

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Joint Application of Nevada Power Company d/b/a)
NV Energy and Sierra Pacific Power Company d/b/a)
NV Energy for approval of the fourth amendment to its) Docket No. 22-11032
2021 Joint Integrated Resource Plan.)
_____)

At a general session of the Public Utilities Commission of Nevada, held at its offices on March 14, 2023.

PRESENT: Chair Hayley Williamson
Commissioner C.J. Manthe
Commissioner Tammy Cordova
Assistant Commission Secretary Trisha Osborne

ORDER

The Public Utilities Commission of Nevada (“Commission”) makes the following findings of fact and conclusions of law:

I. INTRODUCTION

On November 30, 2022, Nevada Power Company d/b/a NV Energy (“NPC”) and Sierra Pacific Power Company d/b/a NV Energy (“SPPC”) (collectively, “NV Energy”) filed with the Commission a joint application (“Joint Application”), designated as Docket No. 22-11032, for approval of the fourth amendment to its 2021 Joint Integrated Resource Plan (“IRP”). NV Energy filed the Joint Application pursuant to the Nevada Revised Statutes (“NRS”) and the Nevada Administrative Code (“NAC”) Chapters 703 and 704, including, but not limited to, NRS 704.741, NAC 704.9005 *et seq.*, and Senate Bill 448 (2021) (“SB 448”). Pursuant to NAC 703.190 and NAC 703.527 *et seq.*, NV Energy requests that certain information contained in its Joint Application receive confidential treatment. This order addresses Phase I of the Joint Application and specifically evaluates NV Energy’s request for approval of the Silverhawk Peaking Plant and associated transmission infrastructure.

II. SUMMARY

The Commission grants Phase I of NV Energy’s Joint Application as delineated in the order below.

III. PROCEDURAL HISTORY

- On November 30, 2022, NV Energy filed the Joint Application.

- The Regulatory Operations Staff of the Commission (“Staff”) participates as a matter of right pursuant to NRS 703.301.
- On December 1, 2022, NV Energy filed a corrected Joint Application.
- On December 12, 2022, the Commission issued a Notice of Joint Application and Notice of Prehearing Conference.
- On December 16, 2022, the Nevada Bureau of Consumer Protection (“BCP”) filed a Notice of Intent to Intervene pursuant to Chapter 228 of the NRS.
- On December 19, 2022, the Presiding Officer issued Procedural Order No. 1 adopting a procedural schedule and discovery processes.
- On December 20, 2022, the Las Vegas Global Economic Alliance filed comments. That same day, Western Resource Advocates (“WRA”) filed a Petition for Leave to Intervene (“PLTI”).
- On December 27, 2022, the Commission issued a Notice of Hearing.
- On January 3, 2023, Google LLC (“Google”) filed a PLTI.
- On January 4, 2023, Boyd Gaming Corporation, Station Casinos LLC, and Venetian Las Vegas Gaming, LLC (“Southern Nevada Gaming Group” or “SNGG”); Iron Point Solar, LLC (“Iron Point”) and Hot Pot Solar, LLC (“Hot Pot”); Wynn Las Vegas, LLC (“Wynn”) and Smart Energy Alliance (“SEA”); Nevada Resort Association (“NRA”); Caesars Enterprise Services, LLC (“Caesars”); MGM Resorts International (“MGM”); and Interwest Energy Alliance (“Interwest”) each filed PLTIs.
- On January 5, 2023, the Presiding Officer issued an Order granting the intervention of WRA.
- On January 6, 2023, the Presiding Officer held a prehearing conference.
- On January 9, 2023, the Presiding Officer issued Procedural Order No. 2.
- On January 11, 2023, Iron Point and Hot Pot filed a supplement to their PLTI.
- On January 12, 2023, NV Energy filed a data request response requested in Procedural Order No. 2.
- On January 13, 2023, the Presiding Officer issued Procedural Order No. 3. That same day Nevada Workers for Clean and Affordable Energy filed a PLTI.
- On January 17, 2023, the Presiding Officer held a continued prehearing conference.

