

# Cost savings using SOLV - FPSO

**PROJECT** Mapping and maintenance of safety barriers according to regulations and operators defined requests.  
**KEY WORDS** Terra Nova. Rotterdam.

## Background

Terra Nova FPSO had a need for a large upgrade and was planned to dock year 2006 in Rotterdam for the Turn Around.

The Surface Maintenance and Passive Fire Protection (PFP) insulation was a big and important part of this scope of work. The specifications for insulation and surface protection needed to be updated and reviewed before starting the planning of the work.

The customer also requested a maintenance cost estimate outline (materials and hours).

There were AGR Field Operations personnel present at all times during the docking period to secure the right quality and progress.

SOLV optimises the maintenance operations with regards to cost, safety and quality. The concept is based on a methodical and detailed recording of total maintenance scope, surface condition and other relevant data of corrosion management.



## The Situation

There were different comprehension on surface - and insulation maintenance within the client's organization.

The maintenance scope was set by individual person's prioritizing or available budget.

Surface - and insulation maintenance had been a balancing item for cut.

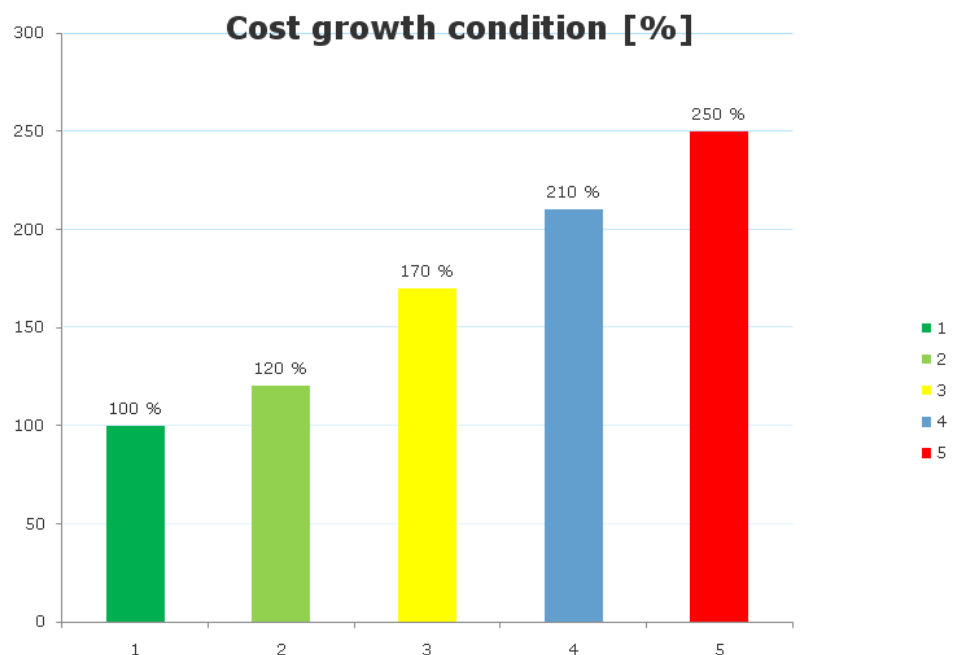
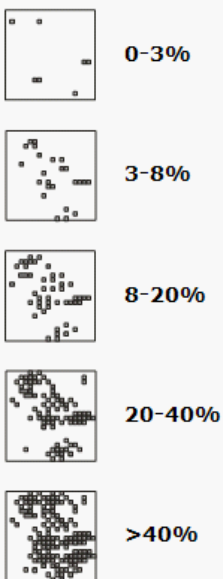
The specifications were outdated and did not meet requirements.

Cheapest insulation material had been used and all PFP insulation did not meet requirements.

Paint system on topside was broken, and antifouling was not applied during new build.

