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# Postirradiation Gamma Scans of GCFR Capsule GB-10 at ORNL

T. N. Tiegs

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**OAK RIDGE NATIONAL LABORATORY**

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## POSTIRRADIATION GAMMA SCANS OF GCFR CAPSULE GB-10 AT ORNL

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### ABSTRACT

The Gas-Cooled Fast-Breeder Reactor capsule GB-10 was examined by gamma spectroscopy at Oak Ridge National Laboratory after fuel rod irradiation tests. The short-lived iodine fission products concentrated at the upper fuel-blanket interface, and cesium fission products concentrated at the fuel-blanket interfaces and in the charcoal trap. High concentrations of ruthenium isotopes were observed in the same positions at which neutron radiographs showed inclusions in the central void.

### INTRODUCTION

The GB-10 capsule irradiation experiment was the tenth in a series of Gas-Cooled Fast Breeder Reactor (GCFR) fuel rod irradiation tests performed at the Oak Ridge Research Reactor (ORR). The purpose of the test was to obtain further information on the release, transport, and trapping of fission products, and to continue evaluation of the GCFR vented and pressure-equalized fuel rod.

Post irradiation examination (PIE) of the GB-10 capsule was divided between Oak Ridge National Laboratory (ORNL) and the Argonne National Laboratory (ANL). ORNL staff members performed disassembly, dimensional inspection, visual examination, and gamma analysis to obtain axial profiles of volatile, short-lived fission products. All other examinations were performed by ANL personnel, so this report is concerned with only the PIE performed at ORNL. Details of the design, fabrication, and operation of the GB-10 capsule have already been reported.<sup>1-4</sup>

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<sup>1</sup>J. R. Lindgren et al., *Planned Thermal Irradiation of Manifold-Vented (U,Pu)O<sub>2</sub>-Fueled Rod in ORR Capsule GB-10*, GA-A-12123 (1972).

<sup>2</sup>A. W. Longest and J. A. Conlin, "Design of GCFR-ORR Capsule GB-10," *GCR-TU Programs Annu. Prog. Rep. Sept. 30, 1971*, ORNL-4760, pp. 163-64.

<sup>3</sup>A. W. Longest and J. A. Conlin, "Design and Operation of GCFR-ORR Capsule GB-10," *GCR-ThU Programs Annu. Prog. Rep. Dec. 31, 1972*, ORNL-4911, pp. 210-23.

<sup>4</sup>Personal communication with R. A. Bradley and J. D. Sease, Apr. 12, 1972.

## CAPSULE DESIGN

The GB-10 fuel rod (Fig. 1) consisted of a  $(U,Pu)O_{1.98}$  fuel column 229 mm (9 in.) long, an upper blanket region 58 mm (2 in.) long of depleted  $UO_2$  pellets, and a charcoal trap 25 mm (1 in.) long above the blanket. All components were enclosed in a type 316 stainless steel cladding tube 9.0 mm (0.353 in.) OD, 7.7 mm (0.305 in.) ID. The two half-pellets at each end of the mixed-oxide column were included to suppress peaking at the end of the test fuel.

The fuel rod had a roughened outer surface and contained solid  $(U,Pu)O_2$  fuel pellets. The charcoal trap was 25 mm (1 in.) long and provided the same potential fission product loading as the rod trap in the reference GCFR rod. That is, the trap contained the same ratio of charcoal mass to power generated within the rod at reference design.

Figure 2 shows the test rod inside the instrumented capsule. The fuel rod was centered in a Zircaloy-2 sleeve, which in turn was centered inside the capsule's primary containment vessel. The capsule was filled with NaK to a level above the fuel rod, and helium pressure was maintained over the NaK. An electrical heater, formed into a coil around the upper end of the Zircaloy-2 sleeve, maintained the trap and upper blanket region of the rod at about 300°C. Eleven thermocouples were located inside the capsule's secondary containment vessel. The thermocouples that monitored the temperature of the fuel region cladding were inserted through the Zircaloy-2 sleeve and were staked into place with their junctions near the inside surface of the sleeve.

## DISASSEMBLY OF CAPSULE AND EXAMINATION OF FUEL PIN

Disassembly began after irradiation when neutron radiography was completed. The fuel pin assembly (fuel pin with Zircaloy-2 sleeve) and the NaK were removed without incident. (Refer to Appendix A for complete documentation of disassembly and examination steps.)

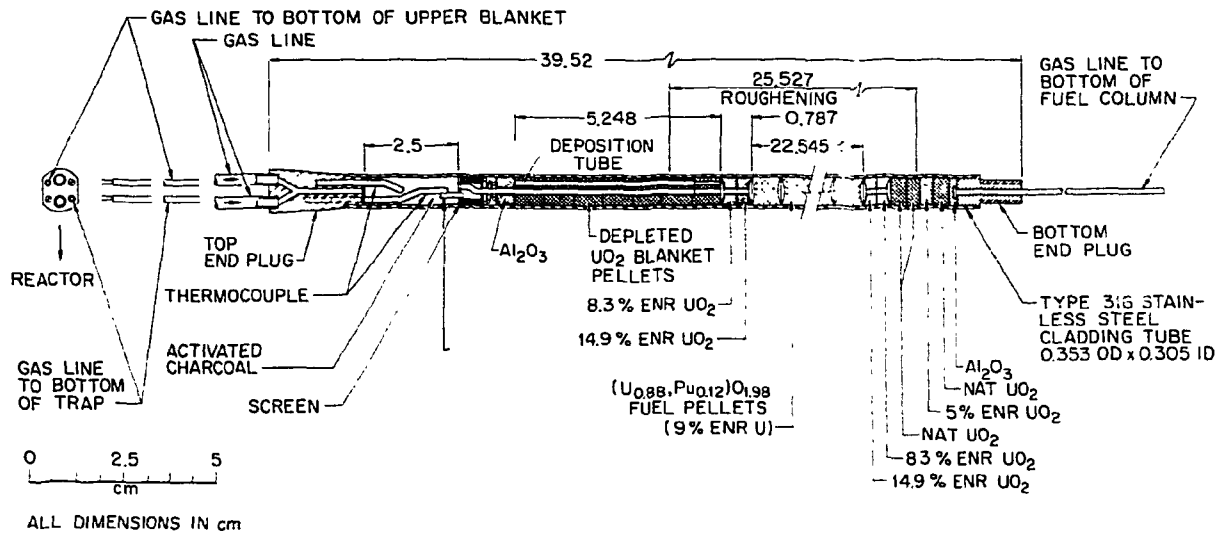


Fig. 1. Fuel Rod Specimen for Irradiation in Capsule GB-10.

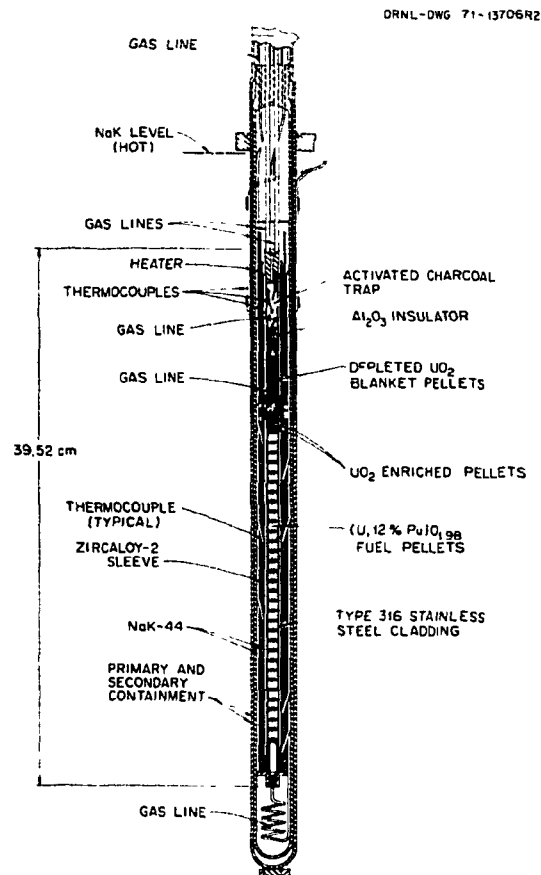


Fig. 2. Schematic of Irradiation Capsule GB-10.

## STEREO MICROSCOPE EXAMINATION

Visual examination with a stereo microscope (Fig. 3) revealed nothing remarkable. Although during operation, unusual thermocouple readings indicated the possibility of a change in thermocouple position,<sup>5</sup> there appeared to be no change from design position.

Next, we removed the Zircaloy-2 sleeve and heater coil from the fuel pin assembly and examined the fuel pin with a stereo microscope (Fig. 3). The pin appeared to be in excellent condition; no corrosion or chemical attack was visible on its surface.

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<sup>5</sup>Personal communication with A. W. Longest, July 1976.



Fig. 3. Photographs of GB-10 Fuel Pin. Views at 0° orientation (a and c), and 180° (b and d). Photos a and b show Zircaloy-2 and heater coil attached.

## GAMMA ANALYSIS

After sealing the open gas lines to the fuel pin with epoxy, we made gamma scans of the fuel pin. A differential gross gamma scan (0.55 to 0.75 MeV) along the fuel pin (Fig. 4) shows the relative burnup profile and the overall distribution of fission products. The burnup profile is relatively flat across the fuel pin with the exception of two points — 49 and 75 mm from the bottom of the fuel stack. Also shown in Fig. 4 is the location of the individual pellets on the top and bottom of the fuel stack.

An axial scan along the fuel pin and gas lines was made with the 0° orientation facing the collimator. This determined the profiles of 19 gamma peaks, representing 20 different isotopes (Table 1). Because of the short counting times used in obtaining the isotope profiles, the statistics were poor. Acquisitions of data taken later with longer counting times gave better statistics.

The iodine (I) distribution in the fuel pin was of prime importance. Iodine concentration was relatively constant across the fuel (Figs. 5, 6, and 7). The short-lived  $^{132}\text{I}$  isotope peaked at the upper fuel-blanket interface. Evidently, the iodine was able to migrate to the fuel-blanket interface easily, but further migration through the blanket was difficult. Migration of these highly volatile species through the fuel is aided by a central void. Peaking of the iodine isotopes at the top fuel-blanket interface is probably due to the greater heat generated by the natural and 5%-enriched  $\text{UO}_2$  blanket pellets at the bottom than by the depleted  $\text{UO}_2$  blanket pellets at the top.

No iodine concentrations of any significance were observed in the fission product trap or gas lines. This point will be dealt with later.

Also of interest was the cesium ( $^{134}\text{Cs}$  and  $^{137}\text{Cs}$ ) distribution in the fuel pin, fission product trap, and gas lines (Figs. 8, 9, and 10). Cesium concentrations peaked at the top and bottom fuel-blanket interfaces and in the fission product trap. Profiles obtained were as expected, considering the high mobility of cesium at the temperatures encountered during irradiation. The diffusion of cesium appears to have stopped at the bottom fuel-blanket interface, causing a relatively

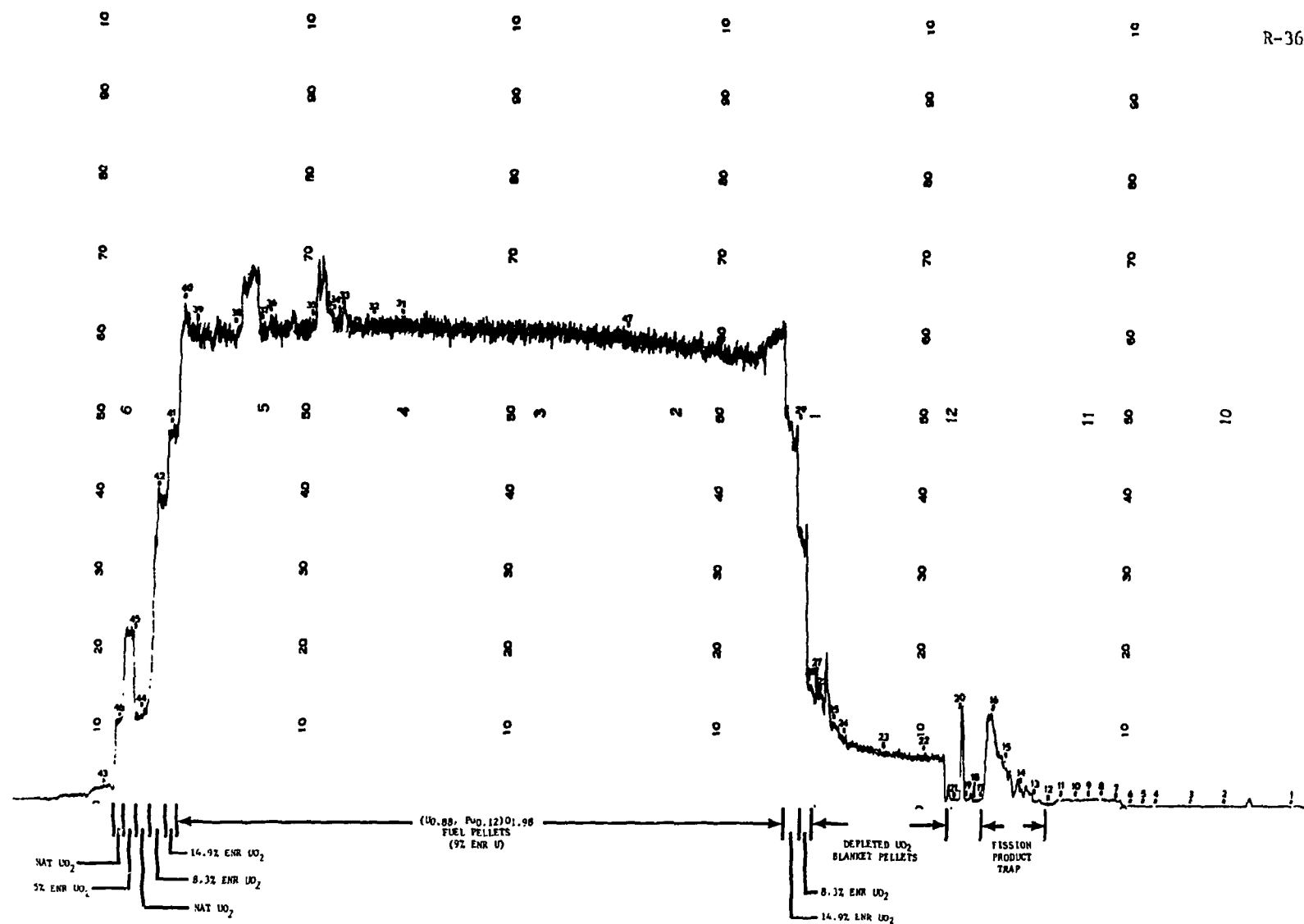


Fig. 4. Differential Gross Gamma Scan (0.55-0.75 MeV) Along GB-10 Fuel Pin. Location of components as shown. Numbers along scan show points where spectral scans were acquired.

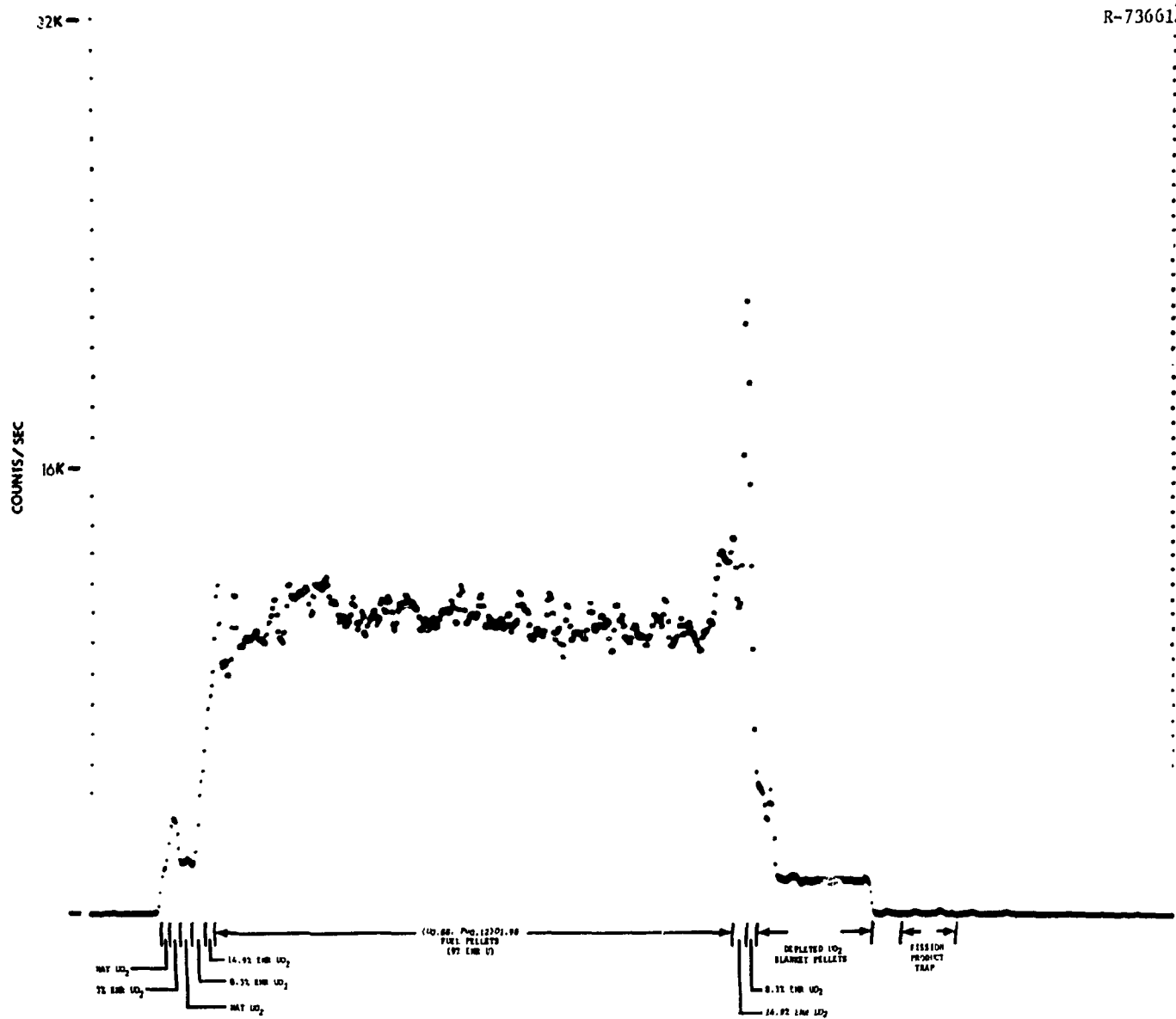


Fig. 5. Gamma Activity of  $^{131}I$  (363 keV) Along GB-10 Fuel Pin.

Table 1. Peaks Analyzed in Axial Gamma  
Scan of GB-10 Fuel Pin

| Isotope                                               | Peak Energy (keV) |
|-------------------------------------------------------|-------------------|
| $^{131}\text{I}$                                      | 363               |
| $^{132}\text{I}$                                      | 628               |
| $^{132}\text{I}$                                      | 666               |
| $^{134}\text{Cs}$                                     | 603               |
| $^{134}\text{Cs}$                                     | 794               |
| $^{137}\text{Cs}$                                     | 661               |
| $^{132}\text{Te}$                                     | 227               |
| $^{103}\text{Ru}$                                     | 495               |
| $^{106}\text{Ru}$ , $^{58}\text{Co}$                  | 510               |
| $^{99}\text{Mo}$                                      | 139               |
| $^{95}\text{Nb}$ , $^{110\text{m}}\text{Ag}$          | 764               |
| $^{95}\text{Zr}$ , $^{154}\text{Eu}$                  | 755               |
| $^{95}\text{Zr}$ , $^{154}\text{Eu}$ $^{131}\text{I}$ | 722               |
| $^{140}\text{La}$                                     | 1595              |
| $^{147}\text{Nd}$                                     | 529               |
| $^{141}\text{Ce}$                                     | 144               |
| $^{144}\text{Ce}$                                     | 132               |
| $^{140}\text{Ba}$                                     | 536               |
| $^{60}\text{Co}$                                      | 1172              |

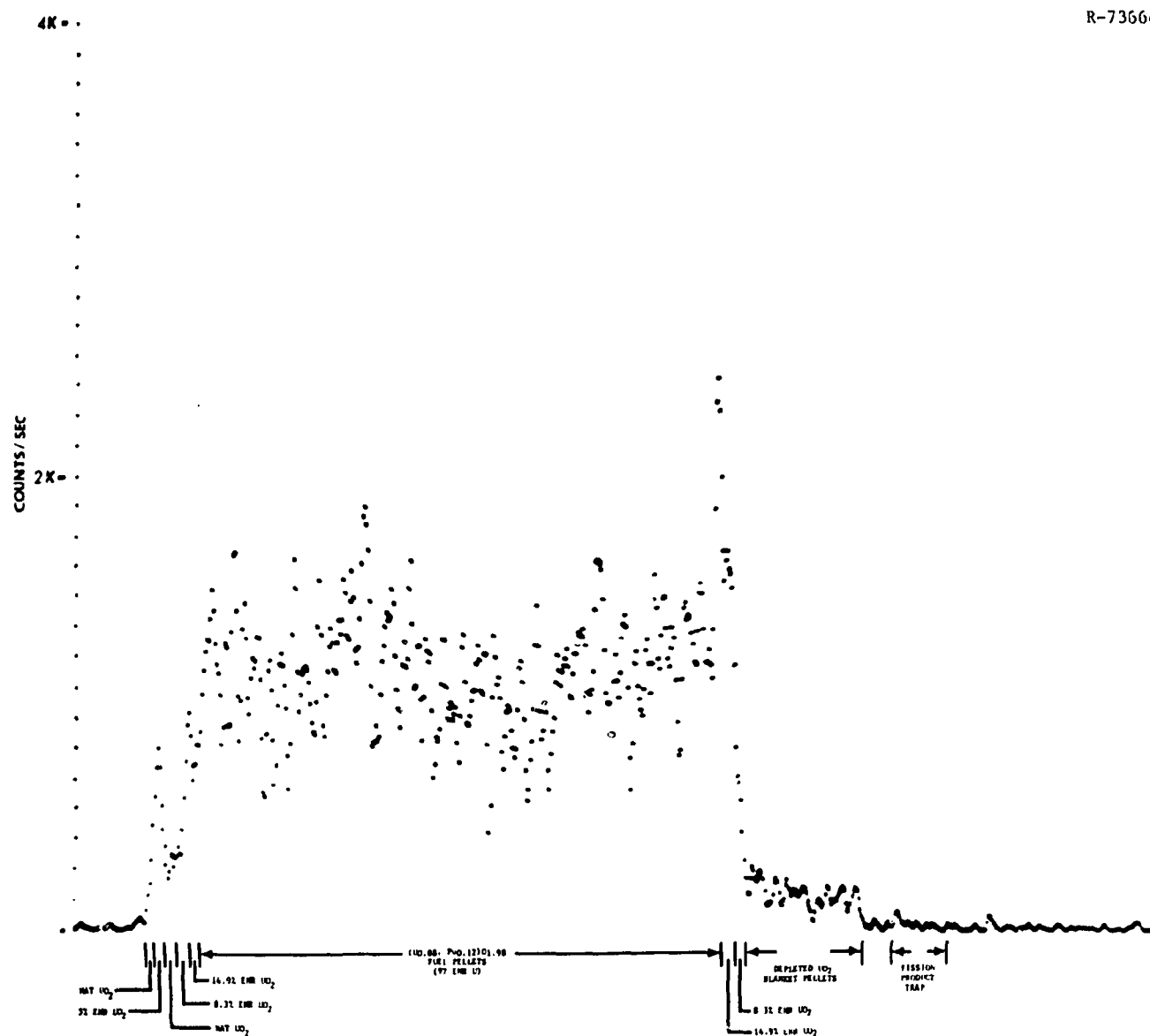


Fig. 6. Gamma Activity of  $^{132}I$  (628 keV) Along GB-10 Fuel Pin.

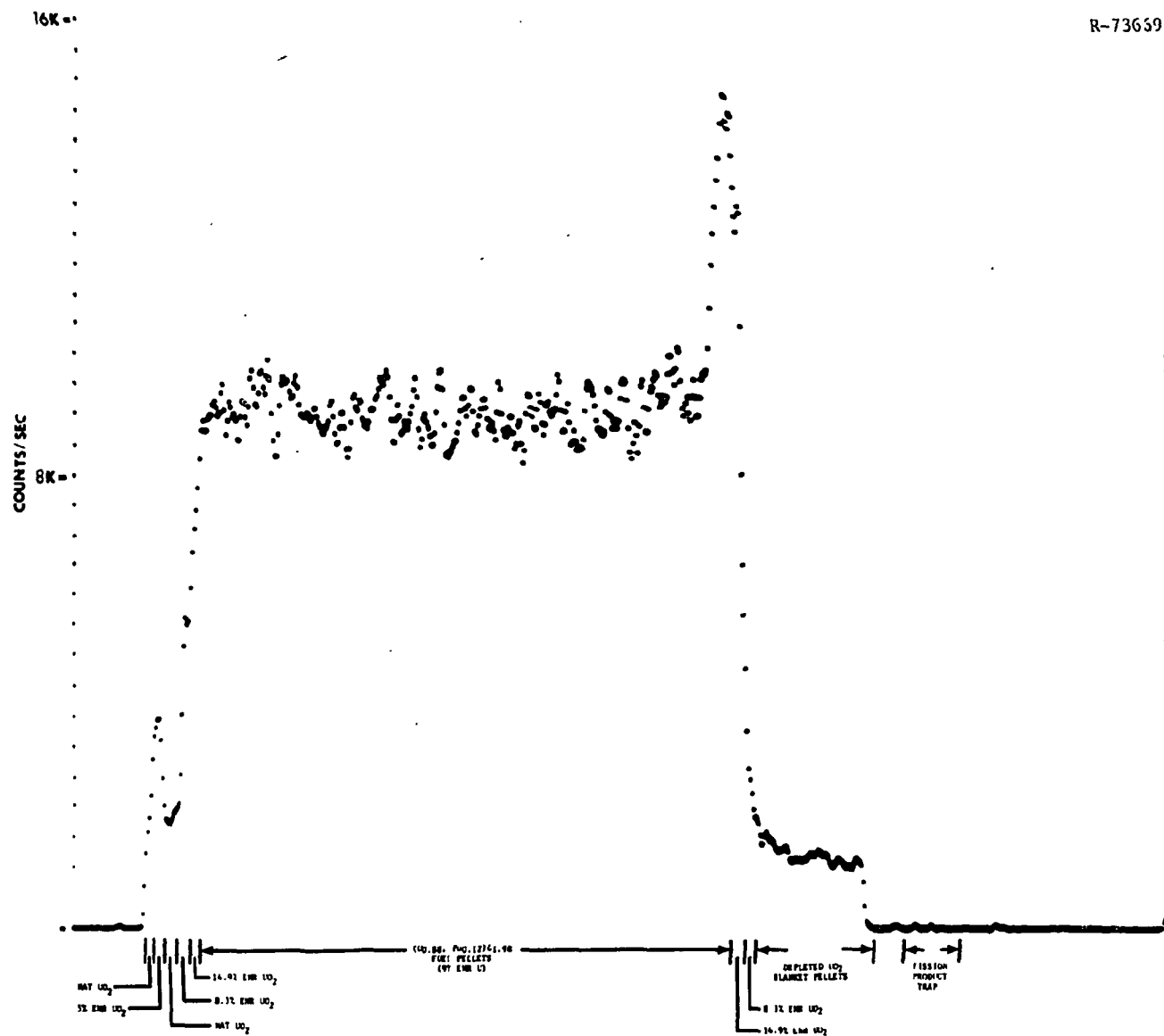


Fig. 7. Gamma Activity of  $^{132}I$  (666 keV) Along GB-10 Fuel Pin.

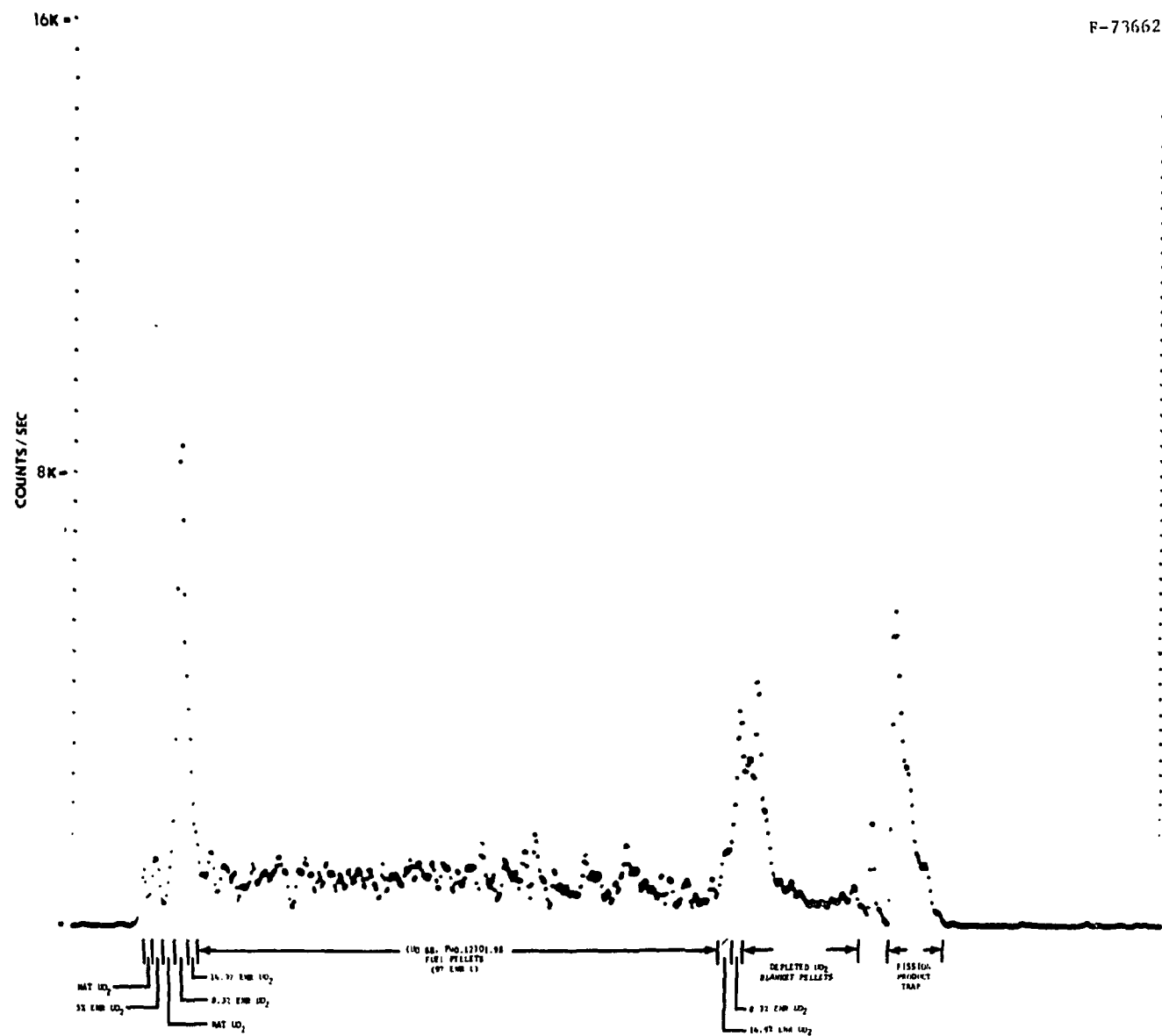


Fig. 8. Gamma Activity of  $^{134}\text{Cs}$  (603 keV) Along GB-10 Fuel Pin.

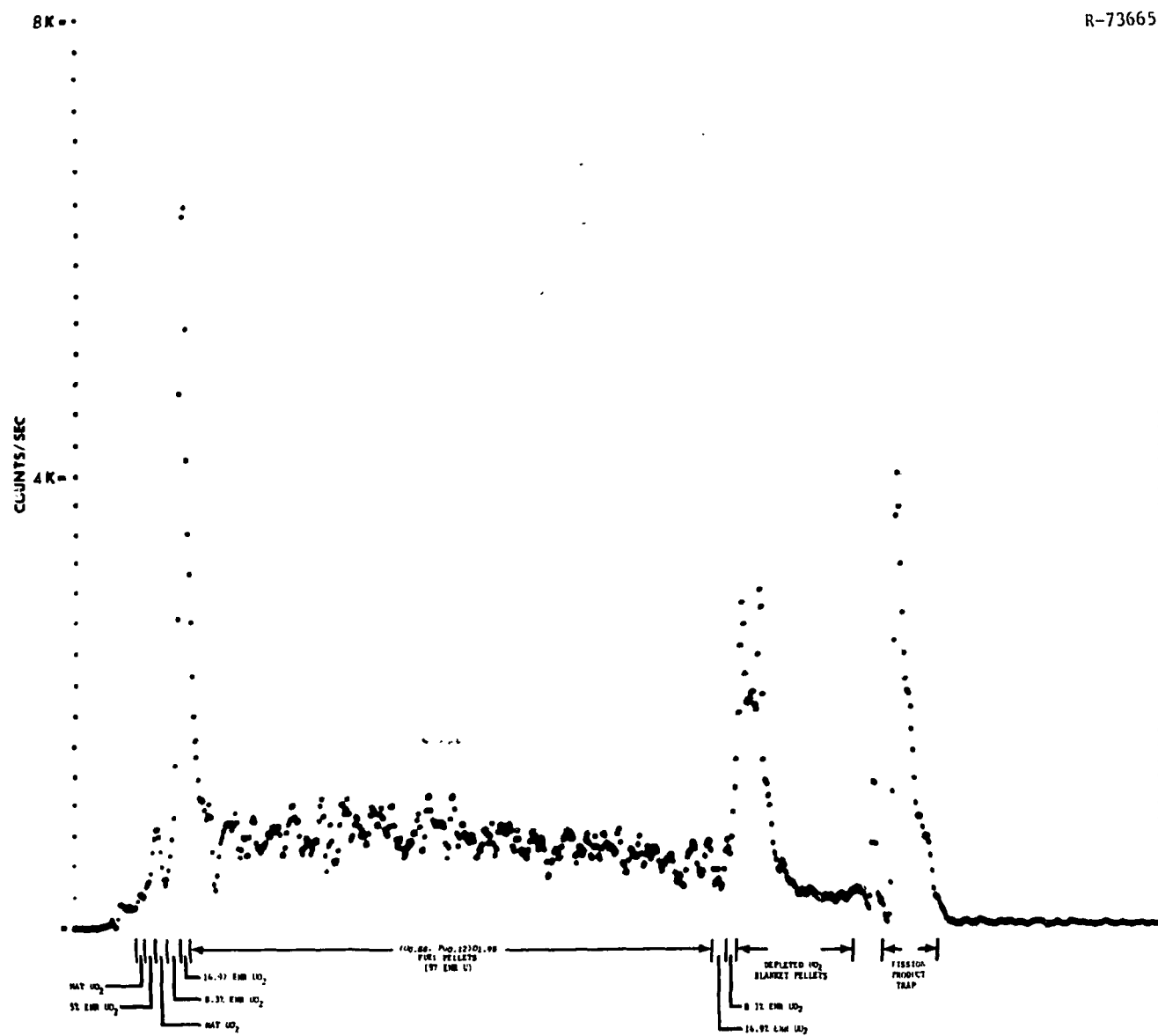


Fig. 9. Gamma Activity of  $^{134}\text{Cs}$  (794 keV) Along GB-10 Fuel Pin.

