BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company In its 2012 Nuclear Decommissioning Cost Triennial Proceeding (U39E)	)))	Application 12-12-012 (Filed December 21, 2012)
Joint Application of Southern California Edison Company (U338E) and San Diego Gas & Electric Company (UU902E) for the 2012 Nuclear Decommissioning Cost Triennial Proceeding to Set Contribution Levels for the Companies' Nuclear Decommissioning Trust Funds and Address Other Related Decommissioning Issues.	)))))))	Application 12-12-013 (Filed December 21, 2012)

REPLY TESTIMONY OF THE COALITION TO DECOMMISSION SAN ONOFRE BY RAYMOND LUTZ AND MARTHA SULLIVAN

September 20, 2013

Martha Sullivan, Organizer
Raymond Lutz, National Coordinator/Citizens Oversight, Inc.
Coalition to Decommission San Onofre
2354 Carmel Valley Rd.
Del Mar, CA 92014
858/945-6273
marthasullivan@mac.com

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- **Raymond Lutz**
- **Martha Sullivan**

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I. INTRODUCTION

In accordance with the Administrative Law Judge"s (ALJ) Ruling of September 16, 2013, granting the Coalition to Decommission San Onofre's (CDSO) Amended Motion for Party Status, CDSO hereby submits its Reply Testimony in this Nuclear Decommissioning Trust Proceeding (NDCTP).

A. The Coalition to Decommission San Onofre (CDSO)

The Coalition to Decommission San Onofre is a DBA of Citizens Oversight, a 501(c)3 Delaware Corporation, with offices in Southern California. Member organizations and individuals reside within the evacuation area of the San Onofre Nuclear Generating Station (SONGS). CDSO/Citizens Oversight, Inc., encourages **increased engagement by the public in the operation of their local, state and federal government to reduce waste, fraud and abuse**. CDSO is unique in its localized, on-the-ground volunteer membership which affords ready consultation with local elected officials and community members regarding the varied impacts of the San Onofre Nuclear Power Plant, including those of decommissioning. Citizens Oversight is based in San Diego and Orange Counties and we have no office in the S.F. Bay Area; therefore effective participation in the CPUC's decision-making process requires additional time, travel and communications expenses. We lack the ratepayer-funded facilities and resources of Southern California Edison, San Diego Gas & Electric and the Commission and we are new intervenors at the Commission. Our communities in Orange and San Diego Counties most impacted by the San Onofre Nuclear Power Plant and its admittedly defective nuclear reactors depend upon us – *unpaid community members who also have to tend to our businesses/jobs, kids, elderly parents* – to represent them in this proceeding as well as in the U.S. Nuclear Regulatory Commission's (NRC) decision-making process for the operation, and now decommissioning, of this defective nuclear power plant. Our neighbors and the media increasingly call upon us with questions about San Onofre, and a large amount of our time is demanded by essential briefings of our elected representatives at the local, state and Federal levels.

CDSO has been startled by the enormous challenge of managing radioactive nuclear waste at the San Onofre Nuclear Power Plant. The issues include: unusually potent forms of fuel, dense storage of spent fuel far beyond design limits, large uncertainties about where the waste will

ultimately be stored and for how long, and last but not least, the economics of decommissioning. These issues were below the radar during the shutdown debate, but they now loom large.

CDSO has secured the involvement of top-rated nuclear waste specialists to provide crucial details about the current situation at San Onofre and other U.S. nuclear power plants.. Our immediate goal in securing this expertise is to assure that best practices will be applied to minimize the risk for those who must live with San Onofre as a nuclear waste dump. Our ultimate goal is to reinvigorate America's national dialog on radioactive nuclear waste.

Responses received from our panel of experts, in video and written form, will serve to better inform public participation at upcoming hearings and public meetings of the U.S. Nuclear Regulatory Commission (NRC) and the California Public Utilities Commission (CPUC). They will also provide program content for briefings and seminars held by CDSO, with an invitation to other groups around the country to use these presentations at their own events.

B. State Law Mandate in Public Utilities Code §8322.

This mandate in California State Law bears reminding as a context for this proceeding. Public Utilities Code §8322 – "The Legislature hereby finds and declares all of the following: (emphasis added)

> (a) The citizens of California should be protected from exposure to radiation from nuclear facilities.
>
> (b) It is in the best interests of all citizens of California that the costs of electricity generated by nuclear facilities be fairly distributed among present and future California electric customers so that **customers are charged only for costs that are reasonably and prudently incurred**.
>
> (c) The costs of electricity generated by nuclear facilities, including the costs of their decontamination and decommissioning, **should be reduced to the lowest level consistent with public health and safety**.
>
> (d) The ultimate costs of the decommissioning of nuclear facilities are of significant magnitude, and introduce an element of financial risk to both electric customers and investors unless **prudent provision is made for defraying those costs**.
>
> (e) In order to reduce both risk and ultimate costs for all of its citizens, the State of California should establish a comprehensive framework for timely payment of the costs of decommissioning, and **provide for allocation of risks and costs among the respective interests**.

(f) The principal considerations in establishing a state policy respecting the economic aspects of decommissioning are as follows:

(1) Assuring that the funds required for decommissioning are available at the time and in the amount required for protection of the public.

(2) Minimizing the cost to electric customers of an acceptable level of assurance.

(3) Structuring payments for decommissioning so that electric customers and investors are treated equitably over time so that **customers are charged only for costs that are reasonably and prudently incurred.**

(g) Decommissioning nuclear facilities causes electric utility employees to become unemployed through no fault of their own, and **these employees are entitled to reasonable job protection the costs of which are properly includable in the costs of decommissioning.**

C. Focus of this Reply Testimony

The focus of this Testimony is regarding the scope of the NDCTP and includes issues that have been broached by the Commission in prior proceedings of this type, as well as concerns regarding the fact that the San Onofre Nuclear Power Plant is now permanently shut down and will be entering decommissioning procedures. We note that prior decisions in this triennial review (such as D.10-07-047) include review not only of "Nuclear Decommissioning Trusts" but also "Related Decommissioning Activities." Since San Onofre Nuclear Power Plant is now entering actual decommissioning activities, it is essential that we provide oversight in this respect, starting now in providing feedback on the reasonableness of SCE's assumptions in preparing the Decommissioning Plan for San Onofre.

II. OVERSIGHT OF DECOMMISSIONING NEEDS TO BE IMPROVED

We are concerned about the apparent limitations to oversight of the decommissioning process by the Commission and the public, some of which were articulated by the Commission itself in D.10-07-047, the last Triennial NDCTP.

A. Reasonableness Standard

The Joint Application of Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E), A.12-12-013, makes the claim that the Commission has historically adopted a reasonableness standard that presumes "that the utilities conduct is reasonable in performing ... decommissioning work if the scope of the work completed and the most recently approved …

decommissioning cost estimate bound the costs incurred." (D.99-06-007 cited at p. 7)

However, in D.10-07-047, the Commission determined quite the contrary:

> Based on the foregoing, we conclude that it is not in the public interest nor reasonable in light of the whole record to provide, going forward, a presumption of reasonableness for decommissioning activities which are completed within cost estimates. This finding is sufficient to reject the Settlement as a whole.' (at p. 49)

D.10-07-047 Finding of Fact 20:

> 20: Past use of a presumption of reasonableness, as adopted in a settlement more than a decade ago for the very first decommissioning activities, is insufficient basis to continue the practice without further scrutiny. The lack of transparency and incomparability of cost estimates, combined with a short time frame for discovery within the NDCTP, limit the effectiveness of our review of the decommissioning activities and expenditures.

