RESPONSE TO COMMENTS

OPTIONS TO EVALUATE REQUESTS TO USE DISCOUNTED PARENT COMPANY GUARANTEES TO ASSURE FUNDING OF DECOMMISSIONING COSTS FOR POWER REACTORS

Table of Contents

Comments on Regulations 1
- Comment 1: Regulations are silent regarding an earnings credit for the PCG 1
  - I. Case-by-Case Evaluation 1
  - II. Interpretation of regulatory silence 2
  - III. Interpretation of omission 6
  - IV. Affiliated company funds not eligible 6
  - V. Summary 7
- Comment 2: Three license transfer orders approved the use of discounted PCGs. 7
- Comment 3: Three license transfer orders approved the NPV approach 12
- Comment 4: Approval of discounted PCGs was not a mistake 13
  - I. Analysis by the New York Attorney General 13
  - II. Analysis by NEI 14
  - III. NRC Conclusion 15
- Comment 5: Combinations of the external sinking fund and a PCG are not subject to the equivalency test 16
- Comment 6: Commitment to annually adjust the discounted PCG is sufficient 19
- Comment 7: New York mischaracterizes the NRC's regulations 20
- Comment 8: New York challenges the NRC's regulations 20
- Comment 9: NRC should follow generally accepted accounting practices (GAAP) 22
- Comment 10: NRC should apply NPV as if the PCG was cash 24

Comments on Costs 26
- Comment 11: Direct Costs of the PCG 26
- Comment 12: Indirect Costs of the PCG 27
- Comment 13: Availability of Letters of Credit 30
- Comment 14: License renewal provides additional accumulation time 31
- Comment 15: The PCG unduly burdens the licensee 32
- Comment 16: The PCG overstates decommissioning liability 33
- Comment 17: The PCG limits the flexibility of financial operations 34
- Comment 18: The PCG has administrative costs 36
- Comment 19: The PCG might limit energy trading activities 37

Comments on the Probability of Funding Success 38
Comment 20: Monte Carlo analysis has no value 38
Comment 21: If probability models are used, NRC should perform the evaluations 38
Other Comments 39
Comment 22: Spent fuel issues are not germane to funding assurance 39
Comment 23: Reactor licensees are meeting the DFA requirements 40
Comment 24: Reductions in NDT contributions are not an issue 41
Comment 25: Licensees have not shifted their position 43
Comment 26: Revision to waste vendor option in NUREG-1307 45

Comments on Regulations

Comment 1: Regulations are silent regarding an earnings credit for the PCG

The Nuclear Energy Institute (NEI) stated that the regulations are silent regarding the addition of an earnings credit to a discounted parent company guarantee (PCG), therefore, it is permitted. Its argument is based on the fact that the prepayment and external sinking fund methods, defined in § § 50.75(e)(1)(i) and (ii), allow the licensee to take an earnings credit for funds in the NDT, while the guarantee language is silent with respect to earnings credits. NEI maintains that the silence, coupled with the allowance for earnings credits for the prepayment and external sinking fund, proves that the licensee may add an earnings credit to a discounted PCG.

Response:
NEI's conclusion is incorrect because the NRC requires every combination of methods and non-standard method, such as a discounted PCG, to be evaluated on a case-by-case basis under § 50.75(e)(1)(vi), and regulatory silence does not necessarily grant permission to perform an action not expressly forbidden. Additionally, when earnings credit language is included in one portion of the regulations but not in another, adoption of the earnings credit is precluded in the other portions. Finally, the language of 10 C.F.R. §50.75(e)(1)(i) and (ii) suggests that PCGs would not satisfy the requirements for earnings credits. Therefore, NEI's claim that silence equals permission is incorrect.

The following discussion describes NEI's proposal, the requirement for case-by-case evaluation of combinations of decommissioning financial assurance (DFA) methods and non-standard DFA methods, the proper interpretation of regulatory silence and omission, and the ineligibility of the parent company's funds to qualify for an earnings credit.

Net present value (NPV) is a tool for appraising the value of long-term projects by discounting estimated future cash inflows and outflows backward in time, which reduces them to today's dollars. The cash flows can be compared to determine if the project will be profitable, assuming the estimates are accurate. NEI proposed to discount the cost of decommissioning, using NPV to determine the size of the discount, and to guarantee the discounted amount using the PCG, in whole or part. A PCG valued in this manner is termed a "discounted PCG." NEI stated that a discounted PCG should be acceptable because earnings credits are permitted for actual funds held in a nuclear decommissioning trust (NDT). With respect to NEI's proposal, the NPV approach may refer to either adding an earnings credit to the PCG or discounting the PCG.

I. Case-by-Case Evaluation

The Commission stated its intent regarding the provisions of § 50.75(e)(1)(vi):

> In promulgating subsection (vi), we intended to give applicants the flexibility necessary to structure methods outside the parameters of any one of the five methods set forth in subsections (i) through (v), or to combine portions of those subsections in such a way as to provide the same end-result of funding assurance.[1]

---

[1] Entergy Nuclear Operations (James A. Fitzpatrick Nuclear Power Plant; Indian Point Nuclear Generating Unit No. 3), CLI-00-14, 53 NRC 488, 550-551 (2001) [Hereinafter PASNY transfer case]

The Commission explained that the flexibility signaled the intent to "consider, on a case-by-case basis, funding mechanisms not expressly permitted under subsections (i) through (v)." [2] This does not, however, allow the licensee to create and take credit for any mechanism not expressly permitted by the regulations without approval by the NRC.

NEI acknowledges that the methods it proposes, namely the discounted PCG and the NPV method, are not expressly permitted.[3] However, the licensee may request the NRC to consider those methods under the provisions of § 50.75(e)(1)(vi). NEI asserts that the discounted PCG and NPV method are permitted by § 50.75(e)(1)(vi) without requiring NRC approval. As discussed in the response to Comment 5, that assertion is incorrect.

The correct approach, as provided under 10 CFR § 50.75(e)(1)(vi), requires the licensee to request that the NRC consider those methods.[4] If the licensee can demonstrate that the specific circumstances of its submittal provides assurance of decommissioning funding equivalent to that provided by the mechanisms of § 50.75(e)(1)(i) through (v), then the NRC may approve its use.[5] Furthermore, as discussed in the Additional Information section titled, "Transfer Orders Applying the Equivalency Test of § 50.75(e)(1)," the NRC may impose conditions to achieve the requisite equivalent assurance. However, without NRC approval, the licensee is not free to use a method not expressly permitted under 10 CFR § 50.75(e)(1). Applying an earnings credits to the PCG, or discounting the PCG, are not included in 10 CFR § 50.75(e)(1), and cannot be used without prior approval from the NRC.

II. Interpretation of regulatory silence

The Federal Courts have established a number of possible interpretations of statutory silence (i.e. when a statute or regulation does not expressly deal with the immediate issue), which include the following:[6]

- Silence intends to rule out a particular statutory application[7]
- Silence signifies the expectation that nothing more need be said to accomplish the statutory objective[8]
- Silence signifies the issue has not been considered at all[9]
- It is a "pregnant silence" that contrasts with a consistent pattern under which departures from a general rule had been expressly authorized[10]
- No inference drawn from statutory silence can be credited when it is contrary to all other textual and contextual evidence of intent.[11]

Regarding DFA, the Commission stated: "A licensee is required to provide assurance that at any time during the life of the facility, through termination of the license, adequate funds will be

[2] Id.

[3] NEI, Industry Comments on June 8 Workshop, p.3, July 13, 2011 (ML11196A203), "This provision [10 CFR 50.75(e)(1)(iii)] does not address the method of determining the amount of the guarantee."

[4] 10 C.F.R. § 50.75(e)(1)(vi).

[5] *Id.*

[6] Congressional Research Service, Statutory Interpretation: General Principles and Recent Trends, p.16 – 17, Order Code 97-598, August 31, 2008

[7] *Burns v. United States*, 501 U.S. 129, 136 (1991)

[8] *Id.*

[9] *See Tobias Holdings, Inc. v. Bank United Corp.*, 177 F. Supp. 2d 162, 167 (S.D.N.Y. 2001); *Dunn-McCampbell Royalty Interest, Inc. v. Nat'l Park Serv.*, V-06-59, 2008 U.S. Dist. Lexis 79101, at *44 (S.D. Tex. Sept 30, 2008) (referencing *Burns*, 501 U.S. at 136).

[10] *Burns*, 501 U.S. at 136.

[11] *Andrus v. Glover Const. Co.*, 446 U.S. 608, 616-17 (1980)

available to complete decommissioning."[12] Commission regulations, at 10 CFR 50.75, further state:

> § 50.75 (b)(1) For an applicant for or holder of an operating license under part 50, the [decommissioning] report must contain a certification that financial assurance for decommissioning will be (for a license applicant), or has been (for a license holder), provided in an amount which may be more, but not less, than the amount stated in the table in paragraph (c)(1) of this section adjusted using a rate at least equal to that stated in paragraph (c)(2) of this section.
> …
> (2) The amount to be provided must be adjusted annually using a rate at least equal to that stated in paragraph (c)(2) of this section.
> (3) The amount must be covered by one or more of the methods described in paragraph (e) of this section as acceptable to the NRC.

Based on the intent of the Commission, as established by the above regulations, NEI's argument is incorrect. A licensee is prohibited from adding an earnings credit to a PCG, or discounting the amount the PCG will cover. The reasons for this conclusion are discussed in the following sections.

A. Intention to Rule Out a Particular Statutory Application

The Supreme Court has established that in certain circumstances silence intends to rule out a particular statutory application.[13] 10 CFR § 50.75(e)(1) allows for earnings credits when using the prepayment and external sinking fund methods to establish the DFA.[14] However, the regulations do not provide such an option for PCGs.[15] While the regulations do not expressly forbid earnings credits for PCGs, the evidence suggests that such an intent was implied in the regulations. The earnings credit and PCG amendments to the regulations were issued together in the 1998 Decommissioning Rule.[16] The establishment of prepayment, external sinking funds, and PCGs are in the same Part and section in the regulations.[17] The discussion for each section lies on consecutive pages.[18] The proximity of the sections implies that when the NRC staff implemented the rule changes that authorized earnings discounts for two of the six methods of establishing DFA, it intended to apply it to those two alone and none other. Additionally, during the June 8, 2011 follow-up meeting, NRC staff members who assisted with the 1998 Decommissioning Rule stated that there was no intent to allow earnings credits for the PCG when earnings credits were added to the prepayment and external sinking fund provisions of 10 C.F.R. §§ 50.75(e)(1)(i) and (ii).[19] Since the intent was to apply the earnings discount to prepayment and external sinking funds alone, the silence with regard to earnings discounts for all other methods is meant to rule out application of the earnings discount for any other method. Therefore, the Commission's silence rules out the application of an earnings credit or discount for the PCG.

[12] Decommissioning of Nuclear Power Reactors, Final Rule, July 29, 1996, 61 FR 39278
[13] *Burns*, 501 U.S. at 136
[14] 10 C.F.R. § 50.75(e)(1)(i) and (ii).
[15] *See* 10 C.F.R. §50.75(e)(1)(iii)(B).
[16] 1998 Decommissioning Rule, 63 FR 50465, 50481
[17] *Id.* § 50.75(e).
[18] *Id.*
[19] Transcript, June 8, 2011 Follow-up Meeting, statement of Ms. Uttal, p.32 (ML111650033)

B. Expectation that Nothing More Need be Said

The Court also established that legislative silence could signify the expectation that nothing more need be said to accomplish the statutory objective.[20] As stated above, the regulations authorize the earnings discount for two of the six methods for establishing DFA.[21] The earnings credit and PCG amendments to the regulations were issued together in the 1998 Decommissioning Rule.[22] The Commission's intent of providing an earnings credit for the prepayment and external sinking fund methods is clearly met by the existing language in the regulations.[23] There is no need to alter the language to insert express prohibitions in the other four methods in order to meet that Commission intent. Therefore, the Commission's silence as to that prohibition could easily be taken as an expectation that nothing more need be said to accomplish its intent. Therefore, the silence of the rule does not support allowing an earnings credit to or a discount for the PCG.

C. Issue has Not Been Considered

Certain federal courts have found that silence can also signify that the issue has not been considered by Congress or the Commission.[24] This interpretation is not applicable here because it can be implied that the Commission did consider the issue. The Commission explicitly allowed the earnings credit to be applied for the prepayment and external sinking fund methods of 10 C.F.R. §§ 50.75(e)(1)(i) and (ii).[25] The earnings credit and PCG amendments to the regulations were issued together in the 1998 Decommissioning Rule.[26] Since it considered and applied the earnings credit in those two situations, but not for the other four methods of establish DFA, it is likely that the Commission considered the credit in PCG situations and chose not to apply it. Therefore, this interpretation does not support NEI's conclusion.

D. Departures from a General Rule Have Been Expressly Authorized

The Supreme Court has recognized that at times legislative silence is "a pregnant silence that contrasts with a consistent pattern under which departures from a general rule had been expressly authorized."[27] In applying this interpretation, the general rule must be determined. The PCG rule is established in 10 C.F.R. Appendix A to Part 30 (Appendix A). In every instance where the regulations authorize PCG use for DFA, that section refers to Appendix A as its authoritative basis.[28] Therefore, Appendix A is the general rule for PCGs.

To establish that the silence of earnings credits in Appendix A to Part 30 is "pregnant," and thus shows intent to allow earnings credits for the PCG, it must be shown that earnings credits were added to the PCG in a consistent pattern that was expressly authorized. That showing has not been made.

[20] *Burns*, 501 U.S. at 136.
[21] 10 C.F.R. § 50.75(e)(1)(i) and (ii).
[22] 1998 Decommissioning Rule, 63 FR 50465, 50481
[23] *See id.*
[24] *See Tobias Holdings, Inc.*, 177 F. Supp. 2d at 167; *Dunn-McCampbell Royalty Interest, Inc.*, 2008 U.S. Dist. Lexis 79101 at *44.
[25] 10 C.F.R. § 50.75(e)(1)(i) and (ii).
[26] 1998 Decommissioning Rule, 63 FR 50465, 50481
[27] *Andrus*, 446 U.S. at 616-17.
[28] *Compare* § 30.35, § 40.36, § 50.75, § 70.25, § 72.30

First, a consistent pattern has not been established. Since 1988, PCGs and self-guarantees have been approved for dozens of reactor and materials licensees.[29] When annual requalification is considered, over 200 guarantees have been approved without allowing an earnings credit or a discount. For example, self-guarantees covering four research and test reactors (RTRs) have been approved each year since 1993. In every instance, the guarantee did not discounting. For power reactors, non-discounted PCGS were approved in 2003, 2009, 2010, and 2011. NEI, however, referred to three license transfer orders, approved in 2001 and 2005, as examples of approval for adding an earnings credit to the PCG.[30] The three license transfer orders do not establish a consistent pattern because hundreds of PCGs were approved without an earnings credit or a discount for the PCG before, during, and after the time period when the three license transfer orders were approved. Even within the three license transfer orders themselves, the pattern is not consistent. As discussed in the response to Comment 2, one of the three license transfer orders approved a PCG that covered the shortfall in DFA, while the other two orders approved PCGs that did not cover the shortfall.

Second, there has been no showing that, with regard to the PCG, that the three license transfer orders were expressly authorized. As shown in Comments 2 and 3 following, the license transfer order approvals were issued in error with respect to DFA, and are not precedential.[31] However, even if the orders had been decided correctly, they would not be precedents, nor establish a pattern. The Commission stated that DFA decisions in license transfer orders have limited value as precedents, especially for non-standard methods of providing DFA:

> We see no risk here of a dangerous precedent. In the area of decommissioning funding assurance, each transfer application is examined *on its own facts.* This will be especially true of applications seeking to use an assurance other than those specifically described in sections 50.75(e)(1)(i)-(v). … Because of the fact-driven nature of our decommissioning rulings in this proceeding, their precedential value is, as a practical matter, limited to an indication of the Commission's openness to funding arrangements not specifically enumerated in subsections (i)-(v).[32] [Emphasis in original]

The two conditions needed to justify the silence of the regulations as “pregnant” are not satisfied. Therefore, the silence of the rule does not support allowing an earnings credit for the PCG.