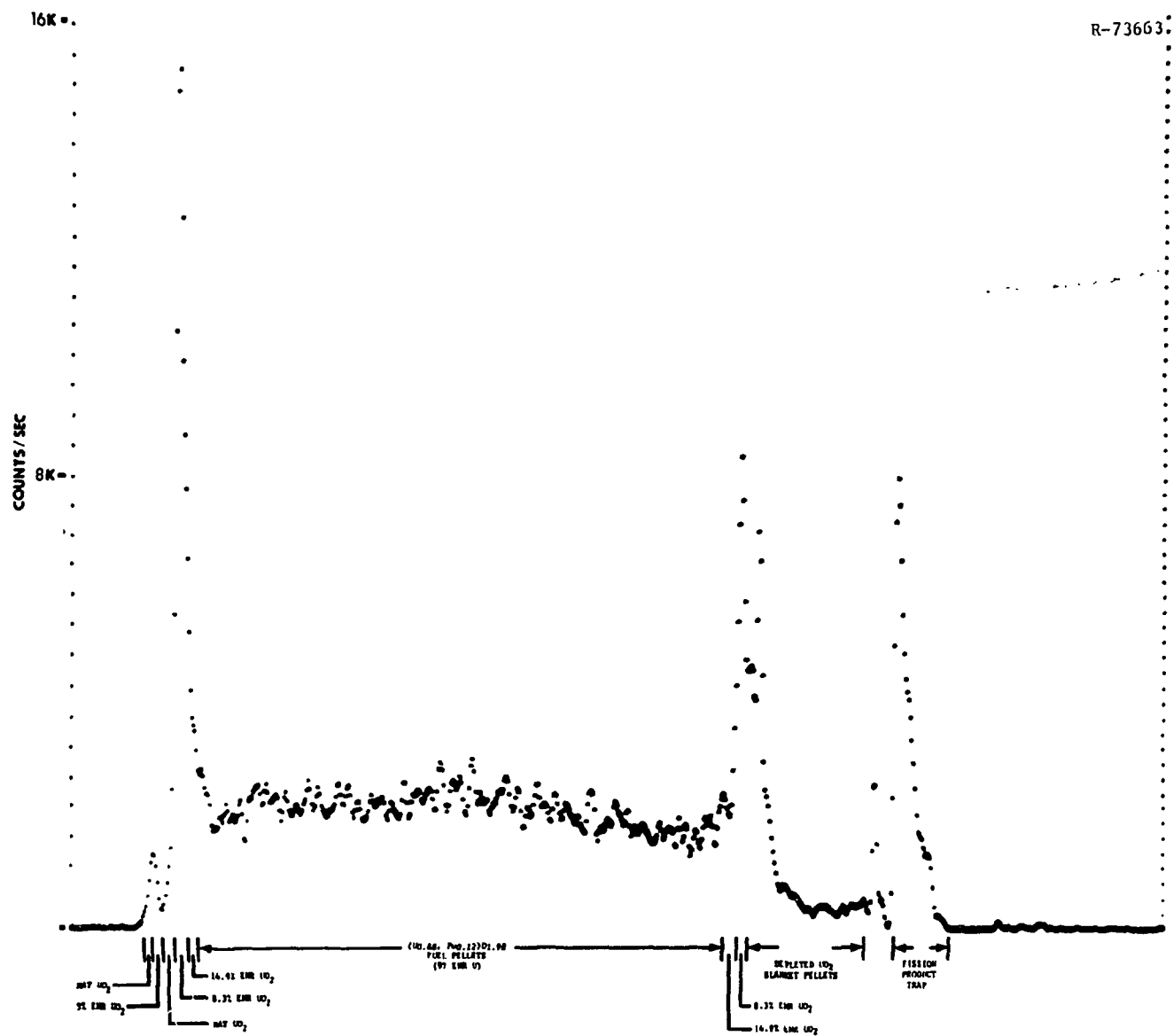


Fig. 10. Gamma Activity of  $^{137}\text{Cs}$  (661 keV) Along GB-10 Fuel Pin.

intense narrow peak. Cesium diffusion did not stop at the top fuel-blanket interface, but continued through the blanket into the charcoal fission product trap. Evidently the diffusion of cesium through the blanket is much slower than through the fuel. Note that although  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  are not as volatile as other species, they are rather long-lived (2.2 and 30 years, respectively) and so have longer times in which to migrate. The presence of cesium in the charcoal trap contrasts with the lack of cesium in the GB-9 capsule's trap,<sup>6</sup> probably because of the higher burnup achieved in the GB-10 capsule.

The distribution profile of tellurium (Fig. 11) is similar to that of iodine. Like iodine,  $^{132}\text{Te}$  is very volatile and short-lived.

Ruthenium ( $^{103}\text{Ru}$  and  $^{106}\text{Ru}$ ) axial (Figs. 12 and 13) show two prominent peaks in the fuel region that correspond to the two peaks in the gross gamma scan. Also, comparison of these scans with the neutron radiographs of the fuel pin (Fig. 14) reveals that the peaks coincide with inclusions in the central void. This indicates that the inclusions could be of a noble metal, and may be the cause of the gas flow inhibition through the fuel pin observed during irradiation.<sup>7</sup>

The distribution profiles of zirconium and europium ( $^{95}\text{Zr}$  and  $^{154}\text{Eu}$ ), shown in Figs. 15 and 16, closely represent a general burnup profile of the fuel pin. Activity of the two isotopes, which have nearly identical gamma energies, is high through the fuel region in the blanket regions. In the lower blanket region, the 5%-enriched  $\text{UO}_2$  pellet is easily discerned, as it is in the gross gamma scan. An inexplicable peak in the upper gas line region may be caused by the gas line spacer present at that point, but it is unknown why only these isotopes exhibited the peak.

The niobium ( $^{95}\text{Nb}$ ) distribution profile across the fuel pin (Fig. 17) closely resembles the zirconium ( $^{95}\text{Zr}$ ) profile. The contribution of  $^{110\text{m}}\text{Ag}$  is considered to be of secondary importance, but may have caused the slight peak at the fuel-blanket interfaces.

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<sup>6</sup>S. Langer et al., *Volatile Fission Product Migration and Plateout in GCFR Fuel Rod Irradiations*, GULF GA-A-12379 (Nov. 8, 1972).

<sup>7</sup>Personal communication with A. W. Longest, July 1976.

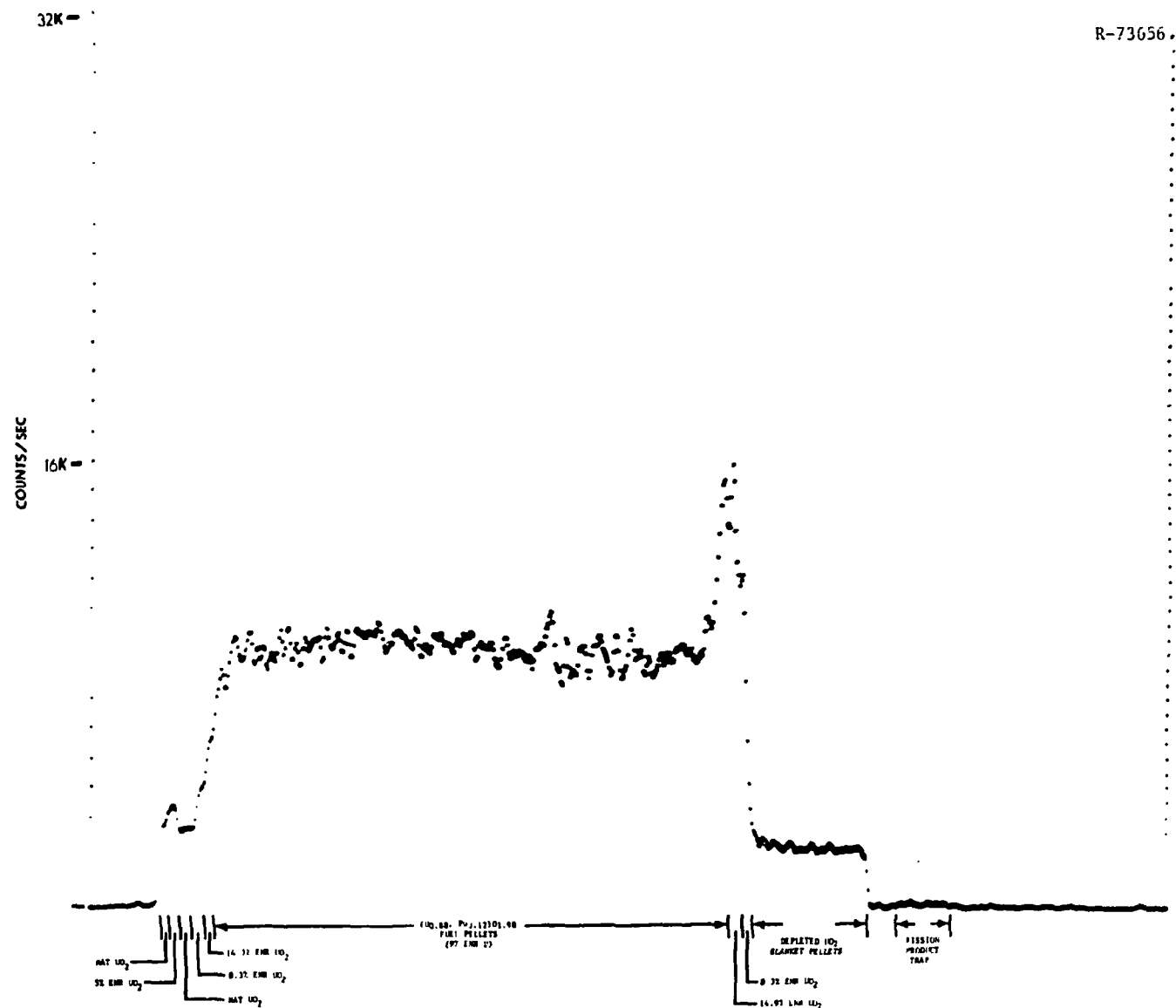
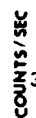


Fig. 11. Gamma Activity of  $^{132}\text{Te}$  (227 keV) Along GB-10 Fuel Pin.



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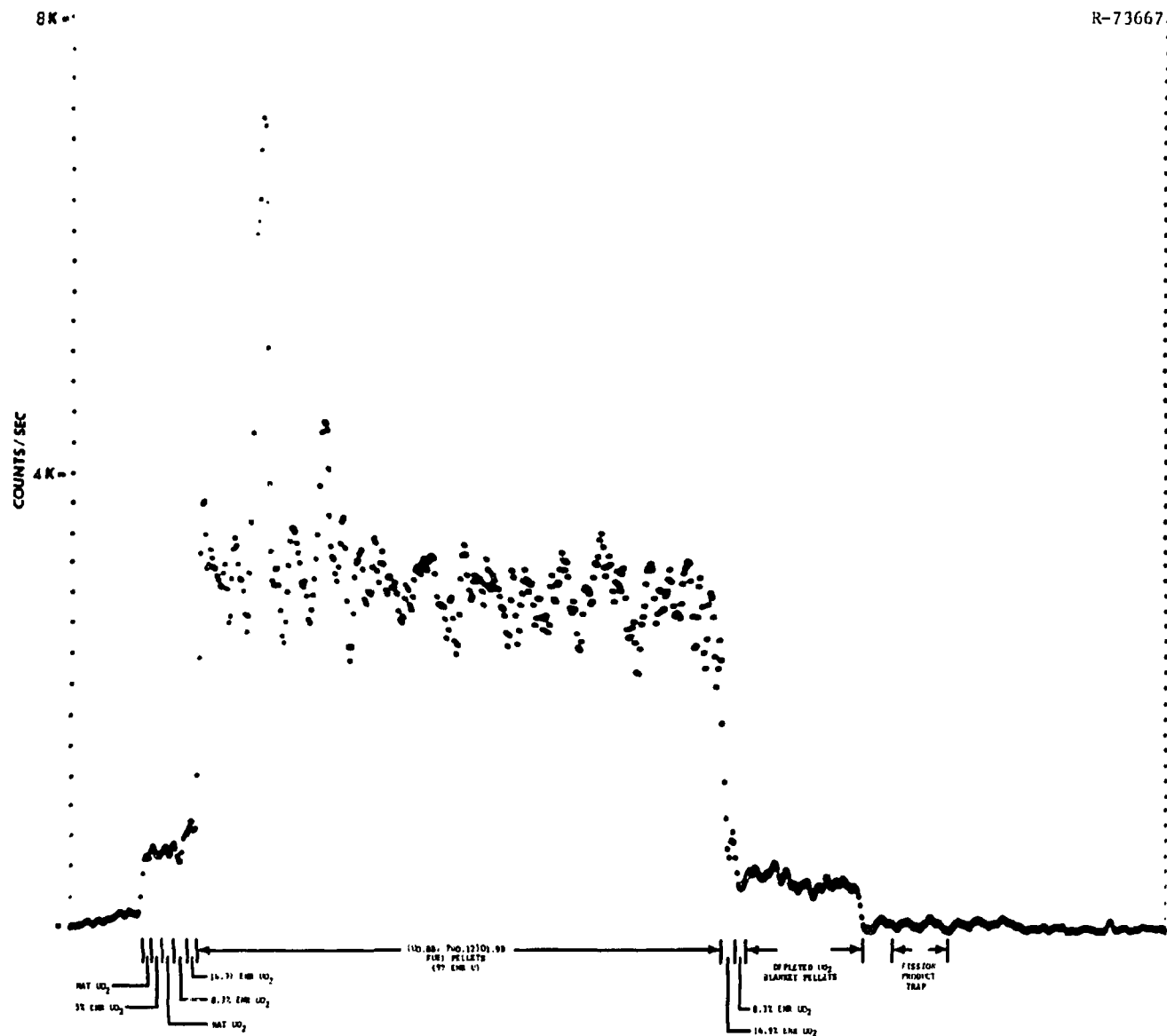


Fig. 13. Gamma Activity of  $^{106}Ru$  (510 keV) Along CB-10 Fuel Pin.

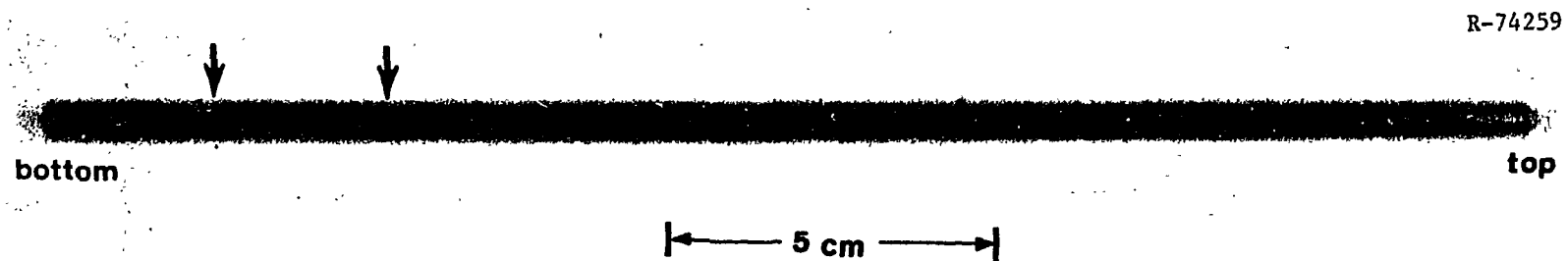


Fig. 14. Neutron Radiograph of GB-10 Fuel Pin. Arrows indicate position of inclusions in Central Void.

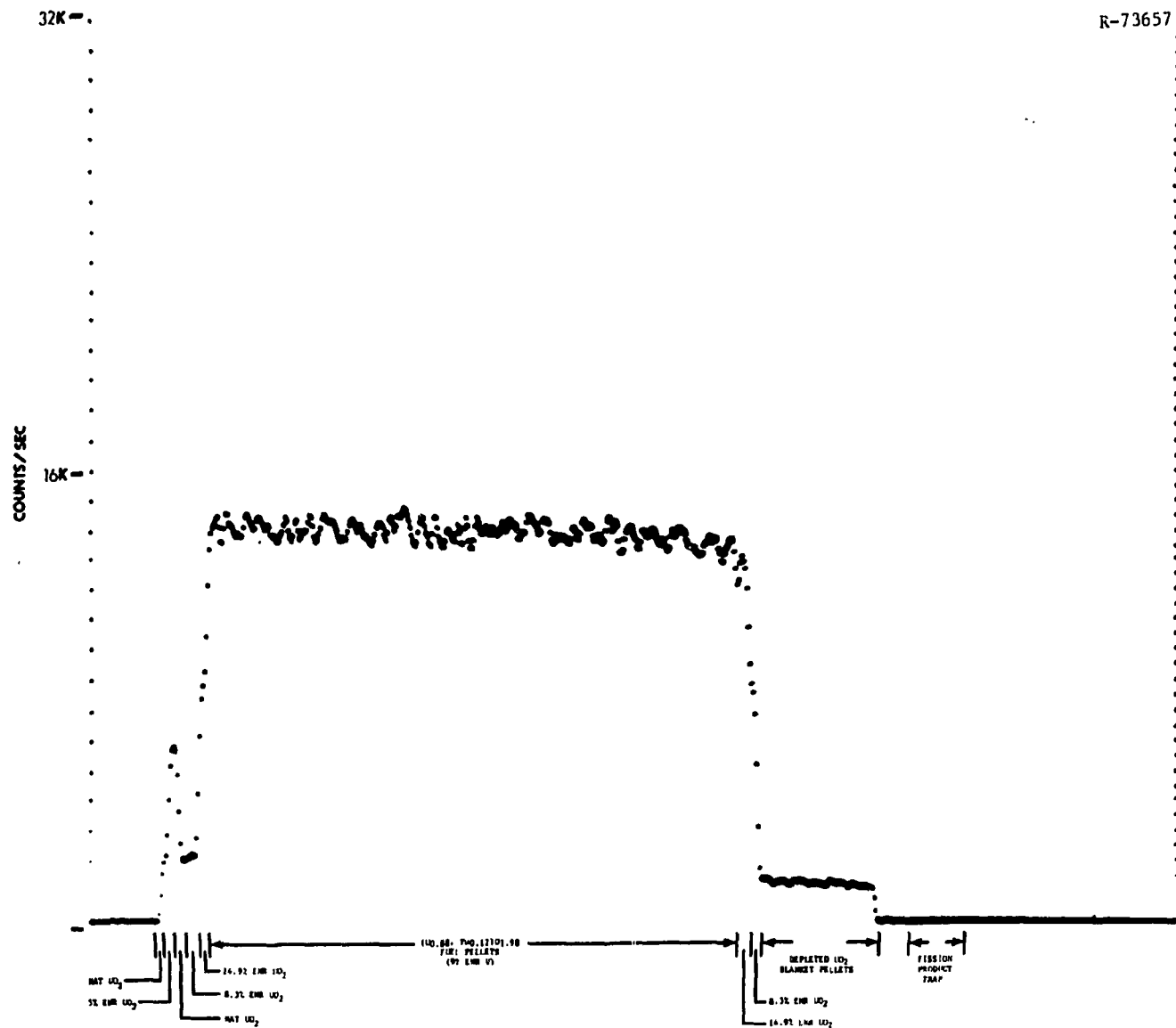


Fig. 15. Gamma Activity of  $^{95}\text{Zr}$ ,  $^{154}\text{Eu}$  (722 keV), and  $^{131}\text{I}$  Along GB-10 Fuel Pin.

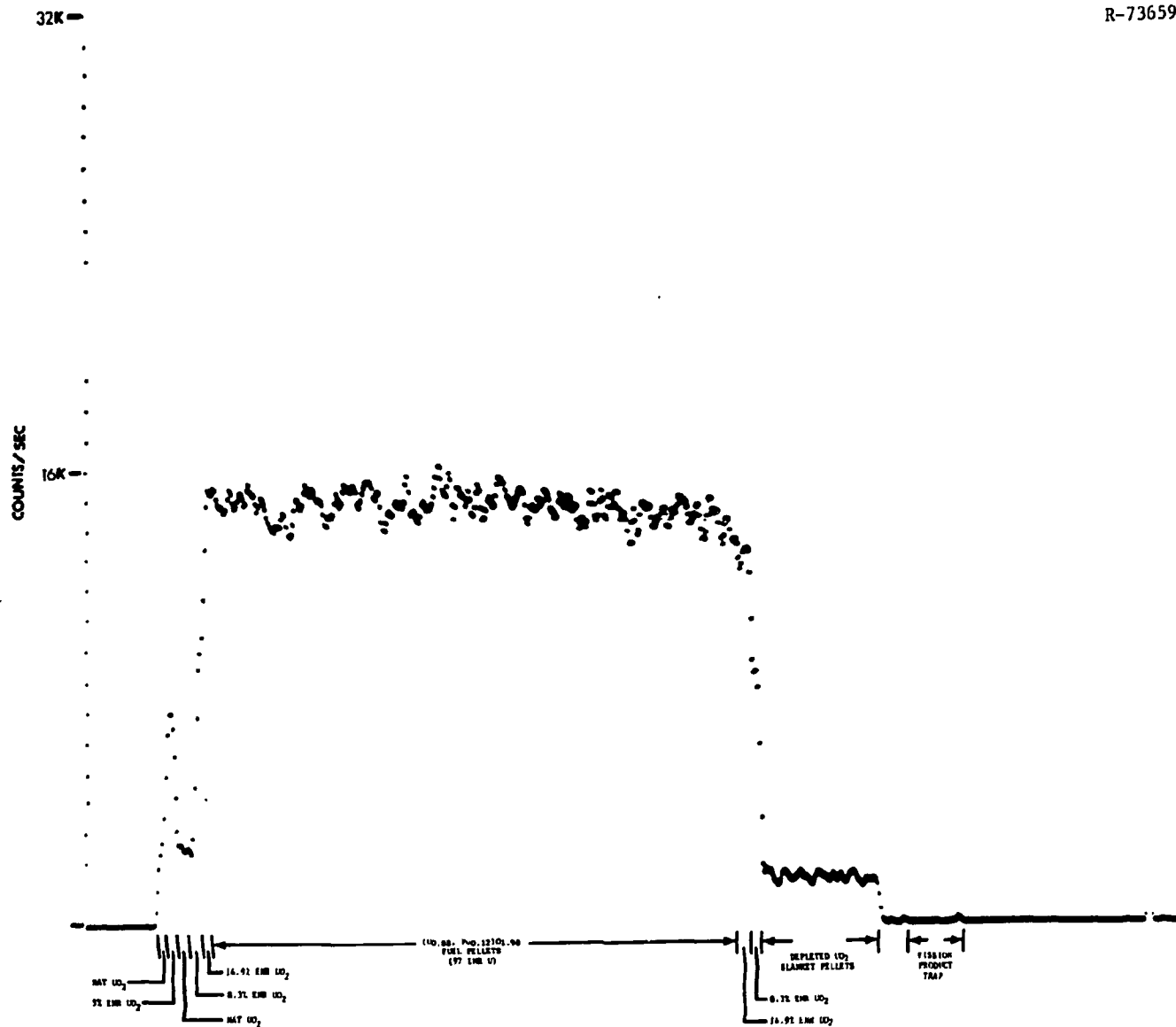


Fig. 16. Gamma Activity of  $^{95}\text{Zr}$  and  $^{154}\text{Eu}$  (755 keV) Along GB-10 Fuel Pin.

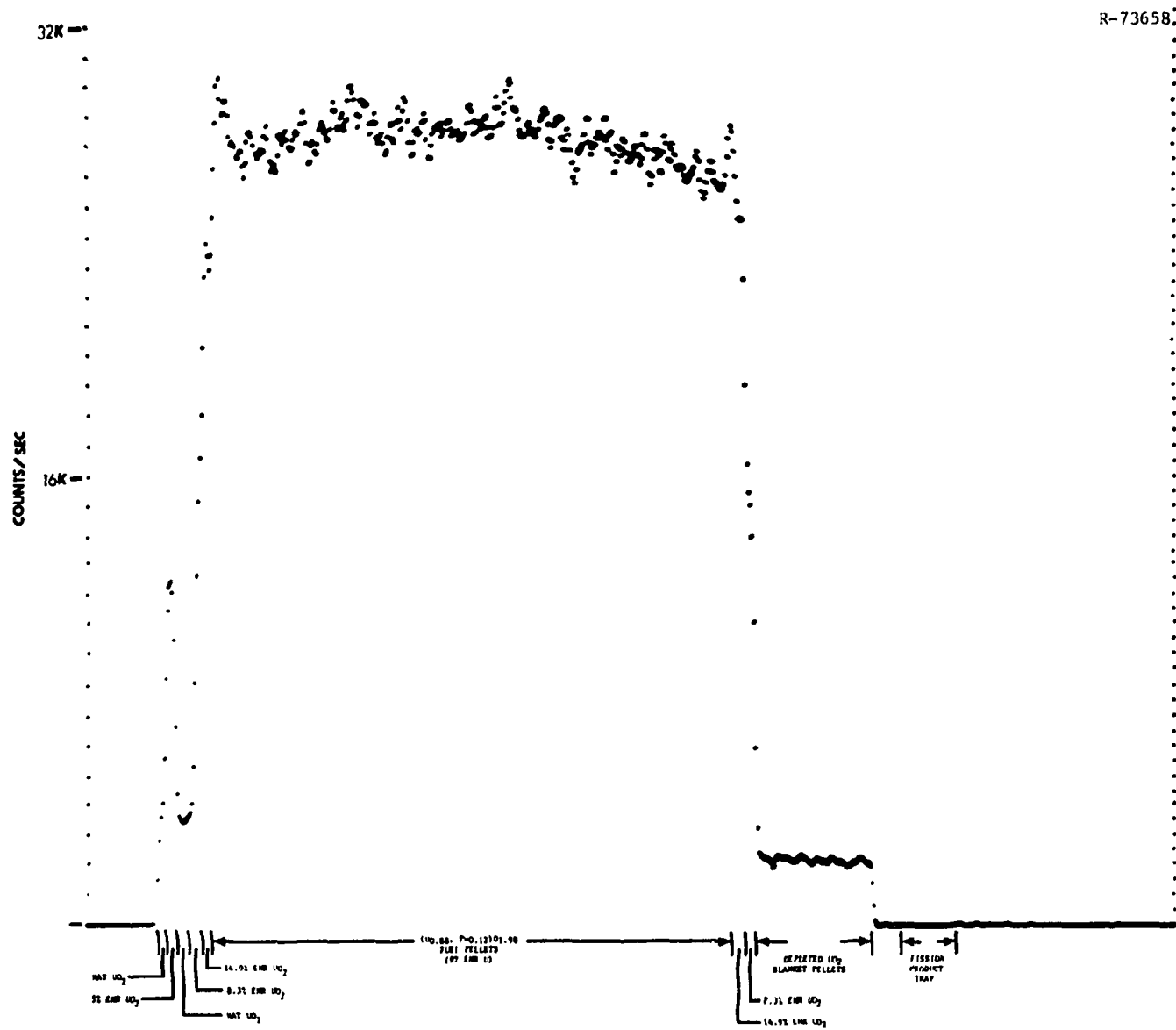


Fig. 17. Gamma Activity of  $^{95}Nb$  and  $^{110m}Ag$  (764 keV) Along GB-10 Fuel Pin.

The lanthanum ( $^{140}\text{La}$ ) profile (Fig. 18) is very similar to the  $^{95}\text{Zr}$  and  $^{95}\text{Nb}$  scans, and is representative of the burnup profile. The barium ( $^{140}\text{Ba}$ ) profile (Fig. 19) is similar to the  $^{140}\text{La}$  scan. These two isotopes share the same fission decay chain and were expected to have similar profiles.

The neodymium ( $^{147}\text{Nd}$ ) profile (Fig. 20) shows a great deal of scatter in its data points, but the general appearance is similar to profiles of  $^{95}\text{Zr}$ ,  $^{95}\text{Nb}$ ,  $^{140}\text{La}$ , and  $^{140}\text{Ba}$ . The profile shows some evidence of neodymium above the blanket in the fission product trap and in the gas lines.

There is more data-point scattering in the profile of  $^{144}\text{Ce}$  than in the  $^{141}\text{Ce}$  scan (Figs. 21 and 22). This is probably because of the difference in their half-lives; 280-days and 33-days, respectively. The  $^{141}\text{Ce}$  profile is similar to the other burnup profiles (i.e.,  $^{95}\text{Zr}$  and  $^{140}\text{La}$ ), and both cerium isotopes were present above the blanket in the fission product trap and in the gas lines.

Considerable data-point scattering is evident in the profile of molybdenum ( $^{99}\text{Mo}$ ) shown in Fig. 23, especially in the regions of the fuel and blanket. The gas lines above the fission product trap also showed some activity.

Although cobalt ( $^{60}\text{Co}$ ) is not a fission product, its profile (Fig. 24) shows activity derived from the activation of the cobalt in the stainless steel.

In addition to the continuous axial scan, complete gamma spectra were recorded at various positions along the fuel pin, fission product trap, and gas lines. These positions are shown in Fig. 4, and the quantitative assessment of the fission product inventory for each position is given in Appendix B.

The spectral scans show that some volatile fission products migrated past the charcoal trap. Scan 1 (Appendix B) shows that cesium ( $^{137}\text{Cs}$ ) migrated to the gas lines about 87 mm (3.5 in.) above the trap, and Scan 9 (Appendix B) shows that iodine ( $^{131}\text{I}$ ) also migrated to about 12 mm (0.5 in.) above the trap. The amount of both isotopes, however, was extremely small.

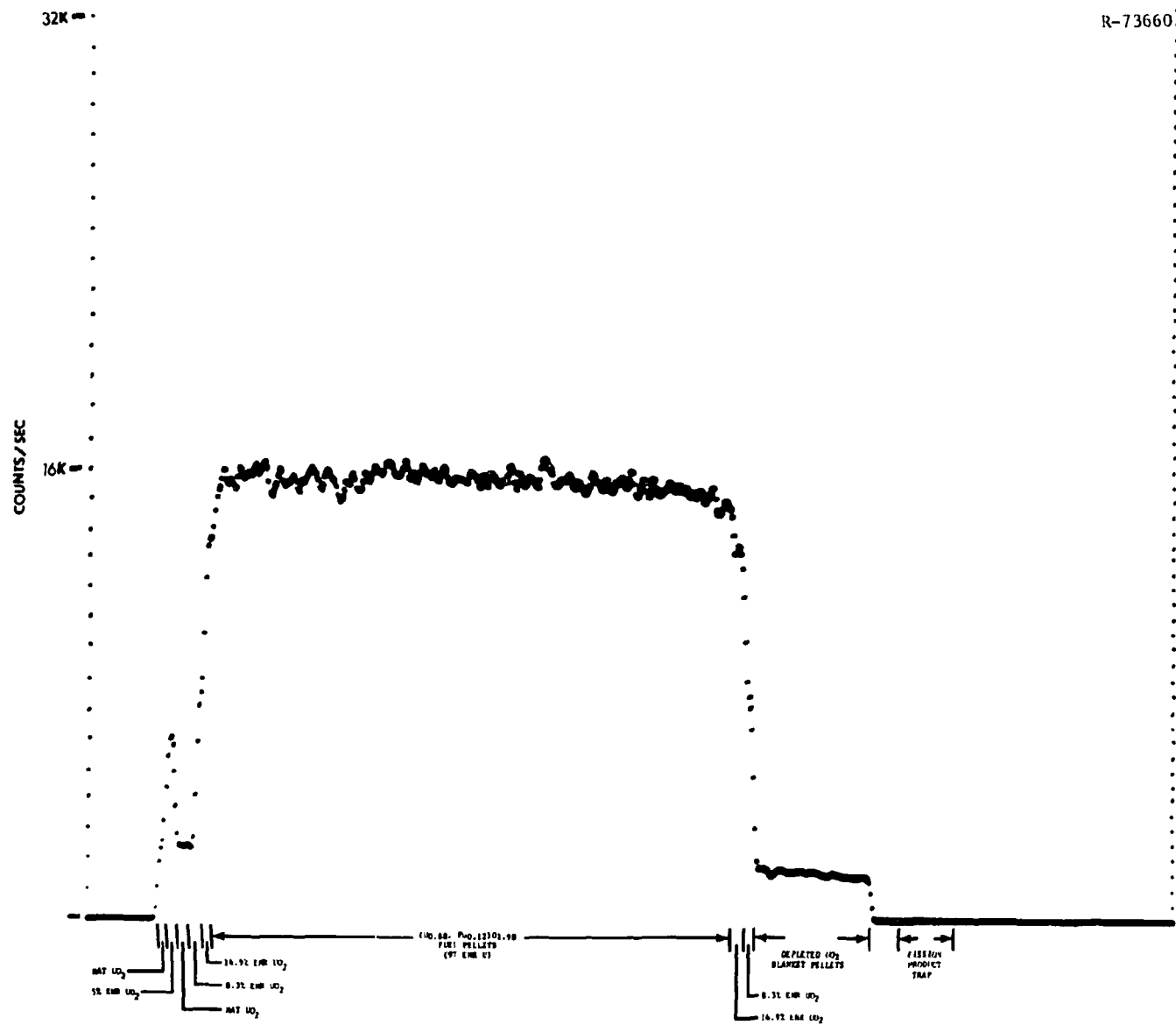


Fig. 18. Gamma Activity of  $^{140}\text{La}$  (1595 keV) Along GB-10 Fuel Pin.

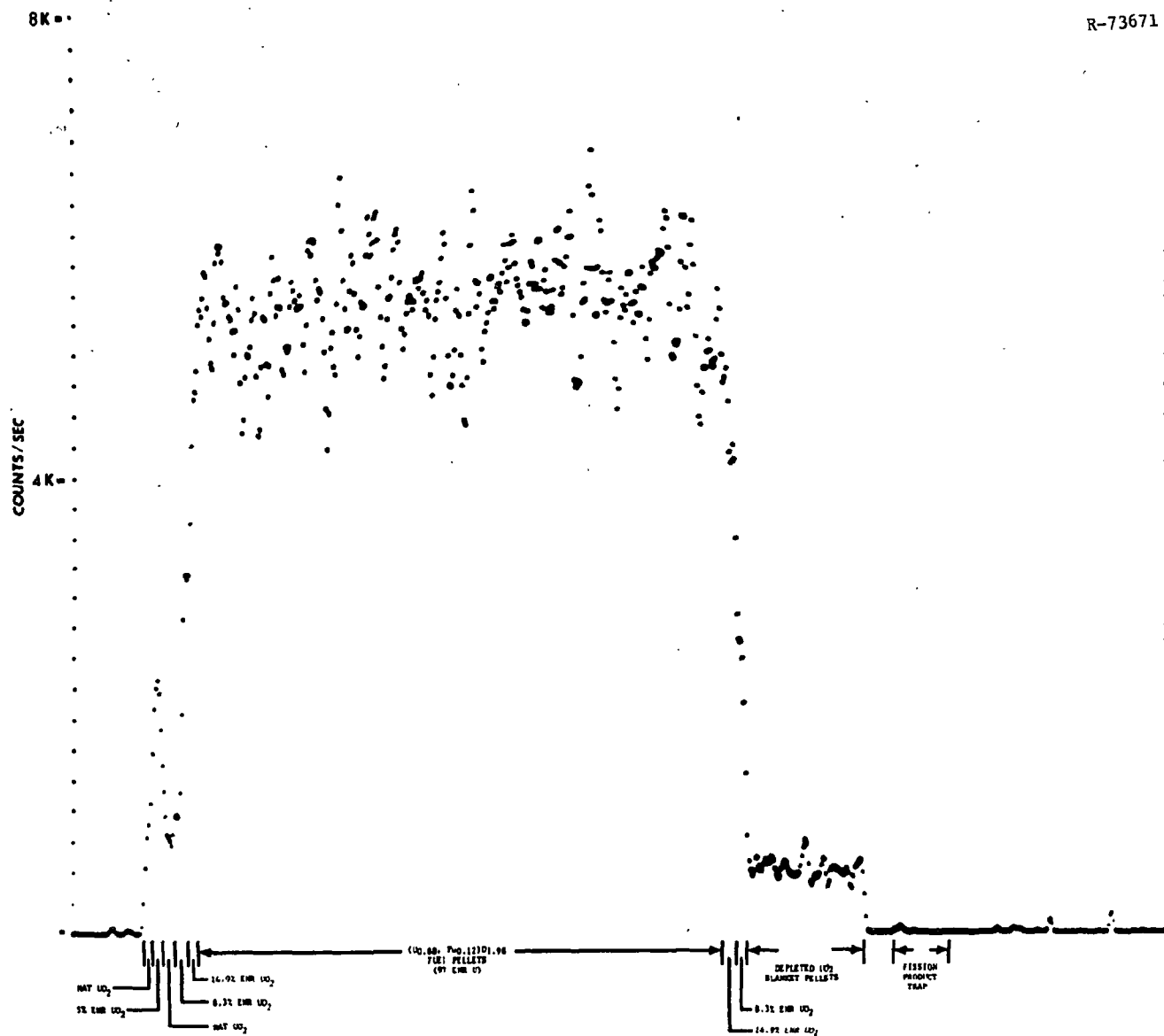


Fig. 19. Gamma Activity of  $^{140}\text{Ba}$  (536 keV) Along GB-10 Fuel Pin.

