Sample search in the INIS Bibliography on: uses of depleted uranium

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date of search: February 2001

	No.	Records	Request
	1	769	"DEPLETED-URANIUM" in DE
	2	24036	explode "USES"
	3	126	explode "TECHNOLOGY-UTILIZATION"
	4	24156	#2 or #3
	5	4982	depleted
	6	228957	uranium
*	7	36	(#1 or (depleted adj uranium)) and #4

Record 1 of 36 - INIS 1997-2000/09

TI: Beneficial Uses of Depleted Uranium
AU: Brown,-C. (U.S. Department of Energy, Germantown, MD (United States)); Croff,-A.G.; Haire,-M.-J. (Oak Ridge National Lab., TN (United States)
CA: Oak Ridge National Lab., TN (United States)
Beneficial Reuse '97: 5. annual conference on the recycle and reuse of radioactive scrap metal Knoxville, TN (United States) 5-7 Aug 1997
FUNDING ORGANIZATION: USDOE Assistant Secretary for Nuclear Energy, Washington, DC (United States)
SO: Aug 1997 16 p.
NT: Available from INIS in electronic form; ALSO AVAILABLE FROM OSTI AS DE97008555; NTIS; INIS; US GOVT. PRINTING OFFICE DEP.
RN: CONF-970830--1 (CONF9708301); Contract AC05-96OR22464 (AC0596OR22464)
PY: 1997
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: Naturally occurring uranium contains 0.71 wt% sup 2 sup 3 sup 5 U. In order for the uranium to be useful in most fission reactors, it must be enriched the concentration of the fissile isotope sup 2 sup 3 sup 5 U must be increased. Depleted uranium (DU) is a co-product of the processing of natural uranium to produce enriched uranium, and DU has a sup 2 sup 3 sup 5 U concentration of less than 0.71 wt%. In the United States, essentially all of the DU inventory is in the chemical form of uranium hexafluoride (UF sub 6) and is stored in large cylinders above ground. If this co-product material were to be declared surplus, converted to a stable oxide form, and disposed, the costs are estimated to be several billion dollars. Only small amounts of DU have at this time been beneficially reused. The U.S. Department of Energy (DOE) has begun the Beneficial Uses of DU Project to identify large-scale uses of DU and encourage its reuse for the primary purpose of potentially reducing the cost and expediting the disposition of the DU inventory. This paper discusses the inventory of DU and its rate of increase; DU disposition options; beneficial use options; a preliminary cost analysis; and major technical, institutional, and regulatory issues to be resolved.
DEI: enriched-uranium; inventories-; isotope-separation; nuclear-fuels; uranium-235; uranium-hexafluoride; uses-
DEC: actinide-compounds; actinide-nuclei; actinides-; alpha-decay-radioisotopes; elements-; energy-sources; even-odd-nuclei; fluorides-; fluorine-compounds; fuels-; halides-; halogen-compounds; heavy-nuclei; internal-conversion-radioisotopes; isomeric-transition-isotopes; isotope-enriched-

materials; isotopes-; materials-; metals-; minutes-living-radioisotopes; nuclei-; radioisotopes-; reactor-materials; separation-processes; spontaneous-fission-radioisotopes; uranium-; uranium-compounds; uranium-fluorides; uranium-isotopes; years-living-radioisotopes
CC: D1100; F1300
C1: D1100
CD: Production-of-Enriched-Uranium; Economics-of-Isotopes-and-Radiation-Applications
UD: 3021
AN: 30-022606

Record 2 of 36 - INIS 1997-2000/09

TI: Depleted uranium oxides as spent-nuclear-fuel waste-package invert and backfill materials.
AU: Forsberg,-C.W.; Haire,-M.J.
CA: Oak Ridge National Lab., TN (United States).
US Department of Energy depleted uranium workshop. Las Vegas, NV (United States). 15 Jul 1997.
FUNDING ORGANIZATION: USDOE Assistant Secretary for Nuclear Energy, Washington, DC (United States).
SO: 7 Jul 1997. 8 p.
NT: Available from INIS in electronic form and/or on microfiche ; Also available from OSTI as DE97008241; NTIS; US Govt. Printing Office Dep.
RN: CONF-970793--2 (CONF9707932); Contract AC05-96OR22464 (AC0596OR22464)
PY: 1997
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: A new technology has been proposed in which depleted uranium, in the form of oxides or silicates, is placed around the outside of the spent nuclear fuel waste packages in the geological repository. This concept may (1) reduce the potential for repository nuclear criticality events and (2) reduce long-term release of radionuclides from the repository. As a new concept, there are significant uncertainties.
DEI: backfilling-; depleted-uranium; packaging-; radioactive-waste-facilities; spent-fuel-storage; uranium-oxides; uranium-silicates; uses-
DEC: actinide-compounds; actinides-; chalcogenides-; elements-; metals-; nuclear-facilities; oxides-; oxygen-compounds; silicates-; silicon-compounds; storage-; uranium-; uranium-compounds
CC: E5200; E1510
C1: E5200
CD: Waste-Disposal; Transport-and-storage
UD: 2908
AN: 29-015247

Record 3 of 36 - INIS 1997-2000/09

TI: Depleted uranium oxides as spent-nuclear-fuel waste-package fill materials.
AU: Forsberg,-C.W.
CA: Oak Ridge National Lab., TN (United States).
US Department of Energy depleted uranium workshop. Las Vegas, NV (United States). 15 Jul 1997.
FUNDING ORGANIZATION: USDOE Assistant Secretary for Nuclear Energy, Washington, DC (United States).
SO: 7 Jul 1997. 21 p.

NT: Available from INIS in electronic form and/or on microfiche ; Also available from OSTI as DE97008242; NTIS; US Govt. Printing Office Dep.
RN: CONF-970793--1 (CONF9707931); Contract AC05-96OR22464 (AC0596OR22464)
PY: 1997
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: Depleted uranium dioxide fill inside the waste package creates the potential for significant improvements in package performance based on uranium geochemistry, reduces the potential for criticality in a repository, and consumes DU inventory. As a new concept, significant uncertainties exist: fill properties, impacts on package design, post- closure performance.
DEI: backfilling-; depleted-uranium; fillers-; packaging-; radioactive-waste-facilities; spent-fuel-storage; uranium-dioxide; uses-
DEC: actinide-compounds; actinides-; chalcogenides-; elements-; metals-; nuclear-facilities; oxides-; oxygen-compounds; storage-; uranium-; uranium-compounds; uranium-oxides
CC: E5200; E1510
C1: E5200
CD: Waste-Disposal; Transport-and-storage
UD: 2908
AN: 29-015246

Record 4 of 36 - INIS 1997-2000/09

TI: Depleted uranium: valuable energy source or waste for disposal?.
AU: Lindholm,-I.
CA: 21. annual symposium on uranium and nuclear energy: 1996. London (United Kingdom). 5-6 Sep 1996.
SO: Uranium Inst., London (United Kingdom). Uranium and nuclear energy: 1996. Proceedings. London (United Kingdom). The Uranium Institute. 1996. 237 p. p. 91-95.
PY: 1996
LA: English
CI: United-Kingdom
PT: B (Book); K (Conference)
AB: Depleted uranium (DU) arises at enrichment facilities. Details of the current capacity of these facilities, their stocks of DU, annual arisings and storage form are given. In many plants it is stored as UF sub 6 on a long-term basis. When newly produced, its radioactivity and radiotoxicity is very low. These both build up over time, however, as decay products appear. Its radiotoxicity will always be less, though, than that of an equivalent amount of uranium contained in naturally occurring ore. The chemitoxicity of DU metal is slightly less than that of lead. Mixed with the weapons related high enriched uranium or plutonium it can provide fuel for light water reactors (LWRs) and provide an effective way of reducing proliferation risks. It is contained in some fuel rods in Candu reactors and LWRs and is being used as a blanket in some fast reactors. There is also potential for re-enriching DU to produce low enriched uranium for the fabrication of LWR fuel. The high density of DU metal makes it attractive for a number of non-nuclear applications but its use is declining because of the complications introduced by regulatory issues. Present arisings of DU are about 47,000 tonnes per year but the combined nuclear and non-nuclear consumption is less than 1000 tonnes per year. The long-term options for the disposition of this material are: re-enrichment; long-term storage; fast reactors or accelerator based transmutation; final disposal. (2 tables; 6 figures). (UK).
DEM: depleted-uranium

DEI: isotope-separation-plants; nuclear-fuels; radioactive-waste-disposal; storage-; uses-
DEC: actinides-; elements-; energy-sources; fuels-; industrial-plants; management-; materials-; metals-; nuclear-facilities; reactor-materials; uranium-; waste-disposal; waste-management
IS: ISBN 0 946777 35 7.
CC: F1200
C1:   F1200
CD: Nuclear-Fuel-Cycle-Economics
UD: 2814
AN: 28-045852
      See Also: 28-045831

