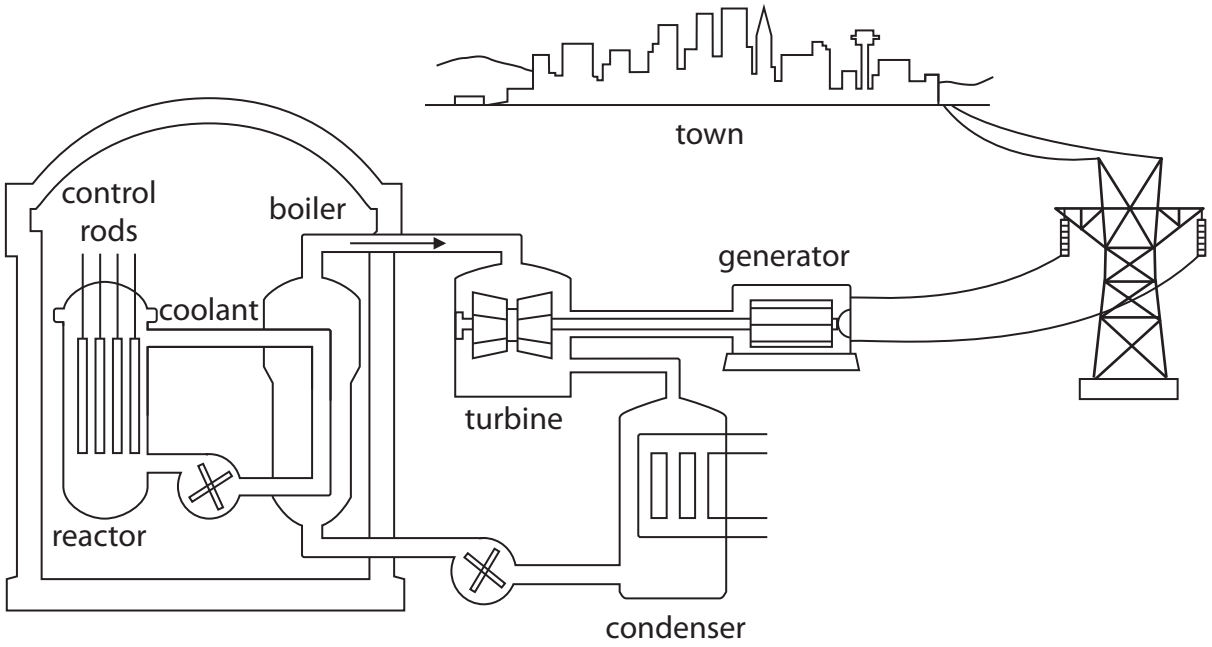
5 (a) The diagram shows stages in electricity generation at a nuclear power station.



Describe the energy transfers that take place in this power station.

(4)

(b) Which of these types of power station uses gravitational potential energy to generate electricity?

(1)

☒ **A** wind farm

☒ **B** geothermal power station

☒ **C** hydroelectric power station

☒ **D** coal-fired power station

(c) Which of these types of power station transfers thermal energy to generate electricity?

(1)

☒ **A** coal-fired power station

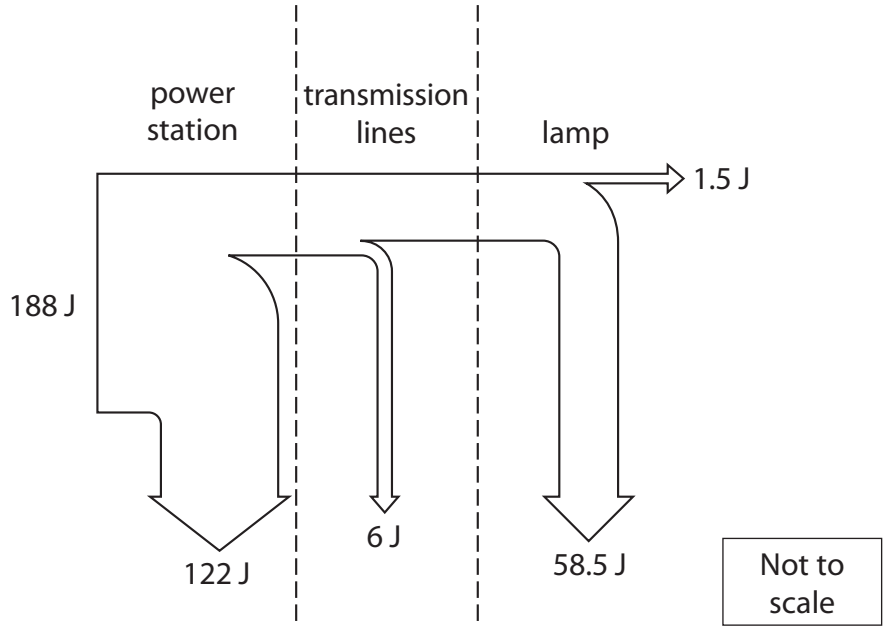
☒ **B** solar farm

☒ **C** hydroelectric power station

☒ **D** wind farm

(d) A power station needs an input of 188 J each second to operate a single 60 W lamp in a house.

The Sankey diagram shows what happens to the input energy at each stage.



(i) Which of these is the main form of energy wasted in the lamp?

(1)

☒ **A** sound

☒ **B** thermal

☒ **C** electrical

☒ **D** light

(ii) State the relationship between efficiency, useful energy output and total energy input.

(1)

(iii) Calculate the overall efficiency from power station input to lamp.

(2)

efficiency = ...

(Total for Question 5 = 10 marks)