

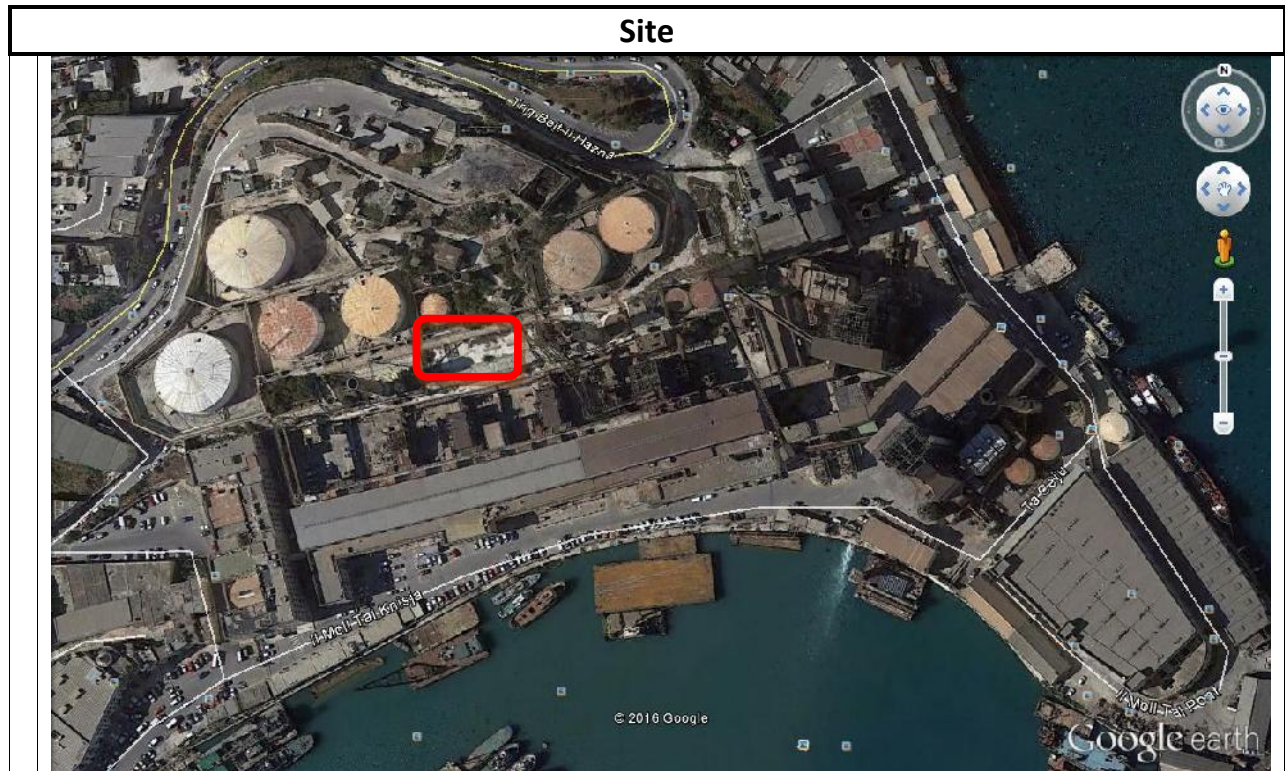
Employer: **Enemalta Plc**Date: **20 / 04 /2017**

Time:

Venue:


Job ref: **MPS-MS-10-Chimney
M2**Issue date: **27/04/2017**


Works Method Statement	010	Area	Zone 04		
Description of Works	Demolition and carting away of existing Chimney M2.				



The report should be read in conjunction with preliminary reports already submitted where all relevant information on Health and Safety and established legal notices are supplied.

