IRIS Network - Portland
Booster Power Supply Standby Battery Calculations

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Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 01/13/15

Strobe Booster Panel (BPS6A)

	G1RF-HDVM Horn/Strobe (20v)				G1RF-VM Strobe (20v)			495S	Quiescent Current	Alarm Current	Rer Cl
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	n/a			
	88	109	193	248	71	98	188	350			
Panel									0.0700		
Circuit1	4		5		2					1.4590	51.37 %
Circuit2	2	1	7		4					1.9200	36.00 %
Circuit3										0.0000	100.00 %
Circuit4										0.0000	100.00 %
									0.0700	**3.3790**	48.02 %
									Total Quiescent	**Total Alarm**	**Remaining % of Panel**

All currents are expressed as mA.
Max current per ckt = 3.0 Amps. Max current per panel = 6.5 Amps.

Total Quiescent Amp x Time Required (24 Hours)	1.680	AmpHr
Total Alarm Amp x Time Required (5 Minutes)	0.282	AmpHr
Total Battery Required	1.962	AmpHr
Total Battery Required + 20%	**2.354**	AmpHr
Battery Supplied	**7.2**	AmpHr

NAC Circuit Voltage Drop/Maximum Length Calculations

Formulas Used: $R_t = (D) \times (R_w) / 1000'$

$V_d = (R_t) \times (I_t)$

Substitute for (R_t) and solve for D

$D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$

R_t = Total Circuit Resistance
D = Total Circuit Length (Feet)
R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
V_D = Circuit Voltage Drop (Max allowed is 4.0Vdc)
I_t = Total Circuit Current

Notes:
1. **NAC Circuit terminal voltage 24Vdc.**
2. **A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.**
3. **Current values listed per device are based on 20Vdc.**

	G1RF-HDVM Horn/Strobe (20v)				G1RF-VM Strobe (20v)			495S	Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	n/a			
	88	109	193	248	71	98	188	350		12AWG (3.5)	14AWG (5.2)
Circuit 1	4	0	5	0	2	0	0	0	1.1790	969.34 Ft	652.44 Ft
Circuit 2	2	1	7	0	4	0	0	0	1.9200	595.24 Ft	400.64 Ft
Circuit 3	0	0	0	0	0	0	0	0	0.0000	#DIV/0! Ft	#DIV/0! Ft
Circuit 4	0	0	0	0	0	0	0	0	0.0000	#DIV/0! Ft	#DIV/0! Ft