Backgrounder on New DOE Contracts for Commercial High-Level Radioactive Waste Disposal

SUMMARY

Late in the George W. Bush Administration, the U.S. Department of Energy (DOE) signed contracts to accept irradiated nuclear fuel[1] from 21 new commercial atomic reactors.[2] It did so even though at that time, no repository for new sources of irradiated fuel existed or was planned. It also did so even though the U.S. government had already paid out $565 million in contract damages – and faced an additional $790 million of contract damages at that very same time – for its failure to dispose of the *existing* inventory of irradiated fuel in the United States. And it did so even though it already expected to face around an additional billion dollars of damage payments to nuclear power utilities each and every year for the next decade.

The closest the U.S. has come to licensing a high-level radioactive waste repository has been at Yucca Mountain, Nevada, which was abandoned after 28 years of study, and 35 years after the U.S. began to search for a repository site. If these 21 pending applications for new reactor licenses are granted, the U.S. government must find disposal capacity for around 21,000 metric tons of irradiated fuel that would be generated at these new reactors. This entire inventory of high-level radioactive waste would have been excess to Yucca's legal capacity limit for acceptance, at least until a second repository was operational elsewhere, even if the now-cancelled Yucca Mountain repository had been licensed. If, as it seems reasonable to assume, the siting of *two* new repositories now will take 60 years or more to accomplish, the DOE will default on the irradiated fuel disposal contracts signed in 2008-2009, and taxpayers will owe nuclear reactor licensees billions of dollars in contract damages.

[1] Also called spent or used nuclear fuel, irradiated nuclear fuel is the high-level or highly radioactive waste which results when "fresh" nuclear fuel rods become a million times more radioactive after undergoing fissioning in atomic reactor cores. The nuclear utilities (and sites) under new waste disposal contracts with DOE include: Duke Energy (Lee 1&2); Southern Nuclear (Vogtle 3&4); South Texas Project (South Texas 3&4); Nine Mile Point (Nine Mile Point 3); UniStar Nuclear (Calvert Cliffs 3); Virginia Electric (North Anna 3); Florida Power and Light (Turkey Point 6&7); South Carolina Electric & Gas (Summer 2&3); Pennsylvania Power and Light (Bell Bend); Progress Energy (Shearon Harris 2&3 and Levy 1&2); Ameren UE (Callaway 2); and Luminant (Comanche Peak 3&4).

[2] The nuclear utilities (and sites) under new waste disposal contracts with DOE include: Duke Energy (Lee 1&2); Southern Nuclear (Vogtle 3&4); South Texas Project (South Texas 3&4); Nine Mile Point (Nine Mile Point 3); UniStar Nuclear (Calvert Cliffs 3); Virginia Electric (North Anna 3); Florida Power and Light (Turkey Point 6&7); South Carolina Electric & Gas (Summer 2&3); Pennsylvania Power and Light (Bell Bend); Progress Energy (Shearon Harris 2&3 and Levy 1&2); Ameren UE (Callaway 2); and Luminant (Comanche Peak 3&4).

There was no apparent justification for the George W. Bush Administration's rush to sign these irradiated nuclear fuel disposal contracts for new reactors. Most of the new reactor projects are trouble-plagued and unlikely to be completed on their original schedules. In addition, the applicants are all multi-billion dollar corporations that did not need a costly leg-up at such an early stage of the licensing process. Some of these corporations have already reaped tens of millions of dollars in taxpayer-funded contract damages, and stand to reap hundreds of millions or even billions more, even though their own ratepayers' investment in the Nuclear Waste Fund remains protected from the claims of their lawsuits.

