

DOCKETED

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Project Title:	McLaren Backup Generating Facility
TN #:	224897
Document Title:	VDC's Response Package to Committee Order
Description:	VDC's Response Package to Committee Order Questions related to Generating Capacity and Air Quality
Filer:	Scott Galati
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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: 16-AFC-01

**VANTAGE DATA CENTERS'
RESPONSE TO COMMITTEE'S
NOTICE OF STATUS CONFERENCE
AND FURTHER ORDERS**

INTRODUCTION

Vantage Data Centers (Vantage) in accordance with the Committee Notice of Status Conference and Further Orders dated September 28, 2018, (Committee Order) hereby files its Response in support of its Application for a Small Power Plant Exemption (SPPE) for the McLaren Backup Generating Facility (MBGF). The Committee Order includes six specific questions related to generating capacity and one question related to air quality. As shown in the analysis below,

1. There is no statutory definition for generating capacity.
2. There is no regulatory definition for generating capacity for facilities that do not generate electricity using turbine generators.
3. The only relevant and recent guidance document specifically related to the methodology for calculation of the generating capacity of a backup generating facility that solely serves a data center is the attached Executive Director's jurisdictional opinion issued to Vantage for its Santa Clara Campus on August

25, 2017¹. While Vantage does not believe the Committee is required to take judicial notice of this document in order to rely on it, Vantage requests the Committee do so and therefore proposes it be marked and entered into evidence as Exhibit 30. In this document the Executive Director informed Vantage that jurisdictional determination would be based upon the limiting load of the data center that the facility would serve. Vantage filed the MBGF SPPE Application in reliance on this determination.

4. The Commission has broad authority to determine the generation capacity of the MBGF and should consider the facts unique to a backup generation facility utilizing internal combustion engines that is solely interconnected to a data center.
5. The Commission should rely on the unrefuted expert testimony of Staff and the Vantage witnesses that prove that the McLaren Data Center (MDC), through software technology and physical electronic devices controls how the MBGF will operate. Vantage proposes that the attached Supplemental Testimony of Michael Stoner and Spencer Myers², which has been prepared to provide the technical facts and expert opinion necessary to answer the Committee questions related to control technology and devices, be identified and entered into evidence as Exhibit 31.
6. The Commission should rely on the unrefuted expert testimony of Staff and the Vantage witnesses that the MBGF is solely connected to the MDC and therefore cannot generate electricity in excess of the demand of the MDC.
7. The Commission should rely on the fact that Vantage has a commercial electrical supply agreement with Silicon Valley Power (SVP), the City of Santa Clara's utility³, to deliver **up to 100 MW** to the MDC. Vantage requests the attached supply agreement be identified and entered into evidence as Exhibit 32.
8. The Commission should rely on the fact that SVP will insert a condition of approval into the City of Santa Clara's approval documents that limits the MDC design and operation from exceeding 100 MW electricity demand.

¹ Docketed on October 4, 2018, TN 224884.

² Docketed on October 5, 2018, TN 224896.

³ Docketed on October 4, 2018, TN 224882.

Vantage proposes the attached letter from SVP⁴ be identified and entered into evidence as Exhibit 33.

9. The MBGF would not exceed the BAAQMD CEQA significant thresholds even during an emergency outage that lasted 19 hours or more. Vantage requests the attached Supplemental Testimony and expert opinion of Dr. Shari Beth Libicki⁵, which has been prepared to provide the technical facts and expert opinion to answer the Committee's air quality question, be identified and entered into evidence as Exhibit 34.

Vantage provides the following more detailed responses to each question below.

GENERATING CAPACITY

1. ***Are there any regulations, statutes, or guidance documents, other than Section 2003, that can apply to the calculation of generating capacity for determining SPPE jurisdiction?***

The Commission is not constrained by Section 2003⁶ because Section 2003 by its very specific language only applies to "turbine generators". As described below a reviewing court would also conclude that Section 2003 applies only to calculating the generating capacity of a facility that employs turbine generators. The evidence is clear that the MBGF will use internal combustion engines which are not turbine generators.

As described below the Commission has the discretion to determine the generating capacity of a facility based on a methodology that is outside the methodology identified in Section 2003. Therefore, the Commission need not attempt to reconcile the terms of Section 2003 with the methodology it adopts from facilities that employ non turbine generating equipment.

Courts usually give agencies broad discretion in interpreting its own statutes, unless the statute is unambiguous and clear on its face by its own language.

⁴ Docketed on October 4, 2018, TN 224883.

⁵ Docketed on October 5, 2018, TN 224895.

⁶ Title 20 California Code of Regulations, Section 2003

Section 2003 provides:

2003 - Generating Capacity.

- (a) The "generating capacity" of an electric generating facility means the maximum gross rating of the plant's **turbine generator(s)**, in megawatts ("MW"), minus the minimum auxiliary load.

- (b) The "maximum gross rating" of the plant's **turbine generator(s)** shall be determined according to this subdivision. If there is more than one **turbine generator**, the maximum gross rating of all **turbine generators** shall be added together to determine the total maximum gross rating of the plant's **turbine generator(s)**.
 - (1) The maximum gross rating of a steam **turbine generator** shall be the output, in MW, of the **turbine generator** at those steam conditions and at those extraction and induction conditions which yield the highest generating capacity on a continuous basis.

 - (2) The maximum gross rating of a combustion **turbine generator** shall be the output, in MW, of the **turbine generator** at average operating site conditions, with the proposed fuel type, and at those water or steam injection flow rates, which yield the highest generating on a continuous basis.
 - (A) The average dry bulb temperature and relative humidity of the inlet air at the plant site shall be calculated using 10-year data for temperature and relative humidity from the nearest meteorological data point, using the most recent published data from the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), the National Oceanographic and Atmospheric Administration (NOAA), the U.S. Air Force, or commercial airport weather stations.

- (B) The barometric pressure at the site shall be one standard atmosphere, corrected for actual site elevation.
- (3) The maximum gross rating cannot be limited by an operator's discretion to lower the output of the **turbine generator(s)** or by temporary design modifications that have no function other than to limit a **turbine generator's** output.
- (4) The maximum gross ratings specified in the overall plant heat and mass balance calculations shall be subject to verification by commission review of the steam or combustion **turbine generator** manufacturer's performance guarantee, specifications and procurement contract, if available.
- (c) The "minimum auxiliary load" means the electrical rating (in MW) of the sum of the minimum continuous and the average intermittent on-site electrical power requirements necessary to support the maximum gross rating as defined in subsection (b) of this regulation and which are supplied directly by the power plant. For geothermal projects, the minimum auxiliary load includes the minimum electrical operating requirements for the associated geothermal field which are necessary for and supplied directly by the power plant. Discretionary loads, i.e., those which can be curtailed without precluding power generation, are not included in minimum auxiliary loads. (**Emphasis added**).

The Court in *Butts v. Bd. of Trs. of the Cal. State Univ.*, 225 Cal. App. 4th 825, at page 835 (Cal. Ct. App. 2014) explains how courts would review the plain meaning of an agency regulation.

We start with an analysis of the plain language of the regulation. The rules of statutory construction also govern our interpretation of regulations promulgated by administrative agencies. (*Hoitt, supra*, 207 Cal.App.4th at p. 523, 143 Cal.Rptr.3d 461.) We give the regulatory language its plain, commonsense meaning. If possible, we must accord meaning to every word and phrase in the regulation, and we must read

regulations as a whole so that all of the parts are given effect. (*Price v. Starbucks Corp.* (2011) 192 Cal.App.4th 1136, 1145, 122 Cal.Rptr.3d 174.) For over 125 years, when determining the meaning of statutes or instruments, “the office of the Judge is simply to ascertain and declare what is in terms or in substance contained therein, not to insert what has been omitted, or to omit what has been inserted....” (Code Civ. Proc., § 1858.)

The Commission, which is California’s electricity generation expert agency, elected to use the term “turbine generator(s)” 12 times when it crafted Section 2003 in 1993. The term “turbine generator” is used in every instance when referring to how to calculate generation. It is not possible to interpret Section 2003 in any way other than specifying how the Commission would calculate generating capacity from a facility that employed “turbine generators”. Applying the legal standard outlined in the line of cases cited above, a reviewing court would agree.

Since the purpose of Section 2003 is to define generating capacity, the court would also not attempt to supplant the entire regulatory language with a layperson’s definition of generating capacity. The Court would not support insertion of other language that simply is missing. The Committee should likewise not attempt to insert a layperson’s definition of the term “generating capacity”. Section 2003 simply provides the methodology for calculating generating capacity for facilities that generate electricity with turbine generators only. Since MBGF does not incorporate turbine generators, the Commission’s determination of its capacity is neither dictated by, nor needs to be consistent with any portion of Section 2003.

