

Erik Asp Sørensen

Senior Engineer, DNVGL - Oil & Gas

Curriculum Vitae

Personal Statistics:

Citizenship: Danish

Date of Birth: 12 April 1967 (50 year)



Language Capabilities:

Danish Native

English Good

German Medium

Education:

Electrical Engineer authorized by the Danish Safety Technology Authority. Specialist within Electrical & non-electrical equipment and assemblies in hazardous areas (ATEX / IECEx), CompEx certified Application Design Engineer (Safe use of equipment in Hazardous areas) & Functional Safety Engineer.

Career:

- 2017 – Present: Senior Engineer, DNV GL (Multi Discipline) within Certification, Verification, Inspection, QA/QC Project engineering mainly for topside offshore facilities.
This within following areas; Electrical, Instrumentation, ESD, Fire & Gas, Rotating Equipment, Turbines, Power Generation, Gas Compression, Emergency Power, Fire Water, Lifting Equipment. Electrical and Non-electrical equipment and assemblies in hazardous areas, (ATEX / IECEx), Machinery Equipment, etc.
- 2016 – Present: Senior Electrical Engineer (Freelance), Asp Consult Provide manpower within the area of electrical & Instrumentation, ATEX / IECEx, Machinery Safety etc. Please visit Asp Consult at <http://www.asper.dk> for further information
- 2016 – 02.2017: Offshore Verification Engineer, Bureau Veritas Verification, Certification, Verification and inspection (QA/QC) of offshore topside installation and equipment. Mainly within Electrical, Instrumentation (SIS), Fire & Gas, ESD system incl. software tests, Fire Water, Escape Routes and Equipment, PAGA, Emergency Power and Lighting, ATEX, Machinery Equipment, Pressurized equipment (PED), Life Saving Equipment, incl. Davits etc.
- 2012 – 05.2016: Technical Authority Electrical & Instrumentation, DONG Energy Oil & Gas 4+ years' experience at DONG Energy E&P as Technical Authority E&I, RFO for the Hejre Platform - within Technical Integrity (Electricity, Instrumentation, Fire & Gas, ATEX - electrical and non-electrical, Machinery, Functional Safety EN61508/61511 etc.), Safe function of machinery, including lifting appliances. Participation in establishing Performance Standards, incl. Verification Scheme's according to new European legislation
- 2007 – 2012: E&I Surveyor/Verification Engineer, DNV GL 4+ years' experience at DNV Energy as Surveyor/Inspector, within Certification, Verification, Inspection, QA/QC Project engineering mainly for topside offshore facilities. This within following areas; Electricity,

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Instrumentation, ESD, Fire & Gas, Software Validation, Emergency Power, PAGA, Fire Water, ATEX, Machinery Equipment, etc.). Verification of Safety Strategies/Philosophies, Functional Specifications multidisciplinary. Verification of Feed studies.

- 2004 – 2007: Electrical Inspector, Sikkerhedsstyrelsen 4 Years of experience at the Danish Safety Technology Authority (Sikkerhedsstyrelsen) as an inspector / advisor. Main activities Inspection related to heavy current regulations, Machine Directive, ATEX Directive, and related standards harmonized under various directives.
- 2000 – 2004: Team Lead, Service and Projects, Electrical Contractor, Lindpro 4 years as Team lead at Lindpro AS, mainly within technical services and projects.
- 2000 – 2000: Commissioning Engineer, Powerplants, BWSC 1-year contract as Commissioning Engineer at Burmeister Wain Scandinavian Contractor. The commissioning was related to diesel engine power plant in Sri Lanka, Maldives and Cayman Island, simultaneously teaching the local staff, running the plant.

