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NUCLEAR REGULATORY COMMISSION

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RULEMAKINGS AND  
ADJUDICATIONS STAFF

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In the Matter of:

Amending 10 C.F.R. Parts 20, 30, 40, 50, 70  
and 72 and Promulgating a Rule Concerning:

NRC Docket No.  
RIN 3150-AH45

Decommissioning Planning

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SUPPLEMENTAL COMMENTS SUBMITTED BY THE STATE OF NEW YORK  
CONCERNING THE NUCLEAR REGULATORY COMMISSION'S PROPOSED  
DECOMMISSIONING RULEMAKING

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On behalf of the People of the State of New York, the Office of the Attorney General of the State of New York respectfully submits the following supplemental comments on the proposed rulemaking concerning the decommissioning of various atomic energy sites (NRC Docket ID NRC-2008-0030, RIN 3150-AH45).

Recent events have confirmed the State's concerns that current decommissioning assurances will be insufficient to fully decommission power reactors such as Indian Point, which have experienced substantial subsurface and groundwater site contamination. Neither NRC nor the licensees are directly addressing persistent shortfalls in licensees' decommissioning trust funds. When coupled with the enormous and unacknowledged cost of remediating subsurface and groundwater contamination that have been brought on by continued radionuclide leaks, these shortfalls make it increasingly likely that the decommissioning trust funds will be exhausted long before full decommissioning has been accomplished.

The Commissioners' continued reliance on an out-of-date decommissioning cost formula and unrealistic assumptions about cost inflation and financial market performance coupled with their steadfast refusal to acknowledge that subsurface contamination, will significantly increase decommissioning costs, could well force States and their taxpayers to either pay the bill to decommission, decontaminate, and restore the reactor sites and degraded resources or accept blighted and unproductive areas in their midst for generations to come. Rather than push this draconian choice on to States and localities, the Commissioners should revise decommissioning regulations and ensure that the licensees – whose activities created the contamination – promptly set aside all the money to cover all decommissioning costs.

**I. SIGNIFICANT SHORTFALLS PERSIST IN DECOMMISSIONING TRUST FUNDS FOR INDIAN POINT AND OTHER ENTERGY MERCHANT PLANTS**

The Entergy Corporation owns Indian Point Unit 1, Unit 2, and Unit 3 as well as other merchant plants in the Northeast. Decommissioning forecasts prepared by Entergy's consulting subsidiary – TLG Services, Inc. – indicate that the decommissioning funds for Indian Point Unit 1 and Indian Point Unit 2 contain just over 50% of the funds that TLG estimates will be required to fully fund the decommissioning of those two Indian Point Units, a shortfall of over \$800 million.<sup>1</sup> See Table 1, below.

**Table 1:<sup>2</sup>  
Shortfall in Entergy's Decommissioning Funds for Indian Point Reactors  
Unit 1 and Unit 2  
(December 31, 2007)<sup>3</sup>**

Facility	Decommissioning Funds Accumulated	Amount Required by NRC Regulations	Entergy/TLG Decommissioning Cost Estimate
Indian Point Unit 1	\$271,190,000	\$317,090,000	\$590,930,000
Indian Point Unit 2	\$347,200,000	\$382,830,000	\$920,500,000
<b>TOTAL</b>	<b>\$618,390,000</b>	<b>\$699,920,000</b>	<b>\$1,511,430,000</b>

In contrast to the Entergy/TLG projections, NRC's decommissioning cost formula is based on a simplistic *pro rata* formula linked to a reactor's generation capacity. However, as illustrated in Table 2, below, even by NRC's grossly inadequate *pro forma* funding requirements under 10 CFR § 50.75(b) and (c), the Indian Point Decommissioning Trust Funds are \$500 million short.

**Table 2:  
Comparison of Indian Point Decommissioning Account Balances  
and NRC Regulatory Requirements  
(March 30, 2009)**

Facility	IP Account Balance	Amount Required by NRC Regulations	Shortfall
Indian Point Unit 1	\$260,150,000	\$457,814,000	\$197,664,000
Indian Point Unit 2	\$342,230,000	\$682,740,000	\$340,510,000
Indian Point Unit 3	\$450,650,000	\$411,700,000	-\$38,950,000
<b>TOTAL</b>	<b>\$1,053,030,000</b>	<b>\$1,552,254,000</b>	<b>\$499,224,000</b>

<sup>1</sup> The decommissioning funding for IP3 resides with the New York Power Authority under an agreement made when that plant was sold to Entergy. The IP3 decommissioning fund has more money than either the IP1 or IP2 decommissioning funds. The IP3 decommissioning fund is dedicated for IP3, not IP1 or IP2.

<sup>2</sup> The State has created these tables with the most up-to-date data to which it has access. The unavailability of more current numbers is a further argument in support of increased regulatory oversight.

<sup>3</sup> Citations have been omitted here to enhance readability, but these tables with full citations and sources are reproduced in appendix hereto.

Entergy's plan to address this shortfall is inadequate. As described below, Entergy unduly relies on (1) the optimistic assumptions that (a) the investment markets will continually spin off profits and (b) such growth will always exceed increases in construction costs and (2) the decades-long SAFSTOR deferral method will make up the difference.

## **II. THE NRC FORMULA FOR ESTIMATING DECOMMISSIONING COSTS IS ANTIQUATED AND OUT OF LINE WITH ACCEPTED TECHNIQUES**

The recent disclosure of additional radioactive leaks and the widespread adoption of sophisticated cost estimates by both industry and international nuclear regulatory agencies further support the State of New York's objection to NRC's adherence to its out-of-date *pro forma* method of estimating decommissioning costs. Even were licensees to cure all funding shortfalls according to the current NRC formula, the accumulated funds would be grossly insufficient to fully decommission nuclear reactors, because the absence of severe contamination is one of the key assumptions on which the current funding formula relies.

