

## E2.2 - Explanation to variation covered by the DPS Partial Surrender

The issue of the variation permit IP 0002/07/Fiii required placing the Enemalta DPS 1 plant on cold standby when the D4 plant (operated by ElectroGas Malta) is commissioned and fully operational. This partial surrender application will cover the decommissioning of the said plant.

### 1 Description of Site

The Delimara Power Station installation of Enemalta plc is situated inside Marsaxlokk bay, at geographic coordinates of approximately 35.833331, 14.555143. The areas of works to decommission phase 1 shall be divided in five zones which shall be referred to as Boundary A, B, C, D, and pipe work as per Figure 1.



Figure 1: Aerial View indicating boundaries A, B, C, D and E

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## 1.1 Scope of works

**Boundary A's** scope shall consist in the Dismantling and demolition of Phase 1, 150m Concrete wind shield, all its internal steel structures and the 2 steel flues and the insulation found inside this wind shield up to finished floor level.

**Boundary B's** scope of work shall include the removal of 2 x 60 MW Waagner Biro boilers and ancillary equipment and alteration of the structure and the shed, which will be dismantled and reinstalled at a lower level and current roof apertures covered. The new hut will maintain the same footprint and location but be of a lower height.

**Boundary C's** scope of work shall include the removal of 2 x BHEL Condensing Steam Turbines, generators and auxiliary equipment, such as service water cooling pumps, etc. from the turbine house. The latter structure will be retained, and some civil works will be required to level the ground floor area where condenser and Condensate Extraction Pumps are installed and the turbine floor area where the exhaust hood is connected to condenser.

**Boundary D's** scope of work shall include the removal of the two 11kV to 132kV 75MVA Generator transformers, the two 11kV to 3.3kV Unit transformers and associated bus duct and busbars.

The three pipelines that leave the Pump house in **Boundary E** are contaminated with HFO. There is also one chlorine water pipeline to be dismantled. After the decontamination process of the HFO lines, these have to be removed for the whole length between Boundary B and Boundary E. Most of the pipe work is installed on a pipe rack.

## 1.2 Exclusions

Although DPS 1 will be decommissioned, some common plant, including but not limited to, the air compressors, Battery Systems, Traveler Cranes, firefighting systems, 3.3kV, 415V Switchgears, specific transformers, electrical supply boards, control wiring, and distribution Boards will be retained.

The phase 1 generation building which houses the two 60 MW BHEL turbines and BHEL generators will not form part of these works. It is expected that the shed will remain intact during the course of these works. The central control room, adjacent to the turbine hall wall also not falls under the scope of works pertaining to this application.

## 2 Details of the plant to be decommissioned

Type of plant	Make	Power output at MCR	Engine Capacity, MW	Boilers: Capacity, t/h	Boilers: pressure, bar A	Temp. °C	Turbines, MW, (bar, °C)	Generators (Nominal rating)
Steam units	Waagner Biro Boiler BHEL Steam Turbine	120 MWe	===	2 x 260	110	513	2 x 60MW, (87 bar, 510°C)	2 x 75MVA (60MW @ 0.8pF)

## 3 Documentation being submitted

The following documents are enclosed with the partial surrender application which Enemalta is submitting:

- DPS WMS 01 – Method Statement for Chimney Dismantling
- DPS WMS 02 – Method Statement for Boilers Dismantling
- DPS WMS 03 – Method Statement for Turbines Dismantling
- DPS WMS 04 – Method Statement for Transformers Dismantling
- DPS WMS 05 – Method Statement for Pipeline Decontamination and Dismantling
- Waste Management Plan
- Sampling Plan

The Sampling Plan is being submitted to ERA for its approval or otherwise, so that in the meantime, where accessible, sampling can take place to come up with a HAZMAT to cover the site and equipment to be dismantled.

Drawings of chimney, boilers, turbines, generators, transformers are included with this variation application.

## 4 Proposed variations in the permit conditions of DPS IPPC IP 0002/07/Fiii

Reference is made to the current IPPC permit sub-sections listed below which require a variation as part of this partial surrender application for DPS 1.

### 4.1 Clause 1.1: Permitted Activities

- DPS 1 (phase 1A and phase 1B) which is already on cold standby, will be decommissioned.
- The four diesel engines which were being operated by Enemalta have been handed over to D3PG and as such, conditions pertaining to these engines will no longer fall under the Enemalta permit. Besides the engines and steam turbine, Enemalta will also be no longer be responsible for operating the:

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- Exhaust abatement equipment
  - Day tank area Adjacent to D3 consisting of:
    - 6 FO separators (these will not even be used by D3PG once conversion is completed)
    - 2 HFO buffer tanks & VOC units (these will not even be used by D3PG once conversion is completed)
    - Service sludge storage tanks and pumps
    - Urea spillage tank and pumps
    - 2 Urea storage tanks
    - 2 Urea dissolving tanks
    - Urea pressure control unit
    - Demineralised water tanks
  - 2 HFO service tanks & VOC units

#### 4.2 Clause 2.2, 2.2.2, 2.2.4: Emissions to Air

Emissions to air from the Release Points Chimney D1 (DPS1), Chimney D6A (DPS6) and Chimney D6B (DPS6) and any reference to them are to be removed from this permit, with the latter two having been handed over to D3PG.