It will be important that the Commission explicitly reaffirm this reasonableness standard. From our perspective, as as will be explained below, we believe *a priori* approval and real-time oversight are appropriate for the decommissioning activities.

B. Conflict of Interest by SCE

If SCE acts as its own general contractor in decommissioning Units 2 and 3 of San Onofre, there is an inherent conflict of interest, and we believe there will be no cost benefit to ratepayers. Work is being contracted to SCE essentially as no-bid, sole-source contracts, which runs counter with best practices, and at a minimum demands close oversight.

In D.10-07-047 at p. 47, the Commission discussed the experienced gained in the decommissioning of San Onofre Unit 1 and Humboldt Bay:

> Another concern is that SCE and PG&E are acting as their own general contractors for the decommissioning. This is uncharted territory which may yield cost benefits to ratepayers but includes risk of myopia from exclusion of third-party perspectives about operational practices affecting costs. Fielder called it a 'conflict of interest" and said, '[O]nly the utilities will know what they did and when they did it.…' [Intervenor Scott Fielder's Reply Brief at 5] Similarly, at the evidentiary hearings, TURN's counsel said:
>
> > 'Essentially, they're asking the Commission to decide that that money belongs to the utility, not to the ratepayers, and they want an upfront guarantee that they can spend these funds irrespective of what facts may come to light in the future or how the utilities actually behave, and perhaps most importantly, whether actions that the utility has taken are contributing to the increase of those costs.' [Reporter's Transcript at 499]

C. Decommissioning Costs are Difficult to Predict

Unlike building something new, it is very difficult to predict the exact costs of decommissioning because of unknown additional costs that arise during the process itself as well as unknowns regarding the availability of a permanent offsite repository. It is a simple fact that very few nuclear power plants have been fully decommissioned, and thus far, as reported in D.10-07047, the NRC has not approved a decommissioning plan for San Onofre, even for Unit 1, because there was no license termination involved to trigger such an approval process and no plan has been submitted to the NRC as a result. [1] Therefore, we have very little basis for assumptions regarding the conditions which may be imposed by the NRC upon the decommissioning of Units 2 and 3, and the completion of the decommissioning of Unit 1, which will be required due to the termination of San Onofre's operating license.

In addition to our intervention at the CPUC, CDSO continues to be active in NRC oversight of the San Onofre Nuclear Power Plant, which is now shifting to decommissioning, commencing with a Public Meeting on September 26, 2013, in northern San Diego County (Carlsbad). Based upon a recent Request for Additional Information issued by NRC to SCE, the NRC appears to exclude "non-radiological spent fuel management" from Decommissioning Trust Fund expenditures.

> RAI #1: Reporting Requirements: "Please confirm that the dollar amounts accumulated in the decommissioning trust fund ($1,666,100,000 for SONGS 2 and $1,890,800,000 for SONGS 3) are exclusively for radiological decommissioning. Specify if any of the accumulated fund balance is for nonradiological decommissioning costs such as spent fuel management or other non-radiological decommissioning activities."

Also, the U.S. Department of Energy (DOE) had planned to have a permanent off-site repository available for high-level radioactive waste (HLRW) and low-level radioactive waste (LLRW) by this time, but the entire Yucca Mountain repository has been canceled and there are no concrete plans for any repositories at this time, with the DOE's best estimate for availability being 2048. Please see further discussion of this issue in Section III.A herein.

The Commission in prior NDCTP proceedings has approved a 25% contingency due to these uncertainties. D.10-07-047:

[1] "The policy problem is amplified by the fact that neither PG&E nor SCE officially submitted their decommissioning plans to the NRC for substantive review because such submission is not required unless in connection with a license termination." D.10-17-047 at p. 47.

> Both the original applications and the settlement proposal in these proceedings apply a 25% contingency factor to the cost estimates for all nuclear units. (At p. 23.)

Indeed, due to the lack of a concise plan and almost no history in completing decommissioning, this contingency may be quite insufficient. SCE acknowledges the uncertainties regarding cost estimates for the decommissioning of San Onofre in Exhibit SCE-06:

> The decommissioning cost estimates provided here reflect generic cost estimates to derive an annual contribution amount for purposes of this application. SCE has not had sufficient time to reflect all the implications of the June 7 announcement for SONGS decommissioning cost estimate presented here. SCE requests that it be permitted, as necessary, additional testimony to reflect the impact of the permanent retirement of SONGS. (at p. 1)

D. The Triennial Review Proceeding is an insufficient oversight mechanism for actual decommissioning activities.

The Scoping Memo for this current NDCTP describes the purpose established for the triennial NDCTP in D.07-01-003:

> The purposes of the nuclear decommissioning cost triennial proceedings (NDCTP) are to set the annual revenue requirements for the decommissioning trusts for the nuclear power plants owned by Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company, to verify the utilities are in compliance with prior decisions applicable to decommissioning, and to determine whether actual expenditures by the utilities for decommissioning activities are reasonable and prudent.

The first part of this purpose statement, i.e. "annual revenue requirements for the decommissioning trusts" have been likely well served by the triennial review approach and the rough approximations to the actual decommissioning plans that would eventually be developed, as described in prior NCDTP proceedings. However, the third objective of the purpose statement, i.e. "to determine whether actual expenditures by the utilities for decommissioning activities are reasonable and prudent" is a very different situation, and ratepayers are not well served by the once-every-three years review of expenditures after the fact.

E. The CPUC Should Use an Independent Oversight Mechanism for actual decommissioning activities to ensure only reasonable and prudent expenditures occur.

There is no reason to reinvent the wheel. Situations similar to the oversight required here have been frequently encountered at other levels of government. The "California League of Bond Oversight Committees" is primarily focused on best practices and guidelines for school or

hospital district bond oversight committees, but other than the name and type of monies involved, the actions of these oversight bodies are precisely what is needed to ensure prudent management of ratepayer-funded Decommissioning Trust Funds.[2] In all cases, we have a large fund which the public expects is properly acquired, invested and expended for the benefit of the community. Both activities include fund and contract management, and both include review of detailed plans and construction activities. Arguably, hospital special districts deal with construction projects with similar levels of detail and technical concerns as exists in the decommissioning of a nuclear power plant, and so the model can work just as well here as it does in those situations.

Use of such an independent Citizens Oversight Panel (COP) of volunteers who have the proper background to provide oversight and timely review can efficiently and effectively improve oversight of decommissioning and spent nuclear fuel management over the many decades these activities will likely continue. A COP typically meets on a monthly basis (if not more often) to review the details of the decommissioning process and the many issues that will likely arise. This level of detail in oversight is common in other segments of our local and state government, and found to be a prudent step to ensure the proper use of taxpayer (ratepayer) funds. Indeed, voters commonly demand the use of a COP when bonds are to be approved by ballot initiatives.

The concept that SCE will act as its own contractor is a big difference in the Bond Oversight Committees mentioned for school and hospital boards and what is proposed here, and underscores the need for detailed and *a priori* oversight. Typically, such an oversight panel insures that subcontracting is done fairly and cost effectively. If SCE proposes that they handle the contract, reasonable manager decision making would include requesting and accepting multiple bids from outside contractors. The oversight body would review contracts and change orders for decommissioning plans. If there are concerns, they would be escalated for review by the CPUC.