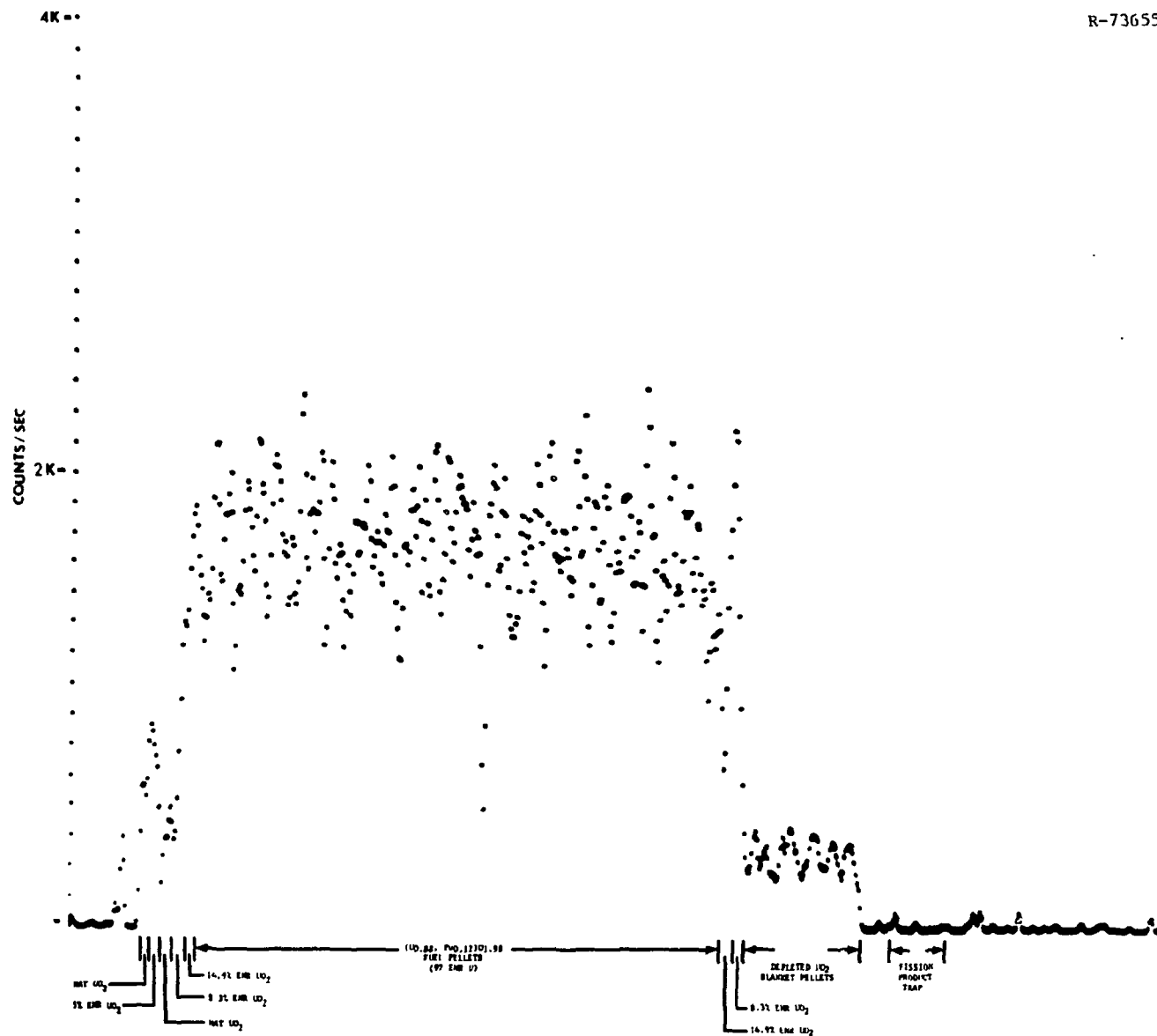


Fig. 20. Gamma Activity of  $^{147}\text{Nd}$  (529 keV) Along GB-10 Fuel Pin.

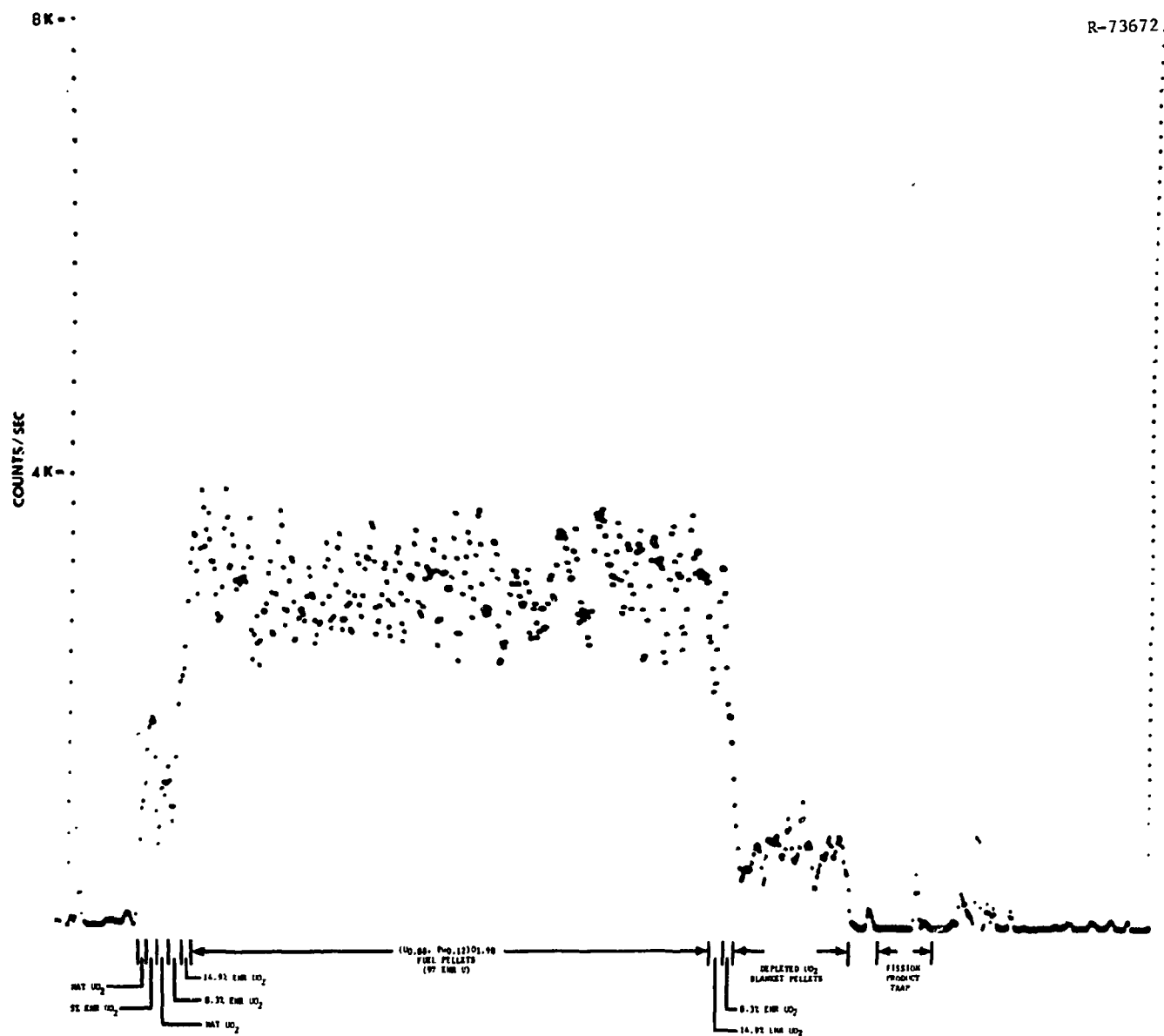


Fig. 21. Gamma Activity of  $^{141}\text{Ce}$  (144 keV) Along GB-10 Fuel Pin.

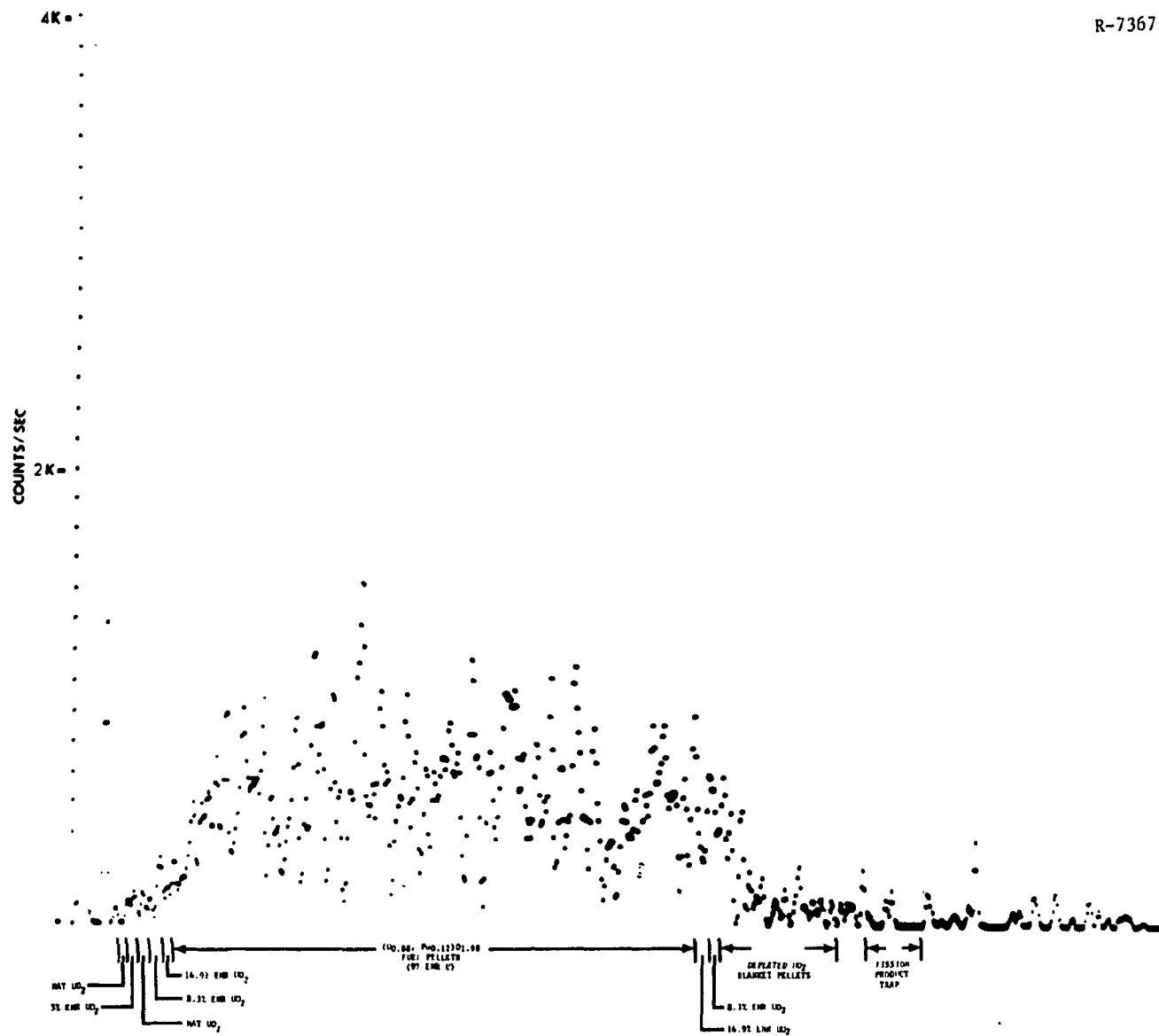


Fig. 22. Gamma Activity of  $^{144}\text{Ce}$  (132 keV) Along GB-10 Fuel Pin.

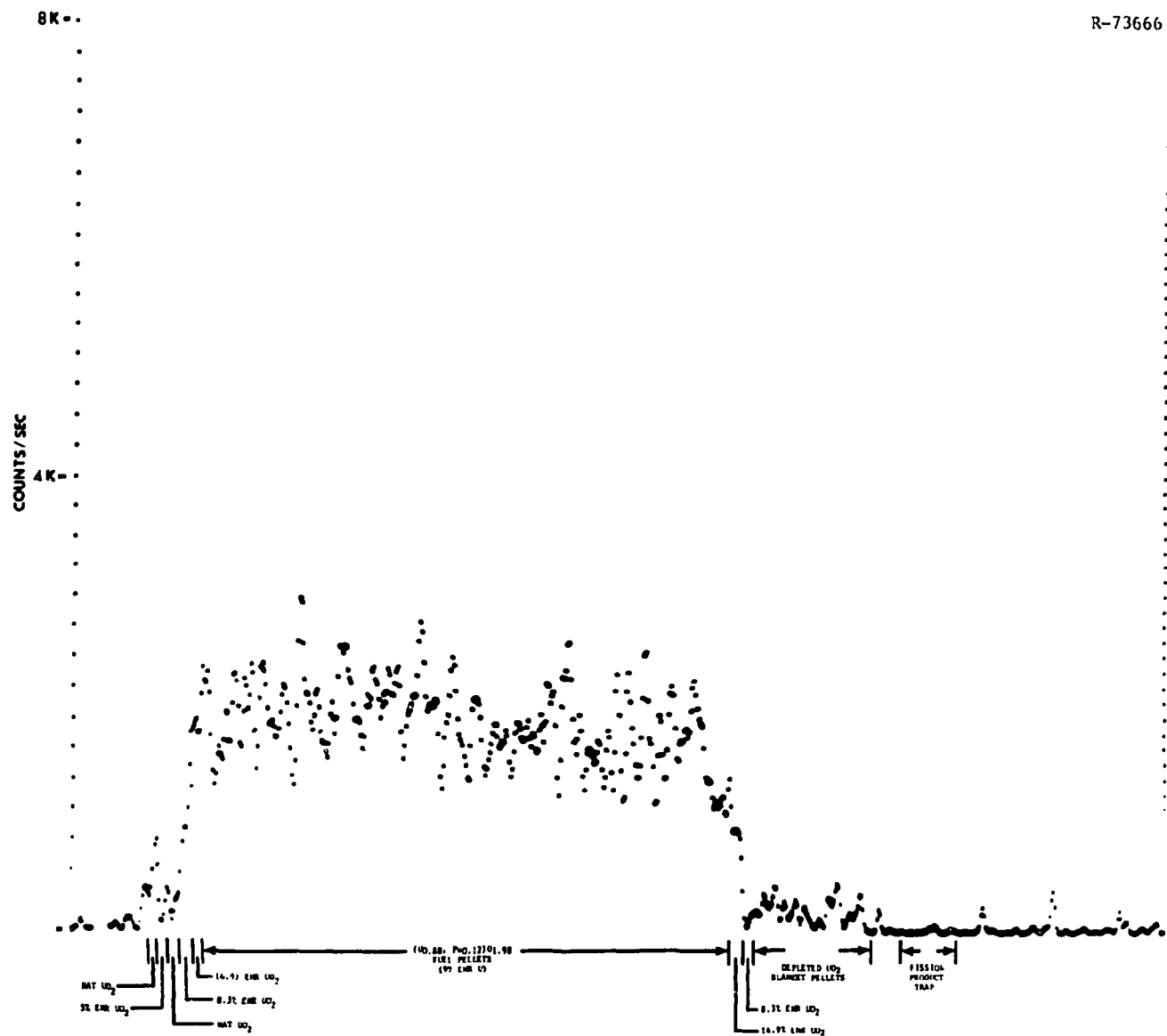


Fig. 23. Gamma Activity of  $^{99}\text{Mo}$  (139 keV) Along GB-10 Fuel Pin.

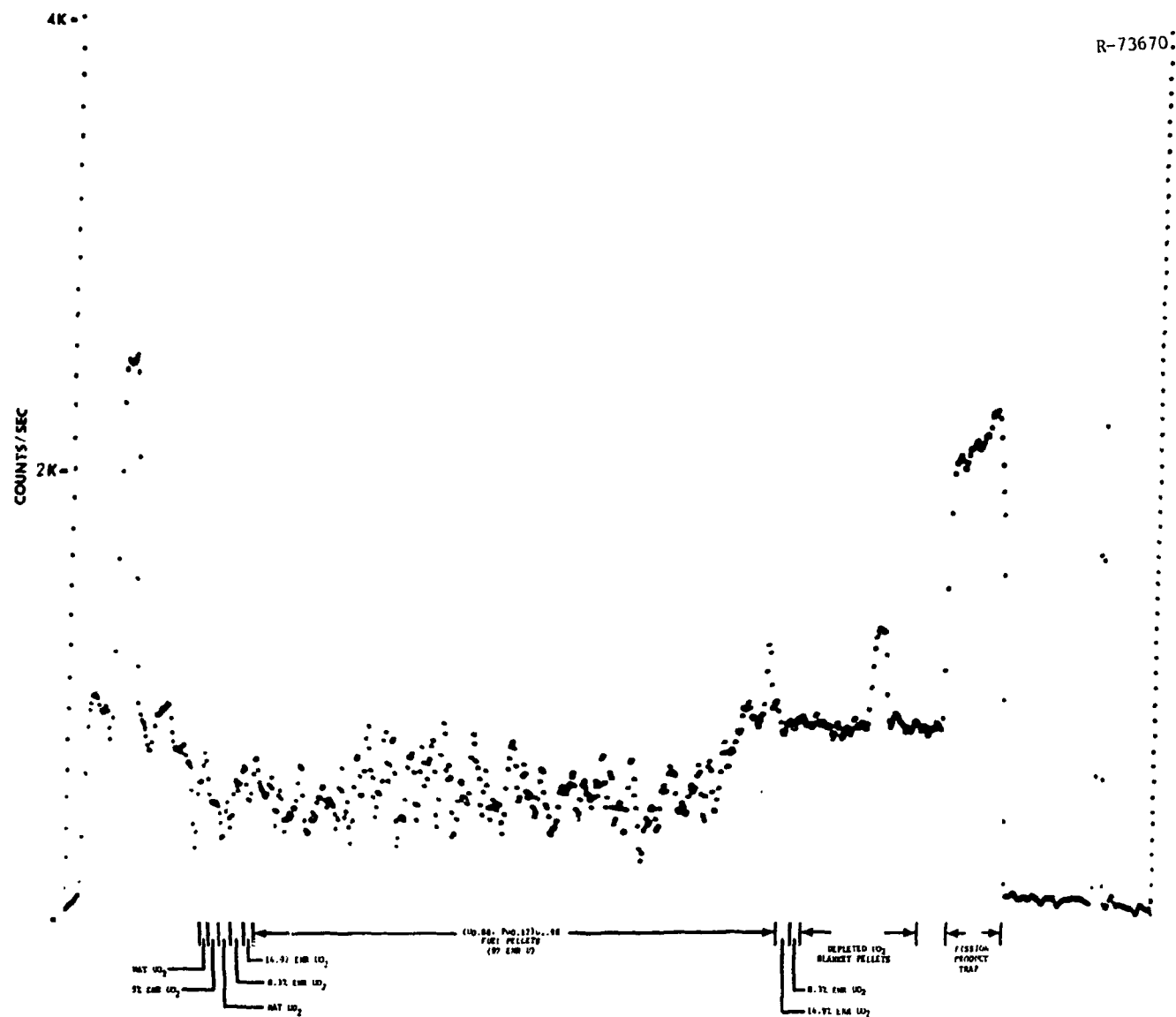


Fig. 24. Gamma Activity of  $^{60}\text{Co}$  (1172 keV) Along GB-10 Fuel Pin.

Although volatile fission products were evident in the gas lines above the charcoal trap, data indicated that most of the fission products were stopped by the trap. To illustrate, a comparison of  $^{131}\text{I}$  activity above the charcoal trap and at the top of the trap, represented by Scans 11 and 12 (Appendix B), shows a value of 3.9 CPS above the trap and 443 CPS at the top of the trap. Similarly,  $^{134}\text{Cs}$  activity changed from about 0 CPS above the trap to 9.8 CPS at the top of the trap, and  $^{129}\text{Te}$  changed from about 0 CPS above the trap to 2.1 CPS at the top of the trap. Scans made farther from the top of the charcoal trap show increasing amounts of fission products, as evidenced by the distribution of  $^{131}\text{I}$  across the trap (Fig. 25).

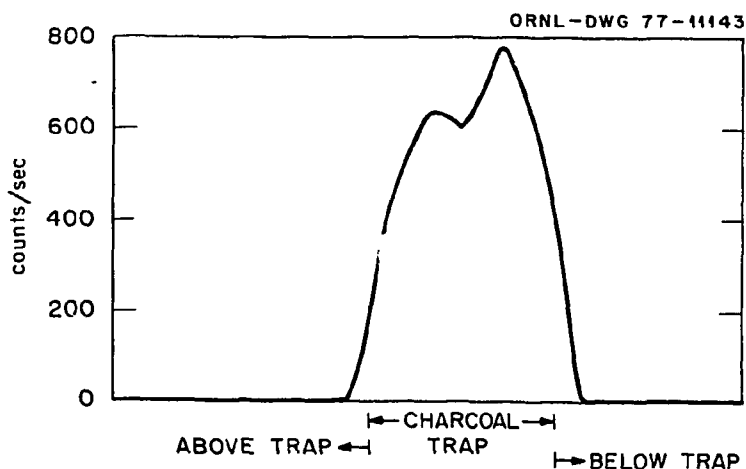


Fig. 25. Distribution of  $^{131}\text{I}$  (363 keV) in Charcoal Trap of GCFR Capsule GB-10. Scale = 2 $\times$ .

#### DIMENSIONAL INSPECTION

Results of fuel pin diameter measurements taken after irradiation, at 0, 45, 90, and 135° orientations using opposing dial indicators, were compared with preirradiation measurements (Table 2).

Bow was determined by rotating the pin to obtain the maximum reading on the dial indicator. After obtaining the maximum reading at 0° orientation, we determined the bow from the dial indicator readings (Fig. 26). Results showed a slight swelling ( $\leq 0.42\%$ ) of the stainless steel cladding.

Table 2. Comparison of CB-10 Fuel Pin Diameters Before and After Irradiation

| Distance From<br>Bottom Weld,<br>mm (in.) | Preirradiation Diameters,<br>mm (in.) |                | Postirradiation Diameters,<br>mm (in.) |                |                |                | Dimensional<br>Change<br>(%) |      |
|-------------------------------------------|---------------------------------------|----------------|----------------------------------------|----------------|----------------|----------------|------------------------------|------|
|                                           | 0°                                    | 90°            | 0°                                     | 45°            | 90°            | 135°           | 0°                           | 90°  |
| 25.4 (1.0)                                | 9.164 (0.3608)                        | 9.167 (0.3609) | 9.185 (0.3616)                         | 9.182 (0.3615) | 9.164 (0.3608) | 9.180 (0.3614) | 0.22                         | 0.03 |
| 38.1 (1.5)                                | 9.169 (0.3610)                        | 9.164 (0.3608) | 9.187 (0.3617)                         | 9.192 (0.3619) | 9.182 (0.3615) | 9.185 (0.3616) | 0.19                         | 0.19 |
| 50.8 (2.0)                                | 9.167 (0.3609)                        | 9.169 (0.3610) | 9.187 (0.3617)                         | 9.195 (0.3620) | 9.182 (0.3615) | 9.185 (0.3616) | 0.22                         | 0.14 |
| 63.5 (2.5)                                | 9.172 (0.3611)                        | 9.169 (0.3610) | 9.202 (0.3623)                         | 9.202 (0.3623) | 9.195 (0.3620) | 9.190 (0.3618) | 0.33                         | 0.28 |
| 76.2 (3.0)                                | 9.169 (0.3610)                        | 9.172 (0.3611) | 9.200 (0.3622)                         | 9.197 (0.3621) | 9.195 (0.3620) | 9.185 (0.3616) | 0.33                         | 0.25 |
| 88.9 (3.5)                                | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.202 (0.3623)                         | 9.202 (0.3623) | 9.192 (0.3619) | 9.197 (0.3621) | 0.36                         | 0.28 |
| 101.6 (4.0)                               | 9.169 (0.3610)                        | 9.169 (0.3610) | 9.200 (0.3622)                         | 9.202 (0.3623) | 9.192 (0.3619) | 9.200 (0.3622) | 0.33                         | 0.25 |
| 114.3 (4.5)                               | 9.172 (0.3611)                        | 9.167 (0.3609) | 9.195 (0.3620)                         | 9.202 (0.3623) | 9.195 (0.3620) | 9.192 (0.3619) | 0.25                         | 0.30 |
| 127.0 (5.0)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.202 (0.3623)                         | 9.190 (0.3618) | 9.190 (0.3618) | 9.190 (0.3618) | 0.36                         | 0.25 |
| 139.7 (5.5)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.185 (0.3616)                         | 9.185 (0.3616) | 9.192 (0.3619) | 9.190 (0.3618) | 0.17                         | 0.28 |
| 152.4 (6.0)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.192 (0.3619)                         | 9.185 (0.3616) | 9.195 (0.3620) | 9.190 (0.3618) | 0.25                         | 0.30 |
| 165.1 (6.5)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.197 (0.3621)                         | 9.187 (0.3617) | 9.190 (0.3618) | 9.192 (0.3619) | 0.30                         | 0.25 |
| 177.8 (7.0)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.187 (0.3617)                         | 9.187 (0.3617) | 9.205 (0.3624) | 9.185 (0.3616) | 0.19                         | 0.42 |
| 190.5 (7.5)                               | 9.169 (0.3610)                        | 9.167 (0.3609) | 9.190 (0.3618)                         | 9.187 (0.3617) | 9.187 (0.3617) | 9.197 (0.3621) | 0.22                         | 0.22 |
| 203.2 (8.0)                               | 9.167 (0.3609)                        | 9.167 (0.3609) | 9.182 (0.3615)                         | 9.182 (0.3615) | 9.192 (0.3619) | 9.195 (0.3620) | 0.17                         | 0.28 |
| 215.9 (8.5)                               | 9.167 (0.3609)                        | 9.167 (0.3609) | 9.187 (0.3617)                         | 9.182 (0.3615) | 9.185 (0.3616) | 9.185 (0.3616) | 0.22                         | 0.19 |
| 228.6 (9.0)                               | 9.167 (0.3609)                        | 9.164 (0.3608) | 9.187 (0.3617)                         | 9.185 (0.3616) | 9.180 (0.3614) | 9.187 (0.3617) | 0.22                         | 0.17 |
| 241.3 (9.5)                               | 9.167 (0.3609)                        | 9.167 (0.3609) | 9.177 (0.3613)                         | 9.187 (0.3617) | 9.177 (0.3613) | 9.187 (0.3617) | 0.11                         | 0.11 |
| 254.0 (10.0)                              | 9.167 (0.3609)                        | 9.167 (0.3609) | 9.174 (0.3612)                         | 9.187 (0.3617) | 9.177 (0.3613) | 9.187 (0.3617) | 0.08                         | 0.11 |
| 266.7 (10.5)                              | 9.167 (0.3609)                        | 9.164 (0.3608) | 9.182 (0.3615)                         | 9.177 (0.3613) | 9.180 (0.3614) | 9.177 (0.3613) | 0.17                         | 0.17 |
| 279.4 (11.0)                              | 8.954 (0.3525)                        | 8.951 (0.3524) | 8.943 (0.3521)                         | 8.951 (0.3524) | 8.959 (0.3527) | 8.989 (0.3539) | 0.11                         | 0.09 |
| 292.1 (11.5)                              | 8.948 (0.3523)                        | 8.948 (0.3523) | 8.956 (0.3526)                         | 8.961 (0.3528) | 8.946 (0.3522) | 8.981 (0.3536) | 0.09                         | 0.03 |
| 304.8 (12.0)                              | 8.943 (0.3521)                        | 8.946 (0.3522) | 8.956 (0.3526)                         | 8.961 (0.3528) | 8.954 (0.3525) | 8.979 (0.3535) | 0.09                         | 0.09 |
| 317.5 (12.5)                              | 8.926 (0.3514)                        | 8.936 (0.3518) | 8.948 (0.3523)                         | 8.946 (0.3522) | 8.936 (0.3518) | 8.964 (0.3529) | 0.06                         |      |
| 330.2 (13.0)                              | 8.900 (0.3504)                        | 8.933 (0.3517) | 8.946 (0.3522)                         | 8.941 (0.3520) | 8.933 (0.3529) | 8.959 (0.3524) | 0.23                         |      |
| 342.9 (13.5)                              | 8.928 (0.3515)                        | 8.971 (0.3532) | 8.920 (0.3512)                         | 8.938 (0.3519) | 8.959 (0.3527) | 8.989 (0.3539) | 0.23                         | 0.14 |

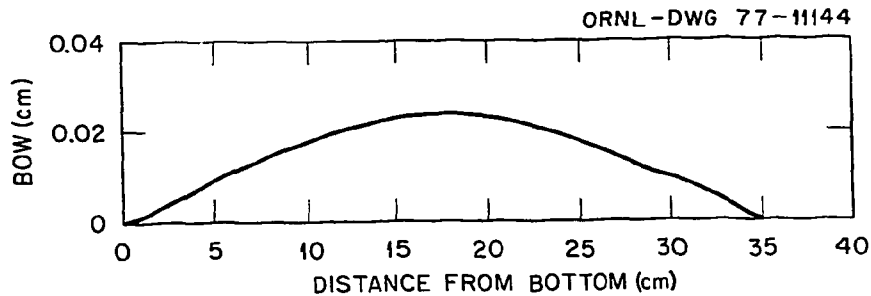


Fig. 26. Bow of GB-10 Fuel Pin from Gage Readings 0-180°.

While diameter measurements were being taken, the dial indicators cycled  $\pm 0.08$  mm (0.003 in.) about every 10 s for no apparent reason. We theorized that the cycling was due, in part, to heat generated by the fuel pin. But a thermocouple, placed on the cladding surface with insulation wrapped around it and the fuel pin, indicated a temperature of 130°C that did not fluctuate with time.

#### CONCLUSIONS

1. The charcoal trap captured a considerable quantity of fission-product cesium. Although some cesium migrated through the trap to the gas lines above, the trap stopped all but a small amount.
2. Fission-product iodine migrated preferentially in one direction, and most of it was stopped at the upper fuel-blanket interface. The charcoal trap stopped all that migrated past the interface.
3. Two possible noble metal inclusions were identified in the central void. These inclusions may have contributed to the gas flow constriction observed during irradiation.

#### ACKNOWLEDGMENTS

The author wishes to acknowledge the efforts of many people who helped in the postirradiation examination. The staff of the Hot Cell Operations at the ORR and the HRLEL did all the disassembly and dimensional measurements. K. H. Valentine set up the gamma scanning equipment and assisted in the analysis. L. G. Shrader and N. M. Atchley performed all the photography during the examination. Ray Ihrig did the technical editing and Gail Golliher did the typing and makeup of the report.

## APPENDIX A

### Disassembly and Examination Steps

1. Capsule was moved into ORR hot cell.
2. With capsule in upright position, lead tube was sheared off at top of second 90° turn from capsule.
3. With capsule still in upright position, a sawcut was made in an argon gas stream through the primary bulkhead 44.5 mm (1 3/4 in.) above the radiography seal plate.
4. The opening was sealed with epoxy to keep air out of the sweep gas and NaK cover gas lines. During the sealing procedure, some epoxy flowed down one NaK cover gas line.
5. Capsule was moved to Bldg. 3525, the High Radiation Level Examination Laboratory, for further disassembly.
6. The capsule positioning footpiece and much of the radiography seal plate were removed.
7. With capsule horizontal, the bottom 17 mm (11/16 in.) of the secondary containment was removed with a rotating chuck saw.
8. With capsule still horizontal, a 6-mm-diam (1/4-in.) hole was drilled through the primary and secondary containments just above the radiography seal plate. An argon stream flooded the drilling site. A gas line jig, which provided an airtight seal, was attached while argon flowed through the line. Argon flow was stopped when the jig was attached.
9. A 6-mm-diam (1/4-in) hole was drilled in an argon stream through the primary and secondary containments 18 mm (3/4 in.) from bottom of the capsule. An argon-purged flask was placed over the drilled hole at the bottom of the capsule, and the capsule was tilted to the vertical position with the flask down.
10. Argon purge gas was applied to the gas line jig at the top of the capsule, forcing the NaK into the argon-purged flask at the bottom.
11. When as much NaK as possible was removed (80.1 g), the bottom of the capsule was placed in a beaker that contained 200 ml of a 50-50 solution of dry mineral oil and dry butyl alcohol. This solution

was drawn up into the capsule and allowed to remain for about 15 min. Argon pressure was applied to the top gas line to flush the solution from the capsule, but reaction products (from the NaK and wash solution) had plugged the bottom hole. A wire probe unplugged the hole, but about 20 ml of the wash solution was lost.

12. The capsule was flushed three more times (total of four flushes) in the same way with the same wash solution.
13. The capsule, NaK, and wash solution were stored overnight under argon purge.
14. With the capsule horizontal, an orientation mark 180° from the reactor, was made with the rotary saw in the middle of the stub of the radiography seal plate and extended along the secondary containment vessel wall.
15. A circumferential cut was made through the primary and secondary containment vessels just above the radiography seal plate.
16. The fuel pin assembly was held by epoxy on the gas lines and could be pulled out only about 100 mm (4 in.). Another circumferential cut through both containment vessels, about 25 mm (1 in.) below the radiography seal plate, freed the fuel pin assembly.
17. Without being twisted, the fuel pin assembly was withdrawn from the containment vessels.
18. Photographs were taken after stereoscopic visual examination of the fuel pin assembly.
19. An orientation mark was made with white marking pen on gas line directly below orientation cut on bulkhead.
20. Sweep gas line from bottom of fuel pin assembly was sawed off at the start of the first turn from the assembly.
21. All lines were sawed off as close to the bulkhead as possible.
22. The lower centering spacer was screwed off and the Zircaloy-2 sleeve and the heater assembly were removed from the fuel pin.
23. All gas and thermocouple lines were sealed with epoxy.
24. The fuel pin was gamma-scanned in the following manner
  - a. A differential gross gamma scan (0.55 to 0.75 MeV) was made along the fuel pin, fission product trap, and gas lines. Because

of extremely high gamma activity, a collimator slit of 0.25mm (10 mil) was used as well as a shield of 1.2-mm (0.047-in.) aluminum.

