WHITE PAPER

RESPONSIBILITY TO PAY FOR DISPOSAL of SPENT NUCLEAR FUEL

by the

UNITED STATES OF AMERICA DEPARTMENT of ENERGY

and

SOUTHERN CALIFORNIA EDISON'S

RESPONSIBILITY TO ITS RATEPAYERS

Prepared by:

Jerome M. Trammer
J&T Consulting Service
Santee, Ca 92071

FOREWORD

DOCUMENT PURPOSE

To analyze the “Standard Contract” between Southern California Edison (SCE) and the Department of Energy (DOE) to determine the following:

1) If the contract provisions have been met.
2) If California utility customers are being overcharged.
3) If refunds are due to ratepayers and if they are being withheld.

CONCLUSIONS:

1. **Decommissioning Trust Funds must be independently audited**

There are two Decommissioning Trust Funds at the Bank of New York Mellon. The Trusts are mandated by CPUC, and administered by SCE with withdrawals made at the discretion of CPUC. Given that CPUC is currently under two separate criminal investigations it is imperative that these trusts be audited by an independent third party. In addition, each trust includes funds for decommissioning costs at San Onofre and the Palo Verde Generating Station in Tonopah, Arizona. Auditors must examine the possibility of improperly comingled funds.

2. DOE is 100% liable for interim waste storage

Under provisions of the Department of Energy’s Standard Contract for nuclear waste disposal, the DOE, not ratepayers, is liable for all costs associated with the storage of Spent Nuclear Fuel (SNF) on the beach at San Onofre.

3. SCE may owe ratepayers refunds under the Standard Contract

In a recent CPUC filing, SCE stated that the Decommissioning Trust Funds (DTFs) are fully funded. Ratepayers have been paying into the Trusts for years. In addition, both utilities have been paying storage costs using ratepayer derived funds that should rightfully be refunded because of the Standard Contract.

4. Refunds may be due to ratepayers for overcharges related to Unit 1.

5. Refunds may be due to ratepayers for overcharges related to Units 2 and 3.

SECTION 1 – BACKGROUND

The beginning

During the first 40 years that nuclear waste was being created in the United States, no legislation was enacted to manage its disposal. In 1982 the private sector was operating some 82 uranium fueled nuclear plants to produce electricity. Highly radioactive spent fuel rods were stored in pools of water at reactor sites, but many utilities were running out of storage space and all the while, the utility's consumers were footing the bill. Anyone who thought they knew where and when a permanent storage facility would be available was simply guessing. In response to the problem, Congress adopted the Nuclear Waste Policy Act of 1982[1] (P.L. 97–425) (the "Act") which established a "comprehensive national program for the safe, permanent disposal of highly radioactive wastes."

Planning for temporary and permanent storage

The Act created a timetable and procedure for establishing a permanent, underground repository for high-level radioactive waste by the mid-1990s, and provided for some temporary federal storage of waste, including spent fuel from civilian nuclear reactors. State governments were authorized to veto a national government decision to place a waste repository within their borders, and the veto would stand unless both houses of Congress voted to override it. The Act also called for developing plans by 1985 for the government to build monitored, retrievable storage (MRS) facilities, where wastes could be kept for 50 to 100 years or more and then be removed for permanent disposal or for reprocessing.

Role of DOE, NRC, and EPA

Congress assigned responsibility to the U.S. Department of Energy (DOE) to site, construct, operate, and eventually close a repository for the disposal of spent nuclear fuel (SNF) and high-level radioactive waste. The U.S. Environmental Protection Agency (EPA) was directed to set public health and safety standards for releases of radioactive materials from a repository, and the U.S. Nuclear Regulatory Commission (NRC) was required to promulgate regulations governing construction, operation, and closure of a repository.

Utilities would pay DOE for storage, DOE administrates storage

Under the act, generators and owners of spent nuclear fuel and high-level radioactive waste were required to pay the costs of disposal of all SNF. The waste program, which was expected to cost billions of dollars, would be funded through a fee paid by Power Plant Operators (Operators) on nuclear-generated electricity[1] or by the MTU (metric ton uranium)

[1] 142 U.S. Code Chapter 108 - NUCLEAR WASTE POLICY ACT of 1982 as AMENDED

depending on when in time the waste was created. An Office of Civilian Radioactive Waste Management was established in the U.S. Department of Energy (DOE) to implement the Act.

DOE develops nuclear waste storage contract

Pursuant to the Act, the EPA developed a Standard Contract[2] (Contract") which all private nuclear generating operators were required to sign before an operating license was approved or extended[3].

The Contract requires the Operator of the generating station to pay a fee to the Department of Energy (DOE) for every kilowatt hour (kWh) generated on and after April 7, 1983 and also provides formulae for calculating fees due to DOE for power generated prior to that date. Second, the contract requires DOE to take possession of all spent nuclear fuel. These fees are assessed in amounts sufficient to fully reimburse the government for all costs associated with DOE taking possession of the SNF and storing it either temporarily, permanently or both as may be necessary. The fees are adjustable over time as inflation impacts the value of the U.S. dollar.

