

Meter Exchange

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Summary of Changes

Document revised to address name change of Meter tag. Also, minor addition to step #6.

Overview

This procedure describes how to exchange a gas meter on a residential or small commercial meter set.

Audience

FortisBC (Gas) distribution supervisors, managers, customer service technicians, and other qualified field personnel including contractors.

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Special Equipment

- Jumper cable
- Regulator pressure test assembly
- Approved pressure gauge or instrument
- Purge hose and lockout equipment
- Optical Probe (USB or Bluetooth) with Sensus FieldLogic Tools (Sonix IQ meter)
- Command Link with Sensus Field Logic Tools (SmartPoint meter)

Safety Concerns

- During the assessment of the meter set, be aware of corrosion, schedule 40 risers, and below grade fittings.
- Use proper back wrenching techniques
- Do not force or bend the riser itself as a means to re-align piping
- Use a grounded purge hose to safely purge the meter to atmosphere where there is risk of creating an unsafe gas/air mixture.
- Use lockout procedures as required.

- Use ergonomically correct wrenching techniques to reduce the risk of sprains and strains or injury from slippage.

Procedure

1. Verify the address and meter identification numbers.
2. Inform the customer of your presence and the purpose of your visit (refer to CRL #1389 *Contact with the Customer*).
 - Present your FortisBC (Natural Gas) photo ID, if requested.
 - Advise customer to turn off / turn down thermostats of any appliance currently in use.
 - If customer is not home and the meter is:
 - Accessible, continue with the meter work.
 - Inaccessible or if there is a risk of freezing temperatures (typically December and January for Lower Mainland Region including Squamish, and October through March for the Interior Region including Whistler), pull the order and leave door tag (**Form 1770 Please Contact FortisBC (Natural Gas) - No Admit/Cold Call**).
3. Prepare for transport the existing meter if required.
 - The following steps will be taken prior to turning off the gas to the meter.
 - If the existing meter has a SmartPoint installed, it must be set to "Prepare for Audit" in FieldLogic. If the SmartPoint is not active, no additional steps are required.
 - If the existing meter is a SonixIQ it must be decommissioned, by using the deactivate option in FieldLogic.
4. Begin the meter work. If bypass valves are installed on both the inlet and outlet, proceed with bypass exchange procedure.
 - Turn off and, if leaving meter set unattended, apply lockout procedure to lock the meter valve.
 - If no bypass valve is present, prepare to replace inlet valve at riser with by-pass valve (standard or stacking valve)
 - If an existing Mueller inlet valve is going to be left in service, it is recommended that these valves be greased when work is performed. This is a Manufacturer recommendation.
 - When the service riser is STEEL, connect a jumper cable across the inlet and outlet piping of the meter set.
5. Repair the meter set and bring it up to current standards, as required.
 - If the service riser is schedule 40 then install a re-enforcing nipple. (see CRL #1205 and or CRL # 1866 for procedure)
 - Remove stress or misalignment from meter set.
 - This may include a swing joint on the downstream side of the meter set.
 - This may include an approved flex hose and u bend where applicable.
 - Replace meter bracket if missing and required or if it is broken.
 - Install a bracket if the meter is unsupported and has copper house lines.
 - Ensure bracket does not restrict meter set movement in locations where frost may be present.
 - Ensure an electrical insulator is present as close to the inlet meter valve as possible, or at the inlet to meter. Replace existing insulator if signs of

cracking/damage are present.

NOTE: If adding an additional 3/4" inlet stacking by-pass valve, ensure there is an electrical insulator at the inlet meter spud.

NOTE: When installing an insulated by-pass valve, ensure there are no brass tailings inside the tailpiece, and no metallic pipe dope has crossed the electrical isolator.

NOTE: When re-using nipples or fittings, these must be cleaned and inspected to determine if reuse is possible. If any cracks, damage, or missing threads are present, DO NOT re-use fitting or nipple.

NOTE: Only use approved thread sealant on piping and follow piping best practices on application to threads.

- Replace any corroded fittings.
- Replace non-standard regulators and fittings.
- Vent or upgrade the regulator to meet venting requirements.
- Report evidence of tampering to your manager.

NOTE: Hazardous conditions should be repaired onsite and documented by submitting a repair notification through GWFM. If the repair is immediate and requires additional resources, report to Dispatch. If the repair is not immediate, create a follow on notification in GWFM.

