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Consumer and Corporate Affairs Canada
Legal Metrology

Consommation et Corporations Canada
Metrologie legale

RECORD OF APPROVAL ACTION

Approval Listing Number S.WA-2000 .

(Issued in advance of preparation of Formal Approval Notice)

OTTAWA, September 30, 1980

Company: Imperial Oil Limited
111 St. Clair Avenue, West
Toronto, Ontario (M5W 1K3)

Type of Device: Electronic computing register for use with approved makes of meters on vehicle tanks used for delivery of fuel oil, gasoline and other refined petroleum liquids, model DCLD-100 (Data Capture Liquid Delivery), in conjunction with a "NOVA" or similar data processing computer.

Description: A pulse generator of the Wiegand type is installed on the meter body, in place of the conventional mechanical register, and the pulses generated are transmitted by shielded cable to the DCLD console in the cab of the vehicle. A microprocessor in the console counts the pulses and applies a pre-programmed calibration factor and an operator-entered unit price. The resulting volume and total price are displayed on the console and printed on the ticket, together with other information such as delivery number, customer number, provincial sales tax, federal sales tax, etc.

The calibration of the meter is by means of an electronic calibrator permanently attached to the shielded cable from the pulser on the meter.

A magnetic tape capsule programmed by the Supervisor must be locked into the console before it can be operated. The tape has a record of the volumes of various products loaded on to the truck and records the details of each delivery. At the end of the day it is used for printing a reconciliation report which previously had to be prepared manually by the driver. The capsule is then removed from the DCLD console and processed by a NOVA computer that prepares a reconciliation report which should match that of the DCLD. Any disagreement is an indication of DCLD malfunction, operator error, etc.

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Description: (Cont'd)

The DCLD console contains a number of electronically controlled interlocks to prevent the operator from making errors or fraudulent deliveries. Riding the ticket is prevented by an interlock that automatically prints the ticket 3 minutes after the flow of liquid has stopped. If either the calibrator or capsule is removed, the solenoid valves cannot be opened and no liquid can be delivered through the meter.

Conditions: Approval to use the DCLD computing register in trade as described above is granted subject to the following conditions:

1) Main and secondary solenoid-controlled valves shall be installed to start and stop the flow so as to eliminate the metering error normally caused by hose expansion/contraction. Suitable pressure gauges are to be installed upstream and downstream of these valves to monitor their operation.

2) The use of this device is restricted to circumstances where the magnetic tape capsule is processed by a NOVA or similar data processing computer to monitor the day-to-day functioning of the DCLD unit.

3) Tests were conducted with hand-crafted units registering in gallons and tenths and the production-line units measuring in litres shall perform in essentially the same manner and must provide indication to tenths of a litre for test purposes. Minor changes required by production-line methods are permitted.

4) Only field tests were made with the hand-crafted units and a production-line unit shall be supplied for Laboratory testing per 16 of the Regulations with charges per 58 of the Regulations.

5) Imperial Oil shall supply such information in the way of diagrams and instructions as required by 15(2) of the Regulations as is required for the training of Weights and Measures Inspectors in the functionning and operation of the device.

Reference No.: 6953-J87

John Armstrong
Chief,
Weights and Measures Division
Legal Metrology Branch