Power Supply

Power is essential for almost all operations in today's businesses. In the animal care industry this includes being able to perform surgery and diagnostic tests, operating the cash register, and accessing records. Some of the impact of power failure can be mitigated by having manual credit card machines, printed cost sheets, and pocket calculators handy to be able to charge clients, but in most cases the only solution for business resumption is to restore power.

Information on how power is supplied can be obtained from the local electricity supply company. If the priority is low for restoration of power to the business and the anticipated need for electrical power is high, the business owner should consider securing a generator for emergencies. Generators can be obtained through contractual agreements with suppliers. A more reliable solution is to purchase a unit with sufficient power output. A representative from the electricity company or Cooperative Extension Service can advise on the energy requirements for the business and the size of generator that would be needed to supply the appropriate amount of power. Professional electrical contractors should be consulted on how to hook up generators and install electrical wiring and units. Faulty wiring is a potential cause of fires, and faulty hookup of generators can lead to electrocution of people at distant sites.

Many farms are in rural areas that have a low priority for restoration of power supply following a disaster. This is because the reestablishment of power is usually prioritized according to human population density. Also, many farms are on the peripheries of energy grids and in some cases are the only consumers in an area. It is important for owners interested in disaster planning to know the relative priority of their farm for the restoration of power. This important information can make all the difference between expecting to prepare for a couple of days without power or planning to be without power, lights, water, heating, and appliance operation for several weeks.

Type of Emergency	Probability of Occurrence	Human Impact	Property Impact	Business Impact	Internal Resources	External Resources	Row Sum
	1 = low; 5 = high	1 = low impact; 5 = high impact			5 = weak resources; 1 = strong resources		

FIG. 14-2 Vulnerability analysis chart. The lower the score, the better. (From Federal Emergency Management Agency: *Emergency management guide for business and industry: a step by step approach to emergency planning, response and recovery for companies of all sizes,* FEMA 141, Washington, DC, 1993, FEMA.)

Agreements can be made with power supply (generator) companies. Generators can be reserved through several companies, and these will be delivered on a preferential basis in disasters.

Professional electrical contractors should be consulted on properly installing electrical wiring and generators. The following table contains information on determining the capacity of a generator needed to run a business.

Estimating the Capacity of a Generator to Run a Business or Farm

kVA/kW amperage chart—80% powerfactor

kVA	kW	208V	220V	240V	380V	400V	440V	450V	480V	600V	2400V	3300V	4160V
6.3	5.	17.5	16.5	15.2	9.6	9.1	8.3	8.1	7.6	6.1			
9.4	7.5	26.1	24.7	22.6	14.3	13.6	12.3	12.	11.3	9.1			
12.5	10.	34.7	33.	30.1	19.2	18.2	16.6	16.2	15.1	12.			
18.7	15.	52.	49.5	45.	28.8	27.3	24.9	24.4	22.5	18.			
25.	20.	69.5	66.	60.2	38.4	36.4	33.2	32.4	30.1	24.	6.	4.4	3.5
31.3	25.	87.	82.5	75.5	48.	45.5	41.5	40.5	37.8	30.	7.5	5.5	4.4
37.5	30.	104.	99.	90.3	57.6	54.6	49.8	48.7	45.2	36.	9.1	6.6	5.2
50.	40.	139.	132.	120.	77.	73.	66.5	65.	60.	48.	12.1	8.8	7.
62.5	50.	173.	165.	152.	96.	91.	83.	81.	76.	61.	15.1	10.9	8.7
75.	60.	208.	198.	181.	115.	109.	99.6	97.5	91.	72.	18.1	13.1	10.5
93.8	75.	261.	247.	226.	143.	136.	123.	120.	113.	90.	22.6	16.4	13.
100.	80.	278.	264.	240.	154.	146.	133.	130.	120.	96.	24.1	17.6	13.9
125.	100.	347.	330.	301.	192.	182.	166.	162.	150.	120.	30.	21.8	17.5
156.	125.	433.	413.	375.	240.	228.	208.	204.	188.	150.	38.	27.3	22.
187.	150.	520.	495.	450.	288.	273.	249.	244.	225.	180.	45.	33.	26.
219.	175.	608.	577.	527.	335.	318.	289.	283.	264.	211.	53.	38.	31.
250.	200.	694.	660.	601.	384.	364.	332.	324.	301.	241.	60.	44.	35.
312.	250.	866.	825.	751.	480.	455.	415.	405.	376.	300.	75.	55.	43.
375.	300.	1040.	990.	903.	576.	546.	498.	487.	451.	361.	90.	66.	52.
438.	350.	1220.	1155.	1053.	672.	637.	581.	568.	527.	422.	105.	77.	61.
500.	400.	1390.	1320.	1203.	770.	730.	665.	650.	602.	481.	120.	88.	69.
625.	500.	1735.	1650.	1504.	960.	910.	830.	810.	752.	602.	150.	109.	87.
750.	600.	2080.	1980.	1803.	1150.	1090.	996.	975.	902.	721.	180.	131.	104.
875.	700.	2430.	2310.	2104.	1344.	1274.	1162.	1136.	1052.	842.	210.	153.	121.
1000.	800.	2780.	2640.	2405.	1540.	1460.	1330.	1300.	1203.	962.	241.	176.	139.
1125.	900.	3120.	2970.	2709.	1730.	1640.	1495.	1460.	1354.	1082.	271.	197.	156.
1250.	1000.	3470.	3300.	3009.	1920.	1820.	1660.	1620.	1504.	1202.	301.	218.	174.
1563.	1250.	4350.	4130.	3765.	2400.	2280.	2080.	2040.	1885.	1503.	376.	273.	218.
1875.	1500.	5205.	4950.	4520.	2880.	2730.	2490.	2440.	2260.	1805.	452.	327.	261.
2188.	1750.			5280.	3350.	3180.	2890.	2830.	2640.	2106.	528.	380.	304.
2500.	2000.			6020.	3840.	3640.	3320.	3240.	3015.	2405.	602.	436.	348.
2812.	2250.			6780.	4320.	4095.	3735.	3645.	3400.	2710.	678.	491.	392.
3130.	2500.			7520.	4800.	4560.	4160.	4080.	3765.	3005.	752.	546.	435.
3750.	3000.			9040.	5760.	5460.	4980.	4880.	4525.	3610.	904.	654.	522.
4375.	3500.			10550.	6700.	6360.	5780.	5660.	5285.	4220.	1055.	760.	610.
5000.	4000.			12040.	7680.	7280.	6640.	6480.	6035.	4810.	1204.	872.	695.

Data from Aggrecko: *Emergency planning guide for power, temperature, and compressed air rental,* New Iberia, La, 1996, Aggrecko.