E. <u>No Inference When Contrary to All Other Evidence of Intent</u>

The Court has also established that “[n]o inference drawn from statutory silence can be credited when it is contrary to all other textual and contextual evidence of intent.”[33] The NRC amended

---

[29] Financial Assurance Inventory Log, Office of Federal and State Materials and Environmental Management Program; Decommissioning fund status reports, Office of Nuclear Reactor Regulation

[30] Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3 – Order Approving the Transfer of Licenses from Northeast Nuclear Energy Company, et al., to Dominion Nuclear Connecticut, Inc., and Approving Conforming Amendments, March 9, 2001 (ML010160314); Nine Mile Point Nuclear Station, Unit Nos. 1 and 2 – Order Approving the Direct Transfer of Licenses from Niagara Mohawk Power Corporation, et al., to Nine Mile Point Nuclear Station, LLC, Approving Conforming Amendments, and Approving Indirect Transfers, June 24, 2001 (ML011520030); Corrected Order Approving Transfer of Licenses and Corrected Conforming Amendments Relating to Beaver Valley Power Station, Units 1 and 2, Davis-Besse Nuclear Power Station, Unit 1, and Perry Nuclear Power Plant, Unit 1, December 16, 2005 (ML053460182)

[31] *See infra* Comments 2 and 3.

[32] Entergy Nuclear Operations (James A. Fitzpatrick Nuclear Power Plant; Indian Point Nuclear Generating, Unit No. 3), CLI-00-14, 53 NRC 488, 556-557 (2001)

[33] *Andrus*, 446 U.S. at 616-17.

its rules for PCGs and the closely related self-guarantee in 5 rulemakings.[34] Those rulemakings did not result in regulations that expressly authorized discounts for the PCG, added an earnings credit to the PCG, or applied the net present value approach to determining the amount of the PCG.[35] As mentioned above, during the June 8, 2011 follow-up meeting, staff members who assisted with the 1998 Decommissioning Rule stated there was no intent to allow earnings credits for the PCG when earnings credits were added to prepayment and external sinking fund provisions of 10 C.F.R. §§ 50.75(e)(1)(i) and (ii).[36] Therefore, there can be no inference allowing earnings discounts for PCGs when it is clearly contrary to the other existing evidence.

Since no interpretation of Commission silence as established by the Courts authorizes an earnings credit or discounts for PCGs, and such a discount is contrary to the Commission's intent, NEI's claim that earnings credits or discounts apply to PCGs is therefore incorrect.

III. Interpretation of omission

NEI's claim that earnings credits apply to PCGs runs contrary to the Supreme Court's principle on interpretation of an omission within a statute or regulation. The Court stated that "where Congress includes particular language in one section of a statute but omits it in another …, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion."[37] The Court additionally stated that "negative implications raised by disparate provisions are strongest when the portions of a statute treated differently had already been joined together and were being considered simultaneously when the language raising the implication was inserted."[38]

The earnings credit for the prepayment and the external sinking fund methods was added in 1998; at the same time the PCG rule was amended to allow reactor licensees to combine the PCG with other methods.[39] No earnings credit, however, was added to the PCG rule.[40] In applying the rule established by the Court, the presumption is that the NRC intentionally excluded the earnings credit from the PCG in order to prevent its use in that manner. In addition, because the adoption of the earnings credit was considered simultaneously with the exclusion from the PCG, the negative implications of the disparate provisions are at their strongest. Therefore, NEI's claim that the omission allows the application of earnings credit to PCGs is incorrect.

IV. Affiliated company funds not eligible

Even if the earnings credit was applicable to the other methods of establishing DFA, the language of 10 C.F.R. 50.75(e)(1)(i) and (ii) indicates that PCGs would not meet the requirements for earnings credits. The regulations for both the prepayment and external sinking fund methods are similar in that the funds are deposited "into an account segregated from licensee assets and outside the administrative control of the licensee and its subsidiaries or

---

[34] General Requirements for Decommissioning Nuclear Facilities, Final Rule, July 27, 1988, 53 FR 24018; Self-Guarantee as an Additional Financial Assurance Mechanism, Final Rule, December 29, 1993, 58 FR 68726; Financial Assurance Requirements for Decommissioning Nuclear Power Reactors, Final Rule, September 22, 1998 63 FR 50465 [Hereinafter the 1998 Decommissioning Rule]; Decommissioning Trust Provisions, Final Rule, December 24, 2002, 67 FR 78332; Decommissioning Planning, Final Rule, June 17, 2011, 76 FR 35512.

[35] *See id.*

[36] Transcript, June 8, 2011 Follow-up Meeting, statement of Ms. Uttal, p.32 (ML111650033)

[37] *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993)

[38] Lindh v. Murphy, 521 U.S. 320, 330 (1997)

[39] 1998 Decommissioning Rule, 63 FR 50465

[40] *See id.*

affiliates of cash or liquid assets."[41] The earnings credit is calculated based on the funds in this account. But the PCG is not a segregated account and has no funds, so it cannot take an earnings credit.

Additionally, the parent company providing the guarantee is an affiliate of the licensee.[42] Even if the parent maintained a fund to cover the PCG, it would not meet the requirements to take an earnings credit because it would be within the control of an affiliated company. Therefore, the limitations placed on the account holding the funds also indicate that allowing an earnings credit for the PCG would not be possible under the regulations.

V. Summary

NEI's claim that discounting or earnings credits should be allowed for PCGs is incorrect because, under 10 CFR § 50.75(1)(e)(vi), any combination of methods or non-standard method must be evaluated by the NRC on a case-by-case basis, and no such evaluation has occurred. The regulations are silent on the issue of discounting and earnings credits for PCGs, and no interpretation of that silence, as established by the Courts, supports NEI's claim. Additionally, the Supreme Court's rule on omissions when similar language is included in one portion of a statute or regulation, but not in another precludes the adoption of discounting or earnings credits for PCGs. Finally, the language used in the two methods (prepayment and the external sinking fund) where earnings credits are allowed suggest that PCGs would not satisfy the requirements for earnings credits. Therefore, NEI's claim is incorrect.

In view of the above, the PCG guarantees only its face amount. Neither an earnings credit nor a discount may be applied to the PCG without approval from the NRC.

Comment 2: Three license transfer orders approved the use of discounted PCGs.

NEI stated that certain license transfer orders approved discounted PCGs, and that the NRC is bound to follow those orders as a precedent.

Response

The three orders were: the Millstone facility[43] (Millstone), the Nine Mile Point facility[44] (NMP) and the Beaver Valley and Perry facilities (FENOC) (collectively, "the three license transfer orders").[45] Each transfer application proposed a combination of a NDT in a prepaid account, a discounted PCG, and a license condition to adjust the PCG each year to provide DFA. However, the financial assurance provisions in the orders were erroneously approved. The approvals did not apply the equivalence test required by § 50.75(e)(i)(vi) to evaluate the

---

[41] 10 C.F.R. §§ 50.75(e)(1)(i), (ii).
[42] The US Federal Energy Regulatory Commission (FERC) defines affiliate as: "Any person that directly or indirectly owns, controls, or holds with power to vote, 10 percent or more of the outstanding voting securities of the specified company." 18 CFR § 35.36(a)(9).
[43] Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3 – Order Approving the Transfer of Licenses from Northeast Nuclear Energy Company, et al., to Dominion Nuclear Connecticut, Inc., and Approving Conforming Amendments, March 9, 2001 (ML010160314) [Hereinafter Millstone 2001 Order]
[44] Nine Mile Point Nuclear Station, Unit Nos. 1 and 2 – Order Approving the Direct Transfer of Licenses from Niagara Mohawk Power Corporation, et al., to Nine Mile Point Nuclear Station, LLC, Approving Conforming Amendments, and Approving Indirect Transfers, June 24, 2001 (ML011520030) [Hereinafter NMP 2001 Order]
[45] Corrected Order Approving Transfer of Licenses and Corrected Conforming Amendments Relating to Beaver Valley Power Station, Units 1 and 2, Davis-Besse Nuclear Power Station, Unit 1, and Perry Nuclear Power Plant, Unit 1, December 16, 2005 (ML053460182) [Hereinafter FENOC 2005 Order]

combinations of DFA methods proposed by the licensees. Approval was apparently based on allowing an earnings credit for the PCG, based on examination of worksheets submitted in the applications. However, in two of the orders, the amount provided by the PCG did not cover the shortfall, and did not meet the minimum requirement of § 50.75(c). The orders are not precedents and the NRC is not bound to repeat the errors.

In its consideration of the comment, the NRC staff re-evaluated the DFA proposed by the licensees. Enclosure 6 shows the results of the re-evaluation of the Millstone 2001 Order. Enclosure 6 contains three worksheets: (1) the Millstone licensee's worksheet submitted in its transfer application;[46] (2) the NRC's re-evaluation using the method of Office Instruction LIC-205, "Procedures for NRC's Independent Analysis of Decommissioning Funding Assurance for Operating Nuclear Power Reactors;" and (3) an NRC evaluation of the shortfall in nominal dollars. The Millstone worksheet shows three figures that are added together to determine the "Trust Fund Balances at Closing" value of $293 million. The total includes $25 million in the form of a PCG. The Millstone worksheet then computes the earnings on a trust fund balance of $293 million, and subtracts the expenses on a year-by-year basis. The result shows that starting with a NDT balance of $293 million will produce earnings that will cover the expenses. However, the actual starting value of the trust fund at closing was only $268 million, as explained in the licensee's application. As a result, the licensee's worksheet does not demonstrate that it covered its expenses. The Millstone worksheet shows that *if* the NDT had a balance of $293 million, *then* it would cover the expenses. In effect, the worksheet added an earnings credit for the PCG. But, since the PCG has no cash, the worksheet included earnings for $25 million in funds that did not exist in the NDT.

The NRC's Office Instruction, LIC-205, had not been developed when the Millstone license transfer was evaluated. However, the NRC staff re-evaluated the Millstone DFA proposal using the methods of LIC-205, which are presented in Enclosure 6 in the worksheet entitled, "NRC Re-evaluation of Millstone SAFSTOR Cost Analysis (Constant Dollars)." LIC-205 is the method used to determine compliance with the DFA requirements. The worksheet shows that the shortfall was $77 million, based on the actual NDT starting balance of $268 million.

The NRC staff computed the shortfall based on nominal dollars, as presented in Enclosure 6 in the worksheet entitled, "NRC Re-evaluation of Millstone SAFSTOR Cost Analysis (Nominal Dollars)." The worksheet is based on the cost escalation and investment fund rate of return as assumed in the Millstone license transfer application. The result shows the nominal dollar shortfall is $880 million in 2054. However, the nominal dollar shortfall is not used to determine compliance with the regulations. The purpose of computing the nominal dollar value of the shortfall in the Millstone 2001 Order is to show the effects of cost escalation. If a licensee depends on a PCG to cover decommissioning costs, and delays or ceases deposits into its NDT, the unfunded amount can become large.

The table below summarizes the PCGs accepted by the NRC. The shaded cells represent PCGs that were less than the shortfall in DFA that needed to be covered. As seen by inspection, the license transfer orders are inconsistent among themselves. The PCGs for the NMP units covered the shortfall, while the FENOC and Millstone PCGs did not. The inconsistent results indicate that the discounted PCG method is problematic. As explained below, the discounted PCG raises a number of issues that should have been addressed in the evaluation of the licensee's DFA.

---

[46] Millstone License Transfer Application, Exhibit L, Decommissioning Funding Worksheet for Unit 1, August 31, 2000 (ML003747539)

PCGs Used in Three license Transfer Orders Referenced by NEI

Facility	Escalation Method	Discounted PCG Amount	Shortfall Amount
Millstone 1	Constant Dollar	$26 million	$77 million
Millstone 1	Nominal Dollar	Not calculated	$880 million
NMP 1	Constant Dollar	$54 million	$40 million
NMP 2	Constant Dollar	$33 million	$32 million
FENOC Beaver Valley 1	Constant Dollar	$67 million	$87 million
FENOC Beaver Valley 2	Constant Dollar	$5 million	$7 million
FENOC Perry	Constant Dollar	$6 million	$8 million

The first issue is to define the method used to evaluate the DFA amount provided by the licensee. The method makes a difference in the way that discounting is handled. In the table above, the "escalation method" refers to the method used to evaluate the effect of escalation in decommissioning costs. The "constant dollar" method is used by NRC when it evaluates the adequacy of the DFA submitted by the licensee. The constant dollar method assumes that all costs will remain the same in the future, or, which amounts to the same thing, it assumes that the cost escalation rate is 0%. By holding all costs constant, the method removes the complexity of predicting rates of cost escalation and investment returns. In effect, the constant dollar method applies a discount to all future cash flows back to the date of the calculation, in order to remove the effects of cost escalation. The result can be compared directly to the prescribed amount specified in the formulas of § 50.75(c) to determine if the amount of DFA provided today covers today's decommissioning cost.

The fact that the cash flows analyzed in the constant dollar method are already discounted to remove the effects of cost escalation is one of the issues that must be considered when evaluating a discounted PCG. The shortfall calculated by constant dollar method has already been discounted. Using the NPV approach would apply a second discount to the shortfall. The NPV approach amounts to taking a double discount on the shortfall, which may result in an inadequate amount of financial assurance.

A second escalation method is to project nominal costs into the future. Nominal costs are future costs that include the effects of inflation and cost escalation.[47] The result is how much decommissioning will cost in the future. The NRC does not use the nominal dollar method for two reasons. First, the prescribed amount specified in the cost formulas of § 50.75(c) estimates the bulk of the decommissioning cost as of today. Thus, the nominal dollar results cannot be directly compared to the regulatory requirement. If the method is used, then the prescribed amount of § 50.75(c) must be escalated to the estimated date of decommissioning, or the cash flows must be discounted back to today's dollars. Second, the nominal dollar method is forced to make assumptions about rates of cost escalation and investment returns. The assumptions produce variable results. Standardizing the rates by using the constant dollar method produces consistent results. It also allows stakeholders to directly compare the performance of licensees to the DFA requirements.

[47] Inflation normally refers to the general increases in process over time; cost escalation refers to the increases in specific costs, and is not the same as general inflation as measured by the Consumer Price Index. Decommissioning costs, for example, increase over time, but at rates higher than the general inflation rate.

However, the nominal dollar method is useful to understand the size of the future obligations. As shown in Enclosure 6, applying the nominal dollar approach in Millstone order estimates that the future value of the shortfall will be $880 million.[48] This implies that a discounted PCG will need to increase to a very large amount in the future if the licensee delays or ceases contributions to its NDT. This is a second issue that needs to be addressed with a discounted PCG. The NRC recognized that allowing combinations of the PCG with a NDT provides an incentive to delay or cease contributions to the NDT:

> Because of the low costs of guarantees, however, allowing this combination of mechanisms could create an incentive for licensees to delay or cease payments into the sinking fund and, instead, to rely on the guarantee for as much of the cost as possible. Given the magnitude of typical decommissioning costs for reactors, this possibility could hinder the timely conduct of decommissioning. In other words, decommissioning could be significantly delayed if, because of a licensee's inadequate contributions to its sinking fund, a guarantor had to come up with large amounts of money at the time of decommissioning.[49]

The discounted PCG provides greater incentives to delay or cease making contributions to the NDT in two ways. First, using a PCG avoids the expense of making a contribution to the NDT. Second, since the total amount of PCGs is limited by the tangible net worth requirement, the discounted PCG allows the parent to issue more PCGs.

A third issue to be addressed with the discounted PCG, as used in the three license transfer orders, is that it depends on an earnings credit from the PCG to cover the shortfall. However, the PCG has no funds and cannot produce any earnings. The safety evaluation reports (SER) for the three license transfer cases have no discussion on how this issue was resolved.

The NMP submittal contains calculations similar to the Millstone example. However, the NRC staff's re-evaluation of the cash flows determined that the discounted PCGs nevertheless covered the shortfalls, thus meeting the DFA requirements for the units.