Terms: DOE takes *all* fuel and provides casks, shipping & transport

The Contract requires the DOE to accept title to all SNF generated by the nuclear power reactor(s). In addition, the Contract requires DOE to provide all casks[4][5] and transportation of the SNF from the Power Plant site to the DOE facility. The Contract also obligates DOE to provide the Operator with (a) written procedures for cask handling and loading; (b) training for the Operator's personnel in cask handling and loading; (c) Technical information, special

---

[2] CFR Title 10, Chapter III, Part 961- Standard Contract For Disposal Of Spent Nuclear Fuel and/or High-Level Radioactive Waste

[3] Appendix 1 – Pertinent excerpts from the Standard Contract

[4] Casks - Dry cask storage is a method of storing spent nuclear fuel that has already been cooled in the spent fuel pool for at least one year and often as much as ten years. Casks are typically steel cylinders that are either welded or bolted closed. The fuel rods inside are surrounded by inert gas. Ideally, the steel cylinder provides leak-tight containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public. The casks are usually naturally ventilated to diffuse the heat generated by the spent fuel rods inside the canister.

[5] Spent Fuel Pools are storage pools for SNF. They are typically equipped with storage racks designed to hold fuel assemblies removed from a reactor. The water in the pool is continuously recirculated and cooled to maintain the SNF at safe storage temperatures.

At San Onofre, Units 1, 2 and Unit 3 have individual spent fuel pools. The nuclear fuel used to power the reactors consists of uranium pellets formed, into long fuel rods and then put together in the form of "assemblies." The SONGS 2 and 3 reactors each contain 217 fuel assemblies. SONGS 2 and 3 were typically refueled every two years. During refueling, a certain number of spent fuel assemblies in the reactor were replaced, usually about 100, with new fuel assemblies which generate higher heat and as a result, electricity more efficiently. The permanently discharged spent fuel assemblies, which are "spent nuclear fuel," remain highly radioactive and must remain submerged in spent fuel pools until shipped offsite, removed to dry storage, or otherwise disposed of. The spent fuel pools each have a current storage capacity of 1,542 spent fuel assemblies. The spent fuel is stored vertically in racks within each pool.

tools, equipment, lifting trunnions, spare parts and consumables needed to use and perform incidental maintenance on the cask(s); and (d) documentation on the equipment provided by the DOE.

Unintended Consequences

The first and apparently last attempt to construct a facility that would allow DOE to accept spent nuclear fuel was at Yucca Mountain, AZ. The Yucca Mountain project was permanently terminated for safety concerns and political reasons.

Although site selection activities continue, the government has no permanent facility to store the spent reactor fuel nor does the DOE have any plans at this time to secure a facility in the next 30 years.

As a result, each nuclear plant in the United States must store the spent nuclear fuel created by their reactor(s). The bulk of these materials will be stored adjacent to each generating station; a small amount may be may be shipped offsite to existing or to-be-created temporary storage facilities built by the government or private industry. The costs for doing this will be claimed from DOE by the operators.

The unintended consequence? The taxpayers will foot the final bill for all the temporary storage costs for spent nuclear fuel; all while DOE remains on the hook for creating a spent nuclear fuel storage facility. Depending on how the utilities and their regulating agencies handle the situation, ratepayers could be expected to fund the interim costs of storage. In theory, that money should be returned to the ratepayers.

SECTION 2 – DECOMMISSIONING TRUST FUNDS (DTFs)

California Law requires a Decommissioning Trust Fund administered by CPUC

The California Public Utilities Code Sections 8321-8330[6][7] are known as the Nuclear Facility Decommissioning Act of 1985. Section 8325(a) of the Code requires “each electrical corporation owning, in whole or in part, or operating nuclear facilities to establish an externally managed, segregated fund” for the purpose of assuring that funds to pay the cost of decommissioning the nuclear generating facility are available when called upon.

[6] California’s Nuclear Facility Decommissioning Act of 1985.

[7] In addition to the CPUC, NRC regulation (10 CFR50.75(b) (1) requires that each applicant or holder of an operating license of a production or utilization facility must certify that financial assurance for decommissioning will be or has been provided.

The trust funds established for SONGS Units 2 and 3 by the California Public Utilities Commission (CPUC) are known as the “Nuclear Facilities Qualified CPUC Decommissioning Master Trust Agreement for San Onofre and Palo Verde Nuclear Generating Stations” and “Nuclear Facilities Nonqualified CPUC Decommissioning Master Trust Agreement for San Onofre and Palo Verde Nuclear Generating Stations.” The Trustee of the trusts is The Bank of New York Mellon. The difference in the names between “Qualified” and Nonqualified” in this use is that a “Qualified Trust” is designed to be tax deductible to its owner while the “Nonqualified” trust is not. The Owner of the Trusts is SCE while the Trustor is Southern California Edison in conjunction with San Diego Gas & Electric (SDG&E). SCE is the Administrator of the trusts; all of SCE’s actions vis-á-vis the trusts require the approval of the CPUC.