Additionally, the court would not look to other sources to attempt to determine the intent of the Commission when it drafted Section 2003 when the language is clear and unambiguous. At pages 835-836, the Court in *Butts v. Bd. of Trs. of the Cal. State Univ.* explained:

Our primary aim is to ascertain the intent of the administrative agency that issued the regulation. (*Manriquez v. Gourley* (2003) 105 Cal.App.4th 1227, 1235, 130 Cal.Rptr.2d 209.) **When that intent “cannot be discerned directly from the language of the regulation,** we may look to a variety of extrinsic aids, including the purpose of the regulation, the legislative history, public policy, and the regulatory

scheme of which the regulation is a part. (*Hoitt, supra*, 207 Cal.App.4th at p. 523, 143 Cal.Rptr.3d 461.) (***Emphasis Added***).

At page 838, the Court held:

If the plain language of a statute or regulation is clear and unambiguous, our task is at an end and there is no need to resort to the canons of construction or extrinsic aids to interpretation. (*Hoitt, supra*, 207 Cal.App.4th at p. 523, 143 Cal.Rptr.3d 461.)

Contrary to the position articulated by Helping Hands Tools, the Commission has the authority to calculate the generating capacity for the MBGF despite the fact that it has not yet adopted a specific regulation on point. The Legislature did not define generating capacity and the Commission's authorizing statute, the Warren-Alquist Act⁷, provides the Commission the necessary broad authority to do so. Specifically Public Resource Code Section

Section 25218 provides:

In addition to other powers specified in this division, the commission may do any of the following:

- (e) Adopt any rule or regulation, ***or take any action, it deems reasonable and necessary*** to carry out this division. (***Emphasis Added***).

Section 25218.5 provides:

The provisions specifying any power or duty of the commission shall be liberally construed, in order to carry out the objectives of this division.

This broad authority allows the Commission to consider ways other than the methodology applicable only to turbine generators for calculating the generating capacity of the MBGF. Any interpretation that the Commission is without that power ignores the plain language of PRC 25218 and 25218.5. According to the plain language of these provisions, this authority is not limited to adopting a regulation. In exercising

⁷ Public Resources Code Section 25000 et seq.

that authority the Commission should narrow its methodology to reflect the circumstances unique to the MBGF and similar facilities. The facts are undisputed:

1. The MBGF uses internal combustion engines which are not “turbine generators”⁸.
2. The MBGF internal combustion engines have a peak rating and a continuous rating.⁹
3. The MBGF through software technology and electronic devices is controlled by the MDC.¹⁰
4. The MBGF has been designed with a 4 to make 3 design basis to ensure redundancy making 12 generators and 1 life safety generator redundant.¹¹
5. The MBGF will only be operated for maintenance and testing and during emergencies.¹²
6. The MBGF during an emergency will only operate at a load equal to the demand by the MDC.¹³
7. The MBGF is not interconnected to the transmission grid or anything else by the MDC.¹⁴

Vantage offers the following methodologies that would be reasonable, not arbitrary and capricious, and would take into account the unique features of such a backup generating facility.

Data Center Load Demand

The preferred way is for the Committee to recognize that the load of the backup generators is completely dictated by the demand of the data center. Using this methodology reflects the most accurate way of describing the relationship between the MBGF and the MDC and describes the actual physical constraint to the generating capacity. In other words, the MDC employs physical electronic devices and software

⁸ Exhibits 20, 21, 27, 200, and 205.

⁹ Exhibit 20, page 2-5 and Revised Appendix A.

¹⁰ Exhibit 31.

¹¹ Exhibit 20, pages 2-2 to 2-3, Exhibit 27 pages 1 to 2, Exhibit 31, Exhibit 202, page 4, and Exhibit 205 page 4.

¹² Exhibit 20, Exhibit 200.

¹³ Repeated consistently throughout Exhibits 20, 27, 31, 200, 202, and 205.

¹⁴ Ibid.

technology (Automatic Transfer Switches, Building Load Management System) that limits the output of the MBGF.¹⁵

As described in more detail in our Response to Question 3 below and in Exhibit 31, load shedding software and electronic equipment automatically adjust the output of the MBGF based only on the demand of the MDC. The demand of the data center is not some ethereal concept derived for purposes of determining generating capacity, but is instead a physical constraint that is not controlled by Vantage but rather controlled through software and electronic control devices that match the output of the MBGF during an emergency where SVP cannot serve the MDC load. The fact that the MBGF is not electrically connected to anything other than the data center creates this unique factual circumstance.

This unique situation must be distinguished from the case of a conventional power facility is interconnected to transmission grid and responds to calls from the California Independent System Operator (CalSO). In the case of a conventional power facility, the CalSO, can call on any portion of the generator's capacity including its maximum generating capacity as the CalSO can direct the electricity to different parts of the system. For the MBGF there is only one place the electricity can go – the MDC. Therefore, the most accurate way of calculating generating capacity from a backup generating facility that solely supports a data center is to understand the potential load of the receiving data center.

It is also important to note that the design demand of the MDC, which the MBGF has been designed to reliably supply with redundant components during an emergency, is based on the maximum critical IT load occurring during the hottest hour in the last 50 years. As testified by Vantage witnesses, such conditions are possible but extremely unlikely to ever occur. The MDC load on that worst case day is just under 98 MW¹⁶, below the SPPE threshold.

Vantage strongly recommends the Committee adopt the expert opinion of Staff, the opinion of the Executive Director when he issued his jurisdictional determination for Vantage's Santa Clara Campus¹⁷, and the opinion of Vantage's expert witnesses. Helping Hand Tools has provided no documentary evidence or expert testimony that the MDC is not the physical constraint to the MBGF generating capacity.

¹⁵ Exhibit 31.

¹⁶ 8/30/18 RT Page 65:6-13

¹⁷ Exhibit 30.

As described below, the Committee can also be assured that with the commercial agreement with SVP¹⁸ and the condition of approval that will be contained in the City approval documents limiting the electricity consumption of the MDC to 100 MW¹⁹, the MDC will be prohibited from future alterations increasing its electricity demand above 100 MW.

Capacity Less Redundant Generation

As described in multiple times in this proceeding, the MBGF has been designed with a 4 to make 3, design basis.²⁰ That is, the generators are electrically grouped into groups of 4 to provide one redundant generator per group of 4. Therefore if a generator failed, the load that the group served could be served by the three remaining generators. Two of the generator yards will house 16 generators (8 total redundant generators) and one will house 15 generators (4 redundant generators as the last group is designed in a 3 to make 2 configuration). Similarly, Vantage has proposed three life safety generators, with one being entirely redundant.

As discussed during the Evidentiary Hearing, the Commission is familiar with redundancy and is aware of at least two projects that each has a spare turbine at the site.²¹ It would not be reasonable to add the generating capacity of a spare turbine to calculate the generating capacity of either of those facilities. Redundant generation should not be counted as part of a facility's generating capacity because by definition it will only replace the primary generation. Therefore, the Commission could calculate the generating capacity of the MBGF by looking at the nameplate rating of each generator and discount the generating capacity of all of redundant generators to arrive at the generating capacity of the MBGF. This calculation would be as follows:

47 Generators – (4+4+4) Redundant Generators = 35 Generators

35 Generators x 2.75 MW (Nameplate Rating) = 96.25 MW

3 Life Safety Generators – 1 Redundant Life Safety Generator = 2 Life Safety Generators

¹⁸ Exhibit 32.

¹⁹ Exhibit 33.

²⁰ Exhibit 20, Exhibit 31.

²¹ Los Esteros Project (03-AFC-2) and the Don Von Raesfeld Project (02-AFC-3) (Petition For Amendment currently being processed for spare turbine).

$$2 \text{ Life Safety Generators} \times 0.6 \text{ MW} = 1.2 \text{ MW}$$

$$96.25 \text{ MW} + 1.2 \text{ MW} = \mathbf{97.4 \text{ MW Facility Generating Capacity}}$$

Again, we believe the appropriate method would be to let the load of the MDC as controlled by the software and electronic technology determine the generating capacity of the MBGF.