A fourth issue with the discounted PCG method becomes apparent by comparing the Millstone and NMP results. Millstone failed to cover the shortfall, while NMP, despite the addition of an earnings credit to the PCG, did cover the shortfall. The reason is that discounting produces variable results depending on the time frame involved. The time frames in the NMP and Millstone orders were different, which led to the NMP PCGs being adequate to cover the shortfall, while the Millstone PCG did not.

The FENOC application did not include worksheets to show how it determined the size of its PCGs. Based on the values submitted, it appears that FENOC determined that that *if* the NDTs for each unit had larger balances as estimated in its application, *then* they would cover the shortfall. In effect, FENOC's determination took an earnings credit for the PCGs; but PCGs cannot produce earnings. The NRC's re-evaluation determined that the PCGs were less than the shortfalls. The FENOC order illustrates a fifth issue with the discounted PCG method – it is misleading to stakeholders because it is not consistent with the NRC's determination of the shortfall. As noted above, the size of the discounted PCG depends on the time period involved. This can mislead stakeholders not only with respect to the size of the shortfall, but also with

---

[48] A second example is provided in the Additional Information section titled, "Historical Data." The cost of Calvert Cliffs decommissioning is expected to rise from $644 million (2005 dollars) to $5 billion (2033 dollars).
[49] 1998 Decommissioning Rule, 63 FR 50465, 50473

respect to the relative performance between licensees. For example, in the Millstone order, the discounted PCG was smaller than the NMP PCG, yet Millstone had the greater shortfall.

The issues described above need to be addressed when a discounted PCG is evaluated for use as a DFA method.

The process for evaluating "other methods" and combinations of methods is specified in 10 CFR 50.75(e)(1)(vi). In the license transfer orders, the discounted PCG is itself an "other method," since it is not described in the regulations. The three license transfer orders included a combination of the PCG with the prepayment method. Both these facts indicate the need for evaluation under § 50.75(e)(1)(vi). The orders involved merchant plant licensees. The regulatory guidance of NUREG-1577 states that combinations should be evaluated under § 50.75(e)(1)(vi), and that licensees without access to ratepayer funds (i.e., merchant plants) should receive greater regulatory oversight:

> As indicated in 10 CFR 50.75(e)(1)(vi), the reviewer should evaluate other decommissioning funding assurance mechanisms or combinations of mechanisms proposed by licensees or license applicants on a case-by-case basis to determine that the mechanism or combination of mechanisms provide assurance of decommissioning funding equivalent to that provided by the mechanisms specified in 10 CFR 50.75(e) (1)(i) - (v).[50]
>
> The reviewer should exercise greater oversight of those licensees that no longer have such rate regulatory oversight.[51]

FENOC's application presented an issue that could have been recognized if the provisions of § 50.75(e)(1)(vi) had been applied. In FENOC's application, the licensee committed to adding $80 million in cash to its NDTs within 5 years as part of its decommissioning funding.[52]

The FENOC safety evaluation report did not mention the $80 million commitment. However, as stated in the 1998 Decommissioning Rule, the PCG may provide an incentive to delay or cease payments into the NDT.[53] If the provisions of § 50.75(e)(1)(vi) had been applied, the evaluation would have considered the adverse incentive of the PCG. Equivalency may have been achievable under the specific circumstances of the submittal by requiring FENOC to follow through on its commitment to pay over the $80 million into its NDTs. The additional funds, if deposited into the NDT, would be eligible for an earnings credit as of the date of the deposit. Adding a condition to require the deposits would have mitigated the incentive to delay or cease payments into the NDTs.

For all of the reasons above, the request to use a discounted PCG should have been evaluated under the provisions of § 50.75(e)(1)(vi).

However, the license transfer SERs invoked § 50.75(e)(1)(iii)(B) to accept the discounted PCG. Apparently, the acceptance was based on adding an earnings credit to the PCG. But subsection (iii)(B) has no provision for discounting or adding an earnings credit to the PCG. It has no provision for the evaluation of combinations. The SERs did not provide the basis for

---

[50] NUREG-1577, Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance, Section 2.f(4)
[51] Id. Section 2.c(2)
[52] FENOC Application, Enclosure 1, p.18, April 5, 2005 (ML051450431)
[53] 1998 Decommissioning Rule, 63 FR 50465, 50473

applying § 50.75(e)(1)(iii)(B), and did not address any of the issues concerning the use of a discounted PCG. No analysis was done to determine if the equivalency test of § 50.75(e)(1)(vi) was satisfied. Both the licensee's application and the NRC's safety evaluation report were devoid of any reference to discounting or NPV.

The qualifier, "apparently," used above, was applied to the NRC's acceptance of an earnings credit for the PCG, because the basis documented in the SERs did not state exactly how the earnings credit was evaluated. What is known is that the SERs recited the licensee's estimate of the additional funding assurance that was needed, and stated that the PCG would be provided in that amount. The SERs stated an earnings credit was applied, however, the SERs do not state that it was applied to the PCG. In Millstone, the SER states that earnings on fund balances were considered.[54] In NMP, the SER states that (1) credit for 2% annual real rate of return was taken in calculating the amounts required for the PCG, and (2) the 2% return was factored into the amount that the transferors propose to have placed in the decommissioning trust funds.[55] In FENOC, the SER states that the 2% was applied to the existing funds.[56] The inference from the amounts approved for the PCGs suggests that an earnings credit was applied to the amount of the PCG. However, the SERS did not provide a basis for giving an earnings credit to the PCG, which has no cash and cannot produce earnings.

The conclusion is that the approvals were issued in error. They did not apply the equivalence test required to evaluate the combinations of methods offered by the licensee. In two of the orders, the amount of DFA did not meet the prescribed amount of § 50.75(c). They are not precedents, and NRC is not bound to repeat the errors. As stated in *Cleveland Nat'l Airshow v. US Dept. of Transportation*:

> A government agency, like a judge, may correct a mistake, and no principle of administrative law consigns the agency to repeating the mistake into perpetuity.[57]

Comment 3: Three license transfer orders approved the NPV approach

NEI stated that the NRC had approved the net present value approach to calculate the amount of decommissioning assurance to be provided by a PCG in the three license transfer orders.

Response:
As stated in Comment 2, the NRC staff analysis of the financial assurance combination in the license transfer orders was not documented. In particular, it is impossible to state that the NPV approach was approved. On the contrary, the evidence indicates that the NPV approach was not approved, and not even considered in the orders.

The NPV approach is not specifically described in the NRC's regulations. Therefore, a licensee that desires to use the NPV approach must obtain NRC approval under the equivalence test of § 50.75(e)(1)(vi). However, the transfer request applications do not mention the NPV approach or request approval to use it. NRC's SERs have no reference to the NPV approach. The Transfer Orders makes no mention of the NPV approach in its approval of the transfers. Thus, the Transfer Orders did not approve the NPV approach.

---

[54] Millstone 2001 Order, SER, p. 8 (ML010160314)
[55] NMP 2001 Order, SER, p.12 (ML011520030)
[56] FENOC 2005 Order, SER, p.8, (ML053460182)
[57] Cleveland Nat'l Airshow v. US Dept. of Transportation, 430 F.3d 757, 764-65 (6th Cir. 2005)

What the SERs issued with the license transfer orders stated was that an earnings credit had been applied. As discussed in detail in Comments 1 and 2, an earnings credit cannot be applied to a PCG.

Comment 4: Approval of discounted PCGs was not a mistake

NEI stated that the approval of discounted PCGs in three license transfer orders was not a mistake. NEI stated that the NRC understood that it approved the PCG after adding an earnings credit and that the PCG needed to be conditioned on an annual review and adjustment. Therefore, the orders establish a precedent that a PCG may be discounted using the NPV approach.

NEI submitted a rebuttal to the legal analysis provided by the New York Attorney General. NEI criticized New York's analysis as stating that the three license transfer orders were inadvertently approved, and that the approvals were *pro forma* issuances in which no position was taken. NEI criticized the NRC for stating that the approvals of the DFA methods in the license transfer orders were made in error.

Response:
The response to Comment 2 identifies the errors made in the approval of DFA in the three license transfer orders. The errors exist whether or not the NRC understood that an earnings credit for funds that did not exist was added to the PCG. In each transfer application, the licensee proposed a combination of the PCG and the prepayment method. That combination requires evaluation under the provisions of § 50.75(e)(1)(vi). NEI agreed in its July 13 letter that any combination, other than the external sinking fund and a PCG, is required to obtain approval from NRC under the equivalency test.[58] However, the SER for each order stated that the PCG met the provisions of § 50.75(e)(1)(iii)(B), and did not state that the discounted PCG met the equivalency requirement. As detailed in Comment 2, the approvals erred in several ways. The legal analyses of the New York Office of the Attorney General and NEI are outlined below. The NRC's conclusion follows.

I. Analysis by the New York Attorney General[59]

The New York Office of the Attorney General provided its legal analysis concluding that NRC approved the DFA provisions of the three transfers in error. New York states that the law permits NRC to correct its prior mistakes and that sound policy demands it in this instance. The New York Attorney General's analysis is summarized below:[60]

> 2. The Discounting of Parent Guarantees has no Regulatory Basis and is Contrary to the Plain Text of a Previous NRC Administrative Procedure Act Rulemaking.
> - Neither 10 C.F.R. § 50.75(e)(1)(iii)(B), nor the text of Appendix A to 10 C.F.R. Part 30, refer to net present value as an acceptable procedure for valuing the magnitude of the shortfall.
> - NRC cannot change the text of a regulation that was developed through an Administrative Procedures Act notice and comment rulemaking process through

[58] NEI, Industry Comments on June 8 workshop, p.10, July 13, 2011 (ML11196A203)
[59] Supplemental Submission by the State of New York Concerning the June 8, 2011 Follow-Up Meeting, p.4 -12, June 27, 2011 (ML11179A060). The numbering of the outline follows the submittal.
[60] The numbering in the summary follows the outline numbering in the New York submittal

the development of a so-called regulatory “guide.”

2.1. The Plain Language of 10 C.F.R. § 50.75 Permits a 2% Credit Only for Actual Monies Prepaid and Set Aside.

- Despite the absence of any language concerning a 2% credit, licensees argue that NRC should imply a right to discount parent guarantees; that assertion is contrary to the plain text of the regulations.
- 10 C.F.R. § 50.75(e)(1)(vi) allows licensees to combine mechanisms, or propose alternative mechanisms, which must be evaluated by Staff on an *ad hoc* basis.

2.2. The Regulatory History Confirms NRC’s Intent to Allow the 2% Credit Only for Actual Money.

- NRC Staff who participated in the 1998 rulemaking wherein parent guarantees were allowed to be combined with external sinking funds have unequivocally stated that NRC did not intend to allow licensees to discount parent guarantees.

3. The License Transfer Cases Neither Compel the Discounting of Parent Guarantees Nor Prevent NRC from Correctly Applying its Regulations on a Going-Forward Basis.

- Staff acknowledges that licensees were permitted to utilize discounted parent guarantees in those cases, but only in error and in contravention of NRC’s regulations.

3.1 The Backfit Rule is Inapplicable.

- See Decommissioning Planning, Final Rule, 76 FR 35512, 35562

3.2. No Analysis was Performed in the License Transfer Cases.

- Staff merely adopted the position of the licensees in those cases and granted pro forma approval, meaning that Staff never took a position with respect to the appropriateness of discounted parent guarantees.
- Tellingly, Staff uses nearly identical language to that in the application to discuss FENGenCo’s plans to use a parent guarantee.
- Moreover, the passing statements in the license transfer cases cannot explain why the licensee was permitted to discount its parent guarantee, and licensees do not argue that Staff performed any analysis on this issue.

3.3 NRC Staff is not Estopped from Correcting its Past Mistakes.

- It is a longstanding principle of administrative law that NRC Staff cannot be estopped from correcting its mistake.
  - *Utah Power and Light Co. v. U.S.*, 243 U.S. 389 (1917)
  - *Off. of Personnel Mgt. v. Richmond*, 496 U.S. 414 (1990)
- Not only does the law permit Staff to correct its prior mistakes, sound policy demands it in this instance.

The relevant passage from the *Utah* case is reproduced below for convenience:

> Of this it is enough to say - that the United States is neither bound nor estopped by acts of its officers or agents in entering into an arrangement or agreement to do or cause to be done what the law does not sanction or permit.[61]

II. Analysis by NEI[62]

The analysis by NEI is outlined below.

---

[61] *Utah Power and Light Co. v. U.S.*, 243 U.S. 389, 408-409 (1917)
[62] NEI, Industry Comments on June 8 workshop, p.4-8, July 13, 2011 (ML11196A203)

- Approval of the net present value approach in the license transfer orders was not a mistake.

NEI stated that the SERs of the three license transfer orders were clear on their face. NEI presented excerpts of the SERs, and underlined the passages that state an earnings credit had been considered and that annual updating was required. In each order, the SER accepts the licensee's statement of the amount that is needed for the PCG. In the Millstone and FENOC orders, the SER states that an earnings credit was applied to the existing fund balances. In the NMP order, the SER stated that an earnings credit had been taken into account in calculating the amount of the PCG. Each SER states that the PCG was provided pursuant to 10 CFR 50.75(e)(1)(iii)(B). The Millstone order states that the PCG required annual updating under 10 CFR 50.75(f)(1), and that the combination of the PCG and the NDTs must equal or exceed the total amount required under 10 CFR 50.75(b) and (c). The NMP order states that the funding level must be recalculated each year, as required by 10 CFR 50.75(b)(2) and adjusted as necessary. The FENOC order states that funding levels must be recalculated annually and adjusted as necessary to meet the requirements of 10 CFR 50.75.

- NRC regulations expressly authorize the combination of funding methods, including the combination of external sinking funds and parent guarantees.

NEI states that § 50.75(e)(1)(vi) allows combinations in general. NEI agrees that all combinations of methods, with the exception of the external sinking fund and a guarantee, need to be reviewed and approved by the NRC, in accordance with § 50.75(e)(1)(vi).[63] However, NEI states that because the combination of the external sinking fund and a guarantee is placed in the second sentence of paragraph (e)(1)(vi), that particular combination is independent and separate from the equivalency analysis required by the first sentence.

NEI states that the conditions for accepting the combination of an external sinking fund and a guarantee are (1) a PCG is provided and (2) the total amount of funds estimated to be necessary for decommissioning is assured, with the understanding that the total amount will be reduced by a discount computed using NPV. The combination would not require NRC approval or a determination of equivalency in accordance with § 50.75(e)(1)(vi). In NEI's view, the licensee should not be required to perform annual reviews and adjustments. The licensee would only give a commitment to do the reviews and adjustments.

- NEI's conclusion

The three license transfer orders were correctly decided because the NRC understood that it approved the PCG after crediting a 2% real rate of return, and that the PCG needed to be conditioned on an annual review and adjustment. NRC's regulations explicitly allow combinations of the external sinking fund and the PCG. The regulations do not prohibit the NPV approach, and the license transfer orders are precedents for doing so.

III. NRC Conclusion

The NRC staff concluded that the license transfer orders were erroneously decided with respect to DFA, as detailed in Comment 2. The regulations require combinations of methods submitted by a reactor licensee to be evaluated and approved for equivalency in accordance with § 50.75(e)(1)(vi). Each of the license transfer orders used a combination of the prepayment

[63] NEI, Industry Comments on June 8 Workshop, p.10, July 13, 2011 (ML11196A203)

method, a discounted PCG, and a license amendment to adjust the PCG each year. Both New York and NRC reach the conclusion that the combination used in the three license transfer orders falls within the scope of the equivalency tests requirement. NEI agreed that any combination, other than the external sinking fund and a guarantee, must be evaluated for equivalency under the provisions of 10 CFR 50.75(e)(1)(vi). NEI's agreement implies that the three license transfer orders should have been evaluated for equivalency with the methods of DFA expressly permitted in the regulations. However, the NRC did not perform the necessary evaluation and did not establish the required equivalency in the three license transfer orders. Therefore, the license transfer orders were decided in error.

