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Document	TE-RA-04
Revision	0
Date	4 November 2026
Subject	Completed risk assessment: SI9 Facility equipment maintenance

Completed risk assessment

GE Vernova work type SI9, Facility equipment maintenance: 4k inspection controls scope on a gas turbine generator at an onshore facility

Completed safety risk assessment (SRA) for a Telic assignment in this GE Vernova work type, prepared with the method of TE-RA-01: hazards identified per task step, risk evaluated as likelihood (L, 1 to 5) x consequence (C, 1 to 5), control measures per task step (engineering, procedural, PPE) and the residual risk with the controls in place. High 12 to 25, Medium 5 to 11, Low 1 to 4.

Assignment	Controls and instrumentation scope of a 4k inspection on a gas turbine generator package at an onshore gas processing facility: calibration of pressure and temperature transmitters, fuel metering valve and bleed valve stroke checks, replacement of an I/O module in the turbine control panel, enclosure CO2 inhibit handling, loop checks and start-up support.
Work type	SI9 Facility equipment maintenance; lone working elements per TE-RA-02
Date and duration	4 November 2026, 5 days, day shift
Assessed by	Remco Petersen, Director / field engineer, Telic Engineering B.V., with the client maintenance supervisor and isolation authority
Reference documents	TE-PRC-06 (facility equipment maintenance), TE-PRC-10 (LOTO), TE-RA-01 section 7, OEM maintenance procedure, site permit-to-work and isolation standard
Isolations (site isolation certificate)	Starter and start inhibit; fuel gas double block and bleed; hydraulic/lube oil pumps and accumulators bled; 110 VAC and 24 VDC panel supplies for the module slot; CO2 system inhibited at release panel. Personal Telic lock on the lock box.

1. HAZARDS IDENTIFIED FOR EACH TASK, 2. RISK EVALUATED, 3. CONTROL MEASURES FOR EACH TASK

#	Task step	Hazard identified	L	C	Risk	Control measures (E = engineering, P = procedural, PPE)	L	C	Res.
1	Permit, isolation confirmation and pre-job briefing	Wrong or incomplete isolation, misunderstanding of scope	3	4	H 12	P: all energy sources listed with the isolation authority (TE-PRC-10 section 2), permit and isolation certificate read and signed, briefing with control room, scope and hold points agreed.	1	4	L 4
2	Apply personal lock, verify zero energy	Residual electrical, hydraulic or fuel energy; unexpected start	3	5	H 15	P: personal lock and tag on lock box (TE-PRC-10 sections 4 and 7), live-dead-live voltage test, gauge at zero and bleed opened, try-start with operator, CO2 inhibit verified at panel (section 3). E: CAT III meter, bleed points. PPE: safety glasses, gloves.	1	5	M 5
3	Transmitter calibration on the package (pressure and temperature loops)	Release of trapped pressure, hot surfaces, process fluid contact	3	3	M 9	P: manifold isolated and vented before disconnecting, cool-down confirmed, calibration with hand pump and reference, site permit for the area. E: rated fittings. PPE: safety glasses, chemical-resistant gloves, FR coverall.	1	3	L 3

4	Fuel metering and bleed valve stroke checks	Fuel gas release, fire; actuator movement injuring hands	2	5	M 10	P: fuel isolated and vented by operations with gas-free test, stroke checks with fuel isolated and control room informed, hands clear of linkages, two persons. E: double block and bleed. PPE: FR coverall, personal gas detector, gloves.	1	4	L 4
5	Replacement of I/O module in the control panel	Electric shock from adjacent live circuits, arc flash, damage to the control system	3	4	H 12	P: panel supplies for the slot isolated and verified, adjacent live sections barriered, ESD precautions, OEM procedure, backup of configuration before and functional test after, not alone (TE-PRC-05). E: dead-front design, insulated tools. PPE: safety glasses, insulated gloves where 110 VAC remains in the panel.	1	4	L 4
6	Enclosure entry for instrument work	CO2 discharge, noise, hot surfaces, unexpected start, confined working	2	5	M 10	E/P: CO2 inhibited and locked under permit and verified, start inhibit locked, cool-down, enclosure entry per site procedure with standby person, lighting and ventilation on. PPE: hearing protection, gloves, hard hat.	1	4	L 4
7	Loop checks, restore isolations, start-up support	Unintended valve movement or trip, people in the module, energy returned while someone is working	3	4	H 12	P: TE-PRC-10 restore sequence (area cleared, covers on, own lock removed last by owner, site returns isolations), loop checks agreed with control room, module cleared before start, return-to-service checklist, hold points and abort criteria. PPE: hearing protection, FR coverall.	1	4	L 4
8	Manual handling of I/O modules, calibration case and tools	Back injury, hand injury	3	2	M 6	P: weight checked, calibration case on trolley, two-person lift above 20 kg. PPE: gloves, safety footwear.	1	2	L 2

PPE REQUIRED FOR THIS ASSIGNMENT

Hard hat, safety glasses, safety footwear S3, FR coverall, gloves (mechanical and chemical-resistant), hearing protection, personal gas detector (bump-tested daily); insulated gloves and arc-rated face protection for panel work with 110 VAC present.

NOTES, BRIEFING AND SIGN-OFF

Reviewed with the maintenance supervisor and isolation authority at the permit briefing. Isolation list confirmed against the single-line diagram and P&ID; zero energy verified by the Telic engineer personally before each intrusive step and again after the lunch break (TE-PRC-10 section 3). No change to control settings without the client's written approval; configuration backup taken before module replacement. LMRA before each step.

Prepared by	Remco Petersen, Director / field engineer, Telic Engineering B.V.
Reviewed with	Site supervisor / area authority at the pre-job briefing; aligned with the site risk assessment and permit for the task
Briefed to	All Telic personnel on the assignment before start of work; last-minute risk assessment repeated before each task and at every change of conditions
Stop work	Any person stops the work when a hazard is not controlled as described here (TE-PRC-09)

Signed on behalf of Telic Engineering B.V. (digitally signed)
Remco Petersen, Director · 4 November 2026

Digitally signed by Remco Petersen
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Date: 04/November/2026