- On January 18, 2023, NV Energy filed a Response to PLTI of Iron Point and Hot Pot.
- On January 20, 2023, the Presiding Officer issued an Order granting the PLTIs of Google, SNGG, Wynn and SEA, NRA, Caesars, MGM and Interwest. That same day, Iron Point and Hot Pot filed a Reply to Response of NPC and SPPC to its PLTI.
- On January 24, 2023, the Presiding Officer held a continued prehearing conference. That same day, NV Energy filed data requested in Procedural Order No. 2.
- On January 27, 2023, NV Energy filed data requested in Procedural Order No. 2.
- On January 30, 2023, Google, WRA, and Staff filed testimony. That same day NV Energy filed data requested in Procedural Orders No. 2 and 3.
- On January 31, 2023, the Presiding Officer held a continued prehearing conference.
- On February 1, 2023, the Presiding Officer issued an Order granting the PLTIs of Iron Point and Hot Pot and Nevada Workers for Clean and Affordable Energy.
- On February 2, 2023, NV Energy filed data requested in Procedural Order No. 2.
- On February 9, 2023, NV Energy filed data requested in Procedural Order No. 2.
- On February 10, 2023, NV Energy filed rebuttal testimony. That same day, the Presiding Officer issued Procedural Order No. 4.
- On February 13, 2023, Google filed an Exhibit list as requested in Procedural Order No. 4.
- On February 14, 2023, the Presiding Officer held a continued prehearing conference. That same day, WRA and Staff filed an Exhibit list as requested in Procedural Order No. 4 and NV Energy filed data requested in Procedural Order No. 2.
- On February 15, 2023, Advanced Energy United filed comments. That same day, NV Energy filed an Exhibit List as requested in Procedural Order No. 4.
- On February 16, 2023, the Commission held a hearing. NV Energy, Google, WRA, BCP, and Staff made appearances. During the hearing, Exhibit Nos. 100-104, 105-C, 106-109, 110-C, 111-118, 300, 301-C, 500, and 600 were admitted to the record. That same day, Google filed an Affidavit affirming the identity and Direct Testimony of Carolyn A. Berry previously filed.
- On February 17, 2023, NV Energy filed a data request response requested in Procedural Order No. 2.

- On February 21, 2023, the Presiding Officer held a continued prehearing conference.
- On February 23, 2023, NV Energy filed a data request response requested in Procedural Order No. 2.
- On March 2, 2023, NV Energy filed a data request response requested in Procedural Order No. 2.
- On March 7, 2023, the Presiding Officer held a continued prehearing conference. That same day, NV Energy filed a data request response requested in Procedural Order No. 2.
- On March 8, 2023, the Commission issued a Notice of Hearing
- On March 10, 2023, NV Energy filed a data request response requested in Procedural Order No. 3.

IV. JOINT APPLICATION – PHASE 1

A. Silverhawk Peaking Plant Project

NV Energy’s Position

1. NV Energy requests approval of its request to amend its Supply Plan to expend approximately \$333 million to purchase, install, and operate a 400 megawatt (“MW”) peaking turbine project (the “Silverhawk Peaking Plant”) at the Silverhawk Generating Station, with a summer peak rating of 444 MW, including wet compression, and an in-service date of July 2024. (Ex. 100 at 13.) NV Energy also requests to amend its Transmission Plan to expend \$20 million to construct transmission infrastructure needed to support the interconnection of the Silverhawk Peaking Plant. (*Id.*; Ex. 107 at 4.) NV Energy requests expedited approval of the Silverhawk Peaking Plant and associated transmission infrastructure by March 10, 2023, to allow the materials to be ordered to meet the July 2024 in-service date. (Ex. 100 at 13.) More specifically, NV Energy states that the need for expedited approval by March 10, 2023, is also based on a required progress payment for the combustion turbine equipment purchase in March 2023 and

the additional cost that will be committed between March 2023 and June 2023 when the Commission could approve the project under the normal regulatory schedule. (Ex. 113 at 8.)

2. NV Energy states that, although it requests fossil generation, it is not deviating from its clean energy goals and remains committed to Nevada's sustainability goals. (Ex. 114 at 10.) NV Energy states that its Preferred Plan, which includes the Silverhawk Peaking Plant, achieves and exceeds the Renewable Portfolio Standard (“RPS”) in all years and targets Nevada's 2050 clean energy goal. (*Id.*) NV Energy states that firm dispatchable resources such as gas turbines contribute much more significantly to capacity in 2050 than energy production, resulting in a positive impact on resource adequacy with minimal carbon dioxide emissions. (*Id.*) NV Energy states that, to support its commitment to state carbon policies, the combustion turbines in the Silverhawk Peaking Plant would be capable of operating on a 15 percent hydrogen mixture with the original equipment manufacturer planning a path toward allowing these units to operate on 100 percent hydrogen. (*Id.*) NV Energy states that the proportion of annual energy provided by firm dispatchable generation only increases slightly even with the addition of the combustion turbines because those turbines are peaking units serving a capacity need and, therefore, operate rarely. (*Id.* at 10-11.) NV Energy states that these units are proposed to be limited to 700 annual hours of operation in their air permit application. (*Id.* at 11.)

