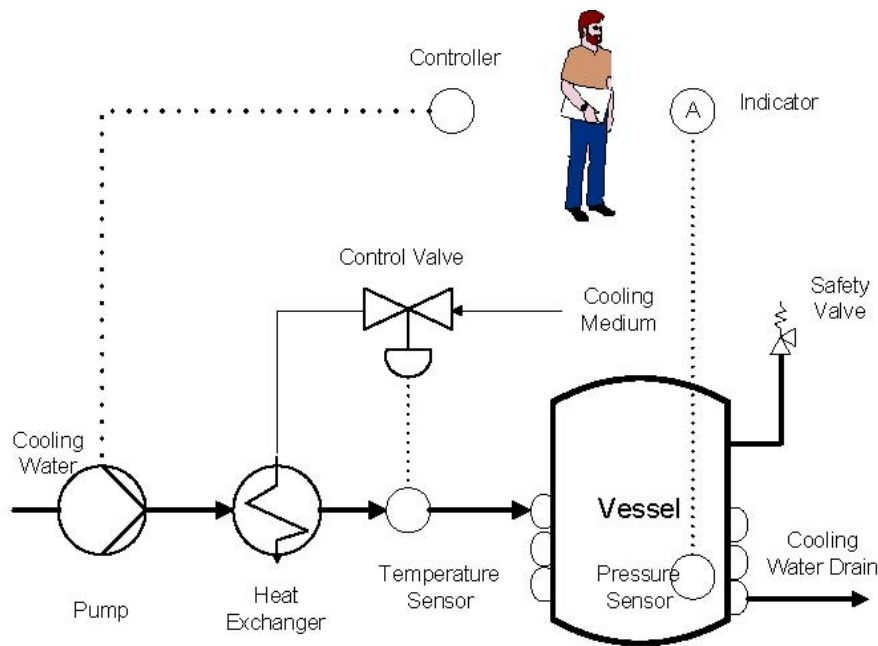


Safety of Nuclear Power Plants
Tutorial - Fault Tree Analysis
Due: April 17th, 2012

Description of the system

- An exothermic reaction takes place in a vessel.
- The cooling of the vessel controls the reaction and the end products.
- In case of an increased exothermic reaction, the operator can increase the speed of the pump using the controller.
- Under design conditions, this measure suffices to avoid vessel burst.



Your task is to help the maintenance personnel to draw a failure tree considering "Vessel Burst" as the top event and quantify this tree. You may assume following probabilities:

Failure of sensor	0.0001	Failure of controller	0.001	Failure of valve	0.01
Failure of heat exchanger	0.001	Failure of pipe	0.0001	Loss of medium/water	0.01
Operator failure	0.0001	Tank break	1E(-6)		