

## TALISMAN MALAYSIA SOUTH ANGSI PLATFORM COMPLEX

### Review of Interconnecting Bridges

ICON Engineering was engaged by Talisman Malaysia to perform a detailed structural engineering review of interconnecting bridges within their South Angsi Platform complex.

The structural inventory includes several bridges between fixed platforms and also a dynamic bridge between the Angsi FPSO and the South Angsi A platform. ICON's scope included a detailed site survey of existing facilities, which identified several instances of cracking in highly stressed components of the bridge support systems and structures.



Bunga Raya D and Bunga Raya E Bridges

#### Review of Temporary Repairs

Some of the problem areas identified had been partially repaired prior to ICON's commission. As such the engineering work focussed on adapting and integrating these repair works where possible to achieve an effective long term solution.



Partial repairs by other contractors were assessed and integrated

#### Design of Long Term Solutions

Other problem areas, particularly on the dynamic bridge required detailed analysis. An array of solutions was developed. Some involved a local strengthening of key support systems, which were prone to fatigue. Others involved a more significant modification of the support systems to establish more effective mechanisms.



Angsi FPSO to South Angsi A Dynamic Bridge

The Client was able to provide dynamic analysis and motion data for the various fixed platforms and the spread moored FPSO. ICON was able to perform the bulk of the structural analysis work using "Spacegas" software.



Pivot Bucket support of dynamic bridge (step removed)

Solutions were tailored to suit both the operational constraints and also the capabilities of the infield maintenance personnel. As all of these facilities were fully operational, the recommended repair scopes and procedures had to cater for safe access and egress by operational personnel at all times.