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18-08007

Public Utilities Commission of Nevada
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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Sierra Pacific Power Company d/b/a NV Energy
Docket No. 18-08007
Golden Road Motor Inn Inc. dba Atlantis Resort Spa
NRS Chapter 704B Northern Nevada Departure Application

PREPARED DIRECT TESTIMONY OF

Sachin Verma

1. Q. PLEASE STATE YOUR NAME, JOB TITLE BUSINESS ADDRESS AND PARTY FOR WHOM YOU ARE FILING TESTIMONY.

A. My name is Sachin Verma. I am the Director of Transmission System Planning for Nevada Power Company d/b/a NV Energy (“Nevada Power”) and Sierra Pacific Power Company d/b/a NV Energy (“Sierra, and together with Nevada Power, the “Companies” or “NV Energy”). My business address is 6100 Neil Road, Reno, Nevada. I am filing testimony on behalf of Sierra.

2. Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS THE DIRECTOR OF TRANSMISSION SYSTEM PLANNING?

A. I am responsible for all transmission planning associated with Integrated Resource Planning (“IRP”), compliance, generator interconnections and transmission load addition functions for the Companies.

3. Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT EXPERIENCE?

A. I have a Bachelor of Science Degree in Electrical Engineering and a Master of Business Administration Degree with a focus in Finance, both from the University of Nevada, Reno. I am a registered Professional Engineer in the State of Nevada. I began my employment with the Companies as a student

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engineer in 2007. I have experience in transmission planning, distribution service, electric metering and system protection. More details regarding my professional background and experience are set forth in my Statement of Qualifications, included as **Exhibit Verma Direct-1**.

4. Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION (“COMMISSION”) OF NEVADA?

A. Yes, I have testified in several IRPs and IRP amendments, including most recently in Docket Nos. 17-11003, 17-11004 and 18-06003.

5. Q. ARE YOU SPONSORING ANY EXHIBITS?

A. Yes, I sponsor the following exhibit:
Exhibit Verma Direct-1 Statement of Qualifications

6. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide background on a posting made on the Companies’ Open Access Same Time Information System (“OASIS”) on January 7, 2019, and it’s affect on the Atlantis Resort Spa’s (“Atlantis”) NRS Chapter 704B application. Additionally, I discuss the limitations of the NRS Chapter 704B application process and lack of available information to the Commission prior to the completion of a Transmission Service Request under the Open Access Transmisson Tariff (“OATT”).

7. Q. WHAT POSTING WAS MADE TO THE OASIS ON JANUARY 7, 2019?

A. The Companies posted information referencing a correction made to the OASIS, which states:

1 NV Energy has identified an error in the current Available Transmission
2 Capacity algorithm specific to northern Nevada in NV Energy’s Open Access
3 Same Time Information System (“OASIS”). The OASIS currently identifies
4 a simultaneous import limit of 1000 MW into Northsys - excluding the ON
5 Line 500 kV connection. The ON Line is identified with a separate south to
6 north capability of 600 MW into Northsys. While one might construe this
7 configuration to allow for scheduling of 1000 MW + 600 MW for a total of
8 1600 MW into the northern control area, the simultaneous import limit into
9 northern Nevada, including the ON Line is and always has been 1275 MW.
10 This limitation is identified through power-flow contingency analysis and has
11 been reflected in the company’s integrated resource plan filings. The
12 combined schedules into northern Nevada cannot exceed this simultaneous
13 import limitation. NV Energy is in the process of correcting the ATC
14 calculation algorithm values and updating the OASIS to reflect the correct
15 simultaneous import algorithm into the northern Nevada transmission system.
16 This correction will result in a reduction of currently schedulable TTC and
17 ATC into northern Nevada. The correction is anticipated to be completed by
18 January 25th, 2019.

12 **8. Q. WILL THE CORRECTION MADE TO THE OASIS HAVE ANY**
13 **IMPACT ON THE ATLANTIS NRS CHAPTER 704B APPLICATION?**

14 A. Yes, with the corrected Total Transmission Capacity, the Available
15 Transmission Capacity on the OASIS is reduced. Currently, the Company has
16 performed a transmission study for one customer queued prior to Atlantis. The
17 results of that analysis indicates that transmission import capability is not
18 available to meet that customer’s entire transmission request. With this
19 customer’s application being queued prior to Atlantis’ application, and with
20 the understanding that Atlantis plans to purchase and import 100% of its
21 energy from outside of the Companies’ system, under the current system
22 configuration, no transmission import capability would be available to
23 accommodate Atlantis’ request. System network upgrades will be required to
24 increase the simultaneous import limit to accommodate any new import
25 service request.

