

Live service Transfer Supporting Covid-19 impacted customers during network replacement

Ryan Smith – Innovation Delivery Manager







COVID 19 has provided GDNs the opportunity to assess a 30 year customer friction of isolating the gas supply to transfer or relay their service as a result the mains replacement programme.

SGN asked "how might we" do this?

- 1. Avoid *accessing the customers property* where possible or may not be granted, or is in appropriate when customers are 'shielding'. (in emergency's we use Full PPE and have a right of entry to protect life & Property)
- 2. GDNs had no technically viable means (to a tolerable risk level) to transfer or renew the existing service without accessing the property and performing an purge & relight.
- 3. There is no *safely defined process*, or *fully risk assessed* method to transfer the service live on to the new live inserted PE main.
- 4. Developing *a method for the short, medium and longer term,* timeliness of the solution should be measured against the level of risk mitigation offered.





Project set up

The aim of this project was to *"conceptualise a method of quickly and safely transferring services live without entering customers' homes or disrupting supply"*.

Joint GDN Taskforce



Working together: 30+ ideas and variations conceptualised and reviewed



Classified as Internal

Project Stakeholder engagement

"Collective intelligence" approach being taken - all GDN participating on chosen strands

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Feeding information from **technical**, **Policy** / **Legal**, **environmental conditions**, **behaviours**, **training**, **and "other"** Points of View.



Classified as Internal

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Options

- Short-term
- Interim
- Permanent





Basic Transfer Process Overview



Technically can be achieved by and now being supported :

- 1. Above ground bypass (may be needed but site dependant)
- 2. Foam off section to connect PE service
- 3. Precision cut iron (avoid under cracking)
- 4. Punch Tee on steel service
- 5. Top tee on inserted (window cut)
- 6. Sequential Squeeze off and purge
- 7. Isolate original service and reconnect

5

1

(6)

8. Connect new PE to original service line



Safety Assurance Testing (Steel & PE options)



Using Riser transfer systems for services









Status

Classified as Internal

MicroStop already tested, field trailed and approved for this use up to 2" minimum 125mm above ground exposed pipe required. Reviewing fittings for below ground use and MiniStop fittings for ¾" services.





ServiBag & ServiSwap

Encapsulation Solutions

- 1. NGN ServiBag project designed to deliver a proposed encapsulation solution.
- 2. NGN also commissioned SoftPANG 2 to review bottled gas options to aid this process
- **3.** ServiSwap project (*continuation of ServiBag*) combines the two elements to potentially deliver a in line service replacement option











Classified as Internal

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Directional Bagging System (DBS)

Mueller Gas' DBS system, combined with Bottled Gas this will enable the customer's maintained during service renewal





Status

- DBS potentially could be an ideal solution for dead insertion mains replacement
- Needs further investigation, assessment and assurance testing under G/23
- Designed for ¾" steel pipe and above.
- Demonstrable approvals and value adding use cases provided from GTI used on over 100,000s of services in the US since 2008.
- 12 minute process overall



Small Diameter permanent PE fusion Tee (Tee-Nee)

Status

- Developed in partnership with Engineering design team at Steer
- Concept solution needs developed further to test and productionise
- Supply chain engagement to develop prototype fitting













Classified as Internal

PE bonded Shims

Current status

Use of shims to increase the pipe OD, allowing a tapping tee to access the pipe under pressure.

Shims - the problem

- For PE services 16 to 25 mm diameter
- Bonding method to considered:
 - Electrofusion not suitable 25 mm and below
 - Solvents no longer used due to COSHH
 - PE is not easy to bond as it is unreactive
 - SGN Developing based on CADENTS NIA PRISM project



20mm

32mm

32mm

Cadent

Your Gas Network



SYSTEMS

SPECIALISTS



32mm

Actions

Classified as Internal

Working with ALH on bonding methods applicable for other solution, fittings sent for testing ALH bench testing 20 fittings to assess suitability & strength.





Summary of all options



Classified as Internal

Conclusion

Highley collaborative (sprint run type) project, joint GDN taskforce, engaged with suppliers to deliver solutions for the UK gas customer impacted by Covid risks/guidelines in shielding or self isolation.

Short term options as highlighted

- Technically viable solutions available, being tested and under approval reviews
- Solutions risks can be managed appropriately through ALARP to an acceptable level.
- Continual policy review of solutions to ensure the best proposed solutions to be utilised where they can be.

Medium term options under review

- Cross GDN task force exploring more suitable solutions that can be developed for use.
- Further development of identified technology's to minimise risk utilising higher TRL equipment.

Longer term options for development

• R&D process to design a new solution which can deliver a permanent solution without re-work.





Thanks

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