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 12-03-014 (Filed March 22, 2012)

POLICY COMMENTS OF FRIENDS OF THE EARTH ON THE PLANNING ASSUMPTIONS TO BE USED IN TRACK 2

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INTRODUCTION

Friends of the Earth ("FOE") provides the following comments pursuant to the September 20, 2012 Assigned Commissioner's Ruling ("ACR") in this proceeding.

As an initial matter, FOE is gratified that the ACR has adopted the main recommendation of the Technical Comments that FOE submitted to Energy Division Staff on the Staff's Proposed Scenarios September 7, 2012, namely that one of the scenarios to be studied in Track 2 of this proceeding should be that the San Onofre Nuclear Generating Station (San Onofre) will be permanently shut down by January 1, 2015. Since one of the four high priority scenarios that Staff has presented in its Revised Scenarios document (attached to the ACR) is an "Early SONGS Retirement Scenario," which will explore the future without energy contribution from San Onofre in the first planning period starting in 2015, FOE is confident that the scenario development process that will be taking place in Track 2 will actively consider this critically important, likely energy future for the state.

That said, to the extent that any of other comments that may be submitted today may take exception to the inclusion of an "Early SONGS Retirement Scenario" as a "high

priority" study case in these proceedings, FOE is prepared to defend the Staff's determination to include this case in our Reply Comments that will be due on October 19, 2012.

In FOE's view, it is not sufficient for an "Early SONGS Retirement Scenario" merely to be studied in this proceeding. Rather, it is essential for the future well being of California for that Scenario to be seen, and ultimately to be selected by the Commission based on the record, as being preferable to the Base Case and any associated Base Case sensitivities. For this reason, FOE looks forward in this proceeding for the opportunity to present a factual case demonstrating that the costs of maintaining San Onofre over the period of years addressed in this proceeding will be substantially greater than the costs of serving ratepayers by the use of readily available alternatives.

However, FOE is concerned that the May 17, 2012 Scoping Memo in this proceeding does not at present specifically anticipate evidentiary proceedings in this Track 2.[1] Therefore, the substance of the Policy Comments below will demonstrate the need for an evidentiary hearing to document the inevitable avalanche of rate increases that will result if the plant's owners, the Southern California Edison Company ("SCE") and the San Diego Gas & Electric Company ("SDG&E"), are authorized to make the multiple, huge investments of capital that will be necessary if the plant is to remain operational over the longer term.

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1 See, *Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge*, Docket No. R.12-03-014, issued on May 17, 2012 ("Scoping Memo"). The Scoping Memo, at page 10, anticipates that after a Commission decision on the scenarios before the end of this year, there will be further review to incorporate the California ISO's updated Renewable Integration Report and to determine system needs. The schedule for this work is to be determined in a subsequent ruling, and there is no suggestion in the text of the Scoping Memo that this latter phase of the proceeding will include evidentiary hearings.

Based on the facts that FOE intends to adduce in this proceeding, the Commission will have the evidence necessary to give the owners of San Onofre a timely signal that, rather than investing large sums of capital into a plant that will, by law, require a number of additional very expensive and time-consuming system upgrades, they should, rather, use their funds to procure less expensive, more reliable and more cost-effective alternatives.

FOE's chief witness in this proceeding will be S. David Freeman, who has over 20 years of experience in senior management positions in the energy industry in California, including service as the Chief Executive Officer of the Sacramento Municipal Utility District and the Los Angeles Department of Water and Power, as well as service as the Trustee that helped to create the California ISO and as a senior policy advisor to Governor Davis, in which capacity Mr. Freeman was instrumental in helping to resolve the California energy crisis in 2000-2001.

Mr. Freeman will testify, supported by other experts, that the retail customers of SCE and SDG&E will benefit from a more reliable and less expensive power supply over the long term if San Onofre ceases all operation no later than 2015 or at the conclusion of its current 40-year license.

This conclusion will be supported by an identification of the billions of dollars of funds that SCE and SDG&E will be required to expend in order to maintain San Onofre in operation for the long term, as well as an identification of the overall lower costs to consumers of the alternatives to the energy that San Onofre has provided in the past. These alternatives include energy efficiency, demand response, decentralized renewable generation and electricity storage technologies.