3. NV Energy states that it is requesting expedited approval of the Silverhawk Peaking Plant because it is critical for NV Energy to reliably serve load. (Ex. 113 at 7.) NV Energy states that resource adequacy risks in Nevada and the Western region have been evolving since the summer of 2020. (Ex. 111 at 3.) NV Energy provides that significant regional heat events have occurred for three consecutive summers and risks for the Western region have continued to change for several reasons including shifts in weather and rapidly changing

resource mix. (*Id.*) NV Energy states that weather has grown more extreme across the region, resource variability has increased, and continued drought conditions have led to supply reductions from numerous hydroelectric plants. (*Id.*) Moreover, NV Energy states that wildfire activity in 2021 resulted in the loss of more than 5,500 MW of transmission capacity from the Pacific alternate current and direct current interties. (*Id.*) The California Independent System Operator (“CAISO”) rule changes have also added uncertainty to the market and coal supply and demand has become an issue for the region. (*Id.*) All of these factors have led to reduced market liquidity, increased prices, and supply curtailments. (*Id.*) NV Energy states that these issues point to added risk in relying on market purchases to cover NV Energy's open positions. (*Id.*) NV Energy expects concerns regarding climate-related events, such as record temperatures, wildfire, and drought, to continue moving forward as the new normal. (*Id.* 3-4.)

4. NV Energy notes the retirement of 18 gigawatts (“GW”) of power from coal and natural gas resources on the Western Interconnection over the past decade, with the planned retirement of an additional 26 GW of mostly coal and natural gas resources by 2032. (*Id.* at 4.) NV Energy states that the California Public Utilities Commission also required procurement of 11,500 MW of specifically non-fossil resources by the end of 2026. (*Id.*) NV Energy states that, not only could these changes dramatically affect the resource mix in the region and the availability of market capacity but, in addition, many recent developments could delay planned new renewable resources in the West and across the United States. (*Id.*) These issues are compounded by rule changes implemented and being discussed by CAISO regarding its day-ahead export priorities and ongoing wheel-through initiative, which NV Energy contends adds significant risk to the market as a whole (*Id.* at 4-5.) NV Energy states that the liquidity in the

real-time hourly power market has also been reduced significantly as more entities have joined the energy imbalance market. (*Id.* at 5.)

5. NV Energy states that supply curtailments have increased risk for its companies, both of which have experienced major supply curtailment events leading to emergency conditions. (*Id.*) NV Energy states that one such curtailment led to a Level 3 Energy Emergency Alert (“EEA”) in August of 2020 - the highest level of emergency that means load shed is imminent. (*Id.* at 5-6.) In July of 2021, NV Energy states it experienced significant curtailments again, leading to an EEA Level 3 situation. (*Id.* at 6.) NV Energy states that, while the summer of 2022 featured lower volumes of supply curtailments, there was still more than 300 MW of curtailments during the critical hours in the September heat wave. (*Id.*) NV Energy states that such curtailments of those sizes highlight the risk of relying so heavily on market purchases. (*Id.*)

6. NV Energy states that adding in-system generating resources, specifically resources available after solar resources drop off in the evening hours, will reduce NV Energy's open position and thus its reliance on market capacity purchases, helping to mitigate uncertainty surrounding climate change, wildfires, western resource retirements, and the impact of the CAISO rule changes. (*Id.*) NV Energy states that events in the West have resulted in significant supply curtailments for its companies and in-system generating resources would not be subject to curtailment and could continue providing energy to Nevada customers even when issues such as regional heat waves and wildfires occur. (*Id.*) NV Energy states it is also taking additional actions to address resource adequacy such as participating in phases of the Western Resource Adequacy Program (“WRAP”). (*Id.*)

7. NV Energy states that the base case in its filing, which includes the Silverhawk Peaking Plant, meets or exceeds the current RPS in every year, meets the 16 percent planning

reserve margin ("PRM") for each utility, targets NV Energy's proportionate contribution to Nevada's 2050 clean energy goal, and provides for the timely retirement of the Valmy generating station. (Ex. 112 at 13.)