SECTION 3 – OPERATING HISTORY

Ownership of SONGS

Southern California Edison (SCE) is the Operator of the San Onofre Nuclear Generating Station (SONGS). The Nuclear Generating Station is jointly owned by SCE, SDG&E and the City of Riverside. SCE owns 80% interest in SONGS 1 and 78.21 % interest in SONGS 2 & 3. SDG&E owns 20% interest in SONGS 1, 2, and 3. The City of Riverside owns the remaining 1.79% interest in SONGS 2 & 3. On June 10, 1983 SCE entered into one Standard Contract (No. DECR01- 83NE44418) with DOE covering the three SONGS Units.

Construction of the generating station commenced in 1964 and the plant began operations in January 1968.

History of Unit 1

SONGS operated three steam powered electric turbine generators during its service life. The first electric power generator, Unit 1 was put into commercial operation in January 1968 and was permanently taken out of service in November 1992 due to a multi-million dollar maintenance requirement. Decommissioning of Unit 1 began in 1999 and most of its structures and facilities were removed from the site by 2008.

History of Units 2 and 3

A DOE permit for the installation of Units 2 and 3 was granted in October 1973. Construction commenced in 1974 and was accomplished in 1981. Unit 2 was brought online on August 18, 1983, while Unit 3 started generating electricity on April 1, 1984. Both Units 2 & 3 have been shut down since January 2012. Unit 2 was taken out of service January 9, 2012, for a

planned routine outage. Unit 3 was taken offline January 31, 2012, after station operators detected a small leak in a tube containing radioactive fluid inside a steam generator[8][9]. On June 7, 2013, SCE announced plans to permanently retire SONGS 2 & 3. In June 2013, SCE announced that SONGS would be permanently closed.

Southern California Edison blames Mitsubishi

SCE has blamed Mitsubishi Heavy Industries for the failure. In an unsigned but acknowledged White Paper dated November 4, 2013[10] SCE claims that "Mitsubishi Heavy Industries (Mitsubishi) has made inaccurate charges about its ability and willingness to repair or replace its defective replacement steam generators (RSGs) at Southern California Edison's (SCE) San Onofre Nuclear Generating Station. Mitsubishi's position finds no basis in the parties' contract or in the factual record. As set forth in detail below, for over 16 months, Mitsubishi failed to offer any viable, implementable and licensable plan that would safely and reliably restore the RSGs to 100-percent power for their promised 40-year operational life."

[8] Steam Generator – In this case a water-to-water heat exchanger using discharged reactor cooling water running through tubes inside the steam generator in a high pressure closed-loop system (primary loop) as a heat source and steam turbine feedwater (secondary loop) as the heat gaining medium. The high pressure in the primary loop prevents the reactor cooling water from boiling and turning into steam. When it leaves the steam generator the reactor cooling water is further cooled and then returned to the reactor; the cycle repeats continuously. The turbine feedwater absorbs sufficient heat from the reactor cooling water to turn into low pressure steam which is then partially dried in the exit chamber of the steam generator to remove a specified amount of moisture and then sent to the turbine generator. On leaving the turbine generator the steam is condensed via cooled water from a separate loop (tertiary loop) and returned to the steam generator to be heated again.

Because the primary coolant becomes radioactive from its exposure to the core both the primary and secondary loops play an important safety role as they function as barriers between the radioactive and non-radioactive sides of the plant. The integrity of the tubing on the primary side of the steam generator is essential in minimizing the leakage of water between the primary and secondary sides of the plant. Steam generator tubes often degrade over time. If a tube bursts while a plant is operating, contaminated steam could escape directly to the secondary cooling loop. During scheduled maintenance outages or shutdowns, some or all of the steam generator tubes are inspected and individual tubes can be plugged to remove them from operation.

[9] Two steam generators manufactured by MHI were installed in Unit 2 in 2009 and two more were installed in Unit 3 in 2010, one of which developed the leak. The design of the four new steam generators, known as RSGs (replacement steam generators) was enhanced by MHI at SCE's request to provide higher temperature steam to the turbine generators (in order) to increase the generators' power output. The design was faulty due to unanticipated vibration of the primary loop tube bundles within the RSGs. The vibration resulted in a number of primary loop tubes rubbing against each other, resulting in excessive wear which led to the leak described above.

[10] White Paper: San Onofre Nuclear Plant Replacement Steam Generators November 4, 2013, a Paper on SCE-Mitsubishi Communications Related to Mitsubishi's Failed Efforts to Repair or Replace the Defective Replacement Steam Generators

Mitsubishi says Southern California Edison shares responsibility

On July 19, Mitsubishi, through their website (www.mhi.co.jp) responded to SCE's letter[11] with a firm statement: "The direct cause of the leakage was determined to be tube-to-tube contact wear in the U-bend region of a Unit 3 steam generator. The kind of wear that occurred had never been observed in any steam generator of the U-bend type. The SONGS steam generators were designed and manufactured with SCE's full supervision and approval and in accordance with well-established and accepted codes and standards along with our own knowledge and experience plus that of outside experts."

