THE HYDRO COMPANY, INC.
DBA THE NEVADA HYDRO COMPANY, INC.

June 24, 2014

Mr. Edward Randolph, Director Energy Division
Ms. Lily Chow
California Public Utilities Commission
505 Van Ness Avenue
San Francisco CA 94102

RE: Comments of The Nevada Hydro Company on the Track 4 procurement Plans of SDG&E

Dear Mr. Randolph and Ms. Chow:

In her email of June 17, 2014, Ms. Chow distributed to the Service List in R.12 -03-014 San Diego Gas & Electric Company's ("SDG&E") LTPP/Track 4 Procurement Plan s for conventional and Preferred Resources, filed with the Energy Division of the California Public Utilities Commission ("Commission") on May 1, 2014. Ms. Chow further advised that Commission Decision 14-03-004 requires Energy Division approval of SDG&E's procurement plans , that Energy Division is solici ting comments from stakeholders on SDG&E's procurement plans, and that comments should be submitted you by Tuesday, June 24th.[1]

Nevada Hydro understands that Energy Division's review is limited to determining whether SDG&E has met the requisite conditions to submit a procurement application and that parties will have the opportunity to participate fully in the Commission's formal process once SDG&E's procurement application is submitted.

Clearly, Decision 14-03-004 (the "Track 4 Decision") in this docket describes the requirements that SDG&E and Southern California Edison ("SCE") must meet in their procurement, and Nevada Hydro's must alert you that although the Track 4 decision clearly authorizes SDG&E and SCE to procure large storage resources like Nevada Hydro's Lake Elsinore Advanced Pumped Storage ("LEAPS") facility, both utilities are have failed to meet this mandate. Nevada Hydro described SCE's failure in filings made to this docket found for your convenience in Attachment 1. SDG&E has failed to mee t the mandate by ignoring LEAPS as a Preferred Resource ; by failing to consider it as a conventional resource that may compete with the Carlsbad Energy Center ("Carlsbad"); and similar to SCE, by claiming that LEAPS is outside of its "service territory " notwithstanding an existing interconnect agre ement with SDG&E. Simply, SDGEs plan fails to meet the requirements of the Track 4 Decision and should not be approved by the Commission's Energy Division.

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[1]/ Once again, the state and the ratepayers are faced with an urgent and fleeting opportunity, this time by SDG&E. Announcement of the procurement plan was noticed by the Commission to market participants on June 17, 2014 and the Commission provided 5 business days for comments. Given the limited time forreview, The Nevada Hydro Company ("Nevada Hydro") has attempted to identify the most obvious problems with the proposed procurement, and hopethat the Commission can extend the timeline and scope of the procurement to meet the needs of the ratepayers andthe state.

1. Background

Nevada Hydro was very pleased to see that the Commission, in the Track 4 Decision explicitly allows advanced pumped storage ("APS") to participate in providing the solution to the reliability problems facing Southern California largely as a result of the shuttering of the San Onofre Nuclear Generation Station ("SONGS"). In its previous filings in this Docket,[2] Nevada Hydro has noted that as its 500 MW Lake Elsinore Advanced Pumped Storage ("LEAPS") facility (FERC Project Number P-14227) and the related Talega-Escondido/Valley-Serrano 500-kV Interconnect ("TE/VS Interconnect") are located roughly ten to twenty miles from SONGS,[3] squarely in the middle of the "SONGS study area" and provide not just megawatts, but also the voltage support, other ancillary services and flexibility from within both SDG&E's and SCE's load pocket. Nevada Hydro has included a recent Whitepaper describing LEAPS and its benefits in Attachment 2.

As Nevada Hydro has mentioned many times, LEAPS has a complete interconnection agreement with SDG&E, SCE and the CAISO. It has the highest CAISO queue position of any proposed project in the region (Queue #72), including that of the Carlsbad. The Federal Energy Regulatory Commission ("FERC") has issued a final environmental impact statement that is now being updated in docket P-14227. FERC has indicated that with so much licensing work complete, that it may issue its license for LEAPS in two years, allowing LEAPS to be operating as soon as 2019, well within the window of this proceeding.[4]

Notwithstanding numerous mandates that LEAPS be included in the mix of resources available to solve crisis caused by the demise of SONGS, LEAPS has been methodically and systematically excluded from SCE's procurement efforts and SDG&E is apparently following in SCE's footsteps to exclude LEAPS as well. The Commission must find this treatment unacceptable.

In addition to ignoring LEAPS in violation of the Track 4 Decision and AB 2514 mandates, SDG&E is also ignoring the benefits provided by Nevada Hydro's proposed TE/VS Interconnect. While the California Independent System Operator ("CAISO") is now evaluating the project for inclusion in its next transmission plan, as designed, the TE/VS Interconnect will provide 1,800 MW to SDG&E's Talega – Escondido 230 kV line and can easily deliver the full amount directly into SDG&E's Talega substation. Further, the facility will provide 1,000 MW of reliability by its proposed in-service date of 2017 and provides far more flexibility at lower cost than other proposed "solutions" mentioned in SDG&E's plan. When combined with LEAPS, Nevada Hydro will be able to provide to SDG&E 1,500 MW of reliability

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[2] / See, for example, "Comments of The Nevada Hydro Company on Workshop Materials," Rulemaking No. 12-03-014, filed January 8, 2014.

[3] / Nevada Hydro has described these projects, their permit path forward and some of the benefits the projects can provide specifically in light of the needs now identified in this proceeding in, "Reply Comments of The Nevada Hydro Company on ALJ Gamson's Policy-Related Questions Presented at the September 4, 2013 Prehearing Conference," R. 12-03-014, filed October 11, 2013.

[4] / "Procurement authorized by this decision should begin as soon as possible. Procurement needs may become critical as early as 2018, and certainly by 2020", SONGS Decision, P. 113. In addition for the timing for LEAPS described, Nevada Hydro reminds the Commission that its Talega-Escondido/Valley-Serrano 500 kV Interconnect Project can deliver up to 1,800 MW to within a few miles of SONGS by 2016. Nevada Hydro expects to reapply to this Commission for a Certificate of Public Convenience and Necessity shortly.

benefits. SDG&E is well aware of both the projects, yet SDG&E has carefully crafted this draft to exclude uniquely only Nevada Hydro's projects from the resource mix . Energy Division must find this discriminatory treatment unacceptable, and not approve their plan.

2. Comments

SDG&E's plan fails to address the mandates of the Track 4 Decision to treat APS facilities as Preferred Resources, and falls short of properly addressing conventional resources as well.

2.1 The physical location of a resource is much less important than its electrical location

Like SCE, SDG&E is attempting to exclude LEAPS from participation by requiring that eligible projects must be physically located in SDG&E's service territory and that they connect to SDG&E owned transmission. While LEAPS clearly connects to SDG&E transmission system, with a final interconnection agreement in place, it is physically located in SCE's service territory. Yet, SCE ref uses to allow consideration of LEAPS because it is not located in the unnecessarily restrictive "West LA sub area" rather than the broader "LA Basin" as described in the Track 4 Decision. Again, our filings in Attachment 1 provide much more detail.

Nevada Hydro contends that while physically located outside of the SDG&E service territory , the LEAPS facility is electrically part of the SDG&E grid, and that the physical location is not nearly as significant as its electrical location in the grid. With its interconnection agreements complete and deliverability finalized, neither SDG&E (nor SCE) should be able to eliminate resources like LEAPS from consideration merely due to where it may touch the ground; much more critical is where and how it may touch and interacts with the grid.

Clearly LEAPS must be able to participate in the procurement process of at least one southern California utility! However, presently, the actions of the two utilities, with this Commission's apparent concurrence, have the apparent effect of discriminating against the LEAPS facility, which exists closer to SONGS than any other proposed resource, yet seems to be located in a void between the two utilities, unable to participate in either's procurement.

2.2 The Plan fails to treat APS as required by Track 4 Decision and by AB 2514

Nevada Hydro appreciates that with the Track 4 Decision, the Commission explicitly directs that "large pumped hydro facilities should not be excluded" [5] from the utilities procurement programs and that new large pumped hydro facilities like LEAPS, like all energy storage facilities, are to be treated as a Preferred Resource. However, SDG&E fails to describe how it intends to meet this Commission requirement, limiting its procurement plan to only smaller storage resources addressed by Decision 13–10–040 in R.10–12–007, and failing to address the overriding mandates of AB 2514 as they apply to APS facilities like LEAPS. Nevada Hydro has described the mandates of AB 2514 and the Track 4 Decision as applied to LEAP S in the filings in Attachment 1. While these comments we re filed in connection with SCE's procurement activities, they unfortunately also apply to SDG&E's plan.

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[5]/ SONGS Decision, at page 102.

2.3 The plan also fails to address the availability of LEAPS as a conventional resource

SDG&E's procurement should not be based solely on "conventional gas fired generation", but on generation that meets local needs and provides flexible capacity. Clearly, with its final environmental impact statement and interconnection agreement with SDG&E, LEAPS, if not to be considered as a Preferred Resource (in violation of the Track 4 Decision and AB 2514) should at least be evaluated as a conventional resource against the proposed Carlsbad facility, particularly as LEAPS has clear advantages to ratepayers.

For example, conventional generation is often limited in its "flexible" capabilities, due to minimum load, or "Pmin" requirements.[6] In contrast, APS facilities are fully dispatchable from very low minimum loads up to their full output. This not only provides a broader range of flexible capacity and dispatch capability, but it reduces CAISO dispatch problems to accommodate minimum load energy and aids pricing issues when a peaker is not setting the marginal price. Further, peakers may actually contribute to overgeneration situations, as some studies, such as the recent E3 report evaluating 50% renewable penetration in the state, show potential significant overgeneration during the middle of the day, quickly followed by significant needs for energy when the solar generation drops off, when the sun sets. Consequently, if the peakers are required to be on line prior to the ramp up, they could be operating during high supply, and potentially overgeneration periods of the day, and thus inadvertently contributing to the overgeneration problem. APS not only provides a full range of dispatchability of the nameplate rating, but does not require up to 300 MW of minimum load generation to be on line to have another 300 MW of available flexible capacity to dispatch for the evening ramp up, and a large pumped storage facility can help mitigate the possible on peak overgeneration situation forecasted due to a large quantity of solar PV generation projected by consuming energy during overgeneration situations.

2.4 LEAPS, whether considered a Preferred or conventional resource provides benefits no other resource can.

The loss of SONGS has left a void in the composition of the generation fleet in Southern California and has instigated an extensive, but unresolved, discussion about the need for and value of system inertia and its interplay with the ability to support imported energy from East of River and West of River. Much of the proposed replacement supply is in the form of energy efficiency, demand response and small renewable generation facilities, with the single exception of Carlsbad (or a similar peaking facility). Peakers like Carlsbad, typically have a very low capacity factor, so that their actual operational time is very low. Thus, if they are not running, they are not providing system inertia to the grid and are not available to provide VAR support.

LEAPS on the other hand, is always available to provide this inertia and VAR support to the grid. An APS generator can operate at very low loads, and thus can spin synchronized to the grid to provide system inertia and voltage (VAR) support at all times. Recently, the CAISO has identified voltage concerns in this area of the grid, and has ordered units to provide VAR support, including the conversion

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[6]/ Thus, a 100 MW peaker based on a General Electric LMS100 gas turbine might only have a dispatchable range of 50 MW to 100 MW, and is not dispatchable below 50 MW. Consequently, a 600 MW bank of six peakers would only be dispatchable from 300 MW to 600 MW.

to synchronous cond ensers of two Huntington Beach units. Consideration of a facility with larger generators which can support imports to Southern California will likely result in substantial savings to ratepayers as well as increased grid reliability.

The proposal to move forward with the procurement of "gas fired generation" means automatically the state has chosen to increase emissions production in the state. This is an unfortunate direction, especially in light of the retirement of the zero emissions San Onofre Nuclea r Generating Station. The proposed Carlsbad facility will have minimum run times and minimum loads, so that the units are "available" for dispatch for their flexible range. The proposed gas fired peakers must be first dispatched to their "Pmin", or must operate at 300 MW so that they are available to the CAISO for a flexible capacity dispatch. They will then further when dispatched for their flexible capacity from 300 MW to 600 MW. The Commission has a responsibility to assess the cost and impact of emi ssions and to incorporate the effect of an emissions generating facility into the procurement evaluation. A large pumped hydro facility like LEAPS not only does not have an emissions component, but has the ability to consume excess generation, thus reliev ing overgeneration situations, and to store and help manage intermittent renewable generation which is available in the grid during both on -peak and off -peak periods.

2.5 Timing must be aligned with Commission mandates and State law

Of most significant concern, should the Commission allow the early procurement of up to 600 MW of conventional gas fired resources and defer procurement of an additional 200 MW of "preferred" resources, SDG&E would be precluded from procuring more than the 200 MW of preferred reso urces, when in fact these may be lo wer carbon footprint facilities, better aligned with the state loading order, and may preclude large preferred resources, such as LEAPS, from being considered due to its size being greater than the remaining need. Nevada Hydro suggests that this Commission consider aligning this plan with the state loading order and policy mandates when approving procurement of both gas fired and conventional resources. As LEAPS connects to SDG&E's 230 KV system near the Talega substatio n a few miles from SONGS , while providing zero emissions as well as system inertia, VAR support, integration of renewables and better management of overgeneration conditions , it must be considered under the Track 4 Decision mandates, yet continues to be ignored.