The three license transfer orders did not approve or even consider approval of the NPV approach. In each instance, the licensee's application, the SER, and the Transfer Order are utterly devoid of any mention of NPV.

NEI's statement that the NRC understood that the three license transfer orders included an earnings credit does not cure the error that the evaluation itself was erroneous. NEI's statement that the staff understood that the PCG had to be conditioned on an annual review and adjustment likewise fails to cure the error. A combination must be evaluated under § 50.75(e)(1)(vi).

Finally, even if the orders were not decided erroneously, they do not establish the discounted PCG or the NPV approach as a precedent for any other order. The Commission stated that precedents with respect to decommissioning funding approvals in license transfer orders are limited to a simple indication of openness to consider non-standard DFA methods.

> We see no risk here of a dangerous precedent. In the area of decommissioning funding assurance, each transfer application is examined *on its own facts.* This will be especially true of applications seeking to use an assurance other than those specifically described in sections 50.75(e)(1)(i)-(v). … Because of the fact-driven nature of our decommissioning rulings in this proceeding, their precedential value is, as a practical matter, limited to an indication of the Commission's openness to funding arrangements not specifically enumerated in subsections (i) - (v).[64] [Emphasis in original]

In summary, the NRC erred when it approved the use of discounted PCGs in the three license transfer orders without performing the equivalency test required by § 50.75(e)(1)(vi). A legal analysis by the State of New York Office of the Attorney General concurs with the staff opinion. NEI's statement that the NRC understood that earnings credits were included in the DFA proposals does not cure the error. The NRC is not required to repeat the errors.

Comment 5: Combinations of the external sinking fund and a PCG are not subject to the equivalency test

NEI stated that the first sentence of § 50.75(e)(1)(vi) requires the NRC to apply the equivalency test to combinations and non-standard methods of DFA. However, the combination of an external sinking fund and a guarantee method is placed in the second sentence of subparagraph (vi). NEI stated that because there are two sentences in paragraph (e)(i)(vi), they operate independently. Therefore, no approval or evaluation of equivalence is required for a

[64] Entergy Nuclear Operations (James A. Fitzpatrick Nuclear Power Plant; Indian Point Nuclear Generating, Unit No. 3), CLI-00-14, 53 NRC 488, 556-557 (2001)

combination of an external sinking fund and a guarantee method.

Response:
The text of the regulation states:

> (vi) Any other mechanism, or combination of mechanisms, that provides, as determined by the NRC upon its evaluation of the specific circumstances of each licensee submittal, assurance of decommissioning funding equivalent to that provided by the mechanisms specified in paragraphs (e)(1)(i) through (v) of this section. *Licensees who do not have sources of funding described in paragraph (e)(1)(ii) of this section* may use an external sinking fund in combination with a guarantee mechanism, as specified in paragraph (e)(1)(iii) of this section, provided that the total amount of funds estimated to be necessary for decommissioning is assured. [Emphasis added]

The Statement of Considerations published with the 1998 Decommissioning Rule demonstrates that the second sentence is required to undergo case-by-case evaluation as specified in the first sentence, plus an additional level of oversight. The two sentences of the paragraph work together, not independently.

Notice that the second sentence of paragraph (e)(1)(vi) carves out a subset of merchant plant licensees for consideration. The criterion is, "licensees who do not have the sources of funding described in paragraph (e)(1)(ii)." Paragraph (e)(1)(ii) identifies cost-of-service rate recovery and non-bypassable charges as the sources of funding that must be missing in order to fall within the scope of the second sentence. Cost-of-service rate recovery describes a public utility arrangement, so they are not within the scope of the second sentence. Non-bypassable charges may be collected by either public utilities or merchant plants, if authorized by rate making authority. The only reactor licensees that fall outside the scope of paragraph (e)(1)(ii), and, therefore, fall within the scope of the second sentence of § 50.75(e)(1)(vi), are merchant plants which do not collect non-bypassable charges, and research and test reactors (RTR).

NEI agrees that combinations that fall outside the scope of the second sentence of § 50.75(e)(1)(vi) must be evaluated and approved by the NRC under the equivalency test.[65] The discounted PCG standing alone would fall outside the scope of the second sentence, since it would not be combined with an external sinking fund.

However, even the combination of an external sinking fund and a guarantee must meet the equivalency requirements of the first sentence. In view of the limited scope of the second sentence of § 50.75(e)(1)(vi), NEI's comment equates to stating that public utility licensees and merchant plant licensees which collect guaranteed sources of revenue specifically reserved for decommissioning are subject to the equivalency test, while merchant plants without access to guaranteed sources of funding are not, when a guarantee is combined with the external sinking fund.

It is unlikely that the NRC intentionally excluded merchant plant licensees with riskier sources of revenue from the equivalency test requirement. The NRC has expressed concerns about DFA methods used by merchant plant licensees. For example, among the comments submitted on the 1998 Decommissioning Rule, NEI requested NRC to use a framework that would allow merchant plant licensees to be included in the range of plants that could use the external

[65] NEI, Industry Comments on June 8 Workshop, p.10, July 13, 2011 (ML11196A203)

sinking fund.[66] The Commission stated that the NEI proposal would increase the risk of inadequate funding.[67] The NRC chose to limit the number of plants that could use the external sinking fund standing alone.[68] The limitation required merchant plant licensees without authorization to collect non-bypassable charges to pay for decommissioning to obtain NRC approval on a case-by-case basis to use an external sinking fund in combination with a guarantee method under the requirements of § 50.75(e)(1)(vi).[69]

The resolution of the comment is that the second sentence § 50.75(e)(1)(vi) does not operate to exclude any reactors from the equivalency test requirement. To the contrary, by carving out a subset of merchant plant licensees, the second sentence defines a group of licensees subject to an additional level of oversight that must be applied to determine if the combination may be approved.

The discussion in the Supplementary Information for the 1998 Decommissioning Rule states the reasons for the greater level of oversight applied to merchant plants. The Supplementary Information explains that merchant plant licensees (i.e., those that lose the ability to recover decommissioning costs through rates) may be allowed to provide equivalent assurance, but are subject to case-by-case evaluation:

> [T]he applicability of the NRC's parent company guarantees and self-guarantees to power reactor licensees is questionable … because the underlying financial tests were developed primarily for other types of entities assuring smaller decommissioning obligations. Consequently, a case-by-case approach [for] reactor licensees that lose the ability to recover decommissioning costs through regulated rates and fees or other mandatory charges established by a regulatory body or other mandatory charges established by a regulatory body [i.e., merchant plant licensees], could provide assurance equivalent to the other methods NRC is allowing. However, the NRC will need to ensure that the mechanisms used will, in fact, provide adequate financial assurance."[70]

The second reason arises in the event that the licensee fails to complete decommissioning and the parent must step in. The parent, as guarantor, is responsible only for the amount of the PCG. If the licensee has been inefficient in conducting the decommissioning, the PCG may not be enough to complete the project. It is possible that the parent could pay over only the PCG amount, and then claim to have performed its performance guarantee. However, because a merchant plant licensee has no access to ratepayer funds, it would have no means to obtain the additional money needed to complete decommissioning. The third reason arises from the low cost of guarantees. The PCG provides an incentive to shift costs or avoid greater responsibility in the event the licensee is unable to complete the decommissioning:

> Because of the low costs of guarantees, however, allowing this combination of mechanisms could create an incentive for licensees to delay or cease payments into the sinking fund and, instead, to rely on the guarantee for as much of the cost as possible. Given the magnitude of typical decommissioning costs for reactors, this possibility could hinder the timely conduct of decommissioning. In other words, decommissioning could be significantly delayed if, because of a

---

[66] 1998 Decommissioning Rule, 63 FR 50469
[67] Id.
[68] Id.
[69] Id.
[70] 1998 Decommissioning Rule, 63 FR 50473

> licensee's inadequate contributions to its sinking fund, a guarantor had to come up with large amounts of money at the time of decommissioning.[71]

These concerns motivated the NRC to add an additional level of oversight for merchant plants that use a guarantee method in combination with the sinking fund, as expressed in the second sentence of § 50.75(e)(1)(vi). The intent is stated in NRC's regulatory guidance on verifying annual amortization amounts for external sinking funds:

> As rate deregulation proceeds, some licensees may no longer have rate regulatory oversight with respect to decommissioning. … The reviewer should exercise greater oversight of those licensees that no longer have such rate regulatory oversight.[72]

In particular, additional oversight is necessary to verify that a merchant plant licensee will, in fact, accumulate the total amount of funds estimated to be necessary for decommissioning if an external sinking fund is used.[73] The reason for the additional oversight is that the external sinking fund, by design, depends on future deposits into the fund to achieve adequate financial assurance. Unlike a prepaid account, the future earnings of the sinking fund do not cover the shortfall between the fund balance and the decommissioning cost. The NRC can rely on rate regulatory authorities to assure that ratepayer funds are properly deposited into a public utility licensee's NDT. However, for the subset of merchant plant licensees that use a combination of the external sinking fund and a guarantee, but have no sources of funding authorized by a rate making authority, the NRC must exercise additional oversight to assure that future deposits are added to the NDT.

Comment 6: Commitment to annually adjust the discounted PCG is sufficient

NEI stated that the licensee should be allowed to use a discounted PCG if it makes a commitment to perform annual reviews and adjustments.

Response:
A commitment is not a condition; it does not ensure performance. The NRC may impose conditions when needed to achieve the requisite equivalent assurance for combinations of methods.[74] In addition, in the area of decommissioning funding assurance, each application is examined on its own facts.[75] The NRC cannot determine whether annual adjustment is adequate, even when imposed as a condition, without review of the facts of the licensee's submittal. There are several facts that the NRC must consider when evaluating a licensee submittal for equivalency to the DFA methods expressly described in the regulations, as outlined below.

The Enclosure 3 section titled, "1998 Decommissioning Rule," identifies three concerns with

---

[71] Financial Assurance Requirements for Decommissioning Nuclear Power Reactors, Final Rule, September 22, 1998, 63 FR 50465, 50473

[72] NUREG-1577, Rev. 1, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," Section III.2.c(2), "Verifying Annual Amortization Amounts for External Sinking Funds," 2003

[73] 1998 Decommissioning Rule, 63 FR 50473

[74] Entergy Nuclear Operations (James A. Fitzpatrick Nuclear Power Plant; Indian Point Nuclear Generating Unit No. 3), CLI-00-14, 53 NRC 488, 546 (2001)

[75] Entergy Nuclear Operations (James A. Fitzpatrick Nuclear Power Plant; Indian Point Nuclear Generating, Unit No. 3), CLI-00-14, 53 NRC 488, 556-557 (2001) [Hereinafter PASNY transfer case]

allowing the PCG to be used by power reactor licensees.[76]

- Questionable applicability of the PCG's financial test to reactors[77]
- Incentive to shift costs and avoid greater responsibility[78]
- Incentive to delay or cease contributions to the NDT[79]

The Enclosure 3 section titled, "Vulnerabilities of the PCG and Self-guarantee," discusses the risk of non-payment when a PCG is used. Annual adjustments to the discounted PCG do not mitigate those risks. In the PASNY transfer case, the Commission described the guarantee as a "mere promise … to pay the money at some future time," which provides less assurance than money already deposited in a NDT.[80] The relative lower degree of assurance suggests that conditions are necessary for the discounted PCG.

The licensee is required to provide adequate DFA at all times:

> A licensee is required to provide assurance that at any time during the life of the facility, through termination of the license, adequate funds will be available to complete decommissioning. For operating reactors, the amount of decommissioning funding required is generically prescribed in 10 CFR 50.75.[81]

However, as discussed in Comment 2, the ability of the discounted PCG to cover shortfall in DFA, depends, in part, on the time frame involved. A discounted PCG may cover the shortfall when originally approved, but may fail to do so later.

In view of the above discussion, a commitment to annually adjust the discounted amount of a PCG does not provide adequate assurance of DFA. To achieve the requisite equivalent assurance when using a discounted PCG, conditions are needed to ensure performance.

Comment 7: New York mischaracterizes the NRC's regulations

NEI stated that the State of New York mischaracterized the NRC's regulations when New York referred to the PCG as a "mere promise to pay" in comments submitted on June 27, 2011.

Response:
In its adjudication of the PASNY transfer case, the Commission described the guarantee as a "mere promise … to pay the money at some future time," which provides less assurance than money already deposited in a NDT.[82] New York described the PCG in the same way.

Comment 8: New York challenges the NRC's regulations

NEI stated that the State of New York Office of the Attorney General challenged the NRC's regulations.

---

[76] *See* discussion on 1998 Decommissioning Rule in the enclosed Additional Information
[77] 1998 Decommissioning Rule 63 FR 50465, 50473
[78] Id.
[79] Id.
[80] 53 NRC 488, 550
[81] Decommissioning of Nuclear Power Reactors, Final Rule, 61 FR 39278, July 29, 1996
[82] 53 NRC 488, 550

Response:
The New York Office of the Attorney General's statements regarding the NRC's DFA regulations are noted below, along with a response on the merits of the statements.

New York stated:

> Neither 10 C.F.R. § 50.75(e)(1)(iii)(B), nor the text of Appendix A to 10 C.F.R. Part 30, refer to net present value as an acceptable procedure for valuing the magnitude of the shortfall. Moreover, nowhere in the relevant regulations is there a reference to, let alone authorization for, net present value for parent guarantees.[83]
>
> Among the conditions contained in the regulations is that a licensee using either the prepayment method or an external sinking fund is allowed to take credit for earnings on those funds using up to a 2 percent annual real rate of return, or a credit of greater than 2 percent if the licensee is a regulated utility and the rate-setting authority has specified a higher rate. 10 C.F.R. §§ 50.75(e)(1)(i), (ii). These two funding mechanisms are distinct from the others mentioned in § 50.75(e)(1) because they require the segregation of actual monies into protected accounts, whereas the other mentioned mechanisms rely on promises to pay. None of the paragraphs wherein provision is made for use of a "promise to pay" mechanism permit a 2% credit.[84]

Reading the text of the regulations demonstrates that the statements are accurate. The regulatory text does not allow sureties, letters of credit, parent company guarantees, self-guarantees, or statements of intent to take an earnings credit.

New York stated:

> The regulatory history confirms NRC's intent to allow the 2% credit only for actual money.[85]

The New York Attorney General accurately characterizes the NRC's regulatory history for DFA. As discussed in the enclosed Additional Information section titled, "Regulatory History," the NRC did not intend or permit an earnings credit for any mechanism other than the prepaid account and the external sinking fund. The response to Comment 1 provides additional reasons for concluding that a discounted PCG is not permitted by the regulations.

On the other hand, NEI's discounting proposal does present a challenge to the NRC's regulations. The proposal requests the NRC to grant industry-wide permission to use a decommissioning funding mechanism that is not specifically permitted in the regulations, without NRC approval or evaluation under the equivalency test required by § 50.75(e)(1)(vi). The proposal requests NRC to grant that permission in a guidance document. However, as discussed in the enclosed response to Comment 1, NRC regulations do not permit taking an earnings credit for, or giving a discount on, the PCG. The enclosed Additional Information section titled, "Transfer Orders Applying the Equivalency Test of § 50.75(e)(1)(vi)," discusses

---

[83] Supplemental Submission by the State of New York Concerning the June 8, 2011 Follow Up Meeting to the March 2, 2011 Decommissioning Funding Workshop & Related Decommissioning Issues, p.4, June 27, 2011 (ML11179A060) [Hereinafter New York June 2011 Supplemental]
[84] Id. p.5
[85] Id. p.7

the Commission's interpretation that the regulation "plainly establishes an 'equivalence' test." To grant the proposal as requested would require NRC to change its regulation, and the Commission's interpretation of the regulation, without notice-and-comment rulemaking.