NO IRRADIATED NUCLEAR FUEL REPOSITORY CAPACITY EXISTS OR IS PLANNED

1. Since 1975, the DOE and its predecessor, the Energy Research and Development Administration (ERDA), have been searching for a suitable site for a high level radioactive waste repository.[3] In the 1987 Amendments to the 1982 Nuclear Waste Policy Act, Congress focused the search on the Yucca Mountain site in Nevada. This led to spending the next 23 years and over $10 billion on geologic site characterization and suitability studies, as well as a highly contested licensing proceeding. But the project was canceled by President Obama in his budget request for Fiscal Year 2011, as well as by DOE Secretary Steven Chu motioning to withdraw the Yucca Mountain construction and operation application from the U.S. Nuclear Regulatory Commission (NRC) licensing proceeding. President Obama and Secretary Chu have established a blue ribbon commission to determine "Plan B" for high-level radioactive waste management and disposal in light of the proposed Yucca Mountain repository's cancellation.

2. Thus, 28 years after passage of the Nuclear Waste Policy Act, 35 years after the repository search began, 53 years into commercial nuclear power, and 68 years after Fermi first split the atom during the Manhattan Project, the U.S. still has no safe, sound, permanent storage plan for high-level radioactive waste.[4]

3. Even if Yucca Mountain had been licensed, its capacity would have been insufficient to hold the inventory of currently operating nuclear reactors, let alone a new generation of nuclear reactors. By spring 2010, enough irradiated nuclear fuel from commercial atomic reactors will exist in the U.S. to have filled the Yucca Mountain repository to its legal limit of 63,000

[3] League of Women Voters Education Fund, *The Nuclear Waste Primer*, Nick Lyons Books, 1985, page 50.

[4] The first commercial nuclear power plant in the U.S. was opened at Shippingport, PA in 1957; Enrico Fermi first split the atom in a prototype reactor at the University of Chicago on December 2, 1942 as part of U.S. efforts to develop atomic weaponry during World War 2.

metric tons.[5] Yucca Mountain would not have had the capacity to take any of the additional 42,000 metric tons of irradiated nuclear fuel that DOE estimates will be generated after spring 2010 at already existing commercial reactors, including irradiated nuclear fuel generated under existing 40-year license terms and generated under extended license terms.[6]

4. New reactors can be expected to generate an additional 21,000 metric tons of commercial high-level radioactive waste – fully a third of the amount that has already accumulated in the U.S. over the past 53 years.[7] Taken together, the amount of irradiated fuel that has already been generated by existing reactors, that will be generated by existing reactors in the future, and that will be generated by the 21 new reactors that DOE has under contract, could amount to 126,000 metric tons. This is double the current amount in the U.S., and enough to fill two Yucca Mountain-sized repositories to capacity.[8]

GEORGE W. BUSH ADMINISTRATION SIGNED 11TH HOUR CONTRACTS FOR IRRADIATED NUCLEAR FUEL DISPOSAL WITHOUT ASSURED CAPACITY

5. Between Nov. 4, 2008 and Jan. 22, 2009 (election day to just after presidential inauguration day), the George W. Bush Administration's DOE signed radioactive waste disposal contracts

[5] Statement of Kim Cawley, Chief, Natural and Physical Resources, Cost Estimates Unit, Congressional Budget Office, "The Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act," before the Committee on the Budget, U.S. House of Representatives, July 16, 2009, page 2, hereafter "The Outlook for the Federal Government's Liabilities"; Edward Sproat, Director, Office of Civilian Radioactive Waste Management, U.S. Department of Energy, Yucca Mountain Project update at the U.S. Nuclear Regulatory Commission's Regulatory Information Conference, Rockville, Maryland, March 2008. The statutory capacity limit at Yucca Mountain was 70,000 metric tons of heavy metal (MTHU), of which DOE had reserved 7,000 MTHM capacity for disposal of DOE spent fuel and nuclear weapons complex high-level radioactive waste.

[6] DOE, Appendix A of Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, Volume II., Feb. 2002. DOE estimated that a grand total of 105,000 metric tons of commercial irradiated nuclear fuel will have been generated in the U.S. by 2046. DOE assumed that reactors granted 20 year license extensions in addition to their original 40 year licenses will only operate for a total of 50 years. However, if reactors actually operate for the full licensed 60 years, the grand total amount of irradiated fuel actually generated could well be significantly larger that DOE has estimated.

[7] "The Outlook for the Federal Government's Liabilities," Cawley, Congressional Budget Office, page 8.

