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January 18, 2013

Hon. Kamala D. Harris
Attorney General
1300 I Street, 17th Floor
Sacramento, California 95814

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INITIATIVE COORDINATOR
ATTORNEY GENERAL'S OFFICE

Attention: Ms. Ashley Johansson
Initiative Coordinator

Dear Attorney General Harris:

Pursuant to Elections Code Section 9005, we have reviewed a statutory initiative related to the generation of nuclear power in California (A.G. File No. 12-0016).

BACKGROUND

The Role of California's Nuclear Power Generation

California's electricity supplies are generated by several energy sources, including natural gas, nuclear fission, wind, solar, and hydropower. Over the years, approximately 16 percent of the state's electricity is generated by nuclear power plants (inside and outside of the state), three-fourths of which comes from the two nuclear power plants in the state—the Diablo Canyon Nuclear Power Plant (Diablo Canyon) in San Luis Obispo County and San Onofre Nuclear Generating Station (SONGS) in San Diego County. Both of these plants are owned primarily by investor-owned utilities (IOUs). The IOUs, in turn, are subject to regulation of their electricity rates by the California Public Utilities Commission.

Unlike some energy sources, such as wind and solar that serve as an intermittent source of energy, nuclear power provides "base load" energy, meaning that it generally provides a relatively uninterrupted, reliable power source. Because nuclear power plants generally produce power around the clock, large portions of California's electricity transmission system have been engineered with the two nuclear power plants' production capacity and output in mind. The Diablo Canyon Power Plant represents a significant generation resource and supports power flows through some of the state's major transmission lines. The SONGS has traditionally been considered by the California Independent System Operator (CAISO)—the independent, public-benefit corporation that manages a large part of the state's electricity grid—to be an integral part of the Southern California transmission system and, therefore, an important resource that helps ensure access to reliable electricity for a majority of Californians.

Since February 2012, both units at the SONGS plant have been completely shut down. While one unit was initially shut down for routine maintenance, the other unit was shut down after a

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water leak was detected in one of the reactor's tubes. At the time of this analysis, it is unclear how long both units will be shut down. The CAISO, the Governor's office, and other state energy planners have sought to find replacement power that would allow the state to maintain electricity reliability while SONGS is closed. Finding such replacement power has proven to be challenging, particularly in the summer months since electricity demand peaks during that time. As a temporary solution, a power plant in Huntington Beach (which had been shut down) was restarted in spring 2012 and operated through November 1, 2012. As part of the enforcement of federal air quality standards, the Huntington Beach power plant was not allowed to remain in operation on a permanent basis. Consequently, energy planners are currently evaluating options for replacement power to the extent that SONGS remains shut down during summer 2013. Planners indicate that it will be necessary to make changes to some of the state's electricity grid as well as major equipment upgrades in the Los Angeles Basin in order to access power from outside the area. At the time of this analysis, a specific contingency plan for this summer, as well as for the longer term, has not been finalized. As a result, the magnitude of the risks—both in the near term and short term—to reliability remain uncertain.

California's "Moratorium" on New Nuclear Power Plant Development

Since 1976, state law has allowed the permitting of new nuclear power plants in the state only if the California Energy Resources Conservation and Development Commission (known as the California Energy Commission or CEC) determines that the federal government has identified and approved a demonstrated technology for:

- The construction and operation of nuclear fuel rod reprocessing plants.
- The permanent disposal of high-level nuclear waste.

In effect, these two conditions have created a moratorium on the construction of new nuclear power plants in California as neither of these conditions has been met. Accordingly, no new nuclear plants have been constructed in California in over 35 years. (State law specifically exempted Diablo Canyon Power Plant and SONGS from these new requirements. Because no permanent disposal site for nuclear waste is now available in the United States, these facilities temporarily store their nuclear waste on site, either in water or in "dry case" cement casings.)

