8. REFERENCES

* Adams EE, Brues AM, Anast GA. 1983. Survey of ocular cataracts in radium dial workers. Health Phys 44:73-79.

* Aieta EM, Singley JE, Trussell AR, et al. 1987. Radionuclides in drinking water: An overview. J AWWA 79:144-152.

Albert RE, Shore RE. 1986. Carcinogenic effects of radiation on the human skin. In: Upton AC, Albert RE, Burns FJ, et al., eds. Radiation carcinogenesis. New York, NY: Elsevier Science Publishing Co., 335-345.

* Ames LL, Rai D. 1978. Radionuclide interactions with soil and rock media. Vol. 1: Processes influencing radionuclide mobility and retention. Las Vegas, NV: U.S. Environmental Protection Agency, Office of Radiation Programs. EPA 520/6-78-007.

* APHA. 1985a. Radium in water by precipitation method 705. In: Greenberg AE, Trussell RR, Clesceri LS, eds. Standard methods for the examination of water and wastewater. 16th ed. Washington DC: American Public Health Association, 652-656.

* APHA. 1985b. Radium 226 by radon in water (soluble, suspended and total) - method 706. Standard methods for the examination of water and wastewater. 16th ed. Washington, DC: American Public Health Association, 657-667.

* APHA. 1985c. Radium 228 (soluble) (tentative) - method 707. Standard methods for the examination of water and wastewater. 16th ed. Washington, DC: American Public Health Association, 667-670.

* Archer VE. 1977. Occupational exposure to radiation as a cancer hazard. Cancer 39(suppl):1802-1806.

* ASTM. 1988a. Standard method for sampling surface soil for radionuclides - Method C 998-83. 1988 annual book of ASTM standards. Vol. 11.03: Atmospheric analysis; occupational safety and health. Philadelphia, PA: American Society for Testing and Materials, 512-514.

* ASTM. 1988b. Standard method for soil preparation for the determination of radionuclides - Method C 999-83. 1988 annual book of ASTM standards. Vol. 11.03: Atmospheric analysis; occupational safety and health. Philadelphia, PA: American Society for Testing and Materials, 515-516.

* Cited in text.

8. REFERENCES

* ASTM. 1988c. Standard test methods for radionuclides of radium in water - Method D 2460-70. 1988 annual book of ASTM standards, Vol. 11.02: Water and Environmental Technology. Philadelphia, PA: American Society for Testing and Materials, 660-662.

Aub JC, Evans Rd, Gallagher DM, et al. 1938. Effects of treatment on radium and calcium metabolism in the human body. Ann Intern Med 11:1443-1463.

* Barnes D, Bellin J, DeRosa C, et al. 1987. Reference dose (RFD): Description and use in health risk assessments. Vol I, Appendix A: Integrated risk information system supportive documentation. Washington, DC: U.S. Environmental Protection Agency, Office of Health and Environmental Assessment. EPA/600/8-86/032a.

* Baverstock KF, Papworth DG. 1985. The U.K. radium luminiser survey: Significance of a lack of excess leukaemia. Strahlentherapie [Sonderb] 80:22-26.

* Baverstock KF, Papworth DG. 1989. The U.K. radium luminiser survey. Br J Radio1 21:72-76.

* Bean JA, Isacson P, Hahne RM, et al. 1982. Drinking water and cancer incidence in Iowa: II. Radioactivity in drinking water. Am J Epidemiol 116:924-932.

* BEIR IV. 1988. Radium. In: Health risks of radon and other internally deposited alpha-emitters. Washington, DC: National Academy Press, 176-244.

* Benes P, Strejc P. 1986. Interaction of radium with freshwater sediments and their mineral components: IV. Wastewater and riverbed sediments. Journal of Radioanalytical and Nuclear Chemistry 99:407-422.

Benes P, Sebesta F, Sedlacek J, et al. 1983. Particulate forms of radium and barium in uranium mine waste waters and receiving river waters. Water Res 17:619-624.

* Benes P, Strejc P, Lukavec Z. 1984. Interaction of radium with freshwater sediments and their mineral components: I. Ferric hydroxide and quartz. Journal of Radioanalytical and Nuclear Chemistry 82:275-285.

* Benes P, Borovec Z, Strejc P. 1985. Interaction of radium with freshwater sediments and their mineral components: II. Kaolinite and montmorillonite. Journal of Radioanalytical and Nuclear Chemistry 89:339-351.

8. REFERENCES

* Benes P, Borovec Z, Strejc P. 1986. Interaction of radium with freshwater sediments and their mineral components: III. Muscovite and feldspar. Journal of Radioanalytical and Nuclear Chemistry 98:91-103.

* Blaufox MD. 1988. Radioactive artifacts: Historical sources of modern radium contamination. Semin Nucl Med 18:46-64.

* Brandon WF, Saccomanno G, Archer VE, et al. 1978. Chromosome aberrations as a biological dose-response indicator of radiation exposure in uranium mines. Radiat Res 76:159-171.

* Bruenger FW, Smith JM, Atherton DR, et al. 1983. Skeletal retention and distribution of ^{226}Ra and ^{239}Pu in beagles injected at ages ranging from 2 days to 5 years. Health Phys 44(Suppl 1):513-527.

Brues AM. 1971. Radiation thresholds. Arch Environ Health 22:690-691.