[8] DOE has estimated that 105,000 metric tons of irradiated fuel will be generated by existing reactors by 2046, assuming each reactor operates for a total of 50 years. Cawley, above, has reported that the 21 new reactors for which DOE has signed disposal contracts could generate an additional 21,000 metric tons of high-level radioactive waste. Cawley and Sproat, above, have reported that 63,000 metric tons of commercial irradiated nuclear fuel already exist in the U.S. today, exactly the amount that would fill a Yucca-sized repository to its legal capacity. 105,000 metric tons plus 21,000 metric tons equals 126,000 metric tons, exactly enough to fill two Yucca-sized repositories to their legal capacities.

with over a dozen nuclear utilities for 21 proposed new reactors.[9] The DOE's irradiated nuclear fuel contracts with nuclear utilities legally bind DOE to "perform" (that is, begin accepting radioactive wastes from these new reactors) within ten years after the termination of their operating license, at the latest -- even though DOE has not identified any site for permanent disposal of the irradiated nuclear fuel that would be generated by the new reactors, nor does it have any disposal plan in place.[10]

6. The earliest the NRC could approve the first new reactor combined Construction and Operating License (COL) application is 2012. The new reactor would then take at least six years to build. If it then operated for 40 years (until 2058), this would mean DOE must take title and liability for the high-level radioactive waste generated by 2068, or else taxpayers would face the monetary consequences for DOE's breach of contract. If NRC approved a 20 year license extension for the reactor, DOE's waste disposal "performance" deadline would then be 2088. (A clause in the new contracts states that, *at the earliest*, DOE would perform 20 years after the initial discharge of radioactive waste from these new reactors – or, in this example, not long after 2038.[11] But such early performance is unlikely.)

7. Given that after 35 years of searching, the U.S. has failed to license a single repository, it is reasonable to predict that the siting of *two* new repositories will take at least 50 years, if not 75 or 100 years. Thus, there is a very real potential for defaults on the new irradiated nuclear fuel contracts signed in 2008-2009.

TAXPAYER LIABILITY FOR UNFULFILLED IRRADIATED NUCLEAR FUEL DISPOSAL CONTRACTS COULD BE BILLIONS OF DOLLARS

8. As discussed above, in Point #4, assuming DOE does not sign any additional contracts, and that new reactors that are already under contract will operate for 50 years, the new contracts

[9] See, for example, U.S. Department of Energy, Contract No. DE-CR01-09-RWO9003, entered into with Duke Energy Carolinas, LLC on November 4, 2008, for the William States Lee III Nuclear Station, Unit 1; see also U.S. Department of Energy Contract Amendment to Contract No. DE-CR01-09-RWO9003. Copies of this contract and its amendment, and those for 20 other proposed new reactors, were obtained via a Freedom of Information Act request submitted to the U.S. Department of Energy, and are available upon request.

[10] "The term *performance date* means the date that is ten (10) years after the expiration of the original term of the operating license, or the term of any license extension(s), granted by the [U.S. Nuclear Regulatory] Commission for the facility named in Appendix A of this contract, whichever date is later." ARTICLE I – DEFINITIONS, U.S. Department of Energy Contract Amendment to Contract No. DE-CR01-09-RWO9003, page 2.

[11] "DOE will begin the acceptance of any SNF [Spent Nuclear Fuel] and/or HLW [High-Level Radioactive Waste] from a nuclear power reactor covered by this contract no earlier than twenty (20) years from the initial discharge date of SNF from that nuclear power reactor." ARTICLE II – SCOPE, U.S. Department of Energy Contract Amendment to Contract No. DE-CR01-09-RWO9003, page 2.

could make taxpayers liable for ultimate disposal of an additional 21,000 metric tons of commercial high-level radioactive waste – fully a third of the amount that has already accumulated in the U.S. over the past 53 years.[12] If the ratepayer funded Nuclear Waste Fund falls short of paying for all management and disposal costs, taxpayers will face ultimate liability.[13] And if DOE breaches its contracts to accept these wastes on time, taxpayers could face hefty court ordered damages, as they already do for DOE's missed radioactive waste disposal deadlines in the past.[14]