Further, the OTC limitations and the arguments for accelerating the procurement timeline should be thoroughly addressed with consideration to the direction the state policies are guiding energy procurement. The parties supporting the accelerated timeline should be required to present options for extending the Encina plant operations, to the extent it is actually needed, and ensure that all options for supply are exhausted, including options to pay for the use of cooling seawater during such an ext ension and limiting operation of Encina to critical needs. Further, the increase in the simultaneous import limit of the SDG&E service area of an additional 1000 MW from the Sunrise Powerlink should be vetted and included in such a supply stack, such that the proposed timeline for this Track 4 procurement could accommodate a somewhat extended procurement cycle, so that preferred resources, including large APS facilities , could be included in the procurement process. Importantly, it is highly likely that a n accelerated procurement of gas fired resources could preclude the procurement preferred resources , which would be contrary to Commission mandates set forth in the Track 4 Decision.

3. Conclusion

Renewable resources, integrated by appropriately sited energ y storage, can provide both operational and reliability benefits, meeting all of the system needs of the evolving greener grid. Nevada Hydro's TE/VS Interconnect and LEAPS projects are critical components for making this greener grid a reality while simul taneously economically solving the immediate reliability needs that are being addressed in this proceeding.

Because of the unique characteristics of APS and the unique locational attributes specific to LEAPS, LEAPS is the optimal resource to meet the nee ds identified in this procurement allocation and this procurement program needs to comply with AB 2514.

Given the State's exacting clean energy policies, there is an unquestionable need for the electric power system in California to move toward an enviro nmentally sustainable future, while still maintaining highly reliable and efficient service at the least possible cost. Given this policy imperative, there can be no doubt that APS generally and LEAPS specifically are the very best facilities that could b e developed in the region in order to meet the challenges of:

- The ever-increasing need for highly flexible resources;
- The ever-expanding reliance in the region on variable renewable resources;
- The evident and hidden limitations on power flows into the region;
- The long-term imperative for California to move away from carbon -based energy resources; and,
- The permanent shutdown of SONGS.

Nevada Hydro trusts that the Commission will assure that the procurement playing field is level and does not discriminate against any potential player.

Sincerely,

David Kates

Attachment 1

Comments of The Nevada Hydro Company on the Procurement Process of SCE (filed but withdrawn as directed by the ALJ)

Response of The Nevada Hydro Company to the Petition for Expedited Modification of Decision 13-02-015

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking No. 12–03–014 (Filed March 22, 2012)

Response of The Nevada Hydro Company to the Petition for Expedited Modification of Decision 13-02-015

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Dated this 20th day of June, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking No. 12–03–014 (Filed March 22, 2012)

Response of The Nevada Hydro Company
to the Petition for Expedited Modification of Decision 13-02-015

Pursuant to the Rule 16.4 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), and directives from ALJ Gamson, The Nevada Hydro Company ("Nevada Hydro") herein submits comments on the "Petition for Expedited Modification of Decision 13-02-015" submitted on June 3, 2014 by Terra–Gen Power, LLC ("Petition") regarding the improper implementation, by Southern California Edison ("SCE"), of the procurement process authorized in this long-term procurement ("LTPP") proceeding.

Nevada Hydro supports the Petition as far as it goes, but notes that the Petition's necessary focus on technical minutiae overlooks other more fundamental problems that have come into play between the directives in Decision 13–02–015 (the "Track 1 Decision)[1] and in Decision D.14–03–004 (the "Track 4 Decision"). These problems are due to the misalignment of the mandates from AB 2514 and these Decisions on the one hand, and the Commission's apparent willingness to allow SCE to solve the problems stemming from the loss of the San Onofre Nuclear Generating Station ("SONGS") as it may, on the other. In Nevada Hydro's view, SCE is working to solve the problems in their own way by selectively ignoring critical mandates from AB 2514 and from the Track 4 Decision.

As SCE is not following the procurement directives from this Commission, Nevada Hydro requests that the Commission modify a single word in Track 4 Decision in order to clearly

[1]/ Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent Retirement of the San Onofre Nuclear Generations Stations, Decision 14–03–004 in Rulemaking 12-03-014, March 14, 2014.

require that SCE abide by the mandates of AB 2514 and the Track 4 Decision. In supporting Terra–Gen's request that the Commission intervene in SCE's procurement process, Nevada Hydro also requests that the Commission require SCE to correct its implementation before market expectations are affected, further resources are expended by bidders and commitments made by SCE to contract with resources that would otherwise not qualify if SCE were following Commission and legislative directives.

1. Introduction

Nevada Hydro was very pleased to see that the Commission, in the Track 4 Decision, is explicitly allowing advanced pumped storage ("APS") to participate in providing the solution to the reliability problems facing Southern California largely as a result of the shuttering of the SONGS. In its previous filings,[2] Nevada Hydro has noted that its 500 MW Lake Elsinore Advanced Pumped Storage ("LEAPS") facility (FERC Project Number P-14227) and the related Talega-Escondido/Valley-Serrano 500-kV Interconnect ("TE/VS Interconnect") are located roughly ten to twenty miles from SONGS,[3] squarely in the middle of the "SONGS study area"/"LA Basin" and provide not just megawatts, but also the voltage support, other ancillary services and flexibility from within the load pocket. Nonetheless, SCE continues to ignore LEAPS.

The Petition focuses on language in the Track 1 Decision concerning "locational effectiveness factors" and Terra–Gen's belief that language in the Track 1 Decision "is susceptible to misinterpretation and that has apparently been misinterpreted by SCE to create what is in effect a new eligibility requirement for continued participation in the Track 1 solicitation."[4] In this filing, Nevada Hydro points to a "back door" in the Track 4 Decision on which SCE seems to be relying to a slightly more insidious end: to ignore mandates in the Track 4 Decision in order to eliminate projects like LEAPS from consideration when the Commission

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[2]/ See, for example, "Comments of The Nevada Hydro Company on Workshop Materials,Rulemaking No. 12–03–014, filed January 8, 2014.

[3]/ Nevada Hydro has described these projects, their permit path forward and some of the benefits the projects can provide specifically in light of the needs now identified in this proceeding in, 'Reply Comments of The Nevada Hydro Company on ALJ Gamson's Policy-Related Questions Presented at the September 4, 2013 Prehearing Conference," R. 12–03–014, filed October 11, 2013.

[4]/ Petition, at Page 1

clearly wants SCE to inclusively assess as many proposed projects as feasible to meet the cost and reliability goals of this Proceeding.[5]

The Track 4 Decision contains directives to assure SCE's procurement process meets Commission objectives and protects ratepayers. If SCE had at least followed the spirit of the Decision, Nevada Hydro would have no issue. However, SCE has found a way around both the letter and spirit of the Decision by restricting the geographic boundaries for eligible resources to an area where there are insufficient Preferred Resources to meet the targets in Track 4 Decision. SCE has used this option in the same manner Terra–Gen identified in its Petition, as a "threshold screen that precludes further consideration of a resource's other attributes in the determination of the resource's value."[6]

The September 16, 2013 Assigned Commissioner/ALJ Ruling in this Docket noted that, "due to long lead times for new resources, there is an urgency to start moving toward identifying and filling any identified need as soon as possible."[7] Nevada Hydro is concerned, therefore, that by pushing aside formal evaluation of LEAPS to fill the identified need in this proceeding, SCE is angling to ignore the elephant in the room that is LEAPS to instead select resources that are less economic to ratepayers, do less to enhance the usefulness of renewable energy resources, do less to support the grid of tomorrow and do less to reduce GHG production in the region. As the interconnection and nearly all environmental work are complete for LEAPS, with some cooperation from regulators, including this Commission, Nevada Hydro can have LEAPS operating by as soon as 2019. Nevada Hydro is therefore submitting these comments to this proceeding to alert the Commission that SCE is apparently avoiding consideration of relevant Preferred Resources like LEAPS, as the Commission directed, to the benefit of its own favored resources.

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[5]/ The Track 4 Decision at P. 102 states: As discussed herein, we require SCE and SDG&E to procure MW ranges of certain types of resources. Each utility should solicit all resources as required by this decision and may propose for approval any set of resources which can meet the LCR need in its portion of the SONGS service area consistent with the authorized resource ranges herein. Within the categories that include preferred resources, bulk energy storage and large pumped hydro facilities should not be excluded [Emphasis added.]

[6]/ Petition, at page 2.

[7]/ Assigned Commissioner and Administrative Law Judge's Ruling Regarding Track 2 and Track 4 Schedules, Rulemaking 12-03-014, September 16, 2013 P. 3.

In Section 2, below, Nevada Hydro describes how SEC has avoided evaluating LEAPS notwithstanding Commission and Legislative mandates. In Section 3, Nevada Hydro describes these mandates as they relate to LEAPS particularly. In Section 4, Nevada Hydro describes how SCE has avoided these requirements while Section 5 describes the minor modification to the Track 4 Decision required to correct this oversight.

2. SCE's procurement process has excluded LEAPS

In the Track 1 Decision, SCE was authorized to procure between 1,400 and 1,800 MW in the West LA sub-area of the LA Basin. As a result, on September 12, 2013, SCE launched the Local Capacity Requirements Request for Offers ("RFO") for incremental capacity in the West LA Basin and Moorpark Sub-Areas. Although it does not directly connect to one of the distribution substations identified in the RFO, Nevada Hydro submitted a complete and timely offer to SCE for LEAPS, noting that it connects to the 500 kV grid feeding into the area (SCE's Valley–Serrano line), and that its deliverability assessment clearly shows that it meets requirements for contributing to local reliability. Nonetheless, on January 6, 2014, Nevada Hydro was notified that, "Unfortunately, the proposal is nonconforming because the interconnection is not in the LA Basin or Moorpark area as required by the RFO."[8] Having eliminated LEAPS on this technicality, SCE never analyzed the facility's ability to meet the requirements for acceptable resources set forth by the Commission.[9]

As a result of the Track 4 Decision, on March 21, Nevada Hydro contacted SCE,[10] asking SCE to reassess its previous denial and consider LEAPS as required in this Decision. Nevada Hydro contacted SCE again by email on April 10 and on other occasions. To date, SCE has not responded to Nevada Hydro's repeated requests.

SCE has effectively eliminated LEAPS from consideration based upon its connection point and although the Track 4 Decision has mandated the proper consideration of both storage and

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[8]/ Email communication from Daniel Walker of SCE to Rexford Wait of Nevada Hydro dated January 6, 2014. In a follow–up call, Mr. Wait again reminded Mr. Walker that LEAPS connects at the transmission not distribution level and that its deliverability analysis is long complete.

[9]/ These requirements are set forth in Order 8 of the Track 4 Decision, and further discussed at Footnote 22, *infra.*

[10]/ Nevada Hydro's email was addressed, as was required in the RFO, to LCR.RFO@sce.com and to Alan.Taylor@sedwayconsulting.com.

Preferred Resources in the LA Basin (as described below), SCE has refused to consider LEAPS under the mandates of this Decision. Further, as both the California Independent System Operator ("CAISO") and SCE have studied this connection, reflected in the signed Large Generator Interconnection Agreement, SCE is well aware of the benefits the interconnection actually provides to their system.

3. The Mandates of AB 2514 and the Track 4 Decision clearly require SCE to consider LEAPS is its procurement process

Clearly, both AB 2514 and the Track 4 Decision require consideration of LEAPS, like all APS facilities. This section describes some of these requirements as they apply to LEAPS.

3.1. AB 2514 requires that APS be considered in this LTPP process, and SCE has not done so

Section 1(f) of AB 2514 is clear in its purpose and directive:

> *There are significant barriers to obtaining the benefits of energy storage systems, including inadequate evaluation of the use of energy storage to integrate renewable energy resources into the transmission and distribution grid through long-term electricity resource planning . . . .*

Further, Section 2836.2(c) requires that the Commission "consider the integration of energy storage technologies with other programs, including demand-side management or other means of achieving the purposes identified in Section 2837 that will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management". Nevada Hydro contends that this law requires that SCE cannot simply set aside consideration LEAPS; it must include LEAPS in its conclusions and decisions relative to how its procurement "will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management".

AB 2514 grants to storage resources certain priority considerations. The Commission allocated priority to some storage resources in accordance with AB 2514 in D.13–10–040. Although APS facilities like LEAPS were carved out of that Decision, the mandates of AB 2514 still apply to APS facilities like LEAPS, acknowledged in the Track 4 Decision but ignored by SCE.