### **A. Only "Site-Specific" Cost Estimates, Which Take Radiologic Contamination into Account, Will Ensure Adequate Decommissioning Funds**

Indian Point's subsurface contamination is more extensive than the contamination encountered at other closed reactors. The presence of subsurface contamination greatly increases the cost of decommissioning and site restoration. For example, the decommissioning cost for the Connecticut Yankee plant originally had been estimated at \$410 million. After site contamination was discovered, however, more than \$1.2 billion (an increase of nearly 200%) was needed for full decommissioning. See *Briefing on Decommissioning Funding*, at 25 (Testimony of Paul Gunter) (February 23, 2010) (ML100610257). Similarly, decommissioning costs at the Yankee Rowe plant in western Massachusetts ballooned from an "initial estimate of \$120 million to more than \$750 million, in large part, the result of the spread of groundwater contamination, some readings of elevated tritium in aquifer systems as deep as 300 feet." *Id.* Clearly, the presence of contamination can make NRC's current *pro forma* decommissioning estimates meaningless.

Since the State of New York voiced its objection to NRC's method of estimating nuclear power plant decommissioning costs in its May 8, 2008 comments, severe leaks of radioactive materials have been detected at several power reactors. According to NRC staff:

There are 65 sites with operating commercial nuclear power plants in the United States. Records indicate 37 of these sites have had leaks or spills that involved tritium in excess of 20,000 pCi/L at some time during their operating history.

Fifteen sites are currently reporting tritium, from a leak or spill, in excess of 20,000 pCi/L

*List of Historical Leaks and Spills of Tritium at U.S. Commercial Nuclear Power Plants, Revision 6*, NRC (September 14, 2010) (ML101270439).

In total, 29 sites currently show the presence of tritium in ground water. *Id.* Although NRC often focuses on tritium, it is not the only radionuclide pollutant of concern. In the recent past, tritium leaks have also been associated with the presence of highly radioactive isotopes, including Strontium<sup>90</sup>. In ground water leaks, "tritium is the beginning of the rest of the byproduct materials. Tritium is the tracer that's the precursor to what we found in Indian Point, which was later the cesium and strontium 90s come [sic], so if the leak goes on for some period of time, unmonitored, there will be more than just tritium." *Public Meeting on Groundwater Protection*, United States Nuclear Regulatory Commission (October 4, 2010) (ML102861795) (comment of James Noggle, RDO, NRC Region One).

In 2009, the Indian Point 2 reactor suffered another leak of tritiated water, also from a buried pipe. Annie Correal, Indian Pt. Broken Pipe Spurs Safety Worries, *The New York Times*, WE2 (March 1, 2009); see also May 14, 2009, *Root Cause Analysis Report: CST Underground Recirc Line Leak* (CR-IP2-2009-00666). In April 2009, only days after entering a 20-year period of extended operations with an enhanced program to manage aging components, radionuclides leaked from Oyster Creek. June 5, 2009, *Root Cause Evaluation Report for Tritium Leak at Oyster Creek* (ML102020419). With the nuclear fleet aging and with buried pipes not being inspected in a frequent and systemic manner, large leaks are increasingly likely, and will lead to very high costs to clean up contaminated soil. The disclosure of radionuclide leaks has continued unabated. At least 8 leaks have been reported at reactors in 2010, alone, with the highest exceeding 2 million picocuries of tritium. David Lochbaum, *Regulatory Roulette: The NRC's Inconsistent Oversight of Radioactive Releases from Nuclear Power Plants*, Union of Concerned Scientists, Groundwater Events Sorted by Date (2010).<sup>4</sup>

NRC has been ineffective in preventing power reactors from leaking radionuclides into subsurface and groundwater resources. In turn, this failure contributes to lax oversight by licensees. NRC should focus on preventing spills before they happen or require the immediate remediation of contamination. Failing those two more effective methods, the State of New York again urges NRC to augment the decommissioning funds when contamination is found so that the hundreds of millions of dollars in increased clean up costs will not be born by taxpayers.

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<sup>4</sup> Available at: [http://www.ucsusa.org/assets/documents/nuclear\\_power/nuclear-power-radioactive-releases.pdf](http://www.ucsusa.org/assets/documents/nuclear_power/nuclear-power-radioactive-releases.pdf)

In the current rulemaking, the industry seeks to avoid responsibility for increased decommissioning and site restoration costs associated with contamination of natural resources due to "routine" releases of radioactive material during plant operation. See *Matrix of Issues Regarding Decommissioning NRC Proposed Rule*, 73 Fed. Reg. 3812, at 20-21 (Jan. 22, 2008). If the Commissioners accept industry's position, taxpayers will end up bearing the cost for the clean up of this released radiation. Instead, the Commissioners should require licensees to promptly set aside the money needed to fully decontaminate reactor sites and remove all contaminated systems, structures, components, soil, and rock. Unless the licensees are required to set aside funds now to remediate contaminated resources, the licensees will continue to lack any motivation to ensure that their operations do not leak radiation into the environment. Indeed, the U.S. Department of Energy has acknowledged that requiring operators to pay for the restoration of environmental resources will ensure that nuclear licensees internalize environmental costs. See *Public Meeting on Groundwater Protection*, (October 4, 2010) (ML102861795) (testimony of Edward Regnier, Chief, Radiation Protection Section, Department of Energy, at 18).

