EXTEND

THE LIFE OF
YOUR PLATFORM

Introducing TSA™, a new system for cathodic protection.

TSA™ is a trademark of Industrie De Nora
The **Tensioned String Anode (TSA™)** technology developed by De Nora, provides an efficient and cost-effective cathodic protection retrofit for in-service offshore platforms. Steel platforms that experience anode deterioration can benefit tremendously from this type of intervention, and the **life of the platform can be extended.**
The impressed current TSA™ system offers the following advantages with respect to galvanic anodes and other retrofit solutions:

**SIMPLE** and **COST-EFFECTIVE** installation

**EXCELLENT** current and potential distribution

**EASY** monitoring of system performance

Robustness and long-term **RELIABILITY**

Our TSA™ technology can be applied to any cathodic protection retrofit needs in shallow water as well as deep water.

---

**CONFIGURATION EXAMPLE**

Finite Element Modeling was extensively used in the design of the Petrobras and Vega Projects.

Modeling of the current and potential distribution was performed with the aim to verify that correct protection conditions were achieved all over the structure, with an effort of dividing local overprotection conditions.
Morrison, De Nora and Cescor have teamed up in the field of **CATHODIC PROTECTION RETROFIT** of offshore platforms, providing a complete package that includes:

**ADVANCED** design and modeling

Supply and manufacturing of **TOP QUALITY** anodes and CP components

Installation works and maintenance **SERVICES**