Works Method Statement			
Item	Description	Action	Target Date
1.0	DESCRIPTION OF AREA / STRUCTURE		
	Situated in Zone 4, the structure consists of a cast in situ reinforced concrete chimney with a height of circa 40m and a base diameter of circa 6m.		
	The chimney is situated in an area close to other elements which, although de commissioned, still require works by the contractor however the distance from public routes is substantial and does not pose any danger to the general public.		
	The chimney is surrounded by the oil sludge tanks to the North West and by a vast plain to the south west and works could be carried out in both directions.		
	Prior to dismantling, and given the most cost effective and smooth operation outlined below, the chimney should be removed once the area is clear from all dangers and live equipment.		
	The chimney consists in section of: <ul style="list-style-type: none"> - An external skin of reinforced concrete, - An internal steel plate - Insulation fibreglass and fire bricks sandwiched between the two skins above. 		
2.0	SAFETY PRECAUTIONS PRIOR TO WORKS		
	<ul style="list-style-type: none"> ➤ Switching off or protect all live equipment ➤ Dismantling of the precipitator and surrounding equipment ➤ Limiting controlled access of 'underlying' plain through liason with SBS and Enemalta. ➤ Placing an active emergency light after each working day at the top most area ➤ Protection of elements in the immediate vicinity of the chimney through the use of metal elements or brick walls placed around same elements. ➤ Provision of a safe works method statement ➤ In view of the size of the scissors, the maximum foreseeable size of the material which would fall from heights always in a straight projectile is to be not more than 10-15 cm and would mostly fall on the inside of the chimney. One must add that the larger the elements the more controlled and vertical is their descent in view of weight. Although chimney is 30cm thick (concrete) the scissors which will be used are considerably smaller which would limit the size of the cut element. 		
2.0	Environmental Issues		
	<ul style="list-style-type: none"> - Hazmat survey submitted at ERA clearly indicates that the materials comprising the chimney which including reinforced concrete and brick lining are to be considered as non-hazardous - During the works which need to be carried out in limited wind conditions, the area of demolition will be continually sprayed to limit dust dispersion. No works shall be carried out when wind speed is over force 4 knots and this will be measured through constant monitor of the weather forecast and also through any other measuring instrument outlined by the environmental monitors. As outlined in the attached presentation, water will be sprayed both from the ground up and also from a higher position than the fly system in order to make sure that any dust is wetted immediately and limit the dispersion to the minimum possible. - The seeping waters, which are to be considered as non-hazardous will be continually cleaned however in view that the area is laid to falls in one direction only, that is in the direction of the precipitator, the main flow of water will be contained through the use of containment zones placed away from the main area of works. These containment zones cannot be placed in the immediate vicinity of the chimney in view of the works and machinery required for such works. A detail of the containment zones is outlined in a plan attached to this MS (attached in presentation). 		

	<ul style="list-style-type: none"> - Prior to commencement of works, the internal area of the chimney will be cleaned of any fly ash which will be tested prior to issuing of any required approvals. - An environmental monitor will be overseeing the works throughout the whole process. - It is being construed that the insulation will be removed along with the iron plate however any remaining fibre glass insulation will be removed from the containment area situated at the bottom of the chimney should this seep to the ground area. 		
3.0	WORKS METHODOLOGY		
	<p>Works will commence firstly on the removal of the internal skin steel plate which will be removed through hotworks. Trained and harnessed personnel will be lowered into the chimney on a tested man cage and using burners, will cut the steel plate in parts. The parts will be of adequate weight that the crane is capable of taking. Once on the ground, the steel plate will be cleaned of any insulation attached to it, insulation which would be tested for contaminants by our consulting monitors. Once cleaned, the steel plates will be shear cut on site and carted off to an adequate facility.</p> <p>Following the removal of the steel plate, the fire bricks will be removed using same personnel on man cage, which bricks will be made to fall on the internal area of the chimney. In view of the limited access, these bricks will be removed and stored in a bunded area following demolition. The bricks will be cleaned and tested for contamination and once test results are out, an adequate carting off methodology would be presented.</p> <p>Once all bricks have been removed, the fly system will be put to operation as per methodology below.</p>		
	<p>The FDS (Fly Demolition System) technology was conceived and perfected over the past 10-12 years , it is summarized in radio-controlled equipment to the demolitions that operates at high altitude supported by a lifting device.</p>		
			



