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DPS SOP


Monitoring of Emissions to Marine Water

Installation Discharge Water Sampling, Analysis and Reporting Requirements

Revision List


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1. Aim and Scope

The objective of this procedure is to establish the monitoring obligations of the emissions to marine water in respect of sampling and analysis for various pollutants levels at the Delimara combustion installation in line with the IPPC permit and legal requirements.

2. References

EN ISO 14001:2004, clause 4.4.6

EN ISO 14001:2004, clause 4.5.1

EN ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

L. N. 234 of 2002 Integrated Pollution Prevention and Control Regulations, 2002

L.N. 9 of 2013 Industrial Emissions (Framework) Regulations, 2013

L.N. 152 of 2007 European Pollutant Release and Transfer Register Reporting Obligations Regulations, 2007

EU Directive 2010/75/EU: on industrial emissions (integrated pollution prevention and control) (Recast)


Regulation (EC) No 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC

MEPA DPS IPPC Permit, latest version

3. Terms and Definitions

Sampling: the process of taking a small quantity of discharge water as representative of the outfall, and in line with the ISO standards as specified in the IPPC permit.


Analysis: the process of analysing the sample for the various pollutants in line with acceptable EN, ISO, or other equivalent Standard Methods, as defined by the EU and national legislation, and as stated in the IPPC permit

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Emission Limit Value:	(ELV) the permissible quantity of a pollutant contained in the discharge water specified in mg/litre and as given in the IPPC permit
Limit of Detection:	(LOD) the resolution/ accuracy level of the testing equipment or the standard method.
AER:	IPPC Annual Environmental Report
E-PRTR:	European Pollutant Release and Transfer Register
MEPA	Malta Environment and Planning Authority

4. Responsibilities

Station Manager, DPS:	Carries out the overall management of power station with the help of the Assistant Managers. Ensures that emissions to marine water are within acceptable limits as specified in the IPPC permit.
Chemist:	Reports to the station manager. Responsible for sampling and taking the necessary measures to get the samples analysed by a laboratory accredited to ISO/IEC 17025: 2005, preferably for all the pollutants required to be sampled in the IPPC permit. Evaluates/ reviews third party laboratory reports and submitted to station manager and RAO.
PE, Regulatory Affairs:	Reviews reports generated by the third party laboratory and data recording and reporting to MEPA of pollutants as per IPPC obligations.
Third Party laboratory:	Accredited to ISO/IEC 17025:2005, hired for carrying out tests for the pollutants and preferably the laboratory scope of accreditation covers all the pollutants listed in the IPPC permit

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5. Operative Rules

5.1 Water Discharge Monitoring

The water discharges into the marine water shall be monitored in line with the obligations specified in the IPPC permit. This applies for:


- Location of the sampling points
- Sampling frequencies
- Choice of testing standard methods for pollutants whose LOD levels are within the ELV of the respective pollutant and preferably in line with the IPPC permit obligations
- Checking for compliance with the ELV's specified in the permit
- Reviewing cases of exceedances and justification for such exceedances
- Taking corrective or preventive action as necessary
- Reporting as necessary to MEPA as and when obliged by the permit

5.2 Water Discharge Sampling: Locations

The sampling location points shall be such that the samples are representative of the respective discharge points and inlet as specified in the IPPC permit. Location of the sampling points shall be with agreement between the station manager and the chemist in order to ensure easy access and the validity of the samples. A site plan of the location points shall be made available, showing the MEPA approved discharge points and their corresponding sampling points.

Please refer to **Annex 1**.

The PE should ensure that sampling is always carried out at the agreed location points and the location points are marked on an appropriate plan for reference purposes.

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5.3 Water Discharge Sampling: Sampling Process & Techniques


Representative samples shall be collected from the specified sampling points by the chemist or authorised laboratory assistant in pre-treated bottles that shall be provided by the third party laboratory. The sampling bottles shall be properly labelled. Sample collection and preservation shall be in line with specified sampling standards indicated in the IPPC permit. The source of sample, date and conditions under which it is collected shall be recorded. Contamination of samples with extraneous substances shall be avoided at all cost since this will render the quality of the sample not valid for testing.

In cases when the sampling point is out of service (e.g., dry, plant not in use, etc.), written records shall be kept to justify why the samples could not be taken listing and the reason why the points were out of service. Preferably, efforts should be made to ensure that the choice of sampling time or days shall avoid any dry abnormal conditions.

