Classification and Certification Service for Single Point Mooring System





CCS
CHINA CLASSIFICATION SOCIETY
中国船级社

Brief Introduction

With the development of the offshore oil and gas exploration and production, and the demand for oil transmission, the Single Point Mooring System(SPM) is becoming more and more important. CCS has carried out classification and Certification survey for 15 SPMs for FPSOs since the 1990s, and 5 SPMs for oil transmission, accumulated a wealth of experience.

CCS Experience

The list of SPMs used for FPSO is as the following:

No.	MOORING TYPE	FSPO NAME	FSPO TYPE	SURVEY EXPERIENCE	OIL FIELD	Capacity (*1000m³)
1	YOKE	HAI YANG SHI YOU 102	FSO	Classification & Statutory Survey	BO NAN Oil Field	65.8
2	INTER TURRET	HAI YANG SHI YOU 111	FPSO	Classification & Statutory Survey	PAN YU Oil Field	150
3	INTER TURRET	HAI YANG SHI YOU 115	FSO	Classification & Statutory Survey	XI JIANG Oil Field	120
4	INTER TURRET	HAI YANG SHI YOU 116	FSO	Classification & Statutory Survey	WEN CHANG Oil Field	123.2
5	INTER TURRET	HAI YANG SHI YOU 118	FSO	Classification & Statutory Survey	EN PING Oil Field	150
6	INTER TURRET	NAN HAI FENG JIN	FPSO	Classification & Statutory Survey	WC13-1/2 Oil Field	124.8
7	YOKE	HAI YANG SHI YOU 112	FPSO	Classification & Statutory Survey	CFD Oil Field	157.5
8	YOKE	HAI YANG SHI YOU 113	FPSO	Classification & Statutory Survey	BZ25-1 Oil Field	160.4
9	YOKE	BO HAI SHI JI	FPSO	Statutory Survey	QHD32-6 Oil Field	164.9
10	YOKE	BO HAI YOU YI	FPSO	Statutory Survey	BO NAN Oil Field	49
11	YOKE	HAI YANG SHI YOU 117	FPSO	Statutory Survey	PL19-3 Oil Field	286.2
12	YOKE	HAI YANG SHI YOU 105	FPSO	Statutory Survey	For repairing	52
13	INTER TURRET	NAN HAI FA XIAN	FPSO	Statutory Survey	HUI ZHOU Oil Field	308
14	INTER TURRET	NAN HAI SHENG KAI	FSO	Statutory Survey	LU FENG Oil Field	126
15	INTER TURRET	NAN HAI SHENG LI	FPSO	Statutory Survey	LIU HUA Oil Field	185
16	INTER TURRET	HAI YANG SHI YOU 121	FSO	Classification & Statutory Survey	LU FENG Oil Field	123.5

The list of SPMs used for oil transmission is as the following:

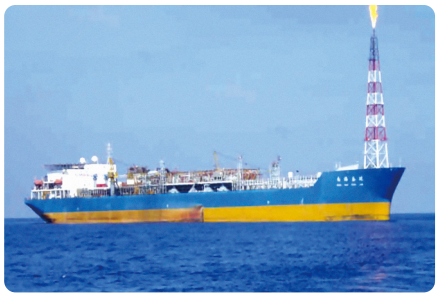
No.	MOORING TYPE	SPM NAME	SURVEY EXPERIENCE	Location / Owner	CAPACITY
1	CALM	Maoming SPM	Classification and Certification	South China Sea / BEISHANLING DIVISION OF MAOMING PORT	$25X10^4$ DWT
2	CALM	Huanuo SPM	Classification and Certification	the Persian Gulf / Middle East oil Company	$30X10^4$ DWT
3	CALM	Hengyi(Brunei) SPM	Certification	Sea area in the North of Pulau Muara Bersa Island in the Brunei	30×10^4DWT