Mitsubishi disputes liability for all damages beyond $137 million

Mitsubishi has claimed that its liability to SCE is limited by the contract between the parties and includes an overall limitation of liability (approximately US $137 million) as well as preclusion of consequential damages, including the cost of replacement power."

SCE claims Mitsubishi's claim is nullified under California law

SCE responded stating that there are contractual exceptions and California law provisions that nullify Mitsubishi's claimed limit of $137 million in liability. SCE claimed that since limitations are not enforceable, Mitsubishi is now responsible for "the full measure of damages incurred by SCE the other SONGS owners and their customers."

SCE seeks $4 billion or more in international arbitration

On October 16, 2013 SCE filed a petition with the International Chamber of Commerce, International Court of Arbitration seeking to recover extensive damages. In addition, both SDG&E and the City of Riverside (COR) filed lawsuits against Mitsubishi. On March 14, 2014, the U.S. District Court in the Southern District of California granted Mitsubishi's motion to stay[12] the suits and issued an Order compelling SDG&E and COR to arbitrate their claims as required by Mitsubishi's contract with SCE. In light of this Order, on May 16, 2014, SCE, EMS, Mitsubishi, SDG&E and COR entered into a stipulation requesting the ICC to join SDG&E and COR in the arbitration and ICC approved the stipulation on June 16, 2014.

The case is pending before the ICC Court of Arbitration.

[11] http://asianjournal.com/news/sce-takes-legal-steps-vs-mitsubishi-over-plant-failure

[12] CASE NO. 13-CV-1724-BEN (KSC) COR v MHI Order Granting Motion To Stay Proceedings Pending Arbitration

SECTION 4. – LITIGATION (SCE v DOE)

SCE wins $142 million compensation for waste storage costs *from* 1968 to 2005

On February 13, 2009 SCE filed a pleading with the United States Court of Federal Claims, [13] seeking damages in the amount of $146,349,316 as mitigation for the period prior to December 31, 2005. "The major elements of those damages relate to construction of a "dry storage" facility for spent nuclear fuel at SONGS, and payments for storage of certain SONGS spent nuclear fuel that was shipped, and is still stored, offsite."

SCE claimed that the contract obligated SCE to make ongoing quarterly payments into the Nuclear Waste Fund and, in return, obligated the DOE to accept spent fuel beginning in 1998[14]. SCE stated: "DOE has not done so, and the current best estimates of the commencement of DOE performance are no earlier than 2020."

The trial court conducted a six-day trial and awarded SCE $142,394,294[15] for expenses undertaken because of DOE's breach. Of that amount, $23,657,791 was attributable to indirect overhead costs associated with the ISFSI project. At trial, the Government did not contest the accuracy of the overhead costs presented by SCE, but instead argued that overhead costs were an improper measure of SCE's damages. The trial court disagreed with the Government, concluding that the construction of the ISFSI facilities was "a necessary and integral part of SCE's overall operations" and included the contested overhead costs in its award. The Government timely appealed the trial court's determination regarding the indirect overhead costs. The Federal Court of Appeals upheld the trial court's ruling[16].

---

[13] Case 1:04-cv-00109- Filed 02/13/2009

[14] The Federal Court of Appeals has ruled that the contractual date and amount of SNF to be picked-up for all nuclear plant operators is to be based on the first Annual Capacity report issued by DOE in July 1987

[15] On December 21, 2012 SCE filed Application 12-12-013 with the CPUC - Triennial Review of Nuclear Decommissioning Trusts**.** Regarding this litigation, SCE reported "SCE, on behalf of the SONGS owners, received a favorable court ruling and order, and received damage payments related to costs incurred January 1998 through December 2005; disposition of SCE's share of $111 million was deferred to A.12-04-001, ERRA (Energy Resource Recovery Account) review of operations" and further that SDG&E "received $28.462 million from SCE as its allocable share of the SCE award; SDG&E credited $15.3 million to the NDAM (Nuclear Footnote 15 continued - Decommissioning Adjustment Mechanism) and the remaining amount of $13.16 million (it's actually 15.32 or 13.162 or $200,000 disappeared) was credited to accounts where the underlying costs had been incurred." Where is the remaining $2,932,294? Did it go to the City of Riverside or? Notice that the numbers involved roughly align with the ownership percentages of SCE and its partners by do not exactly match.

