Title (en)

NONPROLIFERATIVE LIGHT WATER NUCLEAR REACTOR WITH ECONOMIC USE OF THORIUM.

Title (de)

NONPROLIFERATIONS-LEICHTWASSERREAKTOR MIT WIRTSCHAFTLICHER AUSNUTZUNG VON THORIUM.

Title (fr)

REACTEUR NUCLEAIRE A EAU LEGERE NON-PROLIFERATIVE A EMPLOI ECONOMIQUE DE THORIUM.

Publication

EP 0625279 A4 19950125 (EN)

Application

EP 93904924 A 19930204

Priority

- US 9301037 W 19930204
- US 83080792 A 19920204

Abstract (en)

[origin: WO9316477A1] A light water nuclear reactor, which derives most of its energy from thorium, utilizes a seed-blanket core arrangement and a nonparasitic and mechanically simple control system. Neither the initial fuel loading nor the fuel discharged from the reactor is useable for nuclear weapons purposes. The initial fissile fuel is enriched uranium, U-235/U-238 (20:80), which is known to be nonproliferative. The discharged fissile fuel consists of (1) uranium with about ten percent U-235 content, (2) less than one percent of the amount of plutonium produced in conventional light water reactors, (3) U-233 denatured by being uniformly mixed with more than twice as much U-238 and (4) the remaining thorium. About seventy-five to eighty percent of the reactor energy is derived by fissioning in place the U-233 formed in the thorium, thus avoiding the very expensive process of extracting and fabricating the highly gamma-active U-233 into fuel elements.

IPC 1-7

G21C 1/00

IPC 8 full level

G21C 1/00 (2006.01); **G21C 1/08** (2006.01); **G21C 3/328** (2006.01); **G21C 3/42** (2006.01); **G21C 5/12** (2006.01); **G21C 5/18** (2006.01)

CPC (source: EP KR)

G21C 1/08 (2013.01 - EP); **G21C 3/07** (2013.01 - KR); **G21C 3/42** (2013.01 - EP); **G21C 5/18** (2013.01 - EP); Y02E 30/30 (2013.01 - EP)

Citation (search report)

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Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

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DOCDB simple family (application)

US 9301037 W 19930204; AU 3611693 A 19930204; BG 9895194 A 19940803; BR 9305893 A 19930204; CA 2128514 A 19930204; CZ 181294 A 19930204; EP 93904924 A 19930204; FI 943610 A 19940803; HU 9402276 A 19930204; JP 51418993 A 19930204; KR 19940702679 A 19940804; NO 942877 A 19940803; SK 93494 A 19930204