Potential Risks Associated With Nuclear Power Generation

Nuclear power plants present potential safety and security risks generally not associated with other types of energy-generating facilities. Unlike other types of power plants, each nuclear power plant contains large quantities of radioactive material which, if released—through natural disaster, human error, or malicious intent—may cause widespread public harm. As a result, these plants are subject to extensive federal and state regulatory requirements pertaining to their safe operation, security, mitigation of their potential environmental impacts, and the establishment of emergency response procedures in the event of any mishap at a nuclear facility.

PROPOSAL

This measure immediately prohibits the generation of nuclear power in the state, including by existing power plants, until such time as the CEC finds, and the Legislature affirms, that the federal government has identified and approved a demonstrated technology for:

- The construction and operation of nuclear fuel rod reprocessing plants.
- The permanent disposal of high-level nuclear waste.

The measure would result in the immediate shut down of the nuclear power plants in the state. Such plants would remain shut down until such time as the conditions outlined above were met.

FISCAL EFFECTS

Fiscal Effects of This Measure Highly Uncertain

Federal Preemption. Our analysis of this measure indicates that there are questions regarding potential future actions by the federal government agencies that regulate nuclear power and energy markets that could prevent the provisions of this measure from taking effect. So-called federal preemption of this initiative measure could occur because federal energy authorities could require that one or both of the nuclear plants continue to be operated for a period of time—contrary to this measure—to ensure that reliable access to electricity is maintained in California while the necessary infrastructure to provide replacement power is being built. For the purpose of making our fiscal estimates, however, we have assumed that all provisions of the measure would take effect and become operative.

Uncertainty About the Timetable for Obtaining Replacement Power. The measure's ultimate fiscal effect is highly uncertain because some important factors are difficult to predict. One critical factor is the time required to build new electricity generation plants and transmission lines to replace the generation lost due to the immediate shutdown of the state's two nuclear power plants. The state's electricity authorities have stated that, under current statutory and regulatory provisions, it would take many years to permanently replace the electricity generating capacity of at least one of the two nuclear plants due to the current complexity of siting power plants and transmission lines. We have been advised that, in particular, current state and federal air quality and other environmental laws would make siting and building new power plants and transmission lines a potentially lengthy process. If, however, state and federal authorities were to suspend air quality laws as well as expedite the environmental review of replacement power, the time it would take to build new generation could be reduced.

Uncertainty Over When the Conditions of the Measure Might Be Met. As noted earlier, this measure halts the operation of nuclear power plants in California until such time that the CEC determines, and the Legislature affirms, that certain conditions have been met. Thus, the fiscal effects of this proposed initiative would depend upon when, if ever, a federally approved technology exists for the construction and operation of nuclear fuel rod reprocessing plants and for the permanent disposal of high-level nuclear waste. It is our understanding that it is unlikely the conditions allowing the resumption of nuclear power generation in the state would be met for at least many years.

Economic Impacts Could Affect State and Local Revenues and Costs

This measure could have significant effects on the California economy which, in turn, would affect both state and local government revenues and costs.

Disruptions to Electricity System. Because the state's two nuclear facilities are integral parts of the state's electricity grid, their operation is currently important to ensure reliable access to electricity in California. We are advised by the CAISO that permanently closing the two nuclear facilities would potentially affect at least for several years the state's ability to ensure reliable access to electricity, especially during the summer months when energy demand peaks. In particular, the permanent loss of the SONGS plant could reduce the capacity to deliver electricity in the Los Angeles Basin area to below state and local standards for reliability. As a result, the risk of rolling blackouts would increase in that area. The frequency and duration of rolling blackouts would depend on various factors including electricity demand and weather conditions. Such disruptions to the electricity grid could have negative impacts on the California economy, including loss of economic output, reduced productivity, and reduced purchases of goods and services, leading to reduced household and business income. In the case that these disruptions were extensive, the resulting loss of economic activity in the state could be substantial.

