



## DIVISION

BIOFOULING CONTROL

## PROJECT NAME

FPSO Guanabara

## OWNER

MODEC / PETROBRAS

## ABOUT THIS PROJECT:

## ELECTROCHLORINATOR

### PROJECT FACTS

The project scope consisted of a 2 x 100% seawater electrochlorination unit to generate hypochlorite for biofouling control in the FPSO's seawater cooling system. The package utilizes plate cells with a capacity of 45kg/hr hypochlorite production per train. The system includes a cell cleaning system to control scale formation in the electrochlorination cells. The package also includes a proportional dosing system to control the weight of hypochlorite delivered at the full range of cooling water flows. Piping on the system is conductive FRP to meet zone requirements. The LCP, T/Rs, and cells were certified to IECEx Zone 2.

### CHALLENGE

For this project the space was very tight, so a lot of detailed design work was needed to run the piping and cabling in a very space-efficient way. Also, the end user had a strict discharge limit on hypochlorite overboard set by government environmental regulations that needed to be met.

### SOLUTION

H2O's engineering department designed a package that met all client requirements and provided a fully compliant system along with all required vendor documentation. The transformers were custom designed with a small footprint and were taller than normal to utilize the vertical space available. H2O supplied busway for DC power to the electrochlorination cells which took up significantly less space than traditional DC cables would. H2O provided a proportional dosing system to limit environmental impact from excess hypochlorite discharge.

## RESULT

The package was delivered to the client's shipyard in China. The client was happy with the quality of equipment provided, and their seawater cooling system will remain free of biofouling organisms such as barnacles and mussels which would otherwise severely impact the heat exchanger efficiency.