2005 Paper 10 Question 12

Software Engineering and Design

Imagine that you are the user interface designer responsible for a system that manages the shutdown of a nuclear power station.

(*a*) Comment on hazards, risks and reliability.   [3 marks]

(*b*) What special procedures should be followed during design?   [3 marks]

(*c*) There is some debate among the team about whether the operator should be in the control loop. What options are there?   [4 marks]

(*d*) In order to assess alternative options like those in part (*c*):

    (*i*) How could you *estimate* the speed of operator action based on a draft interface layout?   [4 marks]

    (*ii*) How could you *measure* the speed of operator action using alternative prototypes?   [4 marks]

    (*iii*) How could you estimate the probability of operator error?   [2 marks]