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SUPPLEMENTAL RESPONSES TO CEC STAFF DATA REQUEST SET 1 (15-20)

CA3 Backup Generating Facility (21-SPPE-01)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION
SUBMITTED BY: **Vantage Data Centers**

June 22, 2021

DAYZEN LLC

INTRODUCTION

Attached are Vantage Data Centers (VDC) supplemental responses to California Energy Commission (CEC) Staff Data Request Set No. 1 (15-20) for the CA3 Backup Generation Facility (CA3BGF) Application for Small Power Plant Exemption (SPPE) (21-SPPE-01). Staff issued Data Request Set No. 1 on June 7, 2021 and VDC provided partial responses on June 15, 2021. These Supplemental Responses to Data Requests 15-20 are provided after receiving input from Silicon Valley Power (SVP).

15. Please explain whether the Uranium Substation or the Walsh Substation could provide 100 percent power to the CD3DC in the event one of the substations is unable to.

RESPONSE TO DATA REQUEST 15

SVP provided the following response.

Walsh and Uranium Substations are General Distribution Stations for customers connected at 12kV and with loads less than 13.5 MW's. In the event a customer load will exceed 13.5 MVA for a single parcel, as we expect for CAD3DC, then they will be required to build a dedicated substation.

VDC adds that it has proposed the necessary substation improvements and expansion for a dedicated Switchyard in its Application for SPPE to accommodate electricity delivery above 13.5 MVA. The improvements are designed to accommodate full electricity demand of the CA3DC after full buildout.

16. SVP has divided its 60 kV system into "loops" each with its own name; please clarify which loop the CA3DC on-site substation would be interconnected to.

RESPONSE TO DATA REQUEST 16

CA3DC will be on the Central Loop.

17. Please explain whether the additional load associated with CA3DC would cause overloads on the SVP transmission system that would require upgrades to the existing system.

RESPONSE TO DATA REQUEST 17

SVP provided the following response.

From SVP's initial investigations, the additional load associated with CA3DC will be load ramp restricted until projects to reconfigure the Center Loop and Northwest loop and certain PG&E projects being developed to increase the transmission capacity to the SVP system are completed. To fully understand the impacts of this facility, SVP is conducting a System Impact Study funded by CA3DC and that information will be presented to CA3DC. The System Impact Study is underway. Once the System Impact Study and the SVP and PG&E projects are completed, CA3DC will be allowed to ramp

based upon the approved load ramp schedule. Please see attached letter to Vantage from SVP dated 9/24/2020 for additional details related to when load will be able to be served to this facility.

VDC adds that it is proceeding in constructing and operating the CA3DC in phases as described in its SPPE Application pursuant to the 9/24/2020 letter (attached). The SPPE Application has been prepared to accommodate the future load growth and electricity availability but presents the "whole of the action" as required by CEQA for full planned buildout of the CA3DC facility.

18. Please provide for the 60 kV loop on the SVP system that would serve the CA3DC:

    a. A physical description
    b. The interconnection points to SVP service
    c. The breakers and isolation devices and use protocols
    d. A list of other connected loads and type of customers
    e. A written description of the redundant features that allow the system to provide continuous service during maintenance and fault conditions

RESPONSE TO DATA REQUEST 18

The following response was provided by SVP.

a. The loop serving CA3DC is an overhead transmission line comprised of mainly wooden transmission poles, bundled 954 AAC Conductor, serving the Central Clara Area.

b. Interconnection with the SVP system would be in the 60KV Junction Feeder that serves the customer's transformer.

c. SVP utilizes a breaker and half bus design primarily to isolate any faults within each breakers zone of protection, isolating a fault to the specific location and preventing an extended outage to adjacent transformers within the substation or to an adjacent substation.

d. Center Loop serves a mix of General Distribution substations and customer dedicated 60kV Junctions for a total of six substations.

e. Loop services are designed to have two sources of power so that in the event of an unplanned outage, the faulted zone is isolated from the remainder of the loop system, isolating the unplanned outage to

the affected zone. In the same manner, a planned outage used to perform maintenance on a section of the transmission line can be performed without having to drop load, by planning the isolation locations around the piece of equipment to be maintained.

19. Please describe any outages or service interruptions on the 60 kV systems that would serve the CA3DC:
    a. How many 60 kV lines serve data centers in SVP, and how many data centers are on each?
    b. What is the frequency of these outages and how would they require the use of backup generators?
    c. How long were outages and what were their causes?
    d. Are there breakers on the 60 kV line or disconnect switch(es) and did they isolate the faults?
    e. What was the response to the outage(s) by the existing data centers (i.e., initiated operation of some or all back up generation equipment, data offshoring, data center planned shutdown, etc.)?