- b. An axial scan was made at the 0° orientation along the fuel pin, fission product trap, and gas lines for the following isotopes:  $^{144}\text{Ce}$ ,  $^{141}\text{Ce}$ ,  $^{99}\text{Mo}$ ,  $^{132}\text{Te}$ ,  $^{131}\text{I}$ ,  $^{103}\text{Ru}$ ,  $^{106}\text{Ru}$ ,  $^{147}\text{Nd}$ ,  $^{140}\text{Ba}$ ,  $^{134}\text{Cs}$ ,  $^{132}\text{I}$ ,  $^{137}\text{Cs}$ ,  $^{95}\text{Zr}$ ,  $^{95}\text{Nb}$ ,  $^{154}\text{Eu}$ ,  $^{110\text{m}}\text{Ag}$ ,  $^{60}\text{Co}$ , and  $^{140}\text{La}$ . The same 0.25-mm slit and 1.2-mm aluminum shield were used.
  - c. Spectral scans were made at selected points along the fuel pin, fission product trap, and gas lines, using the 0.25-mm collimator slit and the aluminum shield.
25. Every 12.7 mm fuel pin diameter was measured at 0, 45, 90, and 135° by use of opposing dial indicators. Bow was determined by rotating the fuel pin until a maximum was obtained, then measuring diameters along this axis and noting orientation.
  26. The fuel pin was examined stereoscopically and photographed.
  27. Fuel pin was packaged and returned to ORR for additional neutron radiography.
  28. The fuel pin, NaK, primary and secondary containment vessels, Zircaloy-2 sleeve, heater coil, and wash solution were sent to Argonne National Laboratory.

## APPENDIX B

## Analysis of Gamma Spectrum Scans of GB-10 Fuel Pin

Gamma spectrum scans were made at 48 positions along the fuel pin, and printouts of their analyses follow (see Fig. 4 in the main text for location of these positions).

On the printouts, the position number is given in the top left corner immediately following "GB-10." For example, position 5 is listed as GB-10 5, and position 6 as GB-10 6.

## Definition of Printout Symbols

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F. P.           | The Chemical symbol and isotope number of all emitters in the isotope table that are identified with the peak.                                                                                                                                                                                                                                                                                                                                                                       |
| ENERGY<br>(keV) | The energy (in keV) that corresponds to the peak centroid.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| PEAK CHNL       | The channel number of the peak centroid (not the channel containing the peak number of counts as the name implies).                                                                                                                                                                                                                                                                                                                                                                  |
| CPS             | The rate, in counts/second at which characteristic gamma-rays having the centroid energy are detected via a full energy mechanism.                                                                                                                                                                                                                                                                                                                                                   |
| GAMMA/SEC       | When the default values of efficiency calibration factors are used (all zeroes) this number is simply the CPS corrected for amplifier pulse pileup losses. However, when the proper efficiency calibration factors are supplied for uncollimated, point-source counting geometries, this number is the rate at which characteristic gamma-rays are emitted by the source at the centroid energy. Its meaning for collimated, extended-source counting geometries is discussed later. |
| ERR (%)         | This number is an estimate of the statistical uncertainty (due to the random nature of the radioactive decay process) which should be associated with the measurement of CPS (and therefore with GAMMA/SEC as well). The best interpretation is that there is a 68% probability that the true value of CPS deviates from the listed value by less than the listed error.                                                                                                             |

|            |                                                                                                                                                                                                                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BASE WIDTH | The number of histogram channels involved in the calculation of CPS.                                                                                                                                                                                                                                        |
| MU         | The order of the multiplet of which the listed peak is a member. This number includes all local maxima that were detected in the base width even though some of them may not have satisfied the necessary criteria for being listed as a separate peak.                                                     |
| FWHM (keV) | The peak's full width at half maximum (in keV). This number is useful for spotting unresolved multiplets, which often have abnormally high FWHMs. If the program cannot calculate the FWHM (which, for example, sometimes occurs for the central peak of a triplet), a zero will be printed in this column. |
| PK<br>#    | A sequential number assigned to each peak.                                                                                                                                                                                                                                                                  |

GB-10 -1/10 MIL SLIT

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447.04

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EDP<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.05          | 397.39       | 19.225 | 1.945E+01 | 2.84       | 17            | 1  | 1.92          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.46          | 820.55       | 1.5165 | 1.535E+00 | 13.97      | 8             | 1  | 3.11          | 2       |
| CO58  | 810.45          | 1005.16      | 3.0500 | 3.087E+00 | 9.73       | 12            | 2  | 1.77          | 3       |
| ???   | 834.91          | 1035.48      | .56389 | 5.707E-01 | 27.12      | 6             | 1  | 1.58          | 4       |
| ???   | 1099.06         | 1362.72      | .57778 | 5.848E-01 | 26.99      | 8             | 1  | 2.65          | 5       |
| CO60  | 1173.15         | 1454.50      | 6.6361 | 6.716E+00 | 3.48       | 10            | 1  | 2.51          | 6       |
| ???   | 1291.63         | 1601.24      | .42639 | 4.315E-01 | 16.93      | 7             | 1  | 1.93          | 7       |
| CO60  | 1332.52         | 1651.88      | 7.0069 | 7.092E+00 | 3.01       | 11            | 1  | 2.29          | 8       |
| ???   | 1460.75         | 1810.69      | .25556 | 2.586E-01 | 16.56      | 8             | 1  | 2.96          | 9       |

GB-10 -2/10 MIL SLIT

8 - 6 -1976

458.25

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EDP<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.10          | 397.45       | 22.029 | 2.231E+01 | 2.49       | 9             | 1  | 1.97          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.39          | 820.46       | .93472 | 9.466E-01 | 22.43      | 7             | 1  | 2.00          | 2       |
| CO58  | 810.68          | 1005.46      | 3.2277 | 3.269E+00 | 7.28       | 8             | 1  | 2.10          | 3       |
| ???   | 1099.20         | 1362.90      | .88194 | 8.932E-01 | 15.88      | 7             | 1  | 2.76          | 4       |
| CO60  | 1173.28         | 1454.66      | 7.4777 | 7.573E+00 | 3.15       | 10            | 1  | 2.45          | 5       |
| ???   | 1291.42         | 1600.98      | .51111 | 5.176E-01 | 15.54      | 6             | 1  | 1.51          | 6       |
| CO60  | 1332.50         | 1651.86      | 7.2888 | 7.382E+00 | 3.05       | 15            | 2  | 2.56          | 7       |
| ???   | 1460.69         | 1810.61      | .18333 | 1.856E-01 | 20.33      | 8             | 1  | 2.06          | 8       |

GB-10 -3/10MIL SLIT

8 - 6 -1976

507.58

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EDP<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.06          | 397.40       | 23.255 | 2.355E+01 | 2.28       | 8             | 1  | 1.92          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.72          | 820.87       | 1.7027 | 1.724E+00 | 12.51      | 7             | 1  | 2.30          | 2       |
| CO58  | 810.65          | 1005.42      | 3.6388 | 3.636E+00 | 6.60       | 8             | 1  | 2.10          | 3       |
| ???   | 1099.25         | 1362.96      | .92361 | 9.356E-01 | 20.54      | 11            | 2  | 1.49          | 4       |
| CO60  | 1173.22         | 1454.58      | 7.8027 | 7.904E+00 | 3.35       | 14            | 0  | 2.10          | 5       |
| ???   | 1291.57         | 1601.17      | .57778 | 5.852E-01 | 15.14      | 8             | 1  | 2.79          | 6       |
| CO60  | 1332.47         | 1651.83      | 7.8888 | 7.991E+00 | 2.87       | 12            | 1  | 2.30          | 7       |

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## GB-10 4:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???   | 74.85           | 93.39        | 1.4541 | 1.473E+00 | 35.25      | 5             | 1  | 1.51          | 1       |
| CR51  | 320.08          | 397.42       | 24.891 | 2.522E+01 | 2.44       | 10            | 1  | 2.04          | 2       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.64          | 820.77       | .65556 | 6.643E-01 | 28.78      | 6             | 1  | 1.75          | 3       |
| C058  | 810.74          | 1005.52      | 3.7888 | 3.839E+00 | 6.88       | 9             | 1  | 2.18          | 4       |
| C060  | 1173.12         | 1454.46      | 8.3777 | 8.489E+00 | 3.06       | 11            | 1  | 2.52          | 5       |
| ???   | 1291.44         | 1601.00      | .59444 | 6.023E-01 | 14.27      | 8             | 1  | 2.64          | 6       |
| C060  | 1332.49         | 1651.84      | 8.0861 | 8.194E+00 | 2.78       | 11            | 1  | 2.35          | 7       |
| ???   | 1460.92         | 1810.89      | .25694 | 2.603E-01 | 15.45      | 7             | 1  | 1.60          | 8       |

8 - 6 - 1976 521.14

## GB-10 5:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.08          | 397.42       | 25.363 | 2.571E+01 | 2.40       | 10            | 1  | 1.92          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.71          | 820.85       | 1.5250 | 1.545E+00 | 14.18      | 7             | 1  | 2.27          | 2       |
| C058  | 810.97          | 1005.81      | 3.7888 | 3.840E+00 | 8.53       | 12            | 2  | 2.48          | 3       |
| ???   | 834.59          | 1035.08      | .48889 | 4.955E-01 | 36.49      | 7             | 1  | 2.47          | 4       |
| ???   | 1099.17         | 1362.86      | .75000 | 7.602E-01 | 20.49      | 8             | 1  | 3.35          | 5       |
| C060  | 1173.14         | 1454.48      | 7.9055 | 8.013E+00 | 3.06       | 10            | 1  | 2.50          | 6       |
| EU154 | 1273.83         | 1579.20      | .22500 | 2.280E-01 | 22.32      | 6             | 1  | 2.67          | 7       |
| ???   | 1291.52         | 1601.10      | .72778 | 7.377E-01 | 12.71      | 9             | 1  | 2.77          | 8       |
| C060  | 1332.52         | 1651.88      | 8.3680 | 8.482E+00 | 2.72       | 11            | 1  | 2.60          | 9       |
| ???   | 1461.24         | 1811.28      | .16111 | 1.633E-01 | 26.49      | 8             | 1  | 2.72          | 10      |

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## GB10 6:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.04          | 397.37       | 94.761 | 9.751E+01 | 1.37       | 10            | 1  | 1.93          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| C058  | 810.57          | 1005.32      | 10.111 | 1.340E+01 | 4.54       | 8             | 1  | 2.26          | 2       |
| ???   | 834.68          | 1035.19      | 2.7375 | 2.817E+00 | 14.17      | 7             | 1  | 3.15          | 3       |
| ???   | 1099.09         | 1362.76      | 4.6000 | 4.733E+00 | 8.67       | 8             | 1  | 2.24          | 4       |
| C060  | 1173.03         | 1454.35      | 83.488 | 8.591E+01 | 3.93       | 12            | 1  | 2.47          | 5       |
| ???   | 1291.45         | 1601.32      | 2.6527 | 2.729E+00 | 8.16       | 13            | 1  | 2.36          | 6       |
| C060  | 1332.54         | 1651.91      | 77.368 | 7.961E+01 | 0.89       | 15            | 2  | 2.73          | 7       |
| ???   | 1460.42         | 1813.27      | .17083 | 1.758E-01 | 29.75      | 7             | 1  | 2.65          | 8       |

8 - 6 -1976 533.56

## GB-10 7:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.04          | 397.38       | 103.94 | 1.072E+02 | 1.01       | 10            | 1  | 1.95          | 1       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| RU106 | 511.00          | 634.08       | 3.6277 | 3.744E+00 | 14.75      | 9             | 1  | 3.83          | 2       |
| C058  |                 |              |        |           |            |               |    |               |         |
| C058  | 810.69          | 1005.46      | 7.2763 | 7.510E+00 | 7.43       | 9             | 1  | 2.11          | 3       |
| ???   | 834.80          | 1035.34      | 2.6916 | 2.778E+00 | 13.84      | 6             | 1  | 1.85          | 4       |
| ???   | 1099.12         | 1362.80      | 4.5388 | 4.684E+00 | 9.28       | 8             | 1  | 2.19          | 5       |
| C060  | 1173.12         | 1454.47      | 96.037 | 9.912E+01 | 0.85       | 11            | 1  | 2.50          | 6       |
| ???   | 1291.52         | 1601.11      | 3.0694 | 3.168E+00 | 7.15       | 9             | 1  | 2.14          | 7       |
| C060  | 1332.46         | 1651.81      | 88.261 | 9.109E+01 | 0.83       | 12            | 1  | 2.44          | 8       |

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## GB-10 8:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS     | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|---------|-----------|------------|---------------|----|---------------|---------|
| CR51  | 320.03          | 397.37       | 101.97  | 1.052E+02 | 1.03       | 10            | 1  | 1.93          | 1       |
| ND147 |                 |              |         |           |            |               |    |               |         |
| RU106 | 510.96          | 634.03       | 2.7750  | 2.863E+00 | 14.16      | 6             | 1  | 2.87          | 2       |
| C058  |                 |              |         |           |            |               |    |               |         |
| C058  | 810.69          | 1005.46      | 7.9791  | 8.234E+00 | 7.50       | 11            | 2  | 2.11          | 3       |
| ???   | 834.66          | 1035.16      | 2.7166  | 2.803E+00 | 16.67      | 8             | 1  | 2.48          | 4       |
| ???   | 1099.20         | 1362.90      | 4.0222  | 4.150E+00 | 10.51      | 8             | 1  | 2.58          | 5       |
| C060  | 1173.03         | 1454.35      | 94.266  | 9.728E+01 | 7.87       | 12            | 1  | 2.40          | 6       |
| ???   | 1291.41         | 1600.97      | 3.0625  | 3.160E+00 | 7.25       | 9             | 1  | 2.18          | 7       |
| C060  | 1332.45         | 1651.80      | 86.027  | 8.877E+01 | 0.84       | 12            | 1  | 2.47          | 8       |
| ???   | 1460.57         | 1810.45      | 2.24167 | 2.493E+01 | 10.56      | 7             | 1  | 2.38          | 9       |

8 - 6 -1976 543.32

## GB-10 9:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| 1131  | 80.70           | 100.64       | 2.6444 | 2.730E+00 | 28.96      | 6             | 1  | 1.70          | 1       |
| CE144 |                 |              |        |           |            |               |    |               |         |
| ???   | 218.81          | 271.89       | 1.3916 | 1.437E+00 | 40.07      | 5             | 1  | 0.91          | 2       |
| CR51  | 320.04          | 397.38       | 116.16 | 1.199E+02 | 0.94       | 10            | 1  | 1.95          | 3       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| RU106 | 510.46          | 633.41       | 3.9083 | 4.035E+00 | 13.68      | 9             | 1  | 3.62          | 4       |
| C058  |                 |              |        |           |            |               |    |               |         |
| C058  | 810.71          | 1005.49      | 9.0666 | 9.362E+00 | 5.43       | 8             | 1  | 2.10          | 5       |
| ???   | 834.62          | 1035.12      | 3.8097 | 3.933E+00 | 10.86      | 7             | 1  | 2.63          | 6       |
| ???   | 1099.20         | 1362.89      | 5.1555 | 5.323E+00 | 9.79       | 10            | 1  | 2.29          | 7       |
| C060  | 1173.03         | 1454.35      | 92.738 | 9.576E+01 | 0.88       | 12            | 1  | 2.40          | 8       |
| ???   | 1291.48         | 1601.06      | 3.5763 | 3.692E+00 | 6.25       | 9             | 1  | 2.24          | 9       |
| C060  | 1332.44         | 1651.78      | 86.752 | 8.957E+01 | 0.84       | 14            | 1  | 2.43          | 10      |

8 - 6 -1976 549.29

GB-10 10:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS     | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|---------|-----------|------------|---------------|----|---------------|---------|
| ???   | 74.54           | 93.01        | 2.1625  | 2.229E+00 | 31.46      | 5             | 1  | 1.43          | 1       |
| I131  | 80.86           | 100.85       | 2.8541  | 2.942E+00 | 33.69      | 7             | 1  | 1.82          | 2       |
| CE144 |                 |              |         |           |            |               |    |               |         |
| CR51  | 320.04          | 397.37       | 95.558  | 9.851E+01 | 1.06       | 10            | 1  | 1.95          | 3       |
| ND147 |                 |              |         |           |            |               |    |               |         |
| C058  | 810.72          | 1005.51      | 8.9375  | 9.214E+00 | 5.77       | 9             | 1  | 2.15          | 4       |
| ???   | 834.66          | 1035.16      | 2.4180  | 2.492E+00 | 16.34      | 7             | 1  | 2.20          | 5       |
| ???   | 893.05          | 1107.51      | 0.0556  | 8.304E-01 | 36.93      | 5             | 1  | 1.56          | 6       |
| ???   | 1099.21         | 1362.91      | 4.3666  | 4.531E+00 | 9.19       | 8             | 1  | 2.95          | 7       |
| C060  | 1173.05         | 1454.38      | 91.686  | 9.452E+01 | 0.93       | 15            | 1  | 2.43          | 8       |
| ???   | 1291.52         | 1631.11      | 2.8291  | 2.916E+00 | 7.82       | 9             | 1  | 2.27          | 9       |
| C060  | 1332.46         | 1651.81      | 84.605  | 8.722E+01 | 3.85       | 12            | 1  | 2.53          | 10      |
| ???   | 1435.02         | 1778.82      | 0.11250 | 1.159E-01 | 39.37      | 7             | 1  | 1.34          | 11      |

8 - 6 -1976 554.47

GB-10 11:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| I131  | 80.65           | 100.58       | 3.9055 | 4.026E+00 | 22.39      | 7             | 1  | 1.71          | 1       |
| CE144 |                 |              |        |           |            |               |    |               |         |
| CR51  | 320.04          | 397.37       | 92.519 | 9.538E+01 | 1.10       | 10            | 1  | 1.96          | 2       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| RUI06 | 510.92          | 633.97       | 3.4069 | 3.510E+00 | 12.56      | 7             | 1  | 2.92          | 3       |
| C058  |                 |              |        |           |            |               |    |               |         |
| C058  | 810.66          | 1005.43      | 8.4777 | 8.740E+00 | 5.60       | 8             | 1  | 2.20          | 4       |
| ???   | 834.86          | 1035.42      | 2.7652 | 2.850E+00 | 14.53      | 7             | 1  | 1.94          | 5       |
| ???   | 1099.06         | 1362.72      | 4.1819 | 4.311E+00 | 10.70      | 9             | 1  | 1.71          | 6       |
| C060  | 1173.04         | 1454.36      | 91.383 | 9.470E+01 | 0.80       | 12            | 1  | 2.37          | 7       |
| ???   | 1291.46         | 1631.03      | 2.7361 | 2.823E+00 | 7.56       | 9             | 1  | 2.70          | 8       |
| C060  | 1332.44         | 1651.78      | 84.000 | 8.660E+01 | 3.85       | 12            | 1  | 2.42          | 9       |

8 - 6 -1976 600.31

GB-10 12J10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPD<br>(%) | BASE<br>WIDTH | M" | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| 1131   | 80.83           | 100.81       | 443.08 | 4.549E+02 | 0.47       | 10            | 1  | 1.76          | 1       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| ???    | 233.16          | 289.67       | 3.7444 | 3.844E+00 | 14.55      | 6             | 1  | 1.72          | 2       |
| CR51   | 320.04          | 397.37       | 42.244 | 4.337E+01 | 1.84       | 10            | 1  | 1.98          | 3       |
| ND147  |                 |              |        |           |            |               |    |               |         |
| PA233  | 340.38          | 422.59       | 2.1805 | 2.238E+00 | 17.80      | 6             | 1  | 1.92          | 4       |
| RUI06  | 510.88          | 633.93       | 2.0875 | 2.143E+00 | 17.09      | 7             | 1  | 3.18          | 5       |
| C058   |                 |              |        |           |            |               |    |               |         |
| CS134  | 569.30          | 706.33       | 1.6041 | 1.647E+00 | 20.54      | 7             | 1  | 2.25          | 6       |
| CS134  | 604.65          | 750.14       | 9.8444 | 1.010E+01 | 4.34       | 9             | 1  | 2.33          | 7       |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.59          | 820.71       | 4.5291 | 4.650E+00 | 8.51       | 9             | 1  | 2.12          | 8       |
| CS134  | 795.76          | 986.96       | 6.5180 | 6.692E+00 | 5.95       | 9             | 1  | 2.16          | 9       |
| C058   | 810.65          | 1005.42      | 5.7333 | 5.886E+00 | 5.95       | 8             | 1  | 2.13          | 10      |
| TE129M | 818.29          | 1014.88      | 2.1055 | 2.161E+00 | 15.16      | 8             | 1  | 2.29          | 11      |
| ???    | 1047.92         | 1299.37      | .94583 | 9.711E-01 | 20.84      | 5             | 1  | 1.63          | 12      |
| ???    | 1099.18         | 1362.87      | 1.3347 | 1.370E+00 | 18.87      | 7             | 1  | 2.47          | 13      |
| C060   | 1173.12         | 1454.46      | 39.716 | 4.077E+01 | 1.35       | 12            | 1  | 2.49          | 14      |
| ???    | 1291.24         | 1600.76      | .99444 | 1.021E+00 | 11.84      | 6             | 1  | 1.77          | 15      |
| C060   | 1332.46         | 1651.81      | 36.788 | 3.777E+01 | 1.28       | 12            | 1  | 2.48          | 16      |
| CS134  | 1365.47         | 1692.68      | .12639 | 1.297E-01 | 33.85      | 5             | 1  | 0.94          | 17      |
| ???    | 1460.82         | 1810.76      | .21667 | 2.224E-01 | 20.35      | 8             | 1  | 2.92          | 18      |

8 - 6 - 1976 605.48

GB-10 13/10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | SDP<br>(%) | BASE<br>WIDTH | M" | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???    | 68.08           | 84.99        | 10.141 | 1.051E+01 | 5.83       | 29            | 5  | 7.95          | 1       |
| ???    | 69.78           | 87.10        | 12.498 | 1.295E+01 | 4.87       | 29            | 5  | 8.08          | 2       |
| ???    | 75.33           | 93.98        | 23.479 | 2.434E+01 | 2.93       | 29            | 5  | 11.6          | 3       |
| I131   | 80.91           | 100.90       | 634.18 | 6.575E+02 | 0.59       | 29            | 5  | 1.97          | 4       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| ???    | 153.26          | 190.60       | 1.9361 | 2.007E+00 | 39.53      | 6             | 1  | 1.47          | 5       |
| SB125  | 176.56          | 219.49       | 3.2666 | 3.386E+00 | 28.19      | 8             | 1  | 1.81          | 6       |
| ???    | 233.25          | 289.78       | 4.9944 | 5.178E+00 | 15.93      | 8             | 1  | 2.14          | 7       |
| ???    | 273.53          | 339.71       | 2.3500 | 2.436E+00 | 26.93      | 7             | 1  | 1.84          | 8       |
| CR51   | 320.03          | 397.37       | 42.022 | 4.357E+01 | 1.93       | 8             | 1  | 1.97          | 9       |
| ND147  |                 |              |        |           |            |               |    |               |         |
| PA233  | 340.53          | 422.78       | 7.6583 | 7.940E+00 | 7.86       | 7             | 1  | 1.97          | 10      |
| CS134  | 563.16          | 698.72       | 4.5361 | 4.703E+00 | 9.06       | 7             | 1  | 2.02          | 11      |
| CS134  | 569.28          | 706.31       | 7.9666 | 8.260E+00 | 6.49       | 8             | 1  | 1.99          | 12      |
| CS134  | 604.60          | 750.08       | 50.477 | 5.233E+01 | 1.78       | 14            | 1  | 2.00          | 13      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.51          | 820.61       | 65.541 | 6.795E+01 | 1.19       | 11            | 1  | 2.17          | 14      |
| CS134  | 795.74          | 986.95       | 35.564 | 3.687E+01 | 2.16       | 17            | 2  | 2.16          | 15      |
| CS134  | 801.89          | 994.56       | 3.5665 | 3.697E+00 | 7.18       | 17            | 2  | 2.16          | 16      |
| C058   | 810.72          | 1005.51      | 5.3388 | 5.535E+00 | 6.97       | 8             | 1  | 2.03          | 17      |
| TE129M | 818.45          | 1015.08      | 9.4652 | 9.813E+00 | 5.66       | 13            | 2  | 2.01          | 18      |
| ???    | 835.17          | 1035.80      | 1.2555 | 1.331E+00 | 29.28      | 9             | 2  | 3.57          | 19      |
| ???    | 1047.90         | 1299.35      | 5.8055 | 6.019E+00 | 5.74       | 8             | 1  | 2.47          | 20      |
| ???    | 1099.04         | 1362.70      | 2.4111 | 2.499E+00 | 11.45      | 8             | 1  | 2.32          | 21      |
| C060   | 1173.04         | 1454.36      | 39.881 | 4.135E+01 | 1.39       | 11            | 1  | 2.46          | 22      |
| ???    | 1235.12         | 1531.26      | 1.2888 | 1.336E+00 | 10.75      | 8             | 1  | 2.56          | 23      |
| ???    | 1291.47         | 1601.04      | 1.1347 | 1.176E+00 | 13.69      | 9             | 1  | 2.89          | 24      |
| C060   | 1332.45         | 1651.80      | 38.227 | 3.963E+01 | 1.28       | 14            | 1  | 2.42          | 25      |
| CS134  | 1364.99         | 1692.09      | 1.1055 | 1.146E+00 | 9.60       | 13            | 2  | 2.10          | 26      |

8 - 6 -1976 618.04

GE10 14J10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | STD<br>(%) | BASE<br>WIDTH | MM | FWHM<br>(KEV) | BY<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???    | 66.49           | 83.03        | 11.092 | 1.153E+01 | 5.26       | 32            | 6  | 6.14          | 1       |
| ???    | 69.76           | 87.08        | 13.436 | 1.396E+01 | 4.49       | 32            | 6  | 7.07          | 2       |
| ???    | 71.37           | 89.07        | 15.932 | 1.656E+01 | 3.92       | 32            | 6  | 8.30          | 3       |
| ???    | 75.33           | 93.99        | 23.026 | 2.393E+01 | 2.96       | 32            | 6  | 9.07          | 4       |
| ???    | 76.99           | 96.04        | 25.312 | 2.631E+01 | 2.76       | 32            | 6  | 9.07          | 5       |
| 1131   | 80.80           | 100.76       | 604.94 | 6.287E+02 | 0.65       | 32            | 6  | 1.01          | 6       |
| GE144  |                 |              |        |           |            |               |    |               |         |
| ???    | 153.39          | 190.77       | 2.3944 | 2.488E+00 | 32.98      | 6             | 1  | 1.61          | 7       |
| SB125  | 176.46          | 219.37       | 4.5375 | 4.716E+00 | 18.76      | 7             | 1  | 2.32          | 8       |
| ???    | 233.19          | 289.71       | 4.9722 | 5.168E+00 | 13.30      | 6             | 1  | 1.67          | 9       |
| ???    | 273.63          | 339.84       | 3.5444 | 3.684E+00 | 18.61      | 7             | 1  | 2.09          | 10      |
| CR51   | 320.04          | 397.37       | 40.358 | 4.194E+01 | 2.34       | 10            | 1  | 1.91          | 11      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| PA233  | 340.48          | 422.72       | 10.045 | 1.044E+01 | 8.92       | 11            | 2  | 1.75          | 12      |
| CS134  | 563.10          | 698.65       | 3.8222 | 3.972E+00 | 14.06      | 8             | 1  | 1.87          | 13      |
| CS134  | 569.29          | 706.32       | 9.6555 | 1.003E+01 | 5.75       | 8             | 1  | 1.97          | 14      |
| CS134  | 604.60          | 750.08       | 52.631 | 6.510E+01 | 1.36       | 11            | 1  | 2.01          | 15      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.52          | 820.62       | 79.280 | 8.240E+01 | 1.03       | 10            | 1  | 2.11          | 16      |
| CS134  | 795.72          | 986.92       | 44.071 | 4.580E+01 | 1.80       | 17            | 2  | 2.18          | 17      |
| CS134  | 801.81          | 994.47       | 4.7552 | 4.942E+00 | 5.79       | 17            | 2  | 2.08          | 18      |
| C058   | 810.66          | 1005.43      | 4.2333 | 4.400E+00 | 8.56       | 8             | 1  | 2.22          | 19      |
| TE129M | 818.40          | 1015.01      | 10.770 | 1.119E+01 | 4.08       | 9             | 1  | 2.19          | 20      |
| ???    | 1047.89         | 1299.34      | 7.1472 | 7.428E+00 | 5.04       | 9             | 1  | 2.37          | 21      |
| ???    | 1099.11         | 1362.79      | 1.8722 | 1.946E+00 | 13.37      | 7             | 1  | 2.65          | 22      |
| C060   | 1173.39         | 1454.80      | 41.886 | 4.353E+01 | 1.39       | 15            | 2  | 3.05          | 23      |
| ???    | 1235.04         | 1531.15      | 1.8666 | 1.940E+00 | 9.77       | 11            | 2  | 1.70          | 24      |
| ???    | 1291.56         | 1601.16      | 1.0888 | 1.131E+00 | 13.15      | 8             | 1  | 2.21          | 25      |
| C060   | 1332.45         | 1651.79      | 36.622 | 3.806E+01 | 1.30       | 11            | 1  | 2.43          | 26      |
| CS134  | 1365.10         | 1692.23      | .91806 | 9.542E-01 | 11.05      | 9             | 1  | 2.75          | 27      |

8 - 6 - 1976 628.42

GB-10 15/10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPD<br>(%) | BASE<br>WIDTH | M" | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???    | 72.98           | 91.07        | 13.637 | 1.444E+01 | 5.36       | 20            | 3  | 4.12          | 1       |
| ???    | 75.39           | 94.06        | 19.967 | 2.115E+01 | 3.79       | 20            | 3  | 0.00          | 2       |
| 1131   | 80.77           | 100.73       | 778.58 | 8.247E+02 | 0.47       | 20            | 3  | 1.84          | 3       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| ???    | 153.15          | 190.47       | 6.8444 | 7.250E+00 | 13.43      | 6             | 1  | 1.93          | 4       |
| BA140  | 163.96          | 203.88       | 2.5472 | 2.698E+00 | 35.47      | 6             | 1  | 1.65          | 5       |
| SB125  | 176.57          | 219.51       | 9.2777 | 9.827E+00 | 12.22      | 8             | 1  | 1.94          | 6       |
| ???    | 233.08          | 289.57       | 7.8305 | 8.294E+00 | 11.56      | 7             | 1  | 1.93          | 7       |
| ???    | 273.51          | 339.69       | 7.9583 | 8.430E+00 | 10.62      | 7             | 1  | 1.84          | 8       |
| CR51   | 320.01          | 397.33       | 42.438 | 4.495E+01 | 2.34       | 8             | 1  | 2.07          | 9       |
| ND147  |                 |              |        |           |            |               |    |               |         |
| PA233  | 340.42          | 422.64       | 24.475 | 2.592E+01 | 4.49       | 10            | 1  | 2.06          | 10      |
| CS134  | 475.26          | 589.78       | 2.1611 | 2.289E+00 | 36.18      | 8             | 1  | 2.12          | 11      |
| CS134  | 563.23          | 698.81       | 13.501 | 1.430E+01 | 5.18       | 19            | 3  | 2.47          | 12      |
| CS134  | 569.11          | 706.10       | 25.668 | 2.719E+01 | 4.13       | 19            | 3  | 1.90          | 13      |
| CS134  | 604.57          | 750.05       | 146.34 | 1.550E+02 | 0.82       | 11            | 1  | 2.10          | 14      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.49          | 820.58       | 196.66 | 2.083E+02 | 0.66       | 13            | 1  | 2.10          | 15      |
| CS134  | 795.72          | 986.92       | 102.42 | 1.085E+02 | 1.33       | 17            | 2  | 2.21          | 16      |
| CS134  | 801.72          | 994.35       | 9.4624 | 1.002E+01 | 3.79       | 17            | 2  | 2.34          | 17      |
| C058   | 810.59          | 1005.35      | 5.0277 | 5.325E+00 | 0.21       | 8             | 1  | 2.39          | 18      |
| TE129M | 818.35          | 1014.96      | 25.061 | 2.654E+01 | 2.26       | 9             | 1  | 2.31          | 19      |
| ???    | 1047.83         | 1299.27      | 16.547 | 1.752E+01 | 2.83       | 10            | 1  | 2.36          | 20      |
| ???    | 1099.22         | 1362.92      | 1.7194 | 1.821E+00 | 14.20      | 6             | 1  | 2.49          | 21      |
| CS134  | 1168.13         | 1448.27      | 1.9497 | 2.065E+00 | 10.20      | 15            | 2  | 2.40          | 22      |
| C060   | 1173.01         | 1454.32      | 41.472 | 4.393E+01 | 1.49       | 15            | 2  | 2.40          | 23      |
| ???    | 1235.05         | 1531.16      | 3.7222 | 3.942E+00 | 5.76       | 9             | 1  | 2.40          | 24      |
| ???    | 1291.58         | 1601.18      | 1.4222 | 1.506E+00 | 10.25      | 8             | 1  | 2.18          | 25      |
| C060   | 1332.43         | 1651.77      | 38.183 | 4.044E+01 | 1.20       | 12            | 1  | 2.53          | 26      |
| CS134  | 1364.96         | 1692.05      | 2.3152 | 2.452E+00 | 6.02       | 9             | 1  | 2.35          | 27      |

8 - 6 - 1976 635.53

GB-10 16:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPD<br>(%) | BASE<br>WIDTH | M" | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???    | 75.35           | 94.00        | 12.972 | 1.379E+01 | 5.56       | 18            | 2  | 5.78          | 1       |
| IL31   | 80.77           | 100.73       | 611.17 | 6.500E+02 | 2.54       | 18            | 2  | 1.85          | 2       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| ???    | 153.11          | 190.42       | 7.3944 | 7.865E+00 | 16.24      | 8             | 1  | 2.78          | 3       |
| SB125  | 176.52          | 219.45       | 15.823 | 1.370E+01 | 9.17       | 8             | 1  | 1.88          | 4       |
| ???    | 233.17          | 289.69       | 4.7111 | 5.010E+00 | 23.26      | 7             | 1  | 2.95          | 5       |
| ???    | 273.53          | 339.72       | 9.3013 | 9.893E+00 | 9.56       | 7             | 1  | 1.71          | 6       |
| CR51   | 320.00          | 397.32       | 44.316 | 4.713E+01 | 2.60       | 9             | 1  | 1.22          | 7       |
| ND147  |                 |              |        |           |            |               |    |               |         |
| PA233  | 340.42          | 422.64       | 29.844 | 3.174E+01 | 3.35       | 8             | 1  | 2.26          | 8       |
| CS134  | 475.47          | 590.04       | 4.2388 | 4.508E+00 | 19.73      | 8             | 1  | 2.25          | 9       |
| CS134  | 563.06          | 698.60       | 16.147 | 1.717E+01 | 4.34       | 16            | 2  | 2.78          | 10      |
| CS134  | 569.16          | 706.16       | 28.658 | 3.048E+01 | 3.59       | 16            | 2  | 2.11          | 11      |
| CS134  | 604.57          | 750.05       | 173.10 | 1.841E+02 | 2.79       | 12            | 1  | 2.09          | 12      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.48          | 820.58       | 240.31 | 2.556E+02 | 2.56       | 11            | 1  | 2.17          | 13      |
| CS134  | 795.71          | 986.91       | 120.55 | 1.282E+02 | 2.96       | 17            | 2  | 2.21          | 14      |
| CS134  | 801.81          | 994.46       | 11.060 | 1.176E+01 | 3.53       | 17            | 2  | 2.32          | 15      |
| CO58   | 810.65          | 1005.41      | 3.3944 | 3.610E+00 | 12.49      | 8             | 1  | 2.23          | 16      |
| TE129M | 818.35          | 1014.96      | 29.483 | 3.135E+01 | 2.15       | 13            | 1  | 2.22          | 17      |
| ???    | 834.60          | 1035.09      | 1.2194 | 1.297E+00 | 25.93      | 6             | 1  | 1.95          | 18      |
| RJ106  | 871.89          | 1081.30      | 64861  | 6.898E-01 | 39.14      | 5             | 1  | 1.28          | 19      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| ???    | 1047.96         | 1299.43      | 16.275 | 1.943E+01 | 2.76       | 10            | 1  | 2.21          | 20      |
| ???    | 1099.11         | 1362.79      | 2.0194 | 2.147E+00 | 14.20      | 7             | 1  | 2.37          | 21      |
| CS134  | 1167.93         | 1448.03      | 2.0704 | 2.202E+00 | 9.89       | 16            | 2  | 2.76          | 22      |
| CO60   | 1173.00         | 1454.31      | 43.174 | 4.592E+01 | 1.48       | 16            | 2  | 2.55          | 23      |
| ???    | 1235.27         | 1531.44      | 4.0222 | 4.278E+00 | 5.31       | 8             | 1  | 2.28          | 24      |
| CO60   | 1332.44         | 1651.78      | 40.544 | 4.312E+01 | 1.26       | 12            | 1  | 2.46          | 25      |
| CS134  | 1365.04         | 1692.16      | 2.7125 | 2.885E+00 | 5.90       | 11            | 1  | 2.50          | 26      |
| ???    | 1460.63         | 1810.53      | 12083  | 1.285E-01 | 38.35      | 5             | 1  | 1.62          | 27      |

