

AVONDALE DIVISION · Route 41, Avondale, Pennsylvania 19311, Telephone 215-268-2281

NAR File 2726/69

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May 19, 1969

Mr. James C. Malero Isotopes Branch Division of Material Licensing Atomic Energy Commission Washington, D. C.

Dear Mr. Malero:

HEWLETT hp PACKARD

In your letter of May 14, 1969, you requested clarification of whether it might be possible to overheat the foil during accelerated heating of the detector block. It is not possible for this condition to occur for the following reasons:

- 1. The heaters are located in the heat sink at a position that is closer to the thermal switch than the foil.
- The conduction path to the thermal switch is better than 2. the path to the foil. In the former case, the path is solid aluminum while in the latter it is aluminum plus the detector cell. The cell, which is constructed of stainless steel and teflon (tritium, low temperature detector) or a ceramic material (nickel 63, high temperature detector) offers a relatively poor thermal path.

If the set point of our new proportional controlled heaters were temporarily set high to accelerate heating of the detector and a local overheated condition began to develop, the thermal switch would respond within a few degrees of the maximum temperature and shut down the circuit. The temporary excess of BTU's in the local area would be dissipated in the mass of the aluminum heat sink before heat would be conducted through the stainless steel and teflon (or ceramic) materials.

I hope this explanation clarifies the point you raised. If not, please contact me.

FOR DIV. OF COMPLIANCE,

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Yours truly, MBWhitter

M. B. Whittier Radiation Safety Officer

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