Continuous Rating

A third method that the Commission could use to calculate generating capacity would be to recognize that unlike a turbine nameplate rating, a backup internal combustion engine has two ratings; a peak rating and a continuous rating. Use of the continuous rating would be more accurate since the design, including redundant generators, is based entirely on the continuous rating as described in Revised Appendix A of Exhibit 20. Ignoring redundancy and using the continuous rating of the 47 generators and the life safety generators the calculations would be:

$$47 \text{ Generators} \times 1.93 \text{ MW} = 90.71 \text{ MW}$$

$$3 \text{ Life Safety Generators} \times 0.6 \text{ MW} = 1.8 \text{ MW}$$

$$90.71 \text{ MW} + 1.8 \text{ MW} = \mathbf{92.51 \text{ MW Facility Generating Capacity}}$$

Although this method reflects the design basis of the MBGF, it does not reflect the actual constraint of the data center demand and its software and electronic equipment that dictate how the MBGF would operate. It does however, recognize and incorporate the concepts outlined in Section 2003 that look at average continuous operations and not peak operations.

Application of portions of Section 2003

The only portion of Section 2003 that does not specifically refer to turbine generators is the calculation of “minimum auxiliary load”. If the Committee were to apply Section 2003 in a manner that used the nameplate rating of the generators as its maximum generating capacity then it would likewise subtract the “minimum auxiliary load” exactly as written in Section 2003. If the Commission applied this methodology it would not

have jurisdiction over the site because the MBGF would have a generating capacity below 50 MW.

Section 2003 (c) defines the “minimum auxiliary load” as:

the electrical rating (in MW) of the sum of the minimum continuous and the average intermittent on-site electrical power requirements necessary to support the maximum gross rating as defined in subsection (b) of this regulation and which are supplied directly by the power plant.

In the case of the MGBF, since it is on the site of the MDC, the minimum auxiliary load is the load required by the MDC. Therefore, if the Commission used the load of the MDC as contained in the record of 97.4 MW and subtracted that as minimum auxiliary site load from the gross rating of the nameplate rating times the number of generators as proposed by Helping Hand Tools, the MBGF would be below the minimum Commission jurisdiction of 50 MW as follows:

131.05 MW using nameplate only – 97.4 Internal MDC load of the site = 33.65 MW
Generating Capacity.

Again, while all of these methods could be applied, the one method proposed by Staff and Vantage that recognizes the role of the MDC electricity demand is the most accurate and therefore the least arbitrary and capricious.

Regulatory Capacity Restriction

The Commission should also consider that Vantage has entered into an agreement with the City of Santa Clara’s utility, Silicon Valley Power (SVP) to supply electricity to the MDC. That agreement (Exhibit 32) is attached, sets design criteria for the distribution substation that will be dedicated solely to the MDC, and contractually limits the amount of deliverable electricity to the MDC to 100 MW. In other words, if the MDC cannot take delivery of more than 100 MW from SVP, the MBGF, which replaces the electricity that SVP is unable to deliver, would never exceed 100 MW.

To address the concern that the MDC could be altered to require more than 100 MW, Vantage first points out that it believes that such action would require notification to the Commission as the underlying description in its application for an SPPE and supporting

documents would no longer be accurate. However, Vantage has communicated this concern to SVP and as described in Exhibit 33, SVP has committed to including a condition in its City of Santa Clara conditions of approval which would effectively prevent modification of the MDC to require more than 100 MW load. If such a modification were to be considered by Vantage in the future (and Vantage has no plans for such modification) the condition reflects the current state of the law that would require application to the City of Santa Clara and notification to the Commission.

The Commission can and should rely on Exhibits 32 and 33 as further proof the MDC would never require the MBGF to generate more than 100 MW.

2. *Is there any regulation, statute, or other guidance document that supports the argument that the generation capacity in this proceeding can or should be based upon the data center's demand?*

Vantage is not aware of any regulation or guidance document that supports the calculation methodology advocated by Staff and Vantage other than the Executive Director's Jurisdictional Determination of August 25, 2017 (Exhibit 30).

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?*

As discussed in our Response to Question 1 and in detail in Exhibit 31 attached, the MDC employs software technology and devices (Automatic Transfer Switches, Building Load Management System) that will permanently limit the MBGF's generating capacity to less than 100 MW.

4. *Instead of only using diesel generators, are there other devices or technology, such as battery storage, that could meet some of the backup electricity needs of the Data Center?*

Vantage has incorporated battery storage into the design of the backup power supply for the MDC. The use the batteries will provide short-term support that will prevent the MBGF generators from deploying during short events or power interruption or power quality degradation. This system is why the history at its Santa Clara Campus has resulted in the generators only deploying during longer term outages. The problem with employing battery storage to cover longer term outages is prediction of the duration of

the outage. If the MBGF employed 4 hour battery storage (currently the standard for grid connected Battery Energy Storage System installations) it would still need all of the MBGF generators to operate if the electricity outage was even 1 minute longer than the 4-hour duration. The batteries would simply not be able to replace the need for reliable, redundant generation provided by all of the proposed generators. The batteries would just be additional cost component that would require many thousands of square feet of additional land area and would not reduce the need for even one generator.

It is important to note that in order to reduce the potential for outages, Vantage has partnered with SVP to ensure that the MDC is connected to a dual loop transmission system with its own dedicated substation interconnecting on the more reliable 60 kV system. But even though SVP has testified that its system is 99.9859 percent reliable, the need to be prepared for the unexpected is the core of the need for the MBGF and its redundant reliable design.

5. *Is the Applicant willing to amend its project and SPPE application to a facility whose generators have a capacity of less than 100 MW as calculated using just a generator's nameplate capacity?*

Vantage is not able to reduce the number of generators and provide the redundancy and reliability required by its customers. Vantage has relied on the Exhibit 30 and numerous conversations with Staff before it filed its Application for an SPPE. As the Commission is aware, construction of the MDC is underway. It would be unfair and economically catastrophic if the Commission required Vantage to revise its project description, thereby removing all of the backup generation redundancy to the MDC after spending nearly a year in the SPPE process.

6. *What additional information would be necessary for an Application for Certification (AFC) if no changes to the Project were available or made? How long would the process take, given the existing environmental review already conducted?*

Vantage believes that based on Commission history, an AFC would take more than a year to process. Such a delay would be unacceptable to Vantage and would result in extreme economic burdens on Vantage. It would also be fundamentally unfair. Vantage followed the rules, asked the Executive Director for guidance on how to calculate generating capacity and then relied on that advice. Vantage also believes that the Executive Director and Staff's methodology is accurate and the best way to reflect

the generating capacity of the MBGF. Vantage urges the Committee to rely on its Staff experts combined with the commercial agreement and enforceable condition outlined in Exhibits 32 and 33, respectively and grant the SPPE.

AIR QUALITY

1. ***What measures, if any, are available to mitigate the Project's potential to exceed the threshold of significance for daily and annual NOx emissions to a less than significant level?***

As described in Exhibit 34, the MBGF will be offset by the Bay Area Air Quality Management District (BAAQMD), and therefore the MBGF's NOx emissions will not exceed the BAAQMD's significant threshold.

CONCLUSION

The Commission is not bound by the definition of generating capacity of Section 2003 as it is inapplicable to a facility such as the MBGF. The Commission should adopt the methodology proposed by Staff and Vantage because it is the least arbitrary and capricious, is the most reasonable way to incorporate the relationship between the data center and the backup generating facility, and is the only reasonable methodology that incorporates all of the facts that are undisputed in the record. The Commission should also find that the project will not have significant air quality impacts.

Vantage urges the Committee to find that the MBGF meets all of the requirements for a SPPE and issue a decision quickly so that it can be considered by the full Commission at the November 7, 2018 Business Meeting. Approval by November 7, 2018 is necessary to meet the project construction schedule which has already suffered a delay.

Dated: October 5, 2018

Respectfully Submitted,



Scott A. Galati
Counsel to Vantage Data Centers

DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	224884
Document Title:	Executive Director's Jurisdictional Determination Vantage
Description:	N/A
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CALIFORNIA ENERGY COMMISSION

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August 25, 2017

Mr. Matt Silvers, Director of Operations
Vantage Data Centers
2820 Northwestern Parkway
Santa Clara, CA 95051

JURISDICTIONAL DETERMINATION FOR VANTAGE DATA CENTERS V4 AND V5

Dear Mr. Silvers:

The California Energy Commission has been asked to analyze whether Vantage Data Centers' (Vantage) expansion on its Santa Clara campus, would possibly bring the facility under Energy Commission jurisdiction as a thermal power plant of 50 megawatts (MW) or more.