3.2. The Track 4 Decision requires SCE to consider LEAPS in its procurement process.

Clearly, and as required by AB 2514, the Track 4 Decision directed that SCE must consider APS facilities like LEAPS as a "preferred resource".[11] However, and in addition to the explicit requirements for proper consideration of LEAPS that stem from the provisions of AB 2514, in the Track 4 Decision, the Commission detailed other mandates, and for each, most (other than SCE, evidentially) now seem convinced that APS facilities like LEAPS will be essential to assuring the mandates are met as economically as possible. For example:

- The Track 4 Decision reiterated that the Commission has a statutory duty to ensure that customers receive reasonable services at just and reasonable rates, protect the environment, and maintain grid reliability. Clearly, APS facilities will be essential to helping this Commission and the CAISO meet this mandate for a modern green grid.
- Further, "in D.07-12-052 at 12, the Commission stated that once demand response and energy efficiency targets are reached, 'the utility is to procure renewable generation to the fullest extent possible'."[12] Again, most agree that APS facilities like LEAPS will be essential to integrating renewable generation "to the fullest extent possible."
- The Track 4 Decision also reiterated that, "While we strongly intend to continue pursuing preferred resources to the greatest extent possible, we must always ensure that grid operations are not potentially compromised by excessive reliance on intermittent resources and resources with uncertain ability to meet LCR needs."[13] Again, only APS facilities like LEAPS can help assure a stable and reliable grid (through the provision of all ancillary services and energy) while efficiently integrating renewable generation.

The Commission also noted that D.12–01–033 requires that, "Instead of procuring a fixed amount of preferred resources and then procuring fossil-fuel resources, the IOUs are

[11]/ Track 4 Decision, at footnote 3.

[12]/ Track 4 Decision, at P. 14.

[13]/ *Id*. at P. 90.

required to continue to procure the preferred resources "to the extent that they are feasibly available and cost effective."[14] SCE knows that LEAPS is "feasibly available" and cannot yet know whether it is cost effective or not. SCE must consider storage facilities, including LEAPS, ahead of non–preferred resources in meeting authorized procurement targets and has not, notwithstanding the Commission's directive that it "will modify SCE's proposal to ensure that SCE procures a higher percentage of authorized resources from preferred resources and energy storage."[15] .

Although the Track 4 Decision clearly and specifically requires SCE to consider APS to fill the need identified in this proceeding, Nevada Hydro sees no evidence that SCE is abiding by its explicit mandates including:

1. Order 1.c. that requires SCE to procure at least 550 MW from preferred resources consistent with the Loading Order and that "large pumped hydro facilities shall not be excluded".
2. Order 1.e. that requires any additional local capacity, beyond certain specified amounts "may only be procured through preferred resources (including bulk energy storage and large pumped hydro facilities)".
3. Order 8.e. requires a "demonstration of technological neutrality, so that no resource was arbitrarily or unfairly prevented from bidding" into SCE's solicitation process. "To the extent that the availability, viability and effectiveness of resources higher in the Loading Order are comparable to fossil-fueled resources, SCE and SDG&E shall show that it has contracted with these preferred resources first."
4. Although it has obviously not done so, Order 12 that notes SCE "<u>may</u> modify its procurement plan approved by Energy Division per Decision 13-02-015 solely so that resources in portions of the Los Angeles Basin beyond the West Los Angeles sub-area may also be procured to meet incremental local capacity needs identified in this decision." [Emphasis added.]

[14] / *Id*. at P. 15.

[15] / *Id*. at P. 93.

Thus, on the one hand, the Commission states that SCE's procurement authorization now extends throughout the LA Basin local reliability area[16], and that SCE must consider APS as a preferred resource. Clearly, as the only APS facility under development in the LA Basin, the Commission meant for SCE to consider LEAPS. However, the Commission also stated this expansion into the larger LA Basin is at SCE's discretion:

> *Thus, SCE should prioritize procurement in the West Los Angeles sub-area of the LA basin. To the extent that SCE wishes to procure resources in the LA Basin, but not in the West LA sub-area, to meet the incremental authorizations in this decision (i.e., for resources beyond those authorized in D.13-02-015), SCE shall amend its approved procurement plan from Track 1 within 90 days of this decision, subject to Energy Division approval."*[17]

Clearly, as SCE has not moved to amend its plan, it does not "wish" to procure resources outside the West Los Angeles sub-area of the LA basin. By leaving SCE this option, and notwithstanding all of the other mandates detailed above, SCE has been able to avoid considering LEAPS. Further, as there are no large storage or APS facilities in the "West Los Angeles sub-area of the LA basin", SCE is angling to present to the Commission a resource mix that excludes these (and perhaps other) Preferred Resources that are located in the larger area.

The Track 4 Decision is clear in its directive to SCE:

> *As discussed herein, we require SCE and SDG&E to procure MW ranges of certain types of resources. Each utility should solicit all resources as required by this decision, and may propose for approval any set of resources which can meet the LCR need in its portion of the SONGS service area consistent with the authorized resource ranges herein. Within the categories that include preferred resources, bulk energy storage and large pumped hydro facilities should not be excluded. [Emphasis added.]*[18]

In Nevada Hydro's view, there is simply no reason to allow SCE to restrict its evaluation of "feasibly available and cost effective" resources to the West Los Angeles sub-area of the LA basin, particularly when Preferred Resources like LEAPS are available

[16]/ Track 4 Decision, Orders 1 and 5.

[17]/ Track 4 Decision, Page 111

[18]/ Track 4 Decision at P. 102.

and capable of solving the problems identified in this Proceeding in the larger SONGS study area and LA Basin.

4. By ignoring LEAPS, SCE may fill the need identified with other inferior resources, thereby imposing its view of "available resources" over that of this Commission.

The Commission has urged area utilities to "not wait until very close to when the need is critical to acquire such resources; to the extent that additional preferred resources or energy storage is cost-effective and well suited to meet LCR needs in the subject geographical areas, SCE and SDG&E should work to procure these resources in advance".[19] Why then is SCE not assessing LEAPS now?

The Track 4 Decision quotes SCE witness Nelson's acknowledgement that SCE is aware APS facilities like LEAPS "could add additional value to the grid."[20] However, and likely expressing the view of his employer, Mr. Nelson also "was uncertain about the 'effectiveness' of 'any large pumped hydro storage' in meeting the 'West LA Basin LCR' (perhaps as none exist in that area?), he did believe it could be 'bid in' for Track 1 and would contribute to the 'balanced approach' of using 'all resources' to avoid 'the possibility of failure and being overly reliant on anyone'."[21] As noted, Nevada Hydro bid LEAPS in to the Track 1 process and was politely shown the door without any evaluation as to its effectiveness for meeting the LCR need.

Order 8 of the Track 4 Decision set forth the evaluation criteria against which the effectiveness of LEAPS (and all resources) is to be measured (repeated at this footnote).[22] Clearly, not only has SCE not met <u>any</u> of these mandates for the LEAPS facility, having

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[19]/ *Id.* at P. 113.

[20]/ *Id.* at P. 100.

[21]/ As quoted at *Id.* at P. 101.

[22]/ These evaluation criteria identified in Order 8 of the Track 4 Decision are:

a. Cost-effectiveness;

b. Consistency with the Loading Order, including a demonstration that it has identified each preferred resource and assessed the availability, economics, viability and effectiveness of that supply in meeting the LCR need;

c. Compliance with Ordering Paragraphs 1 or 2 (as applicable);

d. For applicable bilateral contracts, compliance with Public Utilities Code Section 454.6; and

e. A demonstration of technological neutrality, so that no resource was arbitrarily or unfairly prevented from bidding in SCE's or SDG&E's solicitation process. To the extent that the availability, viability and effectiveness of resources higher in the Loading Order are comparable to fossil-fueled resources, SCE and SDG&E shall show that it has contracted with these preferred resources first.

eliminated it based upon its point of connection outside of the West LA area, but it may have violated criterion "e" by unfairly preventing the only APS project able to meet these identified needs from within the load pocket from participating in the evaluation process.

5. Proposed modification

Although Ordering Paragraph 1 of the Track 4 Decision clearly notes that the Order addresses the "Los Angeles Basin local reliability area", Order 12 allows SCE the option to ignore this directive to look beyond its West Los Angeles sub-area focus from the Track 1 Decision to the expanded area in the Track 4 Decision.

For the reasons stated herein, Nevada Hydro respectfully requests that the Commission modify a single word in Order 12 of the Track 4 Decision as shown:

> Southern California Edison Company (SCE) ~~may~~ shall modify its procurement plan approved by Energy Division per Decision 13-02-015 solely so that resources in portions of the Los Angeles Basin beyond the West Los Angeles sub-area may also be procured to meet incremental local capacity needs identified in this decision. Any such modification shall be submitted by SCE to Energy Division within 90 days of the effective date of this decision and shall be subject to the written approval of the Director of the Energy Division.

6. Conclusion

Renewable resources, integrated by appropriately sited energy storage, can provide both operational and reliability benefits, meeting all of the system needs of the evolving greener grid. Nevada Hydro's TE/VS Interconnect and LEAPS projects are critical components for making this greener grid a reality while simultaneously economically solving the immediate reliability needs that are being addressed in this proceeding.

Given the State's exacting clean energy policies, there is an unquestionable need for the electric power system in California to move toward an environmentally sustainable future, while still maintaining highly reliable and efficient service at the least possible cost. Given this policy imperative, there can be no doubt that APS generally and LEAPS specifically are the very best facilities that could be developed in the region in order to meet the challenges of:

- The ever-increasing need for highly flexible resources;

- The ever-expanding reliance in the region on variable renewable resources;
- The evident and hidden limitations on power flows into the region;
- The long-term imperative for California to move away from carbon-based energy resources; and,
- The permanent shutdown of SONGS.

Nevada Hydro trusts that the Commission will assure that the procurement playing field is level and does not discriminate against any potential player.

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Dated this 20th day of June, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking No. 12–03–014 (Filed March 22, 2012)

Comments of The Nevada Hydro Company On the Procurement Process of Southern California Edison

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Dated this 9th day of April, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking No. 12–03–014 (Filed March 22, 2012)

Comments of The Nevada Hydro Company
On the Procurement Process of Southern California Edison

Pursuant to the Rule 6.2 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), The Nevada Hydro Company ("Nevada Hydro") herein submits comments on the implementation, by Southern California Edison ("SCE"), of the procurement process authorized in this long-term procurement plan ("LTPP") proceeding.

1. Background

Nevada Hydro was very pleased to see that the Commission, in Decision 14–03–004[1] ("SONGS Decision"), is explicitly allowing advanced pumped storage ("APS") to participate in providing the solution to the reliability problems facing Southern California largely as a result of the shuttering of the San Onofre Nuclear Generation Station ("SONGS"). In its previous filings,[2] Nevada Hydro has noted that as its 500 MW Lake Elsinore Advanced Pumped Storage ("LEAPS") facility (FERC Project Number P-14227) and the related Talega-Escondido/Valley-Serrano 500-kV Interconnect ("TE/VS Interconnect") are located roughly ten to twenty miles from SONGS,[3]

[1]/ Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent Retirement of The San Onofre Nuclear Generations Stations, Decision 14–03–004 in Rulemaking 12-03-014, March 14, 2014.

[2]/ See, for example, "Comments of The Nevada Hydro Company on Workshop Materials, Rulemaking No. 12–03–014, filed January 8, 2014.

[3]/ Nevada Hydro has described these projects, their permit path forward and some of the benefits the projects can provide specifically in light of the needs now identified in this proceeding in, "Reply Comments of The Nevada Hydro Company on ALJ Gamson's Policy-Related Questions Presented at the September 4, 2013 Prehearing Conference," R. 12–03–014, filed October 11, 2013.

squarely in the middle of the "SONGS study area" and provide not just megawatts, but also the voltage support, other ancillary services and flexibility from within the load pocket.

Nevada Hydro appreciates that with the SONGS Decision, the Commission explicitly directs that "large pumped hydro facilities should not be excluded"[4] from the utilities procurement programs and that new large pumped hydro facilities like LEAPS, like all energy storage facilities, are to be treated as a Preferred Resource.[5] Nevada Hydro appreciates the Commission's willingness to take this step because even though most now seem to agree that APS is essential to helping California realize its greener energy future,[6] today, there are few paths available that would allow such facilities to be built by providing necessary revenue. The Commission's LTPP process is clearly the most immediate and transparent.

In D.13-02-015, the Track 1 decision of this proceeding, SCE was authorized to procure between 1,400 and 1,800 MW in the West LA sub-area of the LA Basin. As a result, on September 12, 2013, SCE launched the Local Capacity Requirements Request for Offers ("RFO") for incremental capacity in the West LA Basin and Moorpark Sub-Areas. Although it does not directly connect to one of the distribution substations identified in the RFO, Nevada Hydro submitted a complete and timely offer to SCE for LEAPS, noting that it connects to the 500 kV grid feeding into the area (SCE's Valley–Serrano line), and that its deliverability assessment clearly shows that it meets requirements for contributing to local reliability. Nonetheless, on January 6, 2014, Nevada Hydro was notified that, "Unfortunately, the proposal is nonconforming because the interconnection is not in the LA Basin or Moorpark area as required by the RFO."[7] Having eliminated LEAPS on this technicality, SCE never analyzed the facility's ability to meet the requirements for acceptable resources set forth by the Commission.[8]

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[4]/ SONGS Decision, at page 102.

[5]/ SONGS Decision, at footnote 3.

[6]/ Both to help integrate large amounts of new grid-scale renewable generation, but also to help meet the state's aggressive GHG goals by substituting for the development of new gas-fired resources.

