

# CPC COOPERATIVE PATENT CLASSIFICATION

## G PHYSICS (NOTES omitted)

### NUCLEONICS

## G21 NUCLEAR PHYSICS; NUCLEAR ENGINEERING

## G21D NUCLEAR POWER PLANT

### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- |             |   |             |   |
|-------------|---|-------------|---|
| <b>1/00</b> | <b>Details of nuclear power plant</b> (control <a href="#">G21D 3/00</a> )  | 5/08        | . . with engine working medium heated in a heat exchanger by the reactor coolant  |
| 1/003       | . {Nuclear facilities decommissioning arrangements (decontamination arrangements, treating radioactively contaminated material <a href="#">G21F 9/00</a> )}     | 5/10        | . . . Liquid working medium partially heated by reactor and vaporised by heat source external to the core, e.g. with oil heating  |
| 1/006       | . {primary side of steam generators (secondary side of steam generators <a href="#">F22B 1/00</a> , <a href="#">F22B 35/00</a> or <a href="#">F22B 37/00</a> )} | 5/12        | . . . Liquid working medium vaporised by reactor coolant  |
| 1/02        | . Arrangements of auxiliary equipment   | 5/14        | . . . . and also superheated by reactor coolant   |
| 1/04        | . Pumping arrangements (within the reactor pressure vessel <a href="#">G21C 15/24</a> ; electrodynamic pumps <a href="#">H02K 44/02</a> )                       | 5/16        | . . . . superheated by separate heat source   |
| <b>3/00</b> | <b>Control of nuclear power plant</b> (control of nuclear reaction in general <a href="#">G21C 7/00</a> )   | <b>7/00</b> | <b>Arrangements for direct production of electric energy from fusion or fission reactions</b> (obtaining electric energy from radioactive sources <a href="#">G21H 1/00</a> )   |
| 3/001       | . {Computer implemented control}  | 7/02        | . using magneto-hydrodynamic generators {(MHD-generators with thermodynamic cycles <a href="#">F02C 7/00</a> ; magneto-hydrodynamic generators <a href="#">H02K 44/08</a> )}  |
| 3/002       | . . {Core design; core simulations; core optimisation}  | 7/04        | . using thermoelectric elements {or thermoionic converters} (structural combination of fuel element with thermoelectric element {or with thermoionic converters} <a href="#">G21C 3/40</a> {, <a href="#">G21H 1/10</a> }; thermoelectric elements per se <a href="#">H01L 35/00</a> , <a href="#">H01L 37/00</a> ) |
| 3/004       | . . {Fuel shuffle simulation; fuel shuffle optimisation}  |             |   |
| 3/005       | . . {Thermo-hydraulic simulations}  | <b>9/00</b> | <b>Arrangements to provide heat for purposes other than conversion into power, e.g. for heating buildings</b>   |
| 3/007       | . {Expert systems}  |             |   |
| 3/008       | . {Man-machine interface, e.g. control room layout}   |             |   |
| 3/02        | . Manual control  |             |   |
| 3/04        | . Safety arrangements (emergency protection of reactor <a href="#">G21C 9/00</a> )  |             |   |
| 3/06        | . . responsive to faults within the plant (in the reactor <a href="#">G21C 9/00</a> )   |             |   |
| 3/08        | . Regulation of any parameters in the plant   |             |   |
| 3/10        | . . by a combination of a variable derived from neutron flux with other controlling variables, e.g. derived from temperature, cooling flow, pressure            |             |   |
| 3/12        | . . by adjustment of the reactor in response only to changes in engine demand   |             |   |
| 3/14        | . . . Varying flow of coolant   |             |   |
| 3/16        | . . . Varying reactivity  |             |   |
| 3/18        | . . by adjustment of plant external to the reactor only in response to change in reactivity   |             |   |
| <b>5/00</b> | <b>Arrangements of reactor and engine in which reactor-produced heat is converted into mechanical energy</b>  |             |   |
| 5/02        | . Reactor and engine structurally combined, e.g. portable   |             |   |
| 5/04        | . Reactor and engine not structurally combined  |             |   |
| 5/06        | . . with engine working medium circulating through reactor core   |             |   |