Even the industry's own cost estimates reveal how grossly inadequate is NRC's own model. For example, according to the NRC formula, the estimated decommissioning costs for Entergy's Northeast merchant plants is roughly \$3 billion. Entergy, itself, estimates the decommissioning costs for those plants at between \$4.9 billion and \$5.9 billion, meaning that the adherence to the NRC formula would lead to an ultimate shortfall of between \$2-3 billion dollars. See Table 3, below. Given the size of the projected shortfall, it is not surprising that in a corporate reorganization proceeding, Entergy tried to prevent the public disclosure of some TLG decommissioning cost projections, but a New York State Public Service Commission judge rejected Entergy's argument.

Altogether, the decommissioning trust funds of investor owned utilities are valued at \$21 billion less than estimated costs, with a reliance on uncertain investment gains to make up the difference. *Nuclear Decommissioning Funding Study 2009, Historical NDT Fund Balances, Annual Contributions and Decommissioning Cost Estimates Updated as of December 31, 2009*, Duff & Phelps, Investment Co.<sup>5</sup>

Even as continued leaks will lead to ever higher decommissioning costs, they are giving lie to the argument that these aging plants can be operated safely for the additional licensing period being requested by Entergy and other licensees. Unfortunately, Entergy, like other licensees is relying on the extra twenty years of re-licensing coupled in many instances with the SAFSTOR delay to grow its decommissioning fund to reach just NRC's current inadequate and *pro forma* level. Such calculation leaves the very real risk that decommissioning funds may never be

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<sup>5</sup> Duff & Phelps manages trust funds for licensees; it produces reports on those funds and makes them available at: <http://www.dpimc.com/customportfolios/customnews.html>.

adequate if any plant is retired without relicensing. See Entergy Louisiana LLC, *Annual Report Form 10-K*, at 240 (March 2, 2009).<sup>6</sup>

### **B. NRC is Virtually Alone Among Nuclear Regulatory Authorities in Adhering to a *Pro-Forma* Cost Estimate**

The inaccuracy of a generic or *pro forma* formula is borne out by the International Atomic Energy Agency's estimate that such a formula can only provide accuracy within 30%-50% of the actual cost. *Financial Aspects of Decommissioning*, IAEA-TECDOC-1476, at 13 (2005).<sup>7</sup> Moreover, the American Society for Mechanical Engineers (ASME) acknowledges that the only way to achieve a reasonable degree of reliability is to develop "site-specific" decommissioning costs estimates.<sup>8</sup>

Nuclear regulatory agencies around the world, and even licensees, themselves, have moved away from the *pro forma* formula employed by NRC due to its immense inaccuracy. Canada adopted a "site-specific" methodology after it modernized its regulations. *Examples of Regulation of Decommissioning Financing in Non-EU Countries and Non-Nuclear Areas*,<sup>9</sup> at 1-2. Also, all member states of the European Union – except Bulgaria – have moved away from generic estimating formula to "site-specific" estimates. *Comparison Among Different Decommissioning Funds Methodologies for Nuclear Installations*, European Commission Directorate-General Entergy and Transport, H2, at XI (2007).<sup>10</sup>

As detailed in Section IV of its May 8, 2008 submittal, the State of New York urges NRC to adopt a rule that would ensure more accurate estimates of decommissioning costs, specifically one which fully accounts for site contamination, including contamination by residual radioactive material from routine releases.

### **III. NRC'S CURRENT DECOMMISSION FUNDING PROGRAM IS BASED ON DEEPLY FLAWED ASSUMPTIONS**

In addition to the antiquated and generic decommissioning cost formula, NRC's decommissioning program relies on other equally flawed assumptions. NRC's current decommissioning funding program assumes that financial investments will consistently produce 5% profit each year and that construction costs will increase – conveniently – by only 3% each year. Under this view, in which investment profits

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<sup>6</sup> Available at: <http://www.sec.gov/Archives/edgar/data/7323/000006598409000062/a10k.htm>

<sup>7</sup> Available at: [www-pub.iaea.org/MTCD/publications/PDF/te\\_1476\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/te_1476_web.pdf)

<sup>8</sup> *The Decommissioning Handbook*, at 3-85.

<sup>9</sup> Available at: [www.wupperinst.org/.../EUDecommFunds\\_NonNuclear\\_NonEU.pdf](http://www.wupperinst.org/.../EUDecommFunds_NonNuclear_NonEU.pdf)

<sup>10</sup> Available at: [www.wupperinst.org/uploads/tx.../EUDecommFunds\\_FinalReport.pdf](http://www.wupperinst.org/uploads/tx.../EUDecommFunds_FinalReport.pdf)

will always exceed cost increases, the decommissioning funds will grow – albeit slowly and over many years – to cover the decommissioning bill. Neither assumption is valid.

**A. NRC and Industry’s Assumption That Investment Markets Will Provide a Constant 2% Annual Real Growth Above Inflation Lacks a Rational Basis**

The joint NRC-industry assumption that sufficient growth in the investment markets will make up any deficits has already been proven wrong by the existence of widespread decommissioning funding shortfalls at licensee plants. For example, on June 19, 2009, NRC requested that licensees at 18 operating plants address decommissioning funding assurance shortfalls. *See NRC Requests Plans from 18 Nuclear Power Plants to Address Apparent Decommissioning Funding Assurance Shortfalls*, No. 09-112 (ML091700104). The 18 plants with shortfalls were double the 9 plants with shortfalls at the end of 2008. *2009 Summary of Decommissioning Funding Status Reports for Nuclear Power Reactors*, SECY-09-0146 (October 6, 2009) (ML092580041). As late as May 2010, five of the plants with shortfalls totaling over \$676 million (based on NRC's inadequate funding requirements) had not submitted plans to NRC as to how they would address their deficiencies. *See Biennial Decommissioning Reports*;<sup>11</sup> *2009 Biennial Decommissioning Funding Report*, May 7, 2010 (ML101270158).

