

June 15, 1977

Radioisotopes Licensing Branch  
Division of Fuel Cycle and Material Safety  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. F. St. Mary

Subject: ED Series Gages

Gentlemen:

The Ohmart Corporation wishes to obtain approval of an alternative design for the mounting brackets used in our models ED-2 through ED-14 density gages. We have found that we can use threaded rods to mount the detector and source holder on the pipe in this range of sizes without loss of integrity or increase in radiation hazard.

With the alternative design the only difference between a Model ED-2 and an ED-14 gage is in the length of rod used for mounting. The length of rod is chosen to be so short that when mounted on the pipe the source holder and detector cannot be misaligned appreciably. Misalignment would change the radiation levels external to the gage but more important, from a measurement standpoint would render the calibration of the gage inaccurate. Therefore, it is necessary that the mounting bars held by the threaded rods be parallel when the gage is assembled. This is assured by using rods no longer than necessary and by measuring the distance between the ends of the bars and adjusting the rods until the distances between ends are equal. Much the same procedure is necessary already with the use of pipe riser clamps, however since the clamp faces are so close together only a visual balancing of the spaces between the ends is necessary.

Drawing C-30585 shows the gage as assembled for clamping to metal pipe. Drawing C-30586 shows the gage as assembled for mounting over insulation or on plastic pipe which will not support the weight of the gage. This requires only the addition of four (4) nuts per rod and two (2) mounting tabs shown on Drawing B-30587 for mounting the gage to customer-supplied brackets.

Gages for two inch and fourteen inch pipe have been fabricated and subjected to impact and vibration tests in a measuring condition which would show any movement of components as a change in gage reading. There was none.

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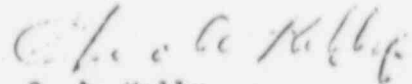
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Using a GM tube survey meter as close to the radiation beam as possible the maximum radiation level measured was 20 mr/hr using a 1000 mCi source. By moving the GM tube away until the tube was two (2) inches from the beam (.5 cm) the radiation level fell off to 6 mr/hr. Thus it is obvious the alternative design presents no radiation hazard. The side plates which prevent hands from entering the primary beam are shown on Drawing A-30584 as well as on the gage drawings.

We trust the above will enable swift approval of the alternative design. The supplementary drawings show the construction changes necessary to establish the alternative design.

Sincerely,

THE OHMART CORPORATION



G. A. Kelly  
Radiation Safety Officer

GAK/ba

Enclosures: 2 Copies Each - Dwgs. C-30585, C-30586, B-30587, C-30582,  
B-30581, B-30580, A-30584

cc: R. Stanton  
A. Livingston

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