BACKGROUND

SCE proposed the San Onofre plant to the Commission as a reliable and cost-effective generation resource back in the 1970's. This was the era when nuclear power was advertised as "too cheap to meter." The Commission's order approving the 2,200 MW plant stated that the estimated capital costs would be $436,960,000 (less than the cost of the recently installed defective steam generators that triggered the shutdown of San Onofre Units 2 and 3), with annual expenses of $76,344,000.[2] This order estimated the cost per kilowatt-hour of the plant's output would be approximately 0.5 cents.[3]

Contrary to this rosy prediction, the history of the San Onofre plant has been one of massive cost overruns that have been steady and steep. This Commission is painfully aware of the fact that nuclear power plants and cost overruns have been Siamese twins in California. This history is important, because it mirrors what the future holds if SCE is allowed to invest the additional billions of dollars that will be needed in order to allow the plant to operate for another 30 years.

THE COSTS OF MAINTAINING SAN ONOFRE

If allowed to continue to operate over the next 30 years (*i.e.*, beyond its initial 40-year license, which expires in 2022, and assuming that SCE is granted a 20-year license extension), San Onofre's owners will be required to fund the following major facility upgrades:

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2 *See* D.78410, mimeo, at 10 (March 9, 1971).

3 *Id.* (stating that the "average cost of energy at the plant site will be 4.75 mills per kilowatt-hour"… with SCE's "average cost of energy delivered to its interconnected system … estimated to be 4.95 mills per kilowatt-hour.").

- Steam generator repairs and replacement at San Onofre Units 2 and 3 and the cost of replacement power while these repairs and replacements are being made;
- By mandate of the State Water Resources Control Board[4], the construction of an alternative cooling system to replace the existing once-through cooling technology that has a significantly adverse impact on marine life, as well as the cost of replacement power while these repairs are being made;
- Pursuant to Nuclear Regulatory Commission rules being proposed, requiring seismic upgrades for plants in seismically active areas, the conduct of seismic studies and the installation of major seismic upgrades, as well as the cost of replacement power while these repairs are being made; and
- In response to the recent Fukushima disaster in Japan, major safety upgrades to be mandated by the NRC for plants located in areas (such as San Onofre) that would be vulnerable to tsunamis, as well as the cost of replacement power while these repairs are being made.

In addition to the foregoing expensive capital upgrades, there are significant additional operating costs associated with the future operation of the plant that the owners will pass on to ratepayers:

- The increased costs of routine plant maintenance for an aging facility, which can be expected to increase significantly as the plant approaches 60 years of

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4 See, State of California Water Resources Control Board Resolution No. 2010-0020 to "Adopt a Proposed 'Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling' and Associated Certified Regulatory Program Environmental Analysis", approved on May 4, 2010, *amended by* Resolution No. 2011-003, approved on May 17, 2012.

age, as well as the cost of replacement power while increasingly expensive repairs are being made;

- The increased cost of uranium as existing low-cost sources are depleted;
- The costs of storing the significant amounts of additional spent fuel that would be generated if the plant is re-licensed; this will necessarily include about $200 million just for the additional dry casks needed to store the additional spent fuel;
- The steady, but sure, increase in the cost of labor (in particular, for plant and spent fuel security in an age of terrorism); and
- The expense of the development and implementation of a viable evacuation plan, which does not exist for San Onofre today.

Finally, the Fukushima meltdown has amply demonstrated that a nuclear power plant, such as San Onofre, which is located in an area that is seismically active and vulnerable to tsunamis, poses the risk of unimaginably large damage to its neighboring community. The cost of such damage is far beyond what the utility or even the federal insurance programs would cover.[5] This potentially immense financial risk to the larger community can be quantified within reasonable parameters, and FOE will present testimony on this issue.

FOE notes that SCE has indicated that San Onofre Unit 3 will be out of service for years and that if it is authorized to bring San Onofre Unit 2 back on line, it may operate

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5 SCE carries four lines of nuclear liability insurance. "Facility form insurance", which covers SCE against "third parties alleging bodily injury and/or off-site property damage due to the nuclear hazard by SCE's nuclear facilities…" has a single lifetime aggregate limit of $375 million. *See* Docket No. A.10-11-015, Exhibit SCE-07, Administrative and General (A&G), Volume 3-*Regulatory Policy and Affairs, Corporate Membership Dues and Fees, Corporate Communications, and Property and Liability Insurance Expense*, Chapter IV, at p. 63 (November 23, 2010).

that Unit at 70% of full capacity. Accordingly, FOE's testimony will analyze the cost of the energy generated at the plant under both full and partial operations. FOE's evidence will show what is obvious, namely, that at partial operation, the cost per kWh will be even higher and clearly not cost-effective.

