

■ Steam Turbine - Protective Systems Checklist

Device	Function	Test/Check
Overspeed trip	Trips at ~110% rated speed (mechanical or electronic)	Periodic live overspeed test or simulated e-trip per site policy
Trip & throttle valve	Fast steam cutoff on trip signal	Exercise/partial-stroke regularly; verify closing time
Governor	Speed/load control (NEMA class per service)	Response test; hunt/instability check
Low lube oil pressure trip	Protects bearings on oil loss	Trip setpoint test; standby pump auto-start
Vacuum/backpressure trip	Protects exhaust end (condensing units)	Setpoint verification
Axial position trip	Thrust failure protection	Probe calibration; alarm-trip margins

■ Operating Cautions

Condition	Risk
Fast cold start	Rotor/casing differential expansion - rubs; follow OEM ramp rates
Water induction	Blade destruction; verify drains open on warmup, steam quality
Extended low-load (condensing)	Last-stage blade flutter/erosion; exhaust hood overheating
Governor hunting	Coupling and gear distress; process instability

■ Efficiency Watch Items

First-stage pressure vs load (fouling indicator) | Steam rate trend vs baseline | Gland seal steam condition | Condenser backpressure vs cooling water temp | Deposit indicators: pressure-stage characteristic shifts