#### 4.3 Clause 2.5: Emissions to Marine Water

Following the decommissioning of DPS1 and transfer of operations of DPS3, the maximum amount of cooling water discharged at the Hofra iż-Żgħira outfall by Enemalta is expected to reduce from 43,000m<sup>3</sup>/h to 8,500m<sup>3</sup>/h retaining a maximum water temperature of 8°C above ambient water temperature. Therefore, the overall impact that cooling water may have at Hofra iż-Żgħira is expected to reduce.

#### 4.4 Raw Materials

Following the decommissioning of DPS1 the following raw materials will no longer be required for ENE operations:

- Additive MGO Fuel "Pentomag 2000"
- OIL TURBINE TOTAL PRESLIA 46

Following the handing over of the diesel engines to D3PG, Enemalta will no longer be responsible for the delivery, storage, use and disposal of:

- Sodium Metabisulfite / Sodium Bisulfite
- NALFLEET 9-108 BLK4 ENG WATER TREATMENT
- SAF-ACID Descaling Compound
- UREA
- Sorbent (sodium bicarbonate - SBC)
- Lube oil Shell Argina X40

All Safety Data sheets of these materials are enclosed to the application.

#### 4.5 Changes to Energy Consumption

The proposed changes will see the removal of DPS1's generating capacity and auxiliary load, together with DPS3's generating capacity and auxiliary load.

Plant Name	Auxiliary Load (MWE)	Type of Auxiliary loads
DPS 1	3 units each	Sea water pumps, boiler feed pumps, fuel pumps and various other pumps and motors necessary for the DPS1 operation of the plant.
DPS 1		
DPS 3	2.5	Sea water pumps, induced draft fans, SBC mills, separators, air compressors, fuel pumps and various other pumps and motors necessary for plant DPS3 operations.
DPS 3		
Note:- Auxiliary load readings are for normally operating plant at full load. Those for DPS1 do not include the power required by the water production facilities as this operation is not continuous. Approx 1.5 kW are required to reduce 1 m <sup>3</sup> /h of evaporated water. And approx 1.94kW are required to produce 1 m <sup>3</sup> /h of demineralised water.		

#### 4.6 Waste reduction

Following decommissioning of DPS1 and the handing over of DPS3's operations to D3PG, the quantities of waste generated by ENE are to decrease substantially by the amounts shown in the table below.

Description of Waste	EWC	DPS1 Estimated % reduction of total waste	DPS3 Estimated % reduction of total waste
Paper and Cardboard	15 01 01	42.5%	15%
Plastic	15 01 02	20%	60%
Wood	15 01 03	14.5%	71%
Mixed Waste	20 03 01	35%	35%
Scrap Metal	17 04 07	70%	15%
Glass	15 01 07	45%	10%
Sea Water Filtration	20 03 01	40%	20%
Waste Oil	13 02 05*	20%	70%
Waste Transformer Oil	13 03 07*	90%	0%
Oily Water	13 05 07*	0%	100%
Oily rags	15 02 02*	47.5%	47.5%
Boiler cleaning waste	06 07 09*	70%	30%
Flyash	10 01 18*	0%	100%
Contaminated packaging	15 01 10*	40%	50%
Spent tubes	16 02 13*	33.3%	33.3%
WEEE	16 02 13*	45%	45%

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## 5 Reference to DPS IPPC IP 0002/07/Fiii conditions

Reference is made to the current IPPC permit sub-sections listed below referring to the conditions stipulated for the Decommissioning of DPS 1.

### 5.1 Clause 2.16.17

The documents submitted as part of this application shall cover the requirements in clause 2.16.17 and subsequent clause 2.16.9, namely:

- i) Results of Outline Decommissioning Plan
- ii) Waste Management Plan

### 5.2 Clause 2.16.18

Since DPS 1 is not located close to the other operators' plants, and the HFO and Gasoil tanks will not be within the scope of this dismantling, it is not anticipated that the individual or coordinated safety studies will be affected. However, SGS Italia has been asked to review the safety report and provide advice on whether these reports require any amendments or otherwise. As per email enclosed to this application (Reply from SGS), Mr. Roberto Vaccari sees no need to review the Enemalta and Coordinated Safety Report.

Similarly, since plant will be decommissioned, emission to air is expected to reduce. This will be considered further in the air dispersion modelling as required by the IPPC permit conditions.