

Station Siting Issues Affecting Performance

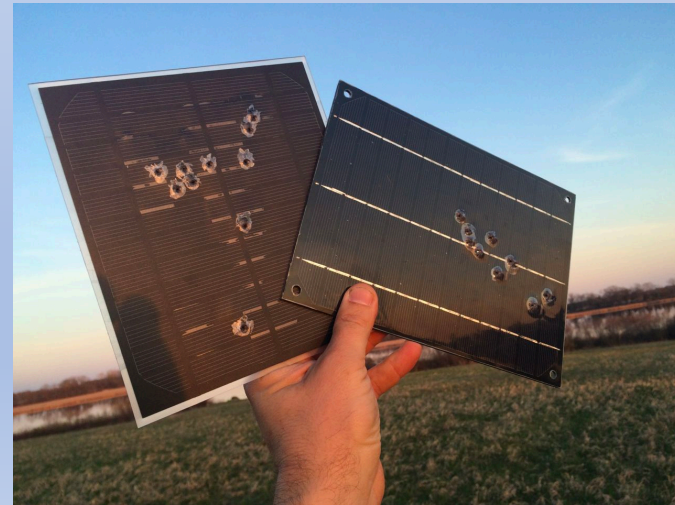
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WILL YOUR SITE KEEP WORKING?

LOCATION CONSIDERATIONS

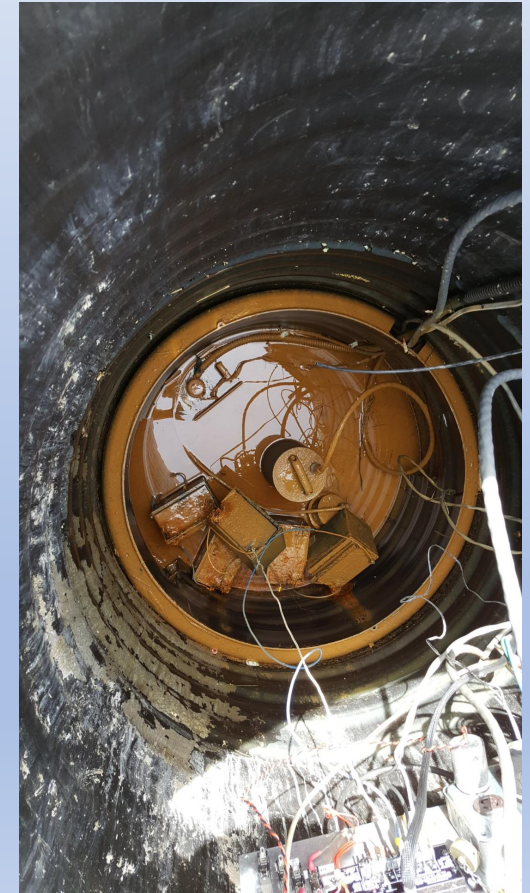
- IS THE SITE SUBJECT TO VANDALISM OR THEFT?
- DOES THE PUBLIC HAVE ACCESS TO THE SITE?
- IS THE SITE VISIBLE FROM ROADS OR TRAILS?



WILL YOUR SITE KEEP WORKING?

LOCATION CONSIDERATIONS, CONTINUED

- **IS THE SITE SUBJECT TO FLOODING?**
- **COULD THE SITE BE CONSUMED BY EROSION?**
- **IS THE SITE SUBJECTED TO HIGH WINDS?**
- **WILL THE SITE SEE HEAVY SNOW LOADING?**



Snow loading at 8000 feet



Flooded TA vault with 6" of water





WILL YOUR SITE KEEP WORKING?

LOCATION CONSIDERATIONS, CONTINUED

- WILL YOUR SITE BE PRONE TO WILDFIRES?
- WILL YOUR STATION WITHSTAND A WILDFIRE?

