DATA CENTER AVAILABILITY / DOWNTIME COMPARISSON CHART

General Statement:

The term reliability is classically defined as the probability that some item (equipment / data center) will perform satisfactorily for a specified period of time under a stated set of conditions.

The term availability is classically expressed as the probability that it (equipment / data center) will be operational at a randomly selected future instant in time.

The term fault tolerance describes a computer system or component designed so that, in the event that a component fails or requires maintenance, a backup component or procedure can immediately take its place with no loss of service. Fault tolerance can be provided with software, or embedded in hardware, or provided by some combination.

% Uptime and Down time per year have a direct correlation, however the downtime figure noted does not directly indicate a one time outage for that duration. It can also mean several outages of smaller time duration. Regardless, whether one second, many minutes or an hour it remains an outage.

Please note that 2(N+1) is not shown in the chart below. Typically the symbol "S" or systems can represent (N+1) at a minimum. Details on the level of availability should be carefully reviewed with an experienced engineer. One final note, the higher the availability you design to the more expensive it is to accomplish it.

% UP TIME	DOWN TIME PER YEAR	ELECTRICAL/UPS SYSTEM	MECHANICAL	GENERATOR
95	438 hours	ND/0	ND	0
95.5	394.2 hours	D/0	ND	0
96.5	306.6 hours	D/0	D	0
97	262.8 hours	D/C	D	0
98	175.2 hours	D/N	D	0
98.5	131.4 hours	D/N	N+1	0
99.5	43.8 hours	N	N+1	N
99.9	8.76 hours	N+1	N+1	N+1
99.999	5.26 minutes	2S	2S	2S
99.9999	32 seconds	2S	2S	2S

ND – Not Dedicated
D – Dedicated
N – Units required supplying load
0 – Not Provided
C – Power Conditioner
S-Systems