CALM: Catenary Anchor Leg Mooring







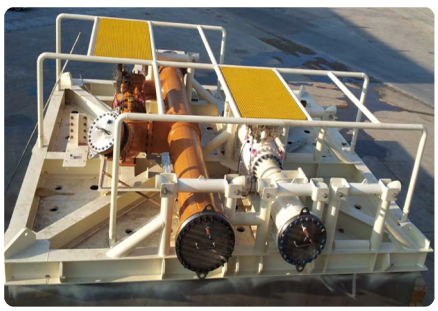



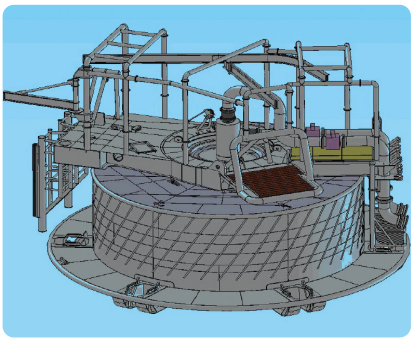


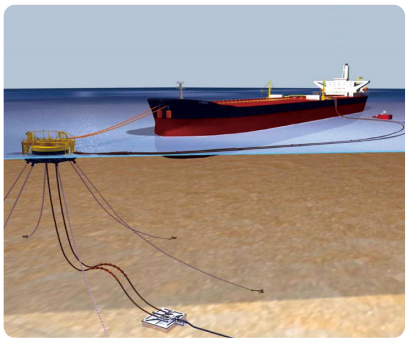


SPMs used for oil transmission





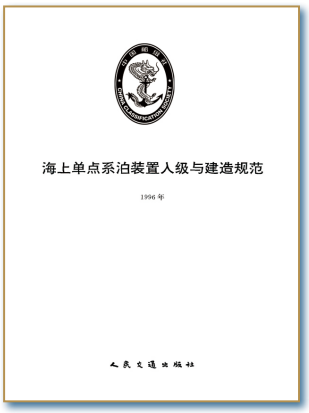


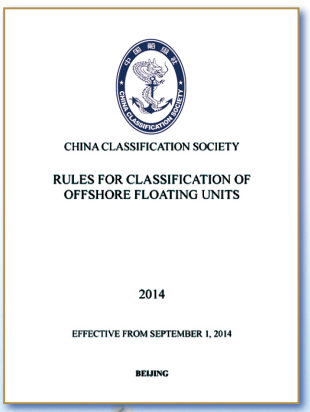


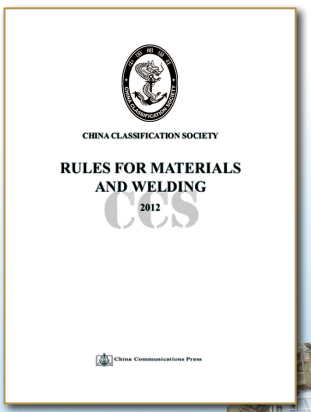


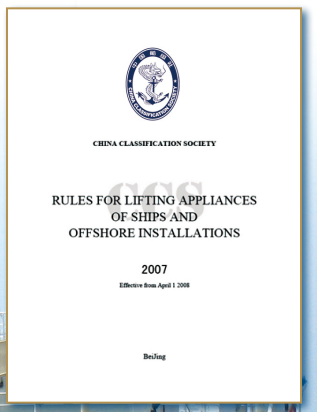
Rules

- Rules for Classification of Offshore Floating Units
- Rules For Classification Of Sea-Going Steel Ships
- Rules For Materials And Welding
- Rules for Offshore Oil and Gas Process System
- Rules for lifting Appliances of Ships and Offshore Installations
- Rules for Single Point Mooring System









Softwares

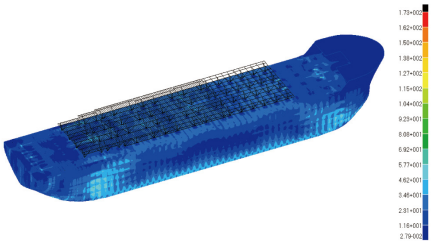
ZenStab

- Stability cal (offshore part)
- Loading cal



ZenMoor (frequency domain)

- mooring system analysis



COMPASS-Rules

- Stability calculation(ship part)
- Tonnage calculation
- Section characteristic calculation
- Electrical power network short circuit calculation
- Gear strength calculation
- Shafting calculation



COMPASS-WALCS-BASIC

- Hydrodynamic responses cal
- Hydrostatic force cal



Orcaflex (time domain)

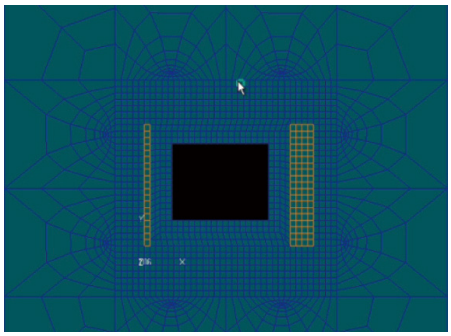
- Fully coupled vessel/line analysis
- Vortex induced vibration analysis
- Installation analysis (subsea system)