* Burns B, Clulow FV, Cloutier NR, et al. 1987. Transfer coefficient of ^{226}Ra from food to young weaned meadow voles, Microtus pennsvlvanicus, in the laboratory. Health Phys 52:207-211.

Calabrese EJ. 1977. Excessive barium and radium-226 in Illinois drinking water. J Environ Health 39:366-369.

* Cech I, Lemma M, Kreitler CW, et al. 1988. Radium and radon in water supplies from the Texas Gulf coastal aquifer. Water Res 22:109-121.

CFR. Code of Federal Regulations. Washington, DC: Office of Federal Register, National Archives and Records Administration.

* CHEMNAME Database. 1989. Dialog Information Services, Inc., Palo Alto, CA. February 1989.

Chmelevsky D, Kellerer AM, Spiess H, et al. 1985. A proportional hazards analysis of bone sarcoma rates in German ^{224}radium patients. Strahlentherapie [Sonderb] 80:32-37.

* Chmelevsky D, Mays CW, Spiess H, et al. 1988a. An epidemiological assessment of lens opacifications that impaired vision in patents injected with radium-224. Radiat Res 1151238-257.

Chmelevsky D, Kellerer AM, Land CE, et al. 1988b. Time and dose dependency of bone-sarcomas in patients injected with radium-224. Radiat Environ Biophys 27:103-114.

Clark C. 1987. Physicians, reformers and occupational disease: The discovery of radium poisoning. Women Health 12:147-167.

8. REFERENCES

CLC. 1988. Coordinated List of Chemicals. U.S. Environmental Protection Agency, Office of Research and Development, Washington DC.

Clifford D, Vijjeswarapu W, Subramonian S. 1988. Evaluating various adsorbents and membranes for removing radium from groundwater. J AWWA (July):94-104.

Cloutier RJ. 1980. Florence Kelley and the radium dial painters. Health Phys 39:711-716.

* Coles DG, Ragaini RC, Ondov JM. 1978. Behavior of natural radionuclides in western coal-fired power plants. Environ Sci Technol 12:442-446.

Cosandey M, Wenger P. 1977. Long-term radium retention in contaminated dial painters. Health Phys 33:221-225.

Crawford DJ, Leggett RW. 1980. Assessing the risk of exposure to radioactivity. Am Sci 68:524-536.

* Davis NM, Hon R, Dillon P. 1987. Determination of bulk radon emanation rates by high resolution gamma ray spectroscopy. In: Graves B, ed. Radon, radium, and other radioactivity in ground water. Chelsea, MI, Lewis Publishers, 111-122.

* De Bortoli M, Gaglione P. 1972. Radium-226 in environmental materials and foods. Health Phys 22:43-48.

Dingman PV. 1987. Waterbury and the hazards of prolonged radiation. Orthopaedic Review 16:352/113-361/122.

* Dixon DW. 1985. Occupational exposure to natural radiation. Sci Total Environ 45:111-120.

* Donivan S, Hollenbach M, Costello M. 1987. Rapid determination of thorium-230 in mill tailings by alpha spectrometry. Anal Chem 59:2256-2558.

* D'Souza TJ, Mistry KB. 1970. Comparative uptake of thorium-230, radium-226, lead-210, and polonium-210 by plants. Radiation Botany 10: 293-295.

* Dvorak V, Kofranek V, Malatova I, et al. 1978. Osteogenic sarcomas in mice after ^{224}Ra or ^{226}Ra administrations. In: Muller WA, Ebert HG, eds. Biological effects of ^{224}Ra. Brussels, Belgium: CEC, 109-119.

* Eisenbud M. 1973. Natural radioactivity. In: Environmental radioactivity. New York, NY: Academic Press, 159-174.

8. REFERENCES

* Eisenbud M, Petrow HG. 1964. Radioactivity in the atmospheric effluents of power plants that use fossil fuels. Science 144:288-289.

EPA. 1979. Radiological impact caused by emissions of radionuclides into air in the United States - preliminary report. Washington, DC: U.S. Environmental Protection Agency, Office of Radiation Programs (ANR-460). EPA 520/7-79-006. NTIS No. PB80-122336.

* EPA. 1982a. U.S. Environmental Protection Agency. Federal Register 47:54598-54621.

* EPA. 1982b. An exposure and risk assessment for arsenic. Final draft report. U.S. Environmental Protection Agency, Office of Water Regulations and Standards. Washington, DC: 4-64.

* EPA. 1985a. U.S. Environmental Protection Agency: Part II. Federal Register 50:13456, 13474, 13496.

EPA. 1985b. Drinking water criteria document for radium (draft). Washington, DC: U. S. Environmental Protection Agency, Office of Drinking Water (WH-550). NTIS No. PB86-241866.

* EPA. 1986a. Gross alpha and gross beta - method 9310. In: Test methods for evaluating solid waste. 3rd ed. SW-846. Washington, DC: U. S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, 9310-l-9310-9.

* EPA. 1986b. Alpha-emitting radium isotopes - method 9315. In: Test methods for evaluating solid waste. 3rd ed. SW-846. Washington, DC: U. S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, 9315-1-9315-6.

* EPA. 1986c. U.S. Environmental Protection Agency: Part VI. Federal Register 51:34836-34862.

* EPA. 1987a. U.S. Environmental Protection Agency. Federal Register 52:2822-2834.

EPA. 1987b. U.S. Environmental Protection Agency. Federal Register 52:28140-28141.

