A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of
the requirements for the degree of

Master of Science

in

the Nuclear Science Center

DEDICATION

ACKNOWLEDGMENTS

97

LIST OF FIGURES

resentation of Source and Dose point Relativ 15

art o t e ıme program developed on personal 21

ane for the two catheter case (Ir-192), using personal 22

two catheter case (Ir-192), using personal 23

se plane for the two catheter case (Ir-192), using computer 24

l f r the two catheter case (Ir-192), using Capintec 25

two catheter case (Ir-192), using Capintec 26

e two catheter case (Ir-192), using 37

..... 38

n

71

78

80

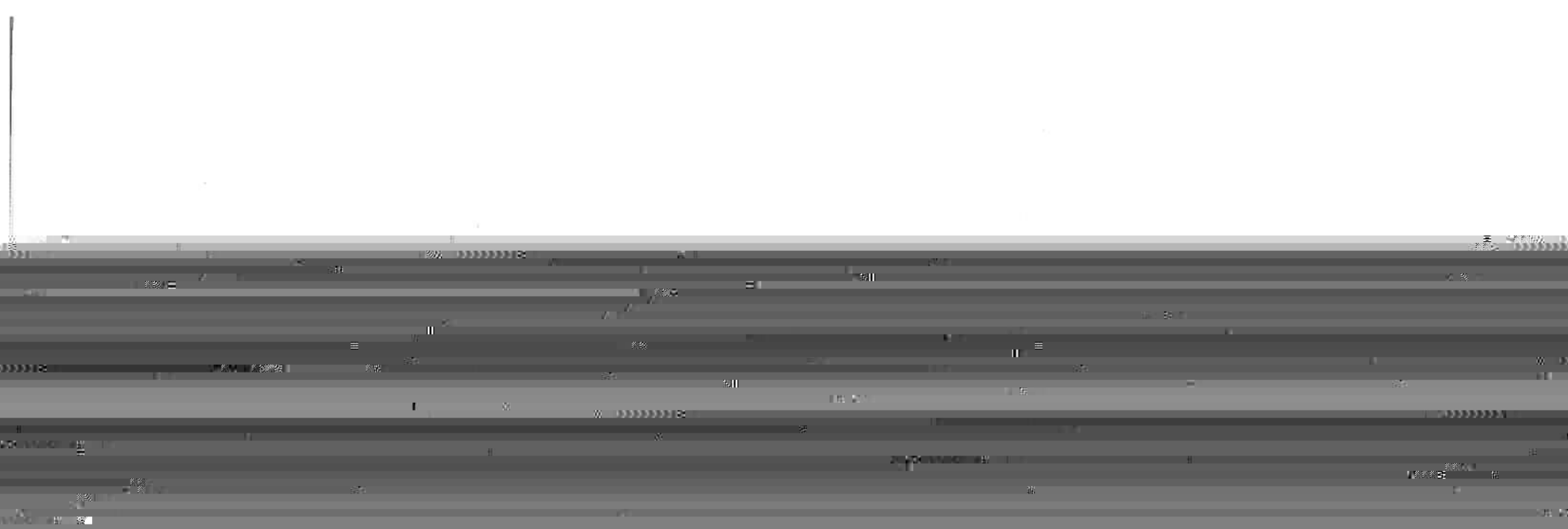
81

82

84

85

86



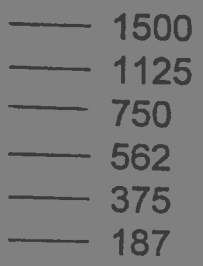
Microsoft Excel version 5.0 is used in this study to solve equation 2.3.1 for an HDR device with an Iridium source. Using this algorithm, we can calculate the dwell times of the source.

Y Axis
cms

Fig 3.5.1: Coronal plane for the two catheter case (Ir-192), using personal computer

^{192}Ir HDR
Coronal Plane
Isodose Curves

^{192}Ir HDR
Saggital Plane
Isodose Curves



^{192}Ir HDR
Transverse Plane
Isodose Curves

X
Left

Fig . .

