

**THORCON SPECIFICATIONS**

ThorCon is a hybrid thorium/uranium liquid-fuel fission power plant providing low-cost, reliable electric power; replaceable Cans contain a reactor vessel, pump, heat exchanger, and fuel.

**Power generation capacity** 250, 500, 750, or 1,000 MW.

**Power output** 245 kV 50 or 60 Hz AC; optional HVDC for long transmission lines.

**Fuel consumption** 112 kg fissile uranium-235 per year per 250 MW module; additional fissile uranium-233 is created from thorium fuel and fissile Pu-239 from U-238.

**Refueling** CanShip replaces 500 ton Can every four years; CanShip replaces fuel salt every eight years; 7 days refueling outage per 250 MW module.

**Availability** 95% planned availability; 500 MW turbine-generator maintenance outage 14 days.

**Load following** power can be ramped up or down at 5% per minute.

**Peaking** optional thermal storage increases generation by 10-20% for 1-2 hours.

**Unexpected load disconnect** steam bypass allows fission reactor operation to continue, temporarily raising cooling water temperature, until load restoration or fission power-down.

**External power** none needed; black start capability.

**Siting** ThorConLand version at navigable waterside location; no railway or highway access needed; 2 ha footprint for 500 MW; optional ThorConIsle version offshore up to 10 m depth.

**Cooling** 16 cubic meters per second seawater flow, 10°C temperature rise, for 500 MW.

**Lifetime** Plant: 80 years; Can: 4 years to recycle; fuel salt: 8 years to fuel handling facility.

**Decommissioning** CanShip removes Cans and fuel salt casks; mildly radio-activated secondary loop removed with special handling; bulk of plant removed, reused, or filled in.

**Control rooms** one within plant plus one per site.

**Staffing plan** 72 security; 42 operations; 30 maintenance; 65 other for 1,000 MW plant.

**Capital plan** \$1,200 million for 1,000 MW power plant, plus costs for site, licenses, permits, fees, taxes; optional ThorConIsle version: \$220 million additional

**Construction time** two years from firm order to power generation; transmission lines, permitting, siting, cooling are local limiting issues.

**Generated electricity cost** \$0.03 per kWh