[16.] The United States Court of Appeals for the Federal Circuit, Appeal from the United States Court of Federal Claims in case no. 04-CV-109, Judge Lawrence M. Baskir. DECIDED: August 23, 2011

SECTION 5 – CONCLUSIONS

Both CPUC and NRC agree:
San Onofre's Decommissioning Trust Funds are fully funded through 2049

When one reviews the Decommissioning Cost Estimate (DCE)[17] for SONGS Units 2 and 3, it becomes obvious that SCE will need to construct additional ISFI facilities and maintain those facilities into the future, thereby extending the necessary time the DTFs will have to remain in existence. The estimated costs to construct, operate and maintain those facilities are shown in the DCE. In addition, extension of the DTFs' life will require additional funds to be expended in maintaining the Trusts and drawing funds as may be required. SCE's current estimate assumes that the DOE will begin accepting SNF from the SONGS project by 2024 and will complete the removal of all SONGS spent fuel by 2049.

DOE is liable for all additional costs for temporary waste storage

Based upon the decision made in SCE's case vs. DOE as upheld on appeal and other precedential cases initiated by a number of nuclear fueled power plant operators, it appears obvious that the DOE will be liable for all costs incurred by the DTF in excess of those that would have been incurred if DOE were to perform or even partially perform its obligations pursuant to the Standard Contract.

160 years or more of spent nuclear fuel on the beach at San Onofre?

The Nuclear Regulatory Commission issued a final rule[18] (Rule) on September 19, 2014 dealing with the environmental impacts that may be expected of continued temporary storage of SNF created by the entire nuclear industry. The Rule concluded that SNF could safely be stored by power plant operators for 30 to 60 years or more beyond the "licensed life for operation of a reactor[19]" without significant impacts to the environment. From the Federal Register: "The NRC has analyzed three timeframes in the GEIS (Generic Environmental Impact Statement) that represent various scenarios for the length of continued storage that

[17] Decommissioning Cost Estimate 2014 Decommissioning Cost Analysis of the San Onofre Nuclear Generating Station Units 2 & 3 dated September 5, 2014 prepared by EnergySolutions, LLC, 100 Mill Plain Road Mailbox No. 106 Danbury, CT 06811

[18] **Federal Register** / Vol. 79, No. 182 / Friday, September 19, 2014 Rules and Regulations10 CFR Part 51

[19] The GEIS (Generic Environmental Impact Statement) created by the NRC assumes an original licensed life of 40 years and up to two 20-year license extensions for each reactor, a total of 80 years. The reader must recognize, however, that San Onofre is already in the process of being decommissioned.

may be needed before spent fuel is sent to a repository. The first timeframe is the short-term timeframe, which analyzes 60 years of continued storage after the end of a reactor's licensed life for operation. The NRC considers the short-term timeframe to be the most likely scenario for continued storage; and the GEIS assumes that a repository would become available by the end of the short-term timeframe."

Going on, the NRC states "The GEIS also analyzed two additional timeframes: Long-term and indefinite. The long-term timeframe considers the environmental impacts of continued storage for 160 years after the end of a reactor's licensed life for operation. Finally, the GEIS includes an analysis of an indefinite timeframe which assumes that a repository never becomes available."

In the same publication, the NRC also states "Presently, the NRC believes that the existing regulatory framework used to renew current licenses can be extended to regulate the management of spent fuel for multiple renewal periods.

It is frightening to note that in October 2014, GAO, in its report to congress titled Spent Nuclear Fuel Management stated "…experts and stakeholders generally noted that because the Congress has not agreed on a new path forward for managing spent nuclear fuel since funding was suspended in 2010, nor have DOE officials proposed legislation requesting new authority, obtaining specific legislative authority in time to meet DOE's proposed time frames might be challenging."

Is SCE trying to charge ratepayers for costs that should be charged to DOE?

In a letter dated January 15, 2015 addressed "To Whom it May Concern," regarding Southern California Edison Company's Application (A.)14-12-007SCE[20], SCE transmitted a public notice that on December 10, 2014, SCE filed an application with the CPUC for approval of the San Onofre Nuclear Generating Station (SONGS) Decommissioning Cost Estimate and other related relief.

In its notice, SCE stated "On December 10, 2014, Southern California Edison Company (SCE) and San Diego Gas & Electric (SDG&E) (collectively referred to as Utilities) filed a joint application with the California Public Utilities Commission (CPUC) to set the amount each utility customer pays into the nuclear decommissioning trust fund through collected rates" and further "In this application each company is requesting its decommissioning trust fund to be set at $0.00. The reduction that SCE is requesting is based on the current estimate of decommissioning costs, current level of funding of the trusts, and financial market conditions known at this time."

[20] Attachment 5-1 – Cover Letter and notice re: SOUTHERN CALIFORNIA EDISON COMPANY (SCE) REQUEST TO CHANGE YOUR ELECTRIC RATES DUE TO ALTERATIONS IN THE NUCLEAR DECOMMISSIONING TRUST FUND APPLICATION NO. A.14-12-007SOUTHERN CALIFORNIA EDISON COMPANY (SCE) REQUEST TO CHANGE YOUR ELECTRIC RATES DUE TO ALTERATIONS IN THE NUCLEAR DECOMMISSIONING TRUST FUND APPLICATION NO. A.14-12-007

Questions and observations:

1. Ratepayers should not pay twice for DOE contract fees, or for additional fees based on the earlier generation of nuclear power

It is assumed that SCE has timely made payment of all required Spent Nuclear Fuel fees to DOE and will continue to make such payments as required. In this respect, continuing payments (if not fully paid in advance) must be limited to fees being paid for DOE's acceptance and storage of the Spent Nuclear Fuel generated by SONGS prior to SCE entering into the Standard Contract with DOE. No other contractual fees based on the generation of nuclear fueled power should be due.

