List of Tables

Table 1	Estimated Number of Persons Who Resided in 12 Geographic Areas Surrounding the FMPC for Some Period of Time from 1951 Through 1988.	Pa
Table 2	Estimated Average Lifetime Lung Dose Equivalent (Sieverts) Resulting from Exposure to Radioactive Material Released from the FMPC from 1951 Through 1988 Among Persons Who Resided in 12 Geographic Areas Surrounding the Site for Any Period of Time During that Period.	Pa
Table 3	Estimated Total of Lung Cancer Deaths that May Be Due to FMPC Exposures and Background Lung Cancer Deaths, from 1951 Through 2088.	Pa
Table 4	Estimated Percentage (%) Increase in the Number of Lung Cancer Deaths from 1951 Through 2088 that May Be Due to FMPC Exposures.	Pa
Table 5	Total Number of Lung Cancer Deaths that May Be Due to FMPC Exposures and Background Lung Cancer Risk by Time Period	Pa
Table 6	Percentage (%) Increase in Lung Cancer Deaths that May Be Due to FMPC Exposures by Time Period	Pa
Table 7	Estimated Percentage Increase in the Number of Lung Cancer Deaths That May Be Due to FMPC Exposures for 12 Areas Within the Assessment Domain	Pa
Table 8	Total Number of Lung Cancer Deaths that May Be Due to FMPC Exposures and Background Lung Cancer Risk by Year of First Exposure	Pa
Table 9	Percentage (%) Increase in Lung Cancer Deaths that May Be Due to FMPC Exposures by Year of First Exposure.	P
Tables A1-A9	Summaries of Scenario Definitions in Terms of the Values Assigned Each Relevant Factors—The Hypothetical Exposure Scenarios 1 Through 9 Used in the Fernald Dosimetry Reconstruction Project	P
Table A10	The 5 th , 50 th and 95 th Percentile Distribution of Dose (Sv) to the Lungs from Uranium for Scenarios 1-9	P
Table A11	The 5 th , 50 th and 95 th Percentile Distribution of Dose (Sv) to the Lungs from Radon for Scenarios 1-9	P
Table A12	The 5 th , 50 th and 95 th Percentile Distribution of Lifetime Risk of Fatal Lung Cancer Due to Exposure to Radon from the FMPC for Scenarios 1-9.	P
Table A13	The 5 th , 50 th and 95 th Percentile Distribution of Lifetime Risk of Fatal Lung Cancer Due to Exposure to Uranium from the FMPC for Scenarios 1-9	P
Table A14	The 5 th , 50 th and 95 th Percentile Distribution of Lifetime Risk of Fatal Lung Cancer Due to Exposure to Radon and Uranium from the FMPC for Scenarios 1-9	P
Table A15	The Median Value (50 th Percentile) of Lifetime Risk of Fatal Lung Cancer Due to Exposure to Radon and Uranium from the FMPC for Scenarios 1-9 by Smoking Status	P
Table B1	Nominal Five-Year Cumulative Radon-Related Lung Dose Equivalent (Sieverts) for Females Who Resided 4 Kilometers Northeast of the FMPC Site During Its Years of Operation (1951 Through 1988) by Age Class and Time Period of Exposure.	P
Table B2	Parameter Estimates for Model Used to Estimate the Increase in the Lung Cancer Mortality Rate Resulting from FMPC-Related Exposure to Radon and Its Decay Products	P
Table B3	Average Annual Age-Specific Mortality Rates for Lung Cancer ² and All Causes Other Than Lung Cancer for the State of Ohio by Gender. 1962-1990	P
Table B4	Percentage of Ever Smokers Among U.S. Adults by Sex, 1950 – 1995.	P
Table B5	Comparison of the Number of Residential Structures Obtained from United States Geological Survey Maps Containing the Fernald Assessment Domain With Those Obtained from Butler County Property Tax Records for Three Cells. 1955 and 1979	P
Table B6	Percent Distribution of the Butler County Population by Year, Age Group, and Gender. 1950-1990	F
Table B7	Average Annual Birth Rates for Butler County. 1950-1990.	F
Table C1	Factors Specified for Dose Estimation Algorithm.	F
Table C2	Values of Dosimetric Factors Used for Estimating Population Dose and Risk	F
Table C3	Comparison of Lung Dose Estimates (in Sv) for Nine Scenarios Using Various Assumptions in Dose Estimation Algorithm. <i>Radon</i> ; Median and 90% Credibility Interval	P
Table C4	Comparison of Lung Dose Estimates (in Sv) for Nine Scenarios Using Various Assumptions in Dose Estimation Algorithm. <i>Uranium</i> ; Median and 90% Credibility Interval.	P

List of Figures

Figure 1	Location of the Fernald Feed Materials Production Center.	Page 10
Figure 2	The Assessment Domain for the Fernald Dosimetry Reconstruction Project.	Page 12
Figure 3	The Nine Hypothetical Exposure Scenarios Used in the Fernald Dosimetry Reconstruction Project	Page 13
Figure 4	Decision-Making Flow Diagram for Determining the Feasibility of Conducting An Epidemiologic Study At Fernald	Page 15
Figure 5	Location of 12 Areas Within the Assessment Domain Used to Summarize the Results in This Report	Page 21
Figure 6	Uncertainty Distribution for Predicted Total Number of Lung Cancer Deaths (for the Years 1951 Through 2088) that May Be Related to Exposures to Radioactive Materials from the Fernald Feed Materials Production Center (FMPC)	Page 28
Figure 7	Uncertainty Distribution for Predicted Percentage Increase in the Number of Lung Cancer Deaths (for the Years 1951 Through 2088) that May Be Due to Exposure to Radioactive Materials Released from the Fernald Feed Materials Production Center (FMPC)	Page 32
Figure 8	Estimated Percentage Increase in the Number of Lung Cancer Deaths from 1951 Through 2088 that May Be Due to FMPC Exposures, by Geographic Area.	Page 35
Figure 9	Estimated Percentage Increase in the Number of Lung Cancer Deaths from 1951 Through 2088 that may be due to FMPC Exposures Within the 10 Kilometer Assessment Domain and Screening-Level Approximations of the Percentage Increase in Lung Cancer Deaths for Various Distances beyond the 10 Kilometer Domain	Page 49
Figure B1	The Location of the 160 Cells that Comprise the Assessment Domain.	Page A-23
Figure B2	Comparison of Percentages of Ever-Smokers Among Adults Obtained from Various Surveys At the National, State and Local Level.	Page A-45
Figure B3	Comparison of the Empirical Cumulative Distributions of the Factor Representing Variability in the Number of Persons Per Structure for U.S. Census Tracts 260 (Crosby and Harrison Townships) and 205.1 (Colerain Township) As Estimated from 1990 U.S. Census Data With the Empirical Distribution of the Assumed Sampling Variability.	Page A-56
Figure C1	Impact of Assuming 67% of A Scenario's Time Is Spent Outdoors On Radon Lung Dose Estimates	Page A-81
Figure C2	Impact of Assuming 67% of A Scenario's Time Is Spent Outdoors On Uranium Lung Dose Estimates	Page A-82
Figure C3	Impact of Ignoring Changes in Location Due to School and Work On Radon Lung Dose Estimates	Page A-83
Figure C4	Impact of Ignoring Changes in Location Due to School and Work On Uranium Lung Dose Estimates	Page A-84
Figure C5	Impact of Applying All Assumptions On Radon Lung Dose Estimates.	Page A-85
Figure C6	Impact of Applying All Assumptions On Uranium Lung Dose Estimates.	Page A-86