DOCKETED	
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Project Title:	McLaren Backup Generating Facility
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Document Title:	VDC's Supplemental Project Description Testimony
Description:	Supplemental Project Description Testimony of Michael Stoner and Spencer Myers in Response to Committee Order Generating Capacity Question 3
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STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Small Power Plant Exemption for the **McLAREN BACKUP GENERATING FACILITY**	**DOCKET NO. 17-SPPE-01** **DECLARATION OF MICHAEL STONER**

I, Michael Stoner, declare as follows:

1. I am presently employed as a Principal with Lake Street Consulting.

2. I have been engaged by Vantage Data Centers to be the Project Manager for the development of the McLaren Backup Generating Facility and the McLaren Data Center.

3. A copy of my professional qualifications and experience was included with my previously filed Opening Testimony and is incorporated by reference in this Declaration.

4. I prepared the attached Supplemental Testimony relating to Project Description to respond to the Committee Order for the Application for Small Power Plant Exemption for the McLaren Backup Generating Facility (California Energy Commission Docket Number 17-SPPE-01).

5. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

6. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Clara, California on October 5, 2018.

Michael Stoner

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Small Power Plant Exemption for the **McLAREN BACKUP GENERATING FACILITY**	**DOCKET NO. 17-SPPE-01** **DECLARATION OF SPENCER MYERS**

I, Spencer Myers, declare as follows:

1. I am presently employed as a Senior Director of Construction for Vantage Data Centers.

2. A copy of my professional qualifications and experience was included in my previously filed Rebuttal Testimony and is incorporated by reference in this Declaration.

3. I prepared the attached Supplemental Testimony relating to Project Description in response to the Committee Order for the Application for Small Power Plant Exemption for the McLaren Backup Generating Facility (California Energy Commission Docket Number 17-SPPE-01).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Clara, California on October 5, 2018.

Spencer Myers

VANTAGE DATA CENTERS
McLAREN BACKUP GENERATING FACILITY
PROJECT DESCRIPTION
SUPPLEMENTAL TESTIMONY TO RESPOND TO COMMITTEE ORDER

I. Name: Michael Stoner
Spencer Myers

II. Purpose:

Our Supplemental Testimony addresses the specific question related to Question 3 related to Generating Capacity contained in the Notice of Status Conference and Further Orders (Committee Order) docketed on September 28, 2018 in the McLaren Backup Generating Facility (MBGF) (CEC Docket 17-SPPE-1) proceeding.

III. Qualifications:

Our qualifications are contained in our previously filed Exhibits 28 and Exhibit 29.

To the best of our knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are our own. We make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

The Committee requested a response to several questions related to Generating Capacity of the MBGF. Specifically, the Committee Order requested a response to Question 3 which is reproduced below.

> ***3. Is there a technology or device that would allow the electricity demand of the Data Center to be met and still permanently limit the generating capacity to less than 100MW?***

Yes. First, the McLaren Data Center (MDC) is limited by its commercial agreement with Silicon Valley Power (SVP), the City of Santa Clara's municipal utility to no more than 100 MW of electric service. Second, the City of Santa Clara will be including in its approval documents, a condition further ensuring that the MDC is not modified in the future to use more than 100 MW without a project modification request and notification to the CEC.

To fully understand the technology and devices that limit the MBGF from generating more than 100 MW, some background on how the MBGF and the MDC are designed and will operate is provided.

There are 12 different Data Modules (DM) that each serves a separate floor of the MDC. Each of these DMs is individually connected to the electrical distribution system. Each DM has an Automatic Transfer Switch (ATS) that allows only an electricity connection for the MDC to ***either*** the SVP substation ***or*** to the MBGF generators**.** It is not possible for the MDC to receive electricity from both SVP and the MBGF generators at the same time.

Eleven (11) of the DMs serve a maximum critical IT customer load of 6 MW. The Twelfth DM serves a maximum critical IT customer load of 3 MW. For 11 of these groupings, there are 4 generators electrically connected in a 4 to make 3 configuration (1 redundant). For 1 of these groupings, there are 3 generators electrically connected in a 3 to make 2 configuration (1 redundant). As discussed in the evidentiary hearing each of the DMs shares a portion of the building mechanical load to provide cooling and ancillary load such as lights. The MBGF has been designed to serve the worst-case day and have 12 redundant generators. The worst-case day has been defined as a day where the temperature is the hottest one hour occurred in the last 50 years in Santa Clara and the every customer is utilizing the maximum of the critical IT load (maximum customer loading). This corresponds to a Power Utilization Efficiency (PUE) of 1.43 and a mechanical building load of 29.67 MW. As was discussed in the evidentiary hearing, this design is so conservative that it simply will not occur.

For all other days if the MDC is fully occupied and each customer is using its maximum loading, the annualized average PUE would 1.25, which yields a mechanical building load of 17.25 MW. Also as discussed at the evidentiary hearing Vantage typically sees customers only utilizing about 60 percent of loading available to it or about 41 MW of customer loading. With a PUE of 1.25 the mechanical building load would be about 10.25 MW. Therefore the total loading for these scenarios would be:

- ***Worst-case day full customer load at max 69 MW + 29.67 = 98.67 MW***

- ***Annualized Average with full customer load at max 69 MW + 17.25 MW = 86.25 MW***

- ***Expected customer load at 41 MW + 10.25 MW = 51.25 MW***

Each of the DMs has been designed to make sure there are redundant generators. This redundancy is a critical aspect of Vantage's commercial

arrangements with its customers. The customers have to be assured that if a generator fails, they will not lose their critical IT load. To provide that assurance, which Vantage guarantees through its commercial agreements with the customer, the MBGF has been designed with each DM have a redundant generator. Therefore, there are 12 redundant generators as part of the MBGF.

Every DM is controlled by software and electronic devices as part of a Building Load Management System (BLMS) that, in the event of an emergency, would match the specific load of the MDC DM to its respective grouping of generators. This is the technology and the device that ensures that the MBGF can never run in a way to generator more than the MDC needs at any one time. The BLMS is an automatic response of the plant automation system, with no operator intervention required for it to operate. Therefore, if the MDC is limited to 100 MW by SVP and the City of Santa Clara, the BLMS is the technology and device that would ensure the MBGF will not generate more than 100 MW.

The BLMS is analogous to the technology and devices that would be employed by a customer who engages in a Demand Response program with a utility.