[2] http://www.calboc.org/

In any event, the COP can ensure that the work is clearly defined and costs seem reasonable. When changes occur, and they always do, then these are handled as change orders, which if they exceed a reasonable threshold, are reviewed in advance by the COP.

The utilities have objected to the notion of retroactively micromanaging activities, and we understand the difficulty because the retroactive nature of this process makes it hard to understand what was known at the time. However, the use of a COP which can review contracts, change orders, and other issues that arise on a real-time basis and *a priori* basis would render the retroactive nature of the existing "reasonableness review" process largely unnecessary, and is harmonious with the reasonableness standard:

> [W]e define the reasonableness for decommissioning expenditures consistent with prior Commission findings; i.e. that the reasonableness of a particular management action depends on what the utility knew or should have known at the time that the managerial decision was made. [D.10-07-047 at Page 45]

The use of a COP to review such management actions protects all parties. If the COP reviews a proposed action and finds it reasonable, then the utility will have an expectation that the action will also be considered reasonable by the Commission, and extended proceedings to resurrect past actions will be averted. On the other hand, if the COP reviews the proposed action and considers it to be unreasonable, then the COP and/or the utility can escalate it for review by the Commission prior to the utility taking the action. .

CDSO is developing bylaws and operational guidelines for such an oversight body which is desperately needed in this case, and it can make these available to the Commission so such a body can be established. However there are certain advantages if this is set up in concert with the CPUC, so that it has stated authority to perform its duties and to provide a means of approving members. See Appendix B for more information.

A COP to provide oversight for decommissioning activities may also review trust fund management that is typically processed in Phase 2 of the NDCTP proceedings, and all parties can benefit from *a priori* and timely review rather than retroactive review. (See D.10-07-047, at Page 2.)

III. SCE'S DECOMMISSIONING COST ASSUMPTIONS ARE FLAWED

A. Date of Transfer of Waste to DOE is unreasonably optimistic.

The U.S. Department of Energy (DOE) does not have a permanent repository for high-level radioactive waste (HLRW), such as Used Nuclear Fuel (UNF), as the proposed Yucca Mountain repository project has been abandoned, and even if it were opened, it would be completely full with existing UNF, not to mention all the waste that continues to be generated by operating plants. Fortunately, San Onofre is now shutdown and no longer producing any more waste. However, it may have to operate the Independent Spent Fuel Storage Installation (ISFSI) on site for an extended period of time, perhaps 60 years or longer, or there may be other options such as transporting the waste to other ISFSI facilities that do not include a dense population center and seismic concerns. (See Section III.C herein.)

According to the DOE in a report published in January 2013, "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste":

> The Administration's goal is to have a [permanent geologic] repository sited by 2026; the site characterized, and the repository designed and licensed by 2042; and the repository constructed and its operations started by 2048. [3]

In Exhibit SCE-06, SCE assumes that the DOE will be ready to store dry casks in 2027. Based upon the DOE report published in January of this year, this is extremely unlikely. Given the considerable legal and financial challenges, not to mention the development, construction and operational readiness necessary for such a sensitive facility, as well as the transport of all of the UNF from across the nation in a safe manner -- a reasonable manager must assume that decommissioning funds are required for at least 40 years of secure storage on site at San Onofre or at an interim storage site with lower risks, as discussed in Section III.C herein.

B. Fuel Pool should be kept operational for the duration of ISFSI operation on site.

In "Dry Transfer Systems for Used Nuclear Fuel" published in May 2012, the DOE describes the need for a method to transfer nuclear materials from dry-cask to dry-cask, without the need for a

[3] http://energy.gov/sites/prod/files/2013%201-15%20Nuclear_Waste_Report.pdf, at Page 7.

fuel pool. As of this date, no such technology exists:

> Repackaging could be needed for recovery from an unplanned event or discovery of an unforeseen condition; to repair, replace, or overpack a compromised cask or canister; to replace aging canisters; and/or to reconfigure storage or transport packages to meet future storage, transport, or disposal requirements.
> ...
> Extended storage may eventually result in degradation of fuel and cask/canister system internals that could impact safety functions needed for storage and transportation. Consequently, a process for opening casks and performing dry [or wet] fuel transfers may be necessary to support any repackaging, recovery, inspection, or other fuel retrieval needs. [4]

There are many unknowns regarding the operation of the dry casks as used and planned for the ISFSI on the San Onofre site, over a period of many decades. Until a reliable dry transfer technology exists, the fuel pool may be needed on-site for possible emergency repair of a leaking or damaged dry cask, or possible upgrade to better design if issues are encountered, or to prepare the casks for transportation. Therefore, it is prudent to delay dismantling the fuel pool for that period of time.

However, the fuel pool can be deactivated and no pumps will need to be operational. Once cooled sufficiently (up to 15 years), all fuel should be removed and placed into dry casks so no power for pumps will be required, as the dry casks are designed to dissipate heat passively. This will also allow the once-through cooling systems which are in violation of California State Water Resources Control Board policy to be shutdown.

A reasonable manager must assume that the fuel pool (without active cooling) will be required during the time that the ISFSI is maintained on-site to provide a backup mechanism for dry casks.

C. Dry Casks should be transported to a secondary temporary site without high-level seismic concerns or dense population.

It is prudent to assume that the dry casks will be transported to an interim storage location which has lower seismic concerns and is located in a less densely populated area (8.5 million people within a 50 mile radius), without a major military facility adjacent and substantial regional economic assets nearby, such as the Ports of Long Beach, Los Angeles and San Diego, not to

[4] http://www.inl.gov/technicalpublications/Documents/5516346.pdf, at Page iii and Page 6

mention the two largest cities in California (Los Angeles and San Diego). Even if no permanent repository is provided by the DOE, a secondary ISFSI location will allow all removal of all casks and the on-site ISFSI can be completely shutdown and decommissioned, no fuel pool will be required for safety concerns, and the entire site can then be decommissioned and returned to its native state.

The people in the area around the San Onofre Nuclear Power Plant did not sign up for a permanent nuclear waste storage site. They were told that the site would be returned to its native state. These presumptions should be fulfilled.

There is active consideration of centralized sites for storage of dry casks containing spent nuclear fuel so as to reduce overall costs of operation and reduce risk by locating these at least away from population centers. In August 2012, the Brattle Group published "Centralized Dry Storage of Nuclear Waste: Lessons for U.S. Policy from Industry Experience and Fukushima," which explained the potential cost savings of a relatively small number of centralized sites for dry cask storage vs. many small ISFSI sites co-located at operating or decommissioned nuclear plant sites:

> Once built, there should be considerable operational cost savings from centralization compared to the ISFSI O&M costs being incurred at the numerous private sites. The 2009 EPRI assessment, as well as studies of possible large, private ISFSI sites, estimated the cost of annual steady-state operations to be $3.7 to $8.8 million per year. These annual operating costs are quite close to what are currently being incurred (on average) at each of the 55 private ISFSIs, so switching to a few federal facilities could save more than $200 million per year in at-reactor operating costs. The variable cost of each storage cask, including the canister and concrete overpack, would be about $1 million per cask, totaling about $600 million per year for a program transporting 6,000 MTU per year. Variable transportation costs would be on the order of $28 million per year, using the EPRI assumption of $280,000 per rail shipment and 100 shipments per year (which would imply in this example 6 casks per shipment). Again, all of these annual operating costs could be funded with the assessments being collected already. [5]

There may be a need for a two-step, long-term storage process including transportation costs for moving the dry casks to the other temporary location. Decisions about the overall strategy are still unresolved and induces uncertainty in the cost projections for the decommissioning process.