Record 5 of 36 - INIS 1970-1975

TI: Synthesis and evaluation of sup 1 sup 1 C-labeled organic compounds for use in nuclear medicine.
AU: Lin,-T.H.; Winchell,-H.S.
CA: Medi-Physics, Inc., Emeryville, Calif. (USA).
SO: Jan 1975. 14 p.
NT: Availability: INIS
RN: SAN--849-3 (SAN8493)
PY: 1975
LA: English
CI: United-States
PT: R (Report); Y (Progress-Report)
DEM: depleted-uranium; fluorine-; fluorine-18
DEI: chemical-preparation; cyclotrons-; labelled-compounds; labelling-; nuclear-medicine; radiochemistry-; collimators-; uses-; carbon-11; gases-; heating-; hydrocyanic-acid; nuclear-reactions; recoils-; surfaces-; targets-; distribution-; in-vivo; organic-compounds
DEC: accelerators-; beta-decay-radioisotopes; beta-plus-decay-radioisotopes; chemistry-; cyclic-accelerators; elements-; fluorine-isotopes; halogens-; hours-living-radioisotopes; isotopes-; light-nuclei; medicine-; nonmetals-; nuclei-; odd-odd-nuclei; radioactive-materials; radioisotopes-; synthesis-; actinides-; metals-; uranium-; carbon-isotopes; even-odd-nuclei; fluids-; hydrogen-compounds; inorganic-acids; minutes-living-radioisotopes
CC: B1300
C1:   B1300
CD: Radiochemistry-and-Nuclear-Chemistry
UD: 0614
AN: 06-189878

Record 6 of 36 - INIS 1970-1975

TI: Preparation of nuclear and non-nuclear material by the sol-gel method.
OT: Vyzkum pripravy jadernych a nejadernych materialu metodou sol-gel.
AU: Baran,-V.
SO: Nukleon-Czechoslovakia. (Apr 1973). (no.1) p. 10-13.
PY: 1973
LA: Czech
CI: Czechoslovakia
PT: J (Journal-Article)
DEM: sol-gel-process
DEI: adsorbents-; chemical-preparation; coated-fuel-particles; depleted-uranium; gelation-; uses-
DEC: actinides-; elements-; fuel-particles; metals-; synthesis-; uranium-

CC: B1600
C1: B1600
CD: Fuel-Processing-and-Reprocessing
UD: 0512
AN: 05-121832

Record 7 of 36 - INIS 1970-1975

TI: Applications of a pulsed spallation neutron source. Report of a workshop held at Argonne National Laboratory, April 29--May 4, 1973. ZING.
CA: Argonne National Lab., Ill. (USA).
SO: 1973. 104 p.
NT: Availability: INIS
RN: ANL--8032 (ANL8032)
PY: 1973
LA: English
CI: United-States
PT: R (Report)
DEM: neutron-sources; zgs-
DEI: accelerator-facilities; depleted-uranium; inelastic-scattering; meetings-; moderators-; neutron-diffraction; pulses-; spallation-; targets-; uses-
DEC: accelerators-; actinides-; coherent-scattering; cyclic-accelerators; diffraction-; elements-; metals-; nuclear-reactions; particle-sources; radiation-sources; scattering-; synchrotrons-; uranium-
CC: E1600
C1: E1600
CD: Accelerators-and-Storage-Rings-whether-for-Particle-Research-or-not
UD: 0502
AN: 05-098163

Record 8 of 36 - INIS 1970-1975

TI: Trends in the use of depleted uranium.
CA: National Materials Advisory Board (NRC), Washington, D.C. (USA).
SO: Jun 1971. 184 p.
NT: Availability: INIS
RN: NMAB--275 (NMAB275)
PY: 1971
LA: English
CI: United-States
PT: R (Report)
DEI: depleted-uranium; reviews-; uranium-alloys; uranium-compounds; uses-
DEC: actinide-compounds; actinides-; alloys-; document-types; elements-; metals-; uranium-
CC: B2200
C1: B2200
CD: Metals-and-Alloys-Physical-Properties-and-Structure
UD: 0402
AN: 04-038455

Record 9 of 36 - INIS 1970-1975

TI: Utilization of depleted uranium.
OT: Vyuziti ochzeneho uranu.
AU: Peka,-I.
SO: Jaderna-Energie-Czechoslovakia. (Apr 1971). v. 17(4) p. 129-132.
NT: 25 refs.

PY: 1971
LA: Czech
CI: Czechoslovakia
PT: J (Journal-Article); E (Short-Communication)
DEI: depleted-uranium; prices-; review-; uses-
DEC: uranium-; value-
CC: F1200
C1:   F1200
CD: Fuel-Cycle-Economics
UD: 0212
AN: 02-014453

Record 10 of 36 - INIS 1976 - 1979

TI: Non-nuclear uses of depleted uranium.
OT: Nutzungsmoeglichkeiten von abgereichertem Uran fuer nicht-nukleare Zwecke.
AU: Floeter,-W.; Bals,-G.; Dreizler,-W. (Uranerzbergbau G.m.b.H. und Co. K.G., Bonn (Germany, F.R.))
SO: Metall (Dec 1978). v. 32(12) p. 1249-1250.
PY: 1978
LA: German
CI: Germany
PT: J (Journal-Article)
AB: Depleted uranium is the major part and the not yet used tail end after uranium enrichment. Possibilities are discussed for using this depleted uranium as alloy-component. The qualities of those uranium alloys are described. It could also be used as a catalyst and for radiation protection purposes. The controlable rest activity of the possible products are discussed. (orig.).
DEM: depleted-uranium
DEI: absorption-; carbides-; catalysts-; corrosion-resistance; gamma-radiation; impurities-; mechanical-properties; purification-; radiation-protection; radioactivity-; steels-; sulfides-; uranium-additions; uses-; x-radiation
DEC: actinides-; alloys-; carbon-additions; carbon-compounds; chalcogenides-; electromagnetic-radiation; elements-; ionizing-radiations; iron-alloys; iron-base-alloys; metals-; radiations-; sulfur-compounds; transition-element-alloys; uranium-
CC: E2300
C1:   E2300
CD: Reactor-Fuels
UD: 1009
AN: 10-449488

Record 11 of 36 - INIS 1976 - 1979

TI: Yield, utilization, storage and ultimate storage of depleted uranium.
OT: Anfall, Verwendung, Lagerung und Endbeseitigung von abgereichertem Uran.
AU: Aumueller,-L.; Hermann,-J.
CA: Nuklear-Chemie und -Metallurgie G.m.b.H. (NUKEM), Hanau (Germany, F.R.).
SO: Nov 1977. 94 p.
NT: Availability: INIS
RN: NUKEM--292 (NUKEM292)
PY: 1977
LA: German
CI: Germany
PT: R (Report)
AB: More than 80% of the uranium leaving uranium enrichment plants is depleted to a residual content of about 0,25% U 235. Due to the present ineconomical

further depletion to the technically possible residual content of 0,1% U 235, the so-called 'tails' are first of all stored. The quantity of stored depleted uranium in the FRG should be about 100.000 t by the year 2000. It represents a strategic reserve for future energy supply regardless of profitableness. The study analysis the conceivable possible uses for the tails quantity considered. These are, besides further depletion whose profitableness is considered, also the use as breeder material in breeder reactors and the use in the non-nuclear field. The main part of the study deals with the various storage possibilities of the depleted uranium in oxidic or fluoride form. A comparison of costs of alternative storage concepts showed a clear advantage for the storage of UF sub 6 in 48 inch containers already in use. The conceivable accidents in storing are analyzed and measures to reduce the consequences are discussed. Finally, the problems of ultimate storage for the remaining waste after further depletion or use are investigated and the costs arising here are also estimated. (RB).
DEM: depleted-uranium
DEI: bibliographies-; cost-; market-; nuclear-facilities; organizational-models; planning-; production-; reserves-; storage-; uses-
DEC: actinides-; document-types; elements-; metals-; resources-; uranium-
CC: E5200; F1200
C1:   E5200
CD: Waste-Disposal; Fuel-Cycle-Economics
UD: 1001
AN: 10-421584

Record 12 of 36 - INIS 1976 - 1979

TI: Amounts, utilization, intermediate and final storage of depleted uranium.
OT: Anfall, Verwendung, Lagerung und Endbeseitigung von abgereichertem Uran.
AU: Hermann,-J.; Aumueller,-L.; Colhoun,-C. (Nuklear-Chemie und -Metallurgie G.m.b.H. (NUKEM), Hanau (Germany, F.R.))
CA: Reactor congress 1977. Mannheim, Germany, F.R. 29 Mar 1977.
SO: Kerntechnische Gesellschaft im Deutschen Atomforum e.V., Bonn (Germany, F.R.). Reactor congress, Mannheim, 29.3.-1.4.1977. Section 3: nuclear fuel cycle. Reaktortagung, Mannheim, 29.3.-1.4.1977. Sektion 3: Brennstoffkreislauf. Eggenstein-Leopoldshafen, Germany, F.R. ZAED. 1977. p. 440-442.
NT: 2 figs. Short communication only.
RN: AED-Conf--77-013-110 (AEDConf77013110)
PY: 1977
LA: German
CI: Germany
PT: B (Book); K (Conference); E (Short-Communication)
DEM: depleted-uranium
DEI: availability-; federal-republic-of-germany; fertile-materials; isotope-separation; storage-; uranium-fluorides; uses-
DEC: actinide-compounds; actinides-; elements-; europe-; fluorides-; fluorine-compounds; halides-; halogen-compounds; metals-; separation-processes; uranium-; uranium-compounds
CC: F1200; E5200
C1:   F1200
CD: Fuel-Cycle-Economics; Waste-Disposal
UD: 0809
AN: 08-303900

Record 13 of 36 - INIS 1976 - 1979

TI: Review of the early AP penetrator work at LASL which led to the selection of U-3/4 Ti alloy.

