

Dose Assessment Using Modified Bicron Analyst Measurements

It should be noted that these dose estimates are based on tests performed in an average beam loss condition within an enclosure and not directly in-beam. If irradiation was with the direct beam, these dose estimates may be significantly in error. The conversion factor between cpm and mR/hr is also based on Cs-137, introducing error into the calculation. The absorbed dose, D, is approximated by:

$$D(\text{mrad}) \approx A * \text{Meterreading}(\text{cpm}) * \frac{1\text{mR}/\text{hr}}{1633\text{cpm}}$$

where A is the value obtained from Figure B-1. To determine A, one needs to know the approximate exposure time and the time since the exposure. For example, for an accident victim exposed for about **2.5 minutes** and monitored **30 minutes** after the exposure, one obtains a value for **A ≈ 60**. If the survey meter read **6500 cpm**, the estimated dose is then:

$$D(\text{mrad}) \approx 60 * 6500\text{cpm} * \frac{1\text{mR}/\text{hr}}{1633\text{cpm}} \approx 240\text{mrad}$$

Perform source check. Value lie within indicated range? YES NO

If yes, proceed with taking measurements.

If no, repeat source check. If the source check fails again, make a note in the logbook.

Complete the following:

Time of Exposure: _____ a.m./p.m. Exposure Date: _____

Name Exposed Individual: _____ ID#: _____

Time at End of Exposure: _____ Type of exposure: Whole Body

Time at Beginning of Exposure: _____ In-Beam

Total Time of Exposure: _____ If in-beam, mark location on Body Chart.

	A	B	C	D	E	F	G
	Meter Reading (cpm)	Time of Measurement	Time of Exposure	Elapsed Time (min) Col B - Col C	A (Fig. B-1)	Dose (mrad) $\frac{\text{Col A} * \text{Col E}}{1633}$	Initials
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Dose Estimate By: _____ Date: _____ Time: _____

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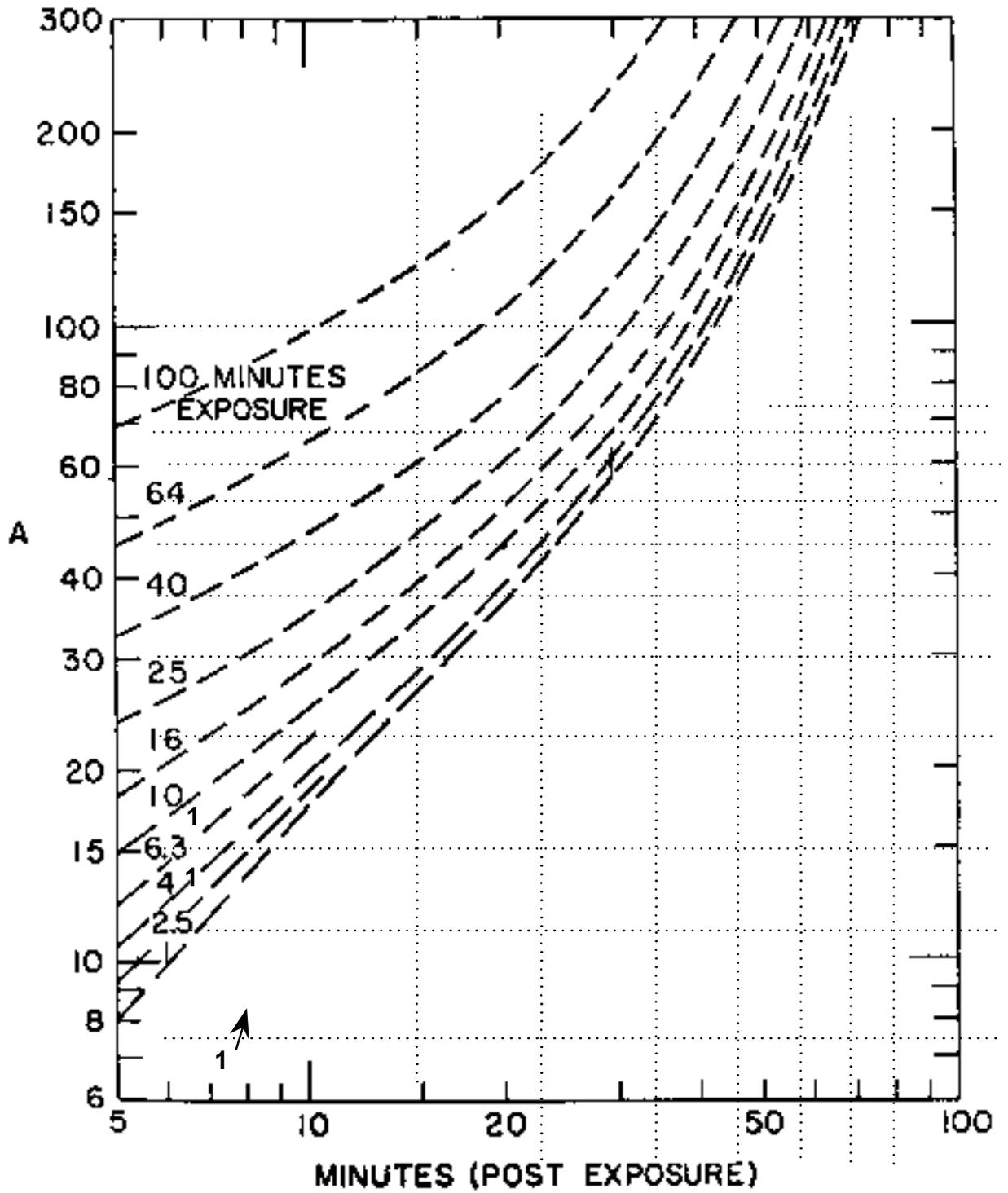


Figure B-1: Calibration Graph

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