2), using Capintec computer

ZL
Y
YL
X
187
375
562
750
1125
1500
Half Scale

^{192}Ir HDR Coronal Plane Isodose Curves

Axis
ms

ose in cGy

250
375
500

^{92}Ir HDR
aggital Plane
sodose Curves

Z Axis
cms

ose in cGy

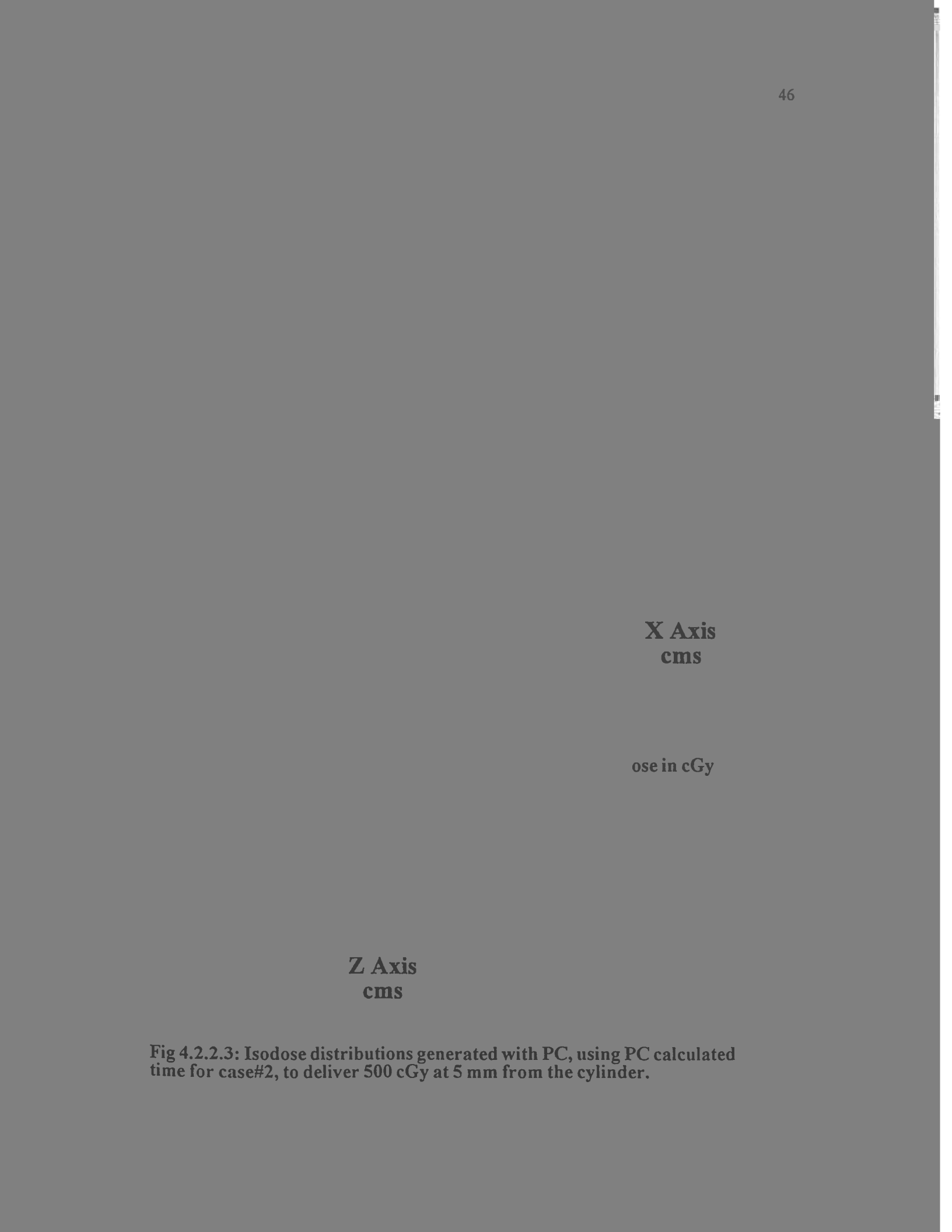
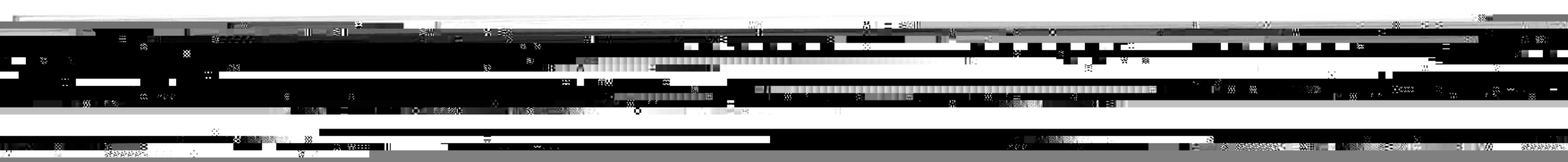


Fig 4.2.2.3: Isodose distributions generated with PC, using PC calculated time for case#2, to deliver 500 cGy at 5 mm from the cylinder.



Total treatment time =9.60 hours

X Axis
cms