6. Install the new meter and bypass valves.
 - Install bypass valves and complete any required piping modifications that may be required to ensure a bypass valve is present on both inlet and outlet of meter.
 - Insert new meter connection washers on the inlet and outlet spuds.
 - Apply a light film of thread lubricant (petroleum jelly, Never-Seize, etc.) on the threads of the meter connections.
 - Connect the meter inlet fitting.
7. Check the regulator if required:
 - Residential Customer (200/400 series meter) with an existing Fisher HSR with no signs of corrosion
 - No regulator action – proceed with exchange
 - Residential Customer (200/400 series meter) with signs of corrosion or without a Fisher HSR
 - Replace regulator – proceed with exchange
 - Residential Customer (200/400 series meter) with an existing OPCO regulator (Bryan Donkin,
 - No regulator action – proceed with exchange
 - Residential Customer (200/400 series meter) with a regulator venting clearance issue
 - Replace with Pietro Fiorentini (OPCO) – proceed with exchange
 - Commercial/ Industrial Customer – Proceed with regulator testing as per (CRL# 1348 – **Inspecting PFM Sets & CRL#1765 – PFM Regulator Adjustment Specifications**)
8. Purge the meter.
 - Connect the meter outlet spud loosely. Slowly turn on the inlet valve until gas has been introduced, stop once gas has been introduced. Purge air through the meter outlet spud, also visually witness flow indication on meter.
 - Tighten both meter connections.

- Remove the jumper cable.
- Slowly turn the meter valves to fully "open"

NOTE: Turning on the meter valve too quickly may damage intermediate house regulators.

- Turn the meter valve to fully "off" if there is no access to perform relights.
9. Activating (Commissioning) Meter.
 - Connect optical probe or Command Link as required to commission meter.
 - Follow commissioning steps to Activate the Meter or SmartPoint.
 - Refer to the work order for the correct configuration settings.
 10. Check for leaks.
 - Soap test all fittings and components. Not just threaded connections but also insulation seams, regulator plugs and seams, moveable parts of the valves, plugs, Pete's plugs on meter. On multi meter manifolds - unions, shut off valves.
 - Perform dial test:
 - If there is flow indicated, locate the source of gas consumption (i.e., leak, failed appliance safety or electronic ignition).
 - Repair leaks found on FortisBC assets.
 - Isolate and make safe if leak is on the customer's appliance or piping.
 - If leak is located on customer owned piping, tag and mark the leak accordingly (Refer to **CRL #1217** and **CRL #1392**)
 11. Dry and paint the meter set and house lines, as appropriate.
 - Use a protective back drop to protect the wall from paint over spray.
 12. Reactivate appliances (if access is available).
 - Visually inspect all gas appliances to ensure they are in safe operating condition.
 - Cycle each appliance in seasonal operation.
 - Return any temperature controls to their as found value.
 - Do a CO investigation if there are signs of sooting, or carbon monoxide levels based on other factors. (Refer to **CRL #1801 Investigating for Carbon Monoxide**).
 - Advise the customer of any repairs required. Tag as necessary.
 - **Form 1042 Danger Tag** (Red Tag)
 - **Form 1507 Caution Tag** (Pink Tag)
 13. Turn the inlet meter valve off if there is no access available to perform relights.
 - Hang relight tag on front and rear door, **Form 1002 Dear Resident: Not At Home-Please Call** (Yellow Tag).
 14. Complete the work order on GWFM.
 - Indicate on the completion report what actions were taken and if the gas is left off, red or pink tagged, or if leaks were found on the customer piping or appliances.
 15. Transport the meter (refer to **CRL #1211 Measurement Devices – Handling**).
 - For transporting SonixIQ and SmartPoints the Radio must be turned off. This requires deactivation of the unit.
 - For SonixIQ meters, ensure the Radio Icon is no longer present on the display screen.
 - Handle the meters carefully.
 - Mark an "S" on the top of sample meters. Use a paint stick/pen and not grease pens or crayons.
 - Mark a "T" on the top of a trouble meter (noisy, stopped, leaking, etc.). Use a paint stick/pen and not use a permanent marker.

Meter Exchange



- **NOTE:** SonixIQ meters are not to be marked on the body of the meter, place mark only on black caps with white paint pen. Additionally, a meter tag needs to be attached to all SonixIQ trouble meters (**Form** 1734 – Meter Tag).
- **NOTE:** The breaking of meter seals is no longer required.
- Any indication of tampering needs to be reported to the local Supervisor/Manager and the Revenue Protection Department.