It will, of course, not be possible to present an exact price tag for each of these elements of expected increased costs associated with the future operation of San Onofre, but FOE will provide a reasonable range of cost estimates by experts in their respective fields. When compared to the costs of alternative technologies (which FOE will also address, but on which the Commission already has a significant amount of data), this range of cost estimates will provide a strong evidentiary basis for the Commission to find that it would be imprudent for the owners of San Onofre either to make the very large anticipated capital investments, or to incur the significantly higher operating expenses, that would be needed to operate the plant on a long-term basis.

SAN ONOFRE IS NOT NEEDED FOR SYSTEM RELIABILITY

The experience of this past summer demonstrates that it is a myth to state that San Onofre is "absolutely essential" to the provision of reliable power to SCE's and SDG&E's customers. When the plant went down in February, there were choruses of doomsayers predicting blackouts in Southern California. However, the blackouts never materialized. Rather, a well-coordinated and conscientious effort on the part of the utilities, the owners of independent generation, the California ISO and key state officials succeeded in pulling together the resources needed to keep the lights on. These resources included significantly enhanced energy efficiency and demand response. Indeed, effective energy efficiency and demand response programs can make up much, if not all, of the perceived future shortfall

from the permanent shutdown of San Onofre, especially if the plant must be operated at less than full power.

This positive outcome in Southern California this past summer was not a one-year phenomenon. The CAISO has just completed a preliminary analysis[6] showing that the electric system in Southern California can operate reliably in 2013 and beyond without San Onofre. FOE will provide testimony explaining how the power system without San Onofre can be more reliable than if the system is dependent on San Onofre. In truth, electric power systems that rely too heavily on a single large plant are putting "too many eggs in one basket." Such large, dominant plants are actually more the enemy than the friend of grid reliability. Any given power plant can suffer an unplanned outage, and the larger and more dominant that such a plant is in a given system, the greater the chance is that the system will suffer a power shortage and rolling blackouts, or worse.

Efficiency, load management and the installation of smaller, decentralized generation sources and storage within the service area are the best elements of a reliable power supply. The recent experience with San Onofre demonstrates that it is not a reliable source of power in Southern California, nor will it be a reliable source of power in the future if it is allowed to operate for another 30 years. As noted above, a number of extended outages will be required to upgrade the plant if it remains in service for another 30 years or more. Each of the major capital upgrades of the plant will require an extended outage, and as the plant continues to age, common sense and experience dictate that it will require more, and likely longer, outages to address the inevitable wear and tear on an aging plant.

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6 This analysis was presented at a public stakeholders meeting on the CAISO's 2012-2013 Transmission Planning Process on September 26, 2012. The PowerPoint presentation that includes this analysis is available at: http://www.caiso.com/Documents/Presentation_2012-2013TransmissionPlanningProcessPreliminaryStudyResults-ProposedSolutions.pdf.

Finally, plants like San Onofre are highly inflexible in that they cannot respond quickly or easily to signals to increase or decrease their generating output. Such plants are increasingly at odds with the evolving electric power system in California, which, with its ever-increasing penetration of variable renewable resources, needs highly flexible resources more than ever. Plants like San Onofre simply cannot provide the fast regulation or fast ramping services that our grid increasingly needs. The need for more highly flexible resources is well recognized both by the CPUC and the California ISO, both of which entities have been sponsoring multiple stakeholder processes on the subject over the past few months.

Thus, an early decision by the CPUC that the continued operation of San Onofre long-term would be imprudent will have the ultimate effect of enhancing, not diminishing, overall system reliability in the State. Such a decision will motivate SCE and SDG&E to invest in sustainable energy alternatives, like efficiency, demand response, electricity storage and small-scale renewable generation, all of which will, unlike an attempted resuscitation of San Onofre, enhance the reliability of the power supply in Southern California.

