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AUG 27 1993

CONDUCTIVE MATERIALS PROGRAM

Teknikantie 12
SF-02160 Espoo
Finland
Tel: +358-0-4354 2008
Fax: +358-0-4354 3131

RETURN FAX: +358-0-4354 3131

TELEFAX MESSAGE

TO: Georgia Department of Natural Resources

ATT: Mr. Slocumb

FAX NO:

DATE:

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NUMBER OF PAGES:
(incl. this sheet)

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CC: x

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FROM:

Jukka Perento

RE: Lisence application for Tapio Paper Variabilty Analyzer, State of Georgia

Enclosed corrections required. Item 1. was definctly my mistake sorry about that.

We wait with a great intrest how far we get now.

BR. Jukka Perento

86 mm

INSTALLATION, OPERATION AND SERVICE

The instructions to operate the Analyzer are described in the Operator's Manual with special reference to the beta weight sensor in chapters headed: Description, Beta Weight Sensor BW-2555, Calibration, Beta Weight, And Radiation Protection.

BETA- RADIATION SOURCE, TESTS ON ITS SAFE USE

The isotope used for β -radiation is a sealed and solid Promethium-147 (Pm-147) capsule manufactured by Amersham Int. plc. (P11C.C1, capsule x.8095) with nominal activity of 200 mCi (milli Curie). The measured activity on the Day: _____ of Month: _____ 19__ was: _____ mCi. The manufacturer's certificate on the activity is included in the delivery documents of the analyzer.

The beta weight sensor shall be tested for radioactive leakage and proper functioning of on-off mechanism and indicator at installation, at source replacement, and thereafter at no longer than six month intervals. Periodically, each 4-7 years, the β -source has to be replaced with the new one. The old source has to be sent back to the manufacturer of the Analyzer.

RECEIPT, POSSESSION, USE and TRANSFER of this device,

Model PVA-113 with BW-2555 Sensor, Serial No. _____ is subject to a general license or the equivalent, and the regulations of the U.S Nuclear Regulatory Commission or a state with which the Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority. This label shall be maintained on the device in a legible condition. Removal of this label is prohibited.

NOTE:

1. Abandonment or disposal is prohibited unless transferred to persons specifically licensed by the department, the U.S. Nuclear Regulatory Commission, or an agreement state.
2. Operation is prohibited if there is indication of failure of or damage to shielding or source containment.
3. Installation, dismantling, relocation, maintenance, repair and testing involving the radioactive material, its shielding or containment shall be performed by persons specifically licensed by the department, the U.S. Nuclear Regulatory Commission, or an Agreement State.
4. Loss, theft, or transfer of this device and failure of or damage to the shielding or the source containment must be reported to the U.S. Nuclear Regulatory Commission, or an Agreement State.

CAUTION - RADIO ACTIVE MATERIAL

(NAME OF MANUFACTURER OR DISTRIBUTOR)

181 mm

RADIATION PROTECTION

TAPIO
User's Manual
Version 1.02e

General

The TAPIO-basis weight sensor contains a radioactive source that emits β - (beta-) radiation. The radioactive material is a commercial product containing Promethium-147 (Pm-147) manufactured by Amersham Int. plc. (Bucks HP7 9NA, U.K.). The aperture of the sensor is automatically closed with a cover in case the electric current is turned off. The size of the aperture is selected by electrical means.

• Maintenance

The Basis Weight Sensor is not allowed to be opened under any circumstances.

• Replacement and disposal of the radiation source

Since the half-life of the radiation source is 5.4 years it has to be replaced periodically. Only TAPIO® Technologies, Inc. or someone else assigned by TAPIO Technologies, Inc. possessing the proper licenses is entitled to replace the source. TAPIO® Technologies, Inc. will take care also for the disposal of the old source.

• License of approval of type-inspection

The basis weight sensor has been evaluated as a generally licensed device. A copy of the general license is enclosed.

• Radiation profile

The stray radiation field being emitted from the TAPIO model BW-2h55 Basis Weight sensor is very well defined and corresponds to the plane of travel of paper being tested as it is fed through the analyzer. The highest absorbed dose rate was 13.8 mrad/hr measured at the surface of the device using a detector window thickness of 7 mg/cm². The highest value measured for the 300 mg/cm² window was 0.1 mrad/hr. These dose rates were found along 5 cm isodistance line on the left side of the device (paper plane). Measurements taken directly above and below the plane of travel yielded no measurable exposure. An absorbed dose rate of 0.5 mrad/hr was measured in front of the device (5 cm, plane of paper travel) for the shallow dose depth 7mg/cm². There was no measurable exposure at the deep dose (300mg/cm²).

• Operating license of the employer and the person responsible

The institution operating the TAPIO-analyzer has to designate a person to safeguard the radioactive material in the particular work place. This individual is responsible for the limitations regarding the operating personnel (age over 18 years, pregnancy etc.), records, and overall possession and handling of radioactive materials.

• Precautions in case of fire or damaged gauge

In case of fire the whole device should be transferred away from the hazardous area if possible. Immediately inform the company safety officer of the situation if the device cannot be moved due to the current situation. After the fire is under control do not enter the area until source has been located and removed by technically qualified individuals and the area declared safe.

If there are any problems due to unintentional impacts; or malfunctions with the beam aperture status indicator lights, or aperture mechanism immediately stop using the device and inform the company safety officer. Request that the safety officer have a qualified individual measure the radiation fields in close proximity to the device.

NOTE: When the shutter is properly closed there should be no measurable radiation over background. If the problem exists or if there are still doubts about the problem inform the manufacturer immediately. **STAY AWAY FROM THE AREA UNTIL THE PROBLEM HAS BEEN SOLVED.**

• **Additional reading**

It is recommended to read additional instructions regarding safety procedures (fire, earthquake etc.) provided by the employer. In the following is the name of the mill person responsible for the above licenses and the confirmation signature of the company:

NAME AND PHONE NUMBER OF THE PERSON RESPONSIBLE:

Place: _____

Date: _____

Name of responsible person

Official employer signature

Telephone where to reach: _____