Ekofisk Tank Topside Removal project

Tormod Austad

Project Manager Ekofisk Tank Topsides Removal

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(Seminar- removal and disposal of offshore structures, 12.12.2006)





Removal of Ekofisk 2/4 Tank Topsides Facilities Ekofisk Complex







30 years of history and evolution....







Ekofisk I Cessation Project Challenges

- Safety
- Cost
- Ekofisk Tank complex facility
- Interfaces to other development activities
- Onshore Disposal





Ekofisk I Cessation Project HSE Risks

- Lifting operations
- Handling of hazardous substances
- Hot work
- Work in height
- Falling from heights
- Potential for dropped objects
- Potential for squeeze/crushing and cut accidents
- Fire in HC residues
- Exposure to toxic fumes while hot cutting
- Front runners exposed to chemicals while handling hazardous waste





Ekofisk I Cessation Project Risk- and Barrier Management

- Risk analysis in planning phase (onshore):
 - Task analysis (qualitative risk analysis)
 - QRA (quantitative risk analysis)
 - Pre-SJA for every job pack
 - Emergency preparedness
 - Barrier register (MTO)
 - Risk evaluation of chemical exposure
 - Work environment analysis
- Risk analysis in execution:
 - SJA (Safe Job Analyses)



VEDLEGG B LEDERORD FOR PRE-SJA

Lextenendene brukes i Pre-SJA matet ved gjermorngang av joldspakkens deleakteviteter

	Maskimarbeid	Tilkomst, egnethet av maskur/begrensninger, utilsikret dropp ved klipping,
		fare för spenn, maskunförers sikt, samhandling mellom maskiner
	Manuelt arbeid	Adkomst, arbeid i høyden, egnethet av verktøy/begrensuinger, vannt
		arbeid, utilsiktet fropp/bevegelser ved brenning
	Lefting	Egnether av løfteutstyr, tilkomst, optimalisering av køtt, utilsiktet
		dropp/hovepelser ved kolling, statyret "henger sog fast", nedlegging av
		utstyr
	Utstyr som skal nives	Gjenværende hydrokarboner, strukturell integrifet, Uførs ging/utstyr henger-
	-	"på utsiden", komplekse struktuser/komponenter,
	Avgumming av JP	Kantlegging og merking av kuttlinjer, gjernomføring av hutt behov for
		eksira supportening, fare for spenn
	Påvirkning på omgivelser	Rive metodens påvinkning på området under eller ved siden av,
		tilgrensende rømningsveier, grensesnitt mot andre arbeidslag
	Pávékning fia	Päwirkning fra andre arbeidalag, vez/vind/redbar
	omgivelser	
	The Assessment's second Manual Street	Management of the second second second second second

Tredjeparts verifikasjon – Komplekse forbold som har verifiseres





Management of key risk areas

- Minimize personnel exposure for risk
- Personal Protective Equipment (PPE)
- Training
- Procedures and routines
- Monitoring and health surveillance
- Audits and monitoring activities
- "Smartere Sammen"





Principles for deciding demolition method

- Machines takes precedence versus manual work
- Limit hot work
- Limit internal lift by optimizing size on object
- Avoid working in heights and ease access by controlled descent of objects
- Mobile working platform as opposed to scaffolding
- Void complex sea lifts by use of containers







Piece small method

- Demolition performed with excavators and hydraulic cutting shares
- Hot cutting of thick steel, vessels and pipe.
- Hot cutting of steel outside reach of excavators, e.g. helideck, CCR building
- Lift down with cranes or excavators
- Scrap material loaded into containers
- Container stored on designated areas awaiting shipment to shore.
- Containers loaded onto supply boat with the barrier cranes for transport to shore.







Handling of lifting risks

- Identify lifting operation early in planning phase
- Suggestions with alternatives in for lifts in job packs

- Uniform lifts
- Optimize weights
- Training of personnel
- Safety Job Analysis





Ekofisk I Cessation Project Qualifications and training requirements

30 courses established in the following topics:

- Safety courses for offshore work
- Introduction to procedures and HSE
- Stropping and rigging
- Access techniques
- Hot work and work permits
- Safety Job Analyses (SJA) training
- Handling of various hazardous materials
- Hazardous waste
- ADR/IMDG (transportation of hazardous materials at sea)
- Prevention and protection of oil spill
- Radiation protection







Ekofisk I Cessation Project Basis for good HSE culture

- Teamwork in engineering phase between AFDecom and COP personnel
- "Smartere Sammen"
- Offshore personnel participated in planning of the work.
- Extensive training of offshore personnel
- Experienced onshore personnel recruited for offshore work
- Establishing a high HSE standard early in the project.
- HSE as focus with the AFDecom and COP organizations





Pro active HSE tools -daily work activities

- Focus on active participation and two way communication in SJA, morning meetings, hazardous observations reporting (RUH)
- Visible management
- PSI conversations
- ConocoPhillips Cardinal rules
- Focus on Housekeeping







Motivation factors

- Active participation and communication through meetings (daily, HSE, SJA) and RUH reporting.
- Respond and implement actions quickly
- Visible leadership
- Offshore visits by onshore project management
- PSI conversations (aim at good HSE culture)
- Safety stand-downs
- Recognition when something goes well
- Frequently repeat the COP Cardinal rules
- Good Housekeeping









Special made containers

Loading and handling of containers on 20 m deck.



Cold cutting of steel structure, Maximum reach 27m

www.atdecom.no

COLUMN STATE

 Cold cutting with diamond wire saw.

Use of machines prioritized over manual work.

操作目的



Demolition of helideck















Lifting of weather bridges

• Thialf lifted down the two weather bridges between EkoT and EkoR & EkoP on the 31 of July.



ConocoPhillips







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