Google's Position

8. Google recommends the Commission postpone its decision on whether to approve the Silverhawk Peaking Plant until more robust modelling and analysis is completed in a re-filed IRP amendment. (Ex. 500 at 3.) More specifically, Google recommends that NV Energy be required to perform model simulations that include the effects of joining the WRAP and its statutory requirement to join a regional transmission organization ("RTO") by 2030 on its needs for energy, capacity, and transmission for all years covered by future IRPs and any current and future amendments to its 2021 IRP. (*Id.*) Google states that, as a component of the refiled amendment, NV Energy should provide detailed information and an associated action plan for the Silverhawk Peaking Plant's potential use of hydrogen with a minimum of a feasibility study and cost-benefit analysis of the facility's potential hydrogen use. (*Id.* at 3-4.) Google further recommends that the Commission institute a series of workshops to draft standards and evaluation criteria for the development of hydrogen for use in the electricity sector, including hydrogen-ready and hydrogen-capable resources, for Commission approval. (*Id.*)

9. Google states that NV Energy could satisfy its short-term needs with carbon-free resources instead of constructing the Silverhawk Peaking Plant. (*Id.* at 8.) Google states that NV Energy's Low Carbon case does not include the Silverhawk Peaking Plant and is based on meeting an 80 percent reduction in carbon dioxide emissions by 2030 instead of the 50 percent reduction by 2030 required by the RPS. (*Id.*) Google further states that NV Energy also provided

cases that consisted entirely of carbon-free resources such as the Battery Energy Storage System (“BESS”) North, BESS South, and Geo case. (*Id.* at 8-9.)

10. Regarding NV Energy’s IRP modeling, Google recommends that the utility be required to perform model simulations that include the effects of joining the WRAP and a statutorily required RTO by 2030 on its needs for energy, capacity, and transmission for all years covered by future IRPs and any current and future amendments to its 2021 IRP. (*Id.* at 13.) Google states that the results of these analyses should be incorporated in a refiled IRP amendment for Commission approval. (*Id.* at 13-14.)

11. Google states that NV Energy’s IRP modeling did not consider its statutory requirement to join an RTO by 2030 nor did it consider any incremental activities toward joining an RTO by 2030, such as joining the WRAP or a day-ahead market. (*Id.* at 9.) Google states that NV Energy is taking steps to join WRAP before 2030 and notes that NV Energy has stated its expectation to recommend a day-ahead market early in 2025 but that it will probably be after 2025 before it can make its recommendation. (*Id.* at 10.) Google provides that these actions are firmly within the 2021 IRP planning horizon. (*Id.*) Google further provides that incremental RTO activities will have an impact on NV Energy’s resource needs. (*Id.*) Google states that, in the near term, joining WRAP and a day-ahead market will have a material impact on NV Energy’s forecasted resource needs and, beyond 2025, long-term resource adequacy, regional transmission planning, and regional transmission control will all materially impact NV Energy’s needs. (*Id.*)

12. Google contends that NV Energy’s incremental activities should be incorporated into the Fourth Amendment to its 2021 IRP, reflecting NV Energy’s decision to join these markets and delineate how the utility has evaluated these impacts in the context of other resource

decisions that it has proposed. (*Id.*) Google additionally states that NV Energy should be required to present alternative scenarios reflecting various potential RTO footprints that may be available in 2030. (*Id.*) Google states that, while details of whether and what form an RTO may take by 2030 are uncertain, 2030 is firmly within the IRP planning horizon and such a major potential change should be analyzed by the IRP process. (*Id.* at 10-11.)

13. Google states that RTO-related activities should be reflected in NV Energy's IRP because the incorporation of activities in NV Energy's IRP comports with potential future policy recommendations of the Regional Transmission Coordination ("RTC") Task Force, of which NV Energy is a member. (*Id.* at 11.) Google, citing an RTC Task Force Report, states that the exclusion of RTO activities from resource planning could result in an over-estimation of resources. (*Id.*) Google states that RTOs provide more efficient resource commitment and dispatch, lower peak capacity needs, more efficient intermittent generation management, and lower reserve requirements. (*Id.*) Google further states that prudent resource planning must consider efficiencies and the resources available to the utility through regionally integrated transmission operation and wholesale electricity markets. (*Id.*) Google provides that failure to do so could result in increased costs and a reduction of the benefits of joining an RTO. (*Id.*)

14. Google states that NV Energy bases its exclusion of the impact of joining the WRAP, a day ahead market, and a statutorily required RTO from the Fourth Amendment on an assertion that "market considerations are not expected to impact the transmission infrastructure necessary to inject the output of the generator (the Silverhawk Peaking Plant) into the grid or deliver to native load customers." (*Id.* at 11-12.) Google provides that, in rebuttal testimony filed in the Third Amendment to the 2021 IRP, NV Energy stated that "it cannot include the impacts of joining an RTO in the Fourth or Fifth Amendments because "a full regional model

would have to be run by a market operator or RTO administrator after-market footprints are fully defined” and that it will not be able to model a day-ahead or RTO in future IRPs “until the modeling inputs are fully known and NV Energy has the Western Electricity Coordinating Council (“WECC”) runs.” (*Id.* at 12.)