EPA. 1987c. U.S. Environmental Protection Agency. Federal Register 52:8172-8186.

* EPA. 1988. Limiting values of radionuclide intake and air concentration and dose conversion factors for inhalation, submersion, and ingestion. Federal Guidance Report No. 11. Washington, DC: U.S.

8. REFERENCES

Environmental Protection Agency, Office of Radiation Programs. EPA-520/l-88-020.

* EPA. 1989a. Interim Methods for Development of Inhalation References Doses. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment. Washington, DC. EP 600/8-88/066F.

* EPA. 1989b. U.S. Environmental Protection Agency. Federal Register 54:9612-9667.

* EPA. 1989c. U.S. Environmental Protection Agency: Part II. Federal Register 54:22524-22543.

* Evans RD, Harris RS, Bunker JW. 1944. Radium metabolism in rats and the production of osteogenic sarcoma by experimental radium poisoning. Am J Roentgen01 & Radium Therapy 52:353-373.

EXICHEM Data Base 1988. Organization for Economic Cooperation and Development.

Finkel AJ, Miller CE, Hasterlik RJ. 1969a. Radium-induced malignant tumors in man. In: Mays CW, Jee WS, Lloyd RD, et al., eds. Delayed effects of bone-seeking radionuclides (Sun Valley Symposium, September 12-14, 1967). Salt Lake City, UT: University of Utah Press, 195-225.

Finkel MP, Biskis BO, Jinkins PB. 1969b. Toxicity of radium-226 in mice. In: Ericson A, ed. Radiation induced cancer. Vienna, Austria: International Atomic Energy Agency, 369-391.

* FRC. 1960. Federal Radiation Council. Federal Register 60:4402-4403.

* Fremlin JH, Abu Jarad F. 1980. Alpha-emitters in the environment. I: Natural sources. Nuclear Instruments and Methods 173:197-200.

Fremlin JH, Wilson CR. 1980. Alpha-emitters in the environment. II: Man-made activity. Nuclear Instruments and Methods 173:201-204.

* FSTRAC. 1988. Summary of state and federal drinking water standards and guidelines. Washington, DC: Federal-State Toxicology and Regulatory Alliance Committee, Chemical Communication Subcommittee.

* Gettler AO, Norris C. 1933. Poisoning from drinking radium water. JAMA 100:400-402.

Goldman M. 1986. Experimental carcinogenesis in the skeleton. In: Upton AC, Albert RE, Burns FJ, et al., eds. Radiation carcinogenesis. New York, NY: Elsevier Science Publishing Co., 215-231.

8. REFERENCES

Gossner W. 1986, Pathology of radiation-induced bone tumors. Leuk Res 10:897-904.

* Gustafson PF, Stehney AF. 1985. Exposure data for radium patients. In: Environmental research division annual report. Argonne, IL: Argonne National Laboratory. ANL-84-103 Part 11:98-180.

* Havlik B, Grafova J, Nycova B. 1968a. Radium-226 liberation from uranium ore processing mill waste solids and uranium rocks into surface streams - I: The effect of different pH of surface waters. Health Phys 14:417-422.

* Havlik B, Nycova B, Grafova J. 1968b. Radium-226 liberation from uranium ore processing mill waste solids and uranium rocks into surface streams - II: The effect of different chemical composition of surface water. Health Phys 14:423-430.

* Hess CT, Michel J, Horton TR, et al. 1985. The occurrence of radioactivity in public water supplies in the United States. Health Phys 48:553-586.

Hickey JL, Campbell SD. 1968. High radium-226 concentrations in public water supplies. Public Health Rep 83:551-557.

* Hoegerman SF. 1976. The cytogenetic effects of internal alpha emitters on human lympocytes: a review. In: The health effects of plutonium and radium. Jee WSS, ed. Salt Lake City, Utah, J.W. Press. pp 779-791.

Howe GR, Nair RC, Newcombe HB, et al. 1987. Lung cancer mortality (1950-80) in relation to radon daughter exposure in a cohort of workers at the Eldorado Port Radium uranium mine: Possible modification of risk by exposure rate. J Nat1 Cancer Inst 79:1255-1260.

* HSDB. 1988. Hazardous Substances Data Bank. National Library of Medicine, National Toxicology Information Program, Bethesda, MD. December 1988.

* Humphreys ER, Loutit JF, Major IR, et al. 1985. The induction by ^{224}Ra of myeloid leukaemia and osteosarcoma in male CBA mice. Int J Radiat Biol 47:239-247.

Hunt CD. 1986. Fate and bioaccumulation of soil-associated low-level naturally occurring radioactivity following disposal into a marine ecosystem. Washington, DC: U.S Environmental Protection Agency, Office of Radiation Programs.

ICRP. 1972. Alkaline earth metabolism in adult man, ICRP Publication No. 20. Health Phys 24:125-221.

8. REFERENCES

* ICRP. 1975. Report of the Task Group on Reference Man. ICRP Publication 23. International Commission on Radiological Protection. New York: Pergamon Press.

* ICRP. 1977. Recommendations of the International Commission on Radiological Protection. ICRP Publication No. 26. New York: Pergamon Press.

* ICRP. 1979. Limits for intakes of radionuclides by workers. ICRP Publication 30. International Commission on Radiological Protection. New York: Pergamon Press.

