EX2

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1 Task 1

$$Q = cm\Delta T \tag{1}$$

$$c(water) = 4.2 \times 10^3 \text{ J/ (kg}^\circ\text{C)} \tag{2}$$

$$P_{loss} = P_{water} = 2600MW \tag{3}$$

$$m_{persecond} = 6.180 \times 10^3 \text{ kg/s} \tag{4}$$

2 Task 3

RT-02 Boiling Water Reactors P30

3 Task 4

$1ppb = 1/1000ppm$
$10ppm = 200 * 50ppb$

4 Task 5

A power station with cooling tower loses 600 kg/s of cooling water by evaporation. The river water contains 0.6 g/l of calcium bicarbonate (hardness). It loses 1200L/s water, gets 0.72kg/s, 2.27×10^7kg/$year$ of calcium bicarbonate (hardness).

$1year = 31536000s$
$1kg = 2L$
calcium bicarbonate: $Ca(HCO_3)_2$ Molar mass: 162.1146 g/mol
slaked lime, aka Calcium hydroxide: $Ca(OH)_2$ Molar mass: 74.093 g/mol Density: 2.21 g/cm

In a year of continuous operation,