15. Google states that NV Energy’s justifications are not reasonable and explains that there are many forecasts and estimates that go into an IRP that change over time. (*Id.*) Google states that, to the extent that NV Energy has sufficient knowledge to make a reasonable estimate of the impact of joining WRAP, a day ahead market, or an RTO, it should be included in the modeling of an IRP or IRP Amendment, particularly because it does so for other issues, such as the delay or cancellation of resources under development, which it cited as one of the justifications for the need for the Silverhawk Peaking Plant. (*Id.*)

16. Google states that NV Energy likely has access to preliminary results of the cost-benefit study being performed by the Western Markets Exploratory Group by the consulting group E3. (*Id.* at 13.) Google further states that, through its discussions with the CAISO and Southwest Power Pool (“SPP”) stakeholder groups regarding a day ahead market, NV Energy has access to information that will allow it to reasonably estimate the benefits of joining these organizations. (*Id.*) Google provides that NV Energy can and should have sufficient information to include the benefits of joining WRAP, a day-ahead market, and an RTO in its IRP planning and failing to do so could bias IRPs toward excessive resource investments, including potentially the Silverhawk Peaking Plant. (*Id.*)

17. Google states that the potential use of hydrogen fuel by the Silverhawk Peaking Plant, and Nevada more generally, should be thoroughly vetted. (*Id.* at 14.) Google states that clean hydrogen is an important tool to enable decarbonization, but the production and use of

hydrogen requires strong standards to ensure it does not increase emissions. (*Id.*) Google states that hydrogen production using an electrolyzer directly tied to a carbon-free resource is “green” and does not produce greenhouse gases. (*Id.*) However, Google explains that hydrogen can increase emissions if derived from a process that uses natural gas or fossil fuel unless those emissions are captured and permanently sequestered. (*Id.*) Google states that hydrogen combustion also produces nitrogen oxides, which are associated with adverse public health impacts and act as indirect greenhouse gases. (*Id.*) Google provides that, if hydrogen is produced using grid electricity, it could lead to significant increases in grid emissions (even more than would be emitted by producing hydrogen with gas) unless strict requirements are met to ensure the electrolyzer demand is met with additional carbon-free generation that is matched to the time and location of the electrolyzer’s electricity use. (*Id.* at 15.) Google states that these outcomes underscore the need for strong standards and system planning practices around hydrogen’s production and use. (*Id.*)

18. Google states that NV Energy notes the benefit of the Silverhawk Peaking Plant’s ability to use hydrogen preliminarily in a 15 percent fuel mixture with a manufacturer-planned path to 100 percent hydrogen operation to enable future clean energy options. (*Id.*) However, Google states that NV Energy does not have a plan or estimated timeline for the use of hydrogen with the Silverhawk Peaking Plant. (*Id.*) Google states that NV Energy intends to develop a plan once hydrogen becomes commercially available in quantities necessary to operate combustion turbines; however, NV Energy has not provided further information about what public information it is following or its estimate of when hydrogen may become commercially available in the necessary quantities. (*Id.* at 15-16.)

19. Google states that hydrogen production is being developed in the West, and the Infrastructure Investment and Jobs Act will establish six to ten regional clean hydrogen hubs – some of which are being pursued in California, Washington, and the Western Inter-States Hydrogen Hub. (*Id.* at 16.) Google states that in Nevada Air Liquide recently opened a hydrogen production facility in North Las Vegas that will serve the hydrogen vehicle market in California. (*Id.*)

20. Google states that the Silverhawk Peaking Plant anticipates being designed to make the transition to hydrogen less expensive than on a unit initially designed to burn natural gas and to accommodate additional selective catalytic reduction (“SCR”) catalyst that would be required to operate on hydrogen; however, NV Energy has not provided an estimate of the costs that will be incurred to modify the Silverhawk Peaking Plant. (*Id.* at 16-17.) Google states that NV Energy should be required to produce such an estimate. (*Id.* at 17.) Similarly, NV Energy has not provided any analysis to establish the feasibility of hydrogen as a fuel for the Silverhawk Peaking Plant but should be required to do so. (*Id.*) Google states that, in order to justify the construction and cost recovery of the project, including changes to accommodate future hydrogen use, NV Energy should be required to establish with a high degree of certainty that 1) hydrogen will be available; and 2) that it has adequate transportation and storage infrastructure to deliver and store the hydrogen fuel for use by the project – all within a timeframe that corresponds to the operating life of the units. (*Id.*)