* IRIS. 1988. Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, DC. December 1988.

* IRIS. 1989. Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, DC. January 1989.

* Jaworowski Z, Bilkiewicz J, Zylicz E. 1971. 226Ra in contemporary and fossil snow. Health Phys 20:449-450.

* Jaworowski Z, Gryzbowska D. 1977. Natural radionuclides in industrial and rural soils. Sci Total Environ 7:45-52.

Jee WS, Parks NJ, Miller SC, et al. 1985. Relationship of bone composition to the location of radium-induced bone cancer. Strahlentherapie [Sonderb] 80:75-78.

* Joshi SR. 1987. Nondestructive determination of selected U- and Th-Series radionuclides in biological samples. Health Phys 53:417-420.

* Kalin M. 1988. Long-term ecological behaviour of abandoned uranium mill tailings. 3. Radionuclide concentrations and other characteristics of tailings, surface waters, and vegetation. Report to Environment Canada, Ottawa, Ontario, Canada, by Institute for Environmental Studies, University of Toronto, Ontario, Canada. Report No. EPS 3/HA/4.

* Kaufmann RF, Eadie GG, Russell CR. 1976. Effects of uranium mining and milling on ground water in the Grants Mineral Belt, New Mexico. Ground Water 14:296-308.

Keane AT, Lucas HF, Markun F, et al. 1986. The estimation and potential radiobiological significance of the intake of 228Ra by early Ra dial workers in Illinois. Health Phys 51~313-327.

8. REFERENCES

* Keitz EL. 1980. Atmospheric cycles of cadmium and lead: Emissions, transport, transformation and removal. The Mitre Corporation. McLean, VA: MTR-8OW343: 2-29-2-30.

* Klener V, Kofranek V, Onyskowova Z, et al. 1972. The late effects induced by 226Ra in mice. In: Bujdoso E, ed. Proceedings of the IRPA Second European Congress. Budapest, Hungary: Akademiaii Kiado, 227-230.

* Kofranek, V, Sedlak A, Bubenikova D, et al. 1985. Late effects of ^{226}Ra , ^{224}Ra and ^{239}Pu in female mice of the ICR strain. Strahlentherapie [Sonderb] 80:88-92.

* Kramer GH, Beaulieu PC. 1983. The determination of radium-226 in urine [Abstract]. Atomic Energy Canada Ltd., (CA 99: 2380s)

* Landa ER. 1984. Geochemical and radiological characterization of soils from former radium processing sites. Heath Phys 46:385-394.

* Landa ER, Reid DF. 1982. Sorption of radium-226 from oil-production brine by sediments and soils. Environ Geol 5:1-8.

Landa ER, Miller CL, Updegraff DM. 1986. Leaching of ^{226}Ra from U mill tailings by sulfate-reducing bacteria. Health Phys 51:509-518.

* Langmuir D, Riese AC. 1985. The thermodynamic properties of radium. Geochimica et Cosmochimica Acta 49:1593-1601.

Littman MS, Kirsh IE, Keane AT. 1978. Radium-induced malignant tumors of the mastoid and paranasal sinuses. Am J Roentgen01 131:773-785.

* Lloyd RD, Wrenn ME, Taylor GN, et al. 1986. Toxicity of ^{228}Ra and ^{228}Th relative to ^{226}Ra for bone sarcoma induction in beagles. Strahlentherapie [Sonderb] 80:65-69.

* Longtin JP. 1988. Occurrence of radon, radium, and uranium in groundwater. J AWWA (July):84-93.

* Looney WB. 1955. Late effects (twenty-five to forty years) of the early medical and industrial use of radioactive material: Their relation to the more accurate establishment of maximum permissible amounts of radioactive elements in the body. Part I. J Bone Joint Surg [Am] 37-A:1169-1187.

8. REFERENCES

Looney WB. 1956a. Late effects (twenty-five to forty years) of the early medical and industrial use of radioactive material: Their relation to the more accurate establishment of maximum permissible amounts of radioactive elements in the body. Part II. J Bone Joint Surg [Am] 38-A:175-218.

Looney WB. 1956b. Late effects (twenty-five to forty years) of the early medical and industrial use of radioactive material: Their relation to the more accurate establishment of maximum permissible amounts of radioactive elements in the body. Part III. J Bone Joint Surg [Am] 38-A:392-406.

Lucas HF Jr. 1960. Correlation of the natural radioactivity of the human body to that of its environment: Uptake and retention of ^{226}Ra from food and water. In: Argonne National Laboratory Radiological Physics Division semiannual report, July-December, 1960. Argonne National Laboratory, Argonne, Illinois. ANL-6297.

* Lucas HF. 1985. ^{226}Ra and ^{228}Ra in water supplies. J AWWA 7:57-66.

* Lucas HF. 1987. An improved method for the simultaneous determination of ^{224}RA ^{226}Ra, and ^{228}Ra in water soils and sediments. In: Graves B, ed. Radon, radium, and other radioactivity in groundwater. Chelsea, MI: Lewis Publishers, 219-227.

* Luz A, Muller WA, Gossner W, et al. 1976. Estimation of tumour risk at low dose from experimental results after incorporation of short-lived bone-seeking alpha-emitters ^{224}Ra and ^{227}Th in mice. In: Biological and environmental effects of low-level radiation. Vol. II. Vienna, Austria: International Atomic Energy Agency, 171-181.

