



Ravi Venkataraman <rvenkataraman@richmondvt.gov>

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## Three Phase Power and EV Charging

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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

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**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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