2. Do utilities have the legal right to charge ratepayers for temporary storage?

On June 3, 2010 SCE filed a claim to recapture excess costs after DOE failed to perform as promised. Ratepayers then had a right to expect that both utilities would file rate cases with the CPUC to recover ongoing costs incurred for the same reason. In return, neither utility should have retained the right to include any other fees for the costs of temporary storage of SNF awaiting acceptance by DOE in its rate base. The answer to whether what is described above happened or not is unknown to the author but should be sought.

Assuming that SCE will recover the costs of temporary storage by suing DOE, why is CPUC allowing SCE to maintain a Decommissioning Trust Fund?

3. Decommissioning Cost Estimates must be reviewed

The DCEs for SONGS Units 1, 2 and 3 should now reflect the anticipated costs required for decommissioning The DCEs should include all costs for the temporary storage of spent nuclear fuel awaiting acceptance by DOE through the target year of 2049 at a minimum.[21] Whether the DCEs accurately reflect these costs is unknown as it has not been validated by an independent third party.

4. The DCE for SONGS Unit 1 should have been amended

The DCE for SONGS Unit 1 should now contain a requirement for sufficient funds to pay for the temporary management of SNF awaiting acceptance by DOE to make the DCE

[21] If one were to calculate the first year for acceptance of SNF by DOE by taking the date DOE issued the Final Rule - 2014 and then add 60 years (the short term analyzed by the rule), one would find that DOE expects that it will likely have a storage facility available somewhere between 2014 and 2074. If you consider the long term period, it could be 2174. How's that for certainty? What does seem certain is that 2049 may well not provide enough money in reserve to be sufficient.

coterminous with the DCE for Units 2 and 3. Whether this action was accomplished or not is unknown.

The DTFs for all three Units are required by both State and Federal law to be funded to a level sufficient to pay for all decommissioning costs required to be expended including ultimate site restoration at the time decommissioning is concluded. SCE has stated that the DCE for Units 2 and 3 was accepted as being adequate by DOE and the CPUC.

5. The Decommissioning Trust Funds should be fully funded to 2049 at this time

Because SCE is contractually required to make payments to DOE for the acceptance and management of all spent nuclear fuel, generated before it entered into the Contract with DOE, it follows that SCE has the right to recapture its previously expended or to-be-expended costs for the temporary management of all SNF generated by the SONGS power plant while awaiting its acceptance by DOE.

6. Out-of-court settlement raises trust fund audit questions

The out-of-court settlement that was approved by CPUC, forced 70% of the costs onto the ratepayers and 30% to the utilities. The deal is subject to current litigation. Nevertheless, 2 questions arise:

(a) What was the value of ratepayer's funds already deposited into the DTF for the temporary storage of nuclear fuel awaiting acceptance by DOE for SONGS Units 2 and 3 when SCE announced that the DTF was fully funded; and

(b) was it equal to the amounts required by the DTF?

7. Why refunds may be due to ratepayers for Unit 1.

i. SCE's claim with DOE[22] successfully recaptured all costs for the temporary management of spent nuclear fuel awaiting acceptance by DOE beginning in 1998(ibid 14) to and including December 31, 2005.

ii. if the costs incurred for SNF management by SCE were not included in its billing rates, then the recaptured funds are the legitimate property of SCE. If, however,

[22] On January 4, 2007 SCE filed Advice Letter 2085-E with the CPUC requesting authority to "Establish a Department of Energy Litigation Memorandum Account (DOELMA)." SCE stated in the letter that "SCE anticipates that the proceeds it receives from the federal government associated with the DOE litigation will substantially exceed SCE's incremental litigation costs, thus providing a significant net benefit to its customers." By its actions, SCE appears to believe that it has a fiduciary responsibility to its ratepayers vis-à-vis sharing the proceeds of litigation. However, if one were to reexamine the distributions of the proceeds of the 2009 litigation, one might conclude to the contrary, especially since in its CPUC filing on December 12, 2013(ibid 15) SCE placed its share of the funds received from litigation not into the DOELMA but instead into a different holding account. SDG&E was kind enough to credit its expense accounts with $13.16 million while it placed the rest of its portion Footnote 23 continues - in yet another holding account. Theoretically, ratepayers should receive some benefit from the reduction of SDG&E's cost base.

any such costs were included in SCE's billing rates, those costs should be or should have been refunded to the ratepayers[23].

iii. SCE should file or should have filed a claim with DOE to recapture its costs of temporary storage of SNF awaiting acceptance by DOE for the period from January 1, 2006 until Unit 1 was taken off line in November 1992. Those costs also included in billing rates for such storage should be or should have been rebated to the ratepayers.

iv. SCE should file or should have filed a claim with DOE to recapture its costs of temporary storage of SNF awaiting acceptance by DOE for the period from November 1992 or when SCE commenced drawing funds from the DTF until 2049. Upon receipt funds representing costs paid from the DTF, such funds should be deposited there. Both SCE's funds not included in its billing rates and ratepayer funds included in SCE's claim for this period should be withdrawn from the DTF or provided by SCE from the claim settlement as applicable and refunded to SCE or the ratepayers as appropriate.