1 9. Q. **WHEN WAS THE ERROR IN OASIS IDENTIFIED?**

2 A. The Companies' identified the error in the OASIS Import obligation during the
3 week of November 26, 2018. The error was identified in parallel with
4 reviewing the existing inbound transmission reservations for a prior queued
5 transmission customer. Prior to identifying this error, the OASIS system
6 appeared to have an additional 325 MW of ATC than what actually exists.
7

8 10. Q. **WHAT IS THE EXPECTED SCOPE AND TIMING FOR A SYSTEM
9 NETWORK UPGRADE THAT WILL INCREASE THE NORTHERN
10 CONTROL AREA SIMULTANEOUS IMPORT LIMIT?**

11 A. A network upgrade to increase the northern system's simultaneous import limit
12 would require an additional interconnection to outside the system or
13 reinforcement of the existing internal transmission system.
14

15 The permitting, design, and construction of any new major transmission
16 resource to increase capacity into the system can take many years (generally,
17 seven to 10 years, assuming no interruption in critical path items). The initial
18 step is performing a routing and constraint study, which typically takes
19 approximately six months to prepare. Given the prevalence of federal lands in
20 Nevada, new transmission into and through Nevada generally requires the
21 preparation by the Bureau of Land Management ("BLM") of either an
22 Environmental Assessment or an Environmental Impact Statement. These
23 analyses can take up to four years to complete. Line design and construction
24 can take an additional two to four years to complete. As such, it could take
25 approximately six to eight years before the requested firm capacity could be
26 provided.
27

- 1 **11. Q. DOES THE CURRENT 704B PROCESS ALLOW THE COMMISSION**
2 **TO FULLY ASSESS THE IMPACTS OF A CUSTOMER’S**
3 **DEPARTURE?**
- 4 A. No. One major concern in the process is that the Commission must first
5 approve the customer’s NRS Chapter 704B application for departure prior to
6 the completion of a Transmission Service Request (“TSR”) study. Without
7 the results of the TSR, the Commission cannot determine what, if any network
8 upgrades are required or what the financial consequences of those network
9 upgrades are to existing customers and their rates. Mr. Shawn Elicegui
10 discusses in his direct testimony how this impacts the statutory requirements
11 in NRS Chapter 704B.
- 12
- 13 **12. Q. DO YOU HAVE A PROPOSED SOLUTION TO THE CONCERN**
14 **NOTED IN Q&A 11?**
- 15 A. Yes. One potential solution would be for the Company or Companies to
16 perform a transmission analysis and production cost impact of the customers
17 departure prior to the Commission’s approval of a 704B application. This
18 information could be provided to the Commission to assist in the decision
19 making and approval process. In order for this study to be performed, at
20 minimum, the Point of Receipt would need to be identified by each applicant.
- 21
- 22 **13. Q. EXPLAIN THE CURRENT PROCESS FOR TSR ANALYSIS?**
- 23 A. Once an application is received and approved, the Transmission Planning
24 department is given 60 days to perform the analysis and provide a System
25 Impact Study to the proposed departing customer. This study is performed by
26 simulating all existing transmission reservations and prior queued transmission
27 service requests on the system. Limitations may exist at both the individual

1 path level as well as at the simultaneous import capability of the system
2 studied. The analysis ensures that energy can be delivered reliably from the
3 Point of Receipt to the Point of Delivery. If transmission capacity is not
4 available, the study identifies the required network upgrades in order to
5 accommodate the TSR.

6
7 **14. Q. DOES THE SERIAL APPROACH OF STUDYING EACH TSR**
8 **INDIVIDUALLY PROVIDE A COMPREHENSIVE VIEW OF THE**
9 **SYSTEM IMPACTS OF MULTIPLE CUSTOMER DEPARTURES?**

10 A. Not necessarily. While the most recent study will provide the impacts of the
11 specific customer and all prior queued customers, this information is not
12 available to the Commission at the time a decision must be made on the
13 approval of a customer departure. An analysis of dispatch and rate impacts
14 due to network upgrades cannot be determined prior to this work. A more
15 holistic approach would be for an assessment to be completed prior to the
16 Commission approval that assesses the impacts of all customers with pending
17 departure requests. Individual studies would still be performed under the
18 OATT.

