

ACCESSION NUMBER: 0046

DOCUMENT TYPE: SA

TITLE: Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement

ORIG. DOC. NO.: DOEIS0229

DOCUMENT DATE: 961200

ORIGINATING AGENCY: Department of Energy

PAGES: 3841

REEL: **FRAME:**

AUTHORS: Department of Energy Office of Fissile Materials Disposition

ABSTRACT: Volumes I, IIa, IIb, III, IVa, IVb, Summary, and Record of Decision. This document analyzes the potential environmental consequences of alternatives for the long-term storage (up to 50 years) and disposition of weapons-usable fissile materials from U.S. nuclear weapons dismantlements under the responsibility of the U.S. Department of Energy. Long-term storage of nonsurplus inventories of weapons-usable plutonium (Pu) and highly enriched uranium (HEU) are required for national defense purposes, while the disposition of weapons-usable Pu declared surplus to defense needs by the President is necessary in order to implement our national nonproliferation policy. In addition to the No Action Alternative, this Draft PEIS assesses three long-term storage alternatives (that is, upgrade at multiple sites, consolidation of Pu, and collocation of Pu and HEU) at six DOE candidate sites located across the country. These sites are Hanford Site, Nevada Test Site, Idaho National Engineering Laboratory, Pantex Plant, Oak Ridge Reservation, and Savannah River Site. Although not a candidate site for long-term storage, Rocky Flats Environmental Technology Site is assessed for the No Action Alternative. For the disposition of surplus Pu, three alternative categories (that is, deep borehole, immobilization, and reactor) with nine primary alternatives are assessed. Because only a disposition technology strategy and no disposition sites will be selected, generic and representative sites were used for analysis purposes. Evaluations of impacts on site infrastructure, water resources, air quality and noise, socioeconomics, waste management, public and occupational health and safety, and environmental justice are included in the assessment. The intersite transportation of nuclear and hazardous materials is also assessed. DOE's Preferred Alternative is identified in this Final PEIS. The Preferred Alternative for storage is a combination of No Action and Upgrade Alternatives for the various DOE sites, and phaseout of Pu storage at RFETS. The Preferred Alternative for disposition of surplus Pu is to pursue a disposition strategy involving a combination of immobilization and reactor alternatives, including vitrification, ceramic immobilization, and existing reactors.

KEYWORDS: FISSILE MATERIALS, PLUTONIUM, HIGHLY ENRICHED URANIUM, DISPOSITION, CANADIAN DEUTERIUM URANIUM, LONG-TERM STORAGE, ALTERNATIVES, CERAMIC IMMOBILIZATION, DEEP BOREHOLE, WASTE MANAGEMENT, TRANSPORTATION, ENVIRONMENTAL EFFECTS, JUSTICE, HEALTH RISKS, SAFEGUARDS, MIXED OXIDE FUEL, LIGHT WATER REACTOR, VITRIFICATION, PUBLIC RESPONSE, LAND RESOURCES, INFRASTRUCTURE, AIR QUALITY, NOISE, WATER RESOURCES, GEOLOGY, BIOLOGICAL RESOURCES, CULTURAL RESOURCES, PALEONTOLOGY, SOCIOECONOMICS

CROSSINDEX:

PROVENANCE:

LOCATIONS: Hanford Site, Richland, WA; Nevada Test Site, Nye County, NV; Idaho National Engineering Laboratory, Idaho Falls, ID; Pantex Plant, Amarillo, TX; Oak Ridge Reservation, Oak Ridge, TN; Savannah River Site, Aiken, SC; Rocky Flats Environmental Technology Site, Golden, CO; Los Alamos National Laboratory, Los Alamos, NM

ACCESSION NUMBER: 0047

DOCUMENT TYPE: SA

TITLE: Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement

ORIG. DOC. NO.: DOEEIS0240

DOCUMENT DATE: 960600

ORIGINATING AGENCY: Department of Energy

PAGES: 0944

REEL: FRAME:

