

DEPARTMENT OF CONSUMER AND CORPORATE AFFAIRS

LEGAL METROLOGY BRANCH

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OTTAWA, May 16, 1978

TECHNICAL GAS CIRCULAR G-78-4

TO: REGIONAL SUPERVISORS OF ELECTRICITY AND GAS
REGIONAL MANAGERS, LEGAL METROLOGY
DISTRICT INSPECTORS OF ELECTRICITY AND GAS
DISTRICT MANAGERS OF ELECTRICITY AND GAS

FROM: CHIEF, ELECTRICITY AND GAS DIVISION

RE: VERIFICATION OF ROCKWELL TURBO METERS FOR WHICH HIGH
PRESSURE FACTORY TEST RESULTS ARE AVAILABLE

Introduction

Turbine meters are sometimes ordered by gas companies with a stipulated requirement that they shall have the manufacturer's high pressure test data available with the meters. Usually the purchaser's requirements are much tighter than those issued by our department.

Recent investigations indicate that performance of some turbine meters may shift in the order of 0.5% on high pressure in comparison to the test data on atmospheric air.

To meet the required high pressure criteria of the purchaser, the manufacturer would select the change gear ratio to suit high pressure performance. A problem arises, on occasions, when the change gear ratio selected for high pressure operation is not satisfactory to meet the departmental requirements on atmospheric air.

To resolve this problem, and to collect the test data which would serve as a basis for the development of a more permanent solution, the following procedure is to be henceforth adopted.

Verification Procedure

1. Every turbine meter submitted for verification with high pressure factory test results shall have the change gear ratio for high pressure measurement recorded with the results.

The high pressure test results and the change gear ratio shall be transcribed on to the field note for all accepted meters.

2. The meter shall be tested on atmospheric air in accordance with the requirements of Part V, Section 3 of the Departmental Instructions. However, the acceptance criteria in Section 3.6 (i) will no longer govern.

All test results on atmospheric air shall be recorded on the field note of accepted meters. The change gear ratio recorded

with the manufacturer's high pressure test results shall be checked.

3. Acceptance of the meter shall be governed by the high pressure test results submitted by the manufacturer. Applicable tolerances remain the same as listed in the aforementioned Section 3.6 (i) of Part V of the instructions.

4. To be accepted, the manufacturer's high pressure test results shall be in the form of a document signed by a responsible officer at the maker's high pressure test facility.

Re-Verification Procedure

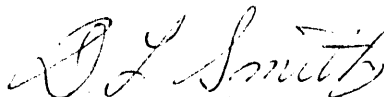
Re-verification of turbine meters originally accepted on the basis of high pressure test results shall be governed by Sections 4.2 (i), (ii) and (iii) of Part V of instructions.

When such meters are subjected to flow tests against a standard under Section 4.2 (iv), the atmospheric air test results for the initial verification must be extracted from the field note together with the change gear ratio.

The tolerance stipulated in Section 4.2 (iv) shall be referenced to the originally obtained error on atmospheric air. The change gear ratio shall not be altered.

Example

Original verification error on atmospheric air at 20% load was -0.8%. The re-verification tolerance at the same load becomes $1.8\% - 0.8\% = 1.0\% - 2.6\%$.



D. L. Smith

c.c. J. R. Stevenson
Rockwell International

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