AU: Sandstrom,-D.J.
CA: Los Alamos Scientific Lab., N.Mex. (USA).
Conference on high density alloy penetrator materials. Charlottesville, Virginia, United States of America (USA). 24 May 1976.
SO: 1976. 16 p.
NT: Available from NTIS. $3.50. Availability: INIS
RN: LA-UR--76-1614 (LAUR761614); CONF-760540--7 (CONF7605407)
PY: 1976
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: A historical review is presented of the depleted uranium penetrator work. The following alloys were studied: U--Ti, U--Mo, U--Nb, and U--Nb--Ti. Ballistic properties, armor penetration, and corrosion resistance were studied. The U--Ti alloy was found to offer the best combination of properties. 12 figures.
DEM: depleted-uranium; molybdenum-alloys; niobium-alloys; research-programs; titanium-alloys; uranium-base-alloys
DEI: corrosion-resistance; mechanical-properties; reviews-; uses-
DEC: actinide-alloys; actinides-; alloys-; document-types; elements-; metals-; transition-element-alloys; uranium-; uranium-alloys
CC: F1200; B1500; B2200
C1: F1200
CD: Fuel-Cycle-Economics; Corrosion; Metals-and-Alloys-Physical-Properties-and-Structure
UD: 0803
AN: 08-287794

Record 14 of 36 - INIS 1976 - 1979

TI: Army Air Force MMT production of 0.65 to 0.85 Ti and quad depleted uranium alloys.
AU: Polson,-C.E.; Levy,-L.M.; Schardt,-R.L.
CA: National Lead Co. of Ohio, Cincinnati (USA).
Conference on high density alloy penetrator materials. Charlottesville, Virginia, United States of America (USA). 24 May 1976.
SO: 1976. 33 p.
NT: Available from NTIS. $4.00. Availability: INIS; Available from NTIS.
RN: NLCO--1134 (NLCO1134); CONF-760540--5 (CONF7605405)
PY: 1976
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: This report concerns the less than 50 ton production of U--(0.65-0.85) Ti and quad (0.50 Ti, 0.75 Zr, 0.75 Mo, 0.75 Nb) alloys. It is presented as three parts: casting of low carbon alloy ingots, rolling of U--0.7 Ti ingots, and solution heat treatment and aging of wrought U--0.75 Ti and U--0.75 quad type alloys.
DEM: uranium-base-alloys
DEI: aging-; casting-; depleted-uranium; fabrication-; heat-treatments; molybdenum-additions; niobium-additions; rolling-; titanium-additions; uses-; zirconium-additions
DEC: actinide-alloys; actinides-; alloys-; elements-; materials-working; metals-; uranium-; uranium-alloys
CC: B2100; F1200
C1: B2100
CD: Metals-and-Alloys-Production-and-Fabrication; Fuel-Cycle-Economics
UD: 0724

AN: 07-278073

Record 15 of 36 - INIS 1976 - 1979

TI: UH sub 3 cermet.
AU: Kasberg,-A.H.
SO: 10 Jun 1975. 4 p.
RN: US patent document 3,888,795
PY: 1975
LA: English
CI: United-States
PT: P (Patent)
AB: UH sub 3 --ductile metal cermet is used as a radiation shield in a shipping cask for spent nuclear fuel rods. The ductile metal may be Cu, Al, Pb, or Cu--Pb. (U.S.).
DEM: casks-; depleted-uranium; uranium-hydrides
DEI: cermets-; chemical-composition; copper-alloys; lubricants-; mechanical-properties; quantity-ratio; shielding-materials; thermal-conductivity; transport-; uses-
DEC: actinide-compounds; actinides-; alloys-; composite-materials; containers-; elements-; hydrides-; hydrogen-compounds; metals-; physical-properties; thermodynamic-properties; transition-element-alloys; uranium-; uranium-compounds
IS: Int. Cl.C04b35/50.
CC: B2300
C1: B2300
CD: Ceramics-and-Cermets
UD: 0705
AN: 07-227889

Record 16 of 36 - INIS 1980 - 1983

TI: Report of the panel on the use of depleted uranium alloys for large caliber long rod kinetic energy penetrators.
AU: Sandstrom,-D.J.; Jessen,-N.; Loewenstein,-P.; Weirick,-L.
CA: Los Alamos Scientific Lab., NM (USA).
Oak Ridge Y-12 Plant, TN (USA).
Nuclear Metals, Inc., Concord, MA (USA).
Sandia National Labs., Albuquerque, NM (USA).
Conference on high density penetration materials. Charlottesville, VA, USA. 28 - 30 Oct 1980.
SO: 1980. 8 p.
NT: Availability: INIS; Available from NTIS., PC A02/MF A01.
RN: LA-UR--80-2948 (LAUR802948); CONF-801061--4 (CONF8010614)
PY: 1980
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: In early 1977 the National Materials Advisory Board, an operating unit in the Commission on Sociotechnical Systems of the National Research Council, NAS/NAE, formed a study committee on High Density Materials for Kinetic Energy Penetrators. The Specific objectives of the Committee were defined as follows. Assess the potential of two materials for use in kinetic energy penetrators, including such factors as: (a) properties (as applied to this application: strength, toughness, and dynamic behavior); (b) uniformity, reliability and reproducibility; (c) deterioration in storage; (d) production capability; (e) ecological impact; (f) quality assurance; (g) availability, and (h) cost. The Committee was divided into two Panels; one panel devoted to the study of

tungsten alloys and the other devoted to the study of depleted uranium alloys for use in Kinetic energy penetrators. This report represents the findings and recommendation of the Panel on Uranium.
DEM: depleted-uranium
DEI: recommendations-; titanium-additions; uranium-base-alloys; uses-
DEC: actinide-alloys; actinides-; alloys-; elements-; metals-; uranium-; uranium-alloys
CC: F1200
C1:   F1200
CD: Fuel-Cycle-Economics
UD: 1207
AN: 12-593032

Record 17 of 36 - INIS 1980 - 1983

TI: Atomic energy.
AU: Ramanna,-R. (Bhabha Atomic Research Centre, Bombay (India))
CA: Seminar on science and its impact on society -- Indian experience. New Delhi, India. 22 - 23 Apr 1978.
SO: Indian National Science Academy, New Delhi. Science and its impact on society -- Indian experience: proceedings of a seminar, New Delhi, April 22-23, 1978. New Delhi. Indian National Science Academy. 1978. p. 105-122.
NT: Discussion on p. 119-120 and Rapporteur's summary on p. 121-122.
PY: 1978
LA: English
CI: India
PT: B (Book); K (Conference)
AB: Development of nuclear science in India, particularly the research and development work at the Bhabha Atomic Research Centre (BARC), Bombay, is described. Among the wide range of materials developed for specific functions under rigorous conditions are nuclear pure grade uranium, zirconium and beryllium, and conventional materials like aluminium, carbon steel and stainless steels. Radioisotopes are produced and used for tracer studies in various fields. Various types of nuclear gauges and nuclear instruments are produced. Radiations have been used to develop new high yielding groundnut mutants with large kernals. The sterile male technique for pest control and radiosterilization technique to process potatoes, onions and marine foods for storage are ready for exploitation. Processes and equipment have been developed for production of electrolytic hydrogen, electrothermal phosphorus and desalinated water. Indigenously manufactured components and materials are now being used for the nuclear energy programme. Indian nuclear power programme strategy is to build heavy water reactors and to utilise their byproduct plutonium and depleted uranium to feed fast breeder reactors which will produce more fissile material than burnt. Finally a special mention has been made of the manpower development programme of the BARC. BARC has established a training school in 1957 giving advanced training in physics, chemistry and various branches of engineering and metallurgy.
DEM: nuclear-energy
DEI: barc-; education-; fbr-type-reactors; india-; ionizing-radiations; personnel-; phwr-type-reactors; radioisotopes-; reactor-technology; research-programs; uses-
DEC: asia-; breeder-reactors; developing-countries; energy-; epithermal-reactors; fast-reactors; heavy-water-cooled-reactors; heavy-water-moderated-reactors; indian-organizations; isotopes-; national-organizations; radiations-; reactors-
CC: F6100
C1:   F6100

CD: General-Relevant-Documents
UD: 1202
AN: 12-576091

Record 18 of 36 - INIS 1980 - 1983

TI: Nondestructive testing of 105mm depleted uranium penetrators. XM774, XM833.
AU: Morris,-C.J.; Foreman,-S.J.
CA: Battelle Pacific Northwest Labs., Richland, WA (USA).
SO: Dec 1979. 71 p.
NT: Availability: INIS; Available from NTIS., PC A04/MF A01.
RN: PNL--3246 (PNL3246)
PY: 1979
LA: English
CI: United-States
PT: R (Report)
AB: The report is an information update concerning the nondestructive testing (NDT) activities at Pacific Northwest Laboratories (PNL) for depleted uranium penetrator (XM774, XM833) quality inspection and evaluation. This report covers NDT activities from August to November, 1979.
DEM: nondestructive-testing; depleted-uranium
DEI: eddy-current-testing; ultrasonic-testing; uses-
DEC: acoustic-testing; actinides-; electromagnetic-testing; elements-; materials-testing; metals-; nondestructive-testing; testing-; uranium-
CC: E1300
C1: E1300
CD: Structures-and-Equipment
UD: 1112
AN: 11-531803

