

# REPORT OF TEST

Issued by : TUV SUD NEL Limited

Certificate No. : 439PVS

Date of Issue : 16 March 2012



TUV SUD NEL Limited

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**Customer** Energy Project Solutions Limited, Keystone Innovation Centre, Croxton Road, Thetford, Norfolk, IP24 1JD

**Authority for work** EPS Limited Purchase Order No. EPS-PO-0312-003 dated 06.03.12

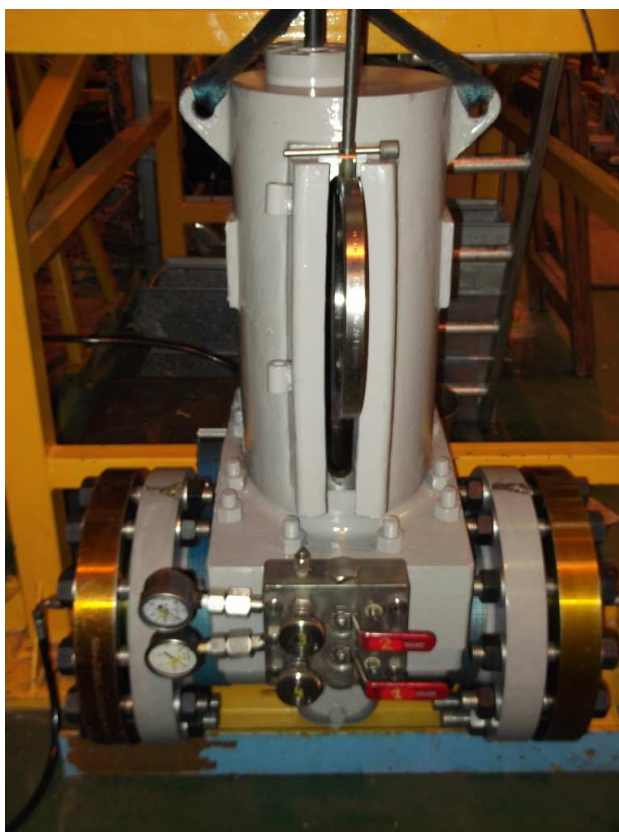
**Date of Receipt** 01 March 2012

**Date of Test** 15 March 2012

**Project No.** EPO 001

**Component**  $\varnothing$  8 inch Dual Chamber, Double Isolation Orifice Fitting 'meter 2di'  
Identification No: None – Prototype for test/demonstration purposes  
Overall length : 650 mm ; Upper chamber height : ~ 700 mm  
Flanges :  $\varnothing$  8 inch ANSI #600

**Suppliers** EPS Limited, Keystone Innovation Centre, Croxton Road, Thetford, Norfolk, IP24 1JD



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**Type of Test**            Functionality demonstration under simulated gas pressure conditions of 10 bar g.

**Conditions**            Temperature        : Ambient                      Pressurising Medium        : Nitrogen gas

**Equipment**            Pressure Source        : Standard OFN nitrogen gas cylinder  
Pressure measurement : 0.2 – 10 bar g Mensor Digital Pressure Gauge  
Model 15000 Ser. No. 241232 NEL ID : NOT 1031  
Pressure Control        : Nitrogen gas regulator.

**Procedure**            For the purposes of the demonstration, the upper chamber of the assembly was initially opened to expose the installed orifice plate in its carrier. The closure plates were then re-instated and the lowering procedure was followed to position the orifice plate in its operational location.

The assembly was connected to the regulated N<sub>2</sub> gas source connected via an in-line isolation valve mounted to the closure flange. System pressure was then raised slowly to **10 bar g** and allowed to stabilise prior to lock-in. (Note: at this point the assembly is effectively in an operational condition under which the entire body and upper chamber are at a balanced pressure).

The procedure of orifice plate withdrawal was then conducted in accordance with EPS instructions. Firstly, the orifice plate was slowly raised into the upper chamber. By manipulation of the manifold valves in the appropriate sequence, the top and bottom chambers were double-isolated from each other thereby allowing the upper chamber to be vented. Once the pressure was exhausted from the upper chamber (witnessed by zero reading at the integral pressure gauge), the closure locking plates were removed to once again reveal the exposed orifice plate. This condition was retained for a period of approximately 5 minutes whilst continuing to monitor the pressure in the 'Flowing' lower chamber which remained at a stable 10 bar g. This concluded the demonstration and the trapped pressure in the lower chamber was released.

**Result**                **The test satisfactorily demonstrated the safe operation and functionality of the meter 2di as a device for the inspection/removal/replacement of orifice plates in situ without interruption of flow conditions.**

## Distribution

Energy Project Solutions Limited	1 copy
Project File (EPO 001)	1 copy
F McQuilken	1 copy

Tested by : F McQuilken            Checked by : R Belshaw

for Director and General Manager, TUV SUD NEL Limited