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SOP DPS 24

Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit

Revision List


Revision No.	Description	Written By/ Revised By	Date
0	First issue	K. Agius	02.11.2010
1	Minor updates to all parts of the SOP and to Template 24.1	N.Attard / J. Zammit	29.12.2014

Revised by: A. Camilleri DPS Mechanical Maintenance Engineer {signed} Norman Attard Environmental Coordinator {signed} M. Aquilina DPS Laboratory Officer in Charge {signed}	Verified by: J. Zammit Maintenance Manager DPS {signed}	Approved by: I. D'Amato DPS Station Manager {signed}
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1. Aim and Scope

The objective of this operational procedure is to specify detailed rules, frequency and responsibility related to the procedure relating to the Boiler Washing Pit at Delimara Power Station in conformity with the DPS IPPC permit and Enemalta's environmental commitment. At the moment the pit consists of two storage reservoirs:

- one for the effluent produced during a boiler washing
- one for the solid soot that precipitates during the filtration process

The discharge of the treated effluent to sea is to be done under strict observance of this SOP.

2. References

EN ISO 14001:04, clause 4.4.6

EN ISO 14001:04, clause 5.1

3. Terms and Definitions

RE Responsible Engineer – Mechanical Maintenance Engineer

PMO Plant Maintenance Officer


MP Maintenance Personnel

LO Laboratory Officer in Charge

DPS Delimara Power Station

IPPC Integrated Pollution Prevention and Control

SOP Standard Operating Procedure

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4. Responsibilities

Responsible Engineer (RE)

- Prepares boiler washing schedule and corresponding effluent discharge cycles
- Ensures periodic removal of deposits, retains operational and inspection forms to prepare an Annual Report

Plant Maintenance Officer (PMO)

- Supervises scheduled works
- Supplies neutralising chemicals
- Periodically samples pit water content and provides sample to the Chemist
- Compiles reporting forms to forward to RE

Maintenance Personnel (MP)

- Carry out clean-up operations in accordance with this procedure and related operative instructions


Laboratory Officer in Charge (LO) (The responsibilities can also be carried out by a lab. Technician)

- Ensures calibration of pH meter
- Tests effluent samples provided by the PMO for correct pH values before discharging

5. Operative Rules

5.1 Boiler Wash Down Pit Control Plan

There are two boiler washing periods annually, usually coinciding with the low load demand seasons. The RE shall plan ahead a schedule of works intended to manage the waste generated in the Boiler Wash Down Pit, and to perform the necessary pit inspections and maintenance. The plan shall possibly include:

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1. The removal of bottom sludge to create space ready to receive boiler wash down slurry.
2. Placing the bottom sludge in the adjacent bunded area for further decanting and open air drying before placing in IBCs ready for disposal as per **SOP DPS 29 – Waste Management Procedure.**
3. Cleaning the pit walls to verify the integrity of the pit with regards to cracks and leaks.
4. Carrying out repairs as defined in **SOP DPS 27 - Pits Inspection and Maintenance.**
5. Neutralisation of boiler washing waste water before discharging to the sea.

5.2 Inspection Requirements

The RE will ensure the timely deployment of the various personnel required to clean the neutralising pit and conduct periodic inspections, including possible maintenance intervention, ahead of boiler washing procedures. The RE shall verify and certify any interventions performed.

5.3 Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit

1. Boiler wash down water ends up directly into the pit. Boiler washing terminates when the neutralising pit is full.
2. The PMO draws samples of boiler wash down water to forward to the chemist for analysis.
3. The chemist will test the sample for pH level and estimates the amount of caustic soda that needs to be added for neutralisation.
4. The recommended amount of caustic soda is dispersed into the pit whilst circulating the effluent using the discharge pump.
5. The slurry is left to stand until there is a distinct separation of deposits from the water content (usually around 24 hours).
6. Another sample of treated effluent is forwarded to laboratory for pH testing.
7. If the pH satisfies the latest version of the IPPC permit requirements (pH 6-10) the effluent is discharged through a fine filter to the sea.

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8. If not, steps 4 to 10 are repeated as necessary.
9. Boiler washing usually requires more than one cycle of treated waste water discharge procedure.
10. The changes in level of the pit are measured and recorded for every discharge cycle and the total volume of water discharged is thus calculated. The results are recorded in **Annex 1 – Template 24.1 - Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit.**

5.4 Actions and Duties

The RE shall conduct inspections and verify quality of works. The RE shall ensure the disposal of waste as per **SOP DPS 29 – Waste Management Procedure.**

The PMO is to execute the scheduled works under the direction of the RE and as defined in this SOP. The PMO is to keep records as indicated in **Annex 1 - Template 24.1 – Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit** and forward it to RE.

5.5 Reporting

The RE is to forward the compiled **Annex 1 – Template 24.1 - Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit** forms to the Maintenance Manager for archiving and retain a copy for operational reference.


6. Reference Documents

Instruments calibration procedures

SOP DPS 29 – Waste Management Procedure


SOP DPS 27 - Pits Inspection and Maintenance

DPS IPPC Permit (latest revision)

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Annex 1

Template 24.1 - Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit

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Template 24.1 - Discharge of Treated Waste Water from Boiler Wash Down Neutralising Pit

This document is to record and approve the neutralization and discharge process of the effluent produced from the boiler washing procedure, carried by the maintenance department, mechanical section at Delimara Power Station

Date:	Attended by Shift: (A/B/C/D):
pH Level before discharge:	Laboratory Officer in Charge:
Date of last boiler washing procedure: _____	Amount of effluent discharged (m ³): <div style="text-align: right;">_____ Total</div> <div style="text-align: right;">_____ Area x depth</div>

Comments:

Supervised by:	_____	_____
	_____	_____
	Plant Maintenance Officer	Responsible Engineer
	(name and signature)	(name and signature)
This document is to be kept by the engineer in charge of the mentioned boiler washing procedure for further verifications		