

### 2.2.6 Hot Tap Tees and Removable Spool

Five hot tap tees are provided along the GEP route to facilitate future midline tie-in of pipelines from other fields. The hot tap tees are welded inline and comprise:

- a 1050mm x 500mm (42 x 20 inch) tee main body with sealed branch (i.e. not pre-drilled) which is orientated with the branch vertically up, thus preventing dead leg corrosion issues;
- a diverless subsea connector hub welded to the branch with a protection cap; and
- an overtrawlable protection shroud.

No pigging bars are required as the tees are in-line inspection (ILI) tool compatible through the main 1050mm (42 inch) bore.

A removable spool is installed to allow connection of a future compression platform (if required). The removable spool consists of an 83.2m straight pipe section with flange sets at each end. The flanges are provided with shrouds to provide anti-snag protection.

The hot tap tee and removable spool locations are as follows:

- hot tap tee 1: KP 48.254;
- hot tap tee 2: KP 84.547;
- hot tap tee 3: KP 185.106;
- hot tap tee 4: KP 373.489;
- hot tap tee 5: KP 594.082; and
- removable spool (upstream flange): KP 381.497.

### 2.2.7 Beach Valve [NT DME Jurisdiction]

The 1050mm (42 inch) beach valve is provided to isolate the offshore GEP in a loss of containment event in the downstream section of the onshore GEP.

The requirements for a beach valve and the beach valve design, functionality and assurance regimes have been established based upon a number of safety studies and risk assessments conducted early in the Project. These are described in Section 4.11.2.

The valve is welded inline, below ground (with the actuator mounted on a stem that extends above ground) immediately upstream of the DNV-OS-F101 / AS2885.1 design code break. There are no small bore flanged connections associated with the beach valve.

The beach valve is located within a fenced, locked and Closed Circuit Television (CCTV) monitored compound which is accessible via a permanent gated access road off Wickham Point Road [229]. The beach valve station is fitted with intrusion detection and lighting and is located approximately 7km from the Onshore LNG Facility.

The beach valve station (finished grade level) and permanent access road are above the extreme water level associated with 200 year return period cyclonic conditions, equivalent to being above 5.8m Australian Height Datum (AHD).

The beach valve is electric motor actuated and is operated manually either locally or remotely from the Onshore LNG Facility control room. The control signals are provided by dual redundant fibre optic cables. The actuator power supply is from the emergency power supply at the LNG Facility.