* Lyman GH, Lyman CG. 1985. Leukemia and groundwater contamination [Letter] JAMA 256:2676-2677.

* Lyman GH, Lyman CG, Johnson W. 1985. Association of leukemia with radium groundwater contamination. JAMA 254:621-626.

* Lyman GH, Lyman C, Johnson W. 1986. Leukemia and radium groundwater contamination [Letter]. JAMA 255:902-903.

* Maletskos CJ, Keane AT, Telles NC, et al. 1966. The metabolism of intravenously administered radium and thorium in human beings and the relative absorption from the human gastrointestinal tract. In: Radium and mesothorium poisoning and dosimetry and instrumentation techniques in applied radioactivity. Cambridge, MA: Massachusetts Institute of Technology, Physics Department, 202-317. MIT-952-3.

8. REFERENCES

* Maletskos CJ, Keane AT, Telles NC, et al. 1969. Retention and absorption of ^{224}Ra and ^{234}Th and some dosimetric considerations of ^{224}Ra in human beings. In: Mays CW, Jee WS, Lloyd RD, eds. Delayed effects of bone-seeking radionuclides. Salt Lake City, UT: University of Utah Press, 29-49.

* Marinelli LD, Norris WP, Gustafson PF, et al. 1953. Transport of radium sulfate from the lung and its elimination from the human body following single accidental exposures. Radiology 61:903-914.

* Markose PM, Eappen KP, Raghavayya M, et al. 1982. Bioaccumulation of radium in a fresh water ecosystem. In: Vohra KG, ed. Natural radiation environment: Proceedings of the 2nd special symposium on natural radiation environment, held at the Bhaba Atomic Research Centre, Bombay, India, during January 19-23. New Delhi, India: Wiley Eastern Ltd., 234-238.

* Martland H. 1931. The occurrence of malignancy in radioactive persons: A general review of data gathered in the study of the radium dial painters, with special reference to the occurrence of osteogenic sarcoma and the inter-relationship of certain blood diseases. Am J Cancer 15:2435-2515.

Martland HS, Conlon P, Knef JP. 1925. Some unrecognized dangers in the use and handling of radioactive substances with especial reference to the storage of insoluble products of radium and mesothorium in the reticula-endothelial system. JAMA 85:1769-1775.

Mays CW. 1988. Alpha-particle-induced cancer in humans. Health Phys 55:637-652.

* Mays CW, Speiss H. 1984. Bone sarcomas in patients given radium-224. In: Boice JD, Fraumeni JF, eds. Radiation carcinogenesis; epidemiology and biological significance. N.Y. Raven Press. pp 24-1252.

* Mays CW, Cochran TH, Jee WS. 1963. Radium and radon retention in mice. Health Phys 9:615-619.

* Mays CW, Lloyd RD, Van Dilla MA. 1975. Fractional radon retention in bone. Health Phys 29:761-765.

* Mays CW, Spiess H, Chmelevsky D, et al. 1985a. Bone sarcoma cumulative tumor rates in patients injected with ^{224}Ra. Strahlentherapie [Sonderb] 80127-31.

* Mays CW, Rowland RE, Stehney AF. 1985b. Cancer risk from the lifetime intake of Ra and U isotopes. Health Phys 48:635-647.

8. REFERENCES

* Mays CW, Lloyd RD, Taylor GN, et al. 1987. Cancer incidence and lifespan vs. alpha-particle dose in beagles. Health Phys 52:617-624.

* Michel J. 1987. Sources. In: Cothern C, Smith J, eds. Environmental radon. New York, NY: Plenum Press, 81-130.

* Michel J, Cothern CR. 1986. Predicting the occurrence of ^{228}Ra in groundwater. Health Phys 51:715-721.

Milgram JW, Jasty M. 1986. Case report 361. Skeletal Radio1 15:258-267.

Miller CE, Finkel AJ. 1968. Radium retention in man after multiple injections: The power function re-evaluated. Am J Roentgenol Radium Ther Nucl Med 103:871-80.

Mole RH. 1985. Leukaemia induction in man by radionuclides and some relevant experimental and human observations. Strahlentherapie [Sonderb] 80:1-13.

* Morris JS, Bobrowski G. 1979. The determination of ^{226}Ra, ^{214}Pb, and ^{214}Bi in fly ash samples from eighteen (18) coal fired power plants in the Untied States. In: Spencer JD, Whieldon CE Jr, eds. Proceedings of the Fifth International Ash Utilization Symposium, Atlanta, GA, February 25-27. Morgantown, WV: U.S. Department of Energy, Morgantown Energy Technology Center. METC/SP-79/10 (Pt.1).

Muth H, Rajewsky B, Hantke H-J, et al. 1960. The normal radium content and the Ra^{226}/Ca ratio of various foods, drinking water and different organs and tissues of the human body. Health Phys 2:239-245.

* Myrick TE, Berven BA, Haywood FF. 1981. State background radiation levels: Results of measurements taken during 1975-1979. Report to the U.S. Department of Energy by Oak Ridge National Library, Oak Ridge, TN. ORNL/TM-7343.

NAS. 1977. Radioactivity in drinking water. In: Drinking water and health. Washington, DC: National Academy of Sciences, 857-903.

* NAS/NRC. 1989. Biologic markers in reproductive toxicology. Washington, DC: National Academy of Sciences/National Research Council, National Academy Press, 15-35.