Adverse market conditions and licensee inattention have caused the average funding level to decline 11% below the 2006 level. *2009 Summary of Decommissioning Funding Status Reports for Nuclear Power Reactors*.<sup>12</sup> Although market conditions have improved since the latest NRC report, the reality is that the trust funds are already falling behind the growth targets that would ensure adequate decommissioning. *See, e.g., Vermont Yankee's Decommissioning Fund Falling Behind Expected Growth Rates*, *Daily Hampshire Gazette*, September 22, 2010.

Indeed, an examination of historical market performance demonstrates that attaining the NRC regulatory minimum real growth rate of 2% in decommissioning funds is unrealistic over the long time horizon imagined by both NRC and licensees in their projections.<sup>13</sup> For example, over the 100 year period from 1910 to 2009, annualized real growth in the Dow Jones Industrial Average amounted to only

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<sup>11</sup> Available at: <http://www.nrc.gov/about-nrc/regulatory/decommissioning/finan-assur/bi-decom-reports.html>

<sup>12</sup> Duff & Phelps manages trust funds for licensees; it produces reports on those funds and makes them available at: <http://www.dpimc.com/customportfolios/customnews.html>.

<sup>13</sup> 10 CFR § 50.75(e)(ii) requires a 2% real growth rate.

1.76%.<sup>14</sup> NRC staff has conducted several analogous analyses and also concluded that the market has experienced several decades long periods in which real growth fell below 2%. *See Response to Comments on Draft Guidance DG-1229, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors" SECY-10-0084, at 30-31 (ML101540488)*. Although any report of a rate of return will vary according to the time horizon and benchmark upon which it is based, such manipulability is precisely the reason why it is irresponsible to rely on such malleable assumptions for funding assurance. The relative recovery of the decommissioning funding trusts does not prove the viability of the current funding mechanisms; if the recent crisis has taught anything, it is that that large market events will occur, but that it is difficult to predict them. *See Ray Ball, The Global Financial Crisis and the Efficient Market Hypothesis: What Have We Learned? Journal of Applied Corporate Finance 21:4 (2009)*.<sup>15</sup> An unfortunately timed market event might further diminish the real growth of funds, which are already behind their predicted levels.

It is capricious for the NRC Commissioners, whose regulatory authority and expertise do not include financial markets, to predict otherwise. It is also inappropriate to take that prediction and use it as a basis for a regulation concerning the sufficiency of decommissioning trusts. It is especially inappropriate when the consequence of "missing the mark" could lengthen the time a blighted contaminated site remains in a community or shift decommissioning and decontamination costs to a State or its citizens. Hosting a blighted "brownfield" for generations was not part of the equation when NRC and AEC initially imposed construction and operating licenses on localities and States.

### **B. Even Small Increases in Decommissioning Costs Will Upend the Commissioners' Unrealistic Accounting Assumptions**

NRC does not adequately monitor licensee performance with regard to funding assurance, but continues to rest on its assumption that time will cure any current deficiencies. The Commissioners' assumptions lack support. Indeed, even Entergy acknowledges that a small error in a current assumption can dramatically alter decommissioning decades in the future. Entergy estimates that decommissioning costs will rise between 3% and 3.5% annually. However, Entergy also admits that even a 0.5% underestimation of decommissioning costs will lead to a 20-25% shortfall when a plant is eventually decommissioned.<sup>16</sup> Changes in the assumption

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<sup>14</sup> Data for annualized growth of DJIA and inflation available at: <http://www.measuringworth.com/index.php>.

<sup>15</sup> Available at: [http://faculty.chicagobooth.edu/john.cochrane/teaching/35150\\_advanced\\_investments/Ball\\_2009%20EMH%20and%20the%20GFC.pdf](http://faculty.chicagobooth.edu/john.cochrane/teaching/35150_advanced_investments/Ball_2009%20EMH%20and%20the%20GFC.pdf)

<sup>16</sup> Entergy New Orleans, Inc., Annual Report 2009, Form 10K, at 47 (February 26, 2010).

about growth of costs greatly compound errors in initial "site-specific" estimates of decommissioning costs, which at their best can only predict costs within 20%.<sup>17</sup> An error in one of these two assumptions will magnify any error in the other and will certainly leave states shouldering a significant part of cleanup costs.

Significant shortfalls persist in decommissioning trust funds for other plants in addition to those operated by Entergy. Licensees are generally not making up for these shortfalls by increasing contributions to the funds. In fact, annual contributions to the funds decreased by nearly 50% between 2005 and 2009. *Nuclear Decommissioning Funding Study 2009: Historical NDT Fund Balances, Annual Contributions and Decommissioning Cost Estimates*, updated as of December 31, 2009, Duff & Phelps, Investment Co. Instead, licensees are increasingly relying solely on market gains and leaving sites idle for decades through the SAFSTOR option to ensure the adequacy of decommissioning funds. Both strategies have significant risks.

### **C. Delaying Decommissioning for Decades to Allow Funds the Chance to Grow Under the SAFSTOR Option is Inappropriate**

Concern about reliance on the delayed decommissioning option known as SAFSTOR has been expressed by NRC staff, and particularly NRC's Licensee Financial Policy Senior Advisor:

We want to balance the optimism that the market will rise with the realization that returns can stagnate for decades at a time and while decommissioning is a long term goal, decades are also long term and we don't want to unnecessarily delay the decommissioning because we are depending too much on market returns.