[7]/ Email communication from Daniel Walker of SCE to Rexford Wait of Nevada Hydro dated January 6, 2014. In a follow–up call, Mr. Wait again reminded Mr. Walker that LEAPS connects at the transmission not distribution level and that its deliverability analysis is long complete.

[8]/ These requirements are set forth in Order 8 of the SONGS Decision, and furtherdiscussed at Footnote 22, *infra*.

With the issuance of its SONGS Decision, the Commission has clarified that SCE's procurement authorization now extends throughout the LA Basin local reliability area[9], and that SCE must consider APS as a preferred resource. As a result, on March 21, Nevada Hydro contacted SCE,[10] asking SCE to reassess its previous denial and consider LEAPS to fill the need identified in this proceeding. To date, SCE has not responded to Nevada Hydro's request.

The September 16, 2013 Assigned Commissioner/ALJ Ruling noted that, "due to long lead times for new resources, there is an urgency to start moving toward identifying and filling any identified need as soon as possible."[11] Nevada Hydro is concerned, therefore, that by pushing aside formal evaluation of LEAPS to fill the identified need in this proceeding, SCE is angling to ignore the elephant in the room that is LEAPS to instead select resources that are less economic to ratepayers, do less to enhance the usefulness of renewable energy resources, do less to support the grid of tomorrow and do less to reduce GHG production in the region. As the facility's interconnection and nearly all environmental work are complete, with some cooperation from regulators, including this Commission, Nevada Hydro can have LEAPS operating by as soon as 2019. Nevada Hydro is therefore submitting these comments to this proceeding to alert the Commission that SCE is apparently avoiding consideration of relevant Preferred Resources like LEAPS, as the Commission directed, to the benefit of its own favored resources.

2. SCE is required to assess the value of LEAPS to meet the identified need and has not

Both AB 2514 and numerous Commission decisions require SCE to evaluate the ability of LEAPS to effectively meet the needs identified in this proceeding. SCE cannot simply dismiss LEAPS from consideration based upon its connection point when the Commission has mandated the proper consideration of both storage and Preferred Resources in the LA Basin. Further, as both the California Independent System Operator ("CAISO") and SCE have studied

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[9]/ SONGS Decision, Orders 1 and 5.

[10]/ Nevada Hydro's email was addressed, as was required in the RFO, to LCR.RFO@sce.com and to Alan.Taylor@sedwayconsulting.com.

[11] Assigned Commissioner and Administrative Law Judge's Ruling Regarding Track 2 and Track 4 Schedules, Rulemaking 12-03-014, September 16, 2013 P. 3.

this connection, reflected in the signed Large Generator Interconnection Agreement, SCE is well aware of the benefits the interconnection actually provides to their system.

2.1. AB 2514 requires that APS be considered in this LTPP process, and SCE cannot simply ignore its potential benefits

Section 1(f) of AB 2514 is clear in its purpose and directive:

> *There are significant barriers to obtaining the benefits of energy storage systems, including inadequate evaluation of the use of energy storage to integrate renewable energy resources into the transmission and distribution grid through long-term electricity resource planning . . ..*

Further, Section 2836.2(c) requires that the Commission "consider the integration of energy storage technologies with other programs, including demand-side management or other means of achieving the purposes identified in Section 2837 that will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management". SCE cannot simply set aside consideration LEAPS; it must include LEAPS in its conclusions and decisions relative to how its procurement "will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management". Failure to correct SCE's misstep would set back the Legislature's main purposes in advocating policies to address energy storage, namely, to facilitate the integration of increasing amounts of renewable generation and to achieve the state's policies to reduce greenhouse gas emissions at the lowest cost to ratepayers.

2.2. The SONGS Decision requires SCE to seriously assess the value of LEAPS and the Commission must assure that it does.

In the SONGS Decision, the Commission detailed a number of mandates, and for each, most (other than SCE, evidentially) now seem convinced that APS facilities like LEAPS will be essential to assuring the mandate is met as economically as possible. For example:

- The SONGS Decision reiterated that the Commission that it has a statutory duty to ensure that customers receive reasonable services at just and reasonable rates, protect the environment, and maintain grid reliability. Clearly, APS facilities will be essential to helping this Commission and the CAISO meet this mandate for a modern green grid.

- Further, "in D.07-12-052 at 12, the Commission stated that once demand response and energy efficiency targets are reached, 'the utility is to procure renewable generation to the fullest extent possible'."[12] Again, most agree that APS facilities like LEAPS will be essential to integrating renewable generation "to the fullest extent possible."
- The SONGS Decision also reiterated that, "While we strongly intend to continue pursuing preferred resources to the greatest extent possible, we must always ensure that grid operations are not potentially compromised by excessive reliance on intermittent resources and resources with uncertain ability to meet LCR needs."[13] Again, only APS facilities like LEAPS can help assure a stable and reliable grid (through the provision of all ancillary services and energy) while efficiently integrating renewable generation.

The Commission also noted that D.12–01–033 requires that, "Instead of procuring a fixed amount of preferred resources and then procuring fossil-fuel resources, the IOUs are required to continue to procure the preferred resources "to the extent that they are feasibly available and cost effective."[14]

Although the SONGS Decision clearly and specifically requires SCE to consider APS to fill the need identified in this proceeding, Nevada Hydro sees no evidence that SCE is abiding by these mandates. Specifically:

1. Order 1.c. requires that SCE procure at least 550 MW from preferred resources consistent with the Loading Order and that "large pumped hydro facilities shall not be excluded".
2. Order 1.e requires that any additional local capacity, beyond certain specified amounts "may only be procured through preferred resources (including bulk energy storage and large pumped hydro facilities)".

[12]/ SONGS Decision, at P. 14.

[13]/ *Id*. at P. 90.

[14]/ *Id*. at P. 15.

3. Order 12 notes that SCE "may modify its procurement plan approved by Energy Division per Decision 13-02-015 solely so that resources in portions of the Los Angeles Basin beyond the West Los Angeles sub-area may also be procured to meet incremental local capacity needs identified in this decision."

The SONGS Decision is clear in its directive to SCE:

> *As discussed herein, we require SCE and SDG&E to procure MW ranges of certain types of resources. Each utility should solicit all resources as required by this decision, and may propose for approval any set of resources which can meet the LCR need in its portion of the SONGS service area consistent with the authorized resource ranges herein. Within the categories that include preferred resources, bulk energy storage and large pumped hydro facilities should not be excluded.* [Emphasis added.][15]

With the Commission's focus on reliability and on cost–effectively increasing reliance on renewable resources while properly managing their intermittent nature, with the apparent exception of SCE, most seem to agree that APS facilities will be essential to fulfilling these objectives. Clearly, as the only large pumped hydro with a complete interconnection in the SONGS study area, SCE has an obligation seriously assess LEAPS in this procurement process. Instead, it has swept it aside in favor of other less flexible resources.

3. By ignoring LEAPS, SCE may fill the need identified with other inferior resources, thereby imposing its view of "available resources" over that of this Commission.

As mentioned previously, there are few sources of revenue potentially available to pay for a 500 MW APS facility, no matter how beneficial it may be to ratepayers. Nevada Hydro has assumed the risk that the project will be able to receive its needed permits and is happy to see that many now believe, as Nevada Hydro has for years, that APS will help the State achieve its green energy goals economically. Nevada Hydro is ready to compete on a level playing field with other resources potentially able to meet needs identified in this proceeding. As the Commission notes, quoting D.13-02-015: "We consider today's decision a measured first step in a longer process. If as much or more of the preferred resources we expect do materialize, there will be no need for further LCR procurement based on current assumptions."[16] Simply, Nevada Hydro is concerned that notwithstanding the above described legislative and policy

[15]/ SONGS Decision at P. 102.

[16]/ Songs Decision, at P. 110.

mandates, those resources SCE favors will have first crack at filling this need, and other resources, like LEAPS, may not even get a chance to be fairly assessed. The Commission cannot expect private developers to compete when discriminatory pressures are brought to bear on the process.

As Nevada Hydro has mentioned many times, LEAPS has complete interconnection agreements with SCE, San Diego Gas & Electric Company and the CAISO. The Federal Energy Regulatory Commission ("FERC") has issued a final environmental impact statement that is now being updated in docket P–14227. FERC has indicated that with so much licensing work complete, that it may issue its license for LEAPS in two years, allowing LEAPS to be operating as soon as 2019, well within the window of this proceeding,[17] and ahead of other proposed projects SCE seems to favor, like its Mesa Loop in proposal.

Why therefore is SCE apparently ignoring the following mandate from the SONGS Decision?

> *There is a need for expeditious action to procure further resources in response to the retirement of SONGS. It will be approximately 18 months form the date for the Track 1 decision to the time SCE files an application for approval of Track 1-authorized procurement. We cannot wait another 18 months or more beyond the date of this decision for consideration of Track 4-authorized procurement.*[18]

The Commission has urged area utilities to "not wait until very close to when the need is critical to acquire such resources; to the extent that additional preferred resources or energy storage is cost-effective and well suited to meet LCR needs in the subject geographical areas, SCE and SDG&E should work to procure these resources in advance".[19] Why then is SCE not evaluating LEAPS now?

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[17]/ "Procurement authorized by this decision should begin as soon as possible.Procurement needs may become critical as early as 2018, and certainly by 2020", SONGS Decision, P. 113. In addition for the timing for LEAPS described, Nevada Hydro reminds the Commission that its Talega–Escondido/Valley–Serrano 500 kV Interconnect Project can deliver up to 1,800 MW to within a few miles of SONGS by 2016. Nevada Hydro expects to reapply to this Commission for a Certificate of Public Convenience and Necessityshortly.

[18]/ *Id.*

[19]/ *Id.* at P. 113.

The SONGS Decision quotes SCE witness Nelson's acknowledgement that SCE is aware APS facilities like LEAPS "could add additional value to the grid."[20] However, and likely expressing the view of his employer, Mr. Nelson also "was uncertain about the 'effectiveness' of 'any large pumped hydro storage' in meeting the 'West LA Basin LCR,' he did believe it could be 'bid in' for Track 1 and would contribute to the 'balanced approach' of using 'all resources' to avoid 'the possibility of failure and being overly reliant on anyone'."[21] As noted, Nevada Hydro bid LEAPS in to the Track 1 process and was politely shown the door without any evaluation as to its effectiveness for meeting the LCR need. With its deliverability and interconnection studies complete, SCE is well aware of the potential ability of LEAPS to meet LCR needs in the West LA Basin, in the LA Basin and in the SONGS Study area.

4. SCE must properly assess LEAPS now as a Preferred Resource to fill the need identified in this Proceeding

Order 8 of the SONGS Decision set forth the evaluation criteria against which the effectiveness of LEAPS (and all resources) is to be measured (repeated at the following footnote).[22] Clearly, not only has SCE not met any of these mandates for the LEAPS facility, having eliminated it based upon its point of connection outside of the West LA area, but it may have violated criterion "e" by unfairly preventing the only APS project able to meet these identified needs from within the load pocket from participating in the evaluation process.

Perhaps SCE is avoiding LEAPS due to the difficulty of properly evaluating APS? Nevada Hydro is aware that SCE had difficulty properly evaluating LEAPS in its 2009 "All Source Request for Offers". There, for example, SCE presented Nevada Hydro with a sample power purchase

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[20]/ *Id.* at P. 100.

[21]/ As quoted at *Id.* at P. 101.

[22]/ These evaluation criteria identified in Order 8 of the SONGS Decision are:

a. Cost-effectiveness;

b. Consistency with the Loading Order, including a demonstration that it has identified each preferred resource and assessed the availability, economics, viability and effectiveness of that supply in meeting the LCR need;

c. Compliance with Ordering Paragraphs 1 or 2 (as applicable);

d. For applicable bilateral contracts, compliance with Public Utilities Code Section 454.6; and

e. A demonstration of technological neutrality, so that no resource was arbitrarily or unfairly prevented from bidding in SCE's or SDG&E's solicitation process. To the extent that the availability, viability and effectiveness of resources higher in the Loading Order are comparable to fossil-fueled resources, SCE and SDG&E shall show that it has contracted with these preferred resources first.

agreement for LEAPS containing heat rate matrices and milestones from the Energy Commission's approval process! It was an arduous process to modify the provided documents and analysis to one more suitable for even a basic hydroelectric facility. In the end, the analysis failed to evaluate the full range of benefits LEAPS could provide while SCE was "unable" to accommodate FERC's hydro licensing approval schedule with the processes used by completing gas–fired bidders.

This Commission is also aware of the difficulty of properly assessing modern APS facilities. On January 16, 2014, it sponsored a technical workshop addressing APS issues. One presenter from Argonne National Laboratories provided a presentation describing a study it undertook addressing Modeling and Analysis of Value of Advanced Pumped Storage Hydropower in the U.S.[23] Nevada Hydro is presently in discussions with Argonne and its analysis team members to use LEAPS as a real world test case for the analytical techniques they developed. In addition, one of Nevada Hydro investors, Morgan Stanley has also expressed its willingness to help in this process. Nevada Hydro hopes that SCE would be willing to call on these resources to help it properly analyze LEAPS in connection with the evaluation process set up by this Commission.

