

Title (en)

A METHODOLOGY FOR MODELING THE FUEL ROD POWER DISTRIBUTION WITHIN A NUCLEAR REACTOR CORE

Title (de)

METHODOLOGIE ZUR MODELLIERUNG DER BRENNSTAB-LEISTUNGSVERTEILUNG IN EINEM NUKLEARREAKTORKERN

Title (fr)

MÉTHODOLOGIE POUR LA MODÉLISATION DE LA DISTRIBUTION DE PUISSANCE DE BARRES DE COMBUSTIBLE À L'INTÉRIEUR DU CŒUR D'UN RÉACTEUR NUCLÉAIRE

Publication

EP 2240939 A4 20120321 (EN)

Application

EP 09739300 A 20090205

Priority

- US 2009033160 W 20090205
- US 2900508 A 20080211

Abstract (en)

[origin: WO2009134498A2] A method for modeling a nuclear reactor core that follows the history of each fuel pin and employs fuel pin flux form factors to explicitly track each fuel pin's fluence exposure along its axial length and uses this information to obtain fundamental data for each fuel rod, i.e. fuel rod cross-sections, for each fuel pin segment. The data obtained for the fuel pins segments are employed to adjust the fuel pin flux form factors to match the real fuel pins' history so that the fuel rod power distribution can be precisely calculated based on the fuel rod cross-sections and the flux form factors.

IPC 8 full level

G21C 5/00 (2006.01); **G06F 9/50** (2006.01); **G21C 17/00** (2006.01); **G21D 3/00** (2006.01)

CPC (source: EP)

G21C 5/00 (2013.01); **G21C 17/00** (2013.01); **G21D 3/001** (2013.01); **G21D 3/002** (2018.12); **Y02E 30/00** (2013.01); **Y02E 30/30** (2013.01)

Citation (search report)

- [I] US 2006184286 A1 20060817 - BOER RAINER [DE], et al
- [A] US 2001026603 A1 20011004 - HIRUKAWA KOJI [JP], et al
- [A] US 4333797 A 19820608 - NISHIZAWA YASUO
- [A] IWAMOTO AND M YAMAMOTO T: "Pin Power Reconstruction Methods of the Few-Group BWR Core Simulator NEREUS", JOURNAL OF NUCLEAR SCIENCE AND TECHNOLOGY, ATOMIC ENERGY SOCIETY OF JAPAN, JP, vol. 36, no. 12, 1 December 1999 (1999-12-01), pages 1141 - 1152, XP008139286, ISSN: 0022-3131
- See references of WO 2009134498A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2009134498 A2 20091105; **WO 2009134498 A3 20091230**; BR PI0908354 A2 20190924; CN 101946253 A 20110112; EP 2240939 A2 20101020; EP 2240939 A4 20120321; JP 2011528101 A 20111110; KR 20100115754 A 20101028; TW 200949856 A 20091201; ZA 201005627 B 20110629

DOCDB simple family (application)

US 2009033160 W 20090205; BR PI0908354 A 20090205; CN 200980104852 A 20090205; EP 09739300 A 20090205; JP 2010545982 A 20090205; KR 20107017784 A 20090205; TW 98104364 A 20090211; ZA 201005627 A 20100805