



Certificate

for Radiation Device

Certificate Number R-486-0001-0-2023	Date of Issue July 24, 2008	Date of Expiry March 31, 2023
--	---------------------------------------	---

The radiation device identified below is certified by the Canadian Nuclear Safety Commission pursuant to paragraph 21(1)(h) of the *Nuclear Safety and Control Act* and section 12 of the *Nuclear Substances and Radiation Devices Regulations*.

Manufacturer: Neftemer Ltd.

Make and Model: Neftemer NFT01

Device Type: FIXED GAUGE

Description: The Neftemer NFT01 source housing is designed for use as the source of gamma radiation for the Neftemer multiphase flowmeter. It is a cylindrical stainless steel fabrication containing a lead shield sandwiched between two stainless steel bulkheads. The lead is bored through the centre to accommodate the source holder which is a screw capped, stainless steel tube containing a lead plug and a Cs-137 Special Form source. The openings at each end of the hole are closed with stainless steel cover plates attached with tamperproof, stainless steel screws and sealed against water ingress by elastomer O-ring seals. The source tube positions the source in the middle of the shield with the remainder of the bore acting as collimator so that a narrow beam of radiation is directed out of the other end. The beam passes through oil filled pipes to a detector on the opposite side which measures the density of the pipe contents. The beam may be interrupted by the shutter, a lead filled stainless steel plug fixed to a rotating shaft with two stainless steel tamperproof screws. When the beam is not required, the shutter is swung over the beam by means of an operating arm attached to the shaft. The arm may be secured and padlocked in either the fully open or closed positions. Access to the source tube cover plate is prevented by a padlocked, stainless steel security plate that also carries all necessary safety and regulatory information on a permanently engraved, stainless steel information plate. The source housing sits on feet that may be bolted to its support. In normal use, the detector is bolted to a similar support on the opposite side of the pipe and the whole unit is covered with a cage to further restrict access. Once in operation, the shutter is left open until there is either a fault or the unit requires major service, removal to another site or disposal. The NFT01 weighs approximately 87 kg. It is 387 mm long by 330 mm wide by 325 mm high.

The following QSA Global sealed source models are allowed in the device: X.8 and VZ-1508.

The radiation device may contain any of the following nuclear substances in a quantity not exceeding the corresponding quantity indicated:

Nuclear Substance	Maximum Quantity
Cesium 137	5.55 GBq

Designated Officer pursuant to paragraph 37(2)(a) of the *Nuclear Safety and Control Act*