				
	<p>The equipment is composed of a hydraulic unit powered by a diesel engine that powers the mechanism equipped with a grounding demolition tool (grinding mill / caliper for the loader arm / bucket cement).</p> <p>In order to counteract the stresses caused by weather conditions such as wind, the equipment is equipped with two propellers at the end that allow the rotation in the horizontal plane.</p> <p>The FDS is controlled by an operator by means of a remote control which can afford to operate and handle all owned systems. Usually the operator, to have a good control on the intervention of demolition, operates on an aerial platform in total safety. In this specific case, the operator will stop with remote control on the shed roof at a safe distance.</p> <p>Also, the operator, in order to better coordinate the tool movements with those of the lifting, is connected by radio with the crane operator.</p> <p>The weight of the equipment varies depending on the model and the type of gripper / crusher / loader bucket that you want to adopt.</p> <p>Sizing and thus the flow of the lifting are dictated by four variables:</p> <ol style="list-style-type: none"> 1. The weight of the equipment at full load ; 2. the security / income ratio that you want to adopt ; 3. the positioning of the lifting means with respect to the artefact in demolition and consequently the distance that results between the center of the fifth wheel and the area of intervention of the apparatus destructive ; 4. the height of the artefact in demolition and consequently the reach of the crane in height (the height of the article must be added 10 m , the operating space of FDS) . 			
	Works Description			




Task chronological order required to implement the assistance package demolition of a chimney:

- ♣ supply and sand stretched / crushed material over the wooden planks to a thickness of about 20/30 cu.m in order to create a falling bed of material;
 - ♣ arrival on site and placement of suitable self-propelled crane reach and scope (it is assumed a crane with a rated capacity of 250-400 tons) in advance;
 - ♣ demolition of the smokestack from an altitude of about + ..0,00m at + 25.00m. The demolition will have progressed to the horizontal sections of approximately 2.00 m. For each section the dust will need to be removed to avoid overloading the floor of the chimney to maintain coverage;
 - ♣ during demolition activities a "fog cannon" (from vertically higher position down to fly system); will ensure the mitigation of dust and possibly and dispersion of particles
 - ♣ demolition of the remaining part of the chimney (from 0,00m share at + 25.00m) through the use of a track excavator equipped with hydraulic tongs armed / concrete crusher;
 - ♣ all the material once placed on the ground in cumulation, will be categorized, loaded and returned to a destination authorized centers (recovery / treatment / disposal).
- The last 15m of chimney will be removed through the use of sheer cutting equipment which is capable of cutting through reinforced concrete. Again, same precautions mentioned above, both in terms of H&s and environmental will be taken during the works.

4.0	TIMEFRAMES		
	Preparatory works and protection of surrounding areas – 2 days		
	Careful and localized Demolition and carting away – 30 days		
	Cleaning of area – 5day		
	Earmarked date of commencement: Beginning December		

AREA Photographic survey			
Ref	Photo	Area / Zone	Status
		Chimney from upper area	
		Chimney from lower area	

		Sludge tanks	

Other Works related					
Ref	Area / Zone	Description	Completion date	Notification	Status
		Adequate protection of surrounding Enemalta assets.			
		Full separation of the chimney from any other area / element.			
		Placing of a soft bed underneath to minimize impact of falling objects.			
		Access control of surrounding area			

Further information required from entities				
Ref	Area / Zone	Description	Notification	Status
		liaising with enemalta		

Personnel / machinery earmarked for use				
Zone	Area	Description	Number	
		Fly machine and crane driver	2	
		Dumping truck and driver	2	
		Helpers and cutters	2	
		TOTAL	6	

Attachments:

- ☐ Drawings (specify)
- ☐ Other (specify)

Minutes prepared by:

Approved:

George Farrugia

Y / N