Record 19 of 36 - INIS 1984 - 1986

TI: Tungsten versus depleted uranium for armour-piercing penetrators.
AU: Johnson,-P.K. (Refractory Metals Association, Princeton, NJ (USA))
SO: International-Journal-of-Refractory-and-Hard-Metals-UK. (Dec 1983). v. 2(4) p. 179-182.
PY: 1983
LA: English
CI: United-Kingdom
PT: J (Journal-Article)
AB: Tungsten alloys have been widely used in the production of armour-piercing (AP) penetrators for defense purposes for the past 40 years. In recent years, however, depleted uranium (DU) has also been utilised for this application. Both materials exhibit high density and strength, two properties necessary for kinetic-energy projectiles to penetrate armour on tanks and other vehicles. The facts, however, support the view that tungsten can and should be utilised as the primary material for most armour-defeating ordnance applications. (author).
DEM: depleted-uranium; tungsten-base-alloys
DEI: comparative-evaluations; density-; fracture-properties; kinetic-energy; projectiles-; specifications-; uranium-base-alloys; uses-
DEC: actinide-alloys; actinides-; alloys-; elements-; energy-; mechanical-properties; metals-; physical-properties; tungsten-alloys; uranium-; uranium-alloys
CC: F1300
C1: F1300
CD: Economics-of-Isotopes-and-Radiation-Applications

UD: 1510
AN: 15-034361

Record 20 of 36 - INIS 1987 - 1989

TI: Production decladding of irradiated fuel assemblies using a YAG laser.
AU: Frazier,-R.S.; Campbell,-D.C.
CA: American Nuclear Society winter meeting. Los Angeles, CA (USA). 15-19 Nov 1987.
SO: Transactions-of-the-American-Nuclear-Society. (1987). v. 55 p. 645-646.
RN: CONF-8711195-- (CONF8711195)
PY: 1987
LA: English
CI: United-States
PT: J (Journal-Article); K (Conference)
AB: Three hundred fifty-seven irradiated blanket assemblies containing 17 tonnes of depleted uranium (DU) from the Experimental Breeder Reactor II (EBR-II) were shipped to the Rockwell International Santa Susana Field Test Laboratory for decladding. Each assembly contained 19 fuel pins with approx 2.5 kg of DU and inbred plutonium ranging from 10 to 450 g per assembly. The Rockwell International Hot Laboratory (RIHL) disassembled the fuel pins, removed the sodium bond material, and shipped the fuel slugs to the Savannah River Plant for reprocessing and plutonium recovery. In all, 6783 fuel pins containing 76.181 kg of plutonium were declad for reprocessing. To process the large number of fuel pins in an expedient manner, a 400-W neodymium-doped yttrium aluminum garnet (YAG) laser was used to cut the cladding. The laser resulted in a high-capacity process.
DEM: ebr-2-reactor; lasers-; spent-fuel-elements
DEI: filters-; mechanical-decladding; plutonium-; reprocessing-; transuranium-compounds; uses-
DEC: actinides-; amplifiers-; breeder-reactors; decladding-; elements-; epithermal-reactors; equipment-; experimental-reactors; fast-reactors; fbr-type-reactors; fuel-elements; head-end-processes; liquid-metal-cooled-reactors; lmfbr-type-reactors; metals-; power-reactors; reactor-components; reactors-; research-and-test-reactors; separation-processes; sodium-cooled-reactors; transuranium-elements
IS: ISSN 0003-018X. CODEN TANSA.
CC: B1620; E3500
C1:   B1620
CD: Spent-fuels-reprocessing; Power-Reactors,-Breeding
UD: 2001
AN: 20-001746

Record 21 of 36 - INIS 1987 - 1989

TI: Storage and uses alternatives of depleted UF sub 6.
OT: Alternativas para estocagem e utilizacao do UF sub 6 empobrecido.
AU: Marques,-S.; Dotto,-R.M. (NUCLEBRAS, Resende (Brazil))
CA: 2. General Congress of Nuclear Energy. Rio de Janeiro, RJ (Brazil). 24-29 Apr 1988.
SO: Associacao Brasileira de Energia Nuclear, Rio de Janeiro. Proceedings of the 2. General Congress of Nuclear Energy - v.2. Anais do 2. Congresso Geral de Energia Nuclear - v.2. 1988. 498 p. p. 317-324.
RN: INIS-BR--1147(v.2) (INISBR1147v2)
PY: 1988
LA: Portuguese
CI: Brazil

PT: I (Miscellaneous); K (Conference)
AB: The U-enrichment of the Angra-1 pellets (Brazil) have generated about 792 ton of depleted-U, which is nowadays beeing stored by URENCO. The possible sending of this compound to Brazil, added to the fact that in the future, NUCLEI (Nuclebras Enriquecimento Isotopico) itself will generate it, reopens the discussion of the destination of this compound. In this context, the necessity, interest and viability aspects of a reconvertion plant of UF sub 6 in Brazil are getting important and are, in what follows, breafly discussed. (author).
DEM: depleted-uranium
DEI: fuel-reprocessing-plants; radioactive-waste-storage; uranium-hexafluoride; uses-
DEC: actinide-compounds; actinides-; elements-; fluorides-; fluorine-compounds; halides-; halogen-compounds; management-; metals-; nuclear-facilities; storage-; uranium-; uranium-compounds; uranium-fluorides; waste-management; waste-storage
CC: E5200
C1:   E5200
CD: Waste-Disposal
UD: 1916
AN: 19-069281

Record 22 of 36 - INIS 1987 - 1989

TI: Thulium oxide fuel characterization study: Part 1, Materials properties measurements. Tm sub 2 O sub 3 -Yb sub 2 O sub 3; thulium-170.
AU: Nelson,-C.A.; Anderson,-R.W.; Fink,-C.R.; Tse,-A.; Fretague,-W.J.
CA: Sanders Nuclear Corp., Nashua, NH (USA).
SO: Aug 1970. 110 p.
NT: Portions of this document are illegible in microfiche products. Availability: INIS; Available from NTIS, PC A06/MF A01; 1 as DE87005218.
RN: SNC--3693-5 (SNC36935)
PY: 1970
LA: English
CI: United-States
PT: R (Report)
AB: A feasibility study was performed on encapsulated thulium-170 as an isotopic fuel for operation at temperatures to 1500 sup 0 C for 180 days. Effects of various combinations of fueled capsule design parameters were evaluated and compard to experimental data. A computer program was developed to predict dose rates through various thicknesses of aluminum, stainless steel, lead, tungsten and depleted uranium absorbers using thermoluminescent dosimetry techniques for experimental corroboration. A procedure for preparing Tm sub 2 O sub 3 /Yb sub 2 O sub 3 composites was evaluated. Melting points and solid-state transformations to the melting point of a composition series 100% Tm sub 2 O sub 3 - 100% Yb sub 2 O sub 3 were determined. The Tm sub 2 O sub 3 - 100% Yb sub 2 O sub 3 system remains cubic to the melting point. Solid-state reaction of candidate containment materials (Hastelloy X, Hastelloy C-276, Haynes-25, T-111, TZM, tungsten and zirconium) with Tm sub 2 O sub 3 /Yb sub 2 O sub 3 were studied. Containment for times to 10,000 hours at 1600 sup 0 C and to 500 hours at 2000 sup 0 C were demonstrated.
DEM: radioisotope-heat-sources; thulium-oxides; thulium-170; ytterbium-oxides
DEI: alloy-co54cr20w15ni10; alloy-mo99; alloy-ni49cr22fe18mo9; alloy-ta90w8hf; capsules-; compatibility-; feasibility-studies; hastelloys-; melting-points; phase-studies; shielding-; thermoelectric-generators; tungsten-; uses-; very-high-temperature; zirconium-
DEC: alloys-; beta-decay-radioisotopes; beta-minus-decay-radioisotopes; chalcogenides-; chromium-alloys; cobalt-alloys; cobalt-base-alloys; containers-; corrosion-resistant-alloys; days-living-radioisotopes; direct-energy-converters;

electron-capture-radioisotopes; elements-; energy-sources; hafnium-alloys; haynes-alloys; heat-resisting-alloys; intermediate-mass-nuclei; iron-alloys; isotopes-; metals-; molybdenum-alloys; molybdenum-base-alloys; nickel-alloys; nickel-base-alloys; nuclei-; odd-odd-nuclei; oxides-; oxygen-compounds; physical-properties; radioisotopes-; rare-earth-compounds; rare-earth-nuclei; stellite-; tantalum-alloys; tantalum-base-alloys; thermodynamic-properties; thulium-compounds; thulium-isotopes; titanium-additions; transition-elements; transition-temperature; tungsten-additions; tungsten-alloys; ytterbium-compounds; zirconium-additions
CC: D2100; B2320
C1: D2100
CD: Power-Production; Structure-and-phase-studies
UD: 1821
AN: 18-085816

