

Bruk av coriolis til måling av nedkjølt naturgass og Biogass i Gasnor.
LNG og LBG



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Gasnor



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GASNOR
A Shell Subsidiary

- Utvikling
 - Første drift i 1994 med rørgass. LNG fra 2003.
 - 50 ansatte (Karmøy, Bergen, Kollsnes, Oslo)
 - LNG produksjon i Øygarden og Karmøy
 - Distribusjon langs hele norskekysten med tankbiler og skip.
- Shell 100% eier fra 1. sept 2012.
- Shell satser stort på LNG til transport – world wide



Forskjellige systemer og emner

- Målesystem båt terminal
- Målesystem trailer
- Målesystem produksjons anlegg ,lasting av båt og trailer med gassretur.
- Batch Controller
- Energimåling med GC og LNG probe
- MID godkjenning og forskrift

Coriolis bruk på kai for måling inn og ut av skip fra terminal

- Coriolis for flowrater på ca 300 m³/h med LNG.
- CMF350 og 5700 transmitter
- Transmitter brukes til å koble sammen coriolis med resten av systemene. Er også koblet direkte til sentralt kontroll system.
- Transmitter inneholder SMV og CT software.
- Transmitter inneholder også alle kalibreringer og filter.
- Er montert som «tube up»



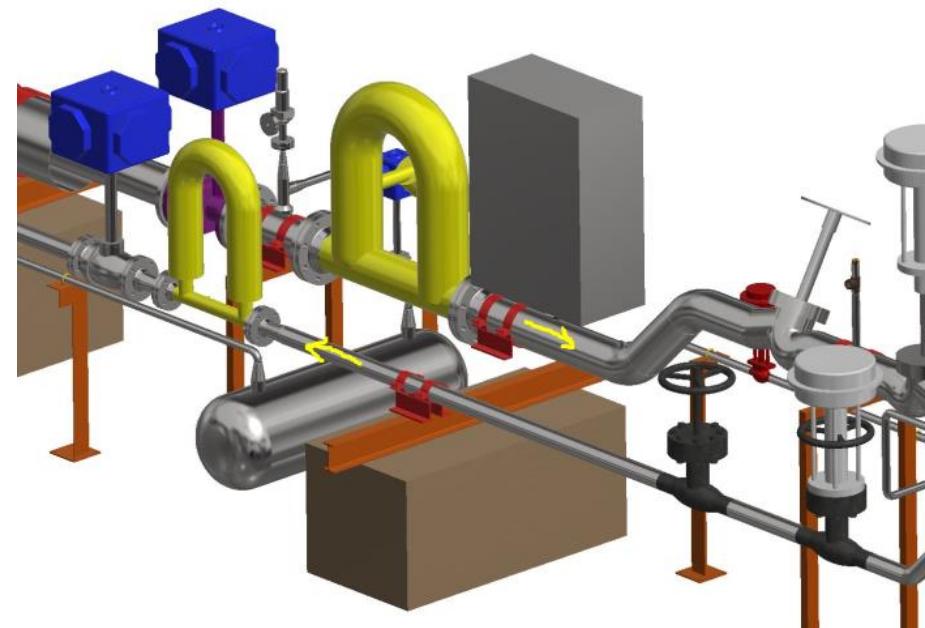
Corilois bruk i trailere for å måle alt som blir levert ut

- Corilolis for flowrater på ca 50 m³/h med LNG.
- CMF200 og 2700 transmitter
- Transmitter brukes til å koble sammen corilois med resten av systemene.
- Transmitter inneholder CT software.
- Transmitter inneholder også alle kalibreringer og filter.
- Er montert som «tube up»



Coriolis bruk på kai for måling ut av produksjonsanlegg til skip og trailer med gassretur. Også inn og ut av selve skipet (Pioneer Knutsen)

- Coriolis for flowrater på ca 400 m³/h med LNG.
- CMF350 og 5700 transmitter
- CMF200 og 5700 transmpter
- Transmitter brukes til å koble sammen coriolis med resten av systemene. Er også koblet direkte til sentralt kontroll system
- Transmitter inneholder SMV og CT software.
- Transmitter inneholder også alle kalibreringer og filter.
- Begge montert som «tube up»



Batch controller

- Batch Controller brukes der hvor vi har flere kunder på et målesystem
- Samler pulser fra transmitter og legger dette inn i batch. Er det gassretur trekkes retur fra.
- Mulighet for utskrift
- Alle våre laste og losse lokasjoner ligger inne i systemet.
- Får brennverdi og densitet fra GC systemer.(automatisk)
- Er koblet til Gasnor transportsystem som også lager BDN i tillegg til rapporter.



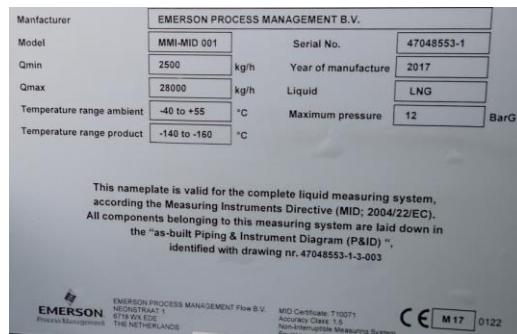
Energimåling ved bruk av GC og LNG probe

- Kompakte GC systemer
- Heises direkte ut i felt ferdig testet
- Precooled probe, rask nedkjøling.
- Innenfor Norsok grenser på analyse og lag-time.
- Validering og kalibrering kan gjøres fjernet over nett.
- Er koblet til nettverk som gjør at den kan linkes med alle flowcomputere.



Godkjenning for kjøp og salg

- Alle målere som brukes til kjøp og salg av LNG/LBG i EU/EØS skal være førstegangs verifisert ihht MID og deretter ihht gjeldende forskrift i landet den er montert.
- Gjeldende forskrift i Norge er 1738.
- Alle målere i denne presentasjonen er førstgangsverifisert ihht modul B-D.
- Dette gjelder systemet coriolis, transmitter, flowcomputer og printer.





Takk for oppmerksomheten



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