21. Google states that NV Energy has not provided a cost-benefit analysis to evaluate the use of hydrogen in place of natural gas as a fuel by the Silverhawk Peaking Plant; however, it should be required to do so. (*Id.*) Google states that, in addition to the modifications to facilitate hydrogen and accommodate its greater volumetric needs compared to natural gas, it must also

consider emissions. (*Id.*) Google explains that it requires about three times the volume of hydrogen compared to natural gas to produce an equivalent amount of electricity and, due to the potential need to limit nitrogen oxide emissions associated with hydrogen's use, the operational efficiency of the project could be negatively affected. (*Id.* at 17-18.) Google states that, at a minimum, such a cost-benefit analysis should include an estimate of the costs to convert the generating technology of the project to burn hydrogen; the incremental costs of procuring, transporting, and storing hydrogen relative to natural gas; the impact on emissions of burning different mixtures of hydrogen to be used with the project; and the difference in the cost of production (\$/MWh) of using hydrogen instead of natural gas as fuel. (*Id.* at 18.)

22. Google states that NV Energy should also be required to establish a plan for using hydrogen as fuel. (*Id.*) Google states that the plan should include a timeline and be based on research and analysis of the possible avenues by which it can viably procure, transport, and generate electricity from hydrogen, including how it will overcome the limitations of existing natural gas infrastructure to carry more than a fraction of hydrogen fuel. (*Id.* at 18-19.) Google further states that the plan should provide details to ensure the hydrogen used is certified "clean" and carbon-free. (*Id.* at 19.)

23. Google states that additional planning must be performed to ensure that NV Energy's use of clean hydrogen also furthers Nevada's clean energy goals. (*Id.*) Google states that, in order to increase clean resources and further Nevada RPS goals, NV Energy should ensure that new clean energy is deployed at the same time that hydrogen production is deployed in a location as the same electrical zone as the electrolyzer used to produce the hydrogen. (*Id.*) Google provides that, if the clean resource is built in a distant location, it may not displace fossil fuel production and could simply displace other clean resources. (*Id.*)

24. Google states that NV Energy must also plan for granular matching of clean energy production with electricity demand because emissions can vary widely by time-of-day. (*Id.* at 20.) Google provides that to “green up” the hydrogen the producer will need to acquire time-based clean energy attribute certificates similar to, but more granular than, portfolio energy credits for all grid electricity consumed in the production of hydrogen. (*Id.*)

25. Google recommends that, as a component of a refiled IRP amendment, NV Energy should provide detailed information and an associated action plan for the Silverhawk Peaking Plant’s potential use of hydrogen including, at a minimum, a timeline, feasibility study, and a cost-benefit analysis of the facility’s hydrogen use. (*Id.*)

WRA’s Position

26. WRA recommends that the Commission not approve NV Energy’s request and instead direct NV Energy to file supplemental testimony in this proceeding, which includes revised quantitative analysis substantiating the need for and benefits from the Silverhawk Peaking Plant or, in the alternative, WRA recommends that NV Energy be directed to file a separate application with a revised analysis. (Ex. 600 at 4, 27.) WRA states that the revised analysis for consideration of the immediate reliability need should include at a minimum: 1) an updated and improved Loss of Load Expectation (“LOLE”) study quantifying the enhanced reliability risks identified qualitatively throughout NV Energy's filing; 2) a robust analysis of resource options, including, but not limited, to the Silverhawk Peaking Plant, including a full assessment of reliability contributions, economic costs and benefits, and environmental impacts of differing procurement strategies; and 3) a request for procurement approval of the resource or portfolio of resources identified by NV Energy, through the analysis articulated above, as the best strategy for meeting its resource needs and the policy energy goals of Nevada. (*Id.* at 4-5.)

WRA also recommends that NV Energy be directed to perform similar levels of reliability analysis for all future IRP filings and amendments, including more robust mid and long-term analysis considering a range of potential future risks, to mitigate the risk of urgent, just in-time procurement currently proposed by the Commission. (*Id.* at 5.)

27. WRA states that, while NV Energy's filing makes a strong and plausible qualitative case for the need for additional reliability resources in the face of growing reliability risk and resource delays, its filing lacks the technical analysis necessary to address whether NV Energy has: 1) quantified and demonstrated the urgent need for new reliability resources through robust technical analysis; 2) sufficiently considered the range of potential supply and demand-side resources which could fulfill this need; and 3) concluded and demonstrated that the Silverhawk Peaking Plant is the best option for meeting customer needs consistent with the energy policy goals of Nevada. (*Id.* at 6.)