Sampling frequencies shall correspond to the requirements stated in the IPPC permit. In cases where the permit requires composite sampling (e.g. analysis for metals) measures shall be taken to prepare and preserve such samples for eventual shipping and analysis.

5.4 Water Discharge Analysis: Procurement for Testing Services & Reporting

The station manager shall be responsible to procure the services of a third party laboratory in order to test the concentrations of the discharge water samples for the pollutants listed in the IPPC permit. The hired laboratory shall be accredited to ISO/IEC 17025:2005, and preferably the laboratory scope of accreditation covers all the pollutants listed in the IPPC permit. It is important that the hired laboratory shall adopt the standard testing methods as requested by the IPPC permit, and if this not possible, use an equivalent method approved by MEPA. In addition the LOD of the test method shall be sufficiently below the required ELV of the pollutant, in accordance with good laboratory practices, preferably $1/10^{\text{th}}$ of the ELV.

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The test report shall include all the relevant details in respect of sample references, pollutants, test methods, LOD levels, concentration test results and any other relevant information. It is also important that the test reports shall be submitted within 3 weeks from end of each quarter year period.


5.5 Calculation of Pollutant Loads

The test results for the pollutants shall be summarised in an appropriate annual worksheet specifically designed for this purpose and kept by the RAO.

For the purpose of calculating the discharge loads, in kg, the following rules shall be followed:

1. As a rule, the annual average concentration of a pollutant **is first worked out** from the values of the reports presented during the same year, and this includes the seawater inlet values
2. When the discharge waters are the outfalls from seawater circulating plants, the annual average inlet water concentrations shall be subtracted from the corresponding annual average outfall values¹
3. In case 2 above, if the outfall concentration result is less than the inlet, then the result is specified "<inlet", and hence the corresponding concentration value is 0
4. In case 2 above, if both the inlet and the outfall concentrations results are "<LOD", then the corresponding concentration is 0
5. In case 2 above, if the inlet concentration is "<LOD" and the outfall has a value above the LOD, then half of the LOD value is subtracted from the outfall concentration value
6. In cases where the discharge water is independent of the seawater inlet (e.g., interceptor discharge, drains, boiler blowdown) and the value is specified "<LOD", then half of the LOD value is recorded and the annual average concentration is based on these values
7. In cases where the laboratory result gives a concentration value which is considered inconsistent with the other data or plant operating conditions, after consultation with the chemist, then its value is recorded accordingly, and can be ignored

¹ Does not apply for the pH values

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8. It is the responsibility of the station manager or his designate to provide the actual quarterly and annual water flows in m³ for each outlet specified in the permit. In case where the value is 0 then the manager has to justify the reasons why no flow was registered.
9. The annual pollutant loads are worked out on the basis of the annual average concentration multiplied by the water discharge flows, taking note of any correction factors for consistency in the units.


5.6 Pollutant Concentrations & Loads Review and Reporting

It is important that the concentration values are reviewed by the PE of the RAO for consistency and cases of exceedances. Where a concentration value exceeds the corresponding ELV it is important that the reason for such an exceedance is investigated as far as practically possible in order to identify any source that may be triggering this exceedance and to take the necessary corrective actions. Any such corrective actions have to be recorded and reported, apart from justifying any exceedance which is very difficult to avoid by virtue of the nature of the emissions (e.g. temperature in excess of allowable increase over the seawater temperature as is the case from boiler blowdown).

Eventually the PE shall prepare the necessary information (concentrations and loads) on the release of pollutants into the sea as required by the AER and the E-PRTR reports. The annual load values have to be compared also with the reporting threshold values of the E-PRTR obligations in cases where the pollutants are listed in the E-PRTR legislation and hence have to be reported in case the values exceed the E-PRTR thresholds. These reports shall be submitted to MEPA as specified by the permit, that is, 31st March. Requests can be submitted to MEPA by the RAO to extend the submission dates, provided a justification is submitted for this purpose. In the case of the E-PRTR reports the LN 152 of 2007 allows for an extension of 3 months after 31st March provided this is justified and approved by MEPA.

6. Reference Documents

IPPC Permit Tables in Schedules 2 and 3

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Annex 1

Site Layout showing discharge and inlet points