NEI stated, in relation to an earlier decommissioning funding issue, that the NRC is not free to change its regulations or its interpretation of the regulations without notice-and-comment rulemaking:

> Although courts generally give substantial deference to an agency's interpretation of its own regulations, they have also held that the Administrative Procedure Act requires notice and comment rulemaking when an agency substantially modifies such interpretations. So while an agency's initial interpretation of its regulations is entitled to substantial judicial deference, once an agency gives its regulation one definitive interpretation, it can only change that interpretation as it would formally modify the regulation itself - through the process of notice and comment rulemaking. Accordingly, the Supreme Court has recognized that if an agency adopts "a new position inconsistent with" an existing regulation, or effects a "substantive change in the regulation," notice and comment are required.[86] [Footnotes in original omitted]

Comment 9: NRC should follow generally accepted accounting practices (GAAP)

Two industry commenters stated that the NRC's financial assurance regulations do not follow GAAP. The commenters requested that NRC revise its regulations to allow discounting in a manner similar to GAAP.

Response
The NRC does not agree that GAAP should be applied to the requirements for DFA. The NRC's regulations protect public health and safety, while GAAP provides cash flow information to interested persons. As noted below, both NRC and the US Government Accountability Office (GAO) have considered and rejected the application of GAAP to DFA.

Since 1973, the Financial Accounting Standards Board (FASB) has been designated by the US Securities and Exchange Commission (SEC) as the private-sector standard setter for GAAP for the United States.[87] NRC considered the FASB standard in the Statement of Considerations published with the 1998 Decommissioning Rule. However, the NRC determined that the NRC's rulemaking could proceed notwithstanding any FASB action. Some commenters on the 1998 Decommissioning Rule generally opposed reporting the status of the NDTs in accordance with GAAP, as stated below:

> Some commenters went further, and expressed criticisms of the FASB exposure draft, indicating that even if it became final in its current form they would not find it appropriate for use. In the view of these commenters, merely recognizing the liability and periodic expense for decommissioning, which is the focus of the FASB draft, is not sufficient to ensure adequate funding. In their view, the FASB standards establish accounting procedures but are not the appropriate

[86] NEI, Revision to Comments on Draft Regulatory Guide DG-1229,Enclosure 1, p.6, September 10, 2009 (ML092590128)
[87] William W. Bratton, "Private Standards, Public Governance: A New Look at the Financial Accounting Standards Board," p. 7, *Boston College L. Rev.*, Vol. 48:1, January 2007

> computations for determining necessary cash flows for funding external trusts. One commenter stressed that the focus of the FASB draft, as well as issues concerning the appropriate discount rate, also made the FASB standard questionable for NRC's purposes.[88]

On the specific issue of the discount rate, NRC stated that:

> Discount rates are used for capital investment analysis and other decision-making purposes but, if used to calculate contributions to decommissioning funds, could result in financial assurance levels that are not adequate to pay for all assured obligations.[89]

At the time of the 1998 Decommissioning Rule, the FASB standard was still under development. NRC concluded that its decommissioning fund status report requirements would not be affected by the accounting standard when it was eventually developed:

> Notwithstanding any final FASB action, the NRC can proceed with its own requirement for reporting on the status of decommissioning funds.[90]

In 2001, GAO completed an audit of NRC's financial assurance oversight program. GAO reviewed the FASB standard and concluded that it was unsuitable as a financial assurance method:

> Changes to the Financial Accounting Standards Board's financial reporting standard will require, for the first time, owners of facilities that require significant end-of-life cleanup expenditures—such as nuclear power plants—to consistently report estimated decommissioning costs as liabilities in their financial statements. When this standard takes effect in mid-2002, many companies that are licensed by NRC to own nuclear power plants will have to change their current financial-reporting practices, and the reporting of estimated decommissioning costs will become more uniform. However, the new accounting standard is not intended to, and will not, establish a legal requirement that these licensees set aside adequate funding for decommissioning costs.[91]
>
> The new standard will have no legal or regulatory affect on the actual accumulation of decommissioning funds and is not intended to do so.[92]
>
> Finally, the new accounting standard cannot ensure that funds will be available at the time of decommissioning. Accounting standards are concerned with how financial events and obligations are reported; they do not ensure that resources will be available to pay for future needs, including decommissioning costs.[93]

NRC agreed with GAO that the FASB standard does not assure the availability of adequate decommissioning funds:

---

[88] 1998 Decommissioning Rule, 63 FR 50465, 50475
[89] Id. 63 FR 50477
[90] Id. 63 FR 50475
[91] GAO-02-48, Nuclear Regulation: NRC's Assurances of Decommissioning Funding During Utility Restructuring Could be Improved, December 2001, p.5
[92] Id. p.7
[93] Id. p.54

> NRC added that the accounting standard and NRC's biennial financial reporting requirements were developed by distinct organizations for different purposes. Finally, NRC said it understands that the purpose of the Financial Accounting Standards Board's standard is to ensure the consistency of financial reporting. The standard is not, NRC added, meant to duplicate NRC's responsibility of assuring the availability of adequate decommissioning funds.[94]

FASB itself recognizes that GAAP should not determine the outcome of business and economic decisions:

> The role of financial reporting in the economy is to provide information that is useful in making business and economic decisions, not to determine what those decisions should be.[95]

Furthermore, FASB recognizes that end users of financial reports have a responsibility to do their own independent evaluation of information reported under GAAP, as stated below:

> Investors, creditors, and others may use reported earnings and information about the elements of financial statements in various ways to assess the prospects for cash flows. They may wish, for example, to evaluate management's performance, estimate "earning power," predict future earnings, assess risk, or to confirm, change, or reject earlier predictions or assessments. Although financial reporting should provide basic information to aid them, they do their own evaluating, estimating, predicting, assessing, confirming, changing, or rejecting.[96]

The NRC's use of financial information to assess the adequacy of a licensee's DFA is entirely consistent with the FASB's position of the uses of GAAP.

Comment 10: NRC should apply NPV as if the PCG was cash

NEI stated that the NRC should allow the licensee to apply the NPV method to discount future cash flows to determine the amount of the PCG today as if the PCG was cash held in a prepayment or external sinking fund.

Response:
NPV is a tool for discounted cash flow analysis, widely used for capital budgeting.[97] However, the NRC determined that discounting methods used for capital investment analysis "could result in financial assurance levels that are not adequate to pay for all assured obligations."[98] The license transfer orders discussed in Comment 2 of this paper illustrate that relying on NPV to calculate discounts can result in shortfalls.

A list of reasons why the PCG should not be treated as cash is shown below:

---

[94] Id. p.57
[95] Statement of Financial Accounting Concepts No. 1, Objectives of Financial Reporting by Business Enterprises, as amended, FASB, p. 10, November 1978. Available at http://www.fasb.org.
[96] Id., p. 2
[97] Net present value, *available at* http://en.wikipedia.org/wiki/Net_present_value
[98] 1998 Decommissioning Rule 63 FR 50465, 50473

- The PCG has no cash associated with it; it cannot generate earnings, and produces no cash flow.

- The NRC uses a constant dollar method to assess the adequacy of DFA. That method implicitly applies a discount to future cash flows to eliminate the effects of cost escalation. Using NPV for DFA would amount to a double discount, which would reduce the amount of DFA to a level less than the prescribed amount of § 50.75(c). See Comment 2 of this paper for a discussion of transfer orders where discounting resulted in licensees failing to cover the shortfall in DFA.

- The NPV method can result in financial assurance levels that are not adequate to meet all future obligations, as demonstrated in SECY-10-0084, Response to Comment 20.[99]

- The NPV method applies to capital investment analysis and other decision making purposes. However, the NRC considered and rejected the use of business decision making discount rates for decommissioning financial assurance purposes in the 1998 Decommissioning Rule.[100]

- NPV varies depending on the future time at which the shortfall occurs, so equal shortfalls may yield different NPVs, which make comparison of licensee performance more complex, and may be misleading to other stakeholders.

- The use of discounted DFA methods reduces the degree of assurance that funds will be available when needed, since it may reduce the ratio of net worth to decommissioning costs.

- The PCG provides an adverse incentive to delay or cease payments into the NDT. A discounted PCG increase the incentive.

- The regulations do not allow treating the PCG as if it were cash.

However, if the NPV approach was applied, the licensee would need to justify its selection of the real rate of return it used to compute the discount. The regulations of allow a rate *up to* 2% real rate of return per year, they do not guarantee it.[101] The licensee cannot simply assert a discount rate of 2% per year without justification. In fact, a negative value can result when the expected growth rate of the NDT lags the cost escalation rate for decommissioning. An example of negative real rate of return is discussed in the Additional Information section titled, “Rate of Return Compared to Decommissioning Cost Escalation.” That section includes a discussion of the economic factors that can cause the negative real rate of return.

In view of the actual performance of NDTs compared to decommissioning cost escalation, if the discounting is allowed, the licensee would need to justify its assumptions regarding the real rate of return, under the specific circumstances of its submittal, rather than simply assume a 2% discount rate.

---

[99] SECY-10-0084,Enclosure 2, p.36 – 39 (ML101540488)
[100] 1998 Decommissioning Rule, 63 FR 50465, 50477
[101] *See* § 50.75(e)(1)(i) and (ii). Public utility licensees may use a higher rate, if authorized by their rate regulatory authority.

Comments on Costs

Comment 11: Direct Costs of the PCG

At the June 8 follow-up meeting, some licensees stated that the PCG has a direct cost for licensees because the parent company charges its subsidiary-licensee an inter-company fee for the PCG.

Response
It is difficult to reconcile the comment that the PCG imposes a direct cost with Exelon's statement at the March 2011 workshop that there were no direct costs from using PCGs amounting to $219 million:

> MS. HOFMANN (Vermont Department of Public Service): [W]hat were the specific costs of having those parent guarantees in place?
> MR. HAYES (Exelon Treasury Department): To be clear, and for the record, there currently are no direct costs associated with issuing a guarantee so there's not incremental interest that hits your income statement.[102]

NEI agreed that that there is no direct cost for a PCG in its April 2011 letter:

> As Mr. Hayes explained … there is no direct monetary fee for using a PCG ….[103]

The 1993 Self-Guarantee Rule stated that the self-guarantee, which is closely related to the PCG, eliminated costs:

> The cost savings would result from the elimination of the cost of third party financial assurance for licensees qualifying to use the self-guarantee.[104]

In addition, the Regulatory Analysis for the 1998 Decommissioning Rule concluded that the PCG would avoid the costs of other mechanisms:

> Consequently, licensees that must couple their existing external sinking funds with other mechanisms following deregulation may be able to avoid the costs associated with securing a surety mechanism or prepayment mechanism if they are able to secure a guarantee.[105]

The 1998 Decommissioning Rule was the subject of extensive comments, yet no commenter stated that inter-company fees charged by a parent to its subsidiary-licensee would negate the cost savings of using the PCG.

Referring to the NRC's definition of cost will help reconcile the differing comments on the direct cost of the PCGs:

---

[102] Common Sessions Transcript, p.145
[103] NEI, Industry Comments on March 2 Workshop, p.1, April 4, 2011 (ML110500002)
[104] 1993 Self-guarantee Rule, 58 FR 68276
[105] SECY-98-0164, Regulatory Analysis on Decommissioning Financial Assurance Implementation Requirements for Nuclear Power Reactors, p. 7 - 8, July 2, 1998 (ML992880091)

> [The] cost of a funding method is defined as the incremental revenue requirements that result from using a particular funding method, other factors being equal.[106]

Applying the NRC cost definition to the PCG, the parent company's inter-company fee is not a "cost" since there is no incremental change in the revenue requirements for the family of companies as a whole. The fee represents an inter-company transfer payment, where every dollar paid by the subsidiary is a dollar received by the parent. Since the parent owns the subsidiary, the fee does not change the parent's entitlement, and it does not require the subsidiary to obtain additional revenue to pay the fee. It is the economic equivalent of a person taking a dollar out of his right pocket and placing it his left pocket. An inter-company transfer fee for a PCG does not meet the NRC's definition of cost because there is no incremental revenue needed to pay for it.

Exelon's unqualified statement, supported by NEI, that there are no direct costs or monetary costs to providing a PCG corroborate the NRC's regulatory determinations that the PCG is a minimal cost method to provide DFA.

Comment 12: Indirect Costs of the PCG

NEI stated that the PCG imposes "significant indirect costs"[107] on the licensee, due to the requirement to meet the financial test for the PCG.

Response:
It is difficult to reconcile the comment that the PCG imposes indirect costs with Exelon's statement at the March 2011 workshop that there were no indirect costs from using PCGs amounting to $219 million:

> MR. FREDRICHS (NRC): But as far as the 219 million dollars in parent company guarantees that you had in place, or may have in place even today, did Exelon actually experience any of the indirect costs that were brought up in earlier NEI comments from last year, restrictions on your liquidity, or credit stress or credit downgradings?
>
> MR. HAYES (Exelon Treasury Department): The quick answer is no, we did not experience any indirect costs for the 219 million. I think, though we [dis]agree for the methodology that was used to calculate the 219, that's not a number that bothers us as much.[108]

NEI's earlier comments stated that the PCG imposed the following list of indirect costs on the licensee in order to pass the financial test for issuing a PCG:

September 10, 2009 letter

- Must set aside assets worth 6 times the amount guaranteed
- Assets set aside may not be pledged as collateral for any other purpose
- Tying up assets leads to credit stress and credit ratings downgrading

---

[106] 50 FR 5600, 5608

[107] NEI, Revision to Comments on Draft Regulatory Guide DG-1229, Enclosure 1, p.7, September 10, 2009 (ML092590128)

[108] Official Transcript of Proceedings, Decommissioning Funding Workshop, Common Sessions, p. 195, US NRC, March 2, 2011 (ML110810747) [Hereinafter Common Sessions Transcript]

August 4, 2010 letter

- Must have tangible net worth 6 times the amount guarantee

However, the regulations of Appendix A to Part 30, which specify the financial test, do not impose any of the requirements listed by NEI. The licensee is not required to set aside funds, or to tie up assets, or to abstain from pledging assets as collateral for other purposes. In fact, the absence of funds to secure the obligations of the PCG is the reason that earnings cannot be credited to the PCG – there are no funds to produce any earnings. The absence of funds is the reason that discounting the PCG has no economic basis – there is no cash flow to discount. The fact that no assets are set aside to collateralize the PCG is the reason that it is vulnerable to bankruptcy and seizure of assets by creditors. To sum up, the reasons given to support the claim that the PCG has significant indirect costs actually are the reasons the PCG has a minimal cost for the licensee – no cash is required. The features of the PCG that minimize its costs are the sources of its vulnerability as a method of financial assurance.

In addition, the information obtained from the workshops and the NRC's independent research indicates that the PCG does not impose indirect costs. The PCG does not impose a credit stress because payment, if any, is required only after the licensee fails to meet its decommissioning obligation. The PCG cannot be called on during operation, since no decommissioning activities take place during that time. After permanent shutdown, payment can be delayed for up to 60 years, since safe storage is sufficient for the licensee to avoid failure, and it has a relatively low annual cost. Therefore, the likelihood of actual payment is very low for at least 60 years after permanent shutdown.

Since the likelihood of actual payment is very low, and the PCG has no requirements for setting aside funds or assets, it logically follows that there should be no effect on credit stress or credit ratings. Examination of GAAP and parent company financial statements supports the conclusion that the parent's credit ratings are not affected by PCGs. As noted in the response to Comment 16 of this paper, Exelon reported that the PCG has no effect on its asset retirement obligations, as reported in accordance with GAAP. Information on the credit rating process presented by Moody's Investors Service at the March 2011 workshop confirmed the conclusion that the PCG does not affect credit stress or credit ratings. Information from both GAAP and Moody's is summarized below.

The GAAP for PCGs are defined in FASB Interpretation No. 45 (FIN No. 45), "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others." FIN No. 45 states that guarantees issued between a parent company and its subsidiary are not required to be recognized as a liability on the balance sheet.[109] The PCG fits into the exception established by FIN No. 45, therefore, it is not required to be recorded on the balance sheet as a liability. GAAP require only that the parent include a note in the financial statements that it has issued the PCG.

