

Task Risk Management

Task Scoring Guidelines (Operations & Maintenance)

For each factor the text above the dotted line is more related to operations tasks and text below the dotted line is more related to maintenance. However, either can be used for guidance when assigning scores.

	None (score 0)	Low (score 1)	Medium (score 2)	High (score 3)
How hazardous is the system involved?	Non-hazardous system (operations)	Small amount of low hazard / condition	Large amount of low hazard or small amount of high hazard	High amount of high hazard / condition
	Non-hazardous system (maintenance)	Task carried out after hazardous system has been proven hazard free	Actions taken to remove hazard, but some may remain	Work carried out whilst adjacent/related systems remain live
To what extent does the task involve the introduction of energy or an ignition source?	No ignition / energy sources	Low pressure or temperature rise	Medium pressure or temperature rise. Combustion engine.	High pressure or temperature rise
	No possibility of a flammable atmosphere	Electrical switching. Electrical equipment used.	Potential for sparks or hot surfaces	Flames
To what extent does the task involve changes to the operating configuration?	No change required	Simple valve changes (few valve moves)	Complex or multiple valve changes. Use of temporary connections	Complex and multiple valve changes. Use of temporary bypass line.
		Connect/dis-connect points designed for routine use (e.g. quick coupling, plug and socket)	Make/break small number of bolted joints	Complex assembly/disassembly. Multiple components.
What is the potential for error in performing the task?	Fully automated task	The potential for error cannot be ruled out although there is no specific concern	There is a recognised possibility for error	There is a significant possibility of error Task requires constant vigilance.
	Very simple and errors would have no consequence	A 'normal' task	Complex task	Errors are likely to be unrecoverable No automated protection.
To what extent could the task affect performance of a safety system?	No systems overridden or defeated	Task involves a deviation from an original procedure or design.	Warning devices may be made inoperable (e.g. alarms, gauges, meters)	Trip systems overridden. Safety valves isolated.
	No safety system affected by task	May affect system calibration. Safety system may not operate as normal.	One of several layers of protection may be made inoperable	Multiple layers of protection may be made inoperable. Potential for common cause failure

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Human Error Analysis (Task HAZOP)

General

- Omitted (not carried out);
- Incomplete;
- Performed on the wrong object;
- Mistimed (too early or late);
- Carried out at the wrong speed (too fast or slow);
- Carried out for the wrong duration (too long or too short);
- Performed in the wrong direction.

Actions

- Misaligned
- Too much or little force/effort.

Transmitting information

- Incorrect,
- Unclear or
- Ambiguous.

Receiving information

- Wrong data may selected
- Misinterpreted.

Performance influencing factors¹

Job factors

- Clarity of signs, signals, instructions and other information
- System/equipment interface (labelling, alarms)
- Difficulty/complexity of task
- Routine or unusual
- Procedures inadequate or inappropriate
- Preparation for task (e.g. permits, risk assessments, checking)
- Time available/required - Divided attention
- Tools appropriate for task
- Communication, with colleagues, supervision, contractor, other
- Working environment (noise, heat, space, lighting, ventilation)

Person factors

- Physical capability and condition
- Fatigue (acute from temporary situation, or chronic)
- Stress/morale
- Work overload/underload
- Competence to deal with circumstances
- Motivation vs. other priorities

Organisation factors

- Work pressures e.g. production vs. safety
- Level and nature of supervision / leadership
- Communication
- Manning levels
- Clarity of roles and responsibilities
- Peer pressure
- Consequences of failure to follow rules/procedures
- Organisational learning (learning from experiences)
- Organisational or safety culture, e.g. everyone breaks the rules

¹ Reference – www.hse.gov.uk/humanfactors/topics/pifs.pdf

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