Nason R, Cohen BL. 1987. Correlation between ^{226}Ra in soil, ^{222}Rn in soil gas, and ^{222}Ra inside adjacent houses. Health Phys 52:73-77.

8. REFERENCES

* NCRP. 1987. Exposure of the population in the United States and Canada from natural background radiation. Bethesda MD: National Council on Radiation Protection and Measurement, 119-120. NCRP Report No. 94.

* Nielson KK, Rogers VC. 1981. Health effect coefficients for radium and radon released in the mining and milling of uranium. In: Gomez M, ed. Radiation Hazards in Mining, 760-763.

* NLM. 1988. Chemline. National Library of Medicine, Bethesda, MD. December 1988.

* Norris WP, Speckman TW. Gustafson PF. 1955. Studies of the metabolism of radium in man. Am J Roentg Rad Therapy Nuclear Med 73:785-802.

* NRC. 1988. Nuclear Regulatory Commission. Maximum permissble concentrations for uranium and thorium. 10 CFR 20.

Parkin DM, Wahrendorf J, Demaret E, et al. 1987. Directory of on-going research in cancer epidemiology. Lyon, France: International Agency for Research on Cancer, 114, 327-328, 612.

Penna-Franca E, Fiszman M, Lobao N, et al. 1970. Radioactivity in the diet in high background areas of Brazil. Health Phys 19:657-662.

* Peterson NJ, Samuels LD, Lucas HF, et al. 1966. An epidemiologic approach to low-level radium 226 exposure. Public Health Rep 81:805-814.

Pinder JE III, McLeod KW, Alberts JJ, et al. 1984. Uptake of ^{244}Cm, ^{238}Pu and other radionuclides by trees inhabiting a contaminated flood plain. Health Phys 47:375-384.

* Pohl-Ruling J, Fischer P, Pohl E. 1976. Chromosome aberrations in peripheral blood lymphocytes dependent on various dose levels of natural radioactivity. In: Biological and environmental effects of low-level radation. Proceedings of the Symposium on Biological Effects of Low-Level Radiation, International Atomic Energy Agency and World Health Organization, Chicago, 11/3-7/75. Vol. II. Vienna, Austria: International Atomic Energy Agency, 317-324.

Polednak AP. 1986. Leukemia and radium groundwater contamination [Letter]. JAMA 255:903-904.

Polednak AP, Stehney AF, Rowland RE. 1978. Mortality among women first employed before 1930 in the U.S. radium dial-painting industry: A group ascertained from employment lists. Am J Epidemiol 107:179-195.

8. REFERENCES

* Proescher F. 1914. The intravenous injection of soluble radium salts. Radium 2:45-53.

* Proescher F, Almquest BR. 1914. Contribution on the biological and pathological action of soluble radium salts II: Resume of the effect of soluble radium salts on the circulating blood cells of white mice and white rats. Radium 3:85-95.

* Quinby-Hunt MS, McLaughlin RD, Quintaniha A. 1986. Radiation monitoring: In: Greenberg AE, Morton GA, eds. Instrumentation for environmental monitoring. Vol. 2: Water. 2nd ed. New York, NY: John Wiley and Sons, 696-742.

Raabe OG. 1984. Comparison of the carcinogenicity of radium and boneseeking actinides. Health Phys 46:1241-1258.

* Raabe OG, Book SA, Parks NJ, et al. 1981a. Lifetime studies of ^{226}Ra and ^{90}Sr toxicity in beagles - a status report. Radiat Res 86:515-528.

Raabe OG, Parks NJ, Book SA. 1981b. Dose-response relationships for bone tumors in beagles exposed to 226Ra and ^{90}Sr. Health Phys 40:863-880.

* Raabe OG, Book SA, Parks NJ. 1983. Lifetime bone cancer dose-response relationships in beagles and people from skeletal burdens of 226Ra and ^{90}Sr. Health Physics 44(Suppl. 1):33-48.

* Rayno DR. 1983. Estimated dose to man from uranium milling via the beef/milk food-chain pathway. Sci Total Environ 31:219-241.

* Reitter GS, Martland HS. 1926. Leucopenic anemia of the regenerative type due to exposure to radium and mesothorium: Report of a case. Am J Roentgen01 16:161-166.

Rowland RE. 1966. Exchangeable bone calcium. Clinical Orthopaedics 49:233-248.

* Rowland RE, Stehney AF, Lucas HF. 1978. Dose-response relationships for female radium dial workers. Radiat Res 76:368-383.

* Rowland RE, Lucas HF, Schlenker RA. 1989. External radiation doses received by radium dial painters. Br J Radio1 21:67-71.

* Roy WR, Thiery RG, Schuller RM, et al. 1981. Coal fly ash: A review of the literature and proposed classification system with emphasis on environmental impacts. Champaign, IL: Illinois State Geological Survey, l-69.

8. REFERENCES

* Rundo J, Keane AT, Lucas HF, et al. 1986. Current (1984) status of the study of ^{226}Ra and ^{228}Ra in humans at the center for Human Radiobiology. Strahlentherapie [Sonderb] 80:14-21.

* Ruttenber AJ Jr, Kreiss K, Douglas RL, et al. 1984. The assessment of human exposure to radionuclides from a uranium tailings release and mine dewatering effluent. Health Phys 47:21-35.