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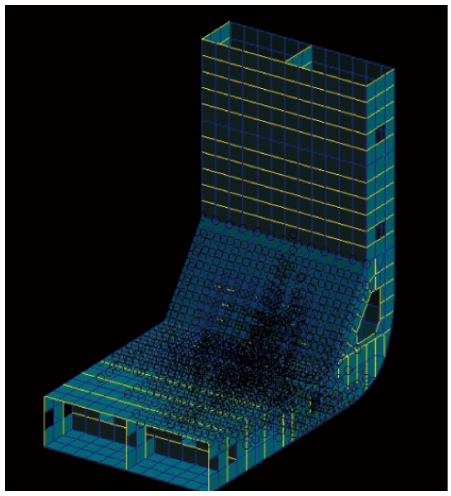
MSC Patran & Nastran

- Structure analysis



ANSYS (AQWA)

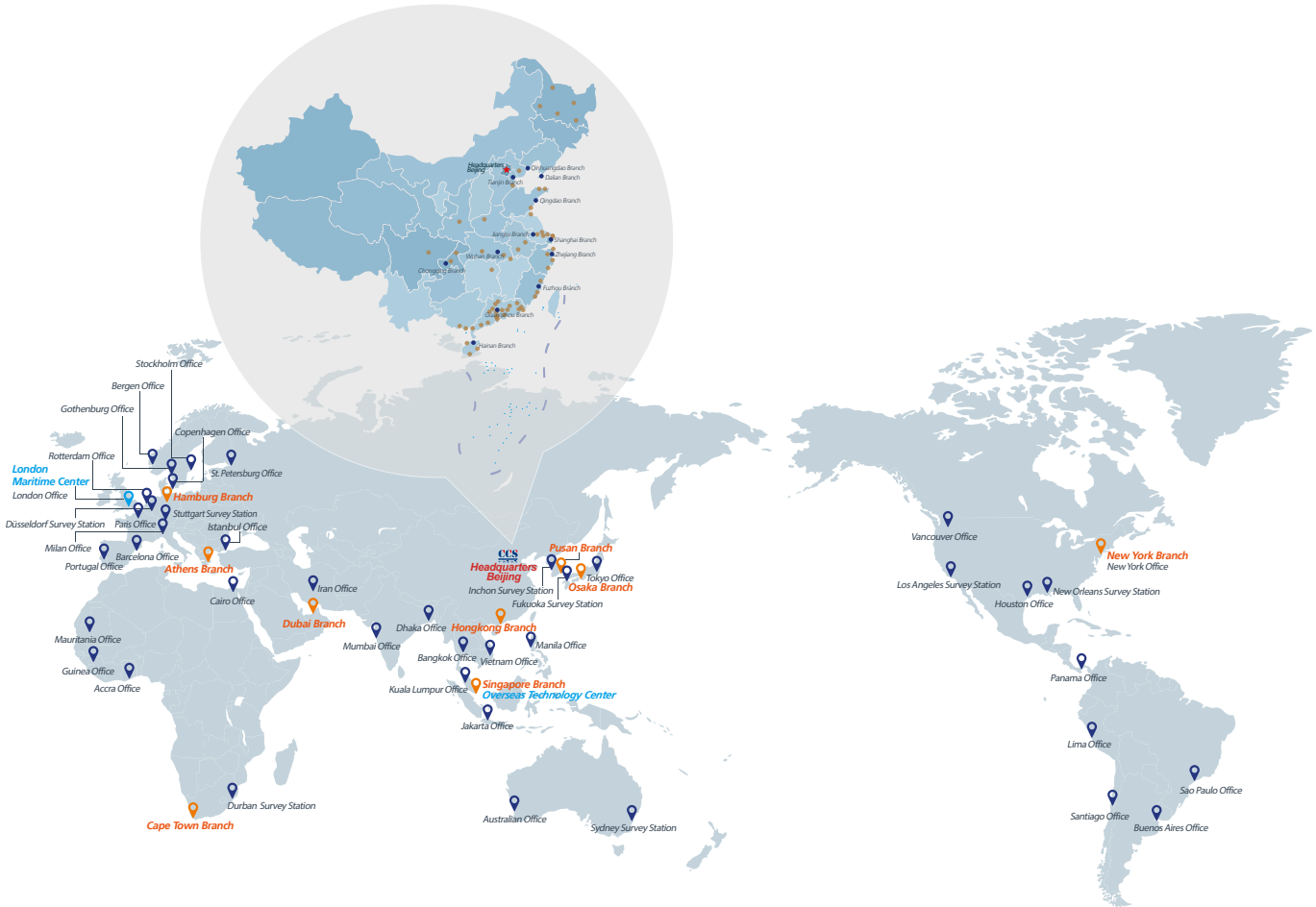
- Structure analysis
- Hydrodynamic analysis



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To meet the demand of our customers, we have set up branches and offices in major port cities in China as well as in Asia, Europe, America, Middle East, Australia and many other countries or regions worldwide, forming a global survey network.



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