Record 23 of 36 - INIS 1990 - 12/92

TI: Use of reprocessed uranium and of depleted uranium. Final report.
OT: Verwendung von wiederaufgearbeitetem Uran und von abgereichertem Uran. Abschlussbericht.
AU: Becker,-H.J.; Baran,-A.
CA: Nuklear-Chemie und -Metallurgie GmbH (NUKEM), Hanau (Germany).
Bundesministerium fuer Umwelt, Naturschutz und Reaktorsicherheit, Bonn (Germany).
SO: Nov 1991. 188 p.
NT: Availability: INIS
RN: NUKEM-FuE--91013 (NUKEMFuE91013); Contract BMU SR 2006 (BMUSR2006)
PY: 1991
LA: German
CI: Germany
PT: R (Report)
AB: A summary presentation is given of discharged and reprocessed quantities as well as of the burnup level of discharged fuel elements. The origin, composition (chemical, isotope contents) and properties of the different uranium qualities (uranium tails from the enrichment of natural uranium; reprocessed uranium and uranium tails from the enrichment of reprocessed uranium) are described. The use of uranium in the conventional and military areas, and as a shield in nuclear and radiation engineering, is explained in short. Possibilities of the use of uranium tails and of reprocessed uranium for nuclear energy generation are outlined (MOX in LWRs and use in CANDU type and breeder reactors). The different enrichment procedures are mentioned, and the existing facilities described, considering in particular the specific siutability for enrichment of reprocessed uranium. Model calculations show the radiation protection problems arising in the processing of regenerated uranium. (HP).
DEM: depleted-uranium; uranium-recycle
DEI: burnup-; bwr-type-reactors; candu-type-reactors; fbr-type-reactors; isotope-separation-plants; market-; mixed-oxide-fuels; natural-uranium; pwr-type-reactors; radiation-protection; reprocessing-; slightly-enriched-uranium; uses-
DEC: actinides-; breeder-reactors; elements-; energy-sources; enriched-uranium; enriched-uranium-reactors; epithermal-reactors; fast-reactors; fuel-cycle; fuels-; heavy-water-moderated-reactors; industrial-plants; isotope-enriched-materials; materials-; metals-; nuclear-facilities; nuclear-fuels; power-reactors; pressure-tube-reactors; reactor-materials; reactors-; separation-processes; solid-fuels; thermal-reactors; uranium-; water-cooled-reactors; water-moderated-reactors
CC: F1200; D1100

C1: F1200
CD: Nuclear-Fuel-Cycle-Economics; Production-of-Enriched-Uranium
UD: 2316
AN: 23-054772

Record 24 of 36 - INIS 1990 - 12/92

TI: Status of the intense pulsed neutron source.
AU: Brown,-B.S.; Carpenter,-J.M.; Crawford,-R.K.; Rauchas,-A.V.; Schulke,-A.W.; Worlton,-T.G. (Argonne National Lab., IL (USA))
CA: 10. meeting of the International Collaboration on Advanced Neutron Sources (ICANS X). Los Alamos (USA). 3-7 Oct 1988.
SO: Hyer,-D.K. (ed.). Institute of Physics, London (UK). Advanced neutron sources 1988. Proceedings of a meeting held at Los Alamos, US, 3-7 October 1988. Bristol (UK). IOP Publishing Ltd. 1989. 890 p. p. 27-45.
ST: Institute of Physics Conference Series. no. 97.
RN: Contract W-31-109-ENG-38 (W31109ENG38)
PY: 1989
LA: English
CI: United-Kingdom
PT: B (Book); K (Conference)
AB: This report details the progress made at the Intense Pulsed Neutron Source (IPNS) during 1986-1988. In December 1987, the 1000th experiment was performed at IPNS. This is a significant milestone and reflects the great deal of work and progress that have taken place since the first experiments were performed in 1981. Since that time, the average proton current has increased from 4 mu A to 14-15 mu A. The reliability has averaged 91% since 1981, by far the world's record for pulsed neutron sources. We have gone from room temperature polyethylene to cryogenic methane moderators, from a depleted uranium to a 77% enriched uranium (Booster) target, and from 4 to 11 neutron scattering instruments. To illustrate the performance of some of the IPNS scattering instruments, some recent experimental results are discussed. (author).
DEM: neutron-sources; pulsed-neutron-techniques
DEI: anl-; beam-currents; beam-optics; data-acquisition; neutral-particles; neutron-spectroscopy; proton-beams; reliability-; scattering-; targets-; uranium-; uses-
DEC: actinides-; beams-; currents-; elements-; metals-; national-organizations; nucleon-beams; particle-beams; particle-sources; radiation-sources; spectroscopy-; us-aec; us-doe; us-erda; us-organizations
IS: ISBN 0-85498-053-9.
CC: E1610
C1: E1610
CD: Design,-development,-operation,-decommissioning-and-dismantling
UD: 2117
AN: 21-067900

Record 25 of 36 - INIS 1990 - 12/92

TI: Preliminary investigations for technology assessment of sup 9 sup 9 Mo production from LEU targets.
AU: Vandegrift,-G.F.; Chaiko,-D.J.; Heinrich,-R.R.; Kucera,-E.T.; Jensen,-K.J.; Poa,-D.S.; Rajan,-J.B.; Varma,-R.; Vissers,-D.R.
CA: Reduced Enrichment for Research and Test Reactors (RERTR) program international meeting. Gatlinburg, TN (USA). 3-6 Nov 1986.
SO: Argonne National Lab., IL (USA). Reduced enrichment for research and test reactors: Proceedings. May 1988. 536 p. p. 64-79.
NT: Availability: INIS; NTIS, PC A23 as DE88012713.

RN: CONF-861185-- (CONF861185); ANL/RERTR/TM--9 (ANLRERTRTM9)
PY: 1988
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: This paper presents the results of preliminary studies on the effects of substituting low enriched uranium (LEU) for highly enriched uranium (HEU) in targets for the production of fission product sup 9 sup 9 Mo. Issues that are addressed include: (1) purity and yield of the sup 9 sup 9 Mo/ sup 9 sup 9 sup m Tc product, (2) fabrication of LEU targets and related concerns, and (3) disposal of radioactive waste. Laboratory experimentation was part of the efforts for issues (1) and (2); thus far, radioactive waste disposal has only been addressed in a paper study. Although the reported results are still preliminary, there is reason to be optimistic about the feasibility of utilizing LEU targets for sup 9 sup 9 Mo production.
DEM: moderately-enriched-uranium; molybdenum-99; reactor-cores; research-reactors
DEI: activated-carbon; adsorption-; capture-; charcoal-; decay-; depleted-uranium; dissolution-; economics-; electrodeposition-; fabrication-; fissile-materials; fission-products; fuel-plates; fuel-rods; highly-enriched-uranium; impurities-; irradiation-; isotope-production; modifications-; neptunium-237; nuclear-fuels; nuclear-medicine; oxidation-; plutonium-239; precipitation-; purification-; quality-control; reactor-safety; salting-out-agents; separation-processes; specifications-; stainless-steels; targets-; technetium-99; uranium-dioxide; uses-
DEC: actinide-compounds; actinide-nuclei; actinides-; adsorbents-; alloys-; alpha-decay-radioisotopes; beta-decay-radioisotopes; beta-minus-decay-radioisotopes; carbon-; carbon-additions; chalcogenides-; chemical-reactions; control-; days-living-radioisotopes; deposition-; electrolysis-; elements-; energy-sources; enriched-uranium; even-odd-nuclei; fissionable-materials; fuel-elements; fuels-; heavy-nuclei; high-alloy-steels; hours-living-radioisotopes; intermediate-mass-nuclei; internal-conversion-radioisoto; iron-alloys; iron-base-alloys; isomeric-transition-isotopes; isotope-enriched-materials; isotopes-; materials-; medicine-; metals-; molybdenum-isotopes; neptunium-isotopes; nonmetals-; nuclei-; odd-even-nuclei; oxides-; oxygen-compounds; plutonium-isotopes; radioactive-materials; radioisotopes-; reactor-components; reactor-materials; reactors-; research-and-test-reactors; safety-; spontaneous-fission-radioisoto; steels-; surface-coating; technetium-isotopes; uranium-; uranium-compounds; uranium-oxides; years-living-radioisotopes
CC: E3600; E3700; E2300
C1: E3600
CD: Research,-Test-and-Training-Reactors; Production,-Irradiation-and-Materials-Testing-Reactors; Reactor-Fuels
UD: 2112
AN: 21-047233

Record 26 of 36 - INIS 1990 - 12/92

TI: Use of reprocessed uranium and of depleted uranium. Final report.
OT: Verwendung von wiederaufgearbeitetem Uran und von abgereichertem Uran. Abschlussbericht.
AU: Becker,-H.J.; Baran,-A.
CA: Nuklear-Chemie und -Metallurgie GmbH (NUKEM), Hanau (Germany).
Bundesministerium fuer Umwelt, Naturschutz und Reaktorsicherheit, Bonn (Germany).
SO: Nov 1991. 188 p.
NT: Availability: INIS

