

**CPC****COOPERATIVE PATENT CLASSIFICATION****G21D**

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

**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 [F22B 1/00](#), [F22B 35/00](#) or [F22B 37/00](#))}

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