9. Barring "unavoidable delays," DOE would face breach of contract charges for missing these contractual deadlines.[15] Resulting damage awards could cost U.S. taxpayers billions, or even tens of billions, of dollars.[16] The courts have not recognized DOE's past missed deadlines as due to "unavoidable delays."[17]

10. Between 1983 and 1987, DOE signed radioactive waste disposal contracts with over 100 operating commercial atomic reactors in the U.S.[18] DOE was contractually obliged to begin accepting waste from utilities on Jan. 31, 1998.[19] When this deadline was missed, the first of a current total of 71 lawsuits were filed by nuclear utilities against DOE for breach of contract, seeking damages to compensate them for on-site storage costs.[20] As of July 2009, $565 million in damages had been awarded, and paid, to five nuclear utilities pursuant to settlements, and one trial court judgment that was not appealed.[21]

11. The funding for these damage awards is coming out of the U.S. Treasury because the courts have ruled that the ratepayer funded Nuclear Waste Fund (estimated to have $23.8 billion

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[12] "The Outlook for the Federal Government's Liabilities," Cawley, Congressional Budget Office, page 8.

[13] "In light of the [Obama] Administration's policy to terminate the Yucca Mountain project and pursue an alternative means of waste disposal, there is no current basis to judge the adequacy of the fee to cover future costs because the method of disposal and its life-cycle costs are unknown." Cawley, CBO, page 5.

[14] See footnotes 10 and 11 immediately above.

[15] Statement Of Michael F. Hertz, Deputy Assistant Attorney General, Civil Division, U.S. Department Of Justice, Before The Committee On The Budget, U.S. House Of Representatives, Concerning "Budgeting For Nuclear Waste Management," Presented On July 16, 2009.

[16] "The Outlook for the Federal Government's Liabilities," Cawley, Congressional Budget Office, page 8; Hertz, Dept. of Justice, page 7.

[17] Hertz, Dept. of Justice, page 2.

[18] Hertz, Dept. of Justice, page 1.

[19] Ibid., page 1.

[20] Ibid., page 2; Statement of Christopher A. Kouts, Acting Director of the Office of Civilian Radioactive Waste Management [OCRWM], U.S. Department of Energy, Before the Committee on the Budget, U.S. House of Representatives, July 16, 2009, page 2.

[21] Ibid.,page 4; Cawley, CBO, page 1; Kouts, OCRWM, page 2.

remaining at the end of Fiscal Year 2009)[22] cannot be used to pay liability to nuclear utility waste contract holders.[23] Contract damages are paid from the Treasury Department's Judgment Fund, supplied by U.S. taxpayers.[24] $35 million of this amount has gone to the federally owned Tennessee Valley Authority, associated with four judgments.[25] Of the 51 still pending cases, 17 were tried with judgments subject to post-trial motions, appeals, or remands.[26] These cases involve a combined total damages amounting to an additional $790 million.[27] Thus, if past court decisions – some under appeal by the U.S. Departments of Justice and Energy – are upheld, the federal government's liabilities under judgments and settlements currently stands at $1.3 billion.[28]

12. DOE has estimated that by 2020, taxpayer liability for breach of contract damages will amount to $12.3 billion – thus, around a billion dollars of damage payments to nuclear power utilities each and every year for the next decade.[29] DOE has not yet estimated liabilities beyond 2020.[30] The nuclear industry itself estimates damages will top $50 billion of taxpayer money.[31] Liability for radioactive wastes from existing reactors will continue to mount if DOE continues to miss agreed deadlines for accepting possession of irradiated nuclear fuel for disposal.[32] Such missed deadlines are especially likely due to the unprecedented, large-scale transport program that would be required to move wastes to a yet to be established repository. And the new contracts signed by DOE in the 11th hour of the Bush Administration will add significantly to future liability.[33] In addition to damages, the Department of Justice has, thus far, expended another $154 million of taxpayer money trying to defend DOE against breach of contract charges and damage awards. This "endless litigation," at taxpayer expense, is expected to continue indefinitely for decades to come, unless Congress intervenes by changing the applicable laws.[34]