*Briefing on Decommissioning Funding*, United State Nuclear Regulatory Commission (February 23, 2010) (Testimony of Thomas Fredrichs, Licensee Financial Policy, Senior Advisor, at 89-90) (ML100610257). Not only does historical data demonstrate the fallacy of relying on an upwards trending market, but the inherent volatility of the markets makes them a poor tool by which to guide a policy as important as the safe and full decommissioning of nuclear reactors such as Indian Point. See Nuclear Regulatory Commission, SECY-10-0084 - Enclosure 2, *Response to Comments on Draft Guidance DG-1229, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors"* at 30-34 (June 25, 2010) (ML101540488).<sup>18</sup>

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<sup>17</sup> See Thomas S. LaGuardia, *The Decommissioning Handbook*, ASME Press (2004), at 3-86.

<sup>18</sup> See also *Briefing on Decommissioning Funding*, United State Nuclear Regulatory Commission (February 23, 2010) Commission Briefing Slides/Exhibits, (ML100550292).

Similarly, taking an earnings credit for the period in which a plant is in SAFSTOR, though permitted by current regulations, contravenes the goal of the regulations, which has long been that decommissioning costs be fully funded at the time of permanent plant shut down. *Briefing on Decommissioning Funding*, at 89. Extending the time horizon by the decades of delay built into the SAFSTOR option dramatically increases the uncertainty of the funds' viability and of the licensee's compliance with its decommissioning and site restoration obligations. Such multi-generational delay will also delay the remediation of the site and its return to "unrestricted use" status, as well as lengthen the time that unproductive brownfields remain in a community and suppress local real estate values and tax revenues. In short, NRC's decision to warehouse a contaminated reactor site for as long as 60 years through the euphemistically-named SAFSTOR option unilaterally imposes an easement on States and communities that compels them to live with a brownfield and blight in their midst.<sup>19</sup>

Due to market volatility and continued funding shortfalls, the State of New York also urges that NRC amend its regulations to require Entergy and other owners to report on the status of their decommissioning fund annually rather than biennially, as current regulations require. 10 CFR § 50.75(f)(2). Currently, licensees do not develop plans for their shortfalls until NRC requests such a plan after examining the biennial report. The licensees (26 out of 27 of the plants with shortfalls at the end of 2008) then develop plans to "true up" their funds, leading to a time period of three years of inadequate funding assurance. *Briefing on Decommissioning Funding*, Testimony of Thomas Fredrichs, at 108, 113. This permissiveness leads to the current circumstance where five plants still report funding shortfalls only months before the next report is due in March, 2011.

Increased reporting requirements will allow NRC to identify underperforming strategies more quickly, ensuring that the changes will be smaller and consequently easier to implement than those that would be necessary when the trust fund is allowed to remain in shortfall for a period of two years – or more – under the current regulation. *Briefing on Decommissioning Funding*, Testimony of Thomas Fredrichs, at 107. Although the industry seeks to avoid the requirement of more timely adjustments by suggesting that real-time and meaningful financial oversight will lead to risky investment behavior, the prudent investment standard under which the funds are currently managed means that such arguments hold no weight. *Briefing on Decommissioning Funding*, Testimony of Thomas Fredrichs, at 104; See also *Response to Comments on Draft Guidance DG-1229, "Assuring the Availability*

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<sup>19</sup> 10 CFR § 50.82 mandates that all decommissioning activities finish within 60 years of the permanent cessation of plant operations, but licensees can apply for extensions if necessary to "protect public health and safety." *Id.* For example the NRC has granted such exemptions to licensees who have sites with both active and with deactivated reactors so that the licensee may leave the deactivated reactor in SAFSTOR until the active reactor is finally ready for decommissioning. By way of example, if the license extension is granted to Indian Point Unit 2, after which Unit 2 is put in SAFSTOR for the maximum period of 60 years, Indian Point Unit 1 will have been in SAFSTOR for nearly 120 years since its shutdown in 1974.

of Funds for Decommissioning Nuclear Reactors" SECY-10-0084 (ML101540488). In that report, NRC staff noted that licensees could implement increased reporting requirements without substantial cost and that increased reporting would better encourage licensees "to make forward-looking plans to avoid shortfalls." *Id.* at 2.

NRC's current financial assurance tests are antiquated, leading to inaccurate predictions about whether current funding commitments will be sufficient to fully pay for decommissioning. See *Briefing on Decommissioning Funding*, Testimony of Thomas Fredrichs, at 100. Notably, NRC Chairman Gregory B. Jaczko advocates a more robust regulatory environment to counter licensees' tendency to evade responsibility:

The decommissioning process at some licensee sites, however, has been delayed due to the failure of having adequate cleanup funds even though there are no insurmountable technical challenges standing in the way of cleanup. In light of this, I believe that the NRC should require more detailed reporting by licensees and place tighter NRC control over certain financial instruments that are set aside to cover eventual decommissioning costs.

The Honorable Gregory B. Jaczko Chairman U.S. Nuclear Regulatory Commission, *Remarks as Prepared for Delivery: Energy and Environment Conference, February 1, 2010*, at 4 (ML100320907). Chairman Jaczko further acknowledged that NRC must:

ensure that sites are appropriately decommissioned so that future communities are not unnecessarily limited in the future use of these locations is a key part of our environmental mission. It is also important in maintaining public confidence in the NRC. Cleaning these sites and returning them to public use should be accomplished efficiently and effectively.

