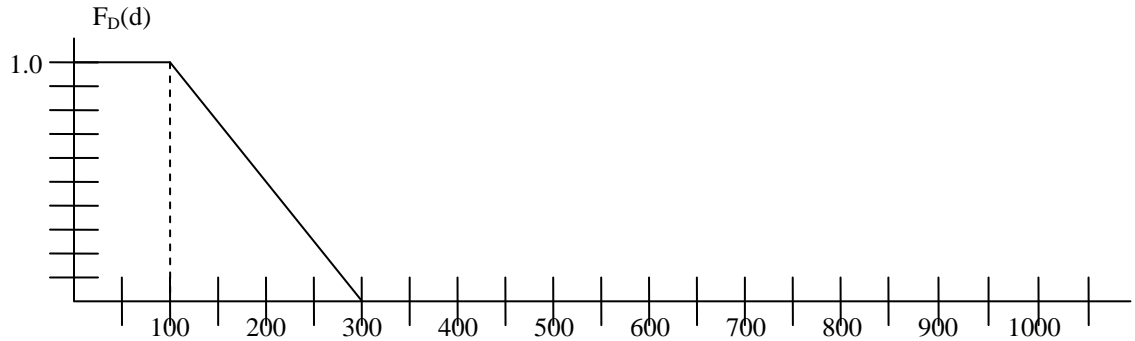


HW#3 Solutions, EE 590F, Fall 2008, Dr. McCalley
Due Oct 24, 2008

1. Three units have capacities and FORs of (50, 0.01), (100, 0.02), and (200, 0.03), respectively, and they serve load characterized by the annual load duration curve given below for a $T=8760$ hour time interval.



Use the effective load approach to compute LOLP and LOLE. Also provide the graph of $F_{D_e}(d_e)$ and estimate EDNS and EENS. You may find this easier to do on a computer.

2. Consider the nine-unit problem considered in class where production costs were computed using a loading order $\{1, 2, \dots, 8, 9\}$. Consider that unit 9 is a must-run unit, and so the loading order is changed to be $\{9, 1, 2, \dots, 8\}$, that is, unit 9 is placed at the top of the list. Repeat the production cost analysis and provide
- A table of new load duration curves following convolution of each successive unit, similar to Table 7 in the notes.
 - LOLP with all units convolved in.
 - The energy delivered by each unit and the associated cost, for all nine units, similar to Table 8 in the notes.
 - The total energy served and the expected unserved energy.