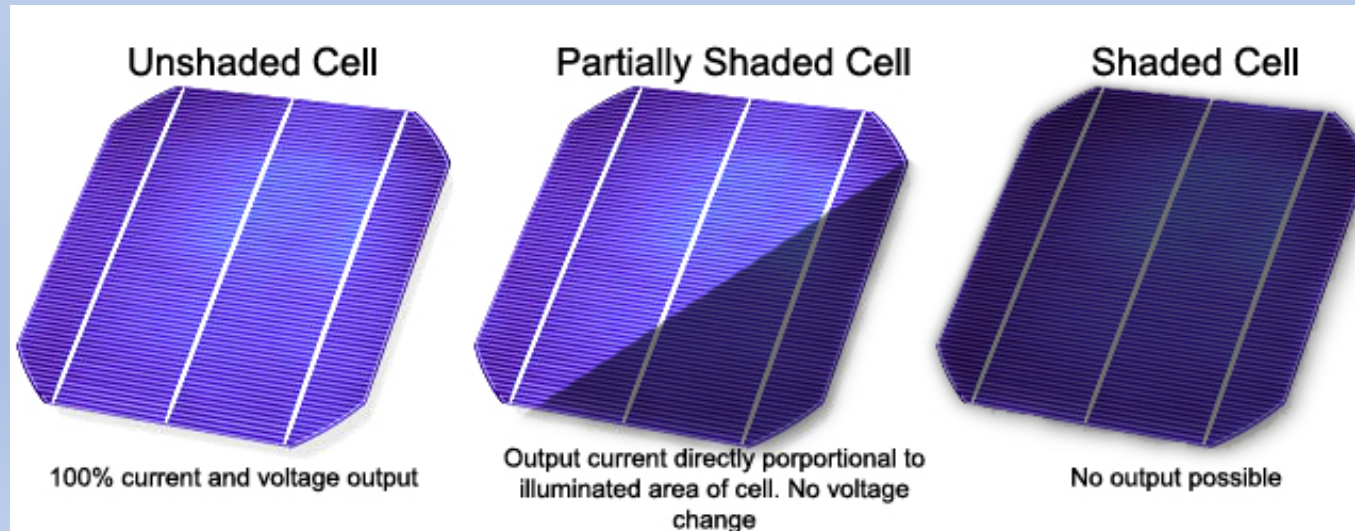




WILL YOUR SITE KEEP WORKING?

POWER CONSIDERATIONS

- IF AC POWERED, IS IT RELIABLE ? DO YOU HAVE YOUR OWN CIRCUIT?
- IF SOLAR POWERED, IS THERE SHADING?
- DO YOU HAVE ENOUGH BATTERY POWER TO RUN STATION FOR SEVERAL DAYS WITH NO POWER SOURCE?



Solar panels elevated for snow loading



Enclosure with 400 Ah of batteries



WILL YOUR SITE KEEP WORKING?

ACCESS CONSIDERATIONS

- ARE YOU ABLE TO GAIN ACCESS TO A SITE IN ALL WEATHER CONDITIONS?
- IF NOT, YOUR STATION WILL REMAIN “BROKEN” UNTIL ACCESS IS POSSIBLE.



WILL YOUR SITE PERFORM WELL?

SENSOR INSTALLATION CONSIDERATIONS

- IS THE SENSOR “LEVEL”?
- IS THE SENSOR ORIENTED PROPERLY? TO WHAT TOLERANCE?
- IS THE SENSOR THERMALLY INSULATED? TO WHAT DEGREE?



WILL YOUR SITE PERFORM WELL?

NOISE CONSIDERATIONS

- IS THE SITE SUBJECT TO “CULTURAL NOISE”?
- IS THE SITE NEAR LARGE TREES, IRRIGATION PUMPS, POWER POLES, RADIO TOWERS, ROAD TRAFFIC, PEOPLE, LIVESTOCK, ETC.?
- WHERE IS THE BEST PLACE TO INSTALL A SEISMOMETER?
- SOME OF THIS IS UNAVOIDABLE...WE HAVE TO MAKE COMPROMISES



WILL YOUR SITE PERFORM WELL?

TELEMETRY CONSIDERATIONS

- DO YOU HAVE CELL SERVICE? IS IT RELIABLE?
- DO YOU HAVE ACCESS TO THE HOST'S NETWORK? IS IT RELIABLE?
- DO YOU HAVE LINE OF SIGHT TO A RADIO TOWER THAT YOU HAVE ACCESS TO? IS IT RELIABLE
- NO TELEMETRY = NO DATA !!!
- WHAT ARE YOUR LATENCY REQUIREMENTS?

THANK YOU FOR LISTENING

LET'S CHAT



RESOURCES

- ANSS Instrumentation Guidelines:
https://pubs.usgs.gov/of/2008/1262/pdf/OF08-1262_508.pdf
- PASSCAL; Station Siting Considerations:
<https://www.passcal.nmt.edu/content/instrumentation/field-procedures/station-siting>
- Earthscope: The Design and Implementation of Earthscope's US Array, Transportable Array:
http://www.usarray.org/files/docs/pubs/L48_TA_Report/TA_L48_high-res.pdf
- Technical Guidelines for the Implementation of the Advanced National Seismic System: <https://pubs.usgs.gov/of/2002/ofr-02-0092/ofr-02-0092.pdf>