8 - 6 - 1976 647.12

GB-10 17:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS     | GAMMA/SEC | SPR<br>(%) | BASE<br>WIDTH | MU | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|---------|-----------|------------|---------------|----|---------------|---------|
| ???   | 73.99           | 92.32        | 5.5333  | 5.680E+03 | 17.61      | 8             | 1  | 2.38          | 1       |
| I131  | 80.79           | 100.76       | 7.7819  | 7.989E+03 | 11.57      | 7             | 1  | 1.87          | 2       |
| CE144 |                 |              |         |           |            |               |    |               |         |
| MO99  | 140.55          | 174.85       | 4.2944  | 4.438E+03 | 17.95      | 6             | 1  | 2.38          | 3       |
| CR51  | 320.05          | 397.38       | 74.652  | 7.663E+01 | 1.27       | 10            | 1  | 1.95          | 4       |
| ND147 |                 |              |         |           |            |               |    |               |         |
| CS134 | 604.59          | 750.07       | 2.3125  | 2.374E+01 | 17.65      | 9             | 2  | 2.17          | 5       |
| IR192 |                 |              |         |           |            |               |    |               |         |
| CS137 | 661.60          | 820.72       | 3.5777  | 3.673E+03 | 12.57      | 8             | 1  | 2.24          | 6       |
| CS134 | 795.71          | 986.91       | 1.6263  | 1.669E+03 | 12.37      | 7             | 1  | 2.34          | 7       |
| C058  | 810.63          | 1005.39      | 6.3333  | 6.193E+03 | 6.40       | 8             | 1  | 2.43          | 8       |
| ???   | 834.89          | 1035.45      | 1.4736  | 1.512E+03 | 22.92      | 7             | 1  | 2.24          | 9       |
| ???   | 1099.28         | 1363.00      | 3.3355  | 3.393E+01 | 11.72      | 17            | 1  | 2.75          | 10      |
| C060  | 1173.14         | 1454.49      | 54.435  | 5.585E+01 | 1.18       | 13            | 1  | 2.47          | 11      |
| ???   | 1291.66         | 1601.28      | 2.4847  | 2.553E+03 | 7.36       | 9             | 1  | 1.94          | 12      |
| C060  | 1332.49         | 1651.85      | 49.535  | 5.082E+01 | 1.12       | 14            | 1  | 2.43          | 13      |
| ???   | 1460.85         | 1810.80      | 1.13194 | 1.354E+01 | 32.73      | 5             | 1  | 1.74          | 14      |

8 - 6 - 1976 653.44

GB-10 18:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS     | GAMMA/SEC | SPR<br>(%) | BASE<br>WIDTH | MU | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|---------|-----------|------------|---------------|----|---------------|---------|
| I131   | 80.88           | 100.86       | 3.6055  | 3.698E+00 | 24.39      | 7             | 1  | 1.33          | 1       |
| CE144  |                 |              |         |           |            |               |    |               |         |
| CR51   | 320.05          | 397.39       | 54.216  | 5.561E+01 | 1.63       | 10            | 1  | 1.97          | 2       |
| ND147  |                 |              |         |           |            |               |    |               |         |
| RUI06  | 510.94          | 634.01       | 5.1416  | 5.274E+00 | 11.38      | 11            | 2  | 3.39          | 3       |
| C058   |                 |              |         |           |            |               |    |               |         |
| CS134  | 604.75          | 750.27       | 9.3361  | 9.576E+00 | 5.09       | 9             | 1  | 1.83          | 4       |
| IR192  |                 |              |         |           |            |               |    |               |         |
| CS137  | 661.58          | 820.70       | 12.119  | 1.243E+01 | 4.12       | 10            | 1  | 2.19          | 5       |
| CS134  | 795.74          | 986.94       | 5.8833  | 6.335E+00 | 6.47       | 8             | 1  | 2.05          | 6       |
| C058   | 810.66          | 1005.43      | 10.791  | 1.106E+01 | 4.36       | 10            | 1  | 2.17          | 7       |
| TEI29M | 818.35          | 1014.95      | 1.5666  | 1.677E+02 | 21.17      | 8             | 1  | 2.88          | 8       |
| ???    | 834.87          | 1035.43      | 1.4222  | 1.458E+03 | 16.61      | 5             | 1  | 2.17          | 9       |
| C060   | 1173.15         | 1454.50      | 45.533  | 4.673E+01 | 1.28       | 12            | 1  | 2.40          | 10      |
| ???    | 1291.25         | 1600.76      | 1.89444 | 9.175E+01 | 15.94      | 8             | 1  | 2.16          | 11      |
| C060   | 1332.46         | 1651.81      | 43.000  | 4.410E+01 | 1.19       | 13            | 1  | 2.44          | 12      |
| CS134  | 1365.21         | 1692.36      | 1.25833 | 2.649E+01 | 20.44      | 9             | 1  | 2.03          | 13      |
| ???    | 1460.80         | 1810.74      | 1.14167 | 1.453E+01 | 32.34      | 6             | 1  | 1.86          | 14      |

8 - 6 - 1976 658.33

GB-10 19:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| CR51   | 320.05          | 397.38       | 38.252 | 3.921E+01 | 2.05       | 9             | 1  | 1.95          | 1       |
| ND147  |                 |              |        |           |            |               |    |               |         |
| CS134  | 604.64          | 750.13       | 8.0444 | 8.246E+00 | 5.97       | 8             | 1  | 2.00          | 2       |
| IR192  |                 |              |        |           |            |               |    |               |         |
| CS137  | 661.53          | 820.64       | 13.433 | 1.377E+01 | 3.47       | 10            | 1  | 2.10          | 3       |
| CS134  | 795.76          | 986.97       | 5.2236 | 5.354E+00 | 11.12      | 15            | 2  | 2.35          | 4       |
| C058   | 810.73          | 1005.52      | 3.0111 | 3.086E+00 | 11.19      | 8             | 1  | 2.24          | 5       |
| TE129M | 818.41          | 1015.03      | 1.4055 | 1.443E+00 | 16.26      | 5             | 1  | 2.31          | 6       |
| RUI06  | 1048.10         | 1299.60      | .75694 | 7.759E-01 | 33.20      | 7             | 1  | 2.13          | 7       |
| ???    | 1099.06         | 1362.72      | 1.9166 | 1.964E+00 | 14.51      | 8             | 1  | 2.78          | 8       |
| C060   | 1173.06         | 1454.38      | 40.555 | 4.157E+01 | 1.35       | 12            | 1  | 2.44          | 9       |
| ???    | 1291.61         | 1601.22      | 1.2444 | 1.275E+00 | 12.36      | 13            | 1  | 2.38          | 10      |
| C060   | 1332.47         | 1651.82      | 38.044 | 3.899E+01 | 1.26       | 12            | 1  | 2.46          | 11      |
| ???    | 1460.58         | 1810.47      | .25556 | 2.619E-01 | 17.39      | 8             | 1  | 2.90          | 12      |

8 - 6 - 1976 703.47

GB-10 20:10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???   | 74.17           | 92.55        | 6.0652 | 6.217E+00 | 17.14      | 9             | 1  | 3.83          | 1       |
| I131  | 80.63           | 100.56       | 4.4055 | 4.516E+00 | 17.39      | 6             | 1  | 1.73          | 2       |
| CE144 |                 |              |        |           |            |               |    |               |         |
| CR51  | 320.04          | 397.37       | 40.450 | 4.146E+01 | 1.93       | 9             | 1  | 1.94          | 3       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| RUI06 | 511.05          | 634.14       | 1.2638 | 1.295E+00 | 39.42      | 10            | 1  | 2.91          | 4       |
| C058  |                 |              |        |           |            |               |    |               |         |
| CS134 | 569.16          | 706.16       | 1.4638 | 1.500E+00 | 23.26      | 7             | 1  | 2.42          | 5       |
| CS134 | 604.60          | 750.08       | 7.7333 | 7.927E+00 | 5.97       | 9             | 1  | 1.99          | 6       |
| IR192 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.53          | 820.63       | 12.470 | 1.278E+01 | 3.55       | 9             | 1  | 2.11          | 7       |
| CS134 | 795.80          | 987.01       | 4.6388 | 4.755E+00 | 8.73       | 9             | 1  | 2.39          | 8       |
| C058  | 810.60          | 1005.35      | 3.8333 | 3.929E+00 | 8.52       | 8             | 1  | 2.31          | 9       |
| ???   | 835.00          | 1035.59      | 1.9944 | 1.121E+00 | 23.60      | 6             | 1  | 1.94          | 10      |
| ???   | 1099.08         | 1362.75      | 1.6000 | 1.640E+00 | 14.12      | 6             | 1  | 1.85          | 11      |
| C060  | 1173.24         | 1454.61      | 40.016 | 4.102E+01 | 1.36       | 12            | 1  | 2.40          | 12      |
| ???   | 1291.66         | 1601.28      | .98333 | 1.007E+00 | 12.93      | 7             | 1  | 1.57          | 13      |
| C060  | 1332.46         | 1651.81      | 37.150 | 3.808E+01 | 1.30       | 13            | 1  | 2.44          | 14      |
| ???   | 1460.55         | 1810.43      | .18333 | 1.879E-01 | 28.26      | 8             | 1  | 2.70          | 15      |

8 - 6 - 1976 719.28

GB-10 21:10 MIL SLIT

| F.D.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | FOV<br>(°) | BASE<br>WIDTH | MM | FORM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| I131  | 83.66           | 100.59       | 5.2777 | 5.414E+00 | 16.73      | 7             | 1  | 2.27          | 1       |
| CE144 |                 |              |        |           |            |               |    |               |         |
| CR51  | 323.06          | 397.43       | 41.872 | 4.295E+01 | 2.24       | 10            | 1  | 1.27          | 2       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| PM102 | 496.52          | 616.13       | 1.6503 | 1.690E+00 | 13.26      | 5             | 1  | 1.65          | 3       |
| CS134 | 634.59          | 750.06       | 6.6430 | 6.815E+00 | 6.73       | 9             | 1  | 1.90          | 4       |
| IR192 |                 |              |        |           |            |               |    |               |         |
| CS137 | 661.63          | 820.76       | 11.573 | 1.187E+01 | 3.93       | 9             | 1  | 2.10          | 5       |
| CS134 | 795.79          | 987.01       | 5.4777 | 5.619E+00 | 7.38       | 9             | 1  | 2.25          | 6       |
| CO58  | 810.63          | 1005.39      | 4.3555 | 4.160E+00 | 8.47       | 8             | 1  | 2.52          | 7       |
| CO60  | 1173.16         | 1454.51      | 42.693 | 4.379E+01 | 1.28       | 11            | 1  | 2.47          | 8       |
| ???   | 1291.57         | 1671.16      | 1.4111 | 1.447E+00 | 10.79      | 9             | 1  | 2.54          | 9       |
| CO63  | 1332.48         | 1651.83      | 40.305 | 4.135E+01 | 1.23       | 12            | 1  | 2.36          | 10      |
| LA140 | 1595.88         | 1978.00      | 4.4903 | 4.196E+01 | 11.74      | 11            | 2  | 2.25          | 11      |

[illegible]

|        |         |         |        |            |       |    |   |      |    |
|--------|---------|---------|--------|------------|-------|----|---|------|----|
| RUI03  | 610.14  | 756.95  | 9.4637 | 1.0330E+01 | 6.22  | 16 | 2 | 1.85 | 32 |
| RUI06  | 621.71  | 771.29  | 7.9944 | 8.701E+00  | 8.89  | 8  | 1 | 2.12 | 33 |
| 1132   | 630.02  | 781.59  | 6.4444 | 7.014E+00  | 10.61 | 8  | 1 | 2.16 | 34 |
| 1131   | 636.73  | 789.90  | 3.2722 | 3.561E+00  | 16.36 | 6  | 1 | 1.61 | 35 |
| SB125  |         |         |        |            |       |    |   |      |    |
| CS137  | 661.45  | 820.53  | 40.811 | 4.442E+01  | 2.37  | 21 | 2 | 2.26 | 36 |
| 1132   | 667.51  | 828.04  | 45.589 | 4.960E+01  | 2.27  | 21 | 2 | 2.14 | 37 |
| ZR95   | 723.97  | 898.01  | 57.311 | 6.238E+01  | 1.68  | 12 | 1 | 2.29 | 38 |
| EU154  |         |         |        |            |       |    |   |      |    |
| 1131   |         |         |        |            |       |    |   |      |    |
| M099   | 739.33  | 917.04  | 5.0555 | 5.502E+00  | 11.21 | 8  | 1 | 1.86 | 39 |
| ZR95   | 756.37  | 938.16  | 63.852 | 6.950E+01  | 1.69  | 39 | 5 | 1.98 | 40 |
| EU154  |         |         |        |            |       |    |   |      |    |
| NB95   | 765.78  | 949.32  | 119.79 | 1.303E+02  | 1.35  | 39 | 5 | 2.62 | 41 |
| AG110M |         |         |        |            |       |    |   |      |    |
| 1132   | 772.47  | 958.11  | 31.020 | 3.376E+01  | 2.35  | 39 | 5 | 2.21 | 42 |
| CS134  | 795.64  | 986.82  | 19.019 | 2.073E+01  | 3.51  | 10 | 1 | 2.25 | 43 |
| CS134  | 801.81  | 994.46  | 2.4277 | 2.642E+00  | 15.94 | 6  | 1 | 1.82 | 44 |
| C058   | 810.96  | 1005.80 | 6.3025 | 6.860E+00  | 7.25  | 17 | 2 | 3.15 | 45 |
| LA140  | 815.81  | 1011.81 | 31.680 | 3.448E+01  | 2.96  | 17 | 2 | 2.26 | 46 |
| TE129M |         |         |        |            |       |    |   |      |    |
| LA140  | 867.73  | 1076.13 | 5.3263 | 5.797E+00  | 9.72  | 9  | 1 | 2.41 | 47 |
| LA140  | 924.91  | 1146.98 | 7.9500 | 8.653E+00  | 10.72 | 16 | 2 | 2.02 | 48 |
| 1132   | 954.41  | 1183.53 | 5.0777 | 5.527E+00  | 9.41  | 8  | 1 | 2.11 | 49 |
| ???    | 1047.87 | 1299.32 | 3.8722 | 4.214E+00  | 9.94  | 7  | 1 | 2.49 | 50 |
| ???    | 1135.62 | 1408.01 | .85417 | 9.297E-01  | 29.02 | 5  | 1 | 1.32 | 51 |
| C060   | 1172.97 | 1454.27 | 37.772 | 4.111E+01  | 1.72  | 11 | 1 | 2.46 | 52 |
| C060   | 1332.41 | 1651.75 | 34.586 | 3.764E+01  | 1.79  | 11 | 1 | 2.56 | 53 |
| 1132   | 1398.50 | 1733.59 | 2.1444 | 2.334E+00  | 12.36 | 8  | 1 | 2.74 | 54 |
| LA140  | 1596.00 | 1978.14 | 63.684 | 6.931E+01  | 1.03  | 17 | 2 | 2.72 | 55 |

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728.24

GB-10 23/10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPD<br>(%) | BASE<br>WIDTH | M" | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| I131   | 80.59           | 100.50       | 7.2666 | 7.900E+00 | 18.54      | 7             | 1  | 2.30          | 1       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| PA233  | 94.58           | 117.85       | 57.011 | 6.198E+01 | 2.84       | 42            | 8  | 2.36          | 2       |
| PA233  | 98.65           | 122.90       | 121.99 | 1.326E+02 | 2.12       | 42            | 8  | 2.64          | 3       |
| TE129M | 103.62          | 129.06       | 91.896 | 9.991E+01 | 2.32       | 42            | 8  | 2.11          | 4       |
| EU155  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE129M | 105.92          | 131.92       | 121.46 | 1.320E+02 | 2.12       | 42            | 8  | 6.97          | 5       |
| EU155  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE125  | 110.79          | 137.96       | 45.086 | 4.902E+01 | 3.17       | 42            | 8  | 2.27          | 6       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| MO99   | 140.38          | 174.64       | 12.193 | 1.325E+01 | 9.50       | 14            | 2  | 1.96          | 7       |
| CE141  | 145.24          | 180.66       | 21.753 | 2.365E+01 | 7.74       | 14            | 2  | 1.92          | 8       |
| ???    | 209.57          | 260.42       | 16.250 | 1.766E+01 | 8.42       | 8             | 1  | 2.12          | 9       |
| TE132  | 228.07          | 283.36       | 97.733 | 1.062E+02 | 1.63       | 9             | 1  | 1.96          | 10      |
| ???    | 277.41          | 344.52       | 110.07 | 1.196E+02 | 1.99       | 15            | 2  | 2.17          | 11      |
| I131   | 284.96          | 353.89       | 9.7388 | 1.058E+01 | 12.35      | 8             | 1  | 2.52          | 12      |
| RU103  | 293.14          | 364.03       | 4.6833 | 5.092E+00 | 20.26      | 6             | 1  | 1.88          | 13      |
| BA140  | 305.20          | 378.97       | 6.5333 | 7.103E+00 | 17.83      | 8             | 1  | 2.86          | 14      |
| IR192  | 315.72          | 392.02       | 12.626 | 1.372E+01 | 7.02       | 14            | 2  | 2.33          | 15      |
| CR51   | 319.78          | 397.05       | 33.584 | 3.651E+01 | 4.67       | 14            | 2  | 2.77          | 16      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| LA140  | 328.61          | 408.00       | 24.914 | 2.708E+01 | 5.28       | 14            | 2  | 1.93          | 17      |
| ???    | 334.03          | 414.72       | 15.104 | 1.642E+01 | 6.29       | 14            | 2  | 1.99          | 18      |
| I131   | 364.37          | 452.33       | 53.455 | 5.812E+01 | 2.34       | 9             | 1  | 2.34          | 19      |
| BA140  | 423.47          | 525.58       | 4.7402 | 5.153E+00 | 18.13      | 7             | 1  | 2.38          | 20      |
| LA140  | 432.34          | 536.58       | 3.9305 | 4.273E+00 | 21.98      | 7             | 1  | 1.67          | 21      |
| LA140  | 486.85          | 604.14       | 59.388 | 6.457E+01 | 2.42       | 12            | 1  | 2.77          | 22      |
| RU103  | 496.88          | 616.58       | 158.79 | 1.726E+02 | 3.91       | 10            | 1  | 2.11          | 23      |
| RU106  | 511.61          | 634.83       | 17.937 | 1.950E+01 | 5.73       | 9             | 1  | 2.24          | 24      |
| CO58   |                 |              |        |           |            |               |    |               |         |
| I132   | 522.58          | 648.43       | 6.5882 | 7.163E+00 | 11.49      | 27            | 3  | 1.84          | 25      |
| ND147  | 530.39          | 658.11       | 7.9800 | 8.676E+00 | 10.30      | 27            | 3  | 2.51          | 26      |
| BA140  | 537.12          | 666.45       | 26.427 | 2.873E+01 | 7.12       | 27            | 2  | 2.14          | 27      |
| CS134  | 604.53          | 750.00       | 15.393 | 1.673E+01 | 6.33       | 16            | 2  | 2.38          | 28      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU103  | 610.23          | 757.05       | 8.7011 | 9.464E+00 | 7.72       | 16            | 2  | 2.18          | 29      |
| RU106  | 621.62          | 771.18       | 8.4916 | 9.232E+00 | 9.22       | 9             | 1  | 2.31          | 30      |
| I132   | 629.95          | 781.50       | 7.4722 | 8.124E+00 | 9.05       | 8             | 1  | 2.28          | 31      |
| I131   | 636.71          | 789.88       | 4.2861 | 4.660E+00 | 13.60      | 7             | 1  | 1.97          | 32      |

|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RUI03  | 610.21  | 757.03  | 8.8203 | 9.597E+00 | 7.42  | 16 | 2 | 1.99 | 33 |
| RUI06  | 621.76  | 771.35  | 7.8444 | 8.535E+00 | 8.12  | 7  | 1 | 1.92 | 31 |
| I132   | 629.97  | 781.53  | 6.7055 | 7.296E+00 | 10.13 | 8  | 1 | 2.15 | 32 |
| I131   | 636.83  | 790.02  | 4.4597 | 4.852E+00 | 16.12 | 9  | 1 | 2.39 | 23 |
| SBI25  |         |         |        |           |       |    |   |      |    |
| CS137  | 661.67  | 820.00  | 26.710 | 2.906E+01 | 3.15  | 20 | 3 | 2.57 | 34 |
| I132   | 667.53  | 828.07  | 37.812 | 4.114E+01 | 2.79  | 20 | 3 | 2.23 | 35 |
| ZR95   | 723.97  | 898.01  | 49.997 | 5.440E+01 | 1.74  | 12 | 1 | 2.32 | 36 |
| EUI54  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 739.16  | 916.83  | 3.2833 | 3.572E+03 | 17.43 | 8  | 1 | 1.52 | 37 |
| LA140  | 751.48  | 932.10  | 5.5313 | 6.018E+00 | 7.05  | 15 | 2 | 2.37 | 38 |
| ZR95   | 756.50  | 938.31  | 59.239 | 6.424E+01 | 1.80  | 15 | 2 | 2.27 | 39 |
| EUI54  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.59  | 949.59  | 110.17 | 1.198E+02 | 1.21  | 22 | 3 | 2.23 | 40 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 772.45  | 958.09  | 27.586 | 3.001E+01 | 2.22  | 22 | 3 | 2.24 | 41 |
| CS134  | 795.62  | 986.80  | 12.016 | 1.307E+01 | 4.93  | 9  | 1 | 2.33 | 42 |
| C058   | 810.97  | 1005.82 | 7.3464 | 7.993E+00 | 6.57  | 17 | 2 | 3.22 | 43 |
| LA140  | 815.75  | 1011.73 | 26.949 | 2.932E+01 | 3.29  | 17 | 2 | 2.46 | 44 |
| TE129M |         |         |        |           |       |    |   |      |    |
| ???    | 834.60  | 1035.10 | .89722 | 9.762E-01 | 40.92 | 6  | 1 | 1.50 | 45 |
| LA140  | 867.70  | 1076.10 | 5.9444 | 6.468E+00 | 8.50  | 9  | 1 | 2.29 | 46 |
| LA140  | 919.15  | 1139.85 | 1.9194 | 2.088E+03 | 19.36 | 6  | 1 | 1.52 | 47 |
| LA140  | 925.08  | 1147.19 | 4.5486 | 4.949E+00 | 11.80 | 9  | 1 | 2.21 | 48 |
| I132   | 954.40  | 1183.52 | 4.8680 | 5.297E+00 | 17.30 | 9  | 1 | 2.25 | 49 |
| ???    | 1047.75 | 1299.16 | 2.8694 | 3.122E+03 | 13.72 | 7  | 1 | 2.55 | 50 |
| C060   | 1172.96 | 1454.27 | 38.547 | 4.194E+01 | 1.67  | 11 | 1 | 2.50 | 51 |
| C060   | 1332.41 | 1651.75 | 36.790 | 4.003E+01 | 1.65  | 11 | 1 | 2.50 | 52 |
| I132   | 1398.64 | 1733.77 | 1.4833 | 1.614E+00 | 16.17 | 7  | 1 | 2.79 | 53 |
| LA140  | 1596.01 | 1978.15 | 57.891 | 6.290E+01 | 1.07  | 14 | 1 | 2.65 | 54 |

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|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RU103  | 610.15  | 756.96  | 10.174 | 1.119E+01 | 6.93  | 15 | 2 | 2.06 | 37 |
| RU106  | 621.72  | 771.29  | 8.5611 | 9.419E+00 | 12.21 | 12 | 2 | 2.22 | 31 |
| I132   | 630.04  | 781.61  | 8.3833 | 9.224E+00 | 8.69  | 8  | 1 | 2.13 | 32 |
| I131   | 636.98  | 790.21  | 3.4388 | 3.783E+00 | 20.62 | 8  | 1 | 1.99 | 33 |
| SB125  |         |         |        |           |       |    |   |      |    |
| CS137  | 661.44  | 820.52  | 27.873 | 3.066E+01 | 2.99  | 18 | 2 | 2.19 | 34 |
| I132   | 667.52  | 828.06  | 43.946 | 4.835E+01 | 2.50  | 18 | 2 | 2.24 | 35 |
| ZR95   | 723.99  | 898.03  | 58.906 | 6.481E+01 | 1.67  | 11 | 1 | 2.24 | 36 |
| EU154  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 739.15  | 916.82  | 3.9777 | 4.376E+00 | 13.91 | 7  | 1 | 1.96 | 37 |
| LA140  | 751.52  | 932.14  | 5.3919 | 5.932E+00 | 7.60  | 15 | 2 | 2.57 | 38 |
| ZR95   | 756.47  | 938.28  | 67.949 | 7.476E+01 | 1.68  | 15 | 2 | 2.34 | 39 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.64  | 949.65  | 123.06 | 1.354E+02 | 1.22  | 24 | 3 | 2.37 | 40 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 772.45  | 958.08  | 32.187 | 3.541E+01 | 2.20  | 24 | 3 | 2.23 | 41 |
| CS134  | 795.69  | 986.88  | 12.987 | 1.428E+01 | 4.76  | 9  | 1 | 2.31 | 42 |
| CS134  | 801.53  | 994.12  | .88611 | 9.749E-01 | 39.66 | 5  | 1 | 1.21 | 43 |
| C058   | 810.94  | 1005.77 | 7.8411 | 8.627E+00 | 6.44  | 17 | 2 | 3.35 | 44 |
| LA140  | 815.76  | 1011.75 | 30.082 | 3.309E+01 | 3.15  | 17 | 2 | 2.42 | 45 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.59  | 1075.97 | 5.2555 | 5.782E+00 | 9.59  | 8  | 1 | 2.17 | 46 |
| LA140  | 919.44  | 1140.21 | 2.2625 | 2.489E+00 | 19.52 | 7  | 1 | 2.23 | 47 |
| LA140  | 925.07  | 1147.18 | 5.3083 | 5.840E+00 | 8.77  | 7  | 1 | 2.16 | 48 |
| I132   | 954.40  | 1183.51 | 6.8111 | 7.494E+00 | 7.19  | 8  | 1 | 2.21 | 49 |
| ???    | 1013.04 | 1256.16 | .94028 | 1.034E+00 | 30.04 | 5  | 1 | 1.12 | 50 |
| ???    | 1047.88 | 1299.33 | 2.1833 | 2.402E+00 | 14.38 | 5  | 1 | 2.03 | 51 |
| C060   | 1172.95 | 1454.25 | 40.122 | 4.414E+01 | 1.67  | 11 | 1 | 2.48 | 52 |
| ???    | 1291.15 | 1600.64 | .98889 | 1.022E+00 | 28.65 | 5  | 1 | 1.78 | 53 |
| C060   | 1332.41 | 1651.74 | 36.444 | 4.009E+01 | 1.82  | 12 | 1 | 2.54 | 54 |
| ???    | 1371.30 | 1699.90 | .76806 | 8.450E-01 | 30.79 | 5  | 1 | 1.74 | 55 |
| LA140  | 1596.00 | 1978.14 | 67.144 | 7.387E+01 | 0.99  | 12 | 1 | 2.67 | 56 |

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|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RU103  | 610.18  | 757.00  | 10.126 | 1.153E+01 | 6.02  | 16 | 2 | 2.40 | 32 |
| RU106  | 621.58  | 771.13  | 10.055 | 1.145E+01 | 8.74  | 8  | 1 | 2.04 | 33 |
| 1132   | 629.82  | 781.33  | 8.6500 | 9.850E+00 | 9.96  | 8  | 1 | 2.31 | 34 |
| 1131   | 636.81  | 790.00  | 8.1000 | 9.224E+00 | 10.60 | 8  | 1 | 2.00 | 35 |
| SBI25  |         |         |        |           |       |    |   |      |    |
| CS137  | 661.40  | 820.48  | 160.39 | 1.826E+02 | 1.14  | 22 | 2 | 2.26 | 36 |
| 1132   | 667.46  | 827.99  | 51.169 | 5.826E+01 | 1.88  | 22 | 2 | 2.28 | 37 |
| ZB95   | 723.92  | 897.95  | 64.305 | 7.322E+01 | 1.77  | 12 | 1 | 2.42 | 38 |
| EU154  |         |         |        |           |       |    |   |      |    |
| 1131   |         |         |        |           |       |    |   |      |    |
| MO99   | 739.21  | 916.89  | 5.5208 | 6.286E+00 | 11.52 | 7  | 1 | 1.99 | 39 |
| LA140  | 751.51  | 932.13  | 5.2171 | 5.941E+00 | 8.60  | 15 | 2 | 2.46 | 40 |
| ZB95   | 756.41  | 938.21  | 71.770 | 8.172E+01 | 1.82  | 15 | 2 | 2.30 | 41 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.54  | 949.52  | 125.74 | 1.431E+02 | 1.25  | 20 | 2 | 2.31 | 42 |
| AG110M |         |         |        |           |       |    |   |      |    |
| 1132   | 772.39  | 958.01  | 31.517 | 3.589E+01 | 2.38  | 20 | 2 | 2.26 | 43 |
| CS134  | 795.72  | 986.91  | 70.148 | 7.988E+01 | 2.09  | 21 | 3 | 2.58 | 44 |
| CS134  | 801.59  | 994.19  | 7.3040 | 8.317E+00 | 6.32  | 21 | 3 | 2.45 | 45 |
| C058   | 811.09  | 1005.96 | 10.179 | 1.159E+01 | 7.60  | 22 | 2 | 3.54 | 46 |
| LA140  | 816.67  | 1012.88 | 47.031 | 5.355E+01 | 3.05  | 22 | 2 | 4.88 | 47 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.55  | 1075.92 | 4.8500 | 5.523E+00 | 11.58 | 8  | 1 | 2.31 | 48 |
| LA140  | 919.56  | 1140.36 | 1.6583 | 1.888E+00 | 26.20 | 6  | 1 | 1.58 | 49 |
| LA140  | 925.00  | 1147.10 | 5.3333 | 6.073E+00 | 11.73 | 9  | 1 | 2.26 | 50 |
| 1132   | 954.38  | 1183.49 | 6.5055 | 7.408E+00 | 8.44  | 8  | 1 | 2.26 | 51 |
| ???    | 1047.78 | 1299.20 | 13.119 | 1.494E+01 | 4.71  | 10 | 1 | 2.29 | 52 |
| ???    | 1098.78 | 1362.38 | 1.5888 | 1.809E+00 | 25.39 | 7  | 1 | 2.29 | 53 |
| C060   | 1172.91 | 1454.20 | 40.990 | 4.667E+01 | 1.77  | 11 | 1 | 2.38 | 54 |
| ???    | 1235.12 | 1531.25 | 2.7833 | 3.169E+00 | 13.76 | 8  | 1 | 2.74 | 55 |
| ???    | 1290.82 | 1600.24 | 1.0777 | 1.227E+00 | 31.32 | 7  | 1 | 1.62 | 56 |
| C060   | 1332.26 | 1651.55 | 39.400 | 4.486E+01 | 1.78  | 12 | 1 | 2.73 | 57 |
| CS134  | 1364.98 | 1692.08 | 1.2638 | 1.439E+00 | 20.89 | 5  | 1 | 1.30 | 58 |
| 1132   | 1398.24 | 1733.27 | 1.6777 | 1.910E+00 | 18.36 | 8  | 1 | 2.73 | 59 |
| LA140  | 1595.96 | 1978.09 | 72.183 | 8.220E+01 | 0.97  | 13 | 1 | 2.71 | 60 |