AUTHORS: Department of Energy Office of Fissile Materials Disposition

ABSTRACT: Volumes I, II, and Summary. This document assesses the environmental impacts that may result from alternatives for the disposition of U.S.-origin weapons-usable highly enriched uranium (HEU) that has been or may be declared surplus to national defense or defense-related program needs. In addition to the No Action Alternative, it assesses four alternatives that would eliminated the weapons-usability of HEU by blending it with depleted uranium, natural uranium, or low-enriched uranium (LEU) to create LEU, either as commercial reactor fuel feedstock or as low-level radioactive waste. The potential blending sites are DOE's Y-12 Plant at the Oak Ridge Reservation in Oak Ridge, Tennessee; DOE's Savannah River Site in Aiken, South Carolina; the Babcock & Wilcox Naval Nuclear Fuel Division Facility in Lynchburg, Virginia; and the Nuclear Fuel Services Fuel Fabrication Plant in Erwin, Tennessee. Evaluations of impacts at the potential blending sites on site infrastructure, water resources, air quality and noise, socioeconomic resources, waste management, public and occupational health, and environmental justice are included in the assessment. The intersite transportation of nuclear and hazardous materials is also assessed. The Preferred Alternative is blending down as much of the surplus HEU to LEU as possible while gradually selling the commercially usable LEU for use as reactor fuel. DOE plans to continue this over an approximate 15- to 20-year period, with continued storage of the HEU until blend down is completed.

KEYWORDS: URANIUM, BLENDING, STORAGE, DISPOSITION, WASTE MANAGEMENT, TRANSPORTATION, ENVIRONMENTAL EFFECTS, HEALTH RISKS, SOCIOECONOMICS, BIOTIC RESOURCES, PUBLIC RESPONSE, NONPROLIFERATION

CROSSINDEX:

PROVENANCE:

LOCATIONS: Y-12 Plant, Oak Ridge Reservation, Oak Ridge, TN; Savannah River Site, Aiken, SC; Babcock & Wilcox Site, Lynchburg, VA; Nuclear Fuel Services, Inc., Erwin, TN

ACCESSION NUMBER: 0048

DOCUMENT TYPE: RT

TITLE: Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement: Public Meeting Comment Summary Report

ORIG. DOC. NO.: DOEMD0003

DOCUMENT DATE: 950117

ORIGINATING AGENCY: Department of Energy

PAGES: 0033

REEL: FRAME:

AUTHORS: Department of Energy Office of Fissile Materials Disposition

ABSTRACT: Pursuant to the *National Environmental Policy Act* (NEPA) of 1969, as amended, the Office of Fissile Materials Disposition held two public meetings to solicit written and oral comments on the HEU EIS. In place of the traditional formal hearings typically used, the Office used an interactive workshop format to stimulate discussions on issues raised by the meeting participants. Notetakers captured the essence of these discussions during each phase of the workshop. A variety of other methods were also available at the meetings for submitting comments including forms for composing written comments; telephones with instructions on using a toll-free number to record oral comments; a laptop computer for accessing the program's electronic bulletin board system to transmit written comments; and a photocopier for making copies of notes or document mark-ups (i.e., notes on pages of the draft HEU EIS).

KEYWORDS: PUBLIC RESPONSE, URANIUM, STORAGE, DISPOSITION

CROSSINDEX:

PROVENANCE:

LOCATIONS: Y-12 Plant, Oak Ridge Reservation, Oak Ridge, TN; Savannah River Site, Aiken, SC; Babcock & Wilcox Site, Lynchburg, VA; Nuclear Fuel Services, Inc., Erwin, TN

ACCESSION NUMBER: 0049

DOCUMENT TYPE: RT

TITLE: Record of Decision for the Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement

ORIG. DOC. NO.:

DOCUMENT DATE: 960729

ORIGINATING AGENCY: Department of Energy

PAGES: 0035

REEL: FRAME:

