CATHODIC PROTECTION CO LTD

Cuprion®

Marine Anti-Fouling System

Industrial Systems

Bio-Fouling of seawater intakes on Ships & Marine Vessels can be a major problem, causing expensive equipment damage and pipework blockages, leading to shut down of vital seawater supplies.

In the case of cooling water systems, plant Integrity must be of primary concern. In addition, repairs to damaged pumps and pipe work are both costly and time consuming.

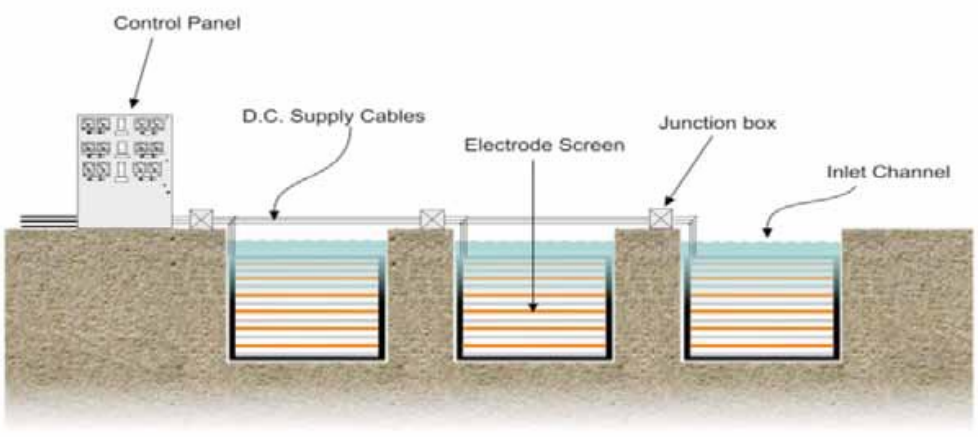
Maintenance managers would consider any remedial actions involving pipe section removal, repair, cleaning and re-installation as major refurbishment work on any operating facility.

CUPRION® - THE SOLUTION

Cathodic Protection Co. Ltd. has developed a range of CUPRION® anti-fouling systems to protect submerged pumps, seawater intakes and associated pipework against marine growth. Originally the CUPRION® system was developed and utilised for application on platforms in the North Sea during the early 1970's.

The CUPRION® system is listed on Article 95 of the EU Biocides Regulation (528/2012), which came into effect on 1st September 2015, ensuring CPCL is legally entitled to place the CUPRION® system on to the European market.

Developing the system for use on industrial seawater intakes involved changes to hardware and installation methods. Design requirements remained unchanged as CUPRION® operates on proven electrolytic principles.



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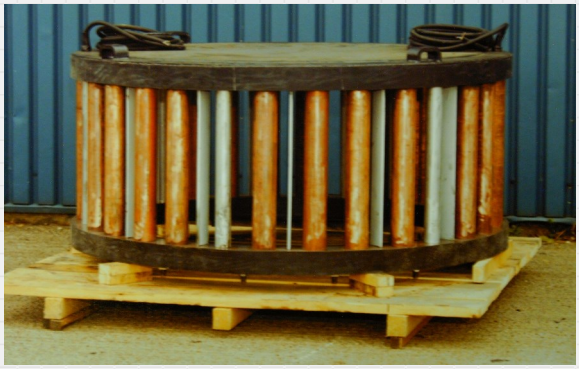
Marine growth prevention is achieved by employing a small d.c. current flow. This current flow energises copper and aluminium anodes to produce a fully effective, anti-foulant dosing solution. Selected dosing levels vary slightly to suit location and application, however maximum dosing limits utilised for design purposes are 24 µg/l and 4 µg/l for copper and aluminium respectively.

Copper is a natural biocide and provides complete protection from marine growth with no adverse environmental impact.



Aluminium anodes produce aluminium hydroxide, which combines with the copper ions holding them in solution, keeping pipe work blockage free. Aluminium hydroxide also helps to arrest corrosion on internal pipe surfaces.

The CUPRION® system has been successfully applied on all types of seawater intakes from individual submerged pumps to large seawater intake basins. The design of the electrode units can be adapted to suit all application requirements.

CUPRION® systems have been installed on all types of industrial seawater intakes worldwide, see chart below.

Project	Country	Client	Description
Amurang 2 x 30 MW Steam Power Plant	Indonesia	PT PLN (Perso)	3 x 7,200 m^3/hr cooling water intakes
PLTU 2 Sulawesi Utara 2 x 25 MW Project	Indonesia	PT PLN (Perso)	4 x 3,000 m^3/hr cooling water intakes
Calbuco Fuel Terminal	Chile	COPEC	4 x 630 m^3/hr fire water pumps
Ras Shokir	Egypt	GUPCO	2 x 1,550 m^3/hr cooling water intakes