Professional Training

- 2016: Various courses obtain from Bureau Veritas, mainly within Safety, Code of Ethic, Inspection Etc.
- 2016: Various GWO courses, e.g. sea survival (Wind)
- 2016: Qualified Inspector at Bureau Veritas
- 2016: Offshore Emergency Training including EBS, incl. Norwegian territory (FOET)
- 2016: Compressed Air Emergency Breathing System Initial Deployment Training
- 2015: IECEx/ATEX Design Application Engineer CompEx Ex12 – Certificate 00469ADE
- 2015: Functional Safety Engineer (TÜV Rheinland) – Certificate no. 11206/ 15
- 2015: Layer of Protection Analysis – 1-day course
- 2015: EU Requirements to machinery manufacturers, importers and distributors. (DI seminar)
- 2015: 2006/42/EU Machinery Directive (Maskinsikkerhed.dk)
- 2014: Gas Conditioning and Processing - G-4 - John M. Campbell
- 2012: Basic Safety Training incl. HUET, certificate valid until February 2020
- 2011: Risk Assessment & Hazardous Area Classification - 2-day course. (Baseefa Certified)
- 2011: Safe Use of Electricity in Potentially Explosive Environments – (Baseefa Certified)
- 2011: ISO 9001 Quality Management Systems Auditor/Lead Auditor - FORCE Technology - Certificate no. fdla263-05A
- 2010: Layers of Protection Analysis (LOPA) - 1-day course.
- 2010: DWD – Dealing with Dilemmas (DNV) 2010: Basic safety and health (DNV)
- 2009: IEC 61892 series, Mobile and fixed offshore units - Electrical installations, incl. Norwegian Legislation - 4-day course. (Trainor AS)
- 2008: Project Management 1 (DNV)
- 2008: Ex authorization cabinet construction - 3-day course. (Trainor AS)
- 2008: Risk Management Introduction (DNV)
- 2008: Project Manager 0 (DNV)

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Summary of Professional Experience:

Electrical engineer authorized by the Danish Safety Technology Authority. – Certificate no. - 2-6020, 20+ years proven experience within international projects, starting from hands-on crafts man, test/commissioning engineering, project managing and as per today, within project verification as Verification Engineer. Latest projects are within the Oil and Gas sector, previous areas have been within power plants, advanced machinery for paper press among other areas. Experience obtained as contractor, manufacturer, government authority, Verification Surveyor (DNV) and as Technical Authority in the E&P business

Multi discipline experience e.g., Electrical, Instrumentation, ESD, F&G detection, Ignition Source Control, Software validation, Emergency Power Evacuation and Escape, lifesaving Appliances (SOLAS), Practical Technical Safety, ATEX, Machinery safety, PED, Functional Safety, QA/QC. Participated in Bow Tie analyses, Layer of Protection Analyses, Safety Critical Elements identification, establishing of Performance Standards Incl. Verification Schemes Ex (IECEx / ATEX), Area Classification (Explosion Safety Document), design/installation electrical and Non-Electrical equipment, inspection & maintenance. Risk assessment, compliance documents and CE marking.

Certificates of Personal Competencies:

- CompEx Ex12A&B Ex (ATEX & IECEx) Application Design Engineer - # 00469ADE
- Baseefa Certified within Safe Use of Electricity in Potentially Explosive Environments - # 11/0372/6 - Baseefa Certified within Risk Assessment & Hazardous Area Classification.
- Functional Safety Engineer (TÜV Rheinland) # 11206/ 15
- Gas Conditioning and Processing - PetroSkills Sep. 2014 (John M, Campbell)
- Quality Management Systems - ISO 9001 # fdla263-0
- Layers of Protection Analysis (LOPA) 2010 & 2014
- IEC 61892 series, Mobile and fixed offshore units, Electrical, incl. Norwegian Legislation (Trainer)
- Ex authorization cabinet construction (Trainer)

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Position as Verification Engineer at Bureau Veritas, Oil & Gas and Renewable Energy:

Surveyor / Verification Engineer at Bureau Veritas (BV) - Esbjerg, related to certification, verification, inspection (QA/QC) of topside facilities.

As part of my basic work at BV, I am involved in on- and offshore inspection and project verification work of topside facilities within my competences, mainly for Hess Corporation (Syd Arne – DK). The verification work is related to validating compliance with legislation and standard requirements, and operator's specifications etc. Inspections/surveys to verify project compliance with the verification documents. Above include audits, inspections and witnessing, quality assurance and quality control (QA/QC) at supplier / manufacturers' facilities.

