “Back up” coupling feature for steam turbine applications to stay coupled to load/inertia upon main coupling failure
- Other API 612, 611, 670 and ASME PTC 20.2 items