THE ALTERNATIVES TO SAN ONOFRE

Over the past few years, under the able oversight of the CPUC, SCE and SDG&E have procured and brought on line new, renewable generating resources, and both utilities are now procuring about 20% of the energy they supply to customers from qualifying renewable resources.[7] Moreover, under SB 1X-2, adopted in April of last year, the two utilities are required by law to achieve a 33% RPS eight years from now. Thus, regardless

[7] See, *Renewables Portfolio Standard Quarterly Report: 1st and 2nd Quarter 2012* (CPUC), at p.3, *available at* www.cpuc.ca.gov/NR/rdonlyres/2060A18B-CB42-4B4B-A426-E3BDC01BDCA2/0/2012_Q1Q2_RPSReport.pdf.

of what happens to San Onofre, over the next few years, SCE will be bringing on line new renewable resources in an amount comparable to the total output of San Onofre. These new renewable resources will dwarf SCE's current plan to operate one San Onofre unit at 70% capacity. Thus, the permanent closure of San Onofre will have the beneficial effect of allowing for the proper integration and timing of the additional renewable resources that SCE and SDG&E are, by law, mandated to procure. With regard to new renewable resources that may be needed, we will document their likely future cost, but note that the price for renewables, particularly solar photovoltaic technology, keeps coming down every year.

Beyond that, and as is evidenced in the "loading order" that is at the heart of the CPUC and CEC's Energy Action Plan, the best value for ratepayers is neither nuclear power nor renewables, but, rather, can be found in new investments in energy efficiency and demand-side management. We will provide evidence that there is a "treasure trove" of additional efficiency and load management available for SCE's customers in quantities that will assure reliable electricity at a lower cost than San Onofre.

There is a surplus of power in California, and loads have not grown in the past five years. Any conceivable growth in demand in the utilities' service territories can be met by the deployment of the existing surplus and enhanced energy efficiency and load management strategies. Moreover, the investments in many energy efficiency products pay for themselves in short order, such that the more widespread deployment of energy efficiency techniques will actually save ratepayers money.

As to load management and demand response, California is still not yet a leader. The State has a long distance to go to catch up with other regions of the country (for

example, within the market footprint of PJM) where demand-side resources in the thousands of megawatts are already playing a significant role in helping to meet overall system needs. Now – in this LTPP proceeding – is the time for the Commission to identify and quantify the potential for demand response to play a meaningful role in replacing San Onofre as a source of truly reliable capacity.

Additionally, the Commission should not overlook the important (and ultimately, essential) role that electricity storage can play in facilitating the operation of the rapidly evolving electric power system in a highly reliable manner. Many of us seem to have forgotten that large pumped storage plants, like Helms, were built in the 1970s to accommodate the excess off-peak generation from the then newly built nuclear power plants. Thus, large-scale electricity storage is neither a new nor a challenging technology. Moreover, the prices of battery technologies keep coming down. It is therefore no longer reasonable to shrug such technology off as "too expensive."[8]

Finally, the case that FOE will present will offer an alternative to San Onofre that will facilitate the achievement of Governor Brown's goal of achieving 12,000 MW of distributed generation by 2020 while saving ratepayers money in comparison to the status quo.

Again, the power supply in California is more than adequate without San Onofre. The bottleneck is the absence of local capacity in its absence. To address this issue, FOE will propose a demonstration program in a designated area that has transmission congestion without San Onofre. That program will consist of:

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[8] To support this, FOE will provide evidence regarding the feasibility and cost of a 1,300 MW pumped storage project proposed in Southern California (which is currently undergoing review at FERC) that can economically more than replace the San Onofre Unit that may continue to be operational.

(1) A feed-in tariff in which, on an hourly time-of-use basis, a decentralized power system (rooftop solar panels) are paid the same rate that the utility charges for that hour;

(2) The utility offers on-bill financing for energy efficiency investments that pay for themselves within 10 years; and

(3) The establishment of a robust capacity market for demand-side resources that will encourage private companies to actively participate.

CONCLUSION

California is today at a real inflection point in terms of identifying its path forward to a truly clean, healthy and sustainable energy future. Now is the time. This long-term procurement planning proceeding is the right vehicle and the perfect opportunity for the Commission to provide SCE's (and SDG&E's) consumers with a better set of alternatives for the future than a crippled and ultimately unreliable large plant, the upgrading and future upkeep of which will be hugely expensive, and the operation of which will be increasingly out of step with the State's growing need for highly flexible, responsive and easily rampable technologies.

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Respectfully submitted,

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