[5] http://www.brattle.com/_documents/UploadLibrary/Upload1072.pdf

D. Dual-Purpose Casks should be utilized.

Of course, to use such an offsite ISFSI facility, the dry casks would need to be transported to that facility. The actual costs of transporting the casks is returned quickly after only a few years of savings, as described in the preceding section, but it is difficult unless the casks are originally designed for transportation. If they are too big or too heavy, transportation becomes impractical.

According to the DOE report on dry transfer (May 2012), "The need for a Dry Transfer System (DTS) at ISFSI-only sites is not anticipated because all UNF is stored in dual purpose canisters." (At p. iii.)

However, we have a question about the Dry Cask Storage Systems (DCSS) used at San Onofre, and whether they are dual-purpose, i.e. suitable both for storage on site and also suitable for transportation. Casks which are appropriately sized for transport may need to be smaller than larger casks that are feasible for fixed-storage situations.

If dual-purpose casks are used, then they can more easily be moved to a secondary temporary location to minimize seismic concerns and to transport to a permanent repository when (and if) one is established. But since they are smaller, the capacity is smaller and so more casks would be required. The upfront costs of purchasing more casks is quickly paid back by savings in future years.

If dual-purpose casks are not universally used at the ISFSI on site at San Onofre, then a means to transfer material is necessary, and so the fuel pool may be required for that reason, as well as to provide a means to respond to any cask failures.

E. SCE's assumed SAFSTOR interval may be too short for safety of workers.

According to the NRC, [from NUREG-1628 (FAQS about Decommissioning)]

> The NRC regulations state that decommissioning must be completed within 60 years of permanent cessation of operations. A duration of 60 years was chosen because it roughly corresponds to 10 half-lives for cobalt-60, one of the predominant isotopes remaining in the facility. By 60 years, the initial short-lived isotopes, including cobalt-60, will have decayed to background levels. In addition, the 60-year period appears to be reasonable from the standpoint of expecting institutional controls to be maintained. For periods beyond 60 years, institutional controls such as those discussed in the response to Question 8.13 would be required. [For restricted use of the site.] Completion of decommissioning beyond 60 years will be approved by the NRC only when necessary to

protect public health and safety. (At p. 5)

The NRC specifies 3 approaches to decommissioning nuclear power plants:

> The NRC has evaluated the environmental impacts of three general methods for decommissioning power facilities.
>
> DECON: The equipment, structures, and portions of the facility and site that contain radioactive contaminants are removed or decontaminated to a level that permits termination of the license shortly after cessation of operations.
>
> SAFSTOR: The facility is placed in a safe stable condition and maintained in that state until it is subsequently decontaminated and dismantled to levels that permit license termination. During SAFSTOR, a facility is left intact, but the fuel has been removed from the reactor vessel, and radioactive liquids have been drained from systems and components and then processed. Radioactive decay occurs during the SAFSTOR period, thus reducing the quantity of contaminated and radioactive material that must be disposed of during decontamination and dismantlement.
>
> ENTOMB: Radioactive structures, systems, and components are encased in a structurally long-lived substance, such as concrete. The entombed structure is appropriately maintained, and continued surveillance is carried out until the radioactivity decays to a level that permits termination of the license. (Ibid, at p. 5)

Because allowing the plant to sit idle in SAFSTOR configuration may allow a reduction in the radioactivity of contaminated material that will have to be removed and handled as Low-Level Radioactive Waste, (LLRW), there may be a cost-benefit to this. Also, workers will be able to work longer before reaching their dose limit, and this is a benefit to the workers, although the work is delayed until years in the future. Workers on a "hot" site may reach their lifetime limits and not be able to ever work again on such activities. Although this may be the fastest way to spend decommissioning funds, it may be seen as unethical to require that workers subject themselves to such radiation if they want to work, and then be unable to ever work again on such a site in very short order.

Thus, an analysis is called for to determine the optimal period of time to allow the plant to remain in SAFSTOR configuration before moving to DECON method. It may be appropriate to wait at least 12 years from the last refueling (February 2012), until all of the fuel can be removed from the pool and perhaps dry casks moved to a secondary temporary ISFSI site, so that the entire site can be decommissioned at one time, rather than operate in a piecemeal fashion.

SCE should perform a cost-benefit analysis of these options and explain why they are recommending to perform the decommissioning in one manner versus the others.

IV. OTHER ISSUES OF CONCERN

A. Amount of Low-Level Radioactive Waste.

SCE says in Exhibit SCE-06 that there would have been less low-level radioactive waste on site in the Base Case than in the Early Decommissioning Case (Pg 7, lines 4-11). This makes no sense at all. There is the same amount or more if the plant is run longer, and the idea that the plant would now have to spend more money on this is an astounding claim. In any case, the funds used for this radiological decommissioning should come from the same account, whether the plant was decommissioned in the base case (SCE-02) vs. the early decommission case (SCE-06). See further discussion in the next section (IV.B).

B. Post Shutdown Interval

In SCE-06 (page 7, line 13), SCE says it originally planned to accomplish the post shutdown interval before shutting down in the base case. This is not really true. There was always an assumption that there would be a post shutdown interval of up to two years, and the NRC assumes this post shutdown interval will exist.

From Exhibit SCE-02 "Base Case" (Pg 6, Line 21, emphasis added):

> The 2012 SONGS 2 & 3 and Palo Verde decommissioning cost estimates are based on an assumption that decommissioning will commence promptly after the current NRC operating licenses expire.

This did not mention the idea that steps would be taken to start the decommissioning process prior to the actual shutdown.

NUREG-1628 (NRC FAQS about Decommissioning) describes the steps required for decommissioning, and up to two years after shutdown before a Post Shutdown Activities Report (PSDAR) is submitted to the NRC for approval (emphasis added):

> The regulations specify actions that both the NRC and the licensee must take to decommission a nuclear power plant. Once the decision is made to permanently cease operations, the licensee must notify the NRC, in writing, within 30 days. The notification must contain the date on which the power generation operations ceased or will cease. The licensee must remove the fuel from the reactor and submit a written certification to the NRC confirming its action. There is no time limit specified before the fuel must be removed or the corresponding certification received by the NRC. Once this certification

has been submitted, the licensee is no longer permitted to operate the reactor or to put fuel back into the reactor vessel. This also reduces the licensee's annual license fee to the NRC and eliminates the obligation to adhere to certain requirements that are needed only during reactor operations. The licensee must submit a post-shutdown decommissioning activities report (PSDAR) to the NRC and the affected State(s) no later than 2 years after the date of permanent cessation of operations. The PSDAR must

- describe the planned decommissioning activities
- contain a schedule for the accomplishment of significant milestones
- provide an estimate of expected cost
- provide documentation that environmental impacts associated with site-specific decommissioning activities have been considered in previously approved environmental impact statements.
- Decommissioning is not supposed to occur prior to a plan submitted and approved by the NRC. (At p. 18.)