As a general matter, the Energy Commission has permitting jurisdiction over any thermal power plant with a generating capacity of 50 megawatts (MW) or more. (Pub. Resources Code, §§ 25110, 25120, 25500) Vantage Data Centers operates data centers in California and Washington, several of which (V1-V4) are currently located on two adjacent parcels in Santa Clara, California. The company is also in the process of constructing another data center (V5) at this location.¹ For reliability purposes, these data centers use diesel-fired back-up generators to maintain operation in case of interruption of electrical service from the grid. If these generators were considered together to constitute a project of 50 MW or more, the Energy Commission would have jurisdiction. Staff has concluded that V1-V3 should not be considered as part of the same project as V4 and V5 as it does not appear that they were part of a foreseeable plan of development and, therefore, do not together constitute the same project. Units V1-V3 were expanded or constructed at various times in 2011 and there is no information or evidence that units V4 and V5 were contemplated or planned at that time.

With regard to data centers V4 and V5, it is unnecessary to determine whether they should be considered the same or separate projects because even if combined their generation is insufficient to trigger Energy Commission jurisdiction pursuant to section 2003 of title 20 of the California Code of Regulations.

¹ Staff had previously concluded that another data center (V6) should be considered separately for several reasons, including that it is on a parcel non-contiguous with the other units and it is connected to the grid through a different substation, and, therefore, its back-up generators would be triggered by a different event than those of V1-5.

Mr. Matt Silvers
August 25, 2017
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Based on the product "cut sheets" Vantage provided to the Energy Commission, from Caterpillar and Cummins power generating suppliers, the steady state continuous output is 70 percent of the nameplate rating for the Caterpillar and the Cummins backup generators. Vantage also included a revised table from its initial submittal updating the outputs, which demonstrates that if the generating output for V4 and V5 were added together, the combined output would be 40.43 MW when accounting for the steady state continuous ratings.

Staff normally determines jurisdiction of a power generating facility based on its maximum generating capacity. However, in determining a facility's maximum generating capacity, we consider both internal loads to deliver the electricity, and any restrictions on the amount of electricity the end user can actually receive. In the case of Vantage, the sole end user of electricity from the diesel generators dedicated to V4 and V5 are two computer buildings with a combined maximum building capacity of 31.5 MW. In other words, under actual operational modes, V4 and V5 together will not generate more than 31.5 MW due to the upper limiting computer building loads, which are well below 50 MW.

In summary, the Energy Commission staff concludes that the construction of V5 at the Vantage Data Centers' Santa Clara campus is not within the Energy Commission's permitting jurisdiction. Staff makes this conclusion based upon the information provided in the May 30, 2017, June 8, 2017, and June 28, 2017 data submitted by Vantage and DayZen, LLC.

If the generating capacity of this project is increased, the existing data centers are expanded, or new information arises that contradicts the details above, staff reserves the right to reexamine or change its conclusion regarding jurisdiction. Please contact Mr. Shahab Khoshmashrab at (916) 654-3913 or Shahab.Khoshmashrab@energy.ca.gov should you have any questions.

Sincerely,


Robert P. Oglesby
Executive Director

cc: Spencer Myers, Director of Construction, Vantage Data Centers
Scott Galati – DayZen, LLC
Brenda Cabral, Supervising Engineer, Bay Area Air Quality Management District
Sanjeev Kamboj, Director, Bay Area Air Quality Management District
Flora Chan, Bay Area Air Quality Management District
Sharl Libicki, Ph.D., Global Air Quality Service Line Leader
Shawn Pittard, CA Energy Commission
Matthew Layton, CA Energy Commission
Shahab Khoshmashrab, CA Energy Commission

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Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	224896
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
Filer:	Scott Galati
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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**

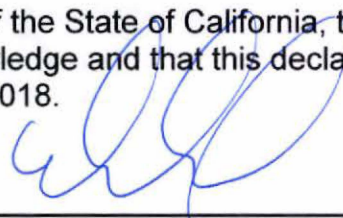
DOCKET NO. 17-SPPE-01

**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.

DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	224882
Document Title:	SVP Vantage Electricity Supply Agreement
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	10/4/2018 10:43:39 AM
Docketed Date:	10/4/2018



Date: August 29, 2017

To: City Manager for Council Action

From: Director of Electric Utility

Subject: Approval of an Electric Service and Substation Construction Agreement with Vantage Data Centers, LLC.

EXECUTIVE SUMMARY

Vantage Data Centers, LLC has requested that the City's Electric Utility, Silicon Valley Power (SVP) provide electric utilities to their third Vantage location, in the vicinity of 725 Mathew Street, through a 100 MVA Substation (Parker Substation). Vantage is expanding its business and will require 27 MVA capacity upon completion of the Substation, scheduled to be in service in November 2018. The remaining 73 MVA of capacity will be available upon completion of the restructuring of the existing electrical loop ("Southern Loop") in the year 2020. Under this Agreement, Vantage will construct Parker Substation per SVP's standards and requirements. The City will own, operate and maintain the Substation. A copy of the Electric Service and Substation Construction Agreement can be viewed on the City's website and is available in the City Clerk's Office for review during normal business hours.

ADVANTAGES AND DISADVANTAGES OF ISSUE

Approval of this Agreement furthers the City's policy on promoting economic growth with a valuable business partner in the City of Santa Clara. There are no disadvantages identified with this Agreement

ECONOMIC/FISCAL IMPACT

Vantage will construct and provide all necessary structures and/or equipment per SVP's standards and requirements. Vantage is required to pay \$5.4 million for the first 27 MVA of capacity available at Parker Substation as their portion of the cost for SVP to restructure the Southern Loop. Any additional capacity purchased will be at the current load development fee.

RECOMMENDATION

That the Council:

- a) approve, and authorize the City Manager to execute, the Electric Service and Substation Construction Agreement with Vantage Data Centers, LLC, pending final review and approval of the City Attorney; and
- b) direct the Finance Department to establish a CIP project number to accumulate and track funds associated with this project.



John C. Roukema
Director of Electric Utility

APPROVED:



Rajeev Batra
City Manager

Documents Related to this Report:

- 1) Electric Service and Substation Construction Agreement with Vantage Data Centers, LLC

**ELECTRIC SERVICE AND SUBSTATION CONSTRUCTION AGREEMENT
BY AND BETWEEN
THE CITY OF SANTA CLARA, CALIFORNIA
AND
VANTAGE DATA CENTERS, LLC**

PREAMBLE

This agreement (“Agreement”), regarding substation construction, is by and between Vantage Data Centers, LLC, a Delaware limited liability company, with its principal place of business located at 2565 Walsh Ave., Santa Clara, CA 95051 (“Customer” or “Vantage”), and the City of Santa Clara, California, a chartered California municipal corporation with its primary business address at 1500 Warburton Avenue, Santa Clara, California 95050, doing business as Silicon Valley Power (the “City” or “SVP”). SVP and Customer may be referred to individually as a “Party” or collectively as the “Parties” or the “Parties to this Agreement.”

The City and Vantage agree as follows:

1. ELECTRIC SERVICE

Vantage has requested that SVP provide it with electric utilities at the following locations in Santa Clara, California: 825, 725 and 651 Mathew Street, as shown in Exhibit A, attached and incorporated for reference. Electric Service is as defined in the Silicon Valley Power Rules and Regulations (the "Rules and Regulations") No. 1.

SVP is immediately able to provide 27 MVA capacity to the locations set forth above, hereby referred to as the “Project,” upon completion of an onsite substation (the “Substation”) by Vantage at the cost of \$200.00 per KVA of purchased capacity. SVP has also agreed to provide an additional 73 MVA capacity upon completion of the restructuring of the existing electrical loop (the “Southern Loop”) as set forth in SVP’s Will Serve letter, dated November 3, 2016, attached and incorporated for reference as Exhibit B. SVP is actively pursuing increased capacity and project completion is expected to be in the year 2020. Once the Southern Loop is restructured, SVP has the ability to provide up to 100 MVA of capacity in total to Customer, up to 5 years after the date of completion of the Southern Loop Expansion. The Parties agree that the additional capacity (up to 73 MVA) from the Substation will also be provided pursuant to the Rules and Regulations, applicable Silicon Valley Power Rate Schedules, current load development fees and subject to the completion of any system upgrades necessary to serve the additional load at the time the load capacity increase is initiated. The additional 73 MVA capacity shall be provided to Vantage at the cost of the load development fee applicable at that time¹.

Vantage will construct and provide any and all necessary structures and/or equipment per SVP’s standards and requirements to construct the Substation as shown in the Substation Plans, attached and incorporated for reference as Exhibit C.