However, in the event SCE does not promptly incorporate LEAPS into its present Commission authorized analysis, Section 206 of the Federal Power Act (16 U.S.C. § 824e) and FERC Rules (18 CFR §385.206) provide a venue at which issues identified in this filing may be addressed Federally. For convenience, Exhibit 1, (attached) summarizes these issues as discussed herein.

5. Conclusion

As Nevada Hydro has pointed out,[24] while, most of the parties to this proceeding are trying to help the Commission manage the situation SCE created, SCE seems inclined to limit the options before this Commission. Let us not forget that the only reason this proceeding even has a "Track 4" is due to the actions of SCE; neither this Commission, nor the state's ratepayers, nor the stakeholders to this proceeding caused the problem we are all now facing.

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[23]/ This presentation may be accessed at: http://www.cpuc.ca.gov/NR/rdonlyres/86FB9E26-5239-4AD7-8C51-DE70054F06E4/0/Koritarov_CPUC_PSHWorkshop_20140116.pdf

[24]/ Nevada Hydro Company's Motion Opposing SCE's Motion to Strike Portions of Nevada Hydro' Opening Brief, Rulemaking No. 12–03–014, December 6, 2013, at page 2.

Renewable resources, integrated by appropriately sited energy storage, can provide both operational and reliability benefits, meeting all of the system needs of the evolving greener grid. Nevada Hydro's TE/VS Interconnect and LEAPS projects are critical components for making this greener grid a reality while simultaneously economically solving the immediate reliability needs that are being addressed in this proceeding.

Because of the unique characteristics of APS and the unique locational attributes specific to LEAPS, LEAPS is the optimal resource to meet the needs identified in this procurement allocation and this procurement program needs to comply with AB 2514.

Given the State's exacting clean energy policies, there is an unquestionable need for the electric power system in California to move toward an environmentally sustainable future, while still maintaining highly reliable and efficient service at the least possible cost. Given this policy imperative, there can be no doubt that APS generally and LEAPS specifically are the very best facilities that could be developed in the region in order to meet the challenges of:

- The ever-increasing need for highly flexible resources;
- The ever-expanding reliance in the region on variable renewable resources;
- The evident and hidden limitations on power flows into the region;
- The long-term imperative for California to move away from carbon-based energy resources; and,
- The permanent shutdown of SONGS.

Nevada Hydro trusts that the Commission will assure that the procurement playing field is level and does not discriminate against any potential player.

/s/ David Kates

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Dated this 9th day of April, 2014

Attachment 2

Building a Clean Energy State Without SONGS: The Lake Elsinore Advanced Pumped Storage and Talega–Escondido/Valley–Serrano 500 kV Interconnect Project

Building a Clean Energy State Without SONGS:

The Lake Elsinore Advanced Pumped Storage
and
Talega–Escondido/Valley–Serrano 500 kV Interconnect Project
FERC Dockets: P-14227, ER06-278
The Nevada Hydro Company

I. Introduction

The state of California is facing two major problems with regard to energy. The first is implementing an aggressive clean energy policy and the second in learning to live without the roughly 2,200 MW once produced by the San Onofre Nuclear Generating Station (SONGS).

A. Building a clean energy state

California has among the most aggressive clean energy policies in the world. California law requires that 33% of all energy used in the state be derived from renewable energy sources by 2020, as well as that the emission of greenhouse gases (GHG) be reduced to 1990 levels by 2020. Beyond that, California policies call for an overall 80% reduction of 1990 GHG emission levels by 2050. This will, in turn demand that over time, California will necessarily rely on an ever-greater percentage of renewable energy resources (*i.e.*, well beyond the currently mandated renewable portfolio standard of 33%) to meet its electric power needs . On top of this, the State's projected transition to a transportation fleet that increas ingly uses electricity rather than gasoline or diesel as its motive power means that California's electric power needs will continue to grow, even with the expected implementation of state -of-the-art energy efficiency programs throughout the state.

However, most renewable energy resources are intermittent. The sun rises in the morning and sets in the evening; the state's ample wind resources are often at their most productive during off-peak hours; and geothermal power operates 24/7, meaning that there are numerous hours during the year when the power from geothermal facilities is or will be surplus. California therefore faces a major challenge on its path to a clean and renewable energy future: it must start developing advanced technologies that can reli ably and effectively buffer the intermittency of renewable generation with the variable demands of electricity customers over the course of a day.

There are only three available technologies that can effectively address th is lack of fit between the times during the day when renewable resources are available and the times when electric power is demanded by society. The first of these is demand response, which can help buffer the demands on the system during periods of peak load. However, in a largely pos t-industrial California, demand response cannot be reasonably expected to meet much more than 5% of the power system's needs for resources that can balance the discrepancy between when renewable energy is generated and when it is consumed. Moreover, demand response

inevitably runs up against consumer resistance. People may be willing to cycle their air conditioners off for up to 10 or 15 minutes an hour on a hot day, but they will not be willing to shift their air conditioning load to the nighttime when it is over 100 degrees outside at 3 p.m.

The second available buffering technology would be to install a fleet of gas -fired turbines (essentially, stationary jet engines). However, the combustion of fossil fuel creates GHGs, which will ultimately limit the ability of the State to deploy this technology broadly. Moreover, although the price of gas is currently low, there is always a risk of significant gas price volatility: prices were as high as $12/MMBTu as recently as 7 -8 years ago. Finally, gas turbin es can operate and produce power when the system has insufficient renewable generation to meet power needs, but gas turbines simply cannot absorb excess power during those hours when there is an overabundance of renewable generation (which will be increasi ngly the case as California deploys more and more renewable resources over the next 5 to 10 years).

However, the third available buffering technology – advanced storage – has none of the limitations of demand response or the drawbacks of a n increased relia nce on gas generation. Storage is clean, green and cost -effective. Moreover, storage can easily absorb excess renewable generation at night when the wind blows and during the height of the day when solar generation will often exceed demand. Finally, the potential of storage is virtually limitless. California will be able to build as much electricity storage capacity as it needs with minimal environmental restrictions. Some of that storage, mostly in the form of batteries, will necessarily be located on the distribution grid to help buffer local distributed generation from rooftop photovoltaic systems.

Under the oversight of the California Public Utilities Commission (CPUC), the State's utilities have signed contracts for well over 10,000 MW of new renewable generation resources, the bulk of which have not yet come on line. When these new renewable proje cts start coming on line later in this decade, California will be faced with major challenges to the stability of its grid, especially in Southern California where the hydroelectric resources (which can provide supplemental power when renewables are not pr oducing to their full capacity) are much less abundant than in the northern part of the State. Further, to deliver that needed energy in the south from the northern part of the state during high demand periods can, does, and will cause costly congestion i ssues on the main transmission paths linking the north to the south, such as Path 26 from the Midway substation (PG&E) to the Vincent substation (SCE).

There is only one technology that can accommodate the significant potential for over - generation that the added new renewables will create, while, at the same time, providing large and reliable amounts of power during periods of peak load, and in a manner that follows load precisely and can, as a major bonus, provide abundant ancillary services, including fas t regulation and fast ramping. That technology is advanced bulk storage.

Storage has been a subject of much discussion in California over the past 5+ years. Assemblywoman Nancy Skinner led the fight to enact Assembly Bill 2514 in 2010. The CPUC has initiated a proceeding to evaluate the long -term role for storage, and the California Energy Commission (CEC) and the California Independent System Operator (CAISO) have all held

extended workshops looking into the long -term value of storage for California. U tility executives have characterized storage as the "Holy Grail" of the clean energy future.

In early 2013 , all three of the State's energy agencies held a Summit on the future of resource adequacy in California , attended by most of the agencies' Commiss ioners and Board Members, as well as by a critical mass of the State's key stakeholders on major energy policy issues. A number of the speakers acknowledged the high value that electricity storage, as a clean, highly flexible and reliable resource, would bring to the grid of the future. Indeed, there was consensus on the part of the active participants at the Summit that California will need a dramatically greater amount of highly flexible new energy resources as soon as three years from now. But where a re the large storage projects? Where is there any major new "steel in the ground" storage project anywhere in the State , and particularly those scaled to address the utility–scale issues?

In the 19 70's, Pacific Gas & Electric Company started building the Helms Pumped Storage project to help buffer the over -generation from its Diablo Canyon nuclear power plant. Helms was a successful project , but now, when the need for storage in California is greater than ever, where are the major storage projects that will unquestionably be needed to help maintain grid reliability in a world increasingly reliant on variable renewable generation, and that will do so in a manner that is environmentally superior and that imposes no burdens on the customers of the utilities?

Fortunately, there is such a project (actually, two closely related projects) that bears serious consideration by everyone who is concerned about California's energy future and who cares about electric power that is clean, reliable and local: the Lake El sinore Advanced Pumped Storage (LEAPS) and Talega–Escondido/Valley–Serrano 500 kV Interconnect (TE/VS Interconnect) Project. Section II of this Paper will des cribe these projects, explain their current permitting status and the challenges they face, and demonstrate the significant benefits that these projects will provide bot h to the grid and the ratepayers of Southern California. Finally, this paper will show why these projects are superior to all other projects that are currently under consideration by the CAISO in order to meet the long -term needs of the grid in Southern California now that SONGS is gone.

B. Coping with the loss of SONGS

The landscape of electric power supply in Southern California has fundamentally change d with the retirement of SONGS. Compounding this impact is the impending effects of the restrictions of once-through-cooling for existing and future generating stations along the pacific coastline.

The retirement of both SONGS has removed 2,150 MW of generation from Southern California. Because of its many years of high operating factor, utility reliability and economic planners for the area had developed a system highly dependent on its presence at full output. With its retirement, syst em reliability in both San Diego and the Los Angeles basins has been significantly diminished.

Also, the cost of electricity to customers in this area has shown a spike upward. This is likely due to a combination of both the loss of the low cost of ener gy from SONGS itself and the loss of SONGS ability to backstop imports of less costly power from external resources rather than using more costly internal generation. Further, since the loss of SONGS, the consumption of natural gas has begun trending upward, likely due to increased use of gas–fired generation to make up for the loss of SONGS

Compounding this impact to reliability is the impact o f the California Water Resource Control Board (CWRCB) performance criteria for mitigating the effects of the use of water for generation cooling that is discharged into the ocean. Compliance is scheduled to begin on January 1, 2018. At this point , it appears none of the generation plants in southern California that are using this "once -through-cooling" (OTC) proces s have found a cost -effective way to meet these criteria. Thus, all generation located along the coastline will likely have to shut down as of that date, unless the CWRCB develops a revised plan.

Some efforts are under way to build replacement generator s on or near these sites. However, under the best of circumstances, there will be less replacement generation built than will be retired.

An important effect of these two decisions has been to put emphasis on the need for the use of transmission to bring lower cost power into the San Diego and Los Angeles basins. Fossil-fueled generation near the high population density coastal area will be both more difficult to permit and more expensive to operate than has been enjoyed from those existing units that had once-through-cooling. Also, a review of the proposed renewable generation in the CAISO generation queue shows that much of it is well back from the coast and will put additional stress on a transmission system that must be made more robust to accommodate it.

The problem is that the grid manager is going to have to operate the system to assure that the energy produced is able to get to the load when needed. This will require a lot of new transmission and a means to manage the various resources (load f ollowing, fast response to outages, quick start, black start, etc.). These renewable resources are widely diverse in the time and location of their energy production. Nevada Hydro's projects have been designed precisely to meet these needs; and meet them in a cost effective manner.

II. The Projects

For a number of years now, The Nevada Hydro Company (Nevada Hydro) has had two projects under development that connect to the grid approximately 10 miles from SONGS on Path 44 – South of SONGS . See the project location on Figure 1, below. These projects are referred to as the Lake Elsinore Advanced Pumped Storage project and the Talega - Escondido/Valley-Serrano 500 kV Interconnect project. The powerhouse associated with the 500 MW pumped storage project is less than 25 miles from SONGS at Lake Elsinore, within the Southern California load pocket.

The benefits that the two projects bring to the region have been well studied and well documented in both Federal and State venues over the years. In addition to the overall system

benefits that these two projects have demonstrated , the projects will help alleviate the resource constraints that are posed by the loss of SONGS in a more effective, more timely and less costly way than the other proposed resources that may be "on the table".

