

ONGC extends life of offshore assets with Bentley SACS

INDIA'S OIL AND Natural Gas Corporation (ONGC) began exploring for oil in Indian waters in 1976, and is currently operating more than 265 offshore fixed jacket platforms in water depths ranging from 25 to 90 metres. Most of these platforms had a 25-year design life, with many of them having already outlived this milestone and many more approaching it. Additionally, modifications on many of the platforms have been made. As a result, the requalification of these structures was highly important to ensure continued oil production. ONGC also wanted to avoid the cost of installing new platforms.

The company has therefore invested US\$150mn to assess its jacketed platforms for extended 'fit for use' and strengthen the platforms as required to meet industry safety requirements. ONGC has used Bentley's SACS software for design-level analysis to carry out detailed structural analyses and SACS Collapse for ultimate strength analysis. This technology became part of ONGC's methodology for platform life extension/requalification, which added 10-15 years to the average life of each structure.

The analysis included dent modelling, member/joint component strengthening, additional pile modelling, and soil convergence, as well as extensive load modelling to recommend equipment removal if necessary. SACS and SACS Collapse, with the efficient multi-run option, allowed multiple analyses with parametric variations to be



An example of jacket platforms in the western offshore region. (Photo: ONGC)

carried out simultaneously and enabled ONGC to optimise the strengthening/mitigation measures, saving at least 12 resource hours per platform.

Dinesh Kumar, GGM, head structures, IEOT-ONGC, India, said, "The wide range of applications offered under the umbrella of Bentley technology has resulted in ONGC being able to manage our offshore assets much more efficiently."