¹ For reference, the Load Development Fee as of the date this Agreement is entered is \$115 per KVA of purchased capacity.

2. SUBSTATION SERVICE

The City will make commercially reasonable efforts to assist Vantage in their engineering, procurement, and construction efforts to provide the 27 MVA capacity of permanent Electric Service through the Substation subject to the completion of the construction of the Substation and any modifications of the 60 kV transmission lines (the "Transmission Lines") required to serve the additional load. The City will own and operate the modifications to the Transmission Lines necessary to serve the Substation. Customer will be responsible for paying all costs associated with the following: the design, procurement, installation, construction, and testing of the modifications to the Transmission Lines, including the temporary 60 kV line(s) during the construction of the Substation; any system enhancements required to safely build out the Substation beyond the aforementioned actions; and as set forth in Section 5 of this Agreement.

The Vantage buildings to be served by the Substation will be existing and future buildings constructed on the parcels of land shown on Exhibit A. Should Vantage (or any successor or assignee as determined by Vantage) cease to occupy any one or more of the buildings to be served by the Substation, electric service to those buildings not occupied by Vantage (or such successor or assignee) will be converted to standard City service and applicable rate schedule in accordance with City Rules and Regulations then in effect. Vantage will be responsible for any cost associated with converting the load back to standard City Services.

3. LAND

Vantage will dedicate expanded on-site land rights to the City to the extent reasonably necessary for the operation and maintenance by the City of the Substation required for permanent electrical service to Vantage, and the operation and maintenance of 60 kV transmission facilities into and out of the Substation, as well as continued rights of access to the Substation. These land rights will be in a form acceptable to the City and Vantage, be provided at no cost to the City and take the form of either a fee title or easement. Easements shall be granted by Vantage for the reconfigured 60 kV Transmission Lines in the event the Substation is removed from SVP's system.

4. SUBSTATION SITE IMPROVEMENTS AND SUBSTATION EQUIPMENT

Vantage will engineer, procure and install, at no cost to the City, all Substation equipment necessary and required by SVP per SVP's standards and engineering review for SVP to provide electric service to the Facility. The completed Substation and all equipment as shown in Exhibit C and as may be required to fulfill the construction, will be owned, operated and maintained by SVP. Vantage will be responsible for securing and paying for all costs related to the design, procurement,

installation, construction, fabrication, inspection and testing of the Substation according to SVP specifications, including equipment and necessary programming owned by the City, whether incurred directly by Vantage or incurred by the City; provided, however, to the extent costs are incurred by the City, Vantage will have the opportunity to review and approve costs for which Vantage will be responsible prior to the City incurring such costs. These costs shall not exceed the reasonable and/or customary costs charged to other parties in connection with similar projects.

The Parties agree to coordinate the design and construction of the Substation and Transmission Lines in accordance with the Project Schedule attached hereto as Exhibit D, to ensure timely completion at a cost reasonably acceptable to Vantage. Updating the Project Schedule to reflect actual progress shall not be considered revisions to the Schedule, provided that the parties use commercially reasonable efforts to adhere to the Project Schedule attached hereto as Exhibit D. Since scheduling is a dynamic process, however, revisions to activity durations and sequences are expected on a monthly basis. In no way will City or SVP be held responsible or subject to any penalty if the Project Schedule is not complete by Customer's anticipated or proposed energization date.

5. TRANSMISSION LINES

The City will obtain all necessary permits for the off-site Transmission Lines necessary to serve the Substation. Vantage will be responsible for the design and construction of the Transmission Lines in accordance with the City's design and procurement standards. The City has final approval on the design of all Transmission Lines necessary to serve the Substation. Vantage will be responsible for paying actual costs incurred by the City related to acquisition of the land rights, as well as all costs for permitting, and testing of the Transmission Lines, including modifications and additions to existing City facilities required to interconnect the Transmission Lines, whether incurred directly by Vantage or incurred by the City, provided Vantage will have the opportunity to review and approve costs for which Vantage will be responsible prior to the City incurring such costs.

Vantage will also be responsible for the design, construction, and cost related to the relocation of existing utilities affected by the Substation. The City has the right to use City Forces or contract crews to perform all SVP transmission system work associated with the construction, provided Vantage will have the opportunity to review costs for which Vantage will be responsible prior to the City incurring such costs. If the City is unable to meet the established timeline, Vantage may use its own contractor to perform the work in accordance with SVP standards and acceptance inspection review. SVP reserves the right to reject the work if it does not meet SVP standards.

6. DESIGN AND MAINTENANCE

SVP will own, operate and maintain the 60 kV bus, breakers, Transformer Bank and related structures up to a set of manually operable disconnect switches feeding Vantage owned 12 kV circuit breakers. SVP will continue to own, operate and maintain the separate control building, within the Station, for local monitoring, operation, and control of the 60 kV facilities and related transformer banks.

Control, communication, and protection wiring from the Vantage switchgear to the SVP control building, and related equipment, will be owned and maintained by SVP. All control and protection wiring must be clearly identified by Vantage per SVP direction to avoid confusion when troubleshooting, maintaining, or repairing Vantage owned 12 kV breakers to avoid possible misoperation of any SVP equipment.

Vantage will follow maintenance procedures, testing, and schedule for its 12 kV breakers, per Industry Standards. Vantage shall coordinate operation and testing of its 12 kV breakers with the operation of SVP's protection systems.

7. ONSITE GENERATION

Customer shall comply with the requirements of the SVP Engineering & Operating Requirements for the interconnection of generation facilities set forth in the Parties' Interconnection Agreement.

8. PAYMENT

Vantage will work with City staff to obtain approval for any and all engineering, construction and inspection requirements related to Vantage's construction and maintenance obligations hereunder. SVP will charge Vantage for engineering time and other related costs associated with the construction of the Substation, as defined in this Agreement. These costs shall not exceed the reasonable and/or customary costs charged to other parties in connection with similar projects and will include any reasonable travel expenses incurred by SVP to perform factory inspections for any equipment purchased by Vantage to be turned over for SVP's ownership.

Vantage will work at its own financial risk on design, procurement and construction of the Substation. Once the City's engineering review is complete, Vantage shall construct the Substation to SVP standards complying with all City inspection requirements. Upon completion of Substation, the Substation will be turned over to the City, in a form acceptable to the City and Vantage and set forth in Section 3 of this Agreement, for continued operation and maintenance.

Reimbursement of costs associated with the construction of the Substation incurred by SVP, to that point, will be invoiced and due in full 45 days prior to Substation

energization. Final costs incurred by SVP during commissioning of the Substation until the completion of the project will be paid in full by Vantage within 30 days of receipt of invoice.

At any time, Vantage may elect to terminate construction of the Substation and the Transmission Lines upon delivery of thirty (30) days written notice thereof to the City. If Vantage chooses to terminate construction of the Substation and Transmission Lines, Vantage will reimburse any and all City expenses actually incurred by the City related to the Substation and Transmission Lines within 30 days of written termination request.

In addition to the actual costs associated with construction of the Substation and Transmission Lines, Vantage will be responsible for a portion of the costs associated with the reconductoring and reconfiguring the Southern Loop in order to accommodate the load requested by Vantage. The cost for such capacity shall be at the rates set forth in Section 1 herein. Before loading the Substation, Vantage will provide a request (or up to three requests) not to exceed the 27 MVA of capacity initially available after completion of the Station. Once the request(s) has been received in writing, the City will issue an invoice for the requested capacity. The cost for such capacity shall be at the rates set forth in Section 1 herein. Once paid in full, the capacity will be made available to Vantage. All additional load development fees are payable by Vantage at the time the load comes online.

9. HOLD HARMLESS/INDEMNIFICATION

To the extent permitted by applicable law, Vantage agrees to indemnify, protect, defend, and hold harmless City, its City Council, officers, employees, volunteers and agents from and against any claim, injury, liability, loss, cost, and or expense or damage, including all costs and reasonable attorney's fees in providing a defense to any claim, to the extent arising from Vantage's negligent, reckless or wrongful acts, errors, or omissions with respect to or in any way connected with the performance of the services by Vantage, its agents, subcontractors, or assigns under this Agreement.