RESPONSE TO DATA REQUEST 19

The following responses were provided by SVP.

a. SVP currently has five 60 kV loops plus an internal 60 kV loop at the Scott Receiving Station (SRS) and the Kifer Receiving Station (KRS). The number of Data Centers (DC) on each Loop:
    i. North East Loop—4 DC
    ii. North West Loop—5 DC
    iii. East Loop—8 DC
    iv. Center Loop--18 DC
    v. South Loop—5 DC
    vi. SRS Internal Loop – 2 DC
    vii. KRS Internal Loop – 4 DC

b&c. There were four outages between January 1st, 2009 and June 16, 2021 where SVP lost both 60kV feeds into a substation that affected a Data Center where back-up generators were required to operate. Over this time period, this equates to a system reliability of 99.98%.

The outages occurred on May 28th, 2016 (7 hours 23 minutes), December 2nd, 2016 (12 minutes) and two different outages on August 16th, 2020 (one 2 hours 21 minutes and second 10 hours 22 minutes). This is a total outage time affecting Data Centers of 20 hours and 18 minutes. Only the Data Centers at various locations on the associated loops were affected, not all Data Centers.

Since 2009, 60kV outage data is presented in the below table (over 12 years, 5 months of data). The items highlighted in yellow indicate that there was some kind of fault occurred. The items highlighted in blue is when we had a customer out of power as a result. The non-highlighted items are where an outage was taken to correct an observed situation.

DATE	LINE (S)	CAUSE	DURATION	CUSTOMERS OUT OF POWER
01/29/21	HOM-BRO	Tree Trimming	1 Hour 38 Min	0
12/29/20	ZEN-URA	Tree Trimming	1 Hour 25 Min	0
09/26/20	HOM-BRO	Tree Trimming	2 Hours 55 Min	0
09/22/20	NAJ-PLM	Tree Trimming	1 Hour 36 Min	0
08/16/20	KRS 60KV BUS AND LAF SUB	Multiple Lightning Strikes	2 Hours 21 Min	1273
08/16/20	WAL-FIB, WAL-URA	Multiple Lightning Strikes	10 Hours 22 Min	5438
10/24/19	MIS CB62 (NRS-MIS)	Hot Spot Repair	29 Min	0
10/11/19	WAL-FIB	Balloons close to line	6 Min	0
09/17/16	KRS-PLM	Rotten Pole Replacement	10 Hours 5 Min	0
08/14/19	SRS CB982-(SRS-CEN)	Faulty JMUX Card	4 Min	0
03/30/19	URA-WAL	Bird @ UW43	1 Hour 46 Min	0
11/22/18	HOM-SER	Pole Fire HS9 (force out)	1 Hour 27 Min	0
07/5/18	SER-HOM	Force out to remove balloons	9 Min	0

05/5/18	SER-HOM	Force out to remove balloons	11 Min	0
09/1/17	AGN-NAJ	Force out to cut trees	1 hour 5 min	0
08/8/17	URA-ZEN	Force out to remove balloons	20 Min	0
05/25/17	SRS-FRV	Tripped during SCADA commissioning	1 Min	0
05/8/17	NWN-ZEN	Force out to remove bird	50 Min	0
04/29/17	SRS-HOM	Force out to remove balloons	2 hours 22 min	0
03/20/17	JUL-CEN	Third Party got into 60kV	9 hours 55 min	0
01/22/17	SER-BRO	Tree in wires	3 hours 31 min	0
01/22/17	NAJ-PLM	A phase contact guy wire when winds pick up	1 hour 47 min	0
01/19/17	KRS-PLM	Palm frond between phases	41 min	0
01/18/17	NAJ-PLM	A phase contact guy wire when winds pick up	1 Hour 44 min	0
12/02/16	RAY T1 & T2	Dropped both transformers during restoration switching due to relay not reset	12 minutes	257
09/06/16	SRS-CEN	Bird Contact	40 Min	0
06/30/16	WAL-FIB	Bird nest contact	12 hours and 4 min	0
05/28/16	SRS-FRV-NWN-ZEN	Balloons in line and breaker fail	7 hours 23 min	28
02/17/16	SRS-FRV	Palm tree with fire	7 hours	0
11/18/15	SER-BRO	Arcing wires forced	2 hours 59 min	0
11/16/15	SER-BRO	Rotten Pole- forced	22 hours 32 min	0
11/09/15	JUL CB32	Possible lightning	53 min	0
10/29/15	SER-BRO	Roller arcing-forced	3 hours 33 min	0
08/12/15	BRO-DCJ, BRO T1	Squirrel on CB100	3 hours 55 min	2155
06/24/15	CCA CB22	Bad JMUX card	3 hours 23	0

