

SYSTEM FOR SUPPLEMENTAL TENSIONING FOR ENHANCED PLATFORM DESIGN AND RELATED METHODS

ABSTRACT

Riser management systems (30), apparatus, and methods to maintain a selected range of tension on a plurality of risers (21) extending between subsea well equipment (23) and a floating vessel (25), are provided. A riser management system (30) can include a mono-buoyancy can platform (31) operably coupled to a plurality of risers (21) extending between subsea well equipment (23) and a moored floating vessel (25), and a plurality of tensioner units (51) each connected to a top portion of a separate one of the risers (21) to provide tension to each of the risers (21). The mono-buoyancy can platform (31) can provide tension to each of the risers (21) sufficient to compensate for a relative vertical offset between the risers (21) and the vessel (25) due to vessel movement, which generally affects each of the risers (21) equally, within tolerances, while the tensioner units (51) can simultaneously provide tension to compensate for one or more additional factors which can affect each riser (21) differently.

Figure 1