NAC Circuit Voltage Drop Calculation

Project Name	**CMP- Portland Service Center**		
Date	**2/6/2017**		
Circuit Number	**Nac#7**		
Area Covered			
NAC Source Alarm Voltage	19.1	Wire	Resistance
Minimum Device Voltage	16	Gauge	Per KFt Cable
Distance to first appliance	200	14	3.14
Total Circuit Current	2.093		

Wire Gauge for balance of circuit	14	3.14

Circuit is within limits

	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.176		17.79	1.31	6.9%
Appliance 2	0.125	35	17.57	1.53	8.0%
Appliance 3	0.125	30	17.41	1.69	8.9%
Appliance 4	0.125	50	17.14	1.96	10.2%
Appliance 5	0.176	50	16.90	2.20	11.5%
Appliance 6	0.346	50	16.69	2.41	12.6%
Appliance 7	0.397	50	16.53	2.57	13.5%
Appliance 8	0.194	50	16.43	2.67	14.0%
Appliance 9	0.253	40	16.38	2.72	14.3%
Appliance 10	0.176	75	16.33	2.77	14.5%
END			16.33	2.77	14.5%
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Totals	2.093	630			

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 2014 NEC Table 8 Uncoated DC resistance. All resistance is based on solid conductors