



The International Contract Engineering (ICE) Group is one of Europe's largest independent ship design and marine engineering consultancies, with an annual capacity of more than ½ million professional engineering man-hours. Headquartered in the Isle of Man, the Group has been in business almost 50 years. It offers a full range of high caliber, cost-effective engineering and design services, either in its own design offices in Romania and the UK or at clients' sites.

The ICE Group has in recent years been involved in projects for the offshore oil & gas industry and with design of commercial, naval and coast guard ships. ICE undertakes the full design scope from conceptual design through class drawings, detail design and production information and also advises clients on build strategy, project management, procurement, shipyard layout and productivity.

The Group's experience includes design for new construction and conversion of a wide range of vessels including tankers, bulk carriers, passenger cruise vessels, ro-ro ferries, naval patrol vessels, frigates, corvettes, jack-up drilling rigs, LNG and LPG gas carriers, semi-submersible drilling rigs, drill ships, offshore service vessels, FSOs, FPSOs, research vessels and fixed offshore production platforms.

Clients include leading shipyards, ship owners and offshore industry contractors throughout Europe as well as in Brazil, Canada, China, India, Japan, Korea, the Middle East, Singapore and the US.

## ICE Presenting Paper at RINA Conference

Summarising experience gained by ICE from almost 40 projects to convert oil tankers into Floating Storage and Offloading ("FSO") and Floating Production Storage and Offloading ("FPSO") vessels, Sorin Brazdis last week presented the paper "From Tanker to FSO/FPSO: A Structural Analysis Challenge" at a London conference arranged by the prestigious Royal Institution of Naval Architects (RINA).

Dr Brazdis was one of the selected international speakers at the "Structural Load and Fatigue on Floating Structures" conference, which focused on advanced analytical methods to ensure safety and structural integrity of vessels used in the offshore energy industry. Co-authored by colleagues from ICE's substantial Structural Analysis Department, the paper described methods used and challenges overcome during the last ten years in ICE projects ranging from conversion of 35-year old VLCCs into FPSOs to fast-track conversion of North Sea shuttle tankers into FSO vessels. The Paper was very well received by the audience that included structural engineering specialists from industry, Classification Societies and academia and Dr Brazdis was praised for his professional presentation of an important subject.



The picture shows the authors of the RINA paper, from left Alexandru Cobzaru, Lucian Anghel, Ciprian Coreschi & Sorin Brazdis.

## New Contract for Ballast Water Treatment Design

ICE has been awarded a contract from a prominent Japanese client to perform retrofit basic design of the ballast water treatment (BWT) system for a handymax bulk carrier. ICE has previously performed a similar design for an LNG Carrier for a European owner.

The Environmental Protection Agency (EPA) of the US estimates that as many as 70,000 vessels will need investments to comply with international ballast water treatment legislation. Being able to provide all engineering disciplines involved in a BWT retrofit project (structural, piping, electrical, and instrumentation) under one responsibility, ICE is keen to assist shipowners and shipyards with retrofit design services.



The new contract increases the number of ICE clients in Japan, a country with a long and distinguished history of shipbuilding. Previous ICE engagements in Japan has involved the basic design of a very large LPG tanker, various design assistance for a passenger cruise vessels, and detail design and yard assistance for new construction of drill ships.

## ICE Hosting Industry Meeting

Icepronav Engineering recently hosted the quarterly meeting of the Romanian Shipbuilders Association (ANCONAV).

Icepronav is one of the founding members of this organisation, which represents the Romanian ship-building industry as well as producers of ship's equipment and accessories.

*Pictured here is ICE Senior Project Manager Marcel Negraia briefing the participants on ICE's project management approach to recent high-value ship design projects for Brazil and Japan.*



## ICE Adjusting to Market Uncertainties

The dramatic fall in the oil price last year has led to postponement of several offshore industry projects. Problems afflicting Brazilian shipyards have created further uncertainties and have forced ICE – like many other companies – to take prudent steps to adjust its manpower capacity and costs to reflect a likely reduction in its workload this year. As a result, some employees, including some who were engaged to deal with the peak workload last year, are not getting their employment contracts extended at this time.

ICE is keen to maintain its core skill and its ability to quickly respond to upcoming business opportunities. To keep lay-offs to a minimum ICE is starting several in-house design development projects, and is also investing in training to maintain and update professional skills and competencies. Being able to offer substantially lower prices than many of its competitors, ICE is hopeful of winning new contracts at a time when most of its customers are focusing on cost savings.

## From Our Project Portfolio

### FPSO Conversion – “FPSO Cidade de Vitória”

#### Scope of Work:

Full scope of marine conversion basic design including pre-conversion inspection of VLCC, structural design including extensive FEM analyses, addition of generating capacity, addition of accommodation and heliport, calculation and design of topside support structures, safety analyses, integration of topside and marine systems, addition of offloading and spread mooring systems, arrangement of riser support structures, all related Class (ABS) submissions and shipyard trouble-shooting assistance in Dubai.

**Year:** 2005;

**Client/Shipyard:** Saipem / Drydocks World Dubai;

**Owner/Operator:** Saipem/Petrobras.