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[22] Cawley, CBO, page 3.
[23] Cawley, CBO, page 6; Hertz, DOJ, page 6.
[24] Cawley, CBO, pages 1, 6; Hertz, DOJ, page 6; Kouts, OCRWM, page 2.
[25] Cawley, CBO, page 7; Kouts, page 2.
[26] Hertz, DOJ, page 5; Kouts, OCRWM, page 2.
[27] Kouts, OCRWM, page 2.
[28] Cawley, CBO, page 7; Hertz, DOJ, page 4.
[29] Cawley, CBO, page 7; Hertz, DOJ, page 3; Kouts, OCRWM, page 2.
[30] "Further, DOE anticipates that payments from the Judgment Fund will span a number of decades after 2020." Cawley, CBO, page 7; "Last year, the Department estimated the liabilities under current law resulting from delaying the beginning of waste acceptance from 1998 to 2020 at $12.3 billion. We have not attempted to further update that estimate." Kouts, OCRWM, page 2.
[31] Hertz, DOJ, page 3.
[32] Cawley, CBO, page 7.
[33] Cawley, CBO, page 2.
[34] Hertz, DOJ, pages 6-7.

13. DOE's new contracts themselves raise the specter of prolonged delays in waste acceptance, and thus increased taxpayer-funded damage awards. They do this by casting doubt on the future of DOE's "TAD" (Transport, Aging, and Disposal) high-level radioactive waste canister program. TAD has formed the heart of DOE Yucca Mountain repository transport, storage, and burial planning for the past several years. In the 1990s, TADs were called MPCs (Multi-Purpose Canisters). However, DOE abandoned MPCs as unworkable not many years after they were first proposed. However, in recent years, DOE resurrected the MPC concept, under the new name of TAD. TADs would supposedly allow the same inner metallic canister to be used, in conjunction with various custom-suited radiation shielding over packs, to contain irradiated nuclear fuel during on-site storage; shipment by road, rail, or waterway; storage at an away from reactor location for "aging" (radioactive decay and thermal cooling) purposes; and even permanent burial in a repository. But DOE's new waste contracts raise doubts that its TAD program will actually be pursued, stating that TAD-based canisters might be used, but also that "DOE may provide written notice that DOE does not intend to use canisters for acceptance."[35] Such internal contradictions raise the specter of yet another DOE managerial meltdown in the making, creating a disconnect between DOE mandated and utility prepared waste container systems, which, upon future DOE reversals, the agency would no longer accept. This risks dramatically increased damage awards from taxpayers, if the half-hearted TAD program is abandoned at some point in the future, potentially resulting in the costly, time-consuming, and even radiologically risky need to remove already "permanently-sealed" irradiated nuclear fuel from what would then be obsolete, unacceptable, and wasted TAD canisters, for repackaging into different, yet to be conceived or designed container systems.

GEORGE W. BUSH ADMINISTRATION'S UNSEEMLY RUSH TO SADDLE TAXPAYERS WITH MULTI-BILLION DOLLAR LIABILITY TO BENEFIT MULTI-BILLION DOLLAR CORPORATIONS

14. Of the license applications submitted to NRC for 26 proposed nuclear reactors since 2007,[36] nine have been canceled or suspended indefinitely in the past two years.[37] An October, 2009

[35] U.S. Department of Energy Contract Amendment to Contract No. DE-CR01-09-RWO9003, ARTICLE IV - RESPONSIBILITIES OF THE PARTIES:

"Article IV.A.l. is further amended by inserting:

(c) Purchaser shall notify DOE at least five (5) years in advance of the Purchaser's anticipated needs for onsite dry SNF storage. Within ninety (90) days after such notification, DOE will provide Purchaser with a list of canisters for Purchaser to select a canister to procure and load for use in onsite dry SNF storage and transfer of such SNF to DOE. This list may include TAD-based canisters and other canisters licensed for storage and transport. Alternatively, *DOE may provide written notice that DOE does not intend to use canisters for acceptance."* (emphasis added)

[36] "COL Applications Received," U.S. NRC, at http://www.nrc.gov/reactors/new-reactors/col.html.