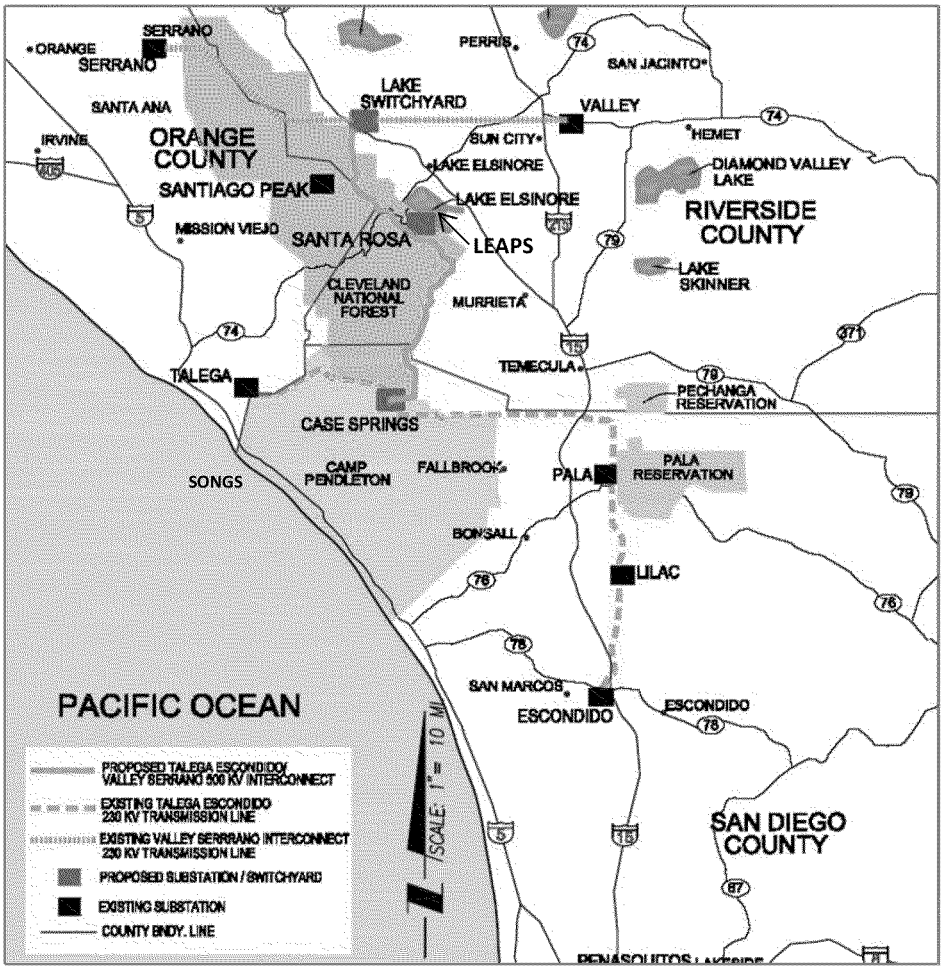

Figure 1 – Location of the LEAPS and TE/VS Projects

- The Lake Elsinore Advanced Pumped Storage (LEAPS) project is a 500 MW generation/600 MW load advanced pumped storage facility. The LEAPS project was being licensed by Federal Energy Regulatory Commission (FERC) in Docket P–11858, and is now under limited additional review in FERC Docket P–14227. LEAPS has an advanced position in the CAISO queue (QP#72), and the system impacts of the project have been fully studied under the CAISO's Large Generator Interconnection Procedures. Nevada Hydro completed updates to the existing Large Generator Interconnect Agreements (one each with SDG&E and SCE) for the facility.
- The Talega–Escondido/Valley–Serrano 500 kV Interconnect (the TE/VS Interconnect) is a 500 kV, 32-mile transmission line that will interconnect LEAPS to the grid and connect

the service territories of both San Diego Gas & Electric Company (SDG&E) and Southern California Edison (SCE). Equally important, however, this project will link the San Diego load pocket and the CAISO's 500 kV electrical backbone, which does not currently extend into SDG&E's service territory.

Nevada Hydro has been working diligently for a number of years to move the projects forward, including permitting for rights-of-way, environmental review, engineering and detailed technical planning (construction sites, staging areas, *etc.*). For example:

1. In January 2007, the FERC and the United States Forest Service (USFS)[1] released their "Final Environmental Impact Statement – Lake Elsinore Advanced Pumped Storage Project"[2] (Final EIS), which addressed both LEAPS and a "transmission lines only project." In Appendix B of the Final EIS, FERC staff included a "Need Determination for the Lake Elsinore Advanced Pumped Storage (LEAPS) Project's Talega-Escondido/Valley-Serrano 500-kV Transmission Line." In this Appendix, FERC staff concluded that the TE/VS Interconnect would be "an appropriate long-term solution to southern California's transmission congestion bottlenecks as well as the transmission constrained, generation-deficient San Diego area."[3]
2. The CPUC has completed an extensive analysis of both projects under the California Environmental Quality Act (CEQA) in connection with its analysis of the Sunrise Powerlink project proposed by SDG&E.[4] That analysis included a review of the TE/VS Interconnect as a CEQA alternative to the Sunrise project. The TE/VS Interconnect was identified as the environmentally superior transmission project in that proceeding.
3. As ordered by the Administrative Law Judge (ALJ) at the CPUC, Nevada Hydro is preparing to refile its application for a Certificate of Public Convenience and Necessity (CPCN) for the TE/VS Interconnect. This refiling is expected to occur within the next month or so. As a result, Nevada Hydro can have the TE/VS Interconnect and LEAPS projects operating in real time prior to other proposed alternatives identified in the CAISO draft 2012-2013 Transmission Plan.

As the TE/VS Interconnect is nearly fully engineered and sited , LEAPS and the TE/VS Interconnect are nearly "shovel ready" during this critical period when time is of the essence in order to identify and start construction on the key resources that will be needed not only to replace the damaged SONGS facility, but just as importantly, to provide a significant amount of desperately needed, highly flexible new capacity on line in time to help address the growing

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[1]/ As nearly 30 of the total 32 mile length of the TE/VS Interconnect traverses the Cleveland National Forest, the participation of the Forest Service has been instrumental in advancing the projects.

[2]/ Federal Energy Regulatory Commission and United States Department of Agriculture– United States Forest Service, *Final Environmental Impact Statement– Lake Elsinore Advanced Pumped Storage Project*; FERC Project No. 11858, FERC/FEIS – 019F, January 2007.

[3]/ Final EIS, at page B–2.

[4]/ *In the Matter of the Application of San Diego Gas &Electric Company for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*; Application 06–08–010.

challenge of integrating an increasing amount of variable renewable resources onto the grid in Southern California.

III. The Challenge

Going back at least 15 years, and with SONGS operating, officials have been aware of the vulnerability facing the Southern California grid. For example, in a March 2001 letter to the CAISO, SDG&E said, "We do not believe we can delay the permitting process [for their proposed Valley–Rainbow Project[5]] any longer without potentially jeopardizing reliability in 2004."[6] The CAISO confirmed this need in a filing to the CPUC that it considered Valley Rainbow as a "high priority" project "that is needed by 2004 in order to increase the transfer capability into the San Diego area to serve load".[7] Notwithstanding this need, the Valley-Rainbow project was ultimately unsuccessful. Since that time, only Nevada Hydro has proposed a project that can solve this continuing problem.

As system load grew over time in the San Diego and Los Angeles areas, system planners understood the regions' import requirements would increase commensurately because of the difficulty of installing new generation in the area. This difficulty was triggered by strict environmental regulations (especially air quality rules), but also by strenuous public opposition to any new industrial facilities. The Otay Mesa combined cycle plant was one of the few successful new projects, but the value of that project in diminishing the need for imports was substantially reduced by the expected retirement of the South Bay plant in 2010. As a result, the ability to use the northern 500 kV path from Palo Verde to Devers, together with the proposed 500 kV TE/VS Interconnect project, was seen as the way to bring a new major supply route into the coastal area between the SCE service area and the Southwest Power Link (SWPL) path, that comes into the SDG&E service area from the east.

In 2005, Congress directed, through Section 1221(a) of the Energy Policy Act of 2005, 119 Stat. 594, 946-951 (2005) (16 U.S.C. § 824p) (EPAct), that the Secretary of Energy identify "any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers" as a National Interest Electric Transmission Corridor (NIETC). On August 6, 2006, well before SONGS went dark, the United States Department of Energy (DOE) issued a preliminary National Electric Congestion Study (Congestion Study), designating the southern California region as a "critical congestion area" under Section 1221 of the EPAct. Although the Court of Appeal on unrelated procedural grounds ultimately overturned this designation, the underlying reliability challenges to the Southern California grid, as well as DOE's conclusions as to the critical congestion in the region, still describe the on–the–ground

[5]/ Described more fully in Section 0 below.

[6]/ March 22, 2001 Letter from James P. Avery, Senior Vice President Fuel and Power Operations to Terry M. Winter, President and Chief Executive Officer, CAISO.

[7]/ "Statement of The California Independent System Operator Corporation Regarding Priority Transmission Projects", March 20, 2001, filed in CPUC Proceeding I.00-11-001, "Order Instituting Investigation into implementation of Assembly Bill 970 regarding the identification of electric transmission and distribution constraints, actions to resolve those constraints, and related matters affecting the reliability of electric supply."

reality. Moreover, as the CAISO's draft 2012-2013 Transmission Plan and work since clearly shows, the shutdown of SONGS poses an equally serious challenge to the Southern California grid.

SDG&E has acknowledged the vulnerability of the area in the long-term resource plan that was submitted as part of its Sunrise Powerlink CPCN application. In that document, SDG&E itself identified a need for a second 500 kV transmission interconnection to meet the grid reliability requirements of the CAISO in 2010. SDG&E officials saw that planned new, renewable generation facilities that would interconnect at the Imperial Valley Substation would be an important new source of supply, and that the proposed Sunrise Powerlink Project, with its 500 kV line from Imperial Valley to an injection point nearby to the Miguel Substation (the terminus of the SWPL) would be a valuable, independent 500 kV supply path into the SDG&E system. However, because of the requirement that the Sunrise line have a shared right-of-way for over 30 miles with the SWPL line, the reliability officials at WECC classified the potential outage of both lines in that common corridor as a "Category C contingency". That is, if both lines in this common corridor were lost, system operation changes with controlled or planned loss of system load would be permitted, but cascading area failures would not be.[8] This NERC determination, while providing more import capability under many circumstances, had the effect of rendering the Sunrise Powerlink Project into a transmission line that was functionally and practically much less robust than the needed independent path for importing a growing power requirement into the SDG&E system. Thus, the now-built and operational Sunrise Powerlink Project was, ultimately, only a partially successful attempt at solving the import problem, which remains a challenge for the future that will necessarily require additional high voltage transmission feeding the SDG&E service area.

More recently still, the CAISO itself recognized the need for a new 500 kV connection, as was noted in recent CAISO testimony submitted to the CPUC in a case involving SDG&E's proposed procurement of new gas-fired resources:

> ***Q. Are there any feasible transmission mitigation solutions that can meet the 650MW to 950 MW need?***
>
> *A. As described above, the constraint driving these needs is the transmission system limitations between the SCE and SDG&E systems south of SONGS. During studies of the Sunrise Powerlink, the ISO studied transmission options to increase the transmission capability between these two systems in order to further reduce local generation needs in San Diego. However, the scope of the upgrades needed to meet a 650 MW to 950 MW need was essentially a new 500 kV line connecting the SDG&E system to the SCE system.*[9]

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[8]/ Per NERC TPL 003-0a.

[9]/ Testimony of Robert Sparks on Behalf of The California Independent System Operator Corporation, Application of San Diego Gas & Electric Company (U902 E) for Authority to Enter into Purchase Power Tolling Agreements with Escondido Energy Center, Pio Pico Energy Center and Quail Brush Power, Application 1105-023, (2012), page. 9.

Notably, this testimony did not address the ramifications of the SONGS retirement. Nor did it address the apparent vulnerability of the grid demonstrated, again with SONGS operating, on the afternoon of September 8, 2011, when an 11-minute "system disturbance" led to cascading outages (including the only 500 kV link from the East in to the SDG&E system) and leaving approximately 2.7 million customers without power. This outage affected parts of Arizona, Southern California, and Baja California, Mexico. All of the San Diego area lost power, with nearly one-and-a-half million customers losing power, some for up to 12 hours. The disturbance occurred near rush hour, on a business day, snarling traffic for hours. Schools and businesses closed, some flights and public transportation were disrupted, water and sewage pumping stations lost power, and beaches were closed due to sewage spills. Millions went without air conditioning on a hot day.

While the Staff report [10] on the outage prepared by the FERC and the North American Electricity Reliability Corporation (NERC) did not recommend physical changes to the system in order to prevent a recurrence of such an outage, Nevada Hydro has concluded and can demonstrate that had its TE/VS Interconnect been on line that day, much if not all of the damage that did occur could have been avoided.

Now, with SONGS gone and with coastal power plants scheduled to shut down as well, this need for enhanced transmission between the SCE and SDG&E systems is a matter of urgency

IV. The Benefits of LEAPS and the TE/VS Interconnect

Nevada Hydro has demonstrated the reliability and economic benefits of its facilities on many occasions. Independent sources, including the CAISO have confirmed Nevada Hydro's own view. What follows is a summary of some of the existing independent analysis -- from FERC, from the State of California, and from the CAISO – that supports the conclusion that LEAPS and the TE/VS Interconnect can and will provide significant overall benefits to the grid in Southern California. This history of positive analytical results leads to the unmistakable conclusion that, by failing, to date, to approve the TE/VS Interconnect as a needed project, regulators may have been doing a disservice to the region and to its ratepayers.

A. FERC's Reliability Conclusions

In November 2006, under the provisions of Sections 1223 and 1241 of EPAct, the FERC identified LEAPS as an "advanced transmission technology," defined as a "technology that increases capacity, efficiency, or reliability of an existing or new transmission facility." [11] In its

[10] / *Arizona–Southern California Outages on September 8, 2011, Causes and Recommendations*. Prepared by the Staffs of the Federal Energy Regulatory Commission and the North American Electric Reliability Corp., April 2012.

