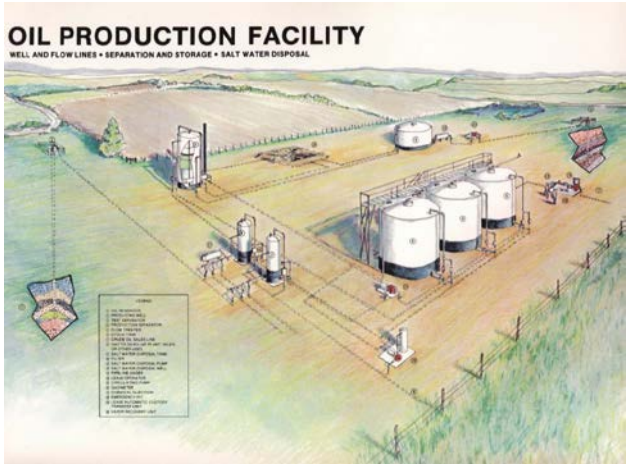
Aera Energy Reduces Maintenance Costs Associated with Turbine Meter Blade Replacement



Application
Upstream Oil and Gas
Water Injection

Application

- Aera Energy, a Joint Venture of Shell and ExxonMobil
  - Use Turbine Meters for Water Injection in California
  - Water injection application critical to support the ground surface properly to eliminate the potential for collapse
  - Oil content up to 10% in water
  - Historically turbine meters have been used for these measurements because of the familiarity with the technology.

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Process Management

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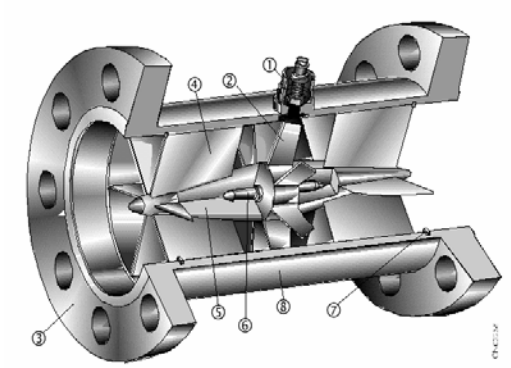

Application
Upstream Oil and Gas Water Injection

Challenge

- Turbine Meters are mechanical devices susceptible to wear on the blades and bearings due to high flow rates, sand/slurry, and coating
  - affecting performance
  - extra maintenance
  - Wear causes inaccuracy and eventually down-time.
- High Pressure Drop
- 10D Up and 5D Down Required for Installation

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Aera Energy Reduces Maintenance Costs Associated with Turbine Meter Blade Replacement

"Rosemount Magnetic Flow Meters eliminate maintenance costs associated with turbine meter blade replacement"

Solution

- Rosemount Magnetic Flow Meters, Install it and Forget it!
  - No Maintenance, No Moving Parts to Wear
  - No Pressure Drop
  - Proven Reliable in Applications with up to 20% Oil Content and up to 80% solid content
- High Performance in a broad range of velocities
  - Coverage to very low and very high flows
- E-series offers dramatic reduction in Upstream/Downstream Requirements

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Aera Energy Has Installed Over 7000 Magmeters

0.5” 8711 with 8732 Magmeters

Results:

- All turbine meters changed to Rosemount magmeters
  - Reduced maintenance costs
  - Reduced trips to the field
    - Turbines are checked once per year
    - Mags are checked once every 3 years
      - 1 hour to check ($45/hr)
      - Turbine – $315,000 per year
      - Mag – $105,000 per year
  - Eliminated blade replacements
    - 1” = $200
    - 2” = $350
    - Assume 1” blade replaced every 5 years
      - $280,000 per year in parts

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