10. FORCE MAJEURE

Neither Party shall be considered to be in default in performance of any of its obligations under this Agreement when a failure of performance is due to an Uncontrollable Force. The term "Uncontrollable Force" as used in this Agreement, shall mean any cause beyond the reasonable control of the Party affected, and which by exercise of due diligence such Party could not reasonably have been expected to avoid and which by exercise of due diligence it has been unable to overcome or obtain or cause to be obtained a commercially reasonable substitute therefore. Such Uncontrollable Force includes the failure or threat of failure of facilities, Act of God, flood, drought, earthquake, storm, tornado, fire, explosion, lightning, epidemic, public

emergency, war, riot, civil disobedience, labor strike, labor dispute, labor or materials shortage (however labor or materials shortage does not include the mere inability to obtain that labor or material at a particular price), sabotage, restraint by court order, restraint by public authority, or action or non-action by governmental authority or accident.

No Party shall, however, be relieved of liability for failure of performance if such failure is due to causes arising out of its own negligence or due to removable or remediable causes which it fails to take reasonable efforts to remove or remedy within a reasonable time, or due to mere fluctuations in market prices, or due to unreasonable delay by the Party claiming or seeking to claim relief from liability. Nothing contained herein shall be construed to require a Party to settle any strike or labor dispute in which it may be involved. Either Party rendered unable to fulfill any of its obligations under this Agreement by reason of an Uncontrollable Force shall give prompt written notice of such fact to the other Party and shall exercise due diligence to remove such inability with all reasonable dispatch.

11. NO ASSIGNMENT OF AGREEMENT/SUCCESSORS IN INTEREST

Customer and SVP each bind itself, its successors, and assigns, to all of its respective covenants of this Agreement. Except as otherwise set forth in this Agreement, no interest in this Agreement or any of the work provided for under this Agreement shall be assigned or transferred, either voluntarily or by operation of law, by either Party without the prior written approval of the other Party, which approval shall not be unreasonably withheld, conditioned or delayed; any such assignment shall not relieve the assignor from any of its obligations under this Agreement. Notwithstanding the foregoing, and without any prior consent of City, Customer shall have the right to assign this Agreement to an affiliate or successor of Customer.

12. NO THIRD PARTY BENEFICIARY

This Agreement shall not be construed to be an agreement for the benefit of any third party or parties and no third party or parties shall have any claim or right of action under this Agreement for any cause whatsoever.

13. AMENDMENTS

It is mutually understood and agreed that no alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the Parties and incorporated as an Amendment to this Agreement.

14. INTEGRATED DOCUMENT - TOTALITY OF AGREEMENT

This Agreement embodies the entire agreement between the Parties regarding the subject matter of this Agreement. No other understanding, agreements, conversations, or otherwise, with any officer, agent, or employee of City shall affect or modify any of the terms in or obligations created by this Agreement.

15. SEVERABILITY CLAUSE

In case any one or more of the provisions contained herein shall be held invalid, illegal or unenforceable by a court of competent jurisdiction, it shall not affect the validity of the other provisions which shall remain in full force and effect.

16. WAIVER

Waiver by either Party of any provision of this Agreement shall not be construed as waiver(s) of any other provision of this Agreement.

17. NOTICES

All notices to the Parties shall, unless otherwise requested in writing, be sent to SVP addressed as follows:

Director of Electric Utility
City of Santa Clara
1500 Warburton Avenue
Santa Clara, California 95050
or by facsimile at (408) 249-0217

And to Customer addressed as follows:

Vantage Data Center, L.L.C.
2820 Northwestern Parkway
Santa Clara, California 95051
Attention: Sureel Choksi
or by facsimile at (408) 748-1292

If notice is sent via facsimile, a signed, hard copy of the material shall also be transmitted via First Class U.S. Mail the same day. The date the facsimile was sent shall control the date notice was deemed given if there is a facsimile machine generated document on the date of transmission. A facsimile transmitted after 1:00 p.m. Pacific on a Friday shall be deemed to have been transmitted on the following Monday.

18. CAPTIONS

The captions of the various sections, paragraphs and subparagraphs of this Agreement are for convenience only and shall not be considered or referred to in resolving questions of interpretation.

19. STATUTES AND LAW GOVERNING CONTRACT

This Agreement shall be governed and construed in accordance with the statutes and laws of the State of California.

20. COMPLIANCE WITH LAWS

Customer and SVP shall comply with all laws, ordinances, codes and regulations of the federal, state and local governments applicable to their respective obligations and activities contemplated by this Agreement.

21. DISPUTE RESOLUTION

- A. Unless otherwise mutually agreed to by the Parties, any controversies between Customer and City regarding the construction or application of this Agreement, and claims arising out of this Agreement or its breach, shall be submitted to mediation within thirty (30) days of the written request of one Party after the service of that request on the other Party.
- B. The Parties may agree on one mediator. If they cannot agree on one mediator, the Party demanding mediation shall request the Superior Court of Santa Clara County to appoint a mediator. The mediation meeting shall not exceed one day (eight (8) hours). The Parties may agree to extend the time allowed for mediation under this Agreement
- C. The costs of mediation shall be borne by the Parties equally.
- D. Mediation under this section is a condition precedent to filing an action in any court. In the event of litigation or mediation that arises out of any dispute related to this Agreement, the Parties shall each pay their respective attorney's fees, expert witness costs and cost of suit, regardless of the outcome of the litigation.

22. VENUE

In the event that suit shall be brought by either Party, the Parties agree that venue shall be exclusively vested in the Superior Court of the County of Santa Clara, or where otherwise appropriate, exclusively in the United States District Court, Northern District of California, San Jose, California.

23. OTHER AGREEMENTS

This Agreement shall not prevent the City from entering into similar agreements with other entities or individuals, so long as the City agrees to provide electric service to Customer as set forth in Section 1 of this Agreement.

24. TERMINATION OF AGREEMENT

A. TERMINATION FOR CAUSE

For purposes of this Agreement, the term "default" shall mean the failure of any Party to perform any material obligation in the time and manner provided by this Agreement. Either Party may terminate this Agreement in the event of a default by the other Party by providing a written Notice of Termination to the defaulting Party. Such Notice of Termination shall become effective no less than thirty (30) calendar days after a Party receives such notice. Such Notice of Termination for cause shall include a statement by the terminating Party setting forth grounds for determination of default under the Agreement.

B. OPPORTUNITY TO CURE DEFAULT

Upon receipt of a Notice of Termination by a Party arising from its default under this Agreement, the defaulting Party shall have thirty (30) days from the receipt of such notice to cure the default by making such payment or performing the required obligation (or additional time, if any, that is reasonably necessary to promptly and diligently cure the default). If the default is cured to the reasonable, mutual satisfaction of the Parties, the Agreement shall remain in effect upon written acceptance of the cure by the Party who issued the Notice of Termination for cause.

C. TERMINATION WITHOUT CAUSE

Notwithstanding anything to the contrary herein, Customer may terminate this Agreement prior to the date the Substation Property is deeded to the City whether or not a default under this Agreement exists by providing Notice of

Termination to City; provided, that, Customer will reimburse City for all costs incurred or committed to be incurred by City in connection with development of Customer's pro rata share of the Substation Facilities capacity up to the date of Customer's Notice of Termination. City must deliver to Customer invoices and other evidence reasonably satisfactory to Customer evidencing payment and/or incurring of such costs within sixty (60) days of receipt of Notice of Termination. Such Notice of Termination shall become effective no less than thirty (30) calendar days after City receives such notice and Customer may revoke such Notice of Termination at any time.

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but both of which shall constitute one and the same instrument; and, the Parties agree that signatures on this Agreement, including those transmitted by facsimile, shall be sufficient to bind the Parties.

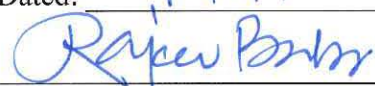
The Parties acknowledge and accept the terms and conditions of this Agreement as evidenced by the following signatures of their duly authorized representatives. The Effective Date is the date that the final signatory executes the Agreement. It is the intent of the Parties that this Agreement shall become operative on the Effective Date.