The extent of any disruptions in any one year and over time would be significantly affected by how quickly replacement power came on line. In order to minimize the length and frequency of major economic disruptions resulting from this measure, it is probable that the state would take emergency action to speed up the process to establish replacement power. Thus, it is likely that any major economic losses resulting from the measure would occur in the near term.

Increased Costs for Electricity. This measure would likely result in an increase in electricity rates. First, the reduction in the state's supply of electricity that would result would put upward pressure on wholesale electricity prices at least until replacement sources came on line and could be fully integrated into the electricity grid. Second, if and when the lost nuclear sources were fully replaced, electricity rates might still for several years be higher than otherwise because electricity rates would reflect new investments in the transmission and distribution system the IOUs would need to make in order to support replacement of these sources of electricity.

The increases in electricity rates under these circumstances could be significant and could affect state and local government revenues and costs. First, they could negatively impact the California economy which, in turn, would likely translate into a loss of revenues to the state and local government. Tax revenues received by governments are affected by business profits, personal income, and taxable sales—all of which in turn are affected by what individuals and businesses pay for electricity. Increases in electricity rates due to the measure would also directly increase state and local government costs since they are large consumers of electricity.

State Could Be Held Liable to Compensate Utilities for Investment Losses. Under current state law, IOUs are generally allowed to recover costs associated with their capital investments through the ratemaking process. If this measure were enacted and resulted in the shutdown of Diablo Canyon and SONGS, it is possible that either a federal or state court could find that the measure's required shutdowns amount to a "taking" of private property and as such would

require "just compensation," which could total more than $4 billion. However, the state's potential liability in this area is uncertain.

Impacts on State and Local Government Finances. If this measure led to the shutdown of Diablo Canyon and SONGS, the resulting cumulative impacts of the potential economic disruptions could be major in the near term until replacement power was found. The losses would depend on weather conditions, electricity demand, electricity costs, and the ability to obtain reliable replacement power. Thus, the resulting impact on state and local government finances—decreased revenues and increased costs—is uncertain, but could be potentially major.

Reduced State and Local Financial Exposure From Potential Nuclear Emergencies

Under this measure, state and local governments could avoid potential future costs and loss of revenues that they might otherwise incur in the event of a major release of radioactivity into the surrounding environment from a California nuclear power plant. Major releases of radioactivity into the environment from nuclear plants have rarely occurred. In part, this is likely due to the regulatory requirements affecting their security and safe operation as well as building standards designed to help plants withstand major natural disasters. In the event that such a release of radioactivity did occur, experts in this field indicate that it could result in major direct governmental costs for emergency response and lost governmental revenues due to widespread economic disruption.

The immediate shutdown under the measure of the two nuclear power plants in the state could therefore reduce some of the exposure of the state and local governments in the vicinity of an affected nuclear generation plant to the substantial costs and lost revenues that could otherwise result from a major release of radiation. However, this measure may not alleviate much of the financial exposure to the state and local governments because the current lack of permanent storage options for nuclear waste means that all nuclear waste will remain stored on site at the two California plants for the foreseeable future, even if the operations of the plants were shut down. These potential avoidable impacts could collectively amount to billions of dollars. The financial exposure of state and local governments to such costs would, however, be offset to some extent by federally mandated liability insurance requirements on the nuclear industry as well as potential federal financial assistance in the event of a major emergency. These state and local fiscal impacts, however, could still be major.

Summary of Fiscal Effects

We estimate that this measure would have the following major fiscal effects:

- Potentially major impacts on state and local finances in the near term in the form of decreased revenues and increased costs due to near-term disruptions in the state's electricity system and electricity price increases. The magnitude of these impacts would depend on the time to develop replacement power, the frequency and duration of rolling blackouts, and various related factors, such as electricity demand and weather conditions.

- Potential avoidance of major future state and local government costs and lost revenues in the rare event of a major nuclear plant incident.

Sincerely,

for Mac Taylor
Legislative Analyst

for Ana J. Matosantos
Director of Finance