Tes 3600 Power Analyzer Software 48 __TOP__

there are several 500 mwt/500 mwe ge mark i-type plants in china, under construction and also planned. these use a conventional core with steam generators and neutron-moderated primary coolant. the first one, the yangjiang plant, a four-unit design, is scheduled for 2020. after that, six-unit, eight-unit and 16-unit plants are planned. the key to this is the use of depleted uranium oxide for the core, in which the fissile material is separated from the actinides during the enrichment process. the oxide is mixed with oxide of oxide cement and put into a spherical pellet of groupe shape, held in a metal box and irradiated. the'reactor-grade' fuel, containing just 0.05% u-235, is mixed with oxide cement and put into a sheet shape of about 40 mm thickness. this is put in another metal box with a pyrochemical reduction process to form uranium dioxide, which is then put into the core. the oxide cement in the core reduces neutron poison and the sheet shape allows radiation of a much more homogeneous neutron field, giving less power peaking than occurs in a conventional core. the fuel assembly is 10 m long and 2 m diameter, and has a burn-up of about 130 gwd/t. this is a modular design, and each unit has two steam generators and the core is thus divided into six modules, arranged in two groups of three. there are six control rods per group. the core is of spiral shape. a test unit, known as hybrid-1, which started up in 2008, has been fully operative since 2010, and similar units are planned. there are long-life reactor-grade fuel rods in the core, and the core weight is in the order of 35 tonnes. the thermal-hydraulic analysis of the yangjiang plant design is for a closed-loop, low-fluid, water-cooled graphite-moderated reactor, which is a significant contrast to the conventional us design. the plant would be about 10 metres high and 2.7 metres diameter.the use of depleted uranium oxide, rather than enriched uranium, reduces the overall amount of fissile material to be used, by about 0.2-0.3% u-235, and so reduces the overall reactor size. it also gives a higher thermal efficiency, due to the low u-235 content of the fuel. the neutron multiplication-neutron energy ratio is more than twice that for a conventional pwr, but this is compensated by a higher thermal efficiency. it was estimated that the thermal neutron intensity at the core centre would be 100 x 1022 neutrons/sec in a conventional pwr, while it would be about 12 x 1022 neutrons/sec for the yangjiang plant.

Tes 3600 Power Analyzer Software 48

the nuscale smr is a passive, modular, natural circulation, liquid metal fast reactor. it uses a new, innovative fuel, the pellets of which are suspended in a liquid metal, and it has no moving parts. it is a core integral pressure vessel design, and an mpr. the reactor is a sodium-cooled, liquid metal reactor, with no moving parts, and the only moving parts being the control rod drives. it uses standard pwr fuel enriched to 4.95% in normal pwr fuel assemblies, with 24-month refuelling cycle. the only passive safety system is a fission gas release system to provide a method for "soft" failures in a small proportion of the reactor. it has a very high power density, as the heat is removed from the reactor core using the natural circulation of liquid metal in the pressure vessel. it is a modular design. the 6. designs on the pathfinder are the candu-60 and the epr. both are fundamentally scalable to a power rating of 100 mwe. the canadian candu-60 design uses the same basic technology as the candu-6 at a smaller scale. it has a separate primary coolant and an integral steam generator. in addition to the reactor core, the pressure vessel contains the primary pumps and internal heat exchangers. the four-loop epr uses a steam generator and an integral pressurizer (a pressurizer that is integral to the steam generator rather than a separate vessel). the reactor is coupled to the turbine by a heat exchanger. the control rods are in the reactor core and the primary pump is canned. unlike most current designs, it is the entire pressure vessel that contains the decay heat, not just the core. each of the two basic designs can be scaled up to 100 mwe. the epr design is the most mature, with the candu-60 being significantly more complex. 5ec8ef588b