Problem 7 (Topic of Lecture 15)

Viewgraph 28 of Lecture 15 presents the break hole size necessary to remove decay heat as steam under the assumptions of

1. Single phase steamflow rate is constant with time equal to flowrate at time zero from a break in a PWR

2. PWR of 1100 MWe and thermal cycle efficiency of 32.4%

3. Decay heat rates following shut down

Time after shutdown	**% of steady state power**
1 sec	6.5
10 sec	5.1
100 sec	3.2
1000 sec	1.9

Perform the necessary calculations to verify (or refute) the value of hole area at 1 second shown in this figure. Select whatever additional property values are needed based on your knowledge of typical PWR operating conditions.

Please note that the solution Chris and I have performed to date yields a result different from that shown in the figure. Hence as you consider your answer recognize that either the book or Chris and I may be wrong.