CITY OF SANTA CLARA, CALIFORNIA
a chartered California municipal corporation

APPROVED AS TO FORM:



BRIAN DOYLE
Interim City Attorney

Dated: 9.7.17


RAJEEV BATRA
City Manager
1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: (408) 615-2210
Fax: (408) 241-6771


ATTEST:



ROD DIRIDON, JR.
City Clerk

“SVP”

VANTAGE DATA CENTERS, LLC
a Delaware Limited Liability Corporation

Date: 8/10/17


By: SUREEL CHOKSI
Title: President and Chief Executive Officer
Address: 2820 Northwestern Parkway
Santa Clara, CA 95051
Telephone: (408) 215-7775
Fax: (408) 748-1292

EXHIBIT A

Parcel Map

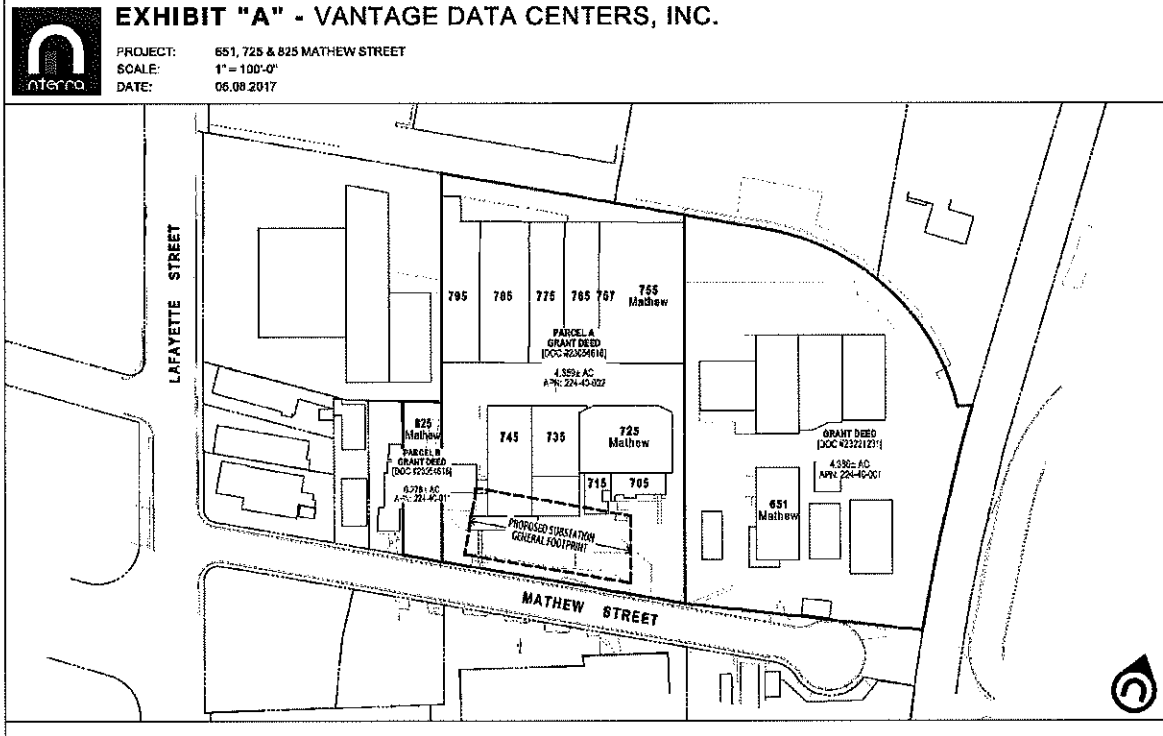


EXHIBIT B

Silicon Valley Power's Will Serve Letter



*Giving You the Power
to Change the World*

November 3, 2016

Vantage Data Centers
Attn: Justin Thomas, Engineering VP
2565 Walsh Ave.
Santa Clara, CA 95050

Subject:
725 and 651 Mathew, Santa Clara, CA

Dear Justin Thomas,

The City of Santa Clara's Electric Department, Silicon Valley Power (SVP), is the electric utility for this project. Electric service to the above mentioned addresses will be provided in accordance with the Rules and Regulations for the utility as approved by the Santa Clara City Council.

Silicon Valley Power is immediately able to provide 27 MW capacity to the project site upon the completion of an onsite substation by Vantage. To provide an additional 73 MW of power, per Vantage's request, is conditional upon the restructuring of our existing electrical loop referred to as the Southern Loop. SVP is actively pursuing increased capacity in this area due to the growing power needs of existing businesses as well as future planned projects, such as Vantage's. The planning for breaking the loop in two has already begun and project completion is expected to be in the year 2020.

Questions can be directed to Jeevan Valath, Senior Electric Utility Engineer assigned to the Southern Loop restructuring project, at (408) 615-6609.

Thank you,

A handwritten signature in blue ink, appearing to read "K. Keating".

Kevin Keating,
Division Manager of Electric Engineering

1500 Warburton Avenue • Santa Clara, CA 95050 • 408-261-5292 • Fax 408-249-0217 • www.siliconvalleypower.com

EXHIBIT C

Station Plan



EXHIBIT "C" - VANTAGE DATA CENTERS, INC.

PROJECT: 651, 725 & 825 MATHEW STREET
SCALE: 1" = 30'-0"
DATE: 06.08.2017

CONCEPTUAL LAYOUT ONLY

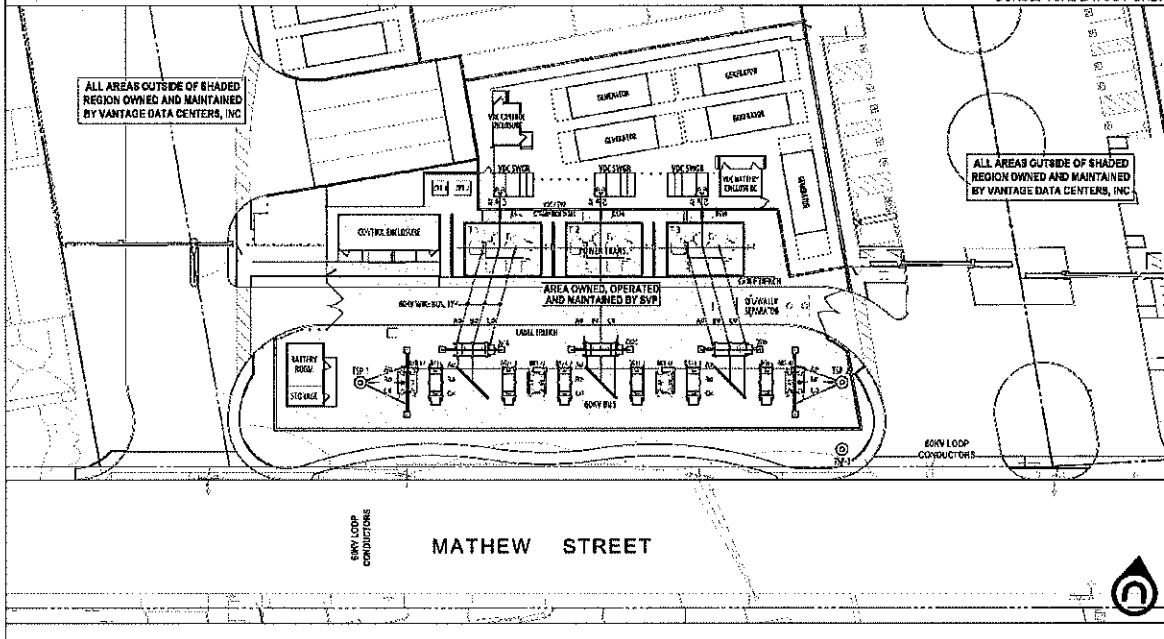
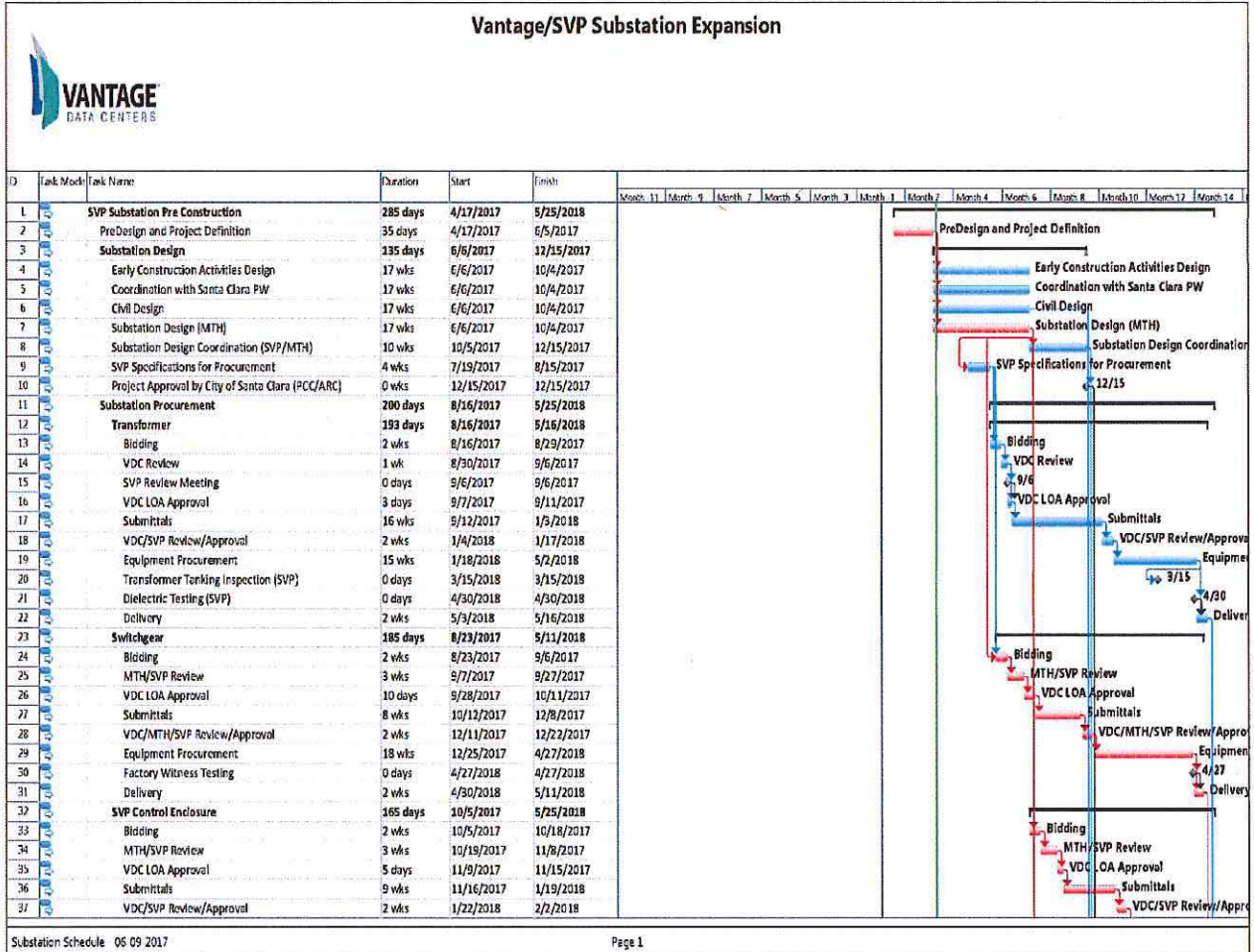