19
20 **15. Q. IN GENERAL, PLEASE EXPLAIN THE RELIABILITY IMPACTS OF**
21 **A CUSTOMER'S DEPARTURE?**

22 A. Sourcing a load from outside the system versus internal to the system can have
23 significant impacts on the overall reliability of a transmission grid. The impact
24 does vary depending on the strength and capability of the transmission tie lines.
25 Although some extremely dense high capacity transmission systems may be
26 able to operate under import only, neither the southern or northern Nevada
27 control zones have that capability. Certain internal reliability must run

1 generation is required in order to operate the system in a reliable manner. The
2 southern Nevada peak system load is approximately 6500 MW while the
3 import capacity is 5200 MW or 80 percent of the peak load. The northern
4 Nevada peak system load is approximately 2200 MW while the import
5 capacity is 1275 MW or 58 percent of the peak load. The stark difference is
6 due to the extremely long and limited line connections to northern Nevada.
7 Bringing in energy over 200 plus miles of transmission is generally inefficient
8 and reactive energy, which supports system voltage, does not travel well. For
9 this reason, local generation providing both real and reactive energy is required
10 in order to support system reliability.

11
12 From a transmission standpoint, the higher the import on a system results in
13 less internal generation support. The transmission system needs to be prepared
14 for the next worst contingency on the system. When imports are increased, the
15 system tie lines become the most critical contingencies. Under these
16 conditions, the loss of a high capacity tie line can result in significantly more
17 reliability issues than a system under light import conditions. Internal
18 generation supports the system in lighter import conditions while the
19 transmission tie lines are depended on for higher import conditions. When
20 internal resources are lost, the transmission system picks up the slack through
21 increased import and power pool participation. When transmission ties lines
22 are lost, the system is dependent on the remaining tie lines which can be near
23 capacity under higher import conditions. Operation of a transmission system
24 under continuous high import results in an overall reduction in reliability to
25 the entire transmission system.

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16. Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A. Yes it does.

**STATEMENT OF QUALIFICATIONS
SACHIN VERMA**

My name is Sachin Verma. My business address is 6100 Neil Road, Reno, Nevada. I have been employed with Sierra Pacific Power Company ("Sierra" or "the Company") since 2007. I am currently the Director Transmission System Planning for Sierra and Nevada Power Company ("Nevada Power", or collectively "the Companies").

I have held my current management position since April, 2018 and have worked as a manager in transmission planning and a transmission planning engineer for a cumulative seven years. As a transmission planning engineer I have performed studies for significant load and generation additions as well as assisted in the compilation of NERC Compliance studies focused on the reliability of the Company's transmission grid and its ability to serve its customers.

Also, I have worked in Electric Meter Operations as both a supervisor and an engineer. In this position, I inspected installation of renewable generation, reviewed and approved electrical panels for new service and designed metering installation for high voltage generation projects. As a distribution engineer I worked with commercial and residential customers to analyze power quality concerns, performed distribution design for equipment replacement and additions and coordinated fuse protection on the system.

I am a Registered Professional Engineer in Nevada -- License #021884. I graduated from the University of Nevada, Reno in 2008 with a Bachelor of Science Degree in Electrical Engineering focused in power systems and in 2014 with a Master of Business Administration focused in finance.

By virtue of my employment, background, experience and education, I am a qualified witness in regard to the NV Energy's system and all transmission planning issues associated with the Companies' PUCN and FERC filings.

AFFIRMATION

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STATE OF NEVADA)
) ss.
COUNTY OF WASHOE)

I, SACHIN VERMA, do hereby swear under penalty of perjury the following:

That I am the person identified in the attached Prepared Testimony and that such testimony was prepared by me or under my direct supervision; that the answers and information set forth therein are true to the best of my knowledge and belief as of the date of this affirmation; that I have reviewed and approved any modifications after the date of this affirmation; and that if asked the questions set forth therein, my answers thereto would, under oath, be the same.


SACHIN VERMA

Subscribed and sworn to before me
this 11 day of January, 2019.




NOTARY PUBLIC

Nevada Power Company
and Sierra Pacific Power Company
d/b/a NV Energy