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| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | M <sup>2</sup> | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----------------|---------------|---------|
| PA233  | 94.36           | 117.58       | 81.741 | 9.526E+01 | 2.53       | 35            | 6              | 2.13          | 1       |
| PA233  | 98.33           | 122.58       | 174.92 | 2.038E+02 | 1.88       | 35            | 6              | 2.32          | 2       |
| TE129M | 103.59          | 129.02       | 86.907 | 1.012E+02 | 2.43       | 35            | 6              | 2.43          | 3       |
| EU155  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| TE129M | 105.87          | 131.85       | 115.46 | 1.345E+02 | 2.15       | 35            | 6              | 1.77          | 4       |
| EU155  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| TE125  | 110.78          | 137.94       | 75.149 | 8.758E+01 | 2.58       | 35            | 6              | 2.31          | 5       |
| TE132  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| PA233  | 114.16          | 142.13       | 25.722 | 2.997E+01 | 5.11       | 35            | 6              | 2.99          | 6       |
| M099   | 140.24          | 174.47       | 15.965 | 1.860E+01 | 10.82      | 14            | 2              | 2.12          | 7       |
| CE141  | 145.08          | 180.47       | 22.073 | 2.572E+01 | 9.61       | 14            | 2              | 2.04          | 8       |
| BA140  | 162.81          | 202.45       | 4.3916 | 5.118E+00 | 28.89      | 5             | 1              | 1.90          | 9       |
| ???    | 209.51          | 260.35       | 19.277 | 2.246E+01 | 9.74       | 8             | 1              | 2.12          | 10      |
| TE132  | 227.89          | 283.13       | 111.85 | 1.303E+02 | 2.06       | 10            | 1              | 2.13          | 11      |
| ???    | 277.32          | 344.42       | 107.75 | 1.255E+02 | 2.07       | 10            | 1              | 2.05          | 12      |
| I131   | 284.39          | 353.19       | 22.911 | 2.670E+01 | 7.45       | 8             | 1              | 2.18          | 13      |
| BA140  | 304.90          | 378.61       | 4.7847 | 5.576E+00 | 31.08      | 7             | 1              | 2.29          | 14      |
| IR192  | 315.70          | 392.00       | 13.903 | 1.620E+01 | 9.16       | 13            | 2              | 2.47          | 15      |
| CR51   | 319.70          | 396.96       | 32.503 | 3.787E+01 | 6.28       | 13            | 2              | 2.25          | 16      |
| ND147  |                 |              |        |           |            |               |                |               |         |
| LA140  | 328.51          | 407.88       | 30.153 | 3.514E+01 | 7.63       | 23            | 3              | 2.20          | 17      |
| ???    | 334.02          | 414.71       | 17.159 | 1.999E+01 | 9.29       | 23            | 3              | 2.21          | 18      |
| PA233  | 340.26          | 422.45       | 18.825 | 2.193E+01 | 8.86       | 23            | 3              | 2.27          | 19      |
| I131   | 364.19          | 452.10       | 218.95 | 2.551E+02 | 1.03       | 11            | 1              | 2.16          | 20      |
| BA140  | 423.24          | 525.30       | 2.9388 | 3.425E+00 | 38.01      | 6             | 1              | 1.49          | 21      |
| LA140  | 432.48          | 536.75       | 4.5833 | 5.341E+00 | 24.28      | 6             | 1              | 1.82          | 22      |
| LA140  | 486.73          | 604.00       | 66.980 | 7.805E+01 | 2.50       | 10            | 1              | 2.15          | 23      |
| RU103  | 496.80          | 616.48       | 180.06 | 2.098E+02 | 1.08       | 11            | 1              | 2.26          | 24      |
| RU106  | 511.48          | 634.67       | 22.505 | 2.622E+01 | 9.73       | 15            | 2              | 2.44          | 25      |
| G058   |                 |              |        |           |            |               |                |               |         |
| I132   | 522.28          | 648.05       | 9.7388 | 1.134E+01 | 12.63      | 8             | 1              | 2.20          | 26      |
| ND147  | 530.17          | 657.83       | 9.9709 | 1.162E+01 | 9.77       | 17            | 2              | 2.31          | 27      |
| BA140  | 537.00          | 666.30       | 29.666 | 3.457E+01 | 6.49       | 17            | 2              | 2.20          | 28      |
| CS134  | 562.94          | 698.45       | 8.7392 | 1.018E+01 | 11.56      | 16            | 2              | 2.13          | 29      |
| CS134  | 568.99          | 705.95       | 16.644 | 1.939E+01 | 9.32       | 16            | 2              | 2.07          | 30      |
| CS134  | 604.43          | 749.87       | 119.52 | 1.392E+02 | 1.66       | 16            | 2              | 2.23          | 31      |
| IR192  |                 |              |        |           |            |               |                |               |         |
| RU103  | 610.05          | 756.83       | 10.186 | 1.187E+01 | 6.40       | 16            | 2              | 2.37          | 32      |

|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RUI06  | 621.60  | 771.15  | 9.9666 | 1.161E+01 | 9.74  | 8  | 1 | 2.33 | 33 |
| I132   | 629.83  | 781.35  | 10.609 | 1.236E+01 | 8.66  | 16 | 2 | 2.40 | 34 |
| I131   | 636.67  | 789.83  | 16.662 | 1.941E+01 | 7.33  | 16 | 2 | 2.18 | 35 |
| SB125  |         |         |        |           |       |    |   |      |    |
| CS137  | 661.39  | 820.46  | 245.33 | 2.859E+02 | 0.82  | 20 | 2 | 2.31 | 36 |
| I132   | 667.42  | 827.94  | 72.185 | 8.412E+01 | 1.48  | 20 | 2 | 2.31 | 37 |
| TE129M | 695.56  | 862.81  | 2.2527 | 2.625E+00 | 27.36 | 6  | 1 | 1.64 | 38 |
| CE144  |         |         |        |           |       |    |   |      |    |
| ZR95   | 723.87  | 897.88  | 69.041 | 8.046E+01 | 1.96  | 14 | 1 | 2.41 | 39 |
| EU154  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 739.15  | 916.82  | 3.9541 | 4.608E+00 | 7.10  | 7  | 1 | 1.67 | 40 |
| LA140  | 751.51  | 932.13  | 5.4206 | 6.317E+00 | 8.93  | 15 | 2 | 2.63 | 41 |
| ZR95   | 756.38  | 938.18  | 69.593 | 8.110E+01 | 1.99  | 15 | 2 | 2.31 | 42 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.51  | 949.49  | 129.39 | 1.507E+02 | 1.19  | 19 | 2 | 2.35 | 43 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 772.37  | 957.98  | 46.428 | 5.410E+01 | 1.92  | 19 | 2 | 2.31 | 44 |
| CS134  | 795.61  | 986.78  | 91.998 | 1.072E+02 | 1.57  | 18 | 2 | 2.37 | 45 |
| CS134  | 801.51  | 994.09  | 9.6153 | 1.120E+01 | 5.33  | 18 | 2 | 2.57 | 46 |
| C058   | 811.11  | 1005.99 | 7.2348 | 8.431E+00 | 7.00  | 18 | 3 | 3.64 | 47 |
| LA140  | 815.92  | 1011.95 | 27.325 | 3.184E+01 | 3.11  | 18 | 3 | 3.28 | 48 |
| TE129M |         |         |        |           |       |    |   |      |    |
| TE129M | 818.30  | 1014.90 | 32.417 | 3.777E+01 | 2.89  | 18 | 3 | 2.17 | 49 |
| LA140  | 867.48  | 1075.83 | 5.2666 | 6.137E+00 | 11.24 | 8  | 1 | 2.29 | 50 |
| LA140  | 920.88  | 1146.94 | 7.6861 | 8.957E+00 | 7.03  | 7  | 1 | 2.60 | 51 |
| I132   | 954.26  | 1183.35 | 9.2555 | 1.078E+01 | 6.92  | 9  | 1 | 2.52 | 52 |
| ???    | 1047.74 | 1299.15 | 22.358 | 2.605E+01 | 2.98  | 10 | 1 | 2.58 | 53 |
| ???    | 1135.69 | 1408.10 | 1.9597 | 2.283E+00 | 19.63 | 7  | 2 | 1.53 | 54 |
| C060   | 1172.89 | 1454.18 | 38.777 | 4.519E+01 | 1.81  | 10 | 1 | 2.53 | 55 |
| ???    | 1235.08 | 1531.21 | 4.2013 | 4.896E+00 | 10.81 | 9  | 1 | 2.46 | 56 |
| C060   | 1332.18 | 1651.46 | 36.973 | 4.308E+01 | 1.87  | 11 | 1 | 2.71 | 57 |
| I132   | 1398.33 | 1733.38 | 2.9888 | 3.483E+00 | 11.17 | 8  | 1 | 2.88 | 58 |
| LA140  | 1595.92 | 1978.05 | 72.066 | 8.398E+01 | 0.98  | 13 | 1 | 2.72 | 59 |

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GB-10 28F10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MU | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| 1131   | 80.01           | 99.79        | 25.477 | 3.717E+01 | 10.56      | 8             | 1  | 2.42          | 1       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| PA233  | 93.93           | 117.05       | 162.18 | 2.366E+02 | 2.40       | 39            | 6  | 2.57          | 2       |
| PA233  | 97.86           | 121.92       | 322.34 | 4.703E+02 | 1.88       | 39            | 6  | 2.89          | 3       |
| TE129M | 103.58          | 129.01       | 92.592 | 1.351E+02 | 3.22       | 39            | 6  | 4.78          | 4       |
| EUI55  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE129M | 105.19          | 131.01       | 104.12 | 1.519E+02 | 3.00       | 39            | 6  | 7.43          | 5       |
| EUI55  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE125  | 110.39          | 137.46       | 149.74 | 2.185E+02 | 2.47       | 39            | 6  | 3.12          | 6       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| CE144  | 132.84          | 165.29       | 15.927 | 2.324E+01 | 14.92      | 7             | 1  | 2.24          | 7       |
| MO99   | 139.79          | 173.91       | 39.817 | 5.810E+01 | 5.98       | 15            | 2  | 2.32          | 8       |
| CE141  | 144.73          | 180.04       | 78.428 | 1.144E+02 | 4.57       | 15            | 2  | 2.40          | 9       |
| ???    | 208.37          | 258.94       | 24.347 | 3.552E+01 | 12.32      | 9             | 1  | 3.51          | 10      |
| TE132  | 227.62          | 282.80       | 175.21 | 2.556E+02 | 2.19       | 12            | 1  | 2.50          | 11      |
| ???    | 276.93          | 343.94       | 75.007 | 1.094E+02 | 5.34       | 18            | 2  | 2.33          | 12      |
| 1131   | 283.68          | 352.30       | 36.893 | 5.383E+01 | 6.80       | 18            | 2  | 2.39          | 13      |
| ???    | 292.67          | 363.45       | 20.044 | 2.924E+01 | 12.75      | 8             | 1  | 2.27          | 14      |
| BA140  | 304.34          | 377.91       | 12.833 | 1.872E+01 | 25.90      | 11            | 2  | 2.28          | 15      |
| CR51   | 319.11          | 396.22       | 27.440 | 4.003E+01 | 13.98      | 13            | 2  | 2.41          | 16      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| LA140  | 327.99          | 407.23       | 97.172 | 1.417E+02 | 3.48       | 11            | 1  | 2.40          | 17      |
| PA233  | 339.87          | 421.96       | 31.861 | 4.649E+01 | 7.69       | 8             | 1  | 2.35          | 18      |
| 1131   | 363.88          | 451.72       | 538.21 | 7.853E+02 | 0.89       | 17            | 1  | 2.52          | 19      |
| BA140  | 423.02          | 525.03       | 14.750 | 2.152E+01 | 15.27      | 8             | 1  | 2.72          | 20      |
| LA140  | 431.77          | 535.87       | 13.083 | 1.909E+01 | 15.45      | 7             | 1  | 2.43          | 21      |
| LA140  | 486.32          | 603.49       | 256.15 | 3.737E+02 | 1.31       | 12            | 1  | 2.64          | 22      |
| RU103  | 496.38          | 615.95       | 384.12 | 5.634E+02 | 0.96       | 13            | 1  | 2.56          | 23      |
| RU106  | 511.06          | 634.16       | 28.961 | 4.225E+01 | 8.35       | 9             | 1  | 2.80          | 24      |
| C058   |                 |              |        |           |            |               |    |               |         |
| 1132   | 522.05          | 647.77       | 21.266 | 3.103E+01 | 14.29      | 12            | 2  | 2.59          | 25      |
| ND147  | 529.81          | 657.39       | 39.522 | 5.766E+01 | 5.40       | 21            | 2  | 3.01          | 26      |
| BA140  | 536.65          | 665.87       | 130.44 | 1.903E+02 | 3.32       | 21            | 2  | 2.52          | 27      |
| ???    | 549.56          | 681.87       | 15.127 | 2.207E+01 | 13.90      | 8             | 1  | 2.65          | 28      |
| CS134  | 568.67          | 705.55       | 17.750 | 2.589E+01 | 11.59      | 8             | 1  | 2.18          | 29      |
| CS134  | 603.94          | 749.26       | 144.02 | 2.101E+02 | 2.35       | 17            | 2  | 2.67          | 30      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU103  | 609.42          | 756.06       | 26.002 | 3.794E+01 | 5.83       | 17            | 2  | 2.96          | 31      |
| RU106  | 620.79          | 770.15       | 13.829 | 2.017E+01 | 11.04      | 7             | 1  | 3.49          | 32      |

|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| I132   | 629.42  | 780.85  | 31.688 | 4.623E+01 | 7.14  | 19 | 2 | 2.58 | 33 |
| I131   | 636.32  | 789.39  | 32.758 | 4.780E+01 | 7.03  | 19 | 2 | 2.97 | 34 |
| SB125  |         |         |        |           |       |    |   |      |    |
| CS137  | 660.97  | 819.94  | 353.36 | 5.155E+02 | 0.99  | 24 | 2 | 2.63 | 35 |
| I132   | 667.01  | 827.42  | 168.74 | 2.462E+02 | 1.35  | 24 | 2 | 2.88 | 36 |
| TE129M | 695.76  | 863.06  | 6.5361 | 9.537E+00 | 17.66 | 6  | 1 | 1.97 | 37 |
| CE144  |         |         |        |           |       |    |   |      |    |
| ZR95   | 723.50  | 897.43  | 318.73 | 4.650E+02 | 0.91  | 16 | 1 | 2.84 | 38 |
| EU154  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 738.81  | 916.40  | 11.419 | 1.666E+01 | 15.09 | 10 | 1 | 2.02 | 39 |
| LA140  | 750.68  | 931.10  | 18.707 | 2.729E+01 | 5.90  | 37 | 4 | 2.35 | 40 |
| ZR95   | 756.08  | 937.80  | 349.75 | 5.103E+02 | 0.83  | 37 | 4 | 2.68 | 41 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.10  | 948.97  | 706.32 | 1.030E+03 | 0.64  | 37 | 4 | 2.67 | 42 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 771.85  | 957.34  | 108.34 | 1.580E+02 | 1.57  | 37 | 4 | 3.04 | 43 |
| CS134  | 795.09  | 986.14  | 106.84 | 1.559E+02 | 2.32  | 17 | 2 | 2.68 | 44 |
| CS134  | 800.72  | 993.12  | 12.267 | 1.789E+01 | 8.14  | 17 | 2 | 3.65 | 45 |
| C058   | 811.18  | 1006.07 | 16.601 | 2.422E+01 | 7.82  | 19 | 2 | 3.27 | 46 |
| LA140  | 815.77  | 1011.76 | 148.13 | 2.161E+02 | 1.93  | 19 | 2 | 3.85 | 47 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.01  | 1075.25 | 20.755 | 3.028E+01 | 8.94  | 14 | 2 | 2.59 | 48 |
| LA140  | 918.94  | 1139.59 | 8.8639 | 1.293E+01 | 10.87 | 16 | 2 | 2.54 | 49 |
| LA140  | 924.54  | 1146.52 | 27.886 | 4.069E+01 | 6.28  | 16 | 2 | 2.84 | 50 |
| I132   | 953.95  | 1182.97 | 19.461 | 2.839E+01 | 6.60  | 10 | 1 | 2.57 | 51 |
| ???    | 1013.09 | 1256.23 | 1.6083 | 2.346E+00 | 40.82 | 5  | 1 | 1.34 | 52 |
| ???    | 1047.36 | 1298.68 | 31.381 | 4.579E+01 | 5.16  | 15 | 1 | 2.76 | 53 |
| C060   | 1172.61 | 1453.83 | 29.411 | 4.291E+01 | 4.22  | 12 | 1 | 2.79 | 54 |
| ???    | 1234.21 | 1530.13 | 3.3930 | 4.950E+00 | 17.33 | 5  | 1 | 1.62 | 55 |
| C060   | 1331.87 | 1651.07 | 28.536 | 4.163E+01 | 3.75  | 13 | 1 | 2.25 | 56 |
| I132   | 1398.04 | 1733.03 | 5.8666 | 8.560E+00 | 12.18 | 8  | 1 | 3.01 | 57 |
| LA140  | 1595.55 | 1977.58 | 289.63 | 4.226E+02 | 0.62  | 23 | 1 | 3.14 | 58 |

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|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RU103  | 609.70  | 756.41  | 18.448 | 2.517E+01 | 7.26  | 16 | 2 | 2.84 | 31 |
| RU106  | 621.29  | 770.76  | 13.511 | 1.844E+01 | 11.28 | 8  | 1 | 3.09 | 32 |
| I132   | 629.56  | 781.02  | 28.605 | 3.904E+01 | 5.93  | 9  | 1 | 2.37 | 33 |
| I131   | 636.44  | 789.54  | 33.115 | 4.519E+01 | 5.08  | 9  | 1 | 2.31 | 34 |
| SB125  |         |         |        |           |       |    |   |      |    |
| CS137  | 661.07  | 820.07  | 184.08 | 2.512E+02 | 1.30  | 23 | 2 | 2.56 | 35 |
| I132   | 667.15  | 827.59  | 206.96 | 2.824E+02 | 1.23  | 23 | 2 | 2.69 | 36 |
| TE129M | 695.76  | 863.06  | 9.0680 | 1.237E+01 | 12.79 | 7  | 1 | 2.98 | 37 |
| CE144  |         |         |        |           |       |    |   |      |    |
| ZR95   | 723.61  | 897.56  | 283.34 | 3.867E+02 | 0.88  | 15 | 1 | 2.74 | 38 |
| EU154  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 738.78  | 916.36  | 15.430 | 2.106E+01 | 13.09 | 14 | 2 | 2.47 | 39 |
| LA140  | 751.35  | 931.94  | 17.095 | 2.333E+01 | 5.42  | 36 | 4 | 3.23 | 40 |
| ZR95   | 756.19  | 937.93  | 311.29 | 4.248E+02 | 0.80  | 36 | 4 | 2.51 | 41 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.20  | 949.10  | 617.31 | 8.425E+02 | 0.62  | 36 | 4 | 2.55 | 42 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 772.01  | 957.54  | 136.54 | 1.863E+02 | 1.23  | 36 | 4 | 2.66 | 43 |
| CS134  | 795.18  | 986.25  | 53.466 | 7.297E+01 | 2.68  | 10 | 1 | 2.68 | 44 |
| LA140  | 815.27  | 1011.14 | 136.52 | 1.863E+02 | 1.70  | 18 | 1 | 2.77 | 45 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.41  | 1075.74 | 20.773 | 2.835E+01 | 5.41  | 9  | 1 | 2.51 | 46 |
| AG110M | 884.28  | 1096.65 | 2.1180 | 2.890E+00 | 31.00 | 5  | 1 | 2.03 | 47 |
| LA140  | 919.09  | 1139.78 | 8.6518 | 1.180E+01 | 10.06 | 17 | 2 | 2.12 | 48 |
| LA140  | 924.74  | 1146.77 | 23.445 | 3.199E+01 | 6.59  | 17 | 2 | 2.61 | 49 |
| I132   | 954.02  | 1183.05 | 27.869 | 3.803E+01 | 4.15  | 10 | 1 | 2.55 | 50 |
| ???    | 1047.58 | 1298.95 | 14.734 | 2.011E+01 | 7.59  | 11 | 1 | 2.63 | 51 |
| C060   | 1172.73 | 1453.98 | 26.644 | 3.636E+01 | 3.71  | 10 | 1 | 2.62 | 52 |
| C060   | 1332.06 | 1651.31 | 23.741 | 3.240E+01 | 4.15  | 10 | 1 | 3.15 | 53 |
| I132   | 1398.05 | 1733.04 | 7.8583 | 1.072E+01 | 9.17  | 9  | 1 | 2.35 | 54 |
| ???    | 1464.66 | 1815.52 | 2.2611 | 3.086E+00 | 23.44 | 8  | 1 | 3.14 | 55 |
| LA140  | 1595.66 | 1977.72 | 265.67 | 3.626E+02 | 0.56  | 16 | 1 | 2.97 | 56 |

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GB-10 30:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| I131   | 79.84           | 99.58        | 21.133 | 3.434E+31 | 23.29      | 8             | 1  | 3.11          | 1       |
| CE144  |                 |              |        |           |            |               |    |               |         |
| PA233  | 93.80           | 116.89       | 97.943 | 1.591E+02 | 5.55       | 17            | 2  | 3.12          | 2       |
| PA233  | 97.26           | 121.18       | 203.51 | 3.307E+02 | 4.36       | 17            | 2  | 2.84          | 3       |
| TE125  | 110.20          | 137.22       | 87.212 | 1.417E+02 | 12.73      | 19            | 2  | 2.62          | 4       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| M099   | 139.64          | 173.72       | 39.442 | 6.409E+01 | 11.55      | 15            | 2  | 3.15          | 5       |
| CE141  | 144.51          | 179.76       | 88.669 | 1.440E+02 | 8.00       | 15            | 2  | 2.49          | 6       |
| TE132  | 227.35          | 282.46       | 364.31 | 5.919E+02 | 2.21       | 13            | 1  | 2.79          | 7       |
| ???    | 276.51          | 343.41       | 44.233 | 7.182E+01 | 11.24      | 8             | 1  | 2.48          | 8       |
| ???    | 292.32          | 363.01       | 26.808 | 4.356E+01 | 14.56      | 6             | 1  | 2.06          | 9       |
| BA140  | 303.73          | 377.16       | 20.283 | 3.295E+01 | 16.63      | 5             | 1  | 1.56          | 10      |
| LA140  | 327.79          | 406.98       | 127.15 | 2.066E+02 | 4.69       | 10            | 1  | 2.62          | 11      |
| I131   | 363.47          | 451.21       | 378.69 | 6.153E+02 | 1.95       | 13            | 1  | 2.76          | 12      |
| BA140  | 422.95          | 524.94       | 15.737 | 2.557E+01 | 25.20      | 7             | 1  | 2.21          | 13      |
| LA140  | 486.04          | 603.15       | 331.81 | 5.391E+02 | 2.28       | 14            | 1  | 2.74          | 14      |
| RU103  | 496.15          | 615.67       | 413.85 | 6.724E+02 | 1.67       | 12            | 1  | 2.77          | 15      |
| RU106  | 510.51          | 633.47       | 15.033 | 2.442E+01 | 23.66      | 6             | 1  | 2.23          | 16      |
| C058   |                 |              |        |           |            |               |    |               |         |
| I132   | 521.70          | 647.34       | 50.941 | 9.902E+01 | 8.02       | 9             | 1  | 3.00          | 17      |
| ND147  | 529.29          | 656.75       | 47.998 | 7.799E+01 | 9.15       | 18            | 2  | 3.02          | 18      |
| BA140  | 536.34          | 665.48       | 141.31 | 2.296E+02 | 5.55       | 18            | 2  | 2.95          | 19      |
| CS134  | 603.74          | 749.01       | 17.116 | 2.781E+01 | 21.93      | 8             | 1  | 2.21          | 20      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU106  | 620.20          | 769.41       | 12.016 | 1.952E+01 | 23.27      | 6             | 1  | 1.70          | 21      |
| I132   | 629.23          | 780.61       | 68.246 | 1.108E+02 | 8.39       | 18            | 2  | 2.79          | 22      |
| I131   | 636.04          | 789.05       | 27.828 | 4.521E+01 | 12.08      | 18            | 2  | 2.75          | 23      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.70          | 819.61       | 72.146 | 1.172E+02 | 4.98       | 23            | 2  | 2.56          | 24      |
| I132   | 666.94          | 827.34       | 442.24 | 7.186E+02 | 1.92       | 23            | 2  | 2.98          | 25      |
| ZR95   | 723.41          | 897.32       | 447.08 | 7.264E+02 | 1.35       | 16            | 1  | 3.23          | 26      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| ZR95   | 756.13          | 937.86       | 464.34 | 7.545E+02 | 1.31       | 39            | 4  | 3.71          | 27      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 765.06          | 948.92       | 375.74 | 1.585E+03 | 3.95       | 39            | 4  | 3.31          | 28      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.78          | 957.25       | 351.12 | 5.705E+02 | 1.52       | 39            | 4  | 3.20          | 29      |
| CS134  | 794.90          | 985.90       | 17.858 | 2.931E+01 | 12.20      | 6             | 1  | 2.66          | 30      |
| C058   | 810.41          | 1005.12      | 21.020 | 3.415E+01 | 11.62      | 15            | 2  | 3.00          | 31      |
| LA140  | 814.84          | 1010.61      | 144.02 | 2.340E+02 | 3.47       | 15            | 2  | 2.98          | 32      |
| LA140  | 867.00          | 1075.24      | 24.520 | 3.984E+01 | 11.37      | 9             | 1  | 3.13          | 33      |
| LA140  | 924.43          | 1146.39      | 26.383 | 4.238E+01 | 10.63      | 9             | 1  | 2.12          | 34      |
| I132   | 953.67          | 1182.62      | 59.133 | 9.608E+01 | 5.25       | 11            | 1  | 3.30          | 35      |
| ???    | 1046.79         | 1297.97      | 5.6300 | 9.099E+00 | 25.76      | 5             | 1  | 1.24          | 36      |
| C060   | 1172.35         | 1453.50      | 22.854 | 3.713E+01 | 9.49       | 9             | 1  | 3.18          | 37      |
| C060   | 1331.70         | 1650.86      | 16.329 | 2.653E+01 | 17.52      | 7             | 1  | 2.73          | 38      |
| I132   | 1397.60         | 1732.48      | 18.912 | 3.073E+01 | 9.77       | 9             | 1  | 3.25          | 39      |
| LA140  | 1595.46         | 1977.47      | 417.94 | 6.791E+02 | 3.93       | 19            | 1  | 3.42          | 40      |

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GB-10 31110 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | MU | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.82           | 116.91       | 94.981 | 1.739E+02 | 5.96       | 15            | 2  | 3.78          | 1       |
| PA233  | 96.87           | 120.69       | 197.95 | 3.624E+02 | 4.21       | 15            | 2  | 3.22          | 2       |
| TE125  | 109.89          | 136.84       | 52.462 | 9.606E+01 | 12.45      | 9             | 1  | 2.56          | 3       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| MO99   | 138.99          | 172.91       | 23.866 | 4.370E+01 | 18.42      | 6             | 1  | 1.87          | 4       |
| CE141  | 144.21          | 179.39       | 56.466 | 1.033E+02 | 10.03      | 8             | 1  | 2.50          | 5       |
| TE132  | 227.06          | 282.10       | 465.37 | 8.521E+02 | 1.92       | 13            | 1  | 2.91          | 6       |
| ???    | 292.21          | 362.88       | 27.500 | 5.035E+01 | 19.80      | 8             | 1  | 3.21          | 7       |
| LA140  | 327.53          | 406.66       | 157.91 | 2.891E+02 | 4.56       | 11            | 1  | 3.14          | 8       |
| I131   | 363.30          | 451.01       | 417.51 | 7.644E+02 | 1.95       | 13            | 1  | 2.94          | 9       |
| BA140  | 422.13          | 523.92       | 17.666 | 3.234E+01 | 22.05      | 6             | 1  | 2.19          | 10      |
| LA140  | 485.89          | 602.95       | 392.90 | 7.194E+02 | 2.01       | 27            | 2  | 3.03          | 11      |
| RU103  | 495.94          | 615.41       | 792.64 | 1.451E+03 | 1.53       | 27            | 2  | 3.13          | 12      |
| RU106  | 510.64          | 633.63       | 91.429 | 1.674E+02 | 6.11       | 9             | 1  | 2.81          | 13      |
| CO58   |                 |              |        |           |            |               |    |               |         |
| I132   | 521.47          | 647.06       | 63.158 | 1.156E+02 | 8.58       | 9             | 1  | 2.77          | 14      |
| ND147  | 529.32          | 656.78       | 27.237 | 4.987E+01 | 16.35      | 7             | 1  | 2.81          | 15      |
| BA140  | 536.22          | 665.33       | 161.35 | 2.954E+02 | 4.08       | 11            | 1  | 3.05          | 16      |
| CS134  | 603.48          | 748.69       | 21.279 | 3.896E+01 | 17.58      | 7             | 1  | 3.34          | 17      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU103  | 609.31          | 755.92       | 19.933 | 3.649E+01 | 21.18      | 8             | 1  | 2.45          | 18      |
| RU106  | 620.85          | 770.21       | 43.533 | 7.971E+01 | 9.35       | 8             | 1  | 2.99          | 19      |
| I132   | 629.00          | 780.32       | 57.933 | 1.060E+02 | 6.99       | 8             | 1  | 3.06          | 20      |
| I131   | 635.43          | 788.28       | 14.304 | 2.619E+01 | 19.04      | 5             | 1  | 1.57          | 21      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.28          | 819.09       | 61.920 | 1.133E+02 | 6.55       | 23            | 2  | 2.35          | 22      |
| I132   | 666.49          | 826.78       | 463.16 | 8.480E+02 | 1.93       | 20            | 2  | 3.24          | 23      |
| ZR95   | 722.99          | 896.80       | 438.55 | 8.030E+02 | 1.63       | 17            | 1  | 3.22          | 24      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| ???    | 737.70          | 915.02       | 14.158 | 2.592E+01 | 17.13      | 5             | 1  | 1.61          | 25      |
| ZR95   | 755.69          | 937.31       | 482.68 | 8.838E+02 | 1.45       | 37            | 3  | 3.14          | 26      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 764.70          | 948.47       | 1026.8 | 1.880E+03 | 1.05       | 37            | 3  | 3.29          | 27      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.27          | 956.62       | 336.75 | 6.153E+02 | 1.81       | 37            | 3  | 3.68          | 28      |
| LA140  | 814.76          | 1010.51      | 156.90 | 2.872E+02 | 3.13       | 12            | 1  | 3.37          | 29      |
| LA140  | 866.98          | 1075.21      | 30.633 | 5.609E+01 | 9.74       | 8             | 1  | 3.11          | 30      |
| LA140  | 924.15          | 1146.04      | 24.600 | 4.504E+01 | 13.12      | 9             | 1  | 2.49          | 31      |
| I132   | 953.49          | 1182.39      | 53.508 | 9.797E+01 | 6.32       | 10            | 1  | 3.17          | 32      |
| ???    | 1047.23         | 1298.52      | 5.4166 | 9.918E+00 | 36.71      | 6             | 1  | 1.67          | 33      |
| CO60   | 1172.16         | 1453.27      | 18.791 | 3.440E+01 | 13.57      | 9             | 1  | 2.91          | 34      |
| CO60   | 1331.44         | 1650.54      | 9.9791 | 1.827E+01 | 24.15      | 9             | 1  | 3.38          | 35      |
| I132   | 1397.35         | 1732.17      | 12.583 | 2.304E+01 | 15.63      | 8             | 1  | 2.79          | 36      |
| LA140  | 1595.40         | 1977.40      | 491.97 | 9.008E+02 | 0.89       | 19            | 1  | 3.72          | 37      |

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GB-10 32:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPD<br>(%) | BASE<br>WIDTH | M <sup>W</sup> | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----------------|---------------|---------|
| PA233  | 93.14           | 116.07       | 87.684 | 1.586E+02 | 6.17       | 15            | 2              | 2.74          | 1       |
| PA233  | 97.10           | 120.97       | 203.25 | 3.677E+02 | 4.17       | 15            | 2              | 2.94          | 2       |
| TE125  | 109.99          | 136.96       | 129.36 | 2.340E+02 | 7.50       | 15            | 1              | 2.97          | 3       |
| TE132  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| M099   | 139.12          | 173.08       | 57.043 | 1.032E+02 | 10.39      | 16            | 2              | 2.69          | 4       |
| CE141  | 144.20          | 179.38       | 92.673 | 1.676E+02 | 8.36       | 16            | 2              | 3.02          | 5       |
| TE132  | 227.06          | 282.11       | 282.86 | 5.118E+02 | 3.27       | 14            | 1              | 2.90          | 6       |
| ???    | 276.26          | 343.10       | 32.437 | 5.069E+01 | 15.22      | 7             | 1              | 2.94          | 7       |
| CR51   | 318.52          | 395.50       | 17.000 | 3.076E+01 | 25.55      | 6             | 1              | 2.42          | 8       |
| ND147  |                 |              |        |           |            |               |                |               |         |
| IR192  |                 |              |        |           |            |               |                |               |         |
| LA140  | 327.52          | 406.65       | 144.66 | 2.617E+02 | 4.61       | 10            | 1              | 2.98          | 9       |
| I131   | 363.30          | 451.00       | 344.93 | 6.241E+02 | 2.18       | 12            | 1              | 2.94          | 10      |
| LA140  | 485.91          | 602.98       | 413.80 | 7.487E+02 | 1.84       | 26            | 2              | 2.92          | 11      |
| RU103  | 495.97          | 615.45       | 859.86 | 1.555E+03 | 1.38       | 26            | 2              | 3.12          | 12      |
| RU106  | 510.64          | 633.63       | 105.87 | 1.915E+02 | 5.74       | 10            | 1              | 3.14          | 13      |
| C058   |                 |              |        |           |            |               |                |               |         |
| ND147  | 529.21          | 656.65       | 45.811 | 8.289E+01 | 10.15      | 19            | 2              | 2.88          | 14      |
| BA140  | 536.03          | 665.10       | 169.05 | 3.059E+02 | 5.53       | 19            | 2              | 2.91          | 15      |
| CS134  | 603.47          | 748.69       | 18.317 | 3.314E+01 | 22.95      | 15            | 2              | 3.25          | 16      |
| IR192  |                 |              |        |           |            |               |                |               |         |
| RU103  | 609.22          | 755.81       | 36.420 | 6.590E+01 | 16.28      | 15            | 2              | 3.02          | 17      |
| RU106  | 621.02          | 770.43       | 38.200 | 6.912E+01 | 10.55      | 8             | 1              | 3.03          | 18      |
| I132   | 628.71          | 779.96       | 40.525 | 7.333E+01 | 10.80      | 9             | 1              | 3.40          | 19      |
| CS137  | 660.59          | 819.46       | 64.762 | 1.171E+02 | 6.36       | 19            | 2              | 3.31          | 20      |
| I132   | 666.88          | 827.27       | 280.73 | 5.080E+02 | 2.78       | 19            | 2              | 3.18          | 21      |
| TE129M | 694.60          | 861.62       | 5.5625 | 1.006E+01 | 42.64      | 5             | 1              | 1.29          | 22      |
| CE144  |                 |              |        |           |            |               |                |               |         |
| ZR95   | 723.15          | 897.00       | 480.38 | 8.692E+02 | 1.41       | 16            | 1              | 3.18          | 23      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| I131   |                 |              |        |           |            |               |                |               |         |
| ZR95   | 755.71          | 937.35       | 537.68 | 9.729E+02 | 1.37       | 36            | 3              | 3.18          | 24      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| NB95   | 764.73          | 948.52       | 1016.8 | 1.839E+03 | 1.25       | 36            | 3              | 3.35          | 25      |
| AG110M |                 |              |        |           |            |               |                |               |         |
| I132   | 771.34          | 956.71       | 222.31 | 4.022E+02 | 2.34       | 36            | 3              | 4.00          | 26      |
| CS134  | 794.93          | 985.93       | 20.004 | 3.619E+01 | 14.02      | 7             | 1              | 2.51          | 27      |
| LA140  | 814.73          | 1010.47      | 222.56 | 4.027E+02 | 3.14       | 20            | 1              | 3.48          | 28      |
| LA140  | 866.79          | 1074.98      | 36.450 | 6.595E+01 | 8.01       | 8             | 1              | 2.89          | 29      |
| LA140  | 918.56          | 1139.11      | 17.739 | 3.210E+01 | 17.38      | 21            | 3              | 3.31          | 30      |
| LA140  | 924.02          | 1145.88      | 45.077 | 8.156E+01 | 11.85      | 21            | 3              | 3.23          | 31      |
| I132   | 953.48          | 1182.37      | 33.716 | 6.101E+01 | 8.76       | 9             | 1              | 3.21          | 32      |
| ???    | 1046.86         | 1298.06      | 5.6958 | 1.330E+01 | 29.47      | 5             | 1              | 1.17          | 33      |
| C060   | 1172.11         | 1453.21      | 19.708 | 3.566E+01 | 10.30      | 7             | 1              | 2.76          | 34      |
| C060   | 1331.83         | 1651.03      | 14.408 | 2.607E+01 | 16.75      | 9             | 1              | 3.72          | 35      |
| LA140  | 1595.44         | 1977.45      | 518.33 | 9.379E+02 | 0.87       | 20            | 1              | 3.54          | 36      |