EXHIBIT D

Project Schedule



DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	224883
Document Title:	SVP Letter to Vantage 10-4-18
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	10/4/2018 10:43:39 AM
Docketed Date:	10/4/2018



Powering The Center of What's Possible

October 4, 2018

Spencer Myers
Vice President
Vantage Data Centers
2820 Northwestern Parkway
Santa Clara, CA 95051

Subject: McLaren Data Center Condition

Dear Mr. Myers,

Silicon Valley Power, a division of the City of Santa Clara, will be requiring a condition of approval be contained in the City of Santa Clara's approval documents for your current revision to the McLaren Data Center. The condition is intended to reflect our current agreement that limits the McLaren Data Center to 100 MW of electricity service and is reproduced below:

The project owner shall design and operate the data center buildings in such a way as to ensure that the electricity consumption of the entire facility shall not exceed 100 MW. If the project owner proposes to modify the data center to increase the capacity above 100 MW in the future, it shall file a request to modify the facility with the City of Santa Clara Community Development Department and Silicon Valley Power and shall notify the California Energy Commission.

If you have any questions, please contact me at 408.615.5601 or kkolnowski@santaclaraca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Kevin Kolnowski".

Kevin Kolnowski
Assistant Director of Electric Utility-Energy Distribution

Cc: Michael Stoner
Kevin Keating
Gwen Goodman
Yen Chen

DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	224895
Document Title:	VDC's Supplemental Air Quality Testimony
Description:	VDC's Supplemental Testimony of Dr. Shari Beth Libicki in Response to Committee Order Air Quality Question 1
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	10/5/2018 9:06:07 AM
Docketed Date:	10/5/2018

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**

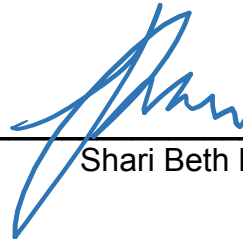
DOCKET NO. 17-SPPE-01

**DECLARATION OF SHARI BETH
LIBICKI**

I, Shari Beth Libicki, declare as follows:

1. I am presently employed as Ramboll's Global Air Quality Service Line.
2. A copy of my professional qualifications and experience was included with the previously filed Opening Testimony and is incorporated by reference in this Declaration.
3. I prepared the attached Supplemental Testimony relating to Air Quality and 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 San Francisco on October 5, 2018.



Shari Beth Libicki

**VANTAGE DATA CENTERS
McLAREN BACKUP GENERATING FACILITY
AIR QUALITY
SUPPLEMENTAL TESTIMONY TO RESPOND TO COMMITTEE ORDER**

I. Name: Shari Beth Lbicki

II. Purpose:

My Supplemental Testimony addresses the specific question related to Air Quality 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:

My qualifications are outlined in previously filed Exhibit 27.

To the best of my 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 my own. I 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 related to air quality. The background and question are reproduced directly from the Committee Order below.

Air Quality

The parties' comments filed in the record and made at the August 30 Hearing focused on whether the potential impacts to air quality when the generators are used for emergency operation had been modeled.

The evidence to date indicates that the potential impacts of the generators based on 50 hours per year per generator have been modeled.¹⁴ This same evidence establishes the actual testing time per year per generator. Given that the single instance of outage in the vicinity of the Data Center was 19 hours, it seems reasonable that the 50 hours of

¹⁴ TN 223911, p. 5.3-14-5.3-17.

modeling would adequately address the potential air quality impacts for both the number of actual testing hours and the hours of emergency operation.

Thus, while separate modeling for emergency operations distinct from that already done for the maximum hours per year of testing authorized under the applicable permit from the air pollution control district does not appear necessary, the modeling discloses that, when operated for 50 hours per year per generator, the Project would exceed the air district's threshold of significance for nitrous oxide (NOx).¹⁵

The Committee therefore **ORDERS** that Staff and Applicant shall, and other parties may, file an Issues Statement no later than Friday, October 5, 2018, to address the following:

1. What measures, if any, are available to mitigate the Project's potential to exceed the threshold of significance for daily and annual NOx emissions to a less than significant level?

Response: In asking this question, the Commission cited to the Initial Study/Mitigated Negative Declaration prepared by Staff and entered into evidence as Exhibit 200 (TN 223911), p. 5.3-14 through 5.3-17. That portion of the document discusses the annual and daily average NOx emissions from testing and maintenance, and notes that, at 40 tons per year, the emissions are in excess of the BAAQMD CEQA mass emissions threshold. It also states at page 5.3-16 that per BAAQMD's Rule 2-2, new sources that emit more than 10 tons per year (tpy) of NOx must fully offset emissions". By fully offsetting MDC's annual emissions from maintenance and testing, there are no incremental emissions on a regional basis. Therefore, the annual and daily average emissions are offset to zero, and there are no increases in mass emissions from maintenance and testing as a result of this Project. Exhibit 200 also states that "[i]n order for the project to qualify for offsets provided by the BAAQMD's small facility bank, the project's total PTE would need to be below 35 tpy. The MDC would need to take a limit on the total annual hours per engine per year in order to remain below BAAQMD Rule 2-2-302 of 35 tpy." I agree with these statements. The Draft Authority to Construct provided by the BAAQMD does, indeed contain a limit on emissions from testing and maintenance from MDC of 35 tpy NOx. Therefore, MDC qualifies for the BAAQMD small facility offset bank which will provide offsets to reduce the annual and average daily emissions to zero.

¹⁵ TN 223911, p. 5.3-14-5.3-17.

In addition to the typical testing and maintenance of engines, if the MDC did experience a 19-hour emergency like the only instance identified by Silicon Valley Power in the last 8 years, and if all of the engines were operated, the NOx emissions from such an event would remain below the 35 tpy threshold for annual emissions of NOx.

The significance thresholds in the BAAQMD CEQA guidelines for mass emissions of NOx are 10 tons per year, and 54 pounds on an average daily basis. As noted above, due to the offsets required by BAAQMD Rule 2-2, the emissions will be offset to zero on both an annual basis and an average daily basis.

Therefore, emissions of NOx are not significant with respect to the BAAQMD CEQA guidelines and will not violate any air quality standard or contribute substantially to an existing or projected air quality violation.