*Id.*, at 4 (February 1, 2010)

**D. Without Meaningful and Timely NRC Regulatory Oversight to Ensure Compliance with Financial Commitments and Obligations, Parent Companies Will Seek to Evade or Minimize Responsibility for Decommissioning Costs**

The State of New York is concerned that Entergy will seek to evade or postpone its responsibility to promptly decommission and completely restore the Indian Point site. Between 2008 and 2010, Entergy attempted to limit or eliminate various financial obligations by proposing a complex corporate reorganization. Specifically, Entergy attempted to reorganize its nuclear holding companies under a separate

entity, Enexus, and issue substantial corporate debt. NRC quickly approved Entergy's proposal. However, after scrutinizing the details, New York and Vermont both rejected the proposal. In its denial, the New York Public Service Commission, reasoned that the reorganization would be "harmful to the financial strength of the New York nuclear assets." New York Public Service Commission, *Order Closing Proceeding and Instituting New Proceeding*, Case 08-E-0077, Case 10-E-0402, at 4 (August 19, 2010); Vermont Public Service Board, *Final Board Order*, Docket No. 7404 (June 24, 2010).<sup>20</sup>

Indeed, Entergy's current and future plans left the New York Public Service Commission so concerned that Entergy was "contemplating alternative financial transactions, which ultimately could jeopardize the financial strength and stability of" the Indian Point reactors, that the Commission preemptively ordered Entergy to consult with it before any attempted reorganization. *Order Closing Proceeding and Instituting New Proceeding*, at 13.

In other contexts, NRC staff has echoed State concerns in reports to the Commissioners, indicating that major accounting scandals, such as occurred with Enron and WorldCom, check and risks under bankruptcy both diminish the strength of parent guarantees. The staff has suggested that each parental guarantee come with an auditor's opinion and that guarantees come with an acceleration clause, which would make the full amount of the guarantee immediately due upon bankruptcy so that NRC would have a larger claim in the bankruptcy court. *Briefing on Decommissioning Funding*, Testimony of Thomas Fredrichs, at 106.

The State of New York is also concerned about recent disclosures that some licensees may be commingling State-regulated funds in to NRC regulated Decommissioning Trust Funds. NRC was concerned enough by reports of licensees' commingling of funds that it issued a regulatory clarification as far back as 2001. *NRC Regulatory Issue Summary 2001-7 10 CFR 50.75(f)(1) Reports on the Status of Decommissioning Funds (Due March 31, 2001)* (February 23, 2001) (ML010300068). Although nearly a decade has passed, NRC was forced to reiterate its position because licensees continued to misreport their funds. See Nuclear Regulatory Commission, *NRC Regulatory Issue Summary 2001-07, Rev. 1, 10 CFR 50.75 Reporting and Recordkeeping for Decommissioning Planning* (Draft November 18, 2008) (ML083180118). This practice may misleadingly inflate the account balances that NRC believes are under its authority and are available for decommissioning, or deplete funds for State regulated obligations. The Commissioners should ensure that State-regulated funds have not been swept into and comingled with NRC regulated accounts.

By way of example, before it sold Indian Point Units 1 and 2 to Entergy, Consolidated Edison was collecting decommissioning funds through its rate payers,

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<sup>20</sup> Available at: <http://psb.vermont.gov/sites/psb/files/orders/2010/7404FinalOrder.pdf>

at levels agreed upon in rate cases before the New York State Public Service Commission. New York State Public Service Commission, *Opinion and Order Adopting Settlement*, Opinion 92-8, Case 91-E-0462, at 91-92 (1992) The money from the rate payers was divided into two funds: one set up to meet the NRC's regulatory minimum decommissioning costs; and another for non-nuclear site restoration. *Id.* At the time of the sale of the Indian Point Units to Entergy, Consolidated Edison recorded \$55 million in the non-nuclear fund. Consolidated Edison, Inc. *2000 Annual Report, Form 10-K*, at 81 (April 2, 2001). As part of the sale, Consolidated Edison committed to transfer to Entergy the NRC regulatory minimum decommissioning funds equal to \$430 million. New York State Public Service Commission, *Joint Petition of Consolidated Edison Company of New York, Inc. and Entergy Nuclear Indian Point 2, LLC For Authority Under Section 70 of the Public Service Law to Transfer Certain Generating and Related Assets to Entergy Nuclear Indian Point 2, LLC and for Related Relief*, at 4-6 (January 11, 2001). Not having sufficient funds set aside to reach the minimum, Consolidated Edison rolled the \$55 million in state-regulated site restoration funding into the NRC funds, thus wiping out any money that New York rate payers had already contributed to return the Indian Point units to green field status. *Id.* Even at the time of the transfer, Consolidated Edison staff acknowledged that the \$430 million would not be sufficient to return the site to green field status, but that another \$47 million would be necessary. *Id.*, *Rasmussen Affidavit*, at 5. Currently, Entergy is reporting that money for site restoration is "included within and assured by" the NRC decommissioning funds. Letter to the Honorable Gerald L. Lynch from Gregory G. Nickson and Paul L. Gioia, re: Public Service Commission Case 08-E-77, dated December 1, 2008. This understanding runs contrary to NRC's view that its funding formula only provides for radiological decommissioning, not site restoration. *See NRC Regulatory Issue Summary 2001-7, Rev. 1* (2008). Consequently, there will be a shortfall of site restoration funds without even taking into account the gross inadequacy of the NRC formula, and New York rate payers will have seen their money disappear in abstruse corporate financial maneuvering.

