Reference no.: EXP-10-352 Date: 07/08/2014

SP ENERGY NETWORKS

Neutral Current Diversion in metallic gas mains and services

A customer recently notified SPEN of an incident where burning to an item of clothing occurred as a result of direct contact with their gas meter.

This led to an extended investigation of the root cause by SPEN staff which was supported by Scotland Gas Networks.

Following extensive investigation and network checks, the root cause was identified as **network neutral current flowing through an alternative return path provided by the customer's earth bonding and the metallic gas mains & services.**

The level of current flow had increased to a significant level due to a loss of the main network neutral conductor, and there being no insulated joints pieces in the metallic gas main & services. **The current flow resulted in the flexible hose on the gas meter "heating up."**

SPEN and Scotland Gas Networks are working together with the Energy Networks Association to agree an appropriate process for highlighting and responding to incidents of this type and the agreed process will be communicated in due course.

Recommendations and action points

- All Operational Staff to be briefed on the Content of this Express
- Operational Staff responding to any reported incidents of this nature, or incidents of "voltage" or "current" in pipework, should establish by testing if current flow is detectable through the gas meter or affected pipework. (e.g. by using a clip-on ammeter)
- Significant spill currents are a potential indicator of Network Neutral conductor open circuit faults and shall be investigated further
- Incidents shall be reported to the Distribution Network Operator and/or Gas Distribution Network Operator as appropriate.