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846.16

## GB-18 33118 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | M' | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.83           | 116.92       | 95.191 | 1.727E+02 | 6.13       | 16            | 2  | 3.91          | 1       |
| PA233  | 97.07           | 120.94       | 202.44 | 3.674E+02 | 4.35       | 16            | 2  | 3.01          | 2       |
| TE125  | 110.00          | 136.97       | 126.48 | 2.295E+02 | 6.43       | 12            | 1  | 2.96          | 3       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| M099   | 139.41          | 173.44       | 46.774 | 8.488E+01 | 11.42      | 14            | 2  | 2.13          | 4       |
| CE141  | 144.19          | 179.36       | 86.775 | 1.574E+02 | 8.42       | 14            | 2  | 3.18          | 5       |
| TE132  | 227.07          | 282.12       | 281.68 | 5.112E+02 | 3.09       | 13            | 1  | 2.89          | 6       |
| ???    | 276.48          | 343.38       | 46.620 | 8.461E+01 | 10.59      | 7             | 1  | 3.00          | 7       |
| ???    | 291.83          | 362.41       | 18.650 | 3.384E+01 | 23.35      | 6             | 1  | 2.09          | 8       |
| LA140  | 327.57          | 406.71       | 143.27 | 2.600E+02 | 5.07       | 11            | 1  | 2.89          | 9       |
| I131   | 363.31          | 451.01       | 338.14 | 6.136E+02 | 2.09       | 11            | 1  | 2.94          | 10      |
| BA140  | 422.53          | 524.43       | 19.500 | 3.538E+01 | 17.21      | 5             | 1  | 2.25          | 11      |
| LA140  | 431.35          | 535.35       | 18.408 | 3.340E+01 | 21.04      | 6             | 1  | 1.95          | 12      |
| LA140  | 485.91          | 602.97       | 413.17 | 7.498E+02 | 1.87       | 27            | 2  | 3.05          | 13      |
| RU103  | 495.97          | 615.44       | 887.68 | 1.611E+03 | 1.38       | 27            | 2  | 3.14          | 14      |
| RU106  | 510.56          | 633.53       | 106.97 | 1.941E+02 | 11.73      | 23            | 3  | 2.91          | 15      |
| C058   |                 |              |        |           |            |               |    |               |         |
| ND147  | 529.49          | 657.00       | 56.156 | 1.019E+02 | 9.17       | 20            | 2  | 2.96          | 16      |
| BA140  | 536.20          | 665.31       | 178.56 | 3.240E+02 | 5.37       | 20            | 2  | 3.12          | 17      |
| ???    | 549.21          | 681.43       | 26.020 | 4.722E+01 | 16.17      | 7             | 1  | 2.47          | 18      |
| RU103  | 609.40          | 756.03       | 22.416 | 4.068E+01 | 18.81      | 8             | 1  | 2.18          | 19      |
| RU106  | 620.91          | 770.30       | 48.775 | 8.852E+01 | 9.88       | 10            | 1  | 3.24          | 20      |
| I132   | 628.84          | 780.13       | 42.950 | 7.794E+01 | 10.15      | 9             | 1  | 2.87          | 21      |
| I131   | 635.86          | 788.82       | 15.666 | 2.843E+01 | 26.98      | 9             | 1  | 3.49          | 22      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.63          | 819.52       | 75.561 | 1.371E+02 | 5.88       | 22            | 2  | 3.41          | 23      |
| I132   | 666.49          | 826.78       | 301.51 | 5.472E+02 | 2.83       | 22            | 2  | 3.32          | 24      |
| TE129M | 694.76          | 861.81       | 14.666 | 2.661E+01 | 23.37      | 8             | 1  | 3.49          | 25      |
| CE144  |                 |              |        |           |            |               |    |               |         |
| ZR95   | 722.99          | 896.80       | 461.80 | 8.381E+02 | 1.49       | 16            | 1  | 3.19          | 26      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| M099   | 738.23          | 915.68       | 20.104 | 3.648E+01 | 15.53      | 7             | 1  | 2.79          | 27      |
| ZR95   | 755.71          | 937.34       | 572.58 | 1.039E+03 | 1.33       | 39            | 3  | 3.20          | 28      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 764.72          | 948.50       | 1063.4 | 1.930E+03 | 1.02       | 39            | 3  | 3.38          | 29      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.55          | 956.97       | 253.63 | 4.603E+02 | 2.11       | 39            | 3  | 3.46          | 30      |
| LA140  | 814.74          | 1010.49      | 164.04 | 2.977E+02 | 2.77       | 11            | 1  | 3.21          | 31      |
| LA140  | 866.79          | 1074.98      | 31.683 | 5.750E+01 | 11.17      | 10            | 1  | 2.82          | 32      |
| LA140  | 924.14          | 1146.03      | 30.558 | 5.545E+01 | 10.49      | 9             | 1  | 2.58          | 33      |
| I132   | 953.69          | 1182.64      | 37.287 | 6.767E+01 | 8.00       | 9             | 1  | 3.09          | 34      |
| C060   | 1172.17         | 1453.28      | 24.283 | 4.407E+01 | 11.05      | 10            | 1  | 3.27          | 35      |
| C060   | 1331.49         | 1650.61      | 17.741 | 3.219E+01 | 14.69      | 10            | 1  | 3.31          | 36      |
| LA140  | 1595.45         | 1977.46      | 517.00 | 9.383E+02 | 0.90       | 21            | 1  | 3.61          | 37      |

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GB-10 34J10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | M <sup>2</sup> | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----------------|---------------|---------|
| I131   | 79.69           | 99.39        | 13.483 | 2.457E+01 | 35.25      | 7             | 1              | 3.37          | 1       |
| CE144  |                 |              |        |           |            |               |                |               |         |
| PA233  | 93.85           | 116.94       | 117.42 | 2.139E+02 | 5.49       | 19            | 3              | 3.89          | 2       |
| PA233  | 96.86           | 120.69       | 240.25 | 4.378E+02 | 4.06       | 19            | 3              | 3.27          | 3       |
| PA233  | 102.62          | 127.82       | 42.419 | 7.729E+01 | 11.67      | 19            | 3              | 1.90          | 4       |
| TE125  | 109.90          | 136.85       | 47.408 | 8.639E+01 | 13.92      | 9             | 1              | 2.53          | 5       |
| TE132  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| M099   | 139.30          | 173.30       | 56.081 | 1.021E+02 | 10.09      | 16            | 2              | 2.46          | 6       |
| CE141  | 144.19          | 179.36       | 98.601 | 1.796E+02 | 7.90       | 16            | 2              | 2.86          | 7       |
| TE132  | 227.04          | 282.08       | 265.26 | 4.833E+02 | 3.10       | 12            | 1              | 2.93          | 8       |
| ???    | 276.27          | 343.11       | 35.570 | 6.481E+01 | 13.99      | 7             | 1              | 3.08          | 9       |
| I131   | 283.23          | 351.74       | 19.383 | 3.532E+01 | 28.53      | 8             | 1              | 2.73          | 10      |
| ???    | 291.75          | 362.30       | 23.191 | 4.226E+01 | 16.29      | 5             | 1              | 1.53          | 11      |
| BA140  | 303.75          | 377.18       | 21.533 | 3.923E+01 | 20.27      | 6             | 1              | 2.65          | 12      |
| LA140  | 327.65          | 406.81       | 149.22 | 2.719E+02 | 4.48       | 10            | 1              | 2.82          | 13      |
| I131   | 363.29          | 450.99       | 340.56 | 6.206E+02 | 2.37       | 13            | 1              | 2.96          | 14      |
| LA140  | 431.28          | 535.26       | 12.783 | 2.329E+01 | 38.27      | 8             | 1              | 2.60          | 15      |
| LA140  | 485.90          | 602.96       | 379.80 | 6.921E+02 | 1.84       | 11            | 1              | 3.01          | 16      |
| RU103  | 495.96          | 615.44       | 856.13 | 1.560E+03 | 1.08       | 14            | 1              | 3.10          | 17      |
| RU106  | 510.63          | 633.61       | 100.05 | 1.823E+02 | 6.60       | 11            | 1              | 3.06          | 18      |
| C058   |                 |              |        |           |            |               |                |               |         |
| I132   | 521.50          | 647.09       | 34.795 | 6.340E+01 | 15.36      | 9             | 1              | 2.25          | 19      |
| ND147  | 529.27          | 656.72       | 39.604 | 7.216E+01 | 11.26      | 7             | 1              | 2.75          | 20      |
| BA140  | 536.24          | 665.36       | 158.66 | 2.891E+02 | 4.46       | 12            | 1              | 3.00          | 21      |
| CS134  | 603.48          | 748.70       | 15.454 | 2.816E+01 | 18.61      | 5             | 1              | 1.90          | 22      |
| IR192  |                 |              |        |           |            |               |                |               |         |
| RU103  | 609.30          | 755.90       | 31.237 | 5.692E+01 | 14.86      | 9             | 1              | 2.87          | 23      |
| RU106  | 620.93          | 770.32       | 45.208 | 8.238E+01 | 9.83       | 9             | 1              | 2.96          | 24      |
| I132   | 628.90          | 780.19       | 23.158 | 4.220E+01 | 22.65      | 11            | 1              | 2.60          | 25      |
| CS137  | 660.61          | 819.50       | 75.638 | 1.378E+02 | 5.61       | 19            | 2              | 2.95          | 26      |
| I132   | 666.64          | 826.97       | 269.46 | 4.910E+02 | 2.82       | 19            | 2              | 3.41          | 27      |
| TE129M | 695.08          | 862.21       | 10.795 | 1.967E+01 | 28.81      | 7             | 1              | 2.74          | 28      |
| CE144  |                 |              |        |           |            |               |                |               |         |
| ZR95   | 723.00          | 896.81       | 487.77 | 8.888E+02 | 1.54       | 18            | 1              | 3.19          | 29      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| I131   |                 |              |        |           |            |               |                |               |         |
| M099   | 738.21          | 915.65       | 16.550 | 3.015E+01 | 20.99      | 8             | 1              | 2.60          | 30      |
| LA140  | 750.64          | 931.06       | 33.926 | 6.182E+01 | 9.77       | 35            | 4              | 2.65          | 31      |
| ZR95   | 755.70          | 937.33       | 534.28 | 9.736E+02 | 1.38       | 35            | 4              | 3.21          | 32      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| NB95   | 764.72          | 948.50       | 1008.8 | 1.838E+03 | 1.07       | 35            | 4              | 3.34          | 33      |
| AG110M |                 |              |        |           |            |               |                |               |         |
| I132   | 771.54          | 956.95       | 216.04 | 3.936E+02 | 2.36       | 35            | 4              | 3.06          | 34      |
| LA140  | 814.73          | 1010.47      | 200.11 | 3.646E+02 | 3.13       | 17            | 1              | 3.40          | 35      |
| LA140  | 866.76          | 1074.93      | 32.650 | 5.949E+01 | 9.03       | 8             | 1              | 2.74          | 36      |
| LA140  | 924.13          | 1146.02      | 35.333 | 6.438E+01 | 8.24       | 8             | 1              | 3.03          | 37      |
| I132   | 953.58          | 1182.50      | 31.379 | 5.718E+01 | 9.62       | 9             | 1              | 3.33          | 38      |
| C060   | 1172.29         | 1453.43      | 17.600 | 3.207E+01 | 13.03      | 8             | 1              | 3.14          | 39      |
| I132   | 1397.71         | 1732.61      | 10.704 | 1.950E+01 | 16.28      | 7             | 1              | 3.52          | 40      |
| LA140  | 1595.44         | 1977.46      | 514.56 | 9.376E+02 | 0.87       | 19            | 1              | 3.66          | 41      |

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GB-10 36:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | END<br>(%) | BASE<br>WIDTH | MV | FTHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.17           | 116.10       | 128.96 | 2.364E+02 | 6.57       | 33            | 5  | 2.62          | 1       |
| PA233  | 97.13           | 121.02       | 266.76 | 4.891E+02 | 5.20       | 33            | 5  | 3.20          | 2       |
| TE125  | 109.94          | 136.90       | 92.780 | 1.701E+02 | 7.99       | 33            | 5  | 2.60          | 3       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| CE144  | 131.79          | 163.99       | 12.858 | 2.357E+01 | 37.42      | 7             | 1  | 3.30          | 4       |
| MO99   | 139.13          | 173.10       | 57.081 | 1.046E+02 | 9.71       | 14            | 2  | 2.74          | 5       |
| CE141  | 144.13          | 179.29       | 99.327 | 1.821E+02 | 7.34       | 14            | 2  | 3.25          | 6       |
| TE132  | 227.18          | 282.26       | 305.02 | 5.592E+02 | 2.85       | 13            | 1  | 3.04          | 7       |
| ???    | 276.45          | 343.34       | 48.570 | 8.905E+01 | 12.59      | 9             | 1  | 2.88          | 8       |
| I131   | 283.21          | 351.72       | 14.250 | 2.612E+01 | 30.81      | 6             | 1  | 1.98          | 9       |
| ???    | 292.33          | 363.02       | 29.450 | 5.399E+01 | 22.59      | 10            | 2  | 2.28          | 10      |
| BA140  | 303.91          | 377.38       | 28.266 | 5.182E+01 | 21.61      | 9             | 1  | 1.96          | 11      |
| CR51   | 318.16          | 395.05       | 22.766 | 4.174E+01 | 19.39      | 6             | 1  | 2.18          | 12      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| IR192  |                 |              |        |           |            |               |    |               |         |
| LA140  | 327.50          | 406.62       | 161.90 | 2.968E+02 | 4.16       | 10            | 1  | 2.97          | 13      |
| I131   | 363.31          | 451.01       | 389.79 | 7.147E+02 | 2.56       | 17            | 2  | 3.02          | 14      |
| LA140  | 431.14          | 535.10       | 13.666 | 2.505E+01 | 28.63      | 6             | 1  | 2.00          | 15      |
| LA140  | 485.92          | 602.99       | 408.31 | 7.486E+02 | 1.88       | 27            | 2  | 3.12          | 16      |
| RU103  | 495.96          | 615.43       | 923.84 | 1.693E+03 | 1.36       | 27            | 2  | 3.17          | 17      |
| RU106  | 510.58          | 633.55       | 116.10 | 2.128E+02 | 5.71       | 11            | 1  | 2.96          | 18      |
| CO58   |                 |              |        |           |            |               |    |               |         |
| I132   | 521.42          | 646.99       | 38.416 | 7.343E+01 | 12.75      | 8             | 1  | 2.65          | 19      |
| ND147  | 529.30          | 656.76       | 41.995 | 7.700E+01 | 13.94      | 17            | 2  | 3.38          | 20      |
| BA140  | 536.12          | 665.21       | 165.14 | 3.028E+02 | 5.37       | 17            | 2  | 3.06          | 21      |
| CS134  | 603.09          | 748.22       | 19.054 | 3.493E+01 | 19.78      | 7             | 1  | 1.60          | 22      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU103  | 609.29          | 755.90       | 36.929 | 6.771E+01 | 10.28      | 7             | 1  | 2.46          | 23      |
| RU106  | 620.68          | 770.01       | 46.995 | 8.617E+01 | 9.55       | 9             | 1  | 2.83          | 24      |
| I132   | 628.90          | 780.20       | 30.666 | 5.622E+01 | 13.19      | 8             | 1  | 2.39          | 25      |
| CS137  | 660.70          | 819.60       | 69.218 | 1.269E+02 | 5.95       | 20            | 2  | 3.22          | 26      |
| I132   | 666.66          | 826.99       | 279.33 | 5.121E+02 | 2.86       | 20            | 2  | 3.13          | 27      |
| ZR95   | 722.98          | 896.78       | 481.23 | 8.823E+02 | 1.57       | 18            | 1  | 3.16          | 28      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| MO99   | 738.49          | 916.00       | 24.245 | 4.445E+01 | 15.91      | 9             | 1  | 3.57          | 29      |
| ZR95   | 755.71          | 937.34       | 552.34 | 1.012E+03 | 1.35       | 37            | 3  | 3.17          | 30      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 764.71          | 948.49       | 1053.0 | 1.930E+03 | 1.03       | 37            | 3  | 3.36          | 31      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.55          | 956.97       | 236.36 | 4.334E+02 | 2.22       | 37            | 3  | 3.05          | 32      |
| LA140  | 814.73          | 1010.47      | 179.05 | 3.283E+02 | 2.73       | 12            | 1  | 3.28          | 33      |
| LA140  | 866.82          | 1075.02      | 31.375 | 5.752E+01 | 8.60       | 7             | 1  | 2.96          | 34      |
| LA140  | 917.76          | 1138.13      | 7.6416 | 1.431E+01 | 25.61      | 5             | 1  | 1.53          | 35      |
| LA140  | 924.31          | 1146.24      | 33.233 | 6.093E+01 | 11.41      | 11            | 1  | 2.93          | 36      |
| I132   | 953.56          | 1182.48      | 40.266 | 7.383E+01 | 8.11       | 10            | 1  | 3.48          | 37      |
| CO60   | 1171.27         | 1452.16      | 21.341 | 3.913E+01 | 13.78      | 11            | 1  | 5.74          | 38      |
| LA140  | 1595.44         | 1977.45      | 540.89 | 9.917E+02 | 0.90       | 20            | 1  | 3.62          | 39      |

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904.46

GB-10 37/10 MIL SLIT

| F.O.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | BASE<br>WIDTH | M <sup>2</sup> | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----------------|---------------|---------|
| I131   | 79.24           | 98.84        | 14.133 | 2.575E+01 | 33.71      | 7             | 1              | 2.98          | 1       |
| CE144  |                 |              |        |           |            |               |                |               |         |
| PA233  | 93.83           | 116.92       | 90.665 | 1.652E+02 | 6.32       | 15            | 2              | 3.72          | 2       |
| PA233  | 97.11           | 120.99       | 211.91 | 3.861E+02 | 4.32       | 15            | 2              | 2.91          | 3       |
| TE125  | 109.98          | 136.95       | 125.88 | 2.294E+02 | 7.82       | 15            | 1              | 3.01          | 4       |
| TE132  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| M099   | 139.17          | 173.14       | 45.597 | 8.309E+01 | 11.46      | 15            | 2              | 2.75          | 5       |
| CE141  | 144.02          | 179.15       | 94.923 | 1.729E+02 | 8.17       | 15            | 2              | 2.81          | 6       |
| TE132  | 227.02          | 282.06       | 302.31 | 5.509E+02 | 3.23       | 15            | 1              | 2.84          | 7       |
| ???    | 276.25          | 343.09       | 40.633 | 7.404E+01 | 17.63      | 11            | 1              | 2.62          | 8       |
| I131   | 283.18          | 351.68       | 13.458 | 2.452E+01 | 32.53      | 6             | 1              | 1.68          | 9       |
| ???    | 292.19          | 362.84       | 30.750 | 5.603E+01 | 17.84      | 8             | 1              | 3.21          | 10      |
| BA140  | 303.94          | 377.42       | 15.875 | 2.892E+01 | 31.16      | 7             | 1              | 2.84          | 11      |
| LA140  | 327.52          | 406.65       | 138.50 | 2.524E+02 | 5.25       | 11            | 1              | 2.92          | 12      |
| I131   | 363.32          | 451.03       | 369.61 | 6.735E+02 | 2.31       | 14            | 1              | 3.32          | 13      |
| BA140  | 422.41          | 524.27       | 17.933 | 3.268E+01 | 18.79      | 5             | 1              | 1.64          | 14      |
| LA140  | 485.91          | 602.98       | 396.58 | 7.227E+02 | 1.87       | 12            | 1              | 2.95          | 15      |
| RU103  | 495.98          | 615.46       | 886.56 | 1.615E+03 | 1.23       | 17            | 1              | 3.10          | 16      |
| RU106  | 510.57          | 633.55       | 105.45 | 1.921E+02 | 5.82       | 10            | 1              | 2.99          | 17      |
| C058   |                 |              |        |           |            |               |                |               |         |
| I132   | 521.59          | 647.21       | 32.700 | 5.959E+01 | 14.85      | 8             | 1              | 3.24          | 18      |
| ND147  | 529.28          | 656.73       | 49.471 | 9.015E+01 | 13.49      | 20            | 2              | 3.51          | 19      |
| BA140  | 536.19          | 665.30       | 184.34 | 3.359E+02 | 5.36       | 20            | 2              | 2.98          | 20      |
| CS134  | 603.65          | 748.90       | 25.123 | 4.578E+01 | 16.10      | 14            | 2              | 2.39          | 21      |
| I0192  |                 |              |        |           |            |               |                |               |         |
| RU103  | 609.08          | 755.63       | 43.510 | 7.928E+01 | 12.33      | 14            | 2              | 3.14          | 22      |
| RU106  | 620.68          | 770.02       | 44.925 | 8.186E+01 | 12.79      | 17            | 1              | 2.92          | 23      |
| I132   | 628.96          | 780.27       | 33.475 | 6.100E+01 | 10.73      | 7             | 1              | 2.61          | 24      |
| I131   | 635.68          | 788.60       | 12.083 | 3.295E+01 | 17.75      | 6             | 1              | 2.75          | 25      |
| SB125  |                 |              |        |           |            |               |                |               |         |
| CS137  | 660.65          | 819.54       | 74.368 | 1.355E+02 | 5.73       | 23            | 2              | 3.40          | 26      |
| I132   | 666.51          | 826.83       | 296.46 | 5.402E+02 | 2.70       | 23            | 2              | 3.24          | 27      |
| Z095   | 723.15          | 896.99       | 483.73 | 8.814E+02 | 1.42       | 16            | 1              | 3.31          | 28      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| I131   |                 |              |        |           |            |               |                |               |         |
| M099   | 738.28          | 915.74       | 17.933 | 3.268E+01 | 17.56      | 7             | 1              | 2.14          | 29      |
| Z095   | 755.48          | 937.06       | 560.21 | 1.323E+03 | 1.36       | 41            | 4              | 2.92          | 30      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| NB95   | 764.41          | 948.12       | 1322.3 | 1.971E+03 | 1.34       | 41            | 4              | 2.68          | 31      |
| AG110M |                 |              |        |           |            |               |                |               |         |
| NB95   | 766.00          | 950.09       | 263.58 | 4.003E+02 | 2.78       | 41            | 4              | 11.5          | 32      |
| AG110M |                 |              |        |           |            |               |                |               |         |
| LA140  | 814.75          | 1013.49      | 227.99 | 3.793E+02 | 2.90       | 17            | 1              | 2.37          | 33      |
| LA140  | 866.53          | 1074.55      | 36.738 | 6.609E+01 | 7.82       | 9             | 1              | 3.14          | 34      |
| LA140  | 918.55          | 1139.11      | 15.523 | 2.028E+01 | 17.70      | 15            | 2              | 2.81          | 35      |
| LA140  | 924.32          | 1146.25      | 44.701 | 8.146E+01 | 9.84       | 15            | 2              | 3.12          | 36      |
| I132   | 953.51          | 1182.42      | 32.402 | 5.904E+01 | 3.49       | 8             | 1              | 3.28          | 37      |
| ???    | 1135.34         | 1407.30      | 7.9166 | 1.278E+01 | 31.73      | 8             | 1              | 2.71          | 38      |
| C060   | 1172.71         | 1453.95      | 23.187 | 4.025E+01 | 10.62      | 9             | 1              | 3.21          | 39      |
| C060   | 1331.64         | 1650.79      | 14.808 | 2.600E+01 | 22.41      | 13            | 2              | 2.72          | 40      |
| LA140  | 1595.45         | 1977.46      | 509.42 | 9.283E+02 | 3.86       | 18            | 1              | 3.68          | 41      |

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GB-10 38/10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC  | ERR<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|------------|------------|---------------|----|---------------|---------|
| PA233  | 93.87           | 116.97       | 97.855 | 1.853E+02  | 6.25       | 17            | 2  | 3.92          | 1       |
| PA233  | 96.84           | 120.65       | 204.69 | 3.876E+02  | 4.52       | 17            | 2  | 3.33          | 2       |
| TE125  | 109.85          | 136.79       | 47.970 | 9.085E+01  | 14.00      | 9             | 1  | 2.32          | 3       |
| TE132  |                 |              |        |            |            |               |    |               |         |
| PA233  |                 |              |        |            |            |               |    |               |         |
| M099   | 139.13          | 173.09       | 48.118 | 9.113E+01  | 11.58      | 15            | 2  | 2.28          | 4       |
| CE141  | 143.99          | 179.11       | 76.552 | 1.449E+02  | 9.55       | 15            | 2  | 2.72          | 5       |
| TE132  | 227.01          | 282.04       | 284.50 | 5.388E+02  | 2.94       | 12            | 1  | 2.97          | 6       |
| ???    | 276.25          | 343.09       | 37.166 | 7.039E+01  | 12.23      | 6             | 1  | 2.81          | 7       |
| LA140  | 327.40          | 406.50       | 139.22 | 2.636E+02  | 4.99       | 10            | 1  | 2.89          | 8       |
| I131   | 363.13          | 450.79       | 334.82 | 6.341E+02  | 3.36       | 17            | 1  | 3.12          | 9       |
| LA140  | 485.71          | 602.73       | 385.22 | 7.296E+02  | 1.93       | 26            | 2  | 3.10          | 10      |
| RU103  | 495.93          | 615.40       | 1037.0 | 1.964E+03  | 1.27       | 26            | 2  | 3.21          | 11      |
| RU106  | 510.56          | 633.54       | 245.25 | 4.645E+02  | 3.39       | 12            | 1  | 3.27          | 12      |
| C058   |                 |              |        |            |            |               |    |               |         |
| I132   | 521.49          | 647.07       | 38.816 | 7.351E+01  | 10.33      | 6             | 1  | 2.66          | 13      |
| ND147  | 529.21          | 656.64       | 33.341 | 6.314E+01  | 13.53      | 7             | 1  | 2.86          | 14      |
| BA140  | 535.99          | 665.06       | 148.17 | 2.806E+02  | 4.22       | 10            | 1  | 2.96          | 15      |
| CS134  | 603.22          | 748.37       | 16.804 | 3.182E+01  | 17.79      | 5             | 1  | 2.11          | 16      |
| IR192  |                 |              |        |            |            |               |    |               |         |
| RU103  | 609.16          | 755.73       | 42.258 | 8.003E+01  | 11.40      | 9             | 1  | 2.92          | 17      |
| RU106  | 620.70          | 770.04       | 96.375 | 1.825E+02  | 4.99       | 9             | 1  | 2.78          | 18      |
| I132   | 628.96          | 780.27       | 23.666 | 4.482E+01  | 21.47      | 10            | 1  | 2.86          | 19      |
| CS137  | 660.61          | 819.49       | 69.865 | 1.323E+02  | 6.34       | 21            | 2  | 3.34          | 20      |
| I132   | 666.44          | 826.72       | 304.69 | 5.771E+02  | 2.87       | 21            | 2  | 3.39          | 21      |
| ZR95   | 722.97          | 896.77       | 440.72 | 8.347E+02  | 1.47       | 14            | 1  | 3.26          | 22      |
| EU154  |                 |              |        |            |            |               |    |               |         |
| I131   |                 |              |        |            |            |               |    |               |         |
| ZR95   | 755.70          | 937.32       | 544.01 | 1.0030E+03 | 1.43       | 39            | 3  | 3.33          | 23      |
| EU154  |                 |              |        |            |            |               |    |               |         |
| NB95   | 764.69          | 948.47       | 1094.3 | 2.072E+03  | 1.06       | 39            | 3  | 3.48          | 24      |
| AG110M |                 |              |        |            |            |               |    |               |         |
| I132   | 771.54          | 956.96       | 268.28 | 5.081E+02  | 2.15       | 39            | 3  | 3.30          | 25      |
| LA140  | 814.73          | 1010.47      | 171.10 | 3.240E+02  | 3.30       | 14            | 1  | 3.48          | 26      |
| LA140  | 866.74          | 1074.91      | 22.500 | 4.261E+01  | 13.90      | 8             | 1  | 2.27          | 27      |
| LA140  | 924.09          | 1145.97      | 34.487 | 6.532E+01  | 9.60       | 9             | 1  | 3.07          | 28      |
| I132   | 953.58          | 1182.51      | 41.191 | 7.801E+01  | 17.94      | 14            | 2  | 3.71          | 29      |
| RU106  | 1048.43         | 1300.00      | 9.8833 | 1.871E+01  | 21.04      | 6             | 1  | 2.23          | 30      |
| C060   | 1171.97         | 1453.04      | 11.287 | 2.137E+01  | 19.06      | 7             | 1  | 2.74          | 31      |
| I132   | 1397.57         | 1732.44      | 3.7541 | 7.110E+00  | 37.04      | 5             | 1  | 1.50          | 32      |
| LA140  | 1595.45         | 1977.46      | 520.75 | 9.863E+02  | 0.96       | 23            | 1  | 3.71          | 33      |

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GB-10 39:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | ERR<br>(%) | FACT<br>WIDTH | KV | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.85           | 116.95       | 96.947 | 1.739E+02 | 6.09       | 17            | 2  | 3.26          | 1       |
| PA233  | 97.12           | 121.00       | 205.82 | 3.694E+02 | 4.41       | 17            | 2  | 2.94          | 2       |
| TE125  | 109.91          | 136.87       | 69.233 | 1.242E+02 | 8.55       | 8             | 1  | 2.52          | 3       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| M099   | 139.48          | 173.53       | 45.040 | 8.081E+01 | 11.96      | 16            | 2  | 2.84          | 4       |
| CE141  | 144.21          | 179.39       | 97.376 | 1.747E+02 | 8.41       | 16            | 2  | 2.98          | 5       |
| TE132  | 227.23          | 282.32       | 288.62 | 5.178E+02 | 3.71       | 17            | 2  | 2.91          | 6       |
| ???    | 276.50          | 343.40       | 41.150 | 7.383E+01 | 13.29      | 8             | 1  | 2.71          | 7       |
| I131   | 283.03          | 351.50       | 16.316 | 2.927E+01 | 22.97      | 5             | 1  | 1.76          | 8       |
| ???    | 292.17          | 362.83       | 30.433 | 5.460E+01 | 17.81      | 8             | 1  | 3.04          | 9       |
| CR51   | 318.47          | 395.43       | 17.012 | 3.052E+01 | 22.03      | 5             | 1  | 1.55          | 10      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| IR192  |                 |              |        |           |            |               |    |               |         |
| LA140  | 327.66          | 406.82       | 148.32 | 2.661E+02 | 4.84       | 11            | 1  | 2.77          | 11      |
| I131   | 363.33          | 451.03       | 320.85 | 5.757E+02 | 2.32       | 12            | 1  | 2.04          | 12      |
| LA140  | 485.92          | 602.99       | 437.83 | 7.856E+02 | 1.79       | 27            | 2  | 2.96          | 13      |
| RJ103  | 495.98          | 615.47       | 896.73 | 1.609E+03 | 1.34       | 27            | 2  | 3.16          | 14      |
| RJ106  | 510.62          | 633.61       | 102.86 | 1.845E+02 | 5.88       | 17            | 1  | 3.23          | 15      |
| C058   |                 |              |        |           |            |               |    |               |         |
| I132   | 521.53          | 647.13       | 35.316 | 5.336E+01 | 13.62      | 8             | 1  | 2.95          | 16      |
| ND147  | 529.46          | 656.96       | 33.129 | 5.944E+01 | 13.26      | 7             | 1  | 2.34          | 17      |
| BA140  | 536.11          | 665.19       | 159.98 | 2.870E+02 | 3.77       | 12            | 1  | 2.77          | 18      |
| CS134  | 603.34          | 748.52       | 9.4541 | 1.696E+01 | 39.25      | 7             | 1  | 2.43          | 19      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RJ103  | 609.33          | 755.94       | 41.179 | 7.388E+01 | 8.98       | 7             | 1  | 2.74          | 20      |
| RJ106  | 620.89          | 770.27       | 43.950 | 7.885E+01 | 9.23       | 8             | 1  | 3.12          | 21      |
| I132   | 628.81          | 780.09       | 38.495 | 6.907E+01 | 9.15       | 7             | 1  | 3.59          | 22      |
| I131   | 635.37          | 788.21       | 9.4166 | 1.689E+01 | 32.56      | 6             | 1  | 1.42          | 23      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.69          | 819.59       | 55.613 | 9.978E+01 | 6.75       | 12            | 2  | 2.23          | 24      |
| I132   | 666.65          | 826.98       | 264.25 | 4.741E+02 | 2.81       | 12            | 2  | 3.39          | 25      |
| ZR95   | 723.14          | 896.98       | 463.78 | 8.321E+02 | 1.48       | 16            | 1  | 3.10          | 26      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| M099   | 738.32          | 915.79       | 20.566 | 3.600E+01 | 14.97      | 7             | 1  | 2.54          | 27      |
| LA140  | 750.62          | 931.04       | 35.846 | 6.431E+01 | 9.44       | 41            | 4  | 3.11          | 28      |
| ZR95   | 755.74          | 937.38       | 566.72 | 1.016E+03 | 1.38       | 41            | 4  | 2.10          | 29      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 764.74          | 948.53       | 1316.5 | 1.824E+03 | 1.14       | 41            | 4  | 3.32          | 30      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.55          | 956.97       | 237.81 | 4.267E+02 | 2.19       | 41            | 4  | 3.22          | 31      |
| LA140  | 814.75          | 1010.50      | 201.35 | 3.612E+02 | 2.89       | 16            | 1  | 2.27          | 32      |
| LA140  | 866.83          | 1075.03      | 32.591 | 5.847E+01 | 10.60      | 17            | 1  | 2.73          | 33      |
| LA140  | 918.64          | 1139.22      | 7.7416 | 1.389E+01 | 24.93      | 5             | 1  | 1.58          | 34      |
| LA140  | 924.12          | 1146.00      | 30.620 | 5.494E+01 | 13.83      | 13            | 2  | 2.57          | 35      |
| I132   | 953.57          | 1182.49      | 28.283 | 5.874E+01 | 10.44      | 9             | 1  | 2.99          | 36      |
| C060   | 1172.35         | 1453.51      | 19.750 | 3.543E+01 | 11.22      | 3             | 1  | 3.40          | 37      |
| C060   | 1330.58         | 1649.48      | 4.2333 | 7.595E+00 | 36.56      | 5             | 1  | 1.56          | 38      |
| LA140  | 1595.46         | 1977.47      | 511.25 | 9.173E+02 | 3.83       | 17            | 1  | 3.56          | 39      |

