



Oil, gas and chemicals 2015

# Reference list

## Front end engineering and design studies

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Year	Client	End Customer	Plant	Study
2014	Statoil	Statoil	Johan Sverdrup, Power from Shore	Comple comprehensive study class D. Comprehensive studie; FEED covering all disciplines Civil structure; building onshore. Offshore module. Weight calculations, HVAC, P&ID FEED Automation; PCS, SAS, Electro Network, F&G FEED Telecom, CCTV, PBX, UHF, FO, DATA, AVS, TMS FEED Electro; HVDC, auxillary & utility, offshore & onshore distribution, UPS, cable dimension/routing
2014	Fred Olsen	Fred Olsen	Ghana FPSO	Complete integrated EICT including E-house SCD, power system dimensioning, system topologies and telecom block diagram with specifications. Project execution plan
2013	BP	BP	BP Ula	Power from shore, main study report Basis of design Power system description High Voltage DC cable Design Utility consumption and heat emission Overall single line
2013	Coscos Shipyard	Dana	Western Isles Development Project (WIDP) FPSO	Complete FEED for electrical systems
2013	Samsung	Statoil	Kvitebjørn	Harmonic analysis/active filter
2013	Total	Total	Martin Linge	Complete turn key engineering, including civil, HVAC, EICT, HSE and Technical Safety disciplines Basis of electrical system design, protection and control philosophy Operating philosophy Load flow and short circuit calculations Dynamic stability Harmonic distortion Cable sizing calculation notes and charts Cable schedule

Year	Client	End Customer	Plant	Study
2013	Aibel	Statoil	Gulfaks B	Harmonic analysis/active filter
2012/13	Statoil	Statoil	Utsira power from Shore	Class C study Overall single line diagram Basis of design for the electrical power system Main power system Utility System calculation/analysis - offshore Utility System calculation/analysis - onshore AC Distribution system description and calculation Utility power system philosophy and control system HVDC cable design report  Class B study Power transmitting with sea electrodes Transmission lines between Kårstø and Haugneset
2011	Aker Solutions	DONG Energy	Hejre	Power system calculation and design Power system description Communication topology and interface description
2011	Aibel/Aker Solutions	Statoil	Troll A TPC 3&4	Study to prepare Troll A for compressor stage 3 & 4. Civil HVDC system onshore/offshore HVDC Cable Motor former Overall system design Electro, IO, Automation; upgrade to 800xA PMS Fire & Gas PMS
2011	Tebodin	ADMA-OPCO	Abu Dhabi Power from Shore	Overall «load» Cluster definition Power from on shore - HVAC HVDC selection report and criteria Power from shore using HVDC Light technology Renewable energy feasibility study Subsea cable laying principle Power cable dimensioning



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Year	Client	End Customer	Plant	Study
2011	ABB Skien	Jurong Shipjard	Seadrill/West Tucana	Protection Coordination study 690/480V Short circuit calculation
2011	HHI	ENI	Goliat	Short circuit Load flow Selectivity analysis TRV Dynamic studies (stability) Earth fault calculation
2010/11	Quip	Petrobas	P63	Short circuit Load flow Selectivity analysis TRV Dynamic studies (stability) Earth fault calculation
2010/09	Petrofac	ADCO	ASABFFD Project	CT/VT calculation Insulation coordination/surge arrester calculation
2009	Shell	Shell	FPSO	Concept development Equipment selection SC / dynamic study
2009	StatoilHydro	StatoilHydro	Mariner/Bressay	Power from shore AC supply, long cables 250 km
2008/11	SADAF	SABIC	SADAF (Saudi)	Power factor compensation Civil
2008/09	ENI	ENI	Goliat	Power from shore
2008/09	Worley Parsons	Qatar Petroleum	North Field Alpha, PS4	Power from shore Converter onshore Harmonics/filters HVAC cable
2008	Worley Parsons	Qatar Petroleum	Halul	Power from shore
2008	Høegh LNG	Hoeg LNG		LNG plant offshore Large generators (7x29MW) Large drives (4x27 MW LCI) Harmonics, Short circuit

Year	Client	End Customer	Plant	Study
2008	Teekay	Teekay Petrojarl	Froy	Short circuit Load flow Design criteria Operational philosophy
2008/07	Fred Olsen	Fred Olsen	Knock Allan/Olowi	Short circuit calculation Load flow analysis Selectivity analysis Earth fault calculations Power cable dimensioning Main power system design criteria Design criteria Operational philosophy
2003	Norsk Hydro	Norsk Hydro	Hydro Rafnes	Filter analysis Short circuit calculation

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