AUTHORS: Department of Energy

ABSTRACT: The Department of Energy (DOE) has decided to implement a program to make surplus highly enriched uranium (HEU) non-weapons-usable by blending it down to low-enriched uranium (LEU), as specified in the Preferred Alternative in the Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement (HEU Final EIS, DOEIS0240, June 1996). DOE will gradually sell up to 85% of the resulting LEU over time for commercial use as fuel feed for nuclear power plants to generate electricity (including 50 metric tons of HEU and 7000 tons of natural uranium that will be transferred to the United States Enrichment Corporation), and will dispose of the remaining LEU as low-level radioactive waste. This program applies to a nominal 200 metric tons of United States-origin HEU that the President has declared, or may declare, surplus to defense needs. The purposes of this program are to support the United States' nuclear weapons nonproliferation policy by reducing global stockpiles of excess weapons-usable fissile materials, and to recover the economic value of the materials to the extent feasible.

KEYWORDS: URANIUM, BLENDING, STORAGE, DISPOSITION, WASTE

MANAGEMENT, TRANSPORTATION, ENVIRONMENTAL EFFECTS, HEALTH RISKS, SOCIOECONOMICS, BIOTIC RESOURCES, PUBLIC RESPONSE, NONPROLIFERATION

CROSSINDEX:

PROVENANCE:

LOCATIONS: Y-12 Plant, Oak Ridge Reservation, Oak Ridge, TN; Savannah River Site, Aiken, SC; Babcock & Wilcox Site, Lynchburg, VA; Nuclear Fuel Services, Inc., Erwin, TN

ACCESSION NUMBER: 0050

DOCUMENT TYPE: RT

TITLE: Assessment of Radioactive Releases to the Environment Due to the Incorporation of Tritium Targets into an Advanced Light Water Reactor to Produce Tritium

ORIG. DOC. NO.:

DOCUMENT DATE: 951000

ORIGINATING AGENCY: Department of Energy Office of Reconfiguration

PAGES: 0058

REEL: FRAME:

AUTHORS: Tetra Tech, Halliburton NUS, SRA Technologies, Maxwell S-Cubed, and Lamb Associates

ABSTRACT: This report attempts to adjust the radioactive releases from the publicly available information in the Safety Analysis Reports (SAR) to account for the effects of adding tritium targets into the reactor core to produce tritium. This report separates the four reactors into two groups by power level. A low-powered group consists of the Westinghouse 600 Megawatt (MWe) electric Pressurized Water Reactor (PWR), known as the AP600, and the General Electric 600 MWe Simplified Boiling Water Reactor (SBWR). While the high-powered group consists of the Asea Brown Boveri 1,100 MWe PWR, known as the System 80+, and the General Electric 1100 MWe Advanced Boiling Water Reactor (ABWR). Dose assessments for normal operations were performed as an aid to determine which reactor's releases would yield the higher impacts in each of the two groups. In the dose assessments, it was conservatively assumed that tritium, once released into the environment, would be in the oxide form. This form was assumed since it will yield doses over four orders of magnitude greater than the doses from elemental tritium, on a per curie inhaled basis.

KEYWORDS: RADIOLOGICAL RELEASES, ADVANCED LIGHT WATER REACTOR, BOILING WATER REACTOR, SAFEGUARDS

CROSSINDEX:

PROVENANCE:

LOCATIONS:

ACCESSION NUMBER: 0051

DOCUMENT TYPE: PT

TITLE: RCRA Part B Permit Application For Waste Management Activities at the Nevada Test Site

ORIG. DOC. NO.:

DOCUMENT DATE: 920700

ORIGINATING AGENCY: Department of Energy Nevada Operations Office

PAGES: 2000

REEL: FRAME:

AUTHORS:

ABSTRACT: Volumes I - IV. Permits for waste management activities at the Nevada Test Site; facility description and maps; explanation of waste characteristics; list of potential low-level mixed waste generators; safety data sheets; hazardous waste samples; groundwater monitoring; procedures to prevent hazards; process information; contingency plans; personnel training; closure and part closure plans; federal laws; certification; potential solid waste management units; exposure information report; compliance schedule.

