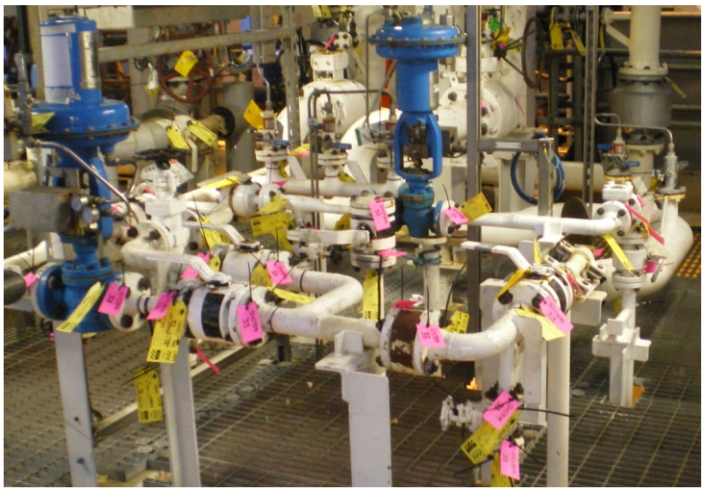
OFFSHORE BOLT PROTECTION

On an offshore platform in the North Sea operated by Chevron and ConocoPhillips, Enviropeel was already successfully protecting small diameter flange bolts that had been severely affected by galvanic corrosion. So, when it came to choosing a system for bolt protection on a new linked platform, the operators decided that Enviropeel was the best approach to use as, even though the new platform was yet to be fully commissioned, it was already suffering from the corrosive effects of the saltwater environment on its bolted systems and needed immediate protection.

Left: a typical flange with bolt corrosion after only a eighteen months.

Below: a small section from the platform showing the inspection tags indicating remedial action required.



PLANNING

The original specification called for 6087 flanges on 25 pipe systems throughout the platform. Two surveys were completed to identify and tag all the target flanges and a seven month program of application was planned. Two six-man teams using three offshore application units on a two-shift, 24-hour rotation started in February with the objective of finishing before the end of August.

MOBILIZATION

Although the first work took place in February, accommodation and other issues delayed the second trip and application only began in earnest in mid June – reducing the time available from seven months to fewer than three. As well as less time, additional joints were added to the schedule, making a new total of 7123.

The reduction in the time available forced a number of operational changes on the project. Manpower was increased from six to eight per shift, with an extra application unit and full utilization of all machines, rather than having one or two on standby as originally intended. Maximum manning was achieved in August when twenty-four personnel and five application units were in full-time operation.

KEY FACTORS

Existing corrosion in bolts

Need for long-term protection

With pressure for increased joint numbers, at the same time as a requirement to maintain strict quality control, it took a massive effort by the teams, supervisors and client to streamline the identification, recording and application process, allowing the teams to begin increasing the numbers of joints completed. Despite equipment servicing issues (arising from the non-stop use and unprecedented volumes of material) and delays from operational issues as the platform systems went 'live', application numbers steadily increased to a final average of 200 joints a day.

CONCLUSION

Meeting the production targets in such a drastically reduced timescale created challenges that could not be solved by simply increasing manpower and equipment levels – tripling the workforce and adding extra application units did not have the same effect on the output; working practices and logistics all had to be revised as the project developed, to maximize productivity.

The final result was not just a higher number of joints completed than the original workscope, but also a far greater understanding of what was required to adapt to new challenges.