1. Description of the project

**Country:** Brasil.

**Localisation:** Marlim, Campos, Roncador.

**Customer:** GE Nuovo Pignone

**End User:** Petrobras Netherlands B.V.

**Project:** P51, P52, P53, P54 (2004-2005).

**Application:** F.P.S.O. (Floating Production Storage and Offloading unit).

2. Requirement of the customer

- Specifications included: Floating neutral pole, arc proof, special paint, incoming protection by coil (impedance limitation), double incoming line, and wirings required double insulation (0,6/1kV).
- Accordance with:
  - DNV (Det Norske Veritas)
  - ABS (American Bureau of Shipment)
  - IEC 61508 (SIL 3)

3. Why a GE solution

- Innovative and open solutions including electronic relay protection provided by GE Multilin, and automation PLCs from GE Fanuc.

4. Key Technical Features

- Generator Modules (TG) and Compression Modules of each FPSO were supplied by GE Nuovo Pignone.
- Panels type SEK-SEV32 and lighting panels.
- Fire & Gas System based on GMR with SIL3 configuration.
- Auxiliary System based on 9070 in HBR configuration.
- PLCs 9030 in duplex configuration for Unicos Systems, and type RX3i in Duplex configuration for F&G systems.
- Cimplicity HMI 35.000 tags each for SCADA System.

5. General Architecture

Contact name

G. Salvi, D. Guidotti, F. Caccia

T +39 02 4242.1