RN: NUKEM-FuE--91013 (NUKEMFuE91013); Contract BMU SR 2006 (BMUSR2006)
PY: 1991
LA: German
CI: Germany
PT: R (Report)
AB: A summary presentation is given of discharged and reprocessed quantities as well as of the burnup level of discharged fuel elements. The origin, composition (chemical, isotope contents) and properties of the different uranium qualities (uranium tails from the enrichment of natural uranium; reprocessed uranium and uranium tails from the enrichment of reprocessed uranium) are described. The use of uranium in the conventional and military areas, and as a shield in nuclear and radiation engineering, is explained in short. Possibilities of the use of uranium tails and of reprocessed uranium for nuclear energy generation are outlined (MOX in LWRs and use in CANDU type and breeder reactors). The different enrichment procedures are mentioned, and the existing facilities described, considering in particular the specific siutability for enrichment of reprocessed uranium. Model calculations show the radiation protection problems arising in the processing of regenerated uranium. (HP).
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DEC: actinides-; breeder-reactors; elements-; energy-sources; enriched-uranium; enriched-uranium-reactors; epithermal-reactors; fast-reactors; fuel-cycle; fuels-; heavy-water-moderated-reactors; industrial-plants; isotope-enriched-materials; materials-; metals-; nuclear-facilities; nuclear-fuels; power-reactors; pressure-tube-reactors; reactor-materials; reactors-; separation-processes; solid-fuels; thermal-reactors; uranium-; water-cooled-reactors; water-moderated-reactors
CC: F1200; D1100
C1: F1200
CD: Nuclear-Fuel-Cycle-Economics; Production-of-Enriched-Uranium
UD: 2316
AN: 23-054772

Record 27 of 36 - INIS 1990 - 12/92

TI: Status of the intense pulsed neutron source.
AU: Brown,-B.S.; Carpenter,-J.M.; Crawford,-R.K.; Rauchas,-A.V.; Schulke,-A.W.; Worlton,-T.G. (Argonne National Lab., IL (USA))
CA: 10. meeting of the International Collaboration on Advanced Neutron Sources (ICANS X). Los Alamos (USA). 3-7 Oct 1988.
SO: Hyer,-D.K. (ed.). Institute of Physics, London (UK). Advanced neutron sources 1988. Proceedings of a meeting held at Los Alamos, US, 3-7 October 1988. Bristol (UK). IOP Publishing Ltd. 1989. 890 p. p. 27-45.
ST: Institute of Physics Conference Series. no. 97.
RN: Contract W-31-109-ENG-38 (W31109ENG38)
PY: 1989
LA: English
CI: United-Kingdom
PT: B (Book); K (Conference)
AB: This report details the progress made at the Intense Pulsed Neutron Source (IPNS) during 1986-1988. In December 1987, the 1000th experiment was performed at IPNS. This is a significant milestone and reflects the great deal of work and progress that have taken place since the first experiments were performed in 1981. Since that time, the average proton current has increased from 4 mu A to

14-15 mu A. The reliability has averaged 91% since 1981, by far the world's record for pulsed neutron sources. We have gone from room temperature polyethylene to cryogenic methane moderators, from a depleted uranium to a 77% enriched uranium (Booster) target, and from 4 to 11 neutron scattering instruments. To illustrate the performance of some of the IPNS scattering instruments, some recent experimental results are discussed. (author).
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DEC: actinides-; beams-; currents-; elements-; metals-; national-organizations; nucleon-beams; particle-beams; particle-sources; radiation-sources; spectroscopy-; us-aec; us-doe; us-erda; us-organizations
IS: ISBN 0-85498-053-9.
CC: E1610
C1:   E1610
CD: Design,-development,-operation,-decommissioning-and-dismantling
UD: 2117
AN: 21-067900

Record 28 of 36 - INIS 1990 - 12/92

TI: Preliminary investigations for technology assessment of sup 9 sup 9 Mo production from LEU targets.
AU: Vandegrift,-G.F.; Chaiko,-D.J.; Heinrich,-R.R.; Kucera,-E.T.; Jensen,-K.J.; Poa,-D.S.; Rajan,-J.B.; Varma,-R.; Vissers,-D.R.
CA: Reduced Enrichment for Research and Test Reactors (RERTR) program international meeting. Gatlinburg, TN (USA). 3-6 Nov 1986.
SO: Argonne National Lab., IL (USA). Reduced enrichment for research and test reactors: Proceedings. May 1988. 536 p. p. 64-79.
NT: Availability: INIS; NTIS, PC A23 as DE88012713.
RN: CONF-861185-- (CONF861185); ANL/RERTR/TM--9 (ANLRERTRTM9)
PY: 1988
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: This paper presents the results of preliminary studies on the effects of substituting low enriched uranium (LEU) for highly enriched uranium (HEU) in targets for the production of fission product sup 9 sup 9 Mo. Issues that are addressed include: (1) purity and yield of the sup 9 sup 9 Mo/ sup 9 sup 9 sup m Tc product, (2) fabrication of LEU targets and related concerns, and (3) disposal of radioactive waste. Laboratory experimentation was part of the efforts for issues (1) and (2); thus far, radioactive waste disposal has only been addressed in a paper study. Although the reported results are still preliminary, there is reason to be optimistic about the feasibility of utilizing LEU targets for sup 9 sup 9 Mo production.
DEM: moderately-enriched-uranium; molybdenum-99; reactor-cores; research-reactors
DEI: activated-carbon; adsorption-; capture-; charcoal-; decay-; depleted-uranium; dissolution-; economics-; electrodeposition-; fabrication-; fissile-materials; fission-products; fuel-plates; fuel-rods; highly-enriched-uranium; impurities-; irradiation-; isotope-production; modifications-; neptunium-237; nuclear-fuels; nuclear-medicine; oxidation-; plutonium-239; precipitation-; purification-; quality-control; reactor-safety; salting-out-agents; separation-processes; specifications-; stainless-steels; targets-; technetium-99; uranium-dioxide; uses-

DEC: actinide-compounds; actinide-nuclei; actinides-; adsorbents-; alloys-; alpha-decay-radioisotopes; beta-decay-radioisotopes; beta-minus-decay-radioisotopes; carbon-; carbon-additions; chalcogenides-; chemical-reactions; control-; days-living-radioisotopes; deposition-; electrolysis-; elements-; energy-sources; enriched-uranium; even-odd-nuclei; fissionable-materials; fuel-elements; fuels-; heavy-nuclei; high-alloy-steels; hours-living-radioisotopes; intermediate-mass-nuclei; internal-conversion-radioisoto; iron-alloys; iron-base-alloys; isomeric-transition-isotopes; isotope-enriched-materials; isotopes-; materials-; medicine-; metals-; molybdenum-isotopes; neptunium-isotopes; nonmetals-; nuclei-; odd-even-nuclei; oxides-; oxygen-compounds; plutonium-isotopes; radioactive-materials; radioisotopes-; reactor-components; reactor-materials; reactors-; research-and-test-reactors; safety-; spontaneous-fission-radioisoto; steels-; surface-coating; technetium-isotopes; uranium-; uranium-compounds; uranium-oxides; years-living-radioisotopes
CC: E3600; E3700; E2300
C1: E3600
CD: Research,-Test-and-Training-Reactors; Production,-Irradiation-and-Materials-Testing-Reactors; Reactor-Fuels
UD: 2112
AN: 21-047233

Record 29 of 36 - INIS 1/93-12/96

TI: Benefits/impacts of utilizing depleted uranium silicate glass as backfill for spent fuel waste packages.
AU: Pope,-R.B.; Forsberg,-C.W.; Ashline,-R.C.; DeHart,-M.D.; Childs,-K.W.; Tang,-J.S.
CA: Oak Ridge National Lab., TN (United States).
1996 international high-level radioactive waste management conference. Las Vegas, NV (United States). 29 Apr - 3 May 1996.
FUNDING ORGANIZATION: USDOE, Washington, DC (United States).
SO: [1996]. 3 p.
NT: Availability: INIS; Also available from OSTI as DE96008810; NTIS; US Govt. Printing Office Dep.
RN: CONF-960421--35 (CONF96042135); Contract AC05-96OR22464 (AC0596OR22464)
PY: 1996
LA: English
CI: United-States
PT: R (Report); K (Conference)
AB: An assessment has been made of the benefits and impacts which can be derived by filling a spent nuclear fuel multi-purpose canister with depleted uranium silicate (DUS) glass at a reactor site. Although the primary purpose of the DUS glass fill would be to enhance repository performance assessment and control criticality of geologic times, a number of benefits to the waste management system can be derived from adding the DUS glass prior to shipment from the reactor site.
DEM: depleted-uranium; spent-fuels
DEI: backfilling-; criticality-; glass-; heat-transfer; leaching-; safety-; shielding-; underground-disposal; uses-
DEC: actinides-; dissolution-; elements-; energy-sources; energy-transfer; fuels-; management-; materials-; metals-; nuclear-fuels; reactor-materials; separation-processes; uranium-; waste-disposal; waste-management
CC: E5200; E2300
C1: E5200
CD: Waste-Disposal; Reactor-Fuels
UD: 2720
AN: 27-066417