NRC finding of design flaws with the Toshiba-Westinghouse "Advanced Passive 1000" (AP1000) reactor could spell significant delays for 14 proposed new reactors in five states.[38] Proposed French Areva "Evolutionary Power Reactors" (EPRs) at Nine Mile Point, NY and Calvert Cliffs, MD had already suffered delays,[39] which could be prolonged by questioning of Areva's design safety by nuclear regulatory agencies in Finland, France, and the U.K.[40] NRC has delayed its draft environmental impact statement of reactor proposals at the Tennessee Valley Authority's Bellefonte, AL site until the utility decides whether or not it will revive its partially built Babcock and Wilcox designed reactors at Units 1 and 2, and/or it will build new Toshiba-Westinghouse AP1000 reactors, namely Units 3 and 4, delaying the projected reactor(s) completion date from 2016 to 2020-2022.[41] The earliest a new reactor could receive its combined Construction and Operating License (COL) from NRC is 2011.[42] This date could be further delayed, as all but two new reactor designs proposed for actual construction in the U.S. have yet to be certified by NRC.[43] Even those that have received NRC certification have since applied for amendments to their designs, which must receive further NRC approvals.

15. The nuclear utilities under new waste disposal contracts with DOE include: Duke Energy; Southern Nuclear; South Texas Project (NRG Energy, Toshiba, CPS Energy); UniStar Nuclear (a merger of Constellation Energy and Electricite de France); Dominion Virginia;

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[37] In Aug. 2009, TVA cancelled three proposed reactors at Bellefonte, AL; in May 2009, Exelon cancelled two proposed reactors at Victoria County Station, TX; in April 2009, Ameren UE cancelled one proposed reactor at Callaway, MO; in March 2009, Entergy indefinitely suspended two proposed reactors, at Grand Gulf, MS and River Bend, LA; and in Jan. 2008, Warren Buffet's MidAmerican cancelled a proposed reactor in Idaho. For more detailed information on these cancellations and suspensions, see "Nuclear Power: The Renaissance That Wasn't," at http://www.psr.org/nuclear-bailout/resources/the-renaissance-that-wasnt.pdf.

[38] Rebecca Smith, "NRC Decision Tests Nuclear Plant Plans," *Wall Street Journal*, October 16, 2009.

[39] Andrew Henderson, "Proposed nuclear power plant: UniStar president outlines reasons for one-year delay," The Valley News, August 22, 2009, http://www.valleynewsonline.com/viewnews.php?newsid=86590&id=1; and, also in August 2009, NRC delayed the scheduled publication of the final environmental review for Constellation's Calvert Cliffs 3 in Maryland to Feb. 2011, a delay of 13 months (see http://www.psr.org/nuclear-bailout/resources/the-renaissance-that-wasnt.pdf).

[40] "French, UK, Finnish Regulators: Have Raised Areva EPR Issues," Wall Street Journal, Nov. 2, 2009, http://online.wsj.com/article/BT-CO-20091102-710144.html.

[41] Dave Flessner, "Bellefonte construction pushed back again," Chattanooga Times Free Press, Aug. 7, 2009, http://www.timesfreepress.com/news/2009/aug/07/bellefonte-construction-pushed-back-again/.

[42] "New Reactor Licensing Applications: Schedules by Calendar Year," U.S. NRC, at http://www.nrc.gov/reactors/new-reactors/new-licensing-files/new-rx-licensing-app-legend.pdf.

[43] The General Electric Nuclear Energy "Advanced Boiling Water Reactor" (ABWR) and the Toshiba-Westinghouse "Advanced Passive 1000" (AP1000) designs have received design certifications from NRC. However, both still must receive approval from NRC for amendments to the certified designs. The GE-Hitachi "Economic Simplified Boiling Water Reactor" (ESBWR), Areva Nuclear Power "U.S. Evolutionary Power Reactor" (EPR), and Mitsubishi Heavy Industries, Ltd. "U.S. Advanced Pressurized-Water Reactor" (US-APWR), however, have yet to receive design certification from NRC. See http://www.nrc.gov/reactors/new-reactors/design-cert.html.