C. Costs Covered by DOE are unclear.

It is unclear what costs may be reimbursed to SCE by the DOE. At SCE-02, p. 18:

> The DOE has an ongoing contractual duty to accept spent fuel at each nuclear plant site and transport it to a permanent repository. In addition, many nuclear plant owner/operators, including SCE, have received damages awards for costs incurred to place and maintain their fuel in dry storage. However, SCE has no knowledge that the DOE has committed to APS [Arizona Public Service] or to any other nuclear plant owner/operator that it will use monies from the Nuclear Waste Fund to assume all of the costs to maintain spent fuel at a remote location, such as the Palo Verde ISFSI, after decommissioning of the power plant is completed. Given that the DOE is already in partial breach of its duty to commence removing fuel from the plant sites beginning in 1998, and vigorously litigates nearly every licensee claim to recover spent fuel costs, SCE has no information that supports an assumption that the DOE will assume all ISFSI costs completed from some date certain until it is eventually ready to remove the fuel to its permanent disposal facility.

The DOE "Disposal Subcommittee Report to the Full Commission, Updated Report" (Blue Ribbon Commission on America's Nuclear Future) of January 2012 states regarding funding:

> The 1982 Nuclear Waste Policy Act created a 'polluter pays' funding mechanism to ensure that the full costs of disposing of commercial HLW would be paid by utilities (and their ratepayers), with no impact on taxpayers or the federal budget. Nuclear utilities are assessed a full-cost- recovery user fee on every kilowatt-hour of nuclear-generated electricity as a quid pro quo payment in exchange for the government's contractual commitment to begin accepting commercial spent fuel or high-level waste for disposal beginning by January 31, 1998. The fee is collected from utilities that own or operate nuclear power plants; generally it is passed on to utility ratepayers. The fee was initially set at 1 mill (0.1 cents) per kilowatt-hour (where it still is); however, the Act requires the Secretary of Energy to review the adequacy of the fee annually and adjust it as needed to ensure that going forward the government can recover the full costs of waste

> management and disposal. In recent years, the fee has generated approximately $750 million in annual revenues. The total amount collected through 2010 amounted to just over $16 billion. Fee revenues go to the government's Nuclear Waste Fund, which was established for the sole purpose of covering the cost of disposing of civilian spent nuclear fuel. (Costs for disposing of defense nuclear wastes are paid by taxpayers through direct appropriations from the Treasury that do not pass through the Nuclear Waste Fund.) The unspent balance in the Fund is allowed to accumulate and accrue interest with the idea that it will be available as needed to fund program expenditures in future years. The current unspent balance in the Fund (known as the "corpus") totals nearly $27 billion, including interest. Federal appropriators are supposed to be able to access the Fund when and in the amounts needed to implement the waste program without facing competition from other funding priorities. The clear intent of Congress in establishing a self-financing mechanism based on contractually-obligated user fees was to 'provide an assured source of funds to carry out the programs and...eliminate...annual budgetary perturbations in an evermore constrained Federal budget,' while at the same time ensuring that 'the Federal budget will not be burdened by repository program expenditures.' Congressional oversight through the annual appropriations process would ensure that expenditures from the Fund would be made prudently and for their intended purposes. But the Fund was clearly designed to ensure that the waste program's needs and schedules determined its funding, rather than allowing federal budget constraints to limit the program's progress. Indeed, the Nuclear Waste Policy Act's provisions for an expanded and accelerated repository program and its direction to DOE to assume contractual obligations for accepting waste on a defined schedule demanded an assured funding source to support the activities needed to meet these legal obligations. (At p. 53.)

Roughly speaking, given that there are 104 reactors in the US, the funds currently available from the NWPA Fund is $27 billion / 104 or about $259 million per reactor. SONGS has three reactors, so that is about $778 million for all the waste generated by SONGS. The NWPA Fund will continue to collect fees and accrue interest.

Unfortunately, we also understand that the NWPA funds are not usable to cover onsite waste management, such as the ISFSI, but this could be changed with Congressional action.

Furthermore, from the same reference, at page 32, an approximate cost for disposing of the UNF is cited:

> A 2008 DOE life-cycle cost estimate arrived at a figure of $96.2 billion (in 2007 dollars) to license, construct, operate and close a repository at Yucca Mountain of sufficient size to dispose of a total of 122,000 metric tons of commercial and defense-origin spent fuel and high-level waste (note that the legislated capacity of Yucca Mountain is 70,000 metric tons). The cost share assigned to 109,000 tons of commercially-generated wastes assumed for disposal was about 80% of that $96.2 billion total, or approximately $77 billion.

From this, we see that the cost to dispose of one ton of SNF is $77 billion / 109,000 tons = $706,000/ton, not including transportation costs from San Onofre to the repository. Since San Onofre has about 1,631 tons on site, disposal at the repository will cost about $1.152 billion, an approximate $352 million shortfall in pro rata share estimate of the current NWPA Fund.

This underscores the need for an independent COP to help provide timely and effective oversight of the roll-out of the decommissioning, to ensure that funds are not misused, and so that worst-case scenarios can be accommodated in the fund.

D. Federal Easement unresolved.

The current easement expires on May 12, 2023. It seems now that the site will be required until 2072 or longer unless all DCSS can be moved to a secondary ISFSI site. This is another issue which adds to the uncertainty of the adequacy of the funds.

E. High Burn-up Fuel

"High burnup fuel" (burnup >45 GWd/MTU or 45,000 MWd/tHM) is so-called because it can burn longer in the reactor, thereby increasing nuclear industry profits.[6] However, high burnup fuel has unresolved serious waste storage issues, with serious implications for "the forecasts and assumptions for estimating the future costs of decommissioning the various nuclear generating stations".

Per SCE's 8/23/13 response to Women's Energy Matters' Data Request Question 40.d in I.12-10-013, et al[7] :

> 8 fuel assemblies exceeding 45 GWd/MTU are stored in dry cask storage
> 570 fuel assemblies exceeding45 GWd/MTU are stored in the U2 Spent Fuel Pool
> 545 fuel assemblies exceeding 45 GWd/MTU are stored in the U3 Spent Fuel Pool

The 1,105 "high burnup" spent fuel assemblies recently reported by SCE to be in the Unit 2 and 3 Spent Fuel Pools present a number of serious unresolved technical challenges for

[6] U.S. Government Accountability Office: Spent Nuclear Fuel/Accumulating Quantities at Commercial Reactors Present Storage and Other Challenges, August 2012 http://www.gao.gov/assets/600/593745.pdf

[7] Data Request Set WEM-SCE-007, prepared by Steve Lelewer, SCE Nuclear Fuels Procurement Manager.

decommissioning, which must be considered in developing the decommissioning plan and considering reasonable cost estimate parameters. This is yet another compelling reason to have an independent COP to provide timely and effective oversight of the ratepayers' Decommissioning Trust Fund.

1) The NRC has "insufficient data to support a licensing position" on high burnup dry cask storage per Dr. Robert E. Einziger, a Senior Materials Scientist in the NRC's Division of Spent Fuel Storage & Transportation, earlier this year. [8]

(2) Nuclear engineers have long known of increased risks from high burn-up fuels. The U.S. Nuclear Waste Technical Review Board *December 2010* Report stated insufficient information is available on high burnup fuels to allow reliable predictions of degradation processes during extended dry storage:

> Only limited references were found on the inspection and characterization of fuel in dry storage, and they all were performed on low-burnup fuel after only 15 years or less of dry storage. Insufficient information is available on high-burnup fuels to allow reliable predictions of degradation processes during extended dry storage, and no information was found on inspections conducted on high-burnup fuels to confirm the predictions that have been made. The introduction of new cladding materials for use with high-burnup fuels has been studied primarily with respect to their reactor performance, and little information is available on the degradation of these materials that will occur during extended dry storage.[9]

(3) Elias Henna of SCE is quoted in the March/April 2003 "Radwaste Solutions Saving a Few Hundred Million Dollars" [A Session Report from the 2002 American Nuclear Society (ANS.org) Winter Meeting]:

> Henna noted that his company is learning a lot from the San Onofre-1 cleanup, because it has two operating units sharing the plant site. His major suggestion was one that might seem counterintuitive, he said: If you have already decided on a decommissioning date sometime in the future, toward the end of life, *switch to shorter refueling cycles and use lower burnup fuel.* That way you will have to cool the fuel in the pool only five years, *whereas high-burnup fuel has to cool for about 15 years*. In this way, he said, you will add a couple more refueling cycles but can shorten your decommissioning project by some four years (assuming no technological breakthroughs in canister design and no change in U.S. Nuclear Regulatory Commission regulations). You will add about $191 million in fuel costs, he noted, but will save up to $261 million in decommissioning costs.

