CPC COOPERATIVE PATENT CLASSIFICATION

G21D NUCLEAR POWER PLANT (electric or magnetic analogue computers, e.g. simulators, for nuclear physics G06G 7/54)

Guidance heading:

G21D 1/00 **Details of nuclear power plant** (control G21D 3/00)

G21D 1/003 . {Nuclear facilities decommissioning arrangements (decontamination arrangements, treating radioactively contaminated material G21F 9/00) }

G21D 1/006 . { primary side of steam generators (secondary side of steam generators F22B1, F22B35 or F22B37) }

G21D 1/02 . Arrangements of auxiliary equipment

G21D 1/04 . Pumping arrangements (within the reactor pressure vessel G21C 15/24; electrodynamic pumps H02K 44/02)

G21D 3/00 **Control of nuclear power plant** (control of nuclear reaction in general G21C 7/00)

G21D 3/001 . { Computer implemented control }
G21D 2003/002 . . Core design; Core simulations
G21D 2003/004 . . Fuel shuffle simulations
G21D 2003/005 . . Thermo-hydraulic simulations

G21D 2003/007 . Expert systems

G21D 3/008 . {Man-machine interface, e.g. control room layout }

G21D 3/02 . Manual control

G21D 3/04 . Safety arrangements (emergency protection of reactor G21C 9/00)
G21D 3/06 . . responsive to faults within the plant (in the reactor G21C 9/00)

G21D 3/08 . Regulation of any parameters in the plant
G21D 3/10 . . by a combination of a variable derived from neutron flux with other controlling variables, e.g. derived from temperature, cooling flow, pressure
G21D 3/12 . . by adjustment of the reactor in response only to changes in engine demand
G21D 3/14 . . . Varying flow of coolant
G21D 3/16 . . . Varying reactivity
G21D 3/18 . . by adjustment of plant external to the reactor only in response to change in reactivity

G21D 5/00 **Arrangements of reactor and engine in which reactor-produced heat is converted into mechanical energy**

G21D 5/02 . Reactor and engine structurally combined, e.g. portable

G21D 5/04 . Reactor and engine not structurally combined

G21D 5/06 . . with engine working medium circulating through reactor core

G21D 5/08 . . with engine working medium heated in a heat exchanger by the reactor coolant

G21D 5/10 . . . Liquid working medium partially heated by reactor and vaporised by heat source external to the core, e.g. with oil heating

G21D 5/12 . . . Liquid working medium vaporised by reactor coolant

G21D 5/14 . . . . and also superheated by reactor coolant

G21D 5/16 . . . . superheated by separate heat source

G21D 7/00 **Arrangements for direct production of electric energy from fusion or fission reactions** (obtaining electric energy from radioactive sources G21H 1/00)

G21D 7/02 . using magneto-hydrodynamic generators { (MHD-generators with thermodynamic cycles F02C 7/00; magneto-hydrodynamic generators H02K 44/08) }

G21D 7/04 . using thermoelectric elements {or thermoionic converters } (structural combination of fuel element with thermoelectric element {or with thermoionic converters } G21C 3/40 {, G21H 1/10 }; thermoelectric elements per se H01L 35/00, H01L 37/00)

G21D 9/00 **Arrangements to provide heat for purposes other than conversion into power, e.g. for heating buildings**

Guidance heading:

G21D 2010/00 **Protection of plant or environment from mutual hazards : means for monitoring the effects of plant or environment upon each other**