




Sterling Chemical Malta Ltd

OPERATIVE INSTRUCTION: MAINTENANCE AND CHECK OF EQUIPMENT AND DEVICES

REVISION HISTORY

Revision Date	Revision Number	Sections affected	Description of the change
28.02.2014	00		First issue

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1. PURPOSE

This procedure sets the main directions to be followed to carry out maintenance activities on equipment, machinery and devices in order to:

- ensure that personnel responsible for maintenance operations carry out such operations in a safely way;
- prevent and/or reduce the incidence of damage to persons, properties or to the environment arising from breakages, malfunctions or an excess of work;
- ensure maintenance plans for preventive and programmed activities are observed;
- record all maintenance activities carried out in order to ensure equipments, machineries and workplaces comply with all safety regulations.
- Guarantee all produced wastes are correctly managed.

2. FIELD OF APPLICATION

This procedure applies to all maintenance activities, inspections, monitoring and periodic checks, planned and unplanned, carried out by the company personnel or by staff from external companies and certified organizations.

3. REFERENCE DOCUMENTS


Reference documents to better comprehend this procedure are the followings:

- Maintenance plan for process plants (Maintenance Plan MN.SOP.001 and Maintenance plan department G / H MN.SOP.004) and relevant SOP
- Guideline to carry out maintenance activities
- ISPESL guidelines "Periodic inspection of FORKLIFTS TRUCKS maintenance and efficiency state and relative equipments"
- Instructions for fire prevention system maintenance and inspection
- Specific instructions on individual maintenance operations.
- Guidelines for the identification of Best Available Techniques (BAT) in order to obtain the Integrated Environmental Authorisation (IEA) released by national and regional competent authorities.

4. BASIC DEFINITIONS

To totally comprehend this procedure you can use the following basic definitions:

- Preventive maintenance: This is a maintenance carried out at predetermined intervals or according to prescribed criteria. It is intended to reduce the likelihood of failure or degradation of machineries, equipments and workplaces;
- Diagnostic maintenance: it is a type of preventive maintenance carried out as a result of the identification and measurement of one or more parameters and after evaluating the remaining time before machinery breakdown according to appropriate models.

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- Corrective maintenance: Maintenance that is done after detecting a failure in order to bring a device back to its previous functioning state.
- Work equipment: it refers to any machine, device, tool or installation, meant as the complex of machines, equipment and components required for the implementation of a production process, to be used at work.
- Management: Collection, transport, recovery and disposal of waste, including the supervision of such operations;
- Environmental protection system: Equipment/instruments acting as a "filter" between work activities emissions and the natural environment, such as activated carbon filters, HPE filters, extractor fan, tanks/underground tanks, differential pressure gauges, scrubber, volume meter for water drains, Imhoff septic, biological tanks, ATU...
- Best Available Techniques: Guidelines that define which are the best techniques to be adopted in order to achieve a minimum environmental impact with the maximum efficiency according to the specific planning sector

5. RECIPIENTS

This procedure addresses to the following operators working in the organization:


- RSGA/RSGS;
- The operator responsible for waste documents management;
- Maintenance manager
- Maintenance clerk
- EH&S office;
- Departmental manager;
- Production supervisor;

6. PROCEDURES

6.1 Requirements to safely carry out maintenance operations

The person in charge of maintenance has to make sure that the staff responsible for the activity has been well trained on all regulations concerning the type of maintenance to be done. For each type of intervention, that must be done by internal operators, a special operating instruction "**Instruction for plant and equipment maintenance activities MIO_4.4.6-I2**," was prepared according to directions provided in the guideline for maintenance activities of Sterling Chemical Malta Ltd, which provides the following information:

- Maintenance operations to be done
- How to use chemicals necessary during maintenance operations
- PPE to be worn during maintenance operations
- Precautions to be followed in order to safely carry out maintenance activities (e.g, always do maintenance activities when the machine is off, identify the area to be serviced in order to avoid that others could restart the machine by mistake)
- Regulations to carry out maintenance operations at a certain high, if necessary.

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- Regulations for the execution of activities in isolated places
- Regulations to carry out activities in ATEX areas
- Regulations prescribed by operational instructions relating to the environment
- Other relevant information to carry out maintenance activities.

6.2 General requirements for safe work equipments

Work equipment made available for workers must comply with the European specific laws and regulations in force.

When selecting work equipment Safety assistant takes into account:

- conditions and specific characteristics of the work to be done;
- which are the risks of a specific workplace;
- risks coming from the use of the equipment itself;
- risks coming from disturbances with other equipment already in use.

When purchasing a work equipment, the departmental manager in charge, fills in the form MM_4.3.1-A and delivers it to RSGS. Safety Assistant check if the equipment complies with law regulations, by acquiring all the documentation supplied with the equipment (use and maintenance booklets, certificates of conformity, etc.). Documentation is correctly filed by the departmental manager, making it available to operators who use equipment and to maintenance staff. After the new acquisition, the Safety office assesses all risks associated with the introduction of the new equipment in the plant and, if necessary, arranges for a risk assessment update to be done by following indications provided in procedure **MPS_4.3.1, Dangers identification and risk assessment**.

Furthermore, when it is required by the regulation on force, Maintenance Manager notifies the relevant bodies of the commissioning (e.g. pressure equipment, lifting equipment).


6.3 Maintenance request

Maintenance requests are made by the department manager by following instructions provided by the quality system P.SOP. 012.