As discussed in the response to Comment 16 of this paper, Exelon confirmed that its accounting procedures do not recognize the PCG as a liability on the balance sheet, and that the PCG is identified in the notes to the financial statements. As another example, in its 2004 Annual Report, Progress Energy disclosed that it used PCGs for nuclear

[109] FIN No. 45, p. 4.

decommissioning in a section titled, "Off-Balance Sheet Arrangements and Contractual Obligations."[110] The PCG is off-balance sheet because it is not recorded as a liability.

A more recent example is provided by FirstEnergy Corp.'s 2008 Annual Report. In 2008, FirstEnergy Corp. used $2.1 billion in LOCs[111] and, including its subsidiaries, provided $3.8 billion in guarantees.[112] At the time, FirstEnergy Corp. used an $80 million PCG for Beaver Valley.[113] The Beaver Valley PCG is small compared to the total amount of guarantees. In addition, FirstEnergy Corp. made the following statement:

> We believe the likelihood is remote that such parental guarantees will increase amounts otherwise paid by us to meet our obligations incurred in connection with ongoing energy and energy-related activities.[114]

When reading the FirstEnergy Corp. statement quoted above, the word "remote" is a term of art in accounting use. A loss contingency classified as "remote" is defined as one with only a slight chance of occurring.[115] Accordingly, it does not require recognition on the balance sheet as an accrued liability.[116]

At the March 2011 workshop, Moody's Investors Service stated the PCG had little effect on the credit rating decision:

> [W]hen it comes to the parent guarantee issue, it is not a primary or secondary credit ratings driver for the rating of the company.[117]

Moody's explained that the method used to determine the size of the PCG likewise has little effect on credit ratings. In discussing whether the PCG is the NPV or the future value, or some other calculation, Moody's stated:

> This is extremely narrow, and focused, and granular in the big picture view of how we are going to assign a rating for an Exelon, or Dominion, or Duke, or Southern Company, or one of the other operating companies that are here. This topic does not get a lot of play in ratings committees with respect to the guarantees. It's really not that big of an issue from a credit perspective.[118]

The regulatory history of the PCG indicates that the PCG method does not impose indirect costs. The NRC added the PCG method at the request of licensees for materials and research and test reactors when it issued the original financial assurance rules in 1988, on the basis that it would minimize impacts on licensees.[119] Later, in 1998, the NRC extended

[110] Progress Energy 2004 Annual Report, p. 43.
[111] FirstEnergy Corp., 2008 Annual Report, p. 96.
[112] Id. p. 37
[113] Id.
[114] Id.
[115] Preliminary Summary of Financial Accounting Standards for Environmental Liabilities, Intangible Assets and Climate Change Risk, Draft Report, U.S. Environmental Protection Agency, p. 12, April 28, 2008. Available at http://www.epa.gov.
[116] Id., p. 13.
[117] Transcript, Decommissioning Funding Workshop, Breakout Session 1, statement of Mr. Hempstead (Moody's Investor Services), p.91, March 2, 2011 (ML100750351)
[118] Id. p. 86-87
[119] 1988 Decommissioning Rule, 53 FR 24018, 24034 - 35

the use of the PCG to power reactors in response to a comment requesting that action.[120] The NRC stated that the PCG was less costly than other methods of providing DFA.[121] None of the comments received in response to either of the NRC rulemakings made a claim that the PCG imposed significant indirect costs on licensees. Similarly, the U.S. Environmental Protection Agency (EPA) allows PCGs as financial assurance for environmental cleanup obligations.[122] The EPA did not receive comments in its rulemaking activities that claimed the PCG imposed significant indirect costs.[123]

Neither NEI nor any other commenter suggested that Exelon or Moody's erred in their statements that there are no indirect costs to using the PCG. In view of those statements, combined with the actual regulatory requirements, the accounting standards, the financial statements of the licensees' parent companies, the regulatory history, and the low likelihood that the PCG will require actual payment, the reasonable conclusion is that the PCG does not impose indirect costs.

Finally, using the PCG is a voluntary action by the licensee. In the event the circumstances of a particular licensee may result in some indirect cost, the licensee can choose a different DFA method to reduce its indirect cost.

Comment 13: Availability of Letters of Credit

Some merchant plant licensees stated they are unable to obtain a letter of credit (LOC) from their bankers.

Reactor licensees state that the low fees paid by materials licensees and their parent companies, as identified in SECY-10-0084, are not always available to them. The reactor licensees state they must pay 1.5% to 4.0% per annum for LOCs and, in some cases, merchant plant licensees cannot obtain LOCs. One large nuclear fleet owner stated that its bankers would not issue LOCs to its reactor licensees due to the regulatory risk of extending credit to non-utility nuclear businesses.[124] The licensee stated:

> [A]s someone who has been in the financial/commercial side of this industry for a long time, nuclear -- just the statement "nuclear" makes it different at a bank credit committee. Saying cash flow is attached to a nuclear asset, because of the regulatory history of nuclear assets, will make the banks more hesitant because there is a regulatory risk associated with the cash flows of a nuclear asset -- that are different in a non-nuclear generation asset ….[125]

Response
NRC anticipated that some licensees that lose the ability to recover decommissioning costs through rates (i.e., merchant plants) would be considered financially risky ventures by credit providers. The NRC provided the PCG as a low-cost method to meet the DFA requirements in the event a licensee could not obtain a surety or LOC at reasonable cost:

---

[120] 1998 Decommissioning Rule, 63 FR 50465, 50470 - 71
[121] Id. at 63 FR 50471
[122] 40 CFR 264.143(f)
[123] Personal communication, P. Bailey, ICF Consulting. Mr. Bailey has extensive experience with the NRC and EPA financial assurance regulations. He has provided consulting services to the NRC on many occasions.
[124] Statement of Mr. Green (Entergy), Transcript, June 8, p.18 (ML111650033)
[125] Statement of Mr. Green (Entergy), Transcript, June 8, p.65 (ML111650033)

> NRC recognizes that there are likely to be limits on the availability of surety mechanisms such as letters of credit, lines of credit, and, in particular, surety bonds, to licensees trying to demonstrate financial assurance. [Financial] mechanism providers also may view some [merchant plant] licensees … as financially risky ventures given their restructured operations and newly deregulated financial characteristics (e.g., licensees may no longer have guaranteed service areas). … Even if surety mechanisms [LOCs and surety bonds] are not available to some licensees, licensees may be able to use … parent and self-guarantees, which are still less costly.[126]

With respect to the cost of LOCs, a number of sources provide information showing that some parent companies have access to low fees.[127] These sources include parent company filings required by the US Securities and Exchange Commission (SEC) and submittals of financial information to the NRC. These sources revealed that LOCs were available at less than 1% per annum to NRC materials licensees and reactor licensee parent companies. Some large NRC materials licensees, with decommissioning costs comparable to reactors, have stopped using LOCs because they were able to obtain surety bonds at even lower cost, in the range of 0.75% per annum.[128] Entergy Corporation stated it has the ability to issue letters of credit against the total $3.5 billion borrowing capacity of its credit facility. Entergy Corp.'s weighted average interest rate for the year ended December 31, 2009 was 1.377%.[129] FirstEnergy, also an owner of several reactor licensees, reported a range of LOC costs from 0.35% to 1.70% in 2008.[130] NextEra Energy Inc., parent of Florida Power & Light Co. (FPL), reported that in December 31, 2010 and 2009, the weighted−average interest rate for its commercial paper borrowings were 0.39% (0.26% for FPL) and 0.19% (0.19% for FPL), respectively.[131]

NRC does not require licensee pay for LOCs directly. For example, materials licensees have made arrangements for third parties to obtain a LOC on their behalf. A third party, such as a parent company, may provide an LOC on behalf of the licensee, as long as the LOC conforms to NRC regulations. This arrangement could permit the licensee to obtain the favorable rates available to the licensee's parent company by allowing the parent company's higher credit rating to be used for the benefit of the licensee.

The regulations of 10 CFR 50.75(e)(1)(vi) allow other mechanisms to be used, if they meet tests for equivalency and specific circumstances exist that would support acceptance of another method. The licensee and its parent could propose a financial assurance method to take advantage of low rates available to the parent and submit it for consideration to NRC.

Comment 14: License renewal provides additional accumulation time

In its September 2009 comments, NEI stated, "[I]t seems likely that most power reactor licensees will have an additional 20-year time horizon over which to accumulate decommissioning funds."[132]

---

[126] 1998 Decommissioning Rule, 63 FR 50645, 50471
[127] Response to Comments on Draft Guidance DG-1229, p.15 – 17 (ML101540488)
[128] Proprietary financial information submitted to NRC
[129] Entergy Corporation and Subsidiaries 2009 Annual Report, p.99
[130] FirstEnergy Corporation, 2008 Annual Report, p. 96
[131] Florida Power & Light Co. Form 10-K, p.100, Filed with the US Securities and Exchange Commission (SEC) on February 2, 2011
[132] NEI, Revision to Comments on Draft Regulatory Guide DG-1229, Enclosure 1, p.4, September 10, 2009 (ML092590128)

Response
Whether license renewal actually provides additional funds for decommissioning depends on two factors. First, whether license renewal actually provides additional time and, second, whether the return on investment stays ahead of the rate of increase in decommissioning costs. Both factors are uncertain, based on experience.

The additional time available from license renewal is not necessarily 20 years. License renewal merely provides the option of continued operation; it provides no guarantee that operation will actually continue. The record shows that since the License Renewal Rule was issued in 1991,[133] eight power reactors have permanently shut down without applying for license renewal.[134] More recently, the Oyster Creek plant has announced it will not operate through the 20-year license renewal it obtained. Oyster Creek will permanently shut down 10 years early rather than meet the expenses of New Jersey environmental requirements.[135] The State of Vermont has declined to issue a Certificate of Public Good that is required for the Vermont Yankee Power Station to operate during the license renewal period.[136] Whether those decisions will be implemented remains unknown. However, they provide some insight on the uncertainty that additional time will actually be realized from license renewal.

Whether the additional time, if realized, results in funds growing to cover the decommissioning cost is uncertain as well. Information discussed in the Historical Data section of this paper indicate that NDT investment returns have not kept up with decommissioning cost increases in all cases, and that the industry is reducing its contributions into its NDTs. The relative weakness of NDT investment returns was a subject of the March 2011 workshop, as stated by a representative of the Bank of New York - Mellon:

> [T]he concern is we have had too many years where costs have exceeded the escalation of asset accumulation. So it is not at all clear to me that license extensions do anything for us. In fact, if cost trends continue the way they are, we get deeper in the hole.[137]

Allowing the use of the discounted PCG will not improve NDT investment performance, even if additional time is available for accumulation. The PCG has no cash and cannot produce earnings, but provides an incentive to delay or cease contributions into the NDT. Consequently, the potential for large unfunded obligations to occur is not mitigated by the potential for license renewal.

Comment 15: The PCG unduly burdens the licensee

NEI stated that the PCG was a “substantial additional burden” to the licensee.[138]

Response:
As discussed in the response to Comment 11, the PCG reduces costs to the licensee.

---

[133] Nuclear Power Plant License Renewal, Final Rule, 56 FR 64943, December 13, 1991.
[134] NUREG-1350, Volume 21, 2009–2010 Information Digest, Appendix B, August 2009.
[135] New York Times, Dec. 8, 2010 ***available at*** http://www.nytimes.com/2010/12/09/nyregion/09nuke.html
[136] Letter from United States Senators Leahy and Sanders and United States Representative Welch to NRC Chairman Jaczko, February 28, 2011 (ML110630216)
[137] Transcript, Decommissioning Funding Workshop, Breakout Session 2, statement of Mr. Keller (Bank of New York – Mellon), p. 61, March 2, 2011 (ML110810744)
[138] NEI, SECY-10-0084: Explanation of Changes, p. 9, August 4, 2010 (ML103220322)

With respect to the general burden of compliance with the DFA regulations, NRC determined that the decommissioning cost estimates were reasonable,[139] and that requiring DFA is necessary to protect public health and safety:

> In carrying out its licensing and related regulatory responsibilities under these acts, the NRC has determined that there is a significant radiation hazard associated with non-decommissioned nuclear reactors. The NRC has also determined that the public health and safety can best be protected if its regulations require licensees to use methods which provide reasonable assurance that, at the time of termination of operations, adequate funds are available so that decommissioning can be carried out in a safe and timely manner and that lack of funds does not result in delays that may cause potential health and safety problems[140]

The NRC considered the costs of compliance with the DFA rules in the 1988 Decommissioning Rule and determined that they did not impose an undue burden:

> [T]he Commission believes that the rule is an equitable means of requiring reasonable assurance of funding for decommissioning without imposing an undue burden on licensees. [141]

Since the original 1988 Decommissioning Rule was issued, the NRC reduced the burden by issuing cost-savings measures in 1993 and 1998, as discussed in the Additional Information section titled, "Regulatory History."

Comment 16: The PCG overstates decommissioning liability

NEI stated that the non-discounted PCG overstated the licensee's decommissioning liability.

Response
The PCG is not a liability under GAAP. The accounting liability of decommissioning determined by GAAP is independent from the NRC's regulations. Likewise, the amount of the PCG is determined by the cost of decommissioning, independently from accounting standards. Therefore, the licensee's accounting liability for decommissioning does not change whether or not it uses a PCG, it discounts the PCG, or it adds an earnings credit for the PCG.

Information gathered at the March 2011 workshop verified that a PCG does not affect the accounting liability in the parent company's financial statements. The accounting liability for decommissioning is defined by the Statement of Financial Accounting Standards No. 143, "Accounting for Asset Retirement Obligations" (SFAS 143).[142] The standards in SFAS 143 require a company to record its decommissioning liability as an asset retirement obligation (ARO) on its balance sheet using specific procedures based on the amount of the decommissioning cost, the time when the costs will be incurred, and the company's borrowing rate. The relevant point is that the PCG does not affect any of the inputs to the ARO liability. Exelon verified that the PCG does not affect the accounting liability:

---

[139] 1988 Decommissioning Rule, 53 FR 24028
[140] 1988 Decommissioning Rule, 53 FR 24033
[141] 1988 Decommissioning Rule, 53 FR 24038
[142] R. Schroeder, S. Sevin, K. Yarbrough, "Reporting Effects of SFAS 143 on Nuclear Decommissioning Costs," *Int'l Advances in Econ. Res.*, Vol. 11, p. 450, 2005.

> The ARO does not change because of the presence of the parent guarantee.[143]

In addition, the standard for reporting the PCG is defined in FASB Interpretation No. 45 (FIN No. 45), "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others," issued in November 2002. FIN No. 45 states that guarantees issued between a parent company and its subsidiary are not required to be recognized as a liability on the balance sheet.[144] The PCG is an off balance sheet arrangement that does not change the liabilities on the balance sheet. Exelon verified that the PCGs it issued in 2010 were off-balance sheet arrangements.

> MR. FREDRICHS (NRC): [A]re the parent guarantees that you have recognized on the balance sheet or off-balance sheet?
>
> MR. HAYES (Exelon Treasury Department): No, they're currently off-balance sheet. In fact we highlight them in our SEC filings so in our [SEC Form] 10-K … it's in the notes of the financial statements. We do disclose fully the amount of guarantees that we have outstanding so while they're not included in the calculation of debt they are fully transparent and the public is aware of the amounts ….[145]

The amount of the PCG may not less than the amount prescribed by the formulas specified § 50.75(c). However, the formulas in § 50.75(c) are not affected by the accounting standards, and were intended to be separate from those standards. At the time of the 1998 Decommissioning Rule, the FASB standard was still under development. NRC concluded that the decommissioning fund status report requirements would not be affected by the accounting standard, regardless of the final FASB action:

> Notwithstanding any final FASB action, the NRC can proceed with its own requirement for reporting on the status of decommissioning funds.[146]

In view of the above information, it is reasonable to conclude that the PCG does not affect the accounting liability for decommissioning. The amount of the PCG is determined by NRC regulations, independent of accounting standards. The separation is reasonable in view of the fact that NRC's regulations protect public health and safety, while accounting standards report cash flow information of businesses.