8 - 6 - 1976 929.19

GB-10 40:10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | SPD<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.85           | 116.94       | 109.90 | 1.967E+02 | 5.73       | 18            | 3  | 3.67          | 1       |
| PA233  | 97.14           | 121.03       | 228.64 | 4.094E+02 | 4.17       | 18            | 3  | 3.14          | 2       |
| TE125  | 109.99          | 136.96       | 79.325 | 1.420E+02 | 8.15       | 9             | 1  | 2.62          | 3       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| ???    | 131.06          | 163.08       | 10.979 | 1.966E+01 | 33.09      | 5             | 1  | 1.30          | 4       |
| MO99   | 139.58          | 173.65       | 45.052 | 8.067E+01 | 11.47      | 15            | 2  | 3.39          | 5       |
| CE141  | 144.06          | 179.21       | 107.36 | 1.917E+02 | 7.46       | 15            | 2  | 2.69          | 6       |
| BA140  | 161.01          | 200.21       | 15.100 | 2.703E+01 | 24.32      | 5             | 1  | 1.48          | 7       |
| TE132  | 227.06          | 282.11       | 260.53 | 4.665E+02 | 3.08       | 12            | 1  | 2.93          | 8       |
| ???    | 276.37          | 343.24       | 39.216 | 7.322E+01 | 13.93      | 8             | 1  | 2.58          | 9       |
| ???    | 291.89          | 362.47       | 35.729 | 6.397E+01 | 13.57      | 7             | 1  | 2.76          | 10      |
| BA140  | 302.94          | 376.18       | 19.616 | 3.512E+01 | 19.75      | 5             | 1  | 1.65          | 11      |
| IR192  | 315.03          | 391.16       | 16.980 | 3.040E+01 | 27.44      | 11            | 2  | 1.29          | 12      |
| CR51   | 318.52          | 395.50       | 24.582 | 4.401E+01 | 22.56      | 11            | 2  | 3.53          | 13      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| IR192  |                 |              |        |           |            |               |    |               |         |
| LA140  | 327.70          | 406.87       | 153.38 | 2.746E+02 | 4.67       | 11            | 1  | 2.92          | 14      |
| I131   | 363.35          | 451.06       | 306.66 | 5.491E+02 | 2.58       | 13            | 1  | 2.97          | 15      |
| BA140  | 422.31          | 524.15       | 16.166 | 2.894E+01 | 29.68      | 8             | 1  | 3.09          | 16      |
| LA140  | 485.92          | 602.99       | 423.97 | 7.592E+02 | 1.81       | 27            | 2  | 2.93          | 17      |
| RUI03  | 495.99          | 615.47       | 901.52 | 1.614E+03 | 1.34       | 27            | 2  | 3.14          | 18      |
| RUI06  | 510.68          | 633.68       | 111.51 | 1.996E+02 | 5.40       | 10            | 1  | 2.98          | 19      |
| CO58   |                 |              |        |           |            |               |    |               |         |
| I132   | 521.39          | 646.96       | 33.533 | 6.034E+01 | 14.30      | 8             | 1  | 3.35          | 20      |
| ND147  | 529.35          | 656.82       | 57.940 | 1.037E+02 | 8.57       | 19            | 2  | 3.37          | 21      |
| BA140  | 536.26          | 665.38       | 179.71 | 3.218E+02 | 5.33       | 19            | 2  | 2.87          | 22      |
| CS134  | 603.82          | 749.11       | 24.211 | 4.335E+01 | 15.80      | 15            | 2  | 3.23          | 23      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RUI03  | 609.31          | 755.92       | 51.334 | 9.192E+01 | 11.12      | 15            | 2  | 2.77          | 24      |
| RUI06  | 620.73          | 770.07       | 44.350 | 7.941E+01 | 10.74      | 10            | 1  | 3.35          | 25      |
| I132   | 629.01          | 780.33       | 40.416 | 7.237E+01 | 13.60      | 9             | 1  | 2.82          | 26      |
| I131   | 636.03          | 789.03       | 11.016 | 1.972E+01 | 34.41      | 8             | 1  | 2.91          | 27      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.72          | 819.63       | 58.602 | 1.049E+02 | 6.93       | 21            | 2  | 3.26          | 28      |
| I132   | 666.84          | 827.22       | 277.27 | 4.965E+02 | 3.02       | 21            | 2  | 3.21          | 29      |
| ZR95   | 723.16          | 897.00       | 466.18 | 8.347E+02 | 1.53       | 17            | 2  | 3.19          | 30      |
| EUI54  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| MO99   | 738.58          | 916.12       | 18.945 | 3.392E+01 | 19.85      | 9             | 1  | 3.24          | 31      |
| LA140  | 750.72          | 931.16       | 32.170 | 5.760E+01 | 17.33      | 34            | 4  | 1.64          | 32      |
| ZR95   | 755.73          | 937.36       | 524.27 | 9.384E+02 | 1.37       | 34            | 4  | 3.18          | 33      |
| EUI54  |                 |              |        |           |            |               |    |               |         |
| NB95   | 764.73          | 948.52       | 975.29 | 1.746E+03 | 1.07       | 34            | 4  | 3.25          | 34      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.22          | 956.56       | 210.70 | 3.773E+02 | 2.34       | 34            | 4  | 3.89          | 35      |
| LA140  | 814.75          | 1010.50      | 200.13 | 3.583E+02 | 3.05       | 17            | 1  | 3.34          | 36      |
| LA140  | 866.90          | 1075.11      | 35.933 | 6.434E+01 | 9.65       | 10            | 1  | 3.17          | 37      |
| LA140  | 918.00          | 1138.42      | 7.0500 | 1.262E+01 | 27.19      | 5             | 1  | 1.50          | 38      |
| LA140  | 924.20          | 1146.11      | 36.183 | 6.479E+01 | 8.71       | 9             | 1  | 2.87          | 39      |
| I132   | 953.51          | 1182.41      | 30.529 | 5.466E+01 | 9.69       | 9             | 1  | 3.40          | 40      |
| ???    | 1046.96         | 1298.19      | 6.0000 | 1.074E+01 | 35.42      | 7             | 1  | 2.44          | 41      |
| CO60   | 1172.61         | 1453.83      | 18.250 | 3.267E+01 | 11.11      | 7             | 1  | 2.61          | 42      |
| CO60   | 1331.53         | 1650.66      | 17.683 | 3.166E+01 | 12.31      | 8             | 1  | 3.54          | 43      |
| LA140  | 1595.44         | 1977.45      | 508.97 | 9.114E+02 | 0.85       | 18            | 1  | 3.50          | 44      |

936.17

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|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| RUI03  | 609.49  | 756.14  | 27.275 | 4.327E+01 | 12.59 | 16 | 2 | 3.09 | 24 |
| RUI06  | 620.72  | 770.06  | 8.3333 | 1.322E+01 | 32.33 | 6  | 1 | 1.69 | 25 |
| I132   | 629.31  | 780.70  | 35.804 | 5.680E+01 | 10.45 | 9  | 1 | 2.99 | 26 |
| I131   | 636.19  | 789.23  | 17.083 | 2.710E+01 | 15.51 | 6  | 1 | 2.19 | 27 |
| SB125  |         |         |        |           |       |    |   |      |    |
| CS137  | 660.76  | 819.68  | 150.01 | 2.380E+02 | 3.01  | 20 | 2 | 2.93 | 28 |
| I132   | 666.96  | 827.36  | 225.64 | 3.580E+02 | 2.49  | 20 | 2 | 3.03 | 29 |
| ZR95   | 723.43  | 897.34  | 460.62 | 7.308E+02 | 1.20  | 14 | 1 | 2.91 | 30 |
| EU154  |         |         |        |           |       |    |   |      |    |
| I131   |         |         |        |           |       |    |   |      |    |
| M099   | 738.51  | 916.03  | 16.025 | 2.542E+01 | 12.92 | 5  | 1 | 2.42 | 31 |
| LA140  | 750.69  | 931.12  | 29.518 | 4.683E+01 | 8.53  | 36 | 4 | 2.33 | 32 |
| ZR95   | 755.89  | 937.57  | 511.16 | 8.113E+02 | 1.24  | 36 | 4 | 2.95 | 33 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.03  | 948.89  | 890.80 | 1.413E+03 | 1.01  | 36 | 4 | 2.88 | 34 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 771.61  | 957.04  | 170.19 | 2.700E+02 | 2.30  | 36 | 4 | 3.11 | 35 |
| CS134  | 794.94  | 985.95  | 46.533 | 7.383E+01 | 7.03  | 10 | 1 | 2.75 | 36 |
| C05C   | 811.18  | 1006.08 | 26.494 | 4.203E+01 | 9.43  | 17 | 2 | 5.13 | 37 |
| LA140  | 814.91  | 1010.70 | 174.95 | 2.775E+02 | 2.93  | 17 | 2 | 3.18 | 38 |
| LA140  | 866.89  | 1075.10 | 32.675 | 5.184E+01 | 8.20  | 9  | 1 | 2.21 | 39 |
| LA140  | 924.43  | 1146.39 | 30.608 | 4.856E+01 | 10.29 | 11 | 1 | 2.68 | 40 |
| I132   | 953.78  | 1182.75 | 25.800 | 4.093E+01 | 8.87  | 8  | 1 | 3.17 | 41 |
| ???    | 1047.58 | 1298.95 | 11.470 | 1.819E+01 | 15.77 | 7  | 1 | 2.92 | 42 |
| C060   | 1172.40 | 1453.57 | 22.150 | 3.514E+01 | 8.80  | 8  | 1 | 2.87 | 43 |
| C060   | 1331.57 | 1650.71 | 17.883 | 2.837E+01 | 10.84 | 8  | 1 | 3.23 | 44 |
| LA140  | 1595.54 | 1977.57 | 457.56 | 7.259E+02 | 0.80  | 16 | 1 | 3.38 | 45 |

8 - 6 - 1976 940.23

GB-10 42510 MIL SLIT

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|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| MO99   | 738.83  | 916.42  | 13.950 | 1.909E+01 | 16.37 | 8  | 1 | 2.48 | 34 |
| LA140  | 751.10  | 931.63  | 14.973 | 2.049E+01 | 10.56 | 16 | 2 | 1.83 | 35 |
| ZR95   | 756.20  | 937.95  | 291.66 | 3.992E+02 | 1.67  | 16 | 2 | 2.54 | 36 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.22  | 949.12  | 569.72 | 7.799E+02 | 0.99  | 19 | 2 | 2.58 | 37 |
| AG110M |         |         |        |           |       |    |   |      |    |
| 1132   | 772.15  | 957.71  | 92.723 | 1.269E+02 | 2.58  | 19 | 2 | 2.54 | 38 |
| CS134  | 795.32  | 986.42  | 130.27 | 1.783E+02 | 2.36  | 11 | 1 | 2.62 | 39 |
| CS134  | 801.81  | 994.47  | 11.137 | 1.524E+01 | 16.62 | 7  | 1 | 2.09 | 40 |
| LA140  | 815.60  | 1011.55 | 120.12 | 1.644E+02 | 2.94  | 14 | 1 | 3.29 | 41 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.15  | 1075.43 | 23.620 | 3.233E+01 | 8.48  | 9  | 1 | 2.62 | 42 |
| LA140  | 924.66  | 1146.67 | 23.950 | 3.278E+01 | 7.58  | 8  | 1 | 2.83 | 43 |
| 1132   | 954.14  | 1183.20 | 17.016 | 2.329E+01 | 9.90  | 8  | 1 | 2.49 | 44 |
| ???    | 1047.66 | 1299.05 | 25.733 | 3.522E+01 | 6.82  | 9  | 1 | 2.68 | 45 |
| C060   | 1172.77 | 1454.03 | 27.216 | 3.725E+01 | 6.02  | 9  | 1 | 2.69 | 46 |
| C060   | 1332.09 | 1651.35 | 26.587 | 3.639E+01 | 6.00  | 9  | 1 | 2.76 | 47 |
| 1132   | 1397.58 | 1732.45 | 4.0541 | 5.549E+00 | 20.52 | 5  | 1 | 1.95 | 48 |
| LA140  | 1595.85 | 1977.95 | 273.58 | 3.745E+02 | 0.95  | 14 | 1 | 2.94 | 49 |

8 - 6 - 1976 948.28

GB-10 43/10 MIL SLIT

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | MV | FWHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???   | 74.79           | 93.32        | 4.1208 | 4.302E+00 | 32.86      | 5             | 1  | 1.46          | 1       |
| CR51  | 320.02          | 397.35       | 118.89 | 1.241E+02 | 1.79       | 10            | 1  | 1.89          | 2       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| RU106 | 510.81          | 633.84       | 4.8916 | 5.127E+00 | 18.41      | 7             | 1  | 2.67          | 3       |
| C058  |                 |              |        |           |            |               |    |               |         |
| C058  | 810.76          | 1005.55      | 13.033 | 1.360E+01 | 8.42       | 10            | 1  | 2.41          | 4       |
| ???   | 834.58          | 1035.06      | 4.4666 | 4.663E+00 | 17.24      | 7             | 1  | 2.18          | 5       |
| ???   | 1099.24         | 1362.95      | 5.4291 | 5.668E+00 | 15.73      | 9             | 1  | 2.60          | 6       |
| C060  | 1173.17         | 1454.52      | 106.85 | 1.115E+02 | 1.44       | 12            | 1  | 2.54          | 7       |
| ???   | 1291.71         | 1601.35      | 3.2833 | 3.428E+00 | 12.34      | 7             | 1  | 1.75          | 8       |
| C060  | 1332.52         | 1651.88      | 98.358 | 1.027E+02 | 1.36       | 11            | 1  | 2.41          | 9       |

8 - 6 - 1976 952.44

GB-10 44J10 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EDP<br>(S) | PAGE<br>WIDTH | NU | FTHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 94.43           | 117.66       | 43.417 | 4.765E+01 | 5.62       | 32            | 6  | 1.88          | 1       |
| PA233  | 98.59           | 122.83       | 98.050 | 1.376E+02 | 3.89       | 32            | 6  | 2.44          | 2       |
| TE129M | 103.61          | 129.05       | 83.637 | 9.176E+01 | 4.11       | 32            | 6  | 2.37          | 3       |
| EU155  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE129M | 105.92          | 131.92       | 112.63 | 1.236E+02 | 3.71       | 32            | 6  | 1.79          | 4       |
| EU155  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE125  | 110.82          | 137.99       | 34.674 | 3.835E+01 | 6.31       | 22            | 6  | 1.88          | 5       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| MO99   | 140.31          | 174.55       | 11.408 | 1.252E+01 | 19.12      | 6             | 1  | 1.75          | 6       |
| CE141  | 145.27          | 183.71       | 18.862 | 2.070E+01 | 13.37      | 7             | 1  | 1.84          | 7       |
| ???    | 209.54          | 260.38       | 14.983 | 1.644E+01 | 17.24      | 8             | 1  | 1.95          | 8       |
| TE132  | 228.05          | 283.33       | 96.745 | 1.361E+02 | 3.37       | 9             | 1  | 1.94          | 9       |
| ???    | 277.42          | 344.52       | 102.07 | 1.120E+02 | 2.74       | 9             | 1  | 2.36          | 10      |
| RU103  | 293.08          | 363.95       | 8.2375 | 9.340E+00 | 28.99      | 9             | 1  | 2.39          | 11      |
| IR192  | 315.69          | 391.98       | 14.232 | 1.558E+01 | 11.36      | 13            | 2  | 2.42          | 12      |
| CR51   | 319.84          | 397.13       | 37.109 | 4.072E+01 | 7.22       | 13            | 2  | 2.32          | 13      |
| ND147  |                 |              |        |           |            |               |    |               |         |
| LA140  | 328.51          | 407.87       | 21.232 | 2.326E+01 | 19.36      | 8             | 1  | 1.82          | 14      |
| ???    | 334.20          | 414.68       | 18.991 | 2.084E+01 | 9.24       | 7             | 1  | 1.77          | 15      |
| I131   | 364.33          | 452.28       | 55.716 | 6.115E+01 | 4.33       | 9             | 1  | 1.97          | 16      |
| LA140  | 432.33          | 536.56       | 4.2041 | 4.614E+00 | 28.68      | 5             | 1  | 1.86          | 17      |
| LA140  | 486.85          | 604.15       | 61.334 | 6.728E+01 | 3.43       | 9             | 1  | 1.99          | 18      |
| RU103  | 496.86          | 616.56       | 161.16 | 1.768E+02 | 1.58       | 13            | 1  | 2.16          | 19      |
| RU106  | 511.63          | 634.86       | 20.058 | 2.231E+01 | 7.54       | 7             | 1  | 2.22          | 20      |
| C058   |                 |              |        |           |            |               |    |               |         |
| BA140  | 537.16          | 666.50       | 28.933 | 3.175E+01 | 5.82       | 8             | 1  | 2.15          | 21      |
| CS134  | 604.58          | 750.06       | 7.8750 | 8.643E+00 | 15.31      | 7             | 1  | 2.25          | 22      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU103  | 610.17          | 756.99       | 7.8500 | 8.615E+00 | 25.42      | 13            | 2  | 1.82          | 23      |
| RU106  | 621.63          | 771.19       | 8.7523 | 9.612E+00 | 12.98      | 7             | 1  | 2.31          | 24      |
| I132   | 630.02          | 781.58       | 8.6583 | 9.502E+00 | 11.41      | 6             | 1  | 2.19          | 25      |
| CS137  | 661.69          | 820.83       | 9.8159 | 1.077E+01 | 9.58       | 18            | 3  | 2.43          | 26      |
| I132   | 667.53          | 828.05       | 44.209 | 4.834E+01 | 5.03       | 18            | 3  | 2.31          | 27      |
| ZR95   | 723.94          | 897.97       | 58.258 | 6.394E+01 | 2.74       | 14            | 1  | 2.24          | 28      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| ZR95   | 756.47          | 938.28       | 70.316 | 7.717E+01 | 2.96       | 16            | 2  | 2.33          | 29      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NB95   | 765.58          | 949.57       | 126.97 | 1.393E+02 | 1.77       | 18            | 2  | 2.26          | 30      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 772.44          | 958.07       | 29.655 | 3.254E+01 | 3.71       | 18            | 2  | 2.18          | 31      |
| CS134  | 795.63          | 986.81       | 7.1383 | 7.871E+00 | 11.67      | 7             | 1  | 2.18          | 32      |
| C058   | 813.57          | 1005.31      | 2.2916 | 3.173E+00 | 26.47      | 6             | 1  | 2.19          | 33      |
| LA140  | 815.61          | 1011.55      | 21.137 | 2.319E+01 | 6.73       | 11            | 1  | 2.24          | 34      |
| TE129M |                 |              |        |           |            |               |    |               |         |
| LA140  | 867.62          | 1076.01      | 5.2916 | 5.807E+00 | 14.75      | 7             | 1  | 1.54          | 35      |
| LA140  | 924.94          | 1147.02      | 6.5958 | 7.239E+00 | 12.31      | 7             | 1  | 2.23          | 36      |
| I132   | 954.50          | 1183.64      | 5.7702 | 6.332E+00 | 13.39      | 7             | 1  | 2.23          | 37      |
| C060   | 1173.01         | 1454.32      | 38.125 | 4.184E+01 | 3.12       | 11            | 1  | 2.45          | 38      |
| C060   | 1332.43         | 1651.77      | 38.362 | 4.177E+01 | 2.87       | 11            | 1  | 2.65          | 39      |
| LA140  | 1596.02         | 1978.16      | 65.183 | 7.154E+01 | 1.72       | 12            | 1  | 2.60          | 40      |



|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| M099   | 738.87  | 916.47  | 12.666 | 1.647E+01 | 15.92 | 3  | 1 | 2.41 | 35 |
| ZR95   | 756.25  | 938.01  | 308.32 | 4.010E+02 | 1.33  | 34 | 4 | 2.47 | 36 |
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.19  | 949.09  | 598.61 | 7.787E+02 | 3.99  | 34 | 4 | 2.39 | 37 |
| AG110M |         |         |        |           |       |    |   |      |    |
| I132   | 772.20  | 957.78  | 92.798 | 1.237E+02 | 2.52  | 34 | 4 | 2.47 | 38 |
| CS134  | 795.40  | 986.52  | 32.133 | 4.183E+01 | 5.58  | 8  | 1 | 2.77 | 39 |
| C058   | 811.09  | 1005.96 | 14.949 | 1.944E+01 | 9.25  | 17 | 2 | 3.33 | 40 |
| LA140  | 815.28  | 1011.15 | 100.55 | 1.333E+02 | 3.26  | 17 | 2 | 2.45 | 41 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.27  | 1075.56 | 18.133 | 2.358E+01 | 11.35 | 11 | 2 | 2.54 | 42 |
| LA140  | 919.19  | 1139.89 | 7.4129 | 9.643E+03 | 17.33 | 15 | 2 | 2.47 | 43 |
| LA140  | 924.75  | 1146.78 | 23.791 | 3.794E+01 | 9.77  | 15 | 2 | 2.76 | 44 |
| I132   | 954.05  | 1183.08 | 17.725 | 2.335E+01 | 9.14  | 9  | 1 | 2.41 | 45 |
| C060   | 1172.75 | 1454.00 | 35.945 | 4.676E+01 | 4.77  | 11 | 1 | 2.56 | 46 |
| C060   | 1331.93 | 1651.15 | 30.408 | 3.955E+01 | 5.27  | 13 | 1 | 2.83 | 47 |
| I132   | 1397.98 | 1732.95 | 4.6833 | 6.092E+00 | 17.82 | 6  | 1 | 2.27 | 48 |
| LA140  | 1595.82 | 1977.92 | 243.38 | 3.166E+02 | 1.33  | 15 | 1 | 2.90 | 49 |

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QB-10 46310 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EFF<br>(%) | BASE<br>WIDTH | M <sup>2</sup> | FWHM<br>(KEV) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----------------|---------------|---------|
| PA233  | 94.36           | 117.58       | 87.303 | 1.003E+02 | 4.31       | 35            | 6              | 2.16          | 1       |
| PA233  | 98.46           | 122.66       | 197.74 | 2.271E+02 | 2.83       | 35            | 6              | 2.44          | 2       |
| TE129M | 103.61          | 129.05       | 119.78 | 1.376E+02 | 3.40       | 35            | 6              | 2.38          | 3       |
| EU155  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| TE129M | 105.86          | 131.84       | 151.04 | 1.735E+02 | 3.09       | 35            | 6              | 1.74          | 4       |
| EU155  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| TE125  | 110.77          | 137.93       | 83.854 | 9.634E+01 | 4.30       | 35            | 6              | 2.33          | 5       |
| TE132  |                 |              |        |           |            |               |                |               |         |
| PA233  |                 |              |        |           |            |               |                |               |         |
| MO99   | 140.27          | 174.50       | 20.081 | 2.307E+01 | 12.15      | 12            | 2              | 1.92          | 6       |
| CE141  | 145.08          | 180.46       | 32.484 | 3.732E+01 | 10.30      | 12            | 2              | 1.91          | 7       |
| ???    | 209.29          | 260.07       | 21.587 | 2.480E+01 | 12.88      | 7             | 1              | 2.12          | 8       |
| TE132  | 228.01          | 283.29       | 139.29 | 1.600E+02 | 2.54       | 9             | 1              | 1.97          | 9       |
| ???    | 277.35          | 344.45       | 139.08 | 1.597E+02 | 2.27       | 8             | 1              | 2.09          | 10      |
| I131   | 284.81          | 353.71       | 15.375 | 1.766E+01 | 16.07      | 7             | 1              | 2.50          | 11      |
| RUI03  | 293.39          | 364.34       | 9.2041 | 1.057E+01 | 20.47      | 5             | 1              | 1.74          | 12      |
| BA140  | 304.45          | 378.05       | 7.0833 | 8.138E+00 | 30.41      | 6             | 1              | 1.86          | 13      |
| IR192  | 315.86          | 392.20       | 18.585 | 2.135E+01 | 11.22      | 12            | 2              | 1.94          | 14      |
| CR51   | 319.66          | 396.90       | 31.764 | 3.649E+01 | 8.93       | 12            | 2              | 2.38          | 15      |
| ND147  |                 |              |        |           |            |               |                |               |         |
| LA140  | 328.54          | 407.92       | 39.198 | 4.503E+01 | 8.35       | 14            | 2              | 1.94          | 16      |
| ???    | 333.92          | 414.58       | 18.609 | 2.138E+01 | 11.03      | 14            | 2              | 2.16          | 17      |
| I131   | 364.23          | 452.16       | 81.650 | 9.380E+01 | 3.40       | 9             | 1              | 2.13          | 18      |
| LA140  | 486.73          | 603.99       | 95.183 | 1.093E+02 | 2.76       | 9             | 1              | 2.11          | 19      |
| RUI03  | 496.82          | 616.50       | 233.07 | 2.677E+02 | 1.46       | 11            | 1              | 2.17          | 20      |
| RUI06  | 511.48          | 634.67       | 29.658 | 3.407E+01 | 7.90       | 9             | 1              | 2.36          | 21      |
| C058   |                 |              |        |           |            |               |                |               |         |
| I132   | 522.55          | 648.39       | 10.233 | 1.175E+01 | 15.74      | 6             | 1              | 1.99          | 22      |
| ND147  | 530.19          | 657.86       | 10.950 | 1.258E+01 | 18.87      | 8             | 1              | 2.19          | 23      |
| BA140  | 536.99          | 666.29       | 42.200 | 4.848E+01 | 5.06       | 8             | 1              | 2.34          | 24      |
| CS134  | 604.36          | 749.79       | 20.142 | 2.314E+01 | 9.97       | 15            | 2              | 2.49          | 25      |
| IR192  |                 |              |        |           |            |               |                |               |         |
| RUI03  | 610.18          | 757.00       | 14.436 | 1.658E+01 | 11.33      | 15            | 2              | 2.30          | 26      |
| RUI06  | 621.87          | 771.48       | 11.350 | 1.304E+01 | 14.00      | 8             | 1              | 2.33          | 27      |
| I132   | 630.01          | 781.57       | 10.233 | 1.175E+01 | 15.01      | 8             | 1              | 2.14          | 28      |
| I131   | 636.68          | 789.84       | 5.3625 | 6.161E+00 | 25.22      | 7             | 1              | 2.19          | 29      |
| SB125  |                 |              |        |           |            |               |                |               |         |
| CS137  | 661.42          | 820.50       | 23.551 | 2.705E+01 | 6.02       | 17            | 2              | 2.22          | 30      |
| I132   | 667.47          | 827.99       | 62.403 | 7.169E+01 | 2.97       | 17            | 2              | 2.31          | 31      |
| ZR95   | 723.92          | 897.95       | 91.208 | 1.047E+02 | 2.20       | 10            | 1              | 2.32          | 32      |
| EU154  |                 |              |        |           |            |               |                |               |         |
| I131   |                 |              |        |           |            |               |                |               |         |
| MO99   | 739.02          | 916.66       | 5.1333 | 5.897E+00 | 25.33      | 8             | 1              | 2.08          | 33      |
| ZR95   | 756.42          | 938.22       | 106.23 | 1.220E+02 | 2.47       | 15            | 2              | 2.37          | 34      |

|        |         |         |        |           |       |    |   |      |    |
|--------|---------|---------|--------|-----------|-------|----|---|------|----|
| EU154  |         |         |        |           |       |    |   |      |    |
| NB95   | 765.53  | 949.51  | 220.01 | 2.297E+02 | 1.43  | 19 | 2 | 2.35 | 35 |
| AG110M |         |         |        |           |       |    |   |      |    |
| 1132   | 772.40  | 958.03  | 45.574 | 5.236E+01 | 3.16  | 19 | 2 | 2.27 | 36 |
| CS134  | 795.64  | 986.81  | 13.925 | 1.599E+01 | 8.99  | 9  | 1 | 2.36 | 37 |
| C058   | 811.10  | 1005.97 | 9.2863 | 1.067E+01 | 10.99 | 17 | 2 | 3.58 | 38 |
| LA140  | 815.58  | 1011.52 | 43.823 | 5.034E+01 | 4.64  | 17 | 2 | 2.64 | 39 |
| TE129M |         |         |        |           |       |    |   |      |    |
| LA140  | 867.64  | 1076.03 | 9.1666 | 1.053E+01 | 11.10 | 8  | 1 | 2.52 | 40 |
| LA140  | 925.15  | 1147.29 | 6.9583 | 7.994E+00 | 17.27 | 9  | 1 | 1.96 | 41 |
| 1132   | 954.41  | 1183.53 | 7.3003 | 8.387E+00 | 13.65 | 8  | 1 | 2.66 | 42 |
| C060   | 1172.94 | 1454.23 | 37.762 | 4.338E+01 | 3.36  | 11 | 1 | 2.63 | 43 |
| C060   | 1332.13 | 1651.39 | 35.366 | 4.063E+01 | 3.35  | 10 | 1 | 2.42 | 44 |
| LA140  | 1596.00 | 1978.15 | 102.02 | 1.172E+02 | 1.42  | 13 | 1 | 2.67 | 45 |

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GB-10 47110 MIL SLIT

| F.P.   | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EDD<br>(%) | BASE<br>WIDTH | M" | FIRM<br>(KED) | PK<br># |
|--------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| PA233  | 93.89           | 117.07       | 139.78 | 2.299E+02 | 4.61       | 29            | 4  | 2.52          | 1       |
| PA233  | 97.78           | 121.82       | 282.37 | 4.242E+02 | 3.62       | 29            | 4  | 2.72          | 2       |
| TE129M | 123.95          | 129.47       | 75.286 | 1.132E+02 | 6.64       | 29            | 4  | 4.29          | 3       |
| EU155  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| TE125  | 110.22          | 137.24       | 104.77 | 1.573E+02 | 5.49       | 29            | 4  | 2.22          | 4       |
| TE132  |                 |              |        |           |            |               |    |               |         |
| PA233  |                 |              |        |           |            |               |    |               |         |
| M099   | 139.79          | 173.91       | 52.621 | 7.934E+01 | 8.62       | 15            | 2  | 2.61          | 5       |
| CE141  | 144.62          | 179.89       | 93.107 | 1.392E+02 | 6.77       | 15            | 2  | 2.42          | 6       |
| TE132  | 227.54          | 282.71       | 181.72 | 2.729E+02 | 4.71       | 13            | 1  | 2.42          | 7       |
| ???    | 276.87          | 343.86       | 99.195 | 1.489E+02 | 5.25       | 9             | 1  | 2.53          | 8       |
| I131   | 284.01          | 352.71       | 15.528 | 2.329E+01 | 23.42      | 6             | 1  | 2.32          | 9       |
| RU103  | 292.95          | 363.79       | 18.612 | 2.795E+01 | 27.12      | 9             | 1  | 2.28          | 10      |
| LA140  | 327.93          | 407.16       | 99.341 | 1.492E+02 | 5.17       | 9             | 1  | 2.46          | 11      |
| PA233  | 339.82          | 421.90       | 29.262 | 4.365E+01 | 12.65      | 7             | 1  | 1.97          | 12      |
| I131   | 363.57          | 451.34       | 185.48 | 2.786E+02 | 2.91       | 13            | 1  | 2.42          | 13      |
| LA140  | 432.11          | 536.29       | 14.941 | 2.244E+01 | 12.15      | 5             | 1  | 1.71          | 14      |
| LA140  | 486.15          | 603.27       | 270.85 | 4.368E+02 | 2.13       | 11            | 1  | 2.62          | 15      |
| RU103  | 496.34          | 615.90       | 394.42 | 5.924E+02 | 1.92       | 15            | 1  | 2.52          | 16      |
| RU106  | 511.00          | 634.37       | 32.866 | 4.936E+01 | 12.18      | 2             | 1  | 2.52          | 17      |
| C058   |                 |              |        |           |            |               |    |               |         |
| ND147  | 529.82          | 657.43       | 25.966 | 3.233E+01 | 12.25      | 6             | 1  | 1.92          | 18      |
| BA140  | 536.59          | 665.83       | 112.61 | 1.691E+02 | 4.27       | 19            | 1  | 2.52          | 19      |
| CS134  | 568.60          | 705.46       | 33.716 | 4.613E+01 | 12.41      | 2             | 1  | 2.10          | 20      |
| CS134  | 603.85          | 749.15       | 227.25 | 3.412E+02 | 2.19       | 11            | 1  | 2.62          | 21      |
| IR192  |                 |              |        |           |            |               |    |               |         |
| RU106  | 621.02          | 770.43       | 7.8416 | 1.177E+01 | 27.68      | 5             | 1  | 1.62          | 22      |
| I132   | 629.28          | 780.66       | 23.216 | 3.487E+01 | 13.47      | 8             | 1  | 2.36          | 23      |
| I131   | 636.31          | 789.38       | 7.2583 | 1.394E+01 | 33.11      | 6             | 1  | 1.64          | 24      |
| SB125  |                 |              |        |           |            |               |    |               |         |
| CS137  | 660.93          | 819.89       | 496.84 | 7.462E+02 | 1.32       | 22            | 2  | 2.72          | 25      |
| I132   | 666.94          | 827.34       | 172.54 | 2.591E+02 | 2.19       | 22            | 2  | 2.12          | 26      |
| ZR95   | 723.48          | 897.43       | 341.47 | 5.128E+02 | 1.42       | 15            | 1  | 2.24          | 27      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| I131   |                 |              |        |           |            |               |    |               |         |
| M099   | 738.63          | 916.17       | 17.175 | 2.579E+01 | 12.76      | 7             | 1  | 2.72          | 28      |
| ZR95   | 756.15          | 937.29       | 373.27 | 5.676E+02 | 1.42       | 35            | 4  | 3.22          | 29      |
| EU154  |                 |              |        |           |            |               |    |               |         |
| NR95   | 765.29          | 948.96       | 702.93 | 1.355E+03 | 1.11       | 35            | 4  | 2.22          | 30      |
| AG110M |                 |              |        |           |            |               |    |               |         |
| I132   | 771.68          | 957.13       | 139.29 | 1.632E+02 | 2.87       | 35            | 4  | 2.24          | 31      |
| CS134  | 795.03          | 986.06       | 194.64 | 2.923E+02 | 2.45       | 17            | 2  | 2.72          | 32      |
| CS134  | 830.75          | 993.15       | 22.918 | 3.442E+01 | 2.52       | 17            | 2  | 2.56          | 33      |
| LA140  | 815.30          | 1011.43      | 151.52 | 2.275E+02 | 2.72       | 14            | 1  | 3.22          | 34      |
| TE129M |                 |              |        |           |            |               |    |               |         |
| LA140  | 866.94          | 1075.17      | 22.466 | 3.374E+01 | 2.72       | 8             | 1  | 2.66          | 35      |
| LA140  | 919.11          | 1139.20      | 10.694 | 1.676E+01 | 17.48      | 16            | 2  | 2.28          | 36      |
| LA140  | 924.39          | 1146.34      | 29.922 | 4.494E+01 | 10.58      | 16            | 2  | 2.28          | 37      |
| I132   | 953.94          | 1182.95      | 17.891 | 2.607E+01 | 12.33      | 9             | 1  | 2.92          | 38      |
| ???    | 1047.44         | 1298.78      | 31.070 | 4.667E+01 | 7.67       | 11            | 1  | 2.42          | 39      |
| C060   | 1172.38         | 1453.54      | 25.166 | 3.783E+01 | 6.86       | 2             | 1  | 2.92          | 40      |
| C060   | 1331.69         | 1650.85      | 23.633 | 3.549E+01 | 6.99       | 8             | 1  | 2.62          | 41      |
| I132   | 1397.71         | 1732.61      | 3.2252 | 4.844E+00 | 37.16      | 7             | 1  | 2.22          | 42      |
| LA140  | 1595.52         | 1977.54      | 299.39 | 4.492E+02 | 1.71       | 18            | 1  | 3.12          | 43      |

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GB-10 48/10 MIL SLIT .

| F.P.  | ENERGY<br>(KEV) | PEAK<br>CHNL | CPS    | GAMMA/SEC | EPP<br>(%) | BASE<br>WIDTH | M" | FTHM<br>(KEV) | PK<br># |
|-------|-----------------|--------------|--------|-----------|------------|---------------|----|---------------|---------|
| ???   | 74.74           | 93.26        | 7.6500 | 8.037E+00 | 20.56      | 6             | 1  | 1.73          | 1       |
| PA233 | 84.86           | 105.80       | 5.0125 | 5.246E+00 | 36.07      | 7             | 1  | 3.36          | 2       |
| EUI55 |                 |              |        |           |            |               |    |               |         |
| CR51  | 320.02          | 397.35       | 128.35 | 1.340E+02 | 2.00       | 14            | 2  | 1.96          | 3       |
| ND147 |                 |              |        |           |            |               |    |               |         |
| C058  | 810.60          | 1005.36      | 11.433 | 1.196E+01 | 8.33       | 8             | 1  | 2.26          | 4       |
| ???   | 834.94          | 1035.51      | 5.2583 | 5.504E+00 | 13.38      | 6             | 1  | 2.15          | 5       |
| ???   | 1099.11         | 1362.79      | 6.7500 | 7.065E+00 | 11.53      | 8             | 1  | 2.58          | 6       |
| C060  | 1173.16         | 1454.50      | 107.50 | 1.125E+02 | 1.43       | 12            | 1  | 2.50          | 7       |
| ???   | 1291.53         | 1601.12      | 3.5166 | 3.680E+00 | 11.02      | 8             | 1  | 2.47          | 8       |
| C060  | 1332.50         | 1651.86      | 97.550 | 1.021E+02 | 1.40       | 12            | 1  | 2.36          | 9       |