[11] / Federal Energy Regulatory Commission, *Order on Rate Request*, Docket Nos. ER06-278-000 et seq., issued November 17, 2006 ("2006 Rate Order"), at ¶ 27.

decision, FERC stated that "Nevada Hydro has proposed a project that may help meet the needs of the CAISO in managing the grid and serving load."[12]

In March 2008, the FERC granted certain rate incentives for the TE/VS Interconnect. The premise for the FERC's action was its finding that, "Nevada Hydro, through independent evidence provided in this proceeding, has adequately demonstrated that its TE/VS Interconnect project will ensure reliability, consistent with the requirement of Order No. 679."[13]

In its application, Nevada Hydro relied on "independently supplied reliability studies," which were prepared by CAISO staff in connection with the CAISO-sponsored planning processes. At that time, the CAISO itself stated, "The transmission line proposed in association with the Lake Elsinore Pumped Storage project would allow the San Diego area to import substantially more power from surrounding areas and would greatly enhance electric system reliability."[14]

Based on the evidence submitted, the FERC concluded that the proposed TE/VS Interconnect

> *will add another major transmission path into the San Diego area with a potential for increasing San Diego's import capability including relief on currently limiting Path 43 (North of San Onofre) and 44 (South of San Onofre) while maintaining adequate system reliability and, therefore, satisfy the Commission's FPA section 219 requirement. In its initial application, NHC stated that the 2003 STEP Report 'concluded that a new high voltage electrical transmission line between Riverside and San Diego Counties is critically needed to serve future load growth.' If built, the TE/VS Interconnect would be the only 500 kV transmission line connecting SCE and SDG&E's transmission systems."*[15]

The FERC concluded that the "TE/VS Interconnect project will ensure reliability, consistent with the requirements of Order No. 679"[16] and that the proposed transmission project "is not routine in nature, but will provide a critical link between two major transmission corridors in California, linking the San Diego basin to the main CAISO grid."[17]

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[12] / *Id.*, at ¶ 26.

[13] / Federal Energy Regulatory Commission, *Order on Rate Incentives and Compliance Filing*, Docket Nos. ER06-278-000 et seq., issued March 24, 2008 ("2008 Rate Order"), at ¶ 27.

[14] / *Motion to Intervene and Comments of the California Independent System Operator Corporation in Support of Lake Elsinore Advanced Pumped Storage Project*, Docket No. P-11858-002, at 3 (Apr. 2, 2004).

[15] / 2008 Rate Order, at ¶ 26.

[16] / *Id.*, at ¶ 27.

[17] / *Id.*, at ¶ 57.

B. Conclusions of the California Energy Commission

The State of California has also developed an independent view of the potential benefits of these projects. As required by state law, (Section 25324 of the State's Public Resources Code), the CEC (along with the CPUC and the CAISO) adopted a strategic plan for the state's electric transmission grid. This plan identified and recommended actions required to implement investments needed to ensure reliability, relieve congestion, and meet future load growth.

In the Joint Committees Report prepared by the CEC concerning the "Strategic Transmission Investment Plan" for the 2007 Integrated Energy Policy Report Proceeding (06-IEP-1F), the CEC Electricity Committee found that "[b]oth the transmission and generation that comprise the LEAPS project could provide significant benefits to California". The project (both LEAPS and TE/VS Interconnect) were among the five new transmission projects recommended for the 2007 Strategic Plan.

Indeed, the TE/VS Interconnect has been designated as a critical statewide transmission resource by the CEC since its 2007 Strategic Transmission Investment Plan, CEC-700-2007-018-CMF." In that report, the CEC advised that this, and other recommended projects "are strategic resources that require specific, swift, and priority consideration by state regulators."

More recently, in its December 2013 Integrated Energy Policy Report, the CEC noted that TE/VS Interconnect is under consideration for solving the dilemma caused by the SONGS shutdown.

C. CAISO Findings

Nevada Hydro's projects have been reviewed and have been found to have value in at least three separate CAISO-sponsored planning processes over nearly a decade. It is important to note that over this long period, the CAISO's view on the value of the projects has not changed. A summary of these findings follow.

The Valley-Rainbow Board Approval

In 2001, CAISO staff, in a memo and presentation to the Board, recommended approval of SDG&E's Valley-Rainbow transmission project. In this material provided to the CAISO Board, staff noted the controversy surrounding the route SDG&E proposed, and suggested that SDG&E pursue the TE/VS Interconnect route (referred to as "the forest route"). This shows that CAISO staff had concluded that the TE/VS Interconnect was (and remains) electrically identical to the Valley-Rainbow project. The CAISO Board approved the project, and its approval was not tied to a specific project or a specific sponsor. In it resolution, the Board noted that "a 500 kV project such as the Valley Rainbow project, is needed". SDG&E chose not to follow-up on this suggestion to pursue other routes. As Nevada Hydro cannot find a Tariff (or other provision) that causes Board decisions to "expire", Nevada Hydro believes that this Board action effectively approved the TE/VS Interconnect as well as Valley-Rainbow.

The Southwest Transmission Expansion Plan

A few years after the Board's action in connection with the Valley -Rainbow project, the Southwest Transmission Expansion Plan (STEP) was established to plan, coordinate, and implement "a robust transmission system among Ar izona, Nevada, Mexico, and Southern California." Nevada Hydro was asked by the CAISO to participate in the STEP process, and Nevada Hydro agreed to do so.

Under the STEP, t he CAISO was the focus for transmission planning activities for California projects . The two California projects of interest to STEP were the TE/VS Interconnect and Sunrise (then known as Imperial Valley -San Diego Expansion Plan or ISEP). In 2004, the CAISO Grid Planning Department published findings in which it detailed the reliability benefits of each project and the additional benefits to be realized if the two projects were combined.

Thus, the STEP study updated and reaffirmed the CAISO Board 's earlier findings on the system benefits of Valley-Rainbow. The STEP study showed both reliability and economic benefits to the region of each project (i.e., the TE/VS Interconnect and SDG&E's ISEP, as well as the additional benefits to be realized if both projects are built.

CAISO South Regional Transmission Plan

In 2006, the CAISO commen ced the CAISO South Regional Transmission Plan ("CSRTP"). CSRTP studied the three proposed southern California projects: Sunrise, Tehachapi, and both the LEAPS pumped storage facility and the TE/VS Interconnect separately. The thr ee sponsors (SDG&E, SCE , and Nevada Hydro , respectively) were required to participate. Other interested parties participated as well.

An August 31, 2006 memo to the CAISO Board stated: "The LEAPS Project consists of a 500 kV transmission line project . . . that would connect S CE's transmission system with that of SDG&E's (LEAPS transmission line) and is accompanied by a 500 MW pumped storage power plant built next to Lake Elsinore (LEAPS power plant) and connecting to the LEAPS transmission line." A September 19, 2006 presenta tion demonstrated the economic benefits of the TE/VS Interconnect both as a stand-alone project and as part of a combines set of projects including Sunrise in the base case analysis. The studies performed under CSRTP, reaffirming the STEP findings, showed that the combined value of both the TE/VS Interconnect and Sunrise is higher than for each project individually. However, CAISO Staff chose not to take the TE/VS Interconnect project to the CAISO Board for approval at that time, because staff felt that i t needed FERC to decide on the treatment of the LEAPS pumped storage facility (which FERC has since provided).

D. Project Value Today

A detailed economic cost -benefit analysis that was performed on the two Nevada Hydro projects in 2010 by the well -respected energy engineering and economics consulting firm, ZGlobal, demonstrated that as a stand -alone project, the TE/VS Interconnect would provide a net benefit to California ratepayers of more than $38 million

per year. Specifically, the analysis demonstrated an annual savings in energy production, renewable portfolio compliance and local reliability costs resulting from the development of this project – approximately $191 million annually – would be substantially greater than the project's annualized costs – approximately $153 million. These benefits fall into three categories: (1) customer benefits, which are the savings that consumers will enjoy due to the lower cost of energy production resulting from the operation of the project; (2) producer benefits, which are the difference between the price at which energy is sold and the price that it costs sellers to create it; (3) reductions in transmission congestion revenue; and (4) societal benefits, which reflects the overall net change in the total benefits of the project to energy consumers, producers and transmission owners. ZGlobal's analysis estimated the total societal benefit of the TE/VS Interconnect Project to be approximately $68 million in 2015.

It is noteworthy that these estimated benefits relate only to the TE/VS Interconnect Project. When net benefits of the LEAPS Project are added, the overall total societal benefits of the projects – nearly $117 million per year – are almost twice as great. With LEAPS on-line, the system will benefit from much greater access to key ancillary services, including spinning and non-spinning reserves, quick start and fast ramping capabilities, improved integration of renewables, decreased potential of wind curtailments and substitution away from thermal generation during peak hours, thereby decreasing the emissions from gas-fired power plants in Southern California during the hours when those emissions are most likely to contribute to exceedances of health-based air quality standards.

Finally, it should be mentioned that ZGlobal is currently updating is cost/benefit analysis to reflect the shutdown of SONGS. Initial indications are that under the SONGS shutdown scenario, the net benefits of the Nevada Hydro projects will be substantially greater than they were shown to be in the ZGlobal analysis of several years ago. Depending on the metric applied, benefit-cost ratios from the construction of the TE/VS Interconnect alone are between 2.0 and 2.7.

E. The Advantages of Storage

LEAPS provides the State with a variety of cost-effective enhancements, including increased reliability and more efficient use of grid resources. Grid benefits include the full range of ancillary services, shifting on-peak to off-peak hours, providing 500 MW of generation near the load pocket and the storage of energy produced during off-peak hours for use during peak-demand hours. Most importantly, LEAPS will dramatically enhance the ability of the grid to effectively integrate, and make much better overall use of, a large amount of the variable energy production in Southern California. This can include off-peak power generated by efficient, baseload generation sources, (including geothermal generation located in the Imperial Valley) wind-generation located in the Tehachapi region, solar thermal generation in the Mojave area as well as other existing and planned renewable resources located throughout and beyond Southern California.

In terms of ancillary services, LEAPS provides 500 MW of regulation and fast responding spin to support grid operations the integration of intermittent renewable resources, and provides highly responsive load following capability. This, combined with the ability to provide voltage support, will help the grid manager effectively and efficiently operate an increasingly complex grid in the Southern California electrical region.

Because LEAPS can store off-peak power, including wind, solar and geothermal energy, the facility's operation will further the objectives of California's Renewable Portfolio Standards (RPS) and greenhouse gas (GHG) emission -reduction standards. LEAPS can also eliminate the need to construct new fossil fuel -burning power plants . Moreover, the Project's dispatchable pumping load will enable the most efficient and renewable generation sources on the Southern California grid to operate more hours each day. The efficient baseload energy generated during non-peak hours that LEAPS w ill absorb and store for later use can then be used to displace the operation during peak periods of those generation plants that are the least efficient and most costly to operate.

Finally, advanced pumped storage facilities like LEAPS are able to respond rapidly to continuously changing conditions and, thereby, enhance the maintenance of system -wide reliability. Pumped storage generation provides unique strategic, operational, and economic benefits, resulting in reduced operating risks, increased total e fficiency, increased critical system control and reliability, and providing more value to the ratepayers. Pumped storage is widely accepted as a mature technology with proven reliability and effectiveness. It is currently the only proven technology avail able for storage of large quantities of energy and is the most efficient form of energy storage available.

V. The CAISO's Plans for Addressing the loss of SONGS is Uncertain and Expensive

The CAISO has provided two views into its thoughts on actions needed to address the loss of SONGS.

The presentation at the February 11, 2012 CAISO stakeholder meeting in connection with the their draft 2012/2013 Transmission Plan showed that the absence of SONGS has a major impact on the entire Southern California area, especially for the "Category C" loss of both 500 kV lines west of Imperial Valley (see discussion in Section III. above) . Indeed, at that meeting, the CAISO staff emphasized that in its mid-term (2018) study of these issues, key elements of the long term plan for SONGS replacement should be initiated immediately in order to help mitigate future unplanned extended outages.

According to the CAISO staff, the key issue behind this urgency is that the loss of SONGS creates transmission impacts (thermal overloading, voltage instability) in the Los Angeles Basin and San Diego LCR (Local Capacity Requirements) areas. The CAISO proposes that, to make up the gap left by the absence of SONGS, the following will be required:

- Over 1,400 MVAR fast acting static VAR compensator (SVC) support in the area of the interface between SCE and SDG&E;
- Over 1,120 MW of new or replaced gas-fired generation; and that,

- The system will continue to have to rely on voltage support via synchronous condensers at Huntington Beach until other voltage support equipment can be installed elsewhere.