Comment 17: The PCG limits the flexibility of financial operations

NEI stated that using a PCG limits the flexibility of the parent company's financial operations in order to maintain adequate net worth to pass the financial test for the PCG.

Response

This comment puts the cart before the horse by suggesting that the PCG puts limits on the parent's finances. In fact, it is the other way around – the parent's finances limit the amount of PCGs it can issue. No licensee is required to obtain a PCG. A licensee's parent can avoid any potential limitations on its financial operations by choosing not to provide a PCG. Furthermore,

---

[143] Transcript, March 2 Workshop, statement of Mr. Levin (Exelon), p.152 (ML110810747)
[144] FIN No. 45, p. 4.
[145] Transcript, March 2 Workshop, statement of Mr. Hayes (Exelon), p.152 (ML110810747)
[146] Id. 63 FR 50475

NRC's reactor licensees have a greater degree of flexibility compared to other NRC licensees and companies in other industries required to provide financial responsibility to other Federal agencies. In particular, the need for flexibility was specifically addressed when the NRC issued the 1998 Decommissioning Rule in anticipation of the economic deregulation of the electric generation industry.[147] The NRC increased reactor licensee flexibility by allowing combinations of DFA methods with the PCG.[148] Additional flexibility was provided by allowing both owners and operators of reactors to provided DFA:

> Applying financial assurance requirements to both owners and operators provides flexibility, since either can demonstrate compliance.[149]

The NRC's regulations require the parent to pass a financial test to qualify to use the PCG.[150] The parent must possess assets and tangible net worth at least 6 times the amount it will guarantee, and a credit rating of BBB- or better, among other criteria. However, there is no requirement that the parent must "maintain" its net worth, or that it cannot reduce its net worth at any time of its own choosing. If the parent fails to pass the financial test, or chooses to cancel it, the licensee simply establishes DFA using another method.[151]

In order for the PCG to limit the parent's financial operations in some way, the parent must be subject to NRC authority. However, the parent company is not an NRC licensee, and the NRC has no authority over the parent regarding financial assurance, other than what the parent voluntarily accepts in the PCG agreement. Examination of the PCG agreement shows that NRC's authority is limited to two items. First, it can require the parent to pay over the guarantee amount only after the licensee fails to perform its decommissioning activities. That failure cannot happen while the licensee is operating, and may not be evident until 60 years after permanent shutdown. Second, if the parent fails to pass the financial test, and the licensee fails to provide alternative DFA, the NRC can require the parent to provide alternate DFA on the licensee's behalf, or pay over the guaranteed amount. Either way, the parent can operate its business as it chooses. NRC has no authority to dictate the parent's financial operations under the authority of the PCG agreement.

A simple hypothetical will clarify the fact that the PCG places no limits on the parent. For example, suppose the parent company fails the financial test due to losing its investment grade credit rating. Can the NRC force the parent to increase its credit rating, in order to meet the financial test requirement of the PCG in place? The obvious answer is, "No." The PCG does not limit the parent's finances. The situation is just the opposite; the parent's finances limit the PCG.

In addition, the flexibility in financial assurance available to reactor licensees compares favorably with other NRC licensees, and with the flexibility permitted by other Federal agencies that require financial responsibility or site closure and reclamation costs. The table titled, "NRC Compared to Other Federal Agencies on Discounting and Funding Adjustments," compares requirements for trust funds used as financial assurance.

---

[147] 1998 Decommissioning Rule, Section 4, Need for General Flexibility, 63 FR 50465, 50468
[148] Id. at 63 FR 50473
[149] Id. at 63 FR 50468
[150] Appendix A to 10 CFR Part 30, Parent Company Guarantee
[151] Id.

NRC Compared to Other Federal Agencies on Discounting and Funding Adjustments

Agency	Annual Fund Deposits Required	Cost Estimate Discounting Permitted	Funding Adjustment Frequency	Days to Make Adjustment
NRC (Reactors)	No	No	2 years[1]	2 Years Merchant[1] 5 Years Utility[1]
NRC (Other)	Full Amount Up-Front	No	90 days to 1 year[2]	30 to 90 days[2]
EPA	Yes[3]	Municipal Waste – Yes[4] Hazardous Waste – No	1 year	30 days
BLM	Full Amount Up-Front	No	1 year	10 days[5]

Notes: 1. Frequency stated in regulatory guidance
2. Frequency stated in regulation
3. Pro-rata amount based on years left on permit; no earnings credit allowed
4. Discounting permitted only if reviewed by State and cost and timing reasonably known
5. BLM allows 10% variance before adjustment is required

The US Environmental Protection Agency (EPA) regulates a variety of substances with potentially adverse environmental impacts, including municipal waste and hazardous waste.[152] With respect to allowing a PCG to grow over time, as proposed by the nuclear industry, the US Environmental Protection Agency (EPA) faced the same question in 1981. EPA refused to allow buildup over time, on grounds that a variety of financial mechanisms was provided to minimize cost. Since the hazardous waste operator is free to choose the mechanism most advantageous to its operation, there was no inequity in refusing to allow PCGs, letters of credit, or sureties to build up over time.[153] The same reasoning applies to the choices available to reactor licensees. The Bureau of Land Management (BLM) regulates mining on public lands, and requires financial guarantees for mining reclamation costs.[154] BLM prohibited the use of PCGs as a financial guarantee mechanism in 2001.[155]

In view of the above, the 1998 Decommissioning Rule increased the flexibility of reactor licensees by allowing the use of the PCG, which had been forbidden before the amendment.

Comment 18: The PCG has administrative costs

NEI stated that the PCG has administrative costs, due to use of licensee staff time to prepare the PCG and obtain approval to use it.

Response
The NRC recognized that combining the PCG with other methods to provide adequate DFA would result in higher administrative costs to licensees. That was the price for obtaining greater flexibility in meeting the DFA requirements:

---

[152] For financial requirements for site closure, see 40 CFR 258, Subpart G for municipal waste, and 40 CFR, Subpart H for hazardous waste.
[153] Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Consolidated Permit Regulations, Interim Final Rule, January 12, 1981 46 FR 2802, 2823
[154] 43 CFR 3809.500 through 3809.599
[155] 43 CFR 3809.574 (2001)

> Allowing combinations of funding methods increases the regulatory flexibility to licensees trying to meet the requirements. (Note, however, that a licensee using a combination of mechanisms faces a greater administrative burden to obtain its mechanisms and, similarly, NRC faces an increased burden in reviewing multiple mechanisms.).[156]

The PCG allows the licensee to eliminate the financing costs of using other methods. The NRC provides templates for the PCG, which help to reduce the administrative effort. The costs of the licensee's internal approval processes are under its control. If the licensee concludes that the savings in financing costs do not justify the administrative cost, it can select a different method to avoid the cost.

Comment 19: The PCG might limit energy trading activities

Licensees and NEI stated that the PCG might limit a parent company's ability to engage energy trading activities. The concern is that trading partners may consider the PCG a form of debt, and refuse to enter into trading activities if the amount of the PCGs is too large. If discounted PCGs are used, then the parent can guarantee larger amounts of decommissioning costs with smaller amounts of PCGs. The commenters suggested that the concerns of potential energy trading partners may be reduced if smaller, discounted PCGs are permitted.

Response
The PCG does not limit energy trading activities. The situation is the reverse – the parent's energy trading activities may limit the use of the PCG. In addition, increasing the parent's ability to engage in energy trading activities may not be an appropriate basis to allow discounts on PCGs. The PCG is vulnerable to financial stress experienced by the parent, which can reduce the likelihood that funds for decommissioning will be available when needed. As discussed below, energy trading may create risks to the ability of the parent to honor the PCG.

Energy trading was the subject of a Case Study by Dr. Parsons of the Massachusetts Institute of Technology Sloan School of Business.[157] He analyzed the energy trading operations of Constellation Energy Group (CEG), which owns several merchant plant licensees in Maryland and New York. CEG's energy trading operation incurred large losses in 2008. Dr. Parsons stated:

> Constellation's crisis [in 2008] illustrates the hidden dangers that arise when a power company's trading operation stops playing a subordinate function and becomes the strategic focus of the business. [158]

The Case Study noted that CEG's stock lost more than 70% of its value in less than two months in 2008, leading to a forced sale at a low price.[159] Within 4 months, CEG's liquidity crisis resulted in a two-notch credit rating downgrade by each of the major agencies.[160]

---

[156] Id. at 63 FR 50473
[157] "Do Trading and Power Operations Mix? The Case of Constellation Energy Group 2008," Dr. John E. Parsons, October 2010 *available at* http://www.mit.edu/~jparsons/Presentations
[158] Id. p.1
[159] Id.
[160] Constellation Energy Group Overview, RMG Financial Consulting, p.3, July 6,2010 *available at* http://www.rmgfinancial/com/files/pdfs/Constellation%20Credit%20Review.pdf

Baltimore Gas & Electric (BGE) is a public utility owned by CEG and located in Maryland. The Maryland Public Service Commission required CEG to take a series of measures that would protect BGE from future risks of energy trading, including ring-fencing measures for purposes of bankruptcy protection and credit rating separation.[161]

Comments on the Probability of Funding Success

Comment 20: Monte Carlo analysis has no value

NEI stated that information presented by the US General Accounting Office (GAO) on using the Monte Carlo analysis technique was a purely academic exercise with little or no value to stakeholders.

Response

Monte Carlo techniques were used by the Federal Reserve Board during the financial crisis of 2008 – 09 as a tool in the stress testing of the banking system.[162] Exelon stated that it used Monte Carlo analysis to evaluate the risks of going forward with the Zion decommissioning project and the license transfer to ZionSolutions.[163] As discussed in the Additional Information section titled, "Financial Assurances Required by Exelon from ZionSolutions, LLC," Exelon required ZionSolutions to provide an extensive set of financial assurances that exceeded NRC requirements. At the March 2011 workshop, financial advisor for nuclear decommissioning funds presented the technique at the March 2011 workshop to illustrate its applicability to assessing success ratio of meeting the decommissioning funding target.[164] The General Accountability Office (GAO) prepared a Monte Carlo evaluation to assess the risk of depleting a trust fund set up by the United States Government to provide economic self-sufficiency for the Republic of Palau.[165] A risk consultant, formerly employed by GAO, and who has participated in audits of the NRC's DFA program, presented information showing how Monte Carlo analysis can identify the risk drivers that affect the decision to begin decommissioning immediately after shutdown or delay the start for a period of time.[166] The tool is commonly used by investment advisors in forming retirement plans.

In the decommissioning context, probability models can be used to risk-inform the NRC's decisions on DFA. For example, Monte Carlo techniques could be useful in screening out non-standard DFA methods with significant risks of shortfalls. The enclosed Additional Information section on Probability Insights provides a discussion of the risks that can be assessed using Monte Carlo methods.

Comment 21: If probability models are used, NRC should perform the evaluations

The State of New York Office of the Attorney General stated that licensees have a vested interest in showing a high probability of success in meeting funding goals. Therefore, the model

---

[161] In The Matter of the Current and Future Financial Condition of Baltimore Gas and Electric Company, Order No. 82986, p.4 - 5, October 30, 2009 available *at* http://webapp.psc.state.md.us, Case No. 9173, Document 218

[162] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Design and Implementation, p.13, April 24, 2009 ***available at*** http://www.federalreserve.gov/bankinforeg/bcreg20090424a1.pdf

[163] Transcript, June 8, 2011 Follow-up Meeting, statement of Mr. Levin, p.110, (ML111650033)

[164] LCG Assoc., Nuclear Decommissioning Trust Asset/Liability Modeling, March 2, 2011 (ML110560778)

[165] Government Accountability Office, Compact of Free Association, Palau's Use of and Accountability for U.S. Assistance and Prospects for Economic Self-Sufficiency, GAO-08-732, June 2008

[166] Dr. Williams, Monte Carlo Applied to Delayed Decommissioning Decision, June 8, 2011 (ML111600249)

and all its assumptions should be publicly available for testing by interested parties. NRC or outside auditors should perform the evaluations.

Response
If probability methods are adopted, the NRC intends perform the evaluations. The models and results would be publicly available.

Other Comments

Comment 22: Spent fuel issues are not germane to funding assurance

NEI stated that the March 2, 2011 workshop presentation on spent fuel management by the Vermont Department of Public Service was not germane to decommissioning funding assurance.

Response
The purpose of the workshop was to gather relevant experts and stakeholders to discuss decommissioning issues of concern to all stakeholders, including the PCG discounting issue raised by the nuclear industry. The workshop attracted a distinguished panel of speakers, and many participants stated that the presentations were highly informative and relevant to their issues.

The issue of funding spent fuel storage often arises in decommissioning discussions. For example, licensees who elect to use SAFSTOR as a means to increase their projected earnings credit must account for the increased storage expenses. A major driver of those expenses is the cost of spent fuel management. A licensee would require an exemption to use decommissioning funds for spent fuel expenses. However, licensees assume that the NDT funds will generate excess earnings that can be used to pay for spent fuel management expenses during SAFSTOR. In addition, many NDTs commingle funds for decommissioning, spent fuel management, and site restoration. The State of New York expressed concerns about commingling and the use of state-regulated funds collected for non-decommissioning purposes being commandeered for decommissioning. The State of Vermont expressed its concerns that the termination of the Yucca Mountain project may well result in spent fuel residing in their State for a much longer time than originally planned. Vermont suggested that NRC consider amending its rules to start planning for spent fuel storage earlier than the current requirement of 5 years before permanent shutdown. The increasing relevance of the issue was recognized by NRC in the recently issued final rule on Decommissioning Planning, which requires decommissioning reactors to provide an annual report on the status of their spent fuel funding plans.[167]

The New York Attorney General stated:

> As an initial matter, the State of New York welcomed the opportunity to participate in the public Workshop. The presentations and comments by Staff and the various speakers and attendees provided a transparent forum where a broad spectrum of stakeholders could substantively discuss several key decommissioning issues. The State notes that an open dialogue among Staff and all stakeholders – including the States – about

[167] Decommissioning Planning, Final Rule, June 17, 2011, 76 FR 35512

> multiple issues surrounding decommissioning is in the public interest and could lead to an improvement of the decommissioning process.[168]

Each of the stakeholders presented valid points for NRC consideration. As a government agency, the NRC encourages all stakeholders to present their views, which results in better informed decisions.

Comment 23: Reactor licensees are meeting the DFA requirements

NEI stated that reactor licensees of all types (rate-regulated and merchant companies) are meeting NRC requirements.[169]

Response
When the NRC issued its 1996 rule on Decommissioning of Nuclear Power Reactors, it stated:

> A licensee is required to provide assurance that at any time during the life of the facility, through termination of the license, adequate funds will be available to complete decommissioning.[170]

The NRC reviewed a number of decommissioning fund status reports for several earlier years and determined that the number and duration of shortfalls was greater than previously quantified. For the years 2001 through 2011, reactor facilities had shortfalls on many occasions. The table labeled, "Shortfalls in Financial Assurance Occurring in DFS Reports," quantifies the shortfalls. The shortfalls were measured as of December 31 of the year preceding the DFS report. For example, the shortfalls quantified in the 2009 DFS report were measured as of December 31, 2008. Analysis of the 2009 decommissioning fund status reports indicates that approximately 80% of the $2.4 billion shortfall was reported by facilities that had delayed or ceased making payments into their NDTs.

Shortfalls in Financial Assurance Occurring in DFS Reports[171]

Reporting Year	Number of Facilities with Shortfalls	Shortfalls Resolved in 3 Months	Shortfalls Not Resolved in 1 Year
2001	4	4	0
2003	9	3	0
2005	6	0	6
2006	6	0	6
2007	7	0	0
2009	27	1	6
2010	1	0	1
2011	5	3	--

[168] Comments Submitted by the State of New York, p. 1, April 7, 2011 (ML11030522)
[169] NEI, Industry Comments on March 2 Workshop, p. 3, April 4, 2011 (ML110500002)
[170] Decommissioning of Nuclear Power Reactors, Final Rule, 61 FR 39278, July 29, 1996.
[171] Results complied from decommissioning fund status reports submitted under § 50.75(f)(1). The table does not include shortfalls addressed in license transfer cases.