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[8] See his presentation (slide 7) on Status of NRC Research on High Burnup Fuel Issues, at the March 13, 2013 Regulatory Information Conference session on W24- Storage and transportation of High Burnup Fuel. http://www.nrc.gov/public-involve/conference-symposia/ric/past/2013/docs/abstracts/einziger-rev-2-onsite-w24-hv.pdf

[9] http://www.nwtrb.gov/reports/eds_rpt.pdf

> This idea is more appropriate for a plant operating in a regulated market not a free market, he conceded. SCE is current replanning the fuel cycles of Units 2 and 3 toward the end of plant life to incorporate this idea.
>
> Henna also touched on the issue of safety. One incident can shut down the whole project, and you may not be able to go back to work for a couple of years. (at p. 69).

NOTE that per SCE Testimony in I.12-10-013, SCE actually LENGTHENED the refueling cycles in installing the failed Steam Generator Replacement Project in Units 2 and 3, and there is no indication that they used lower burnup fuel during this refueling, even though the NRC license for San Onofre was due to expire in 2022. These management decisions by SCE need to be scrutinized in light of their sizeable cost implications for the Decommissioning Trust Fund.

(4) There is no ability to monitor inside dry casks. Uncertain what's happening inside dry casks, DOE and the industry's Electric Power Research Institute are embarking on a four-year, $16 million project to develop instrumented lids that can report on the status of the spent rods inside.

- Fancy New Lids for Nuclear Waste Casks, As Contents Get Hotter – Forbes – May 2, 2013. http://www.forbes.com/sites/jeffmcmahon/2013/05/02/fancy-new-lids-for-nuclear-waste-casks-as-contents-get-hotter/?view=pc
- EPRI Press Release and Schedule, April 22, 2013, http://www.epri.com/Press-Releases/Pages/-U-S--Department-of-Energy-Taps-Electric-Power-Research-Institute-to-Lead-Spent-Nuclear-Fuel-Storage-Project-.aspx
- NRC: The Use of a Demonstration Program as Confirmation of Integrity for Continued Storage of High Burnup Fuel Beyond 20 Years (Draft), http://pbadupws.nrc.gov/docs/ML1305/ML13056A516.pdf

E. Severance Costs

Exhibit SCE-6 at Page 8-9 describes the use of Decommissioning Trust funds for employee severance costs, citing Public Utilities Code Section 8322(g): (emphasis added)

> Decommissioning nuclear facilities causes electric utility employees to become unemployed through no fault of their own, and **these employees are entitled to reasonable job protection the costs of which are properly includable in the costs of decommissioning.**

Severence pay isn't "reasonable job protection", it is just the opposite. Actual "job protection" would be a commitment to giving existing workers first opportunity for jobs during decommissioning and a commitment to redeploying those workers who cannot be so placed to other jobs within SCE/Edison International and SDG&E/Sempra.

Also, as noted previously, based upon a recent Request for Additional Information issued by NRC to SCE, the NRC appears to exclude "non-radiological spent fuel management" from Decommissioning Trust Fund expenditures.

> RAI #1: Reporting Requirements: "Please confirm that the dollar amounts accumulated in the decommissioning trust fund ($1,666,100,000 for SONGS 2 and $1,890,800,000 for SONGS 3) are exclusively for radiological decommissioning. Specify if any of the accumulated fund balance is for nonradiological decommissioning costs such as spent fuel management or other non-radiological decommissioning activities."

APPENDIX A:
QUALIFICATIONS AND PREPARED TESTIMONY

QUALIFICATIONS AND PREPARED TESTIMONY OF RAYMOND LUTZ

Q1. Please state your name and business address.

A1. My name is Raymond Lutz. My business address is 771 Jamacha Rd #148, El Cajon, CA 92019

Q2. By whom are you employed and in what capacity?

A2. I am the principal of Cognisys, Inc, an engineering firm, and the National Coordinator of Citizens Oversight, Inc., a 501(c)3 nonprofit organization DBA Coalition to Decommission San Onofre.

Q3. Please describe your educational background and professional experience.

A3. I received a Master's Degree in Electrical Engineering from San Diego State University (1984) and have held numerous professional positions for the past 33 years. Recently, I have participated as an intervenor in the NRC License Amendment Request by Southern California Edison for San Onofre Nuclear Generating Station, published in the Federal Register on August 16, 2012.

Q4. What is the purpose of your testimony?

A4. I am co-sponsoring CDSO's Reply Testimony in the Commission's Triennial Nuclear Decommissioning Trust Proceeding.

Q5. Does this complete your testimony?

A5. Yes, it does.

QUALIFICATIONS AND PREPARED TESTIMONY OF MARTHA SULLIVAN

Q1. Please state your name and business address.

A1. My name is Martha Sullivan. My business address is 2354 Carmel Valley Road, Del Mar CA, 92014.

Q2. By whom are you employed and in what capacity?

A2. I am the owner of Apply Liberally Enterprises, LLC and Organizer for Citizens Oversight, Inc., a 501(c)3 nonprofit organization DBA Coalition to Decommission San Onofre.

Q3. Please describe your educational background and professional experience.

A3. I received a Bachelor's Degree in Urban Studies from San Francisco State University (1981) and worked for the California Public Utilities Commission until 1998, attaining the level of Project and Program Supervisor. At the CPUC, I worked on human resources, budgeting, facilities management, information technology management, telecommunications and energy utility regulation, and environmental impact assessment and mitigation monitoring. In 1998, I joined an environmental consulting firm as a principal, growing its utility infrastructure practice substantially. Since 2003, I have been a community organizer in San Diego County, and in 2007, formed my company, Apply Liberally Enterprises LLC, a small business based in San Diego offering fine art and collectibles for sale and event planning and production services.

Q4. What is the purpose of your testimony?

A4. I am co-sponsoring CDSO's Reply Testimony in the Commission's Triennial Nuclear Decommissioning Trust Proceeding.

Q5. Does this complete your testimony?

A5. Yes, it does.

APPENDIX B:

DRAFT BYLAWS FOR CITIZENS OVERSIGHT PANEL

The following is a draft of bylaws for a Citizens Oversight Panel to improve oversight and provide a priori review of expenditures during the decommissioning process. These bylaws were written so as to allow the COP to persist as a completely independent body. If the COP is organized in concert with the CPUC, this would provide additional authority and the CPUC could assist with approval of members, which is a minor weakness of the structure described herein.

