IGEM
Institution of
Gas Engineers & Managers

Technical Report Synopsis

For Incorporated Membership

To The Institution of Gas Engineers and Managers

Example

DSEAR AND IGEM/GM/7B COMPLIANCE FOR I&C GAS METERING INSTALLATIONS GREATER THAN 16SCMH WITHIN THE [redacted] [redacted] (DISTRIBUTION) NETWORK

January 2010

Sypnosis

[redacted] has a 4bar/medium pressure and 75mbar/low pressure supply network. It is envisaged that over the licence period of 1996-2016, the Network will comprise of 250,000 customer supplies. Currently the network has over 3000km of mains laid with over 130,000 customers, of which 9,400 are industrial and commercial meters. These 'I&C' meters are split between 5,600 low pressure and 3,800 medium pressure.

Part 1 – Project Idea Statement

I will demonstrate my knowledge and understanding of the engineering principles for this project by reviewing the requirements of:

- Institution of Gas Engineers and Managers – IGE/GM/7A "Electric connections for gas metering equipment".
- Institution of Gas Engineers and Managers – IGE/GM/7B "Hazardous area classification for gas metering equipment".
- Institution of Gas Engineers and Managers – IGE/SR/25 "Hazardous area classification of natural gas installations".
- Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

I will concentrate on gas 'I&C' customer meter installations operating at 4bar/medium pressure, installed in standard design weather protection/security housings and that may incorporate electrically operated equipment.

I will review hazardous areas, make recommendations and provide guidance on design and procedural modifications with regard to ventilation of gas meter / pressure regulation housings and creep relief vents.

I will prioritise by surveying each individual installation type, analysing factors such as:

1. Daily metered sites incorporating telemetry equipment with electrical equipment.
2. Elevated pressure sites having higher creep relief rates.
3. Sites having other hazardous areas that may impact on the gas meter installation.

In particular the project will involve:

- Calculating relief vent rates for a range of regulator types.
- Determine theoretical hazardous areas for both ideal and non-ideal creep relief vent design (for gas customer meter installations).
- Calculate for each type of customer meter installation actual ventilation areas and additional ventilation requirements if necessary to achieve a minimum Zone 1 hazardous area classification.
- Identify, evaluate and propose recommendations with regard to proposed physical solutions for creep relief vents and ventilation requirements.
- Undertake risk assessments to identify hazards and identify associated controls.
- Prepare implementation plan including budget requirements for upgrade and remedial works associated with afore mentioned recommendations.
- Prepare procedure/agreement for third party connections to meters.

Part 2 – Personal Role Statement

I will be Lead Engineer from the outset and will be personally responsible for delivering the objectives outlined in the project statement above. Achievement of this will involve:

- Design solutions and identify suppliers to deliver potential solutions for ventilation and relief pipes.
- Preparation of budgets.
- Review of relevant industry standards.
- Review of manufactures technical literature and design documents relating to pressure regulating equipment at metering installations.
- Review of company asset database and identify the range/application of regulator types to verify equipment set points against manufactures guidance/ industry standards.
- Undertaking site visits to establish status of current installations and identifying risks/hazards etc. to be addressed and which would impact solutions proposed.
- Manage and coordinate personnel carrying out on-site remedial works.

Part 3 – Academic Level Statement

I will demonstrate my knowledge and understanding of the project to BEng (Hons) level by ascertaining the relief vent rates for a variety of regulators, operating at various pressures. I will ascertain from first principles the derivation of equations that form the basis for determining release rates, as contained in the afore mentioned IGE documents.

I will carry out a sensitivity test for a common installation comparing IGE/GM/7B and IGE/SR/25. Again, this will involve calculations from first principles that will be supported with theoretical evidence.

I certify that the above Synopsis has been prepared by myself

Full Name (in block letters) ~~Dr~~/Mr/~~Mrs~~/~~Miss~~ MR

Address

Post C

Membership No.

Signature Date 27-01-2010

I certify that the above Synopsis has been prepared by

Full Name (In block letters) ~~Dr~~/Mr/~~Mrs~~/~~Miss~~

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