



William Miller <william@millersolar.com>

RE: [EXT]RENEW2023-01838

1 message

William Miller <william@millersolar.com>

Fri, Nov 17, 2023 at 12:44 AM

Reply-To: william@millersolar.com

To: Matt Varvel <mvarvel@co.slo.ca.us>

Cc: Jessica Hall <jhall@co.slo.ca.us>

Bcc: Heather Wethington <heather@wethingtonengineering.com>, Jim Gowdy <gowdyelectriccambria@gmail.com>, Theodore Van den Heuvel <theomaan@yahoo.com>, Jessica Steely <Jessicas@semmesco.com>, Brendan Cosgrove <brendanc@semmesco.com>

Matt:

Respectfully, I disagree with many of the points you made below. See my comments.

William

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From: Matt Varvel [mailto:mvarvel@co.slo.ca.us]**Sent:** Thursday, November 2, 2023 10:34 AM**To:** william@millersolar.com**Cc:** Jessica Hall**Subject:** Re: [EXT]RENEW2023-01838

William,

Please upload your responses to the portal. Please remove the structural calcs from the plans. Each document shall be a separate file named what it is.

This is not how you instructed me when we discussed this over e-mail. The county provides conflicting information on the document naming conventions, as I have pointed out in the past. I separated out the structural calcs and resubmitted them, but we would all save a lot of time if the counties on-line application portal was not so tragically flawed. It was refreshing when working with Vera Graham that she recognized this and acknowledged it. Everyone else has treated me like I am some kind of

idiot and that is demeaning.

Special inspections are required based on the project design from the building code. All special inspections shall be dictated by the engineer of record on their plans per our program and per the building code.

Special inspections can be waived, so they are therefore discretionary, by definition. The engineer of record has determined that a special inspection is not warranted: "The PV structure is both construction of a minor nature and a Group U structure that is an accessory to a residential occupancy building, so special inspection of the welds and pole embedment is not required. (2022 CBC Section 1704.2, Exceptions 1 and 2). These are not Driven Deep Foundations, so inspections per 2022 CBC 1705.7 are also not required." We will be submitting the BLD-1031 and BLD-1032 but none of the categories for inspection will be selected. Therefore there will be no need for special inspections or special inspectors.

Your single line is not drawn per industry standards.

There are no published requirements for any given standard. My drawings are clear, concise, complete and arguably superior to any manufacturer's drawings. If there is something specific missing from my plan set, point it out. Can we drop this now?

I understand that inverters and charge controller may have multiple sources tying into them.

Maybe you understand this point but whoever reviewed the original plan set obviously does not. Will there be a qualified person assigned to review my plan set? Correcting an unqualified reviewer is a waste of my time. Battery inverters are common these days so you should have someone in your department that knows how these systems work. If you need help explaining these systems, just ask.

Update your drawings and provide the manufacturers recommendations, listing and installation instructions.

I have never been required to submit a manufacturer's installation manual. I did so but I find the request rather odd. Plan reviewers should be conversant on the basics of the systems they are reviewing. The wording of many of the corrections points indicate he/she is not.

They always have a single line diagram in their documents, and they provide information on the maximum a/c, d/c input and outputs etc..

The manufacturer's drawings are generic, advisory, incomplete and poorly drawn and therefore not suitable for inclusion in a permit application. Battery inverter data sheets do not list a "maximum dc input current." The plan reviewer might be confusing the specifications for a non-battery inverter.

We cannot do plan review via e-mail. All submittals and responses must go through the portal. If you choose you can convert to paper and work with us in person at the counter.

It is not my intention to review the plan via e-mail. My intention was to diplomatically tell you the plan review contained many items that are not appropriate on this plan review, obviously because the plan reviewer is not qualified to review these plans.

I will wait to see your complete resubmittal on the portal.

Does this mean you will be reviewing the resubmission? They will be uploaded in the next 24 hours.

Work with Jessica if you need assistance with the portal.

Matt Varvel

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DEPARTMENT OF PLANNING AND BUILDING

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From: William Miller <william@millersolar.com>

Sent: Thursday, November 2, 2023 9:43 AM

To: Matt Varvel <mvarvel@co.slo.ca.us>

Subject: [EXT]RENEW2023-01838

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Matt:

I hope you are doing well.

I received a set of plan corrections (RENEW2023-01838) regarding an off-grid project we are proposing. I don't know if I am off-base here, but there are a lot of items on the corrections that seem like they should not be there. It doesn't look like you reviewed the project. I have a few questions I would like to ask that will help me formulate my response.

I have attached my draft, incomplete response to this message along with the plan set to make it easy for you to glance over.

1. I see we are required to have a special inspection. We have permitted engineered PV structures before and this was never required. I have never dealt with this but I have now studied it pretty thoroughly. Frankly this requirement could kill this project or force us to design a racking system that would be far less productive. The CBC in Section 1704.2, Exception 1 allows the requirement to be waived for constructions of a minor nature. Here is the passage: *1. Special inspections and tests are not required for construction of a minor nature or as warranted by conditions in the jurisdictions as approved by the building official.* This rack is a pretty simple solar rack in the backyard of a home that is tilted just high enough to maximize winter solar harvest. We have engineering analysis that proves we have planned for the proper embedment to resist wind loads. We have driven test pipes to prove we can achieve this embedment. I hope that would be adequate. Might this racking system be considered for a waiver from Special Inspection under 1704.2, Exception 1?

2. There seems to be some confusion on the part of the reviewer on the process of feeding AC to and from battery inverters: *7 justify sending one conductor to one panel and another conductor to another panel from each inverter.* Any battery inverter with a generator and/or grid AC source will need AC input(s) and output connections. Attached is a diagram from Outback depicting this power flow. I did include directional arrows on my drawing to help make this clear. What can we do to educate plan checkers on this standard practice?

3. We are designing a system without a conventional utility service. The service would be where the required sole neutral-ground bond would be located. Lacking a

service, we are still required to establish a single N-G bonding point for the AC system. We have always chosen the inverter fed panel as the logical AC bonding point. We will be connecting all bonding leads as directly as possible to that bonding point. This comes up in: *12 Justify taking an equipment ground to one panel but a feeder to another panel from the generator.* We are running the generator bonding lead to the single bonding point or to a bus immediately connected to that bonding point. This is best-practice. How do we educate plan checkers on this finer point of off-grid power system bonding?

Matt, many thanks for looking this over. If there is anything I can do to clarify the project, how we plan on implementing it, or anything I can do to help you understand the more obscure points of off-grid technology, please let me know.

William Miller

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