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2 POISSON REDUNDANT RELIABILITY OF OPERATING UNITS (POISSONO.BAS)
3 ORIGINAL DATE: Circa 1985
4 REVISION DATE: October 24, 2020
5 AUTHOR: Phil Rutherford
6 RUN DATE: 24-10-2020 (DD-MM-YYYY)
7 RUN TIME: 20:24:44
8 RUN WITH MMBASIC.EXE (www.mmbasic.com)
9
10 APPLICABLE TO HEAT PIPE PROBLEMS WHERE M+N UNITS ARE OPERATING IN PARALLEL
11 $MU = (M+N) * LAMDA * T$
12
13 MINIMUM NUMBER OF OPERATING UNITS REQUIRED (M) ? 10
14 MAXIMUM NUMBER OF EXCESS (SPARE) OPERATING UNITS (N) ? 5
15 UNIT FAILURE RATE (PER HOUR) ? 0.000001
16 MISSION TIME (HOURS) ? 87600
17
18 RELIABILITY WITH 0 SPARES IS 0.416445366 P(=> 10/ 10.S)
19 RELIABILITY WITH 1 SPARES IS 0.7491466825 P(=> 10/ 11.S)
20 RELIABILITY WITH 2 SPARES IS 0.9100439604 P(=> 10/ 12.S)
21 RELIABILITY WITH 3 SPARES IS 0.9712967716 P(=> 10/ 13.S)
22 RELIABILITY WITH 4 SPARES IS 0.9915458281 P(=> 10/ 14.S)
23 RELIABILITY WITH 5 SPARES IS 0.9976489693 P(=> 10/ 15.S)
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