Record 30 of 36 - INIS 1/93-12/96

TI: DUSCOBS - a depleted-uranium silicate backfill for transport, storage, and disposal of spent nuclear fuel.
AU: Forsberg,-C.W.; Pope,-R.B.; Ashline,-R.C.; DeHart,-M.D.; Childs,-K.W.; Tang,-J.S.
CA: Oak Ridge National Lab., TN (United States).
FUNDING ORGANIZATION: USDOE, Washington, DC (United States).
SO: 30 Nov 1995. 105 p.
NT: Availability: INIS; Also available from OSTI as DE96011586; NTIS; US Govt. Printing Office Dep.
RN: ORNL/TM--13045 (ORNLTM13045); Contract AC05-84OR21400 (AC0584OR21400)
PY: 1995
LA: English
CI: United-States
PT: R (Report)
AB: A Depleted Uranium Silicate COntainer Backfill System (DUSCOBS) is proposed that would use small, isotopically-depleted uranium silicate glass beads as a backfill material inside storage, transport, and repository waste packages containing spent nuclear fuel (SNF). The uranium silicate glass beads would fill all void space inside the package including the coolant channels inside SNF assemblies. Based on preliminary analysis, the following benefits have been identified. DUSCOBS improves repository waste package performance by three mechanisms. First, it reduces the radionuclide releases from SNF when water enters the waste package by creating a local uranium silicate saturated groundwater environment that suppresses (1) the dissolution and/or transformation of uranium dioxide fuel pellets and, hence, (2) the release of radionuclides incorporated into the SNF pellets. Second, the potential for long-term nuclear criticality is reduced by isotopic exchange of enriched uranium in SNF with the depleted uranium (DU) in the glass. Third, the backfill reduces radiation interactions between SNF and the local environment (package and local geology) and thus reduces generation of hydrogen, acids, and other chemicals that degrade the waste package system. In addition, the DUSCOBS improves the integrity of the package by acting as a packing material and ensures criticality control for the package during SNF storage and transport. Finally, DUSCOBS provides a potential method to dispose of significant quantities of excess DU from uranium enrichment plants at potential economic savings. DUSCOBS is a new concept. Consequently, the concept has not been optimized or demonstrated in laboratory experiments.
DEM: depleted-uranium; spent-fuels
DEI: backfilling-; packaging-; radioactive-waste-disposal; spent-fuel-storage; uranium-silicates; uses-
DEC: actinide-compounds; actinides-; elements-; energy-sources; fuels-; management-; materials-; metals-; nuclear-fuels; oxygen-compounds; reactor-materials; silicates-; silicon-compounds; storage-; uranium-; uranium-compounds; waste-disposal; waste-management
CC: E1510; E5200
C1: E1510
CD: Transport-and-storage; Waste-Disposal
UD: 2719
AN: 27-062404

Record 31 of 36 - INIS 1/93-12/96

TI: NWIS signatures for confirmatory measurements with B33 trainers.
AU: Mihalczo,-J.T.; Pare,-V.K. (Oak Ridge National Lab., TN (United States))

CA: 36. annual meeting of the Institute for Nuclear Materials Management. Palm Desert, CA (United States). 9-12 Jul 1995.
SO: Anon.-Institute of Nuclear Materials Management 36. annual meeting: Proceedings. Volume 24. Northbrook, IL (United States). Inst. of Nuclear Materials Management. 1995. 1347 p. p. 848-855.
NT: Institute of Nuclear Materials Management, 60 Revere Drive, Suite 500, Northbrook, IL 60062 (United States) $75.00.
RN: CONF-950787-- (CONF950787)
PY: 1995
LA: English
CI: United-States
PT: B (Book); K (Conference)
AB: Nuclear weapons identification system (NWIS) signatures have been used successfully to confirm that B33 trainer parts in their M102 containers, shipped from military bases to the Oak Ridge Y-12 Plant, were as declared by the shipper to be nonenriched uranium. The verification was accomplished by comparing signatures for B33 trainer parts with signatures for mock-ups made with depleted uranium packaged at the Oak Ridge Y-12 Plant in M102 containers. These verifications were conducted in a timely, reliable manner and produced no false positives for the 512 verifications. NWIS signatures have been demonstrated to be adequate for shipper-to-shipper confirmatory measurement within the US Department of Energy (DOE) and between the US Department of Defense (DOD) and DOE. A nonintrusive use of NWIS signatures is demonstrated and would allow the use of this method by foreign nations at DOE or DOD facilities. A field-deployable system, based on a laptop personal computer system, is under development. Although the NWIS method was developed for nuclear weapons identification, the development of a small processor now allows it to be also applied in a practical way to subcriticality measurements, nuclear fuel process monitoring and quantitative nondestructive assay of special nuclear material.
DEM: nuclear-weapons-dismantlement; nuclear-weapons; y-12-plant
DEI: fissile-materials; identification-systems; nondestructive-analysis; nuclear-facilities; nuclear-materials-management; process-control; us-dod; us-doe; uses-
DEC: chemical-analysis; control-; fissionable-materials; management-; materials-; national-organizations; us-aec; us-erda; us-organizations
CC: F4100; B1110
C1: F4100
CD: Technical-Aspects; Nuclear-methods-in-chemical-and-isotopic-analysis
UD: 2715
AN: 27-052272

Record 32 of 36 - INIS 1/93-12/96

TI: Calculated NWIS signatures for enriched uranium metal. Nuclear Weapons Identification Systems.
AU: Valentine,-T.E.; Mihalczo,-J.T.; Koehler,-P.E. (Oak Ridge National Lab., TN (United States))
CA: 36. annual meeting of the Institute for Nuclear Materials Management. Palm Desert, CA (United States). 9-12 Jul 1995.
SO: Anon.-Institute of Nuclear Materials Management 36. annual meeting: Proceedings. Volume 24. Northbrook, IL (United States). Inst. of Nuclear Materials Management. 1995. 1347 p. p. 388-393.
NT: Institute of Nuclear Materials Management, 60 Revere Drive, Suite 500, Northbrook, IL 60062 (United States) $75.00.
RN: CONF-950787-- (CONF950787)
PY: 1995
LA: English

CI: United-States
PT: B (Book); K (Conference)
AB: Nuclear Weapons Identification System (NWIS) signatures have been calculated using a Monte Carlo transport code for measurement configurations of a sup 2 sup 5 sup 2 Cf source, detectors, and a uranium metal casting. NWIS signatures consist of a wide variety of time-and frequency-analysis signatures such as the time distribution of neutrons after californium fission, the time distribution of counts in a detector after a previous count, the number of times n pulses occur in a time interval, and various frequency-analysis signatures, such as auto-power and cross-power spectral densities, coherences, and a ratio of spectral densities. This ratio is independent of detection efficiency. The analysis presented here, using the MCNP-DSP code, evaluates the applicability of this method for measurement of the sup 2 sup 3 sup 5 U content of 19-kg castings of depleted uranium and uranium with enrichments of 20, 40, 60, 80, 90, and 93.2 wt % sup 2 sup 3 sup 5 U. The dependence of the wide variety of NWIS signatures on sup 2 sup 3 sup 5 U content and possible configurations of a measurement system are presented. These preliminary calculations indicate short measurement times. Additional calculations are being performed to optimize the source-detector-moderator-casting configuration for the shortest measurement time. Although the NWIS method was developed for nuclear weapons identification, the development of a small processor now allows it to be also applied in a practical way to subcriticality measurements, nuclear fuel process monitoring and qualitative nondestructive assay of special nuclear material.
DEM: depleted-uranium; enriched-uranium; uranium-235
DEI: californium-252; fissile-materials; iaea-safeguards; monitoring-; nondestructive-analysis; nuclear-materials-management; nuclear-reaction-analysis; nuclear-weapons-dismantlement; quantitative-chemical-analysis; uses-; y-12-plant
DEC: actinide-nuclei; actinides-; alpha-decay-radioisotopes; californium-isotopes; chemical-analysis; elements-; even-even-nuclei; even-odd-nuclei; fissionable-materials; heavy-nuclei; internal-conversion-radioisotopes; isomeric-transition-isotopes; isotope-enriched-materials; isotopes-; management-; materials-; metals-; minutes-living-radioisotopes; national-organizations; nuclei-; radioisotopes-; safeguards-; spontaneous-fission-radioisotopes; uranium-; uranium-isotopes; us-aec; us-doe; us-erda; us-organizations; years-living-radioisotopes
CC: B1110; F4100
C1: B1110
CD: Nuclear-methods-in-chemical-and-isotopic-analysis; Technical-Aspects
UD: 2715
AN: 27-050066

Record 33 of 36 - INIS 1/93-12/96

TI: Depleted Uranium Hexafluoride Management Program. The technology assessment report for the long-term management of depleted uranium hexafluoride. Volume 2.
AU: Zoller,-J.N.; Rosen,-R.S.; Holliday,-M.A. (and others)
CA: Lawrence Livermore National Lab., CA (United States).
FUNDING ORGANIZATION: USDOE, Washington, DC (United States).
SO: 30 Jun 1995. 400 p.
NT: Availability: INIS; Also available from OSTI as DE95017526; NTIS; US Govt. Printing Office Dep.
RN: UCRL-AR--120372-Vol.2 (UCRLAR120372Vol2); Contract W-7405-ENG-48 (W7405ENG48)
PY: 1995
LA: English

