

From: Gary Brown [mailto:gary@zglobal.biz]

Sent: Tuesday, April 15, 2014 2:02 PM

To: Flynn, Tom

Cc: Sparks, Robert; Kravchuk, Lyubov; Zhu, Songzhe; Wright, Linda; Feusi, Leslie

Subject: April IR Open Window & Battery Storage

Hello Tom, (and the rest of you engineers and Interconnection folks),

I understand the ISO is conducting a stakeholder process for Energy Storage due in part to the anticipated ground swell of Interconnection Requests related to Battery Storage. I also realize there are comments due on the recent presentation 4/14/2014. As the timing of the IR submissions will end shortly thereafter, in addition to charge and discharge characteristics, will there be a requirement for a "PSLF" dynamic model submission? As there seems to be no model immediately available (albeit there are some custom models developed in PSS/E for ABB and Alstom application in Europe, and maybe in the US), and to date GE and/or WECC has no "approved" battery storage model in PSLF format.

Questions:

1. What will the ISO/PTOs be looking for in model .dyd and .epc files?
2. Will the ISO accept modeling PSS/E format, as they may exist?
3. For SCE's 8 MW Lithium-ion battery storage facility, (Tehachapi Wind Energy Storage Project connecting to the Monolith 66 kV Substation) what did the ISO/SCE accept and/or use for modeling purposes?

There is concern that the IR validation process may be extended and problematic without some advanced knowledge of what the ISO requires/expects/accepts.

Any insightful information on this would be greatly appreciated.

Thanks and Best Regards to all,

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