Why ratepayers may be entitled to refunds for SONGS Units 2 and 3

i. with respect to the funds received by SCE as a result of its 2009 claim vs. DOE, if any ratepayer funds included in the claim were used to pay SCE's cost of temporarily storing SNF awaiting acceptance by DOE, then those funds should be or should have been rebated by SCE to the ratepayers.

ii. for the period from January 1, 2006 until the Units were taken offline in January 2012 or until SCE commenced using funds from the DTF for Units 2 and 3, whichever occurred later, SCE should file or should have filed a claim with DOE to recapture any costs of temporary storage of all SNF awaiting acceptance by DOE. Upon receipt, funds representing costs paid from the DTF should be deposited there. Both SCE's funds not included in its billing rates and ratepayer funds included in SCE's claim for this period should be withdrawn from the DTF or provided by SCE from the claim settlement as applicable and refunded to SCE or the ratepayers as appropriate.

iii. for the period commencing at the time SCE began withdrawing funds from the DTF, SCE should file or should or should have filed a claim with DOE for the capture of all SNF awaiting acceptance by DOE to pay the costs of temporary

[23] This matter requires research and likely, access to SCE's books and records of account. The CPUC's DRA could do it but can they be trusted?

storage of all SNF awaiting acceptance by DOE. That claim should extend through 2049. Upon receipt such funds should be or should have been deposited into the DTF. Both SCE's funds not included in its billing rates (if any) and ratepayer funds included or previously spent in SCE's claim for this period should be withdrawn from the DTF and refunded to SCE or the ratepayers as applicable.

~END~

Attachments follow

ATTACHMENT 1

Pertinent provisions of sections excerpted from the Nuclear Waste Policy Act and the Standard Contract between the DOE and the power plant operators.

42 U.S. Code Chapter 108 - NUCLEAR WASTE POLICY ACT

SUBTITLE A—REPOSITORIES FOR DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL

Sec. 111. Findings and purposes:
Sec. 111. (a) Findings. The Congress finds that—
(5) the generators and owners of high-level radioactive waste and spent nuclear fuel have the primary responsibility to provide for, and the responsibility to pay the costs of, the interim storage of such waste and spent fuel until such waste and spent fuel is accepted by the Secretary of Energy in accordance with the provisions of this Act [42U.S.C. 10101 et seq.];

Department of Energy CFR Title 10 Chapter III Part 961

STANDARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH-LEVEL RADIOACTIVE WASTE

§ 961.11 Text of the contract.
The text of the standard contract for disposal of spent nuclear fuel and/or high/level radioactive waste follows:

SUBTITLE A—REPOSITORIES FOR DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL FINDINGS AND PURPOSES

Sec. 111. (a) Findings. The Congress finds that—
(5) the generators and owners of high-level radioactive waste and spent nuclear fuel have the primary responsibility to provide for, and the responsibility to pay the costs of, the interim storage of such waste and spent fuel until such waste and spent fuel is accepted by the Secretary of Energy in accordance with the provisions of this Act [42 U.S.C. 10101 et seq.];

ARTICLE IV—RESPONSIBILITIES OF THE PARTIES

B. DOE Responsibilities

1. DOE shall accept title to all SNF and/or HLW, of domestic origin, generated by the civilian nuclear power reactor(s) specified in appendix A, provide subsequent transportation for such material to the DOE facility, and dispose of such material in accordance with the terms of this contract.

2. DOE shall arrange for, and provide, a cask(s) and all necessary transportation of the SNF and/or HLW from the Purchaser's site to the DOE facility. Such cask(s) shall be furnished sufficiently in advance to accommodate scheduled deliveries. Such cask(s) shall be suitable for use at the Purchaser's site, meet applicable regulatory requirements, and be accompanied by pertinent information including, but not limited to, the following:

(a) Written procedures for cask handling and loading, including specifications on Purchaser-furnished cannisters [sic] for containment of failed fuel;

(b) Training for Purchaser's personnel in cask handling and loading, as may be necessary;
(c) Technical information, special tools, equipment, lifting trunnions, spare parts and consumables needed to use and perform incidental maintenance on the cask(s); and

(d) Sufficient documentation on the equipment supplied by DOE.