			min	
05/30/15	SER-BRO	No cause found	3 hours 12 min	0
03/31/15	BRO-DCJ 12KV BUS 1 & 2	Squirrel across 12kv bus tie	3 hours 26 min	2927
01/28/15	Mission CB12	Shorted control cable	6 hours 29 min	0
04/24/14	DCJ CB42	Tripped during relay work. BF wired as TT	1 Hour 30 Min	0
10/14/13	URA_WAL	Sheared Hydrant hit 60kV above	2 hours 26 min	0
12/06/12	Jul CB 32	Tripped due to cabinet vibration	2 min	0

d. Each loop has breaker/switches and they operated as expected.

e. SVP does not have knowledge of how each Data Center reacts to a SVP caused outage. SVP only know the times we restored service.

20. Please provide the following regarding Public Safety Power Shutoff (PSPS) events:

a. Would historical PSPS events have resulted in the emergency operations of the backup generators at the proposed CA3DC?
b. Have there been changes to the SVP and PG&E system around the CA3DC that would affect the likelihood that future PSPS events would result in the operation of emergency generators at the proposed CA3DC?

RESPONSE TO DATA REQUEST 20

SVP provided the following responses.

a. To date, SVP has not had any historical PSPS events. As such there has been no impact to SVP or SVP customers by a PG&E initiated PSPS event in other areas.

b. SVP has not been notified of any changes related to PG&E's transmission system that would change the likelihood of future PSPS events.

SILICON VALLEY POWER
CITY OF SANTA CLARA

September 24, 2020

Vantage Data Centers
Sam Huckaby, Vice President – Construction
2820 Northwestern Parkway
Santa Clara, CA 95051

Subject: New Data Center at 2590 Walsh

Dear Mr. Huckaby,

The City of Santa Clara's Electric Department, Silicon Valley Power, is the electric utility for the City of Santa Clara. Electric service to the subject project will be provided in accordance with the Rules and Regulations for the utility as approved by the Santa Clara City Council. Silicon Valley Power has reviewed the power needs and commitments at all Vantage sites within the City per the property list below:

- 2820 Northwestern
- 2897 Northwestern
- 737 Mathew
- 2590 Walsh (new proposed project not yet approved – request for 90 MVA)

Based on Vantage's existing and future power needs, Silicon Valley Power should be able to provide the following total power combined for all the sites:

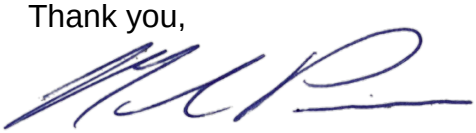
- Up to 126.5 MVA from the current date to the end of Second Quarter of 2022
- Up to 192.5 MVA at Third Quarter of 2022 upon completion of the South Loop Project.
    - If there are delays on the South Loop Project, it will affect the timeline to increase from 126.5 to 192.5.
    - 737 Mathew is limited to 33 MW until the South Loop Project is completed.
- Silicon Valley Power is starting the process for additional transmission capacity to the City. The conceptual timeline for completion is Fourth Quarter of 2025. Upon completion of additional transmission, Vantage can increase from 192.5 MVA to 273 MVA.
- If Vantage has a need to exceed 192.5 MVA prior to these timeframes, the City would be interested in partnering on a battery storage project or other generation facility to serve those needs.

The specific details of this service and SVP system modifications required to provide this capacity for 2590 Walsh will be worked out in a Substation Service Agreement at a future date. The City is also in the process of reviewing and updating its load development fee, which will be applicable for any new project (or above 192.5 MVA). It is also important to note that all appropriate fees will need to be paid, and this letter does not supersede any requirements or

agreements for the already approved sites at 2820 Northwestern, 2897 Northwestern, and 737 Mathew.

Questions can be directed to Wendy Stone at (408) 615-5648.

Thank you,



Manuel Pineda
Chief Electric Utility Officer
City of Santa Clara – Silicon Valley Power

cc: Michael Stoner