KEYWORDS: WASTE MANAGEMENT, TRANSPORTATION, GENERATORS, ENVIRONMENTAL EFFECTS, HEALTH RISKS, EMPLOYEE TRAINING, HAZARDOUS WASTES

CROSSINDEX:

PROVENANCE:

LOCATIONS: Nevada Test Site, Nye County, NV

ACCESSION NUMBER: 0052

DOCUMENT TYPE: PT

TITLE: RCRA Part B Permit Application For Waste Management Activities at the Nevada Test Site Additional Units

ORIG. DOC. NO.:

DOCUMENT DATE: 950100

ORIGINATING AGENCY: Department of Energy Nevada Operations Office

PAGES: 0200

REEL: FRAME:

AUTHORS:

ABSTRACT: Volume V. Permit applications; mixed waste storage unit description and maps; waste characteristics; process information and operations; release response; hazards prevention; training requirements; closure plans; compliance schedule; construction drawing; NTS acceptance criteria for storage of mixed waste; manufacturers' literature.

KEYWORDS: WASTE MANAGEMENT, STORAGE, SAFEGUARDS, MIXED WASTE, TRAINING, ENVIRONMENTAL EFFECTS

CROSSINDEX:

PROVENANCE:

LOCATIONS: Nevada Test Site, Nye County, NV

ACCESSION NUMBER: 0053

DOCUMENT TYPE: PN

TITLE: Mitigation Action Plan for the Implementation of a Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel

ORIG. DOC. NO.:

DOCUMENT DATE: 960800

ORIGINATING AGENCY: Department of Energy

PAGES: 0004

REEL: FRAME:

AUTHORS: Department of Energy Office of Environmental Management

ABSTRACT: The U.S. Department of Energy (DOE) and the Department of State jointly issued the *Final Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (DOEEIS218F) on February 23, 1996. The Record of Decision (ROD) establishing the policy was published in the Federal Register on May 17, 1996. As specified in the ROD, approximately 19.2 metric tons of spent nuclear fuel and approximately 0.6 metric tons of target material are expected to be received and managed at DOE's Savannah River Site in South Carolina and the Idaho National Engineering Laboratory in Idaho. A maximum of approximately 150 to 300 shipments through the Charleston Naval Weapons Station in South Carolina and five shipments through the Concord Naval Weapons Station in California will be accepted. Most of the target material and some of the spent nuclear fuel will be received overland from Canada. In compliance with 10 CFR 1021.331, this document sets forth a Mitigation Action Plan to reduce the likelihood of potential adverse environmental impacts associated with the policy established in the ROD in accordance with Section VIII.B of the ROD.

KEYWORDS: NUCLEAR FUEL, STORAGE, DISPOSITION, WEAPONS
NONPROLIFERATION, HEALTH RISKS, ENVIRONMENTAL EFFECTS

CROSSINDEX:

PROVENANCE:

LOCATIONS: Savannah River Site, Aiken, SC; Idaho National Engineering Laboratory, Idaho Falls, ID; Charleston Naval Weapons Station, SC; Concord Naval Weapons Station, CA

ACCESSION NUMBER: 0054

DOCUMENT TYPE: RT

TITLE: Completion Report: Kismet Experiment/Exercise

ORIG. DOC. NO.:

DOCUMENT DATE: 950602

ORIGINATING AGENCY: Department of Energy

PAGES: 0358

REEL: FRAME:

AUTHORS: Department of Energy Nevada Operations Office and Los Alamos National Laboratory

ABSTRACT: KISMET, a Los Alamos National Laboratory (LANL) experiment conducted on March 1, 1995, was the first in a series of high explosive (HE) experiments to be conducted in the U1a "Lyner" underground test complex at the Nevada Test Site. The purpose of this experiment was to verify the Lyner complex design and operation, develop underground imaging techniques, proof test the new Fiber Optic Firing System, investigate the distribution of heavy metal through the native alluvium, and exercise the skill of the Key and Critical Position personnel necessary to safely support nuclear testing.

