

Task

Maintenance Error



Maintenance Error: failing to perform a task or performing it incorrectly during routine testing, checking, servicing or breakdown repair.

Errors can result in equipment malfunction or in an incident causing damage to plant or harm to people or to the environment.

Human errors and violations in servicing and repair tasks have many of the same root causes as errors in other types of task. However, with maintenance, a fault introduced into the system by human error today might have no effect for several months and then cause a sudden unexpected hazardous breakdown or incident.

Learning more about maintenance error

If the answer to any of the questions below is 'no', then you need to take action

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| 1. | Are maintenance tasks risk assessed including identification of consequences of maintenance errors? | ☐ |
| 2. | Are you fully aware of what maintenance errors could lead to an incident? | ☐ |
| 3. | Is there a clear strategy and plan for maintenance? | ☐ |
| 4. | Are resources allocated and roles, responsibilities and accountabilities clearly identified? | ☐ |
| 5. | Are there effective defences in place to ensure maintenance errors are unlikely to result in incidents?
Examples of best practice defences, which may be included in industry guidance or law, are: <ul style="list-style-type: none"> • Administrative controls (permits, procedures, checklists, lock-out tag-out, independent verification or 'four eyes' checks). • Management controls (supervision and checking of tasks). • Competent maintenance teams. • Physical barriers and guards. | ☐ |
| 6. | Are maintenance tasks well designed in terms of environment, surroundings, access, lighting, time allocated, and individual or collective protection measures? | ☐ |
| 7. | Do managers and supervisors perform walk around inspections of maintenance tasks whilst in progress? | ☐ |

8.	Does the incident investigation process include human factor lessons learned, from maintenance near misses and accidents?	☐
9.	Is progress of maintenance work, including status of equipment, communicated well during and between shifts?	☐
10.	Is there a training and competence management system for maintenance teams?	☐
11.	Is there a process to assess the capabilities of contractors for specific tasks?	☐
12.	Do plans take consideration of the supervision of temporary or inexperienced maintenance technicians and contractors?	☐
13.	Is the ease of maintaining systems considered during design of installations or equipment?	☐
14.	Do managers or supervisors look for early signs of problems (for example a large backlog of jobs; excessive repair times; adverse feedback from staff)?	☐
15.	Are maintenance requirements assessed during Management of Change?	☐
16.	Are there measures in place that monitor safety and effectiveness of maintenance activities?	☐
17.	Is there a program to address continuous improvement in maintenance activities?	☐
18.	Are human factor learnings taken into account when reviewing maintenance instructions?	☐

What can we do about it?

Management responsibility:

The factors that can lead to human error in maintenance are basically the same as for other types of job.

To avoid such errors and encourage good performance in maintenance work, it is important that management should, as a minimum, ensure that there are:

- Enough people competent to perform and to check the specific maintenance task.
- Adequate supplies of spares and consumables to enable work to progress as planned.
- Good communications so that maintenance teams (and others who might be affected by maintenance, including contractors) know what work has to be done and where (particularly important at shift handover).
- Effective work permit system and isolation procedures in use. These are crucial and should be developed against formal safety analyses so that major hazards, as well as personal/occupational safety are considered.
- Contingency plans; for example, if a job looks as if it might overrun, or if other problems arise.
- Systems for investigating problems that occur and for making improvements.
- Structured processes to identify and assess human error potential especially in safety critical maintenance tasks (and to reduce this potential).

And that:

- All preventive maintenance work is carefully planned and scheduled.
- Breakdown maintenance, although not scheduled is also carefully planned.

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