POLICY		NRCS national regulator for compulsory specification	
Policy Number	LM-P-001-06-08	Compiled by: B Beard	Signature:
Effective Date	2008-06-20		
Version No:	0	Approved by: SH Carstens	Signature:
File name:	LM-P-001-06-08-Approval and verification of control devices w WM		

1. Scope

Approval and verification of auxiliary devices fitted to water meters designed for continuous measurement of water.

2. Reference documents

SANS 1529-1: Clause 4
SANS 1529-9: Scope and definition of prepayment measuring system.
Trade Metrology Regulations Part ll, Regulation 16

3. Basic legislative requirements

NOTE: *It is recommended that even if a manufacturer does not consider that a device is subject to the requirements of the Trade Metrology Act he or she should submit a sample to the Legal Metrology Department of the NRCS for inspection and confirmation of this.*

3.1 Mechanical water meters may be fitted with an auxiliary device that provides a pulse to drive a secondary electronic device e.g. indicator or radio transmitter for remote reading.

a) If the mechanical volume indicator remains the primary indicator and the pulsed output:
   (i) Drives an auxiliary indicator that is not the primary indicator; or
   (ii) Drives a radio transmitter or some other means for remote data collection; or
   (iii) Drives some other device not associated with the control of the measured volume of water delivered;
   (iv) Drives an auxiliary device that is solely used to control the flow of free water and is not associated with starting or stopping a volume of water for which payment has been made in advance or will be charged for at a later date. (For example, a device that allows a fixed volume of free water per day or a fixed volume of free water per day before reverting to a trickle flow of free water to satisfy free basic water requirements),

   then the pulse generation device is only evaluated for its affects on the accuracy of the water meter as per clause 4.5 of SANS 1529-1. The mechanical indicator then takes precedence in any delivery of water (including free water).

b) If the pulse generator drives:
   (i) An electronic indicator that is intended to be the primary indicator for the delivery of a volume of water (wherever situated); or
   (ii) An auxiliary device used to control the volume of water delivered without intervention other than entering an amount of credit or a fixed volume to be delivered, irrespective of whether or not the auxiliary device has an indicating device or whether or not part of the volume of water delivered is free. (For example a prepayment function where the user enters credit to obtain a volume of paid for water after receiving a free basic volume or a flat rate function that can be programmed to deliver a fixed volume of water once or on consecutive occasions either associated with a free basic volume or not),

   then such electronic indicator or device and meter forms a measuring system that must be approved according to applicable requirements of SANS 1529-9.

3.2 A meter that itself has electronic components including an electronic primary indicator, shall be approved in terms of SANS 1529-9. If an interface is present to drive auxiliary devices the provisions of clause 2.1 a) or b) shall be complied with, as applicable.

3.3 The use of an unapproved or unverified measuring device to provide a volume output for use in a prepayment system or other system, for the sale of water, is not permitted even if it is installed in combination with an approved and verified meter. The reason for this is that the volume delivered according to the payment made is, in this case, determined by the unapproved or unverified meter on which any indication is regarded as the primary indication.

4. Explanatory notes

4.1 Examples of where electronic auxiliary devices **require type approval**

Type approval **is** required:

a) Where an auxiliary device incorporates an indicator that is intended to be the primary indicator; or
b) Where an auxiliary device, including a shut off valve, is directly attached to the meter or interfaced directly to the meter by radio etc. and is used to control a volume of water, for which payment must be made, and that is delivered without intervention other than entering an amount of credit (pre-payment) or a fixed volume to be delivered (e.g. a device driven directly by the meter that can be programmed to deliver a fixed volume of water once or on consecutive occasions such as for flat rate tariffs), irrespective of whether or not it is capable of indicating a volume or an amount of credit available. This includes a device that is used to supply free water before reverting to a delivery of water for which payment must be made. Test according to applicable requirements of 1529-9 for in-line systems; or
c) Where the auxiliary device together with the meter forms a prepayment system. Test according to requirements of 1529-9 for in-line or end of line systems, as applicable.

4.2 Examples of where electronic auxiliary devices **do not require type approval** and the integral mechanical or electronic primary indication takes precedence in any measurement of a volume of water.

Type approval **is not** required:

a) Where an auxiliary device driven by the meter only restricts the flow rate and does not measure or otherwise calculate an actual volume of water (in this case the device may not cause the meter to deliver below its approved minimum flow rate).
b) Where an auxiliary indicator is not the primary indicator and, if situated where the purchaser has access to it, bears the legend “Not for use in trade” or “Not for use for a prescribed purpose”.
c) Where a device, whether or not associated with a meter, is used to deliver a volume or repeated volumes of free water only and is not used to stop or start a volume of water for which payment must be made. This includes a device that measures a known volume of free water before stopping or restricting the flow to any minimum flow rate or minimum volume of free water that might be required by law or voluntarily allowed by a water supplier.
d) Where a simple type approved and verified meter is only interfaced to a radio transmitter or some other means for remote data transfer. This includes the case where the signal may be used by the seller to operate a prepayment function from a remote site in which case the shut off valve is also exempt from approval (i.e. the auxiliary device at the meter has no function that allows credit or a volume of water to be entered or programmed to control the volume of water delivered). In this case the volume indicated by the verified meter takes precedence in any transaction and shall be used in the resolution of any dispute.

5. Verification of Auxiliary devices

5.1 Verification by an accredited laboratory **required**

Auxiliary devices that require type approval and that have primary indications of volume or monetary values (e.g. credit available) or both volume and monetary values shall be verified according to the applicable requirements of Annex B or Annex C of SANS 1529-9.

5.2 Verification **not required**

a) Auxiliary devices that do not require type approval do not need to be verified.

b) Auxiliary devices that require type approval and that comply with Clause 4.15 a), b) and c) of SANS 1529-9 (i.e. they are only slaves of the verified meter as far as accuracy of volume is concerned and do not have any form of adjustment mechanism) and,

   (i) have no indication of volume or a monetary value; or
   (ii) the indication of volume or a monetary value, or both, is not the primary indication (i.e. they are duplications of the primary indications on the verified meter) and are clearly marked “Not for use in trade” or “Not for use for a prescribed purpose”,

   need not be verified, provided that hardware and software complies at all times with the approval requirements and functionality is checked at the time of manufacture. In this case the verified mechanical or electronic indicator is the primary indicator and will be used in any dispute concerning water measured.