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ABSTRACT

TUBING ANNULUS VALVE

A subsea wellhead assembly has a tubing hanger with a tubing annulus passage and a production passage. A metal-sealing shuttle valve is mounted in the tubing hanger for blocking upward flow through the tubing annulus passage. The shuttle valve has a retention mechanism that prevents the shuttle from moving to the open position when fluid pressure is applied from above. The retention mechanism is released by the running tool after testing has been completed, causing the shuttle to close. The tree has an engaging member that can be stroked downward into the tubing hanger annulus passage to move the shuttle valve to the open position for communicating with the annulus.

FIGURE 1A