Coalition to Decommission San Onofre -- Citizens' Oversight Panel CDSO-COP

1. Preamble

This section sets out the mission and specific definitions used in the "Standard Citizens' Oversight Panel" bylaws, provided in Exhibit A.

1.1 Name

The name of this group will be "Coalition to Decommission San Onofre" or "CDSO" and maybe referred to as "Panel," "Board," "Committee," or "Working Group."

1.2 Organization

CDSO is organized as a "Citizens' Oversight Panel" based on the standard bylaws template provided by Citizens' Oversight, Inc., which is a 501(c)3 public-benefit nonprofit organization with corporate headquarters in Delaware ("COPS"). The "Coalition to Decommission San Onofre" and "CDSO" are fictitious names of Citizens Oversight, Inc. and designate this Panel.

1.3 Mission

CDSO is a group of INDEPENDENT citizens (see definition below) who will provide short and long-term oversight of the San Onofre Nuclear Generating Station (SONGS) and related facilities to ensure proper and effective decommissioning and waste handling.

The CDSO intends to:

- Be a citizen-centered oversight group, independent of utilities and direct stakeholders, to represent, advocate and promote the interests of the community and ratepayers
- Provide consistent and long-term oversight of decommissioning and disposition of nuclear waste. The danger is highest in the first months and years.

- Promote education of the community and encourage community participation
- Inform elected officials and encourage them to take steps to speak out
- Determine "Official" Positions on "Issues of Concern," such as
  - Least hazardous most responsible handling of the waste, this is urgent
  - Relocation of waste from San Onofre to safer location
  - Oversight of expenditures to promote efficient use of decommissioning funds
- Work to generate a template for other plants
  - Necessary first step in dealing with the waste is shutting a plant down
  - CDSO already has a good reputation in this regard

1.4 PANEL

The Panel shall consist of eleven to thirty-five (11-35) voting panelists. The number of panelists shall be odd.

1.5 DISTRICT

The "DISTRICT" shall be defined as the area served by Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E), or within 100 miles of the plant, if served by another utility.

1.6 INDEPENDENT

A person or entity is considered to be "INDEPENDENT" if that person or entity is not an employee, official, vendor, contractor, or consultant of Southern California Edison, San Diego Gas and Electric, and any relevant regulatory governmental agencies, such as the California Public Utilities Commission (CPUC) and the Nuclear Regulatory Commission (NRC). Union officials and members of unions who may work at such plants are likewise not independent.

1.7 QUALIFIED MEMBERS

To maintain a high level of expertise, the Panel shall be comprised of INDEPENDENT persons who live within the DISTRICT and at least:

- One (1) individual with extensive experience each of the following three (3) categories:
  - Environmental Science

- Finance
- Engineering, preferably with working knowledge in decommissioning and waste management and disposal.
- Regulatory Intervention -- A professional with experience with CPUC and NRC regulator matters.

- Designated Positions (6) The initial panel shall include representatives from each one of the following organizations:
  - Citizens Oversight, Inc.
  - Peace Resource Center of San Diego
  - Residents Organized for a Safe Environment (ROSE)
  - San Clemente Green
  - San Onofre Safety.org
  - Sierra Club
- The membership shall also include:
  - One member active in a @@[taxpayers' organization]
  - One member active in a @@[senior citizens' organization]
  - One member active in a @@[business organization]
  - Engineer or Scientist in Nuclear or related field.
- Advisory Members are not independent, but can be very helpful in completing the work of the panel. The following are recommended Advisory Members:
  - A representative from Southern California Edison
  - A representative from San Diego Gas & Electric
  - A representative from at least one major union group

1.8 PANEL YEAR

The PANEL YEAR is defined as the Calendar Year.

1.9 MEETING LOCATIONS

Due to the size of the DISTRICT, meetings shall be held alternately in Orange County and San Diego County.

1.10 INITIAL SUBCOMMITTEES

The following subcommittees are initially established: Education, Elected Official Liaison, Fund Audit, Decommissioning, Waste Storage.

EXHIBIT A - Standard Citizens' Oversight Panel Bylaws

These standard Citizen's Oversight Panel Bylaws include terms which are defined in the Preamble. These terms are written in UPPER CASE.

1. General

This Citizens' Oversight Panel, named according to the preamble, is a nonpartisan public benefit group and a project of Citizens' Oversight, Inc. a 501(c)3 public benefit corporation.

2. Panel Membership

1. Term: each voting member shall serve a term of two (2) years and no more than two (2) consecutive full terms. Past members may be reappointed after a hiatus of at least one (1) term of two (2) years.
2. The Panel will insure staggered terms of members for continuity of information and skills. Of those members first appointed, half (rounded down) shall serve an initial one (1) year term to enable the staggering of terms. Panelists shall draw straws to determine which will have one-year initial terms. Those who serve one-year initial terms may serve an additional two (2) additional consecutive full terms of two (2) years each.
3. Any Panel member wishing to serve an additional term within the limitations noted herein may request re-appointment by directing a letter of intent to the Panel, via the Chair, within 60 days prior to the expiration of their current term.
4. Panel members shall serve without compensation.
5. Panel members shall be residents or have business offices within the "DISTRICT" and be INDEPENDENT.
6. Elected officials are eligible to be panel members if they do not engage in any activity outside of their Panel membership that is incompatible or in conflict with duties or responsibilities related to the Panel, and are otherwise considered INDEPENDENT.

7. Alternate Members: At the discretion of the Panel, Alternate Members may be appointed. Alternate Members are otherwise qualified to be panel members (i.e. live in the DISTRICT and are INDEPENDENT), can participate in panel deliberations and discussions. However, Alternate members cannot make or second motions and cannot vote. Alternate members shall receive a copy of Panel agenda packet and other related materials at each meeting, will be included in electronic dissemination of materials, and otherwise treated as a member. The use of Alternate Members facilitates induction of new members into the Panel without any disruption and provides a means to allow members to continue to participate even if they are termed out. The Panel will give due consideration to the service of Alternate members when vacancies occur on the Panel, subject to an application being submitted for regular membership and the applicant being qualified and nominated within the MEMBER TYPES category that corresponds with the vacancy.

8. Advisory Members: At the discretion of the Panel, Advisory Members may be appointed. Advisory members are not qualified to be full panel members, either because they are not INDEPENDENT or they live outside the DISTRICT. Advisory Members do not vote and may be excluded from any discussion at the discretion of the Panel.

9. The Panel shall appoint or reappoint Panel members through the following process:

1. Nomination Committee: Each year, a Nomination Committee shall be formed. That committee shall:

1. Solicit written statements from any existing qualified members who wish to serve an additional term.

2. Solicit nominations and applications from any Alternate Members.

3. Solicit nominations and applications by the general public within the DISTRICT through press releases and appropriate newsletters and email lists.

4. Interview candidates as appropriate.

5. Provide a slate of recommended candidates to the full Panel.

2. Confirmation: The panel will accept the proposed slate of nominees and entertain other nominations. Confirmation of the nominees is performed by vote of the Panel without the nominees in attendance.

10. Removal from Membership; Vacancy

11. Members of the Panel may be removed as follows. Upon a member's removal, his or her seat shall be declared vacant.

1. Due to the member's failure to attend without prior notice two (2) consecutive Committee meetings, or a total of three (3) meetings in one calendar year. The Parliamentarian shall maintain records of attendance and provide a report at the start of each meeting.

