

## Northern Endeavour FPSO Crane Boom Change-out

**Client: Woodside Energy Limited**

### Overview

AEC was engaged by Woodside to perform conceptual and detailed engineering for the first ever large crane boom change-out on an on-station FPSO in Australia, without the use of a second crane or construction barge.

### The Challenge

To replace a corroded, de-rated 46m long Favco crane boom with a like-for-like new replacement, while the FPSO is on-station and operating, without using a marine spread or construction vessel.

### The Solution

AEC produced an innovative methodology detailed below:

1. Ship the new boom to site in pieces using the regular facility supply boat.
2. Lift the new boom on deck using the old (de-rated) crane boom.
3. Assembly the new boom on deck, then lift and place it on an elevated, custom built slide-frame structure.
4. Rotate the old boom down on a second custom built, elevated slide-frame. Disconnect and slide the old boom free using rigging.
5. Slew the boom-less crane cab and align with the new boom. Slide-in, connect and commission the new boom.
6. Use the new crane boom to lift the old boom and place on deck for dismantling and offloading.

AEC produced all concepts, detailed steel-design, rigging design, lift plans and led the constructability reviews both onshore and offshore. AEC also provided on-site supervision during execution of the works.

### Outcome

The project was completed on-time, on-budget and without incident and was considered highly successful by Woodside. The Offshore Installation Manager (OIM) presented an award to the AEC design team at the AEC offices in recognition of the project success.