Florida Power and Light; South Carolina Electric & Gas; Pennsylvania Power and Light; Progress Energy; Ameren UE (Union Electric); and Luminant. Each of these represent multi-billion dollar corporations.[44]

16. Signing contracts with reactors that cannot even be licensed for several more years, at the earliest, begs the question why DOE was in such a rush. George W. Bush's Energy Secretary, Samuel Bodman, seems to have answered this, by stating "These contracts are essential to advancing the commercial nuclear renaissance…Making these contracts available to the developers of new reactors will support the expanded use of nuclear power in the United States…"[45] Just four days later, on Election Day 2008, DOE begin hastily signing radioactive waste disposal contracts for proposed new reactors. By Jan. 22, 2009 – two days after Barack Obama was inaugurated president – DOE had signed contracts for 21 proposed new reactors.[46] This seems to have been a parting gift, at the 11th hour, from the George W. Bush Administration to the commercial nuclear industry, at taxpayer financial risk to the tune of billions, or even tens of billions of dollars of future liability, culminating 8 years of Bush/Cheney era giveaways to the nuclear power industry.[47]

17. The courts have ruled that the ratepayer funded Nuclear Waste Fund (estimated to have $23.8 billion remaining at the end of Fiscal Year 2009)[48] cannot be used to pay liability to nuclear utility waste contract holders.[49] Despite this, the ratepayer funded Nuclear Waste Fund is expected to fall tens of billions of dollars short of paying for the first repository program. The Yucca Mountain repository – effectively cancelled by President Obama and Energy Secretary Chu in February 2010, through zeroing out its budget in Fiscal Year 2011, and moving to withdraw the DOE construction and operation application from the NRC licensing board proceeding – was estimated by DOE in 2008 to have cost $96.2 billion for

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[44] See also U.S. Nuclear Regulatory Commission, COL Applications Received, including Applicant names, at http://www.nrc.gov/reactors/new-reactors/col.html.

[45] "U.S. Department of Energy Announces the Availability of Disposal Contracts for New Nuclear Reactors," U.S. Department of Energy press statement, October 31, 2008, at http://www.energy.gov/news/6704.htm.

[46] See footnote 4 above.

[47] See, for example, the Energy Policy Act of 2005, signed into law by George W. Bush on August 8, 2005, which contained $13 billion in subsidies, tax breaks, and other federal taxpayer funded support for the nuclear power industry, and which also authorized the nuclear power loan guarantee program. This led to the 2007 appropriation of $20.5 billion in taxpayer-backed nuclear loan guarantees for new reactors and uranium enrichment facilities. On February 1, 2010, President Obama's Energy Secretary, Steven Chu, called for a tripling of the new reactor loan guarantee fund to $54.5 billion. On February 16, 2010, President Obama himself announced the awarding of $8.3 billion in taxpayer-back loan guarantees for the construction of two new reactors at Southern Company's Vogtle Nuclear Power Plant in Georgia.

[48] Cawley, CBO, page 3.

[49] Cawley, CBO, page 6; Hertz, DOJ, page 6.

just the first 100 years of operations.[50] Such large shortfalls in funding would be compensated, yet again, by U.S. taxpayers.

18. While DOE has signed these new commercial radioactive waste disposal contracts, and has recently awarded taxpayer-backed loan guarantees for the construction of new reactors, it has not opened a national repository for the permanent disposal of irradiated nuclear fuel, nor cleaned up the severely contaminated West Valley, NY commercial reprocessing site. As Native American environmental justice advocate Winona LaDuke has put it, even kindergarteners know in regards to their toys that you have to clean up your last mess before you're allowed to make a new one. DOE's new waste disposal contracts enable the commercial nuclear power industry to make a new high-level radioactive "mess," while the old one is yet to be cleaned up or solved, and American taxpayers will bear the ultimate liability.

[50] Cawley, CBO, page 5, citing U.S. Department of Energy, Office of Civilian Radioactive Waste Management, *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program*, DOE/RW-0591 (July 2008).