



Ravi Venkataraman <rvenkataraman@richmondvt.gov>

Three Phase Power and EV Charging

Denis, Dean <ddenis@vermontelectric.coop>

Mon, Aug 23, 2021 at 4:48 PM

To: Ravi Venkataraman <rvenkataraman@richmondvt.gov>

Cc: "Joslyn L. Wilschek (joslyn@ilovt.net)" <joslyn@ilovt.net>, "Fiske, John (John.Fiske@greenmountainpower.com)" <John.Fiske@greenmountainpower.com>

Hi Ravi,

Please see my responses to your questions, in red, below.

I'm copying John from GMP for their information and since you may have more follow-up for them to respond to also.

Thank you,

Dean

From: Ravi Venkataraman <rvenkataraman@richmondvt.gov>

Sent: Monday, August 23, 2021 11:47 AM

To: Denis, Dean <ddenis@vermontelectric.coop>

Subject: Three Phase Power and EV Charging

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Hi Dean,

Somewhat tangential to the Richmond substation project, I have some questions for you about DC fast charging stations. The Richmond Planning Commission is looking into requiring a DC fast charging station for gas station uses. This regulatory change would impact the Richmond Mobil gas station, and would require them to install a DC fast charging station for any redevelopment project in the future. My questions are:

- Currently, would an applicant be able to successfully install a DC fast charging station at the Mobil gas station? **There is single phase power there now, so it would depend on the charger's load requirements.**
- Is there three phase power? **There is 3 phase from Richmond substation extending across the interstate to RT 2. VEC would need to install a few spans of 3 phase along RT 2 to the Mobil station and install a 277/480V 3 phase pad mount transformer in order to serve the more power intensive chargers.**
- Would the improvements to the substation allow for the installation of a DC fast charging station at the Mobil gas station? **The proposed substation improvements would be completely independent of this and only improve the reliability of the VEC distribution feeder serving the gas station.**
- How much would it cost to be able to put in place the utility infrastructure to install a DC fast charging station at that location? **Our Utility Designer estimates \$50k for the VEC portion of the work (plus customers cost for excavators and electricians) in order to extend the three phase power line with a pad-mounted service transformer sized to the specified load.**
- What is the utility's capacity to provide power to DC fast charging stations? **Fast chargers can each draw anywhere from 50-350kW, so it really depends on the specific location. In this case, the existing Richmond substation**

transformer would have the capacity to serve this additional load. Is there a limit the town should keep in mind if we want to pursue a requirement for new developments to have DC fast charging stations? There is clearly the possibility that limited local line capacity and / or higher costs to provide any necessary system improvements to the local areas could make these projects less feasible. I suggest first checking in with the local utility to get a better sense for these system impacts.

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