## The Solution

- New specifications to be prepared with requirements on quality on executed work.
- Set requirements for paint system and paint materials.
- Establish a descriptive study for control and overview according to customer's requirements.
- Measure all painted areas and all PFP insulated lines.
- Register the condition on all items.
- Be able to prioritize surface and PFP insulation maintenance after condition and/or criticality and be able to select the most important detail first.
- Establish a budget tool that gives full cost control before and during work.
- Determine an accurate and defined scope of work for maintenance.
- Follow up quality requirements during docking
- Provide technical support and competence to the installations during the docking.



*Production forecasting was based on detailed reservoir models.*

## The Estimated versus Actual

Facility Maintenance and Corrosion Management (FM/CM) has worked with the main oil & gas operating companies in the North Sea.

Following services is provided by FM/CM:

External corrosion management and Insulations Maintenance systems aligned to industry safety & integrity best practice.

Consultancy providing technical solutions to external coatings, corrosion and insulation problems, including external integrity audits, failure investigation and the preparation of specifications for problem areas.

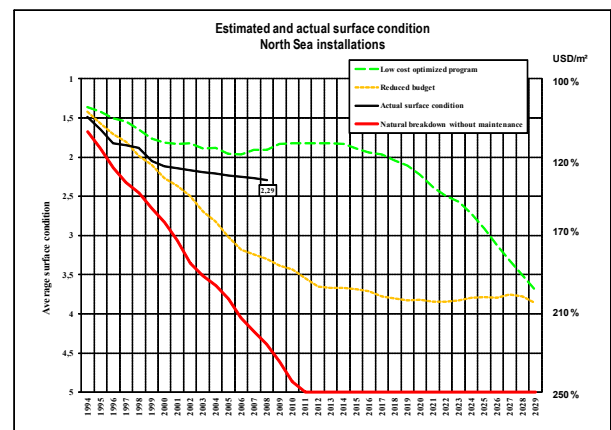
Management services includes the preparations of insulation and coatings strategies, long term plans and detailed work packs and project management of related activities such as scope definition, procurement, safety management and quality control.

Inspection & quality management services including insulation and coatings inspection surveys; preparation of detailed insulation/coatings/corrosion inspection work packs; third party insulation/paint inspection; and the training of coating/corrosion/insulation inspectors.

These services are delivered by the FM/CM's expert team of insulation and corrosion engineers, coatings and insulation inspectors and surveyors, which includes many FROSIO-certified inspectors.

FM/CM's unique management tool, SOLV, enables the team to provide the best support to asset owners requiring any advice concerning corrosion, coatings or insulation.

The system has been used the last 18 years and the costumers have achieved cost savings up to 70 %.



Estimated and actual surface condition North Sea installations



## The Results

The survey with a descriptive study gave full control and an overview on the installation maintenance needed. It was possible to establish plans and budget from the information in the study. It was easy to prioritize surface maintenance after condition and/or criticality. To prepare and select the scope of work became easy and clear.

By preparing work packs, with accurate and defined scope of work for maintenance, the result gave up to 40 % savings.

The requirements for paint system and paint materials and quality inspections resulted in extended lifetime from 2-5 years to 12-15 years. The survey study identified maintenance needs on safety barriers, and this survey system satisfied government requirements and demands.

From the study on PFP insulation it was easy to make scope of work, with list of materials, drawings and all needed information included.

Savings with SOLV

0 %	5 - 15 %	20 - 30 %	30 - 40 %	40 - 55 %
Hourly based work	Hourly based work with advisory	Hourly based work with SOLV	Hourly based work with incentive and SOLV	Fixed price with SOLV

## ABOUT AGR GROUP

AGR Group is a leading provider of essential services and technologies to the international oil and gas industry. Our services range from assisting small exploration companies with their first licence applications through to constructing and managing ambitious drilling programmes for major organisations. In addition, we provide expertise, technology and critical solutions for exploration, development, production and maintenance projects for some of the world's largest oil companies.

We have a worldwide reputation for our innovative, safe, environmentally-friendly and cost-effective solutions to key exploration and production challenges and have established a leadership position in a number of key sectors. We focus on growth and earnings performance while pursuing sound and ethical business practices.

We have three operating divisions:

- AGR Petroleum Services
- AGR Drilling Services
- AGR Field Operations: Maintenance management

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