* Sax NI, Lewis RJ Sr, eds. 1987. Hawley's condensed chemical dictionary. 11th ed. New York, NY: Van Nostrand Reinhold Company, 993-995.

Schlenker RA. 1986. Comparison of intake and committed dose equivalent permitted by radiation protection systems based on annual dose equivalent and committed dose equivalent for a nuclide of intermediate effective half-life. Health Phys 51:207-213.

Schlenker RA. 1988. Skeletal 212Pb retention following ^{224}Ra injection: Extrapolation of animal data to adult humans. Health Phys 54:383-396.

Schlenker RA, Keane AT, Unni KK. 1989. Comparison of radium-induced and natural bone sarcomas by histologic type, subject age and site of occurrence. Br J Radio1 21:55-62.

* Schlundt H, Nerancy JT, Morris JP. 1933. The detection and estimation of radium in living persons: IV. The retention of soluble radium salts administered intravenously. Am J Roentg Rad Therapy 30:515-522.

* Schoeters GE, Vanderborght OL. 1981. Temporal and spatial response of marrow colony-forming cells (CFU-S and CFU-c) after ^{226}Ra incorporation in BALB/c mice. Radiat Res 88:251-265.

Schoeters GE, Vanderborght OL. 1983. Relative effectiveness of 241Am ^{226}Ra approached by haemopoietic stem cell studies in various bone marrow sites of contaminated mice. Health Phys 44:555-570.

* Schoeters GE, Luz A, Vanderborght OL. 1983. ^{226}Ra induced bone-cancers: The effects of a delayed Na-alginate treatment. Int J Radiat Biol 43:231-247.

* Sebesta F, Benes P, Sedlacek J, et al. 1981. Behavior of radium and barium in a system including uranium mine waste waters and adjacent surface waters. Environ Sci Technol 15:71-75.

* Seil HA, Viol CH, Gordon MA. 1915. The elimination of soluble radium salts taken intravenously and per OS. NY Med J 101:896-898.

8. REFERENCES

* Sharpe WD. 1974. Chronic radium intoxication: clinical and autopsy findings in long-term New Jersey survivors. Environ. Res. 8:243-383.

Simon SL, Deming EJ. 1986. Time-dependent leaching of radium from leaves and soil. J Environ Qua1 15:305-308.

* Sonnabend E, Spiess H, Mays CW. 1986. Tooth breakage in patients injected with ^{224}Ra. Strahlentherapie [Sonderb] 80:60-64.

Sorahan T. 1985. Radium luminizers - selection effects [Letter]. J Occup Med 27:7.

Sorahan T. 1986. Radium luminizers [Letter]. J Occup Med 28:1202.

* Spencer H, Kramer L, Samachson J, et al. 1973. Intake and excretion patterns of naturally occurring radium-226 in humans. Radiat Res 56:354-369.

Spiers FW. 1988. Particle dosimetry in bone and the toxicity of boneseeking radionuclides. Phys Med Biol 33:395-411.

* Spiers FW, Lucas HF, Rundo J, et al. 1983. Leukaemia incidence in the U.S. dial workers. Health Phys 44 (Suppl 1):65-72.

* Spiess H, Mays CW. 1979. Liver diseases in patients injected with ^{224}Ra. Environ Res 18:55-60.

* Spiess H, Gerspach A, Mays CW. 1978. Soft-tissue effects following ^{224}Ra injections into humans. Health Phys 35:61-81.

* Spiess H, Mays CW, Spiess-Paulus E. 1985. Growth retardation in children injected with ^{224}Ra. Strahlentherapie [Sonderb] 80:45-50.

* Spiess H, Mays CW, Chmelevsky D. 1989. Malignancies in patients injected with ^{224}Ra. Br J Radio1 21:7-11.

* SRC (Syracuse Research Corporation). 1989. Toxicological profile for thorium. Report to Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Atlanta GA, by Syracuse Research Corporation, Syracuse, NY.

* Stebbings JH, Semkiw W. 1989. Central nervous system tumors and related intracranial pathologies in radium dial workers. Br J Radio1 21:63-66.

* Stebbings JH, Lucas HF, Stehney AF. 1984. Mortality from cancers of major sites in female radium dial workers. Am J Ind Med 5:435-459.

8. REFERENCES

Stebbings JH, Lucas HF, Toohey RE. 1986. Leukemia and radium groundwater contamination [Letter]. JAMA 255:902.

* Stefani FH, Spiess H, Mays CW. 1985. Cataracts in patients injected with ^{224}Ra. Strahlentherapie [Sonderb] 80:51-59.

Stehney AF. 1954. Radium and thorium X in some potable waters. Acta Radiologica 43:43-51.

* Stehney AF, Lucas HF. 1955. Studies on the radium content of humans arising from the natural radium of their environment. In: Proceedings of the international conference on peaceful uses of atomic energy. New York, NY: United Nations, l-13.

* Stehney AF, Norris WP, Lucas HF, et al. 1955. A method for measuring the rate of elimination of radon in breath. Am J Roentgenol, Rad Therapy and Nuclear Med 73:774-784.

* Stehney AF, Lucas HF, Rowland RE. 1978. Survival times of women radium dial workers first exposed before 1930. In: Late biological effects of ionizing radiation. Vol. I. Vienna, Austria: International Atomic Energy Agency, 333-351.

Sunshine I. 1983. Dr. Alexander 0. Gettler's documentation of a radiation hazard. Am J Forensic Med Path01 4:307-309.