5. (b) Beginning not later than July 1, 1987, DOE shall issue an annual capacity report for planning purposes. This report shall set forth the projected annual receiving capacity for the DOE facility(ies) and the annual acceptance ranking relating to DOE contracts for the disposal of SNF and/or HLW including, to the extent available, capacity information for ten (10) years following the projected commencement of operation of the initial DOE facility.

ARTICLE VIII—FEES AND TERMS OF PAYMENT

A. Fees

1. Effective April 7, 1983, Purchaser shall be charged a fee in the amount of 1.0 mill per kilowatt hour (1M/kWh) electricity generated and sold.

2. For SNF, or solidified high-level radioactive waste derived from SNF, which fuel was used to generate electricity in a civilian nuclear power reactor prior to April 7, 1983, a one-time fee will be assessed by applying industry-wide average dollar per kilogram charges to four (4) distinct ranges of fuel burnup so that the integrated cost across all discharged (i.e. spent) fuel is equivalent to an industry-wide average charge of 1.0 mill per kilowatt-hour. For purposes of this contract, discharged nuclear fuel is that fuel removed from the reactor core with no plans for reinsertion. In the event that any such fuel withdrawn with plans for reinsertion is not reinserted, then the applicable fee for such fuel shall be calculated as set forth in this paragraph 2. The categories of spent nuclear fuel burnup and the fee schedule are listed below:

[In 1982 dollars]

Nuclear spent fuel burnup range	Dollars per kilogram
0 to 5000 MWDT/MTU	$ 80.00
5000 to 10000 MWDT/MTU	142.00
10000 to 20000 MWDT/MTU	162.00
Over 20000 MWDT/MTU	84.00

This fee shall not be subject to adjustment, and the payment thereof by the Purchaser shall be made to DOE as specified in paragraph B of this Article VIII.

3. For in-core fuel as of April 7, 1983, that portion of the fuel burned through April 6, 1983 shall be subject to the one-time fee as calculated in accordance with the following methodology:

[a] determine the total weight in kilograms of unranium [sic] loaded initially in the particular core;

[b] determine the total megawatt-days (thermal) which have been generated by all of the fuel assemblies in the said core as of 12:00 A.M. April 7, 1983;

[c] divide the megawatt-days (thermal) generated in the said core by the total metric tons of initially loaded uranium in that core and multiply the quotient by the conversion factor 0.0078 to obtain a value in dollars per kilogram; and

[d] multiply the dollars per kilogram value by the kilograms determined in [a] above to derive the dollar charge for the one-time fee to be paid for the specified in-core fuel as of 12:00 A.M. April 7, 1983. For purposes of this contract, in-core fuel is that fuel in the reactor core as of the date specified, plus any fuel removed from the reactor with plans for reinsertion. That portion of such fuel unburned as of 12:00 A.M. April 7, 1983 shall be subject to the 1.0 mill per kilowatt-hour charge.

4. DOE will annually review the adequacy of the fees and adjust the 1M/KWH fee, if necessary, in order to assure full cost recovery by the Government. Any proposed adjustment to the said fee will be transmitted to Congress and shall be effective after a period of ninety (90) days of continuous session has elapsed following receipt of such transmittal unless either House of Congress adopts a resolution disapproving the proposed adjustment. Any adjustment to the 1M/KWH fee under paragraph A.1. of this Article VIII shall be prospective.

ARTICLE VIII—FEES AND TERMS OF PAYMENT

A. Fees

1. Effective April 7, 1983, Purchaser shall be charged a fee in the amount of 1.0 mill per kilowatt hour (1M/kWh) electricity generated and sold.

2. For SNF, or solidified high-level radioactive waste derived from SNF, which fuel was used to generate electricity in a civilian nuclear power reactor prior to April 7, 1983, a one-time fee will be assessed by applying industry-wide average dollar per kilogram charges to four (4) distinct ranges of fuel burnup so that the integrated cost across all discharged (i.e. spent) fuel is equivalent to an industry-wide average charge of 1.0 mill per kilowatt-hour. For purposes of this contract, discharged nuclear fuel is that fuel removed from the reactor core with no plans for reinsertion. In the event that any such fuel withdrawn with plans for reinsertion is not reinserted, then the applicable fee for such fuel shall be calculated as set forth in this paragraph 2. The categories of spent nuclear fuel burnup and the fee schedule are listed below:

[In 1982 dollars]

Nuclear spent fuel burnup range	Dollars per kilogram
0 to 5,000 MWDT/MTU	$80.00
5,000 to 10,000 MWDT/MTU	142.00
10,000 to 20,000 MWDT/MTU	162.00
Over 20,000 MWDT/MTU	184.00

This fee shall not be subject to adjustment, and the payment thereof by the Purchaser shall be made to DOE as specified in paragraph B of this Article VIII.

3. For in-core fuel as of April 7, 1983, that portion of the fuel burned through April 6, 1983 shall be subject to the one-time fee as calculated in accordance with the following methodology:…….& etc.

4. 4. DOE will annually review the adequacy of the fees and adjust the 1M/KWH fee, if necessary, in order to assure full cost recovery by the Government…….& etc.