



# Sea Marconi – sustainable innovations for energy and environment

**S**ea Marconi is an energy and environment-focused company, providing lifecycle management solutions for holders of **electrical equipment filled with insulating fluids**. Founded in 1968 and headquartered in Turin, Italy, Sea Marconi now has five bases across Europe and South America, with operations covering over 3,000 customers on five continents.

The company is independent from the manufacturers of equipment, producers of insulating oils and repairers and is expert member of IEC, CENELEC, CIGRE, etc.

Sea Marconi solutions include testing, laboratory analysis, diagnostics, and treatment of the transformer oil throughout its service-life, from factory testing to forensic engineering.

With 100 employees, 45 years of experience, 40 patents and a large international customer base, Sea Marconi is recognized as having the best available technologies and best environmental practices in the monitoring and servicing of oil filled transformers as defined by the European Integrated Pollution Prevention and Control Directive.

Nowadays Sea Marconi operates with a leading position continuously researching for innovations finalised toward a really sustainable development.

**TransfoClean® provides a specific solution for each criticality during the lifecycle of the oil and transformer**

## TransfoClean® - loss prevention and environmental protection

The core business of Sea Marconi (line TrasfoClean®) includes products, services and technologies finalized to the loss prevention and environmental protection of fleets of strategic equipment with insulating fluids (e.g. transformers, reactors, bushings, tap changers, etc.), supporting the holders in the difficult and very delicate task of combining continuity of service, safety, costs and environment protection.

TransfoClean® allows, through the **analysis of the insulating oil**, to know the unique features of each transformer and its behavior over the years.

Sea Marconi is an international leader in the diagnostics of the degradation of insulating liquids and electrical equipment through its **accredited laboratory**. Sea Marconi provides specific analysis for each step of transformer' lifecycle and then develops diagnostic reports to **identify possible criticalities** and the **related solutions** including the priorities of intervention. Since 1968 the volume of analyses and diagnoses carried out have

originated one of the largest independent data base worldwide, which represents one of the factors of excellence of Sea Marconi's diagnostics for **preventing catastrophic failures** and damages (direct and indirect).

According to the criticality detected (e.g. corrosive sulfur, acidity of oil, moisture in oil and paper, paper aging etc.) Sea Marconi intervenes with specific oil treatment able to re-establish the chemical-physical features of the oil to the same conditions of new one. This extraordinary results of the treatments by Sea Marconi are consequence of the use of multi-function Decontamination Modular Units (DMU), designed and made internally, and the formulation of **specific reagents** used on the basis of different operational scenarios. The process is conceptually similar to a dialysis, in fact the DMUs are connected to the transformer by hoses, the insulating fluids circulates through the DMUs where it is heated, degassed, de-humidified filtered, decontaminated thanks to the reagent and then return into the transformer, which is never drained, even partially. The **continuous circulation** of the oil creates a constant flow of liquid in the transformer also



Samples of insulating fluids analysed in 2015:	15,000
Transformers and equipment analysed in 2015:	10,000
Tests carried out on insulating liquids in 2015:	88,500
Pieces of equipment in the Sea Marconi data base:	> 70,000
Diagnoses in the Sea Marconi data base:	> 200,000



**Specific oil treatment may be performed keeping the transformer in operation, energised and loaded even in nuclear power plants and on transformers up to 780 MVA and up to 500 kV**

favouring the elimination of deposits (sludge) on the papers and in the tank. The process is carried out under Sea Marconi security procedures such as the system against the accidental spills, the low operational temperatures or the supervision software capable of monitoring the process, 24/24, even when working unmanned. Each intervention may be performed also keeping the transformer in operation, energised and loaded (international experiences also in nuclear power plants and on transformers up to 780 MVA and up to 500 kV).

Among the treatments by Sea Marconi, one of the historical and core service is certainly the **CDP Process®**, recognized

as the Best Available Techniques (BAT) and Best Environmental Practice (BEP) on the market for PCBs (one of the Persistent Organic Pollutants and defined carcinogenic for humans) decontamination.

CDP Process® has been developed and patented by Sea Marconi, as the only process capable (already in 1982) of **detoxifying and dehalogenating the PCBs** present both in the oil and the inner parts of the transformer. The treatment is carried out as described above, reclassifying oil and transformer “PCBs free” in accordance with the European Directive 59/96. The CDP Process® operates safely at low temperatures (80-100 °C), without risks for

explosions or fires, thanks to the use of a proprietary solid reagent (S/CDP®). CDP Process® increases the value of functional resources in operation, without disposing of PCBs, resulting as the best solution also in terms of CO<sub>2</sub> equivalent saved for each kg of oil not incinerated.

With the same operating modalities Sea Marconi performs many other treatments. For example in case of oils contaminated by acids, polar or corrosive compounds, Sea Marconi has developed an integrated solution putting in place the DMUs used in addition to “done on purpose” reagents and operational procedures capable of **restoring the optimal conditions of the fluid and the equipment.**

**CDP Process®**, developed and patented by Sea Marconi, is the only process capable of detoxifying and dehalogenating the PCBs present both in the oil and the inner parts of the transformer

**Contact:**

**Headquarter**  
**Sea Marconi Technologies sas**  
 via Ungheria 20  
 10093 Collegno (TO), Italy  
 Tel +39 011 234.34.34  
 Fax +39 011 234.34.35  
 www.seamarconisolution.com  
 Info@seamarconi.it