The State of New York urges the NRC Commissioners to adopt its staff's recommendations to ensure greater accountability of parent organizations and reiterates the recommendations it offered in its May 8, 2008 comments. NRC should extend its revisions to 10 CFR § 72.30, requiring enhanced reporting requirements for independent spent fuel storage facilities to power reactors and the State of New York supports the enhanced reporting requirements of proposed 10 CFR § 50.82, which would require annual reporting on yearly decommissioning expenditures, the balance of funds, and detailed cost estimates of remaining decommissioning costs.<sup>21</sup>

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<sup>21</sup> *Comments Submitted by the Office of the Attorney General of the State of New York Concerning the Nuclear Regulatory Commission's Proposed Rulemaking to Amend 10 CFR Parts 20, 30, 40, 50, 70 and 72 to Require Certain Changes in Decommissioning Planning*, May 8, 2008) (ML081340325).

#### **IV. Conclusion**

The State of New York reiterates its previous comments and requests that NRC take into account the past year's revelations about decommissioning shortfalls and continuing instances of leaks at power reactors. The State further urges NRC to increase the strength and timeliness of the financial assurance monitoring regime so that decommissioning funds will not operate at shortfalls. Moreover, the formula by which decommissioning costs are estimated should be modernized to take into account "site-specific" factors, such as the presence of contamination, so that the ultimate costs will not be borne by States and their citizens.

dated: Albany, New York  
November 29, 2010

Adam Dobson  
Charlie Donaldson  
Janice Dean  
John Sipos

State of New York  
Office of the Attorney General

**APPENDIX**

**Table 1:<sup>22</sup>  
Shortfall in Entergy's Decommissioning Funds for Indian Point Reactors  
Unit 1 and Unit 2  
(December 31, 2007)**

<b>Facility</b>	<b>Decommissioning Funds Accumulated<sup>23</sup></b>	<b>Amount Required by NRC Regulations<sup>24</sup></b>	<b>Entergy/TLG Decommissioning Cost Estimate<sup>25</sup></b>
Indian Point Unit 1	\$271,190,000	\$317,090,000	\$590,930,000
Indian Point Unit 2	\$347,200,000	\$382,830,000	\$920,500,000
<b>TOTAL</b>	<b>\$618,390,000</b>	<b>\$699,920,000</b>	<b>\$1,511,430,000</b>

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<sup>22</sup> The State has created these tables with the most up-to-date data to which it has access. The unavailability of more current numbers is a further argument in support of increased regulatory oversight.

<sup>23</sup> Letter to NRC from J.E. Pollock, dated October 23, 2008, Attachment 1 to NL-08-144, Unit No. 1 and 2 10 CFR § 50.54(bb) Program for Maintenance of Irradiated Fuel (ML083040378).

<sup>24</sup> Letter, John F. McCann to U.S. Nuclear Regulatory Commission, Decommissioning Fund Status Report, ENOC-08-00028 (March 26, 2008) (ML081420032), Attachments I-III, reflecting totals of columns entitled "Amount of decommissioning funds estimated to be required pursuant to 10 CFR § 50.75(b) and (c)" for Indian Point Unit 1 (\$317.09M); Unit 2 (\$382.82M); and Unit 3 (\$382.83M).

<sup>25</sup> Letter to NRC from J.E. Pollock, dated October 23, 2008, Attachment 1 to NL-08-144, Unit No. 1 and 2 10 CFR § 50.54(bb) Program for Maintenance of Irradiated Fuel (ML083040378).

**Table 2:**  
**Comparison of Indian Point Decommissioning Account Balances and NRC**  
**Regulatory Requirements**  
**(March 30, 2009) <sup>26</sup>**

Facility	IP Account Balance <sup>27</sup>	Amount Required by NRC Regulations <sup>28</sup>	Shortfall
Indian Point Unit 1	\$260,150,000	\$457,814,000	\$197,664,000
Indian Point Unit 2	\$342,230,000	\$682,740,000	\$340,510,000
Indian Point Unit 3	\$450,650,000	\$411,700,000	-\$38,950,000
TOTAL	\$1,053,030,000	\$1,552,254,000	\$499,224,000

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<sup>26</sup> Entergy Nuclear Operations, Inc., *Status of Decommissioning Funding For Year Ending December 31, 2009* (ML100950058)

<sup>27</sup> As of 12/31/2009

<sup>28</sup> As of 12/31/2009

**Table 3:  
Shortfall in Entergy's Decommissioning Funds for Northeast Reactors**

<b>Facility</b>	<b>Decommissioning Funds Accumulated<sup>1</sup></b>	<b>Amount Required by NRC Regulations<sup>29</sup></b>	<b>Entergy/TLG Decommissioning Cost Estimate</b>
Indian Point Units 1, 2, and 3	\$1,086,710,000 <sup>30</sup>	\$1,136,740,000 <sup>31</sup>	\$2,191,059,000 - 2,464,262,000 (2007 dollars) <sup>32</sup>
Palisades	\$ 257,910,000 <sup>33</sup>	\$ 354,190,000 <sup>34</sup>	\$ 594,000,000 - 781,500,000 <sup>35</sup>
Vermont Yankee	\$ 439,570,000 <sup>36</sup>	\$ 490,890,000 <sup>37</sup>	\$ 655,528,000 - 991,115,000 (2006 dollars) <sup>38</sup>
FitzPatrick	\$ 511,020,000 <sup>39</sup>	\$ 513,640,000 <sup>40</sup>	\$ 764,114,000 - 963,968,000 (2007 dollars) <sup>41</sup>
Pilgrim	\$ 621,740,000 <sup>42</sup>	\$ 495,120,000 <sup>43</sup>	\$ 722,221,000 <sup>44</sup>
<b>TOTAL</b>	<b>\$2,916,950,000</b>	<b>\$2,990,580,000</b>	<b>\$4,926,922,000 - \$5,923,066,000</b>

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<sup>29</sup> 10 CFR § 50.75(b) and (c) for Year Ending December 31, 2007.

