



PANAMETRICS

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August 29, 1984

United States Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

Attention: Dr. John Glenn  
Material Licensing Branch  
Division of Fuel Cycle and Material Safety

Ref: Renewal of license 20-07181-04G  
Program Code: 03240

Gentlemen:

We wish hereby to apply for a renewal of the above license, and with reference to your notification of expiration, we would like to pursue the alternative mentioned, namely, identification only of additions, changes, etc.

With reference to the documents listed in our current license, namely:

Application dated March 16, 1979 as amended April 25, 1979, June 24, 1979 and August 24, 1979, please consider these as remaining in effect except that the April 25, 1979 document should be amended as follows:

- 1) Delete all references to Kr-85, as we have disposed of all Kr-85 and have no present plans for its use.
- 2) Replace "49CFR173.391 (a),(b) or (c)" with "49CFR173.422" in last paragraph.

The following additional information is also submitted:

- 3) Supplementary shielding for probes containing an Am-241 source: Additional shielding is proposed for future Am-241 type probes to reduce a small radiation level (about .25 mr/hr, max) produced at the surface of the probe when certain types of samples are introduced for measurement. (This effect is most clearly seen for thick samples of low atomic number and is believed due to the backscatter by the sample of the 60 keV gamma component.)

Log: Sept. 12-I

Applicant.....
Check No... 006564
Amount/ Fee Category 1700-35
Type of Fee... REN
Date Check Rec'd... 9-17-84
Received By... ase

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The shielding consists of a 1/32" lead liner inside the probe housing plus a narrow lead strip (1/16" x 3/32" x 3 1/2") embedded in the probe cover plate in front of the sample-orifice. This arrangement substantially eliminates the effect.

- 4) Update of shipping instructions in Radiation Safety Manual: Proposed changes show the changes in the pertinent 49CFR regulation-numbers and the new form of certification required (see enclosed sheets showing previous and substitute paragraphs). Also, copy of latest Materials License and copies of updated NRC regulations to be substituted for those presently in Manual.

We thus propose continuance of operation under the conditions of our present license except for the changes described above.

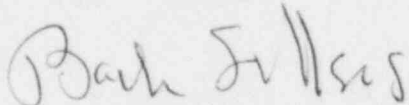
We are enclosing our check for \$700.00 (in accordance with Schedule 3J).

For any further information that may be required please contact:

Dr. Bach Sellers (RSO) or  
Joris Brinkerhoff at  
(617) 899-2719

Thank you for your attention to this matter.

Yours truly,



Bach Sellers  
Vice-president

BS/dmm

#### 4. Shipping

As per par. 173.422 of the Department of Transportation Regulations (49CFR) manufactured articles of which radioactive materials (other than liquids) are a component part are exempt from specification packaging, marking and labeling requirements provided they are securely packed in strong outside containers and provided that certain conditions relating to the radiation level, strength of source, etc. are met. At the present time (August 1984) all Panalyzer probes (except certain early models, prior to August 1975) meet these conditions and hence may be shipped as described. However, a notification must be provided with the package (see 49CFR173.421-1) which includes the name of the consignor or consignee and the statement, "This package conforms to the conditions and limitations specified in 49CFR173.422 for excepted radioactive material, instruments and articles, UN2911". For air shipment, the airbill should also show the designation, "Excepted radioactive material, instruments and articles, UN2911". For UPS shipment, the UPS "Hazardous Materials Shipping Paper" should be used, the DOT shipping name being "Radioactive material, instruments and articles" and the Hazard class "Radioactive material". The ID number is UN2911 and no DOT label is required (please contact Panametrics for details regarding your particular shipment).

Of course, no special regulations.....

#### 4. Shipping

As per par. 173.391 (b) of the Department of Transportation Regulations (49 CFR) manufactured articles of which radioactive materials (other than liquids) are a component part are exempt from specification packaging, marking and labeling requirements provided they are securely packed in strong outside containers and provided that certain conditions relating to the radiation level, strength of source, etc. are met. At the present time (June 1979) all Panalyzer probes (except certain early models, prior to August 1975) meet these conditions and hence may be shipped as described. However, a shipping paper must be provided with the package which lists the name and quantity of the radioactive material plus other information such as chemical and physical form, etc. (please contact Panametrics for information regarding your particular probe).

Of course, no special regulations apply to the electronics and associated instrument components such as cables, etc. These items may be shipped in a separate box in accord with normal packaging and handling procedures.

The above requirements apply to federal regulations. It is to be noted that state radioisotope shipping regulations (where they exist) apply only to transportation not subject to the regulations of federal agencies. However, where such state regulations do apply they do not necessitate procedures beyond those required by federal regulations with regard to packaging and marking and generally are identical with the Department of Transportation Regulations.

#### 5. Emergency Procedures

Should the shutter fail to close during handheld use of the probe, then, as discussed in "Safe Handling and Use," Section 2, the probe should be immediately placed, with source face down, on a surface which has a thickness equal to or greater than the equivalent of 1/16" of lead, i. e., 1/4" of brass, 1/4" of steel. Should the shutter fail when using the bench mounted probe, then the sample cover should be replaced immediately. This, of course, provides adequate shielding for the exposed source. If the external housing of the probe becomes ruptured or distorted there is little likelihood of significant source material leakage due to the nature of source construction (described previously). However, if the sides of the probe housing are destroyed the external radiation levels near the probe may increase due to the removal of shielding (including,