Then, in a July 2013 presentation by CAISO for a meeting held by the CPUC and CEC [18], a number of possible transmission alternatives were presented to address the reliability needs of the southern California electric system due to the retirement of the SONGS. These alternatives also addressed the present understanding of the needed response to the requiremen t of the "once-through-cooling" mitigation and future load growth in the San Diego and Los Angeles basin areas. These alternatives can be summarized as follows:

1. The TE/VS Interconnect perhaps including LEAPS.
2. Addition of new generation:

	2018	**2022**
L.A. Basin		3,800 MW
SDG&E	1,120 MW	785-920 MW

3. New Transmission Projects:
   - Alberhill – Suncrest (Central) 500 kV
   - Valley–Alberhill–Viejo–new Cougar 500 kV
   - Imperial Valley – Songs HVDC Line
   - Sycamore – Penasquitos 230 kV line
   - Alamitos (or SONGS) – South Bay area HVDC Submarine Cable

NHC's high level view of the CAISO's suggestions appear in the following table:

Proposal	Potential Positives	Potential Negatives
New Generation		The siting of approximately 5,800 MW of generation in the Los Angeles and San Diego basins by 2022 will require an expenditure of approximately $6 billion. If sites were limited to 500 to 600 MW each, that would be 10 sites. The sites will require natural gas supply, air quality permits and electric transmission system capable of supporting this additional generation. The generation would likely be simple cycle combustion turbines with higher heat rates compared to combined cycle units, there would bean economic penalty. This is not green house gas friendly suggestion. This type of unit would incur added expense for startup/shutdown costs, increased maintenance, and even worse heat rates at less than full load operation.
Proposed	Provides closure of the 500 kV	This option has yet to be studied for the level of its effectivenessin the

[18] CEC/CPUC Joint Workshop Electricity Infrastructure Issues Resulting from SONGS Closure, ISO 2013 Transmission Plan Nuclear Generation Backup Plan Studies (SONGS), July 15, 2013 PowerPoint Presentation.

Proposal	Potential Positives	Potential Negatives
Alberhill – Suncrest 500 kV line	open jaw, with SWPL as the lower jaw and Palo Verde – Devers – Valley – Serrano as the upper jaw. Provides a 500 kV source into SDG&E in the event of the loss of the Imperial Valley-Miguel and Imperial Valley-Suncrest 500 kV lines. Continues 500 kV supply into SDG&E for the loss of the North Gila – Imperial Valley 500 kV line, the single most difficult contingency limiting SDG&E imports.	wider context of the southern California transmission planning process. Nor does it provide any improvement in the need for resources in the L.A. Basin. Something else must handle that need. Given SDG&E's difficulty with the Valley-Rainbow and Sunrise projects, this proposal will require a well-considered development effort when "time is of the essence".
Proposed Valley-Alberhill-Viejo-Cougar 500 kV line		This is an entirely new option, for which there has yet to be shown that it can be built. Given the history of difficulty that SCE has experienced in completing the entire Tehachapi transmission development, especially in the area around Rio Hondo and Mira Loma, this project, while impressive in its concept, is likely to have difficulties with getting its path permitted. It may not be completed, or it may be significantly delayed. Further, there is no assurance that it would offer enough voltage support and real power flow to the area to offset the Imperial Valley area problems. Tests of the additional stress on the South of Lugo path must also be considered.
Proposed projects in SDG&E territory		Both projects suffer from the fact that one of the primary issues for the area lies to the east of Imperial Valley – loss of the North Gila-Imperial Valley 500 kV line. Thus, while the proposals add line transfer capacity west of Imperial Valley, they both are west of the biggest problem line loss contingency when considering G-1/N-1 issues. There is already more than enough line capability with SWPL and Sunrise for normal operations and the possible loss of the Sunrise line. The Sycamore-Penasquitos 230 kV line may relieve some congestion on the Sunrise path if Imperial Valley-Miguel were out, but that seems to be a small advantage. That 230 kV line does nothing for the two major contingencies in the Imperial Valley area. The proposed DC line may provide some advantage for the N1-1 loss of the two 500 kV lines west of Imperial Valley. But without some specifics to review, this is merely a possibility. Given the right-of-way problems SDG&E encountered in the Sunrise development, there is reduced assurance that the line could be completed when "time is of the essence".
South Bay area HVDC Submarine Cable	The use of DC cables in the ocean is a well understood technology.	By 2022, both ends of either cable option will be connected to weak sources. Once Alamitos is retired that's a weak point. South Bay has no useful source except the 500 kV line coming into

Proposal	Potential Positives	Potential Negatives
		Miguel, which is part of the problem. SONGS is now just an any-bus with no special attributes.

While there is no one solution that will be able to resolve the extensive needs identified by the C AISO, the selection of proposals to provide the required solution must consider both timeliness and cost. The timeliness issues will be driven by the ability to get the necessary sites, rights-of-way, air quality studies, permits of various types and cons truction duration. Cost effectiveness will require the evaluation of the generation types and fuel costs that can be sited and installed versus delivery of resources located outside the area via the transmission system.

Since the TE/VS Interconnect has most of its permitting activities already completed and is seeking its final CEQA and CPCN approval from the Commission, it can be constructed and operating by late 2015 or early 2016. For its base configuration, this woul d provide 1,100 MW of increased import capability under normal conditions and 1,800 MW under contingency situations. If a cooperative effort were undertaken by SCE and SDG&E to use a portion of the Talega – Escondido 230 kV line path at 500 kV (and Nevada Hydro understands the corridor is already permitted for 500 kV), the full capability of the 500 kV line from Alberhill to Case Springs (2,600 to 3,400 MW) could be available to meet the needs of both the utilities.

The other theoretical (at best) propos als presented by the CAISO as "solutions" appear to Nevada Hydro to be largely speculative. Moreover, they appear be much more costly than the proposed TE/VS Interconnect , which has its detailed engineering and costing complete . Notwithstanding this, the CAISO was not, and could not be , specific as to how it proposes to fill these gaps within the timeframe in which the SONGS replacement resources will be needed . Given that another Southern California area blackout could be the consequence of delay , that planning process must be fully transparent and public process.

As mentioned, the resolution of the SONGS problem must also be carried out while existing gas -fired generators along the coastline are to be revamped to meet once -through cooling (OTC) regulation requirements imposed by the State Water Resources Control Board . This will , in some cases , involve shutting down existing power plants in the area in order to remove them and build replacements. Additionally, there is no promise or absolute determination that the total of generation from any of these plants, whether new or re-powered, will add up to the total that existed prior to the beginning of the SONGS shutdown.

Another issue that has not been addressed in the CAISO's presentations, but should be, involves the ratings for Path 43 and Path 44. In Nevada Hydro's view, in the absence of SONGS, the present ratings for these paths are of no value. Both Path 43 and 44 have ratings that are largely dependent on the presence of SON GS operating at full output. With SONGS being a strongpoint in the transmission system, because large amounts of power from it could flow either north on Path 43 or south on Path 44, these import channels were quite important and useful. However, with SO NGS not operating, the performance of these paths is quite different

and much weaker. A recalibration of the measurements of the capability for importing power that uses these path ratings is required, and that recalibration must reflect current realities . A correct understanding of the actual transfer capabilities between the two utilities, which will result from a proper recalibration of import capabilities, will further underscore the uncertainty of the tentative plan that the CAISO is looking at in or der to replace the capacity and energy that was, in the past, provided by SONGS. Furthermore, such a recalibration will underscore the value that LEAPS and the TE/VS Interconnect will bring to the system.

VI. The Nevada Hydro Projects Are the ONLY Real Solution to the SONGS Crisis

LEAPS is a key project that will help alleviate the resource constraints that are posed by the loss of SONGS in a more effective, more timely and less costly way than the other proposed resources that were suggested in the CAISO's draft plan.

State officials looking fo r a solution to the SONGS dilemma should know that LEAPS and TE/VS Interconnect projects will provide numerous system benefits including:

- 500 MW of highly flexible and fast-ramping generation;
- A dramatic increase in the ability of the Southern California grid to absorb and integrate variable renewable generation, especially the absorption of off-peak resources and surplus wind energy that would otherwise have to be curtailed as the LEAPS project also provides 600 MW of load for off-peak renewable wind generation;
- 500 MW of carbon-free on-peak electrons;
- High quality MVARs at a cost that would be roughly half that of static VAR compensators;
- Local capacity in that portion of the SCE load pocket that would be most highly impacted by the loss of SONGS;
- Potential congestion relief on Path 26
  - That would not trigger the limitations of the SCIT nomogram; and
  - At a cost that would be significantly less than the Delany-Colorado River line that the CAISO proposed to approve as part of the current transmission plan;
- A new 500 kV line connecting the SCE and SDG&E service territories that the CAISO has long recognized as being needed; and,
- A dramatic enhancement in overall system reliability in southern California.

LEAPS and the TE/VS interconnect will provide major reliability improvements at both its north and south connection points. However, the far more important value -added of LEAPS is its electrical proximity to the existing SONGS substation. Talega is only a few miles no rth of SONGS. Thus, in terms of real power (megawatts) and reactive power (megavars), LEAPS and the TE/VS Interconnect are THE replacement for SONGS.

Moreover, as discussed above, a dvanced pumped storage is , and as more and more variable renewable resources are interconnected, will increasingly be, a valuable system asset. There is no such capability in Southern California. Fast starting, quick reversal between pumping and generating, and very high ramp rate capability provides grid operators with a tool for system control like none other. The location of LEAPS in the grid is also a significant advantage when coupled with the TE/VS transmission. Moreover, the project's phase shifters will provide discrete flow control.

One of the major problems with the disappearance of SONGS is the lack of voltage support in a critical area of the LA Basin. The increased flows on the 230 kV system from north to south, running at a high percentage of the area's line ratings during high load periods, causes significant increases in reactive power loss. The TE/VS Interconnect, at 500 kV, has much lower reactive power loss for the same flow rate than do the equivalent 230 kV line(s). In addition, LEAPS provides reactive support along the way.

There is no existing high voltage connection between the SCE and SDG&E systems. The September 2011 blackout clearly shows a need for power transfers under major contingencies that cannot be managed by the existing 230 kV lines. 500 kV interconnections are needed to handle problems caused by 500 kV contingencies. The size of both the SCE and SDG&E systems has grown to such a point that 230 kV lines are no longer adequate for the task of inter-utility flow management. The limit of flow management efforts or capability at 230 kV has now been exceeded. This situation has become even more tenuous with the need to push the supply locations back from the coastal areas, where the existing generation is likely to be significantly reduced because of once through cooling regulation limits.

As Nevada Hydro has stressed in a variety of venues, with or without SONGS operating, these projects can bring 1,100 MW of reliability to San Diego under normal operating conditions and can transfer 1,800 MW during emergencies. In addition, the projects can:

- Provide a reliability substitute for most of the SONGS facility (1,800 MW); and
- Prevent system collapse during usual NERC and CAISO testing requirements.

In addition to these benefits, the CAISO should note that LEAPS, like all advanced pumped storage facilities:

- Is dispatchable in 15 seconds (with units spinning);
- Provides black start in 10 minutes;
- Provides full range of ancillary services; and
- Provides regulation, load following and voltage support.

Finally, Nevada Hydro will construct LEAPS and its associated transmission for roughly $1.5 billion, whereas as the CAISO has noted, the alternatives that would substitute as SONGS

replacements would cost at least twice as much to construct and face unknown approval paths.[19] Further, LEAPS can be operating by 2018.

VII. Conclusion

Given the State's exacting clean energy policies, there is an unquestionable need for the electric power system in California to move toward an environmentally sustainable future, while still maintaining highly reliable and efficient service at the least possible cost. Given this policy imperative, as well as the demonstrated history that the LEAPS and TE/VS Interconnect projects are needed and valuable assets to meet Southern California's mid- and long-term power system needs, there can be no doubt in the mind of anyone who is serious about meeting the State's policies that the LEAPS and TE/VS Interconnect projects are the very best projects that could be developed in that region in order to meet the challenges of:

(1) the ever-increasing need for highly flexible resources;

(2) the ever-expanding reliance in the region on variable renewable resources;

(3) the evident and hidden limitations on power flows into the region;

(4) the long-term imperative for California to move away from carbon-based energy resources; and

(5) the permanent shutdown of SONGS.

Despite the roadblocks they have faced to date on the road to being approved, these projects have a demonstrated history being accepted by regulatory and system-planning authorities that they are needed assets for the region. Moreover, these projects are a near perfect fit with the overall mid-term and long-term needs of the system in Southern California. As a result, regulators should embrace these projects and do everything within their power to help smooth their path forward. Not to do so would be a shame, both for the reliability and the flexibility of the grid of the future and for the ratepayers who depend on their leaders to plan for and oversee the implementation of an electric power system that is the cleanest, most reliable and most cost-effective system achievable.

[19] In their draft transmission plan, the CAISO, in Table 3.5-11, identified a number of Mid-Term and Long-Term (combined transmission & generation) alternatives to replace SONGS. This includes (in Alternative 1) over 1100 MW of new and replacement generation plus an additional 500- 1000 MVAR of reactive support needed by roughly 2018. In addition, the CAISO forecasts it would require an additional roughly 3000MWof generation by 2022. Simply assuming the costs for VARs at $1-2, LEAPS can provide far more benefits and flexibility plus energy and other ancillaries for roughly the cost of the VARs alone. The CAISO's draft plan may be found at http://www.caiso.com/Documents/Draft2012-2013TransmissionPlan.pdf.