CI: United-States
PT: R (Report)
AB: With the publication of a Request for Recommendations and Advance Notice of Intent in the November 10, 1994 Federal Register, the Department of Energy initiated a program to assess alternative strategies for the long-term management or use of depleted uranium hexafluoride. This Request was made to help ensure that, by seeking as many recommendations as possible, Department management considers reasonable options in the long-range management strategy. The Depleted Uranium Hexafluoride Management Program consists of three major program elements: Engineering Analysis, Cost Analysis, and an Environmental Impact Statement. This Technology Assessment Report is the first part of the Engineering Analysis Project, and assesses recommendations from interested persons, industry, and Government agencies for potential uses for the depleted uranium hexafluoride stored at the gaseous diffusion plants in Paducah, Kentucky, and Portsmouth, Ohio, and at the Oak Ridge Reservation in Tennessee. Technologies that could facilitate the long-term management of this material are also assessed. The purpose of the Technology Assessment Report is to present the results of the evaluation of these recommendations. Department management will decide which recommendations will receive further study and evaluation.
DEM: depleted-uranium; uranium-hexafluoride
DEI: evaluation-; materials-recovery; program-management; radioactive-waste-management; recommendations-; recycling-; uses-
DEC: actinide-compounds; actinides-; elements-; fluorides-; fluorine-compounds; halides-; halogen-compounds; management-; metals-; uranium-; uranium-compounds; uranium-fluorides; waste-management; waste-processing
CC: D1100; E2300
C1: D1100
CD: Production-of-Enriched-Uranium; Reactor-Fuels
UD: 2702
AN: 27-005547

Record 34 of 36 - INIS 1/93-12/96

TI: Depleted Uranium Hexafluoride Management Program. The technology assessment report for the long-term management of depleted uranium hexafluoride. Volume 1.
AU: Zoller,-J.N.; Rosen,-R.S.; Holliday,-M.A. (and others)
CA: Lawrence Livermore National Lab., CA (United States).
FUNDING ORGANIZATION: USDOE, Washington, DC (United States).
SO: 30 Jun 1995. 600 p.
NT: Availability: INIS; Also available from OSTI as DE95017527; NTIS; US Govt. Printing Office Dep.
RN: UCRL-AR--120372-Vol.1 (UCRLAR120372Vol1); Contract W-7405-ENG-48 (W7405ENG48)
PY: 1995
LA: English
CI: United-States
PT: R (Report)
AB: With the publication of a Request for Recommendations and Advance Notice of Intent in the November 10, 1994 Federal Register, the Department of Energy initiated a program to assess alternative strategies for the long-term management or use of depleted uranium hexafluoride. This Request was made to help ensure that, by seeking as many recommendations as possible, Department management considers reasonable options in the long-range management strategy. The Depleted Uranium Hexafluoride Management Program consists of three major program elements: Engineering Analysis, Cost Analysis, and an Environmental Impact Statement. This Technology Assessment Report is the first part of the

Engineering Analysis Project, and assesses recommendations from interested persons, industry, and Government agencies for potential uses for the depleted uranium hexafluoride stored at the gaseous diffusion plants in Paducah, Kentucky, and Portsmouth, Ohio, and at the Oak Ridge Reservation in Tennessee. Technologies that could facilitate the long-term management of this material are also assessed. The purpose of the Technology Assessment Report is to present the results of the evaluation of these recommendations. Department management will decide which recommendations will receive further study and evaluation. These Appendices contain the Federal Register Notice, comments on evaluation factors, independent technical reviewers resumes, independent technical reviewers manual, and technology information packages.
DEM: depleted-uranium; uranium-hexafluoride
DEI: comparative-evaluations; environmental-impacts; feasibility-studies; gaseous-diffusion-plants; materials-recovery; radioactive-waste-management; recommendations-; recycling-; research-programs; uses-
DEC: actinide-compounds; actinides-; elements-; evaluation-; fluorides-; fluorine-compounds; halides-; halogen-compounds; industrial-plants; isotope-separation-plants; management-; metals-; nuclear-facilities; uranium-; uranium-compounds; uranium-fluorides; waste-management; waste-processing
CC: D1100; E2300
C1: D1100
CD: Production-of-Enriched-Uranium; Reactor-Fuels
UD: 2702
AN: 27-005546

Record 35 of 36 - INIS 1/93-12/96

TI: Structural credit for depleted uranium used in transport casks.
AU: Salzbrenner,-R.; Wellman,-G.W.; Sorenson,-K.B. (Sandia National Lab., Albuquerque, NM (United States)); McConnell,-P. (Gram Inc., Albuquerque, NM (United States))
CA: 3. international high level radioactive waste management (IHLRWM) conference. Las Vegas, NV (United States). 12-16 Apr 1992.
SO: Anon.-Proceedings of high level radioactive waste management. Volume 1. La Grange Park, IL (United States). American Nuclear Society. 1992. 2425 p. p. 2241-2248.
NT: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (United States).
RN: CONF-920430-- (CONF920430)
PY: 1992
LA: English
CI: United-States
PT: B (Book); K (Conference)
AB: This paper reports that depleted uranium (DU) is used in high level radioactive waste transport containers as a gamma shield. The mechanical response of this material has generally not been included in calculations intended to assure that these casks will maintain their containment function during all normal use and accident conditions. If DU could be qualified as a structural component, the thickness of other materials (e.g. stainless steel) in the primary containment boundary could be reduced, thereby allowing a reduction in cask mass and/or an increase in payload capacity. This study was conducted to determine the mechanical behavior of a range of DU alloys in order to extend the limited set of mechanical properties reported in the literature. These mechanical properties were used as the basis for finite element calculations to quantify the potential for claiming structural credit for DU.
DEM: casks-; depleted-uranium; high-level-radioactive-wastes

DEI: finite-element-method; gamma-radiation; materials-testing; mechanical-properties; performance-testing; radiation-accidents; radiation-protection; safety-analysis; shielding-; transport-; uses-
DEC: accidents-; actinides-; calculation-methods; containers-; electromagnetic-radiation; elements-; ionizing-radiations; materials-; metals-; numerical-solution; radiations-; radioactive-materials; radioactive-wastes; testing-; uranium-; wastes-
IS: ISBN 0-87262-891-4.
CC: E1510; E2300; F4200
C1: E1510
CD: Transport-and-storage; Reactor-Fuels; Non-Technical-Aspects
UD: 2403
AN: 24-010996

Record 36 of 36 - INIS 1/93-12/96

TI: Use of reprocessed uranium and of depleted uranium.
OT: Verwendung von wiederaufgearbeitetem Uran und von abgereichertem Uran.
AU: Neghabian,-A.R.; Becker,-H.J.; Baran,-A.; Binzel,-H.W.
CA: Bundesministerium fuer Umwelt, Naturschutz und Reaktorsicherheit, Bonn (Germany).
Nuklear-Chemie und -Metallurgie GmbH (NUKEM), Hanau (Germany).
SO: 1992. 190 p.
ST: Schriftenreihe Reaktorsicherheit und Strahlenschutz. Ergebnisberichte, Untersuchungen, Studien, Gutachten.
NT: Available from FIZ Karlsruhe.
RN: BMU--1992-332 (BMU1992332); Contract BMU SR 2006 (BMUSR2006)
PY: 1992
LA: German
CI: Germany
PT: R (Report); X (Microfiche-Unavailable-from-INIS)
AB: A summary presentation is given of discharged and reprocessed quantities as well as of the burnup level of discharged fuel elements. The origin, composition (chemical, isotope contents) and properties of the different uranium qualities (uranium tails from the enrichment of natural uranium; reprocessed uranium and uranium tails from the enrichment of reprocessed uranium) are described. The use of uranium in the conventional and military areas, and as a shield in nuclear and radiation engineering, is explained in short. Possibilities of the use of uranium tails and of reprocessed uranium for nuclear energy generation are outlined (MOX in LWRs and use in CANDU type and breeder reactors). The different enrichment procedures are mentioned, and the existing facilities described, considering in particular the specific suitability for enrichment of reprocessed uranium. Model calculations show the radiation protection problems arising in the processing of regenerated uranium. (orig.).
DEM: depleted-uranium; uranium-recycle
DEI: burnup-; bwr-type-reactors; candu-type-reactors; fbr-type-reactors; isotope-separation; market-; mixed-oxide-fuels; natural-uranium; pwr-type-reactors; radiation-protection; reprocessing-; slightly-enriched-uranium; uses-
DEC: actinides-; breeder-reactors; elements-; energy-sources; enriched-uranium; enriched-uranium-reactors; epithermal-reactors; fast-reactors; fuel-cycle; fuels-; heavy-water-moderated-reactors; isotope-enriched-materials; materials-; metals-; nuclear-fuels; power-reactors; pressure-tube-reactors; reactor-materials; reactors-; separation-processes; solid-fuels; thermal-reactors; uranium-; water-cooled-reactors; water-moderated-reactors
CC: F1200; B1100
C1: F1200
CD: Nuclear-Fuel-Cycle-Economics; Chemical-and-Isotopic-Analysis

UD: 2402
AN: 24-007863