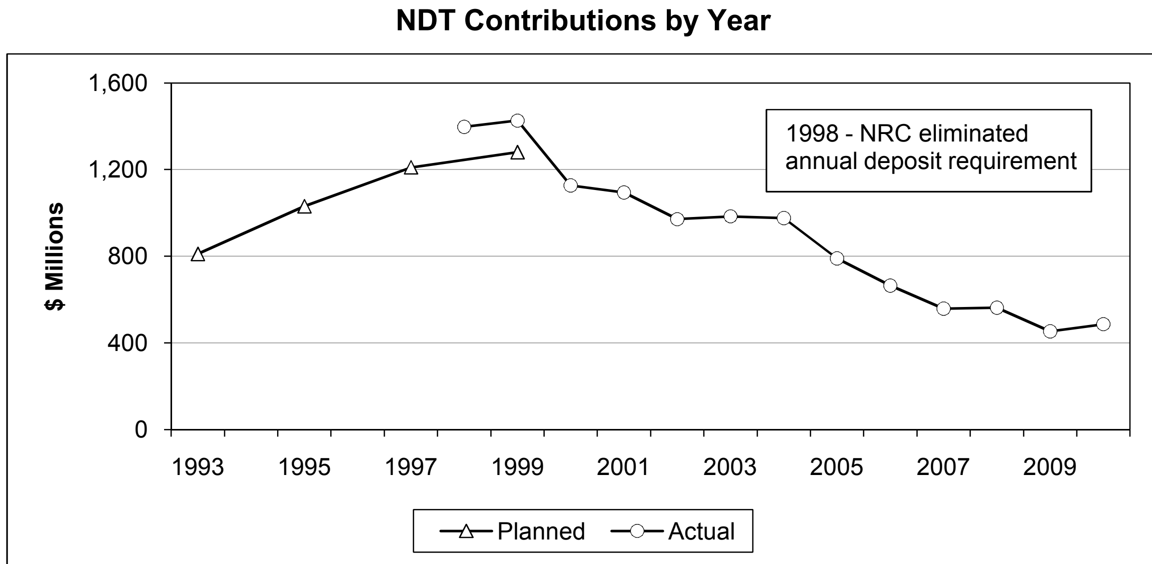
Comment 24: Reductions in NDT contributions are not an issue

NEI stated that information presented by Duff & Phelps Investment Management Company (Duff & Phelps) at the March 2011 workshop was incorrect and misleading. NEI specifically objected to two informative slides presented by Duff & Phelps. One slide showed a graph of the trend of declining deposits into the NDTs.[172] The second slide showed that the $20 billion gap between total NDT assets and total decommissioning costs was nearly the same in 2009 as it was in 2005. NEI pointed out that there are a number of reasons why licensees may be able to reduce their deposits into the NDTs while still maintaining compliance with NRC regulations.

Response:
A number of NRC licensees have accumulated adequate funds for decommissioning and do not need to make additional contributions to their NDTs. However, not all licensees are in that situation.

The information presented by Duff & Phelps simply shows the facts of their research. The information needs to be put into context to understand its significance. The graphs below show the longer term trends in NDT contributions, the cost of decommissioning, and the difference between the aggregate NDT assets of the industry and decommissioning costs, which includes information from Duff & Phelps and other sources, including NRC records.

NDT Contributions by Year



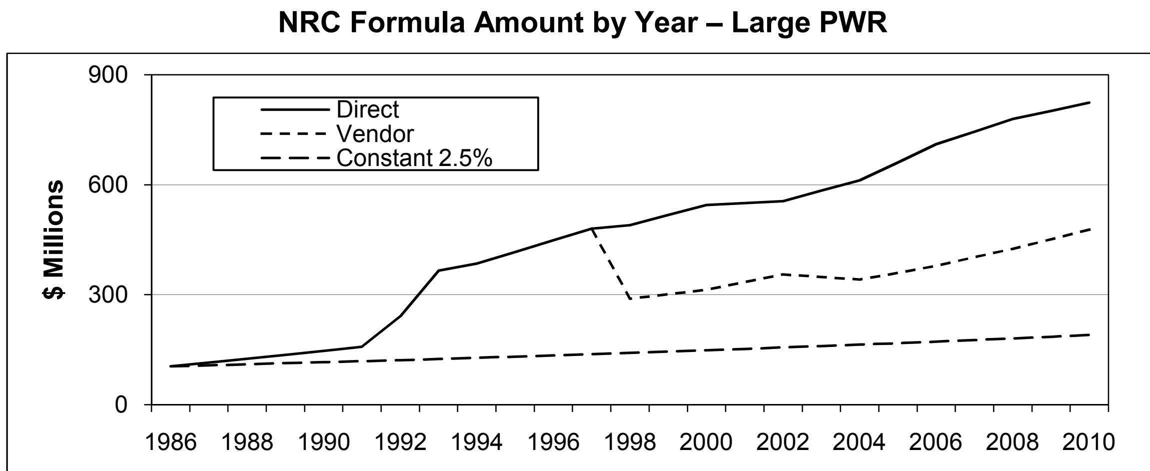
Data on NDT contributions has been collected by Duff & Phelps since 1998.[173] NISA Investments has collected data on planned contributions to NDTs since 1993.[174] When the two datasets are combined, the long term trend shows that contributions increased annually until the NRC eliminated the annual deposit requirement in the 1998 Decommissioning Rule. The trend is illustrated in the “NDT Contributions by Year” chart, which plots planned contributions from 1993 to 1999, and actual contributions from 1998 to 2010. In some cases, the decline after 1998 can be attributed to increasing the NDT in license transfers. Also in 1998, the NRC allowed earnings credits to be added to the NDTs, for up to 60 years after the time of permanent

[172] Historical NDT Fund Balances, Annual Contributions and Decommissioning Cost Estimates, Duff & Phelps Investment Management Company, March 2, 2011 (ML110690037)
[173] Duff & Phelps, Historical NDT Contributions, p.3, July 22, 2011 (ML11249A221)
[174] NISA Investment Advisors, 2010 Survey of Trust Sponsors, *available at* http://www.nisanet.com

shutdown. As a result, a licensee could reduce or eliminate its NDT contributions and still meet the NRC's requirements by projecting a longer time horizon for its earnings credit. However, as the regulatory language in 10 CFR 50.75(e)(i) and (ii) states, the licensee is still required to make deposits "such that the amount of funds would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected." The declining contribution trend has continued since 1999.

The "NRC Formula Amount by Year – Large PWR" chart shows the trend in decommissioning costs since 1986.[175] It was prepared by ABZ, Inc. for the March 2011 Decommissioning Funding Workshop. A cost escalation rate of 2.5% per year is shown to approximate a typical rate of increase used in decommissioning cost estimates prepared by licensees. It also approximates the general inflation rate. As the chart shows, in 1998 the NRC revised the minimum required amount by allowing a waste vendor method, which was intended to account for potential cost savings by using volume reduction techniques. The continuing rise of decommissioning costs at a rate greater than general inflation shows the chart's prominent feature.

NRC Formula Amount by Year – Large PWR



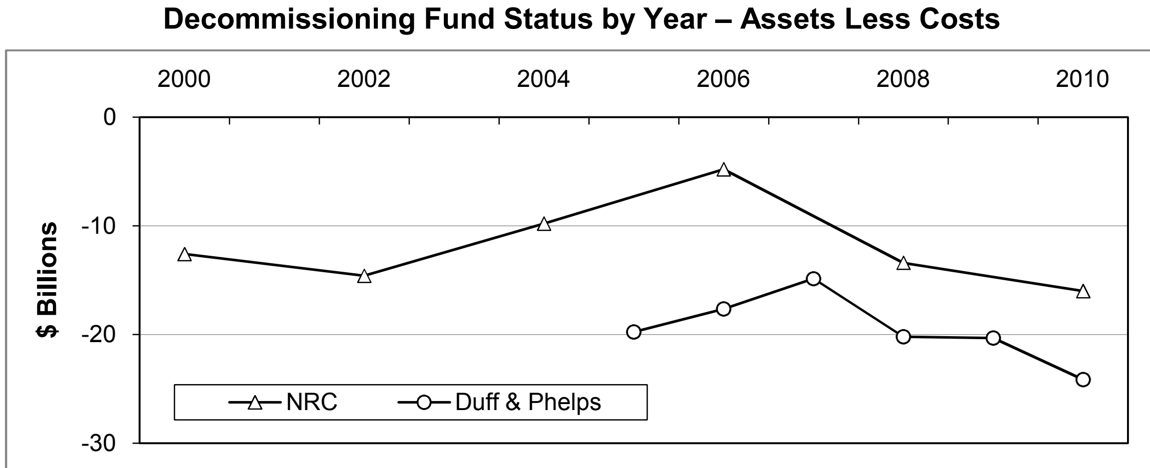
The "Decommissioning Fund Status by Year – Assets Less Costs" chart below shows the longer term trend in the industry-wide aggregated difference between NDT assets and decommissioning costs. Data points are shown to indicate the years for which the differences were calculated. The NRC data is taken from the decommissioning fund status (DFS) reports submitted every two years under § 50.75(f)(1). The Duff & Phelps data for investor owned utilities includes information from filings with the US Securities and Exchange Commission (SEC) and other public sources, as well as NRC DFS reports.[176] The investor-owned utility data generally compares total NDT fund assets to the total cost of decommissioning, rather than the NRC minimum. Both the NDT fund total assets and the total costs may provide for non-decommissioning costs, such as restoring the site to its original condition after the radioactive material is removed. As a result, the Duff & Phelps differences are based on total NDT assets and total costs that often are higher than the NRC minimums. Public power companies are not required to file reports with the SEC. Duff & Phelps uses the public power companies' annual reports and the NRC DFS reports.[177]

---

[175] ABZ, Inc., Cost Trends in Decommissioning, March 2, 2011 (ML110560598)
[176] Transcript, Decommissioning Funding Workshop, Breakout Session 2, p. 43 - 44, March 2, 2011 (ML110750355)
[177] Id.

The NRC data consistently show smaller differences, based on the DFS reports. However, in the majority of cases, the decommissioning cost in the DFS reports is the NRC minimum requirement rather than a site-specific cost estimate. Recall that the minimum prescribed amount of § 50.75(c) is intended only to represent the "bulk" of decommissioning costs. Site-specific cost estimates by submitted by licensees, where available, typically show higher costs than the NRC minimum. Consequently, the NRC data should be considered a lower bound on the difference between the NDT assets and the actual costs. The Duff & Phelps data may be considered an upper bound on the difference between assets and cost, since they compare higher total assets to higher total decommissioning costs, in most cases. However, both data sets show the same trend.

Decommissioning Fund Status by Year – Assets Less Costs



When the long term trend in NDT assets is compared to the rise in decommissioning costs, it appears that no progress has been made on closing the difference in the last decade. Stated differently, the rise in costs appears to have outpaced the increase in assets. Part of the reason is the declining trend in NDT contributions, which results in lower fund assets than would have been realized if deposits had been made.

This trend is material to the consideration of allowing a discounted PCG as a method to meet the NRC's DFA requirements. As discussed in Comment 23, shortfalls have occurred during the period contributions have been declining. In 2009, the downward trend in NDT contributions, combined with the market downturn, resulted in shortfalls of approximately $2.4 billion. Analysis of the 2009 decommissioning fund status reports indicates that approximately 80% of the $2.4 billion shortfall was reported by facilities that had delayed or ceased payments into their NDTs. While there are several reasons for the 2009 shortfalls, the declining contributions to the NDTs and the rising costs of decommissioning were factors. These factors need to be considered in evaluating a licensee's request to use a discounted PCG.

Comment 25: Licensees have not shifted their position

NEI stated that, contrary to the New York Attorney General's comment, the licensees have not shifted their position in an effort to justify the net present value approach for discounting the PCG.

Response:
With respect to the licensees' arguments, the New York Attorney General stated:

> New York has concerns about licensees' determined efforts to recast the plain regulatory text to allow a corporate parent guarantee to be discounted. As part of this effort, licensees have presented a series of shifting arguments to do that which the regulation does not allow. Those arguments, however, lack any regulatory basis, and are contrary to the Administrative Procedure Act ("APA") rulemaking process that led to the promulgation of the current financial assurance requirements in 1998.[178]
>
> Licensees have set forth two inconsistent justifications for their position that they should be allowed to discount the value of parent guarantees offered as financial assurance. … First, licensees ascribe significant precedential value to the orders and license amendments associated with three routine license transfer cases in 2001 and 2005. … Second, upon Staff's attempt to correct the mistake that it made in the license transfer cases, licensees shifted their position, now asserting that regulatory authority to permit discounting of corporate parent guarantees is found in § 50.75(e)(1)(vi).[179]

NEI's positions have changed since it first commented on proposed regulatory guidance in its September 2009 letter. A chronology of NEI's positions follows:

Chronology of NEI's Comments on the Process for Discounting the PCG

September 10, 2009, p.10 (ML092590128)
NEI identified three license transfer orders as the process for approving a discounted PCG. No regulatory basis was provided to support the request for allowing a discounted PCG.

August 4, 2010, p.7 - 8 (ML103220322)
NEI stated the three license transfer orders were a precedent. NEI stated that discounting the PCG was acceptable because the PCG was "effectively equivalent" to prepayment of funds into a NDT. NEI requested NRC to apply the NPV method to allow the licensee to use a discounted PCG.

March 8, 2011, p.1 - 2 (ML110690015)
In response to the NRC staff conclusion that the three license transfer orders were erroneously decided, NEI stated § 50.75(e)(1)(iii)(B) allows licensees to use net present value methods to discount the PCG, and was correctly used in the three license transfer orders. NEI stated that neither § 50.75(e)(1)(vi) nor exemptions were required for licensees to use NPV to discount a PCG.

April 4, 2011 (ML111050002)

NEI stated the approach used in the three license transfer orders is acceptable. NEI restated that "regulatory dispensation" (i.e., § 50.75(e)(1)(vi)) is not necessary for the licensee to use a discounted PCG.

July 13, 2011
NEI stated that the discounted PCG is acceptable because earnings credits are authorized for the prepayment and external sinking fund methods under

---

[178] New York Attorney General, Supplemental Submission Concerning the June 8 Follow-up Meeting, p.1, June 27, 2011 (ML11179A060)
[179] Id. p.5 - 6

> § 50.75(e)(1)(i) and (ii). NEI agreed that all combinations of methods, save one, are subject to the equivalency test of 10 CFR 50.75(e)(1)(vi).[180] The exception is a combination of an external sinking fund, a discounted PCG, and the licensee's commitment to adjust the PCG amount annually to account for changes in decommissioning costs, which is not subject to NRC approval or evaluation of equivalency.

The chronology above shows that NEI's first position relied on the three license transfer orders, with no statement of any regulatory basis to support its discounting request. NEI's first documented view of the NRC's regulations stated that § 50.75(e)(1)(iii)(B) should be applied to allow discounts, and that § 50.75(e)(1)(vi) does not apply. In its final comment, NEI stated that the requirements § 50.75(e)(1)(vi) apply to all combinations of methods, with one exception. NEI suggested that the exception should be the basis to allow licensees to discount the PCG without approval from NRC or evaluation for equivalency with the existing methods specified for DFA.

Comment 26: Revision to waste vendor option in NUREG-1307

NRC should issue a draft of NUREG-1307 for comment if the waste vendor option is changed.

Response
NRC provided an opportunity for comment on the changes in its March 2, 2011 workshop. Updates to NUREG-1307 are essentially ministerial in nature, consisting of providing examples of how to perform the calculation in § 50.75(c) using updated values from the US Bureau of Labor Statistics and published prices for waste disposal charges. The proposed changes to the waste vendor option are based on information submitted by licensees to NRC. The information demonstrated that the waste vendor option as used by licensees differed significantly from NUREG-1307. The NRC concluded that NUREG-1307 should be revised to include