6.4 Planning of maintenance and safety checks and inspections

As far as process plants, maintenance manager has to issue and keep the maintenance plan updated. It reports all maintenance activities to be implemented for each parts of the plant, specifying if they must be carried out by internal or external operators. According to indications provided by the maintenance plan, the maintenance manager carries out a maintenance program **MN.SOP.003** and charges each serviceman with a single maintenance operation. At the end of maintenance activities, the operator notices the activity on the maintenance sheet and sends it to the manager.

As far as equipment and machinery that do not belong to process plants (e.g. portable power tools, and canteen extractor fans) and components of systems that require compulsory inspections, the

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person in charge of maintenance has to issue an **Inspections and maintenance operations schedule (MR_4.4.6-I1)** that shows the following information:

- identification of the equipment and machinery (including lifting equipment);
- description of maintenance operations to be done
- the body responsible for the control specifying whether internal or external
- the frequency of maintenance, monitoring or verification operations
- the schedule with all arranged dates

The maintenance manager has to schedule both maintenance and monitoring activities (internal and external) and periodic testing carried out by control bodies or public or private entity authorized by the Ministry of Labour, Health and Social Policies.

In order to plan maintenance and monitoring operations, the maintenance manager takes into account the following elements:

- all uses that can damage the equipment liable to result in dangerous situations for safety and the environment
- provisions under the law in force
- directions provided by the manufacturer are shown in the use and maintenance booklets, or in good manufacturing practices (GMP)
- reports received from other business functions about breakdowns, faults or accidents related to the use of the equipment
- analysis of accidents due to non-safety equipment
- long periods of inactivity or wear of the equipment
- How previous operations were carried out
- frequent extraordinary maintenance operations
- any other information that is relevant to ensure the equipment safety state and its efficiency also in terms of environmental performances


For scheduling periodic inspections by authorized bodies please follow indications in Annex VII of Legislative Decree 81: 152/2008 and subsequent amendments

Checks and maintenance operations of any equipment or machinery usually involves the examination and verification of these features:

- functionality;
- state of the mechanical and electrical section;
- worker's safety when using such equipment;
- equipment cleaning, sanitation and hygiene (when expected).

6.5 Maintenance operations in ATEX areas

If the contract company staff have to enter into ATEX areas (or EXAT areas -potentially explosive atmospheres), the departmental manager that requires the intervention has to fill and get the contractor manager to sign a **Work Permit (MM_4.4.6-H1)** which lists all risks relative to the area in which the contract company staff will work.

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Executor company manager will look over the relevant measures and has the duty to notify his staff on regulations and protective equipment to be used.

Each signature on the work permit - which must be specific in relation to different types - identifies responsibility for the accuracy of the instructions given, the information provided and controls carried out.

6.6 Planning of maintenance and safety checks and inspections

Maintenance and monitoring activities, as well as inspections and periodic checks of the equipment are carried out according to schedule.

If such activities are carried out by Sterling internal staff, first it has to be appropriately formed according to specific work instructions. At the end of the activities, the operator has to record the operations on the equipment maintenance sheet or directly on the inspection log by specifying the following information:

- date in which the operation was performed
- detailed description of the operation
- All possible repair parts installed
- safety checks carried out
- his name and signature

If the operation applies to dust filters, maintenance manager has to notify RSGA about it so that he can record the pressure of filter gauges as well as faults or any cleaning operation carried out.


If the operation is carried out by external companies or by organizations certified for periodic monitoring, checks are recorded by the external operator directly on his sheets which will be delivered to the maintenance manager. Furthermore, the maintenance manager has to update equipments sheets or logs.

The maintenance manager has to update the schedule and notify the Safety officer or RSPP on any issues related to the single operation (detected both by internal personnel and external organizations), by using the non-compliance form. Please refer to **MPA_4.5.3 Enquiry, Complaint, Non conformity, Handling**.

If you need for a not programmed maintenance operation or service to be done, the maintenance manager gives detailed instructions to qualified personnel on the type of action to be taken, or as an alternative, he charges external companies or organizations with performing the operation. Also in this case, activities are recorded following the same instructions above mentioned.

7. MANAGEMENT OF POSSIBLE ENVIRONMENTAL INTERACTIONS

Equipment and/or machinery maintenance activities can affect the environment. All possible consequences and the relative behavioural regulations within the SGAS system that the Technical Office and the Process Engineer has to observe to ensure environment safeguard are shown below:

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1. New waste production: In case of production of a new waste or a waste whose proper management is unknown please follow instructions in procedure **MIOA_4.4.6-A**;
2. Standard waste production: In case of production of wastes such as spent activated carbons, water wash, scrubbers; please follow the operating instruction **MIOA_4.4.6-A**
3. Environmental protection systems: Please follow the **Annual maintenance plan**;
4. Accident: In the event of an accident involving the environment please fill in the form **MM_4.5.3-B "Form accidents/near misses'** and follow procedure **MP_4.4.7" Emergency training and rections"**.
5. Design and choice activities concerning the replacement of mechanical parts has to be carried after consulting the Guideline issued by the Ministry of the Environment. The first option to be considered will be suggested by BAT in the specific area. This is not a mandatory option. In fact, a cost-benefit balance has to be made by taking into account all actual results achievable with respect to environmental performances as well as the costs that the organization has to incur to implement BATs.

8. APPENDIX

Nil.