28. WRA states that NV Energy's request does not include any probabilistic reliability analysis of the emergent reliability risks described in its filing and does not appear to have updated past or performed new reliability analysis to determine which resources could be capable of meeting that risk and instead relies on outputs of outdated reliability analysis performed in 2020 and 2021, which assessed a different portfolio of resources and set of market and reliability conditions than is discussed in the instant filing. (*Id.*) WRA provides that NV Energy's prior analyses are also deficient and points to NV Energy's treatment of its hydroelectric contracts as a firm resource in its reliability modeling and analysis of its open capacity position. (*Id.* at 6-7.) WRA further provides that, unless or until the obligation to analyze and allocate reliability requirements becomes a regional responsibility of the Western Power Pool ("WPP") as part of the WRAP, NV Energy's internal approach to reliability must be

modernized to leverage modern tools and current input assumptions. (*Id.* at 7.) WRA contends that NV Energy's lack of an original probabilistic reliability analysis supporting its proposal leaves the Commission with insufficient information to approve its request at this time. (*Id.*) WRA states that the time and cost of its recommendation is trivial in the context of NV Energy's request, yet also vital to the ability of the Commission to act upon it. (*Id.*)

29. WRA states that NV Energy's overarching reliability concerns regarding itself and the broader WECC are valid. (*Id.*) WRA states that the confluence of resource retirements, load growth, drought risk, regional competition for scarce resources, and extreme weather pose both reliability and economic risks for utilities with open capacity and energy positions. (*Id.*) WRA states that NV Energy's concerns are echoed in analyses from WECC, WPP, CAISO, and joint analysis funded by the major Desert Southwest utilities and have been a present theme throughout recent NV Energy IRP filings. (*Id.* at 7-8.)

30. WRA states that NV Energy's actions to reduce its open positions, particularly during evening hours, appear prudent based on current trends and market risks, including the potential peaking thermal resources. (*Id.* at 8.) WRA states that such actions reduce NV Energy's exposure to severe market prices and reduce the risk that NV Energy would have reliability shortfalls in the event of severe weather; however, WRA provides that the prudence of such actions are conditional on corroborating quantitative analysis. (*Id.*) WRA states that detailed analysis is merited prior to committing hundreds of millions of dollars to a specific solution and such analysis is not present in this proceeding. (*Id.*)

31. WRA states that NV Energy did not apply best practice tools and methods to its analysis of the reliability concerns discussed in the filing. (*Id.* at 11.) WRA provides that NV Energy did not perform any probabilistic modeling to assess the emergent reliability concerns

raised in its narrative and, consequently, did not and could not assess whether the Silverhawk Peaking Plant (or any alternatives) can resolve that concern. (*Id.*) WRA states that NV Energy relied on static outputs of prior analyses which, while robust, do not reflect the current understanding of system conditions or NV Energy's latest portfolio. (*Id.*)

32. WRA states that the correct tools and methods were used by NV Energy in 2020 and 2021 to inform the resource planning questions at the time that they were performed but those tools and methods have not yet been applied to the emerging needs identified by NV Energy or the Silverhawk proposal. (*Id.* at 11-12.) WRA states that the instant filing is rife with urgent and emergent risks and is a significant change to NV Energy's portfolio mix, which merits fresh analysis prior to the consideration of a \$333 million investment in new gas capacity. (*Id.* at 12.) WRA states that, without updated analysis, it is impossible to assess the appropriate amount of thermal capacity to meet its desired reliability standard, what quantity of alternative resources could meet the same reliability standard, or whether those alternative resources would come at a lower cost. (*Id.*) Moreover, WRA states that NV Energy's anticipated participation in the WRAP does not eliminate the need for NV Energy to perform its own internal, probabilistic resource modeling for Commission review until its participation with WRAP is fully underway and its resource accounting standards are aligned with WRAP obligations. (*Id.* at 12-13.)

33. WRA states that it has concerns with NV Energy utilizing its 2020 and 2021 reliability analyses as the basis for its reliability modeling. (*Id.* at 13.) For example, WRA states that LOLE analyses assess how a resource portfolio performs as a system and the effects of different resource interactions. (*Id.*) WRA states that, if electrification or climate change result in different load patterns, the LOLE results and corresponding Effective Load Carrying Capability (“ELCC”) and PRM outputs will change as well. (*Id.*) WRA states that ELCC results

are a function of the resource portfolio being analyzed and a material shift in the amount of solar and storage within NV Energy's portfolio to gas and geothermal will inherently change the resulting values of all resources involved as well as the combined portfolio effects. (*Id.*) WRA provides that it does not appear that NV Energy generated new ELCC values to reflect the individual or aggregate ELCC of the new portfolio in the instant filing. (*Id.* at 13-14.) WRA further provides that the shape of the ELCC results will also shift because of other material changes identified in NV Energy's filing, such as the revised shape and magnitude of NV Energy's load forecast filed in its Third IRP Amendment in Docket No. 22-09006. (*Id.* at 14.)

