


<b>Safety Bulletin</b>				Tesco Corporation 5616 – 80th Avenue SE Calgary, Alberta, Canada T2C 4N5 Tel: 1-877-TESCO-77 (North America) Tel: 1 (713) 359-7195 (AMSS 24-hour support) Tel: 1 (713) 359-7295 (International) Email: <a href="mailto:bulletins@tescocorp.com">bulletins@tescocorp.com</a> <a href="http://www.tescocorp.com">www.tescocorp.com</a> <a href="http://www.tescoparts.com">www.tescoparts.com</a>
<b>No: SB059</b>	<b>Rev: 0</b>	<b>Date: 31 May 2011</b>		
<b>Pipe Handler Unlock Proximity Switch          Affects Hydraulic Top Drive Motor          Control &amp; ESD Reset</b>				

**BACKGROUND INFORMATION:**

An incident occurred in which the HXI Top Drive motor control disengaged (that is, the high and low range solenoids were de-energized) during operation. The proximity sensor on the Pipe Handler Unlock proximity switch (located on the top drive) did not function correctly, resulting in the Pipe Handler wrongly indicating as being “unlocked” when in fact the pipe handler was “locked”. This event will force the PLC control logic to de-energize both solenoids, which may result in uncontrolled unwind of the drill pipe. This, in turn, could result in drill pipe connection breaking and causing injury to personnel.

In another incident, TESCO found an issue involving the Emergency Shut Down (ESD) circuit located at the top drive driller’s panel. Pushing the ESD button deactivates the prime mover if there is an emergency and top drive operation is interrupted. If the ESD is reset, there is a possibility of the top drive equipment to automatically restart or resume operation from the last known setting, which could endanger personnel.

**AFFECTED PRODUCT:**

All TESCO HXI Top Drives that are equipped with PLC control.

**RECOMMENDED ACTION:**

After reviewing the HXI Top Drive PLC code, TESCO concluded that the code required re-programming and corrective action was taken immediately:

- The HXI Top Drive PLC program has been modified so that the high and low range solenoids remain energized, effectively shifting the top drive into neutral in the case where the Pipe Handler proximity sensor signal is lost. Instead, the hydraulic pumps are swashed to zero flow so that the torque holding capacity of the top drive is maintained, thus preventing an uncontrolled unwind.
- The HXI Top Drive PLC modification also includes wiring the driller’s panel ESD circuit status back to the PLC. This allows the ESD status to be monitored at all times as well as resetting all drilling parameters if ESD is activated. This ensures that the HXI Top Drive equipment will not start or resume automatically if ESD is reset.

A new PLC program was created and distributed to owners and operators of the HXI Top Drive. Version 4 (CODE\_PLC\_HXI\_228\_XXX\_Rev4) resolves both issues described above, while Version 5 includes this and other operational upgrades.

It is important that the HXI Top Drive utilizes the latest PLC code to ensure proper operation. Contact TESCO to arrange for an update to the top drive’s PLC program.

Version	Date (D/M/Y)	ECN	Description of Bulletin Changes
Rev 0	31/05/2011	127-0369	Initial release of document