<sup>30</sup> Letter, John F. McCann to U.S. Nuclear Regulatory Commission, Decommissioning Fund Status Report, ENOC-08-00028 (May 8, 2008), Attachments, I, II, and III (totaling columns entitled “Amount accumulated to the end of the calendar year preceding the date of the report” for Indian Point Unit 1 (\$271.19M); Unit 2 (\$347.2M); and Unit 3 (\$468.32M)). To simplify things, this chart aggregates the three decommissioning trust funds for each of the three separate reactors and their associated facilities at Indian Point; however, OAG notes that significant financial and legal differences exist among the three separate trust funds.

<sup>31</sup> *Id.* at Attachments I-III, reflecting totals of columns entitled “Amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c)” for Indian Point Unit 1 (\$317.09M); Unit 2 (\$382.82M); and Unit 3 (\$382.83M).

<sup>32</sup> TLG Services, Inc., Decommissioning Cost Analysis for the Indian Point Energy Center, Document E11-1583-002 (Feb. 2008), at 29.

<sup>33</sup> Letter, John F. McCann to U.S. Nuclear Regulatory Commission, Decommissioning Fund Status Report, ENOC-08-00028 (May 8, 2008) (ML081420032), Attachment V.

<sup>34</sup> *Id.*

<sup>35</sup> TLG Services, Inc., Due Diligence Decommissioning Cost Analysis for the Palisades Nuclear Power Station, Document E11- 1529-002 , Rev. B (May 2006), at 2. TLG Services, Inc. has laid out different scenarios based on the date that the United States Department of Energy will remove waste from the site. It is doubtful that DOE will meet the 2017 Spent Fuel Pickup date. *See* Steve Tetrault Stephens, “Yucca Director Downplays Project Schedule,” *available at* <http://www.yuccamountain.org/pdf-news/timeline-1106.pdf> (in which Edward Sproat, the Director of the DOE Civilian Radioactive Waste Management, states that the acceptance date is closer to 2020); *see also System Fuels, Inc. v. United States*, 73 Fed. Cl. 206, 208, n.2. (September 29, 2006) (“the viability of the government's plan to use Yucca mountain as its nuclear waste repository has been cast into doubt by the decision in *Nuclear Energy Institute v. Environmental Protection Agency*”).

<sup>36</sup> Letter, John F. McCann to U.S. Nuclear Regulatory Commission, Decommissioning Fund Status Report, ENOC-08-00028 (March 26, 2008), Attachment I.

<sup>37</sup> *Id.*

<sup>38</sup> TLG Services, Inc., Decommissioning Cost Analysis for the Vermont Yankee Nuclear Power Station, Document E11-1559-002, Rev. 0 (Jan. 2007), at 26.

<sup>39</sup> *Id.* at Attachment IV.

<sup>40</sup> *Id.*

<sup>41</sup> TLG Services, Inc., Decommissioning Cost Analysis for the James A. FitzPatrick Nuclear Power Station, Document E11-1582-002 (Feb. 2008), at 24.

<sup>42</sup> Letter, John F. McCann to U.S. Nuclear Regulatory Commission, Decommissioning Fund Status Report, ENOC-08-00028 (March 26, 2008), Attachment II.

<sup>43</sup> *Id.*

<sup>44</sup> TLG Services, Inc., Decommissioning Cost Analysis for the Pilgrim Nuclear Power Station, Document E11-1529-002 (Feb. 2008), at 26.

## Rulemaking Comments

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**From:** John Sipos [John.Sipos@ag.ny.gov]  
**Sent:** Monday, November 29, 2010 9:42 PM  
**To:** Bladey, Cindy; NRCExecSec Resource; Rulemaking Comments; secy@nrc.gov  
**Cc:** Adam Dobson; Charlie Donaldson; Janice Dean  
**Subject:** RIN 3150-AH45: decommissioning rulemaking; supplemental comments - State of New York  
**Attachments:** 2010 11 29 NYS supp comments RIN-3150-AH45.pdf

Dear Commissioners, Secretary Vietti-Cook, Ms. Bladey, & NRC Rulemaking Staff:

The State of New York submits these supplemental comments concerning the pending rulemaking proceeding concerning decommissioning regulations, NRC Docket No. RIN 3150-AH45.

The State has been following the rulemaking process via the Commissioners' public notices that are published in the Federal Register pursuant to the federal Sunshine Act. As of today (Monday, November 29, 2010), no notice has appeared in the Federal Register that the Commissioners will be considering RIN 3150-AH45 at tomorrow's meeting. See 75 Fed. Reg. 73136 (Nov. 29, 2010). However, this afternoon, the State learned that a morning meeting session has been added in advance of tomorrow's previously-scheduled afternoon session and that the decommissioning rulemaking had been placed on the "tentative" agenda for the morning session.

The State requests that the Commissioners consider the attached comments before taking action on RIN 3150-AH45.

Respectfully submitted,

John Sipos  
State of New York

dated: November 29, 2010 21:40h

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To: <Cindy.Bladey@nrc.gov>, <NRCExecSec@nrc.gov>,  
<rulemaking.comments@nrc.gov>, <secy@nrc.gov>  
CC: "Adam Dobson" <Adam.Dobson@ag.ny.gov>,  
"Charlie Donaldson" <Charlie.Donaldson@ag.ny.gov>,  
"Janice Dean" <Janice.Dean@ag.ny.gov>  
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