34. WRA states that, in contrast to the ELCC, the PRM has increased potential for stability if executed with a consistent metric – perfect capacity – which refers to a hypothetical resource class with perfect dispatch, infinite ramp rate, and with no outage risk, and is the unit in which ELCC is typically expressed. (*Id.*) WRA states that all resources have limitations and ELCC analysis may be used to determine how a resource compares to perfect capacity, as NV Energy has done for solar, wind, storage, and geothermal resources; however, these ELCC values were not updated and may introduce error in the relationship between the PRM and desired reliability standard. (*Id.* at 14-15.) WRA states that NV Energy appears to apply the full summer rating to its thermal and hydro resources with no modification of these resources' values to perfect capacity, overlooking their real-world limitations and significantly overstating their reliability contributions. (*Id.* at 15.) For example, WRA provides that NV Energy's filing simultaneously provides full capacity credit to its Hoover Dam contract in its modeling and position analysis while contemplating a potential near-term future in which Lake Mead is a dead pool no longer capable of producing energy. (*Id.*) WRA states that this simplification, alongside NV Energy's use of summer peak rating for thermal resources, excluding any consideration of

outages, has the effect of destabilizing the relationship between the PRM and the Commission's approved LOLE standard. (*Id.*)

35. WRA states that E3's ELCC study recommends that, if any factors related to characteristics of load, other resources in the portfolio, or the portfolio itself change significantly, then the ELCC values in its study should be revisited. (*Id.*) WRA states that, similarly, NV Energy's PRM study indicates that several future changes may eventually require NV Energy to revisit its PRM requirement, such as fundamental changes in the shape of NV Energy's load, major changes in its resource portfolio, and improved understanding of impacts of climate change on extreme weather events that affect system reliability. (*Id.* at 15-16.) WRA states that, since the completion and approval of NV Energy's ELCC and PRM studies, NV Energy has: 1) filed a revised load forecast reflecting significant changes to the shape and magnitude of its load driven by electrification, energy efficiency and demand response, behind-the-meter resources, and large customer activity; 2) proposed a substantial modification to its portfolio resource mix through the replacement of the Iron Point and Hot Pot solar and Battery Energy Storage System ("BESS") projects with new geothermal, standalone BESS, and natural gas resources; 3) identified significant changes in the availability of market purchases from other regions driven, at least in part, by the correlated effects of weather on regional resource performance and load; and 4) identified significant risk that its contracted hydroelectric capacity may be reduced or unavailable as a result of drought conditions. (*Id.* at 16.)

36. WRA states that, to the extent that these changes are material enough to drive the emergency need for the Silverhawk Peaking Plant, and expedited treatment in this case, it is also material enough to merit updated or original analysis quantifying and justifying that reliability need. (*Id.*) WRA states that prior analyses should not be considered sufficiently precise or

specific for the execution of major procurement decisions in the current environment considering that procurement decisions dwarf the cost of revised modeling. (*Id.* at 17.) WRA states that approval of major procurement based on outdated analysis would represent a step backwards in NV Energy's best practices for resource planning and would be troubling precedent for the Commission. (*Id.*)

37. WRA states that, at a minimum, NV Energy should ensure its LOLE model is updated to assess the integrated reliability of each portfolio under consideration. (*Id.*) WRA states that each portfolio should be assessed discreetly to confirm that it meets a desired reliability standard as expressed in reliability risk (such as LOLE). (*Id.*) WRA states that this is in contrast to NV Energy's current practice, which performs a static analysis of need based on PRM and resource counting rules and attempts to derive equivalent portfolios using similar open positions between all cases developed. (*Id.*) WRA states that this method is not sufficient for determining whether each individual portfolio considered is reliable nor to consider whether the portfolios being compared, and their associated costs, provide equivalent reliability benefits. (*Id.* at 17-18.)

38. WRA states that, for a specific reliability need such as the need identified for the Silverhawk Peaking Plant, LOLE analysis can indicate the relative reliability contribution resulting from including or excluding that specific unit and can indicate the equivalent capacity for other resource technologies needed to meet the same LOLE standard. (*Id.* at 18.) As an example, WRA provides that through this analysis NV Energy could articulate the volume of BESS in installed megawatt hours ("MWhs") necessary to achieve the same reliability standard as the Silverhawk Peaking Plant proposal, confirm that both achieve the Commission's desired reliability standard of 0.1, and present to the Commission the relative merits of these competing