KEYWORDS: UNDERGROUND TESTING, HIGH EXPLOSIVES, LAND EFFECTS,
IMAGING SYSTEMS, SAFEGUARDS, RADIOLOGY

CROSSINDEX:

PROVENANCE:

LOCATIONS: Los Alamos National Laboratory, Los Alamos, NM; Nevada Test Site, Nye County, NV

ACCESSION NUMBER: 0055

DOCUMENT TYPE: TB

TITLE: Supplemental Socioeconomic Data Report: Storage and Disposition of Weapons-Usable Fissile Materials PEIS

ORIG. DOC. NO.:

DOCUMENT DATE: 960200

ORIGINATING AGENCY: Department of Energy and U.S. Bureau of Economic Analysis

PAGES: 0270

REEL: FRAME:

AUTHORS:

ABSTRACT: This supplemental report provides the supporting data used to assess potential impacts to the regional economy, population, housing and community services. The report consists of tables showing the percent change from No Action projections resulting from the proposed Storage and Disposition alternatives at each of the sites analyzed.

KEYWORDS: FISSILE MATERIALS, STORAGE, DISPOSITION, ECONOMY, POPULATION, COMMUNITY EFFECTS, SOCIOECONOMICS, FINANCE

CROSSINDEX:

PROVENANCE:

LOCATIONS: Nevada Test Site, Nye County, NV; Hanford Site, Richland, WA; Idaho National Engineering Laboratory, Idaho Falls, ID; Pantex Plant, Amarillo, TX; Oak Ridge Reservation, Oak Ridge, TN; Savannah River Site, Aiken, SC; Rocky Flats Environmental Technology Site, Golden, CO

ACCESSION NUMBER: 0056

DOCUMENT TYPE: RT

TITLE: Calculation of Avoided Human Health Impacts from the Uranium Fuel Cycle by Blending Weapons-Usable Fissile Materials (Plutonium and Highly Enriched Uranium) for Use as Replacement Reactor Fuel

ORIG. DOC. NO.:

DOCUMENT DATE: 960300

ORIGINATING AGENCY: Department of Energy Office of Fissile Materials Disposition

PAGES: 0030

REEL: FRAME:

AUTHORS: Tan Z R, Blauer H M

ABSTRACT: One of the proposed disposition technologies in the *Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement* (Storage and Disposition PEIS) is to blend the surplus Pu with the depleted uranium to produce mixed oxide (MOX) fuel which replaced uranium dioxide fuel in commercial nuclear power plants. In the Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement (HEU EIS), DOE proposes to blend HEU to low-enriched uranium (LEU) for use in commercial nuclear fuels. In the alternatives for converting Pu and HEU to the commercial nuclear fuels, part of the current nuclear fuel cycle in commercial nuclear power plants can be replaced. This report estimates the human health risk from the current uranium fuel cycle for operating light water reactors (LWRs) in the United States. These estimates are used to compare the human health risk from the weapons-usable fissile materials disposition programs. These comparisons could reveal if the proposed disposition alternative would produce net adverse human health impacts or avoid

adverse human health impacts when part of the current fuel cycle is replaced by the proposed weapons-usable fissile materials disposition alternatives. The information in this report supports the avoided human health impact conclusions in the Storage and Disposition PEIS and the HEU EIS.

KEYWORDS: PLUTONIUM, URANIUM, STORAGE, DISPOSITION, HEALTH RISKS, MIXED OXIDE FUEL, LIGHT WATER REACTORS, RADIONUCLIDES, MINING, MILLING, CONVERSION, ENRICHMENT, FUEL FABRICATION

CROSSINDEX:

PROVENANCE:

LOCATIONS:

ACCESSION NUMBER: 0057

DOCUMENT TYPE: PN

TITLE: Resource Conservation and Recovery Act Industrial Site Environmental Restoration Closure Plan - Area 2 Bitcutter and Postshot Containment Shops Injection Wells

ORIG. DOC. NO.: DOENV427

DOCUMENT DATE: 960500

ORIGINATING AGENCY: Department of Energy Nevada Operations Office

PAGES: 0065

REEL: FRAME:

AUTHORS: Department of Energy Nevada Operations Office Environmental Restoration Division