* Swanson SM. 1983. Levels of ^{226}RA 210Pb To^{TALU} in fish near a Saskatchewan uranium mine and mill: Health Phys 45:67-80.

* Swanson SM. 1985. Food chain transfer of U-series radionuclides in a northern Saskatchewan aquatic system. Health Phys 49:747-770.

* Taylor GN, Dougherty TF, Mays CW, et al. 1972. Radium-induced eye melanomas in dogs. Radiat Res 51:361-373.

* Taylor GN, Mays CW, Lloyd RD, et al. 1983. Comparative toxicity of ^{226}Ra, ^{239}Pu, ^{241}AM, ^{249}Cf, and ^{252}Cf in C57BL/Do black and albino mice. Radiat Res'95:584-601.

* Teixeira, VS, Franc0 EP. 1986. Root uptake of exogenous radium-226 by three edible vegetables grown in farm soils from the vicinity of the first Brazilian uranium mine and mill [Abstract]. Chem Environ Proc Int Conf: 837-842. (CA 110: 7068b)

Tempel V, Mehler E, Berndt G. 1970. Multiple Plattenepithelkarzinome nach unkontrolliertem Gebrauch einer Radiumkompresse. Dermatol Monatsschr 156:115-119. (German)

8. REFERENCES

* Toohey RE, Keane AT, Rundo J. 1983. Measurement techniques for radium and the actinides in man at the center for human radiobiology [Abstract]. Health Phy 44:323-341. (CA 99: 60681b)

Tracy BL, Letourneau EG. 1986. Leukemia and radium groundwater contamination [Letter]. JAMA 255:3365.

* Tracy BL, Prantl FA, Quinn JM. 1983. Transfer of ^{226}Ra, ^{210}Pb, and uranium from soil to garden produce: Assessment of risk. Health Phys 44:469-477.

United Nations. 1971. Ionizing radiation: Levels and effects. New York, NY: United Nations.

United Nations. 1972. Ionizing radiation: Levels and effects. Vol 1: Levels. New York, NY: United Nations.

* Valentine RL, Mulholland TS, Splinter RC. 1987. Radium removal using sorption to filter sand. J AWWA (April):170-176.

Vaughan J. 1986. Carcinogenic effects of radiation on the human skeleton and supporting tissues. In: Upton AC, Albert RE, Burns FJ, et al., eds. Radiation carcinogenesis. New York, NY: Elsevier Science Publishing Co., 311-334.

VIEW Database. 1989. Agency for Toxic Substances and Disease Registry (ATSDR), Office of External Affairs, Exposure and Disease Registry Branch, Atlanta, GA. June 20, 1989. (Map based on VIEW Database, June 12, 1989)

* Walton A, Kologrivov, Kulp JL. 1959. The concentration and distribution of radium in the normal human skeleton. Health Phys 1:409-416.

* Watson AP, Etnier EL, McDowell-Boyer LM. 1984. Radium-226 in drinking water and terrestrial food chains: Transfer parameters and normal exposure and dose. Nuclear Safety 25:815-829.

Weant GE, McCormick GS. 1984. Nonindustrial sources of potentially toxic substances and their applicability to source apportionment methods. Research Triangle Park, NC: U. S. Environmental Protection Agency (MD 14). EPA-450/4-84-003. NTIS No. PB84-231232.

* Weast RC, ed. 1985. CRC handbook of chemistry and physics: A ready-reference book of chemical and physical data. 66th ed. Boca Raton, FL: CRC Press, Inc., B-133.

8. REFERENCES

Whittaker EL. 1986. Test procedure for gross alpha particle activity in drinking water: Interlaboratory collarobrative study. Las Vegas, NV: U.S. Environmental Protection Agency, Environmental Systems Laboratory, EPA/600/S4-86/027.

* WHO. 1984. Radioactive materials in drinking water. In: Guidelines for drinking-water quality. Vol. I: Recommendations. Geneva, Switzerland: World Health Organization, 103-108.

* Wick RR, Gossner W. 1983. Follow-up study of late effects in ^{224}Ra treated ankylosing spondylitis patients. Health Phys 44:187-195.

* Wick RR, Gossner W. 1989. Recent results of the follow-up of radium-224 treated ankylosing spondylitis patients. Br J Radio1 21:25-28.

* Wick RR, Chmelevsky D, Gossner W. 1986. ^{224}Ra: Risk to bone and haematopietic tissue in ankylosing spondylitis patients. Strahlentherapie [Sonderb] 80:38-44.

* Windholz M, ed. 1983. The Merck index: An encyclopedia of chemicals, drugs, and biologicals. 10th ed. Rahway, NJ: Merck and Company, Inc., 1170-1171.

Wishart DL. 1986. Leukemia and radium groundwater contamination [Letter]. JAMA 255:901-902.

* Wrenn ME, Taylor GN, Stevens W, et al. 1986. Summary of dosimetry, pathology, and dose response for bone sarcomas in beagles injected with radium-226. In: Thompson RC, Mahaffey JA, eds. Life span radiation effects studies in animals: What can they tell us? Washington, DC: U.S. Department of Energy, Office of Scientific and Technical Information. CONF-830951.

* Wrenn ME, Durbin PW, Willis DL, et al. 1987. The potential toxicity of uranium in water. J AWWA (April):177-181.