Position as TA at DONG Energy Oil & Gas:

Technical Authority E&I – Hejre Topside (HPHT Oil Production Platform), Senior E&I Engineer (Team Lead) - Multi discipline (Electrical, Instrumentation, F&G, ATEX, Machinery, Functional Safety etc.

- Responsible for equipment and installations complying with Danish legislation, EU Directives, recognized standards and company specifications.
- Stay up-to-date on Legislation, EU Directives and Standards, ensure knowledge sharing through the organization, ensure internal standards, guidelines and procedures are updated etc
- Development of Performance Standards within F&G Detection systems, ISC, Emergency Power, and Emergency/Escape light among others.
- Supporting the Operations Department in their daily activities on existing production platforms.
- Assuring the quality of all projects, including equipment, materials, components and systems utilized in the projects, during manufacturing of equipment/systems and in the daily operation of topside- & production/process facilities.
- Daily communication with 3rd party Certifying Agency (Det Norske Veritas) to provide evidence for compliance with relevant regulations, standards & HSE procedures.
- Participate in audits, inspections and witnessing, quality assurance and quality control (QA/QC) both off-site at manufacturers' facilities and on-site during the construction process.

Position as surveyor/verification engineer at Det Norske Veritas (DNV GL):

Surveyor / Verification Engineer at DNV Energy - Esbjerg, related to certification and verification of topside facilities.

As part of my basic work at DNV, I have been involved in on- and offshore inspection and project verification work of topside facilities within my competences, mainly for Maersk Oil & Gas AS and DONG Energy E&P. The verification work was related to validating compliance with legislation and standard requirements, and operator's specifications etc. Inspections/surveys were carried out to verify project compliance with the verification documents. Above include audits, inspections and witnessing, quality assurance and quality control (QA/QC) at supplier / manufacturers' facilities.

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Through my involvement with Maersk Oil & Gas and DONG Energy E&P I have gained experience within variety of technical safety areas, i.e. within electrical and machinery safety, Emergency Power, Ignition Source Control (ATEX), Fire and Gas Detection Systems, Alarm Announcement (PAGA), Process Safety, Fire Water systems, Emergency Escape ways/light, amongst others.

List of Areas with special involvement:

- Participation in the DNV, DONG "Hejre Project Development" TEAM, verification of Contractor FEED studies
- Participation in ATEX standardization group S-531 (DNVs member in Denmark)
- Participation in TTS at Statoil Stjørdal Åsgard A in PS 3 & 7 Fire and gas detection. (Technical Safety Barrier Management) 03/2010.

Publications and Papers:

Elektriske installationer i eksplosionsfarlige områder. (Electrical Installations in Hazardous Areas) Published by the Danish Safety Technology Authority in Electra 2007. Read the article at

<https://www.sik.dk/Global/Publikationer/Artikler/Artikler-fra-Electra/2007/Elektriske-installationer-i-eksplosionsfarlige-omraader>

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Supplier / manufacture Inspection job references:

Maersk Oil & Gas (DK and Qatar)

UPS systems (Gutor, Switzerland)

Distribution Panels / Switchboards (ABB, Semco, BarTec, Stahl etc.)

Control Panels, ESD, Scada & UCPs (Siemens, ABB)

Lifting Appliance, including systems for personal lifting. (Electrical & Instrumentation)

Rotating Equipment, pumps. (Sulzer, LeWa, Milton Roy etc.)

Software test (ESD) (Siemens, ABB, ICS Triplex & Yokogawa)

F&G system's (Detectors & control systems)

PA/GA system (SemSound – Bosch)

Well Service equipment

DONG Energy E&P (Oil & Gas)

UPS systems (Emerson & Schneider Electric)

Distribution Panels / Switchboards (Semco, ABB, & Emerson)

Control Panels, ESD, Scada & UCPs (Siemens, ABB)

Lifting Appliance, including systems for personal lifting. (Electrical & Instrumentation) (Norsafe)

Rotating Equipment

- Emergency generators (MTU)
- Fire pumps (Frank Mohn)
- Turbines generators (enclosed equipment) (MAN Turbo & Diesel)

Software test (ESD) (Siemens)

F&G system's (Detectors & control systems)

PA/GA system (SemSound & Neumann, Germany)