ABSTRACT: This plan addresses the closure of the Bitcutter and Postshot Containment Shop injection wells in which hazardous wastes were disposed of for several years during the early 1980s. The wells are located in Area 2 of the U.S. Department of Energy's (DOE) Nevada Test Site (NTS) (see Figures 1-1 and 1-2), a DOE research and development facility in Nye County, Nevada. The NTS is located approximately 88 km (55 mi) northwest of Nye County, the major population center in the area. The DOE Nevada Operations Office (DOE/NV) plans no further disposal activities at the units and intends to close them in accordance with the Resource Conservation and Recovery Act (RCRA) closure requirements. This plan contains the elements required by *Title 40 of the Code of Federal Regulations* (CFR) Part 265, Subpart G, as cited in the Nevada Division of Environmental Protection (NDEP) hazardous waste management permit for the NTS (NDEP, 1995) and is subject to its requirements. Also included are elements of the Nevada regulations pertaining to the closure of hydrocarbon contamination sites (i.e., Nevada Administrative Code 459.9973). Regulatory citations have been included with the plan section headings for reference. The included citations are primarily to the federal regulations since they have been incorporated by reference in the Nevada hazardous waste regulations (NAC 444.8632).

KEYWORDS: NEVADA TEST SITE, HAZARDOUS WASTES, DISPOSAL, HYDROCARBON CONTAMINATION, ENVIRONMENTAL PROTECTION

CROSSINDEX:

PROVENANCE:

LOCATIONS: Nevada Test Site, Nye County, NV

ACCESSION NUMBER: 0058

DOCUMENT TYPE: SU

TITLE: Summary of Hydrogeologic Controls on Ground-Water Flow at the Nevada Test Site, Nye County, Nevada

ORIG. DOC. NO.:

DOCUMENT DATE: 960000

ORIGINATING AGENCY: Department of the Interior with the Department of Energy

PAGES: 0059

REEL: FRAME:

AUTHORS: Laczniak R J, Cole J C, Sawyer D A, Trudeau D A

ABSTRACT: The underground testing of nuclear devices has generated substantial volumes of radioactive and other chemical contaminants below ground at the Nevada Test Site (NTS). Many of the more radioactive contaminants are highly toxic and are known to persist in the environment for thousands of years. In response to concerns about potential health hazards, the U.S. Department of Energy, under its Environmental Restoration Program, has made NTS the subject of a long-term investigation. Efforts supported through the U.S. Department of Energy program will assess whether byproducts of underground testing pose a potential hazard to the health and safety of the public and, if necessary, will evaluate and implement steps to remediate any of the identified dangers. Any assessment of the risk must rely in part on the current understanding of ground-water flow, and the assessment will be only as good as the understanding itself. This report identifies and updates what is known about some of the major controls on ground-water flow, highlights some of the uncertainties in the current understanding, and prioritizes some of the technical needs as related to the Environmental Restoration Program. An apparent deficiency in the current understanding is a lack of knowledge about flow directions and rates away from major areas of testing. Efforts are necessary to delineate areas of down-gradient flow and to identify factors that constrain and control flow within these areas. These efforts also should identify the areas most critical to gaining detailed understanding and to establishing long-term monitoring sites necessary for effective remediation. Maps included.

KEYWORDS: HYDROLOGY, GEOLOGY, UNDERGROUND TESTING, HEALTH RISKS, ENVIRONMENTAL EFFECTS, RADIOACTIVITY, TOXIC WASTE

CROSSINDEX:

PROVENANCE:

LOCATIONS: Nevada Test Site, Nye County, NV; Ash Meadows Subbasin, Nye County, NV; Oasis Valley Subbasin, Nye County, NV; Alkali Flat-Furnace Creek Ranch Subbasin, Nye County, NV; Yucca Flat, Nye County, NV; Frenchman Flat, Nye County, NV; Pahute Mesa, Nye County, NV; Rainier Mesa, Nye County, NV

ACCESSION NUMBER: 0059

DOCUMENT TYPE: DD, RT

TITLE: International Radiobiology Archives of Long-Term Animal Studies - Volume I: Descriptions of Participating Institutions and Studies