2. Failure to comply with the ethics policy statement (please see Exhibit "B" attached).

3. The seat shall also be declared vacant due to the death, disability or resignation of a member.

12. Mid-term Replacement If mid-term vacancies occur, the process for replacement shall generally follow the same process as for regular appointments. The Panel may adjust the processes as may be reasonably necessary for the particular circumstances and make every effort to fill any vacancies as soon as possible.

III. Authority and Operation

1. Citizens' Oversight Panel: Role and Responsibility The authority of this Citizens Oversight Panel is based on the recognition that in a democracy, the public is ultimately responsible for providing oversight over their elected officials, governmental agencies, and public agencies. Without adequate oversight, waste, fraud and abuse is the inevitable result.

2. To carry out its MISSION, the Panel may:

1. Review and comment upon the financial status of any relevant project and take special note of budgetary variances or changed circumstances at each meeting.

2. Participate in the on-going refinement of the mission, including specific project scope, setting of priorities and benchmarking of progress as it may relate to project execution.

3. Enumerate "Issues of Concern", investigate these issues, and formulate official positions.

4. Prepare and distribute an annual report to the community summarizing the accomplishments of the year, related issues affecting the project, financial status and progress toward completion of the approved project. This report shall be

published and sent to all publications and other forms of media within the District, elected officials within the District and interested parties. Committee members may append minority reports should there be dissenting views.

5. Organize community events to encourage education of the community and increase participation in oversight.

6. Take additional steps it deems necessary, consistent with its authority, to accomplish its oversight responsibility.

3. Selection of Executive Officers

1. Executive Officers are defined as the Chair, Senior Vice Chair, 2nd Vice Chair, Parliamentarian, and Treasurer.

2. The initial panel members shall designate the initial Executive Officers.

3. Thereafter, the Executive Officers shall be selected annually at the first meeting held on or after the start of the PANEL YEAR, or as vacancies may occur.

4. The Executive Officers serve at the pleasure of the Panel, and each may be removed by 2/3 majority vote of the Panel.

4. Other Panel Offices

1. Other offices of the Panel may be created by a majority vote of the Panel.
2. Any newly created offices may initially be appointed by the Chair.
3. Thereafter, other officers will be selected annually at the first meeting held in the PANEL YEAR, or as vacancies may occur. Other officers shall serve at the pleasure of the Panel.
4. As with the Executive Officers, all offices of the Panel may only be filled from current full members of the Panel, who are QUALFIED and INDEPENDENT.

IV. Procedures for Panel Meetings and Support

1. Panel Staffing and Support

1. Events and operations shall be funded by fund-raising or other means.

2. Fund-raising for operations of the committee shall not include any contributions from utilities, employees, agents, or their vendors. Funds may be gained from regulatory agencies, however, such as the CPUC and the NRC, when available.

3. Any fund-raising activity will be kept separate from the Panel, such that sources of

funds will not be known so that decisions of the committee can be free of any monetary influence.

4. No funds will be accepted from entities that are not INDEPENDENT.

2. Meeting Schedule and Location

1. The Panel shall meet at least bi-monthly (every other month) for the first two (2) years at a regular date, time and location. Thereafter, the Panel shall meet at least quarterly at a regular date, time and location.

2. All meetings shall be publicized to the general public using a website, email lists of interested members of the public, and press releases sent to the media.

3. Meetings shall be held in MEETING LOCATIONS, if defined. Otherwise, meetings shall be held in a central location within the DISTRICT.

4. Meetings may be held using electronic means, such as Google Hangout, or other software, to reduce the need for long trips by Panel Members.

3. Subcommittees

1. The Panel may establish subcommittees in categories it deems appropriate to conduct its work and meet its responsibilities.

1. At minimum, the INITIAL SUBCOMMITTEES will be established

2. At its discretion, the Panel may consolidate subcommittees or establish additional subcommittees on an as-needed basis to more efficiently conduct its work. No subcommittee may be comprised of more than 40% of the number of duly appointed regular panel members.

3. Alternates may participate in and attend subcommittee meetings, but may not vote. Any other participants or third parties involved with or consulting a subcommittee requires advisement to and concurrence of the Executive Officers in advance.

4. Subcommittees will appoint a chair and keep a record of their work so as to report to the full Panel at the next scheduled meeting of the full Panel.

5. All meetings will use an agenda and will be noticed to the full Panel at least 72 hours in advance. Every effort will be made to have a standing meeting date for each subcommittee.

6. Subcommittees should consist of at least three leadership members, chair, co-chair, and immediate past chair. Leadership roles in subcommittees should be for one year, and then passed to another member. Thus if a Panel Member becomes a regular member of a subcommittee the first year, that person can advance to the co-chair position in year two, and chair position in year three, and past-chair position in year four, thereby maintaining operational knowledge of the subcommittee.

4. Legal Counsel

1. The Chair of the Panel may utilize the legal counsel of Citizens Oversight, Inc. as necessary through the Chair when approved by the Panel, and if available. The Panel may retain other legal counsel at its own expense.

V. Conduct of Meetings

1. Quorum

1. A majority of the current members of panel is considered a quorum and shall be present and voting to conduct business. The Parliamentarian shall include this in his report at the start of every meeting.

2. Regardless of attendance, the minimum number of votes necessary is defined as the total number of members divided by three, rounded up to the nearest integer. Thus for a panel of 11 members, a minimum of four (4) votes must be cast on the prevailing side of any motion for the Panel to take action, even if only 6 members are present.

2. Public Meetings

1. The Citizens Oversight Panel is NOT subject to the open meeting laws of the State of California, however the Panel shall still conduct open meetings when practical.

2. Notices and agendas regarding Panel meetings and subcommittee meetings shall be posted on the web site and promulgated by email list servers, and other means, when available.

3. The Parliamentarian will provide each member of the Panel a current copy of the open meeting laws of the State of California (Ralph M. Brown Act).

3. Reports

4. At least once a year the Committee shall issue a report on the result of its activities. Minutes from its proceedings, all documents received, and reports issued should be made public, unless otherwise determined by the Panel to be matters to be conducted in closed meetings. All public minutes, documents received by, and reports issued by the Panel shall be made available on an Internet website maintained by the Panel.

5. Parliamentary Procedure

1. Except as otherwise provided herein or in applicable law, the Panel shall conduct meetings in accordance with Parliamentary Procedure, based on the principles of Robert's Rules of Order, as applicable to small committees.

2. The Chair of the Panel shall facilitate meetings or ask that another facilitator be chosen. It is a good practice to allow others to take on this role to encourage new members to take leadership positions.

3. All votes will initially be by consensus. If 100% consensus cannot be obtained, rationale for any dissenting views are to be heard, the proposal should be modified if possible, ad a consensus vote is attempted again. Once all minority views are heard and attempts to modify the proposal are made and unanimity is not possible, and then majority vote shall determine the outcome.

4. Contrary to Roberts Rules of Order, it is not necessary to have a motion on the floor to start discussion on a matter before the committee. After a set time of discussion on a matter, the committee will decide if it wishes to form a proposal for possible adoption. If the proposal is not adopted unanimously, dissenting views are to be heard and the committee will attempt to resolve all differences. If all differences cannot be resolved, the matter will be put to a vote and a simple majority will adopt the proposal.

5. The panel is encouraged to allow free-form brainstorming and open discussions with time limits to allow the wisdom of the group to flourish.

6. Amendment

1. These Bylaws may be amended by (i) a two-thirds majority vote of the Panel.

2. The Panel should seek the advice of Citizens Oversight, Inc. when considering amendments to these bylaws.