ORIG. DOC. NO.: DOERL9672; EUR16954

DOCUMENT DATE: 960700

ORIGINATING AGENCY: Department of Energy

PAGES: 0464

REEL: FRAME:

AUTHORS: Gerber G B, Watson C R, Sugahara T, Okada S

ABSTRACT: This document, "Long-Term Animal Studies in Radiobiology, I. Descriptions of

Participating Institutions and Studies," describes archived radiobiology studies. This document has three major divisions, introductory material, and four indexes. The bulk (>400 pages) of the document is devoted to descriptions of individual studies. The study descriptions are presented in a stylized format in which the following topics are presented: Study Identification (number and title); Institution - the institution name; Scientists - List of principal scientists and their working status; Purpose - Brief statement of the problem to be solved by the study; Status - State of completion of the study and/or availability of archival material; Treatment - Brief summary of treatment(s) applied to animals; Dosimetry - Short description of the dosimetric techniques used; Endpoints - Description of biological changes observed; Animal - Number and species/strain of animal employed; Results - Brief summary of significant findings; References - Bibliographic citations of significant publications; Experimental Groups - Tabulation of the experimental design, with archival group identification numbers.

KEYWORDS: ANIMAL EXPERIMENTATION, RADIOLOGY, RADIOACTIVE CHEMICALS

CROSSINDEX:

PROVENANCE:

LOCATIONS: Europe: AEA Environment & Technology Harwell Laboratory; Commissariat a l'Energie Atomique, Centre d'Etudes Nucleaires de Fonteney-aux-Roses; ENEA Laboratory of Pathology, Casaccia-Rome; DKFZ Deutsches Kernforschungszentrum; GSF Forshchungszentrum fur Umwelt und Gesundheit; KFK Kernforschungszentrum Karlsruhe; Medical Research Council, Radiobiology Unit; NPRB National Radiological Protection Board; SCK/CEN Studiecentrum voor Kernenergie, Centre d'Etude de l'Energie Nucleaire; St. Bartholomew Medical College, London; TNO Organisatie Natuurwetenschappelijk Onderzoek, Centre Radiological Protection & Dosimetry, Rijswijk; Universitat Freiburg, Institut fur Biophysik und Strahlenbiologie; Agricultural University, Department of Pathology, Uppsala / National Defense Research Institute Sundbyberg; URCRM Ural Research Center of Radiation Medicine; EULEP European Late Effect Project Group; University of Oxford, CRC Normal Tissue Radiobiology Research Group; Universitat Ulm, Institut fur Arbeits und Sozialmedizin; Dr. Daniel den Hoed Cancer Centre, Rotterdam. North America: University of Utah, UT; University of California at Davis, CA; Argonne National Laboratory, Argonne, IL; Pacific Northwest Laboratory, Richland, WA; Inhalation Toxicology Research Institute; Ernst O. Lawrence Berkeley Laboratory; Oak Ridge National Laboratory, Oak Ridge, TN; CETT/CRHL Colorado State University, CO; Brookhaven National Laboratory; University of Rochester; Atomic Energy of Canada Ltd. Chalk River. Japan: National Institute of Radiological Sciences, Chiba; Institute for Environmental Sciences, Rokkasho-Mura, Aomori; Hokkaido University, Department of Environmental Veterinary Medicine, Laboratory of Radiation Biology, Hokkaido; Tohoku University, Department of Radiation Research, Sendai; The University of Tokyo, Faculty of Medicine, Department of Radiation Biophysics and Radiological Health, Tokyo; Research Institute of Environmental Medicine, Nagoya University, Nagoya; Shiga University of Medical Sciences, Department of Experimental Radiology, Shiga; Nara Medical University, Kashihara, Nara; Osaka University, Faculty of Medicine, Department of Radiation Biology, Osaka; Osaka Prefecture University, Research Institute of Advanced Science and Technology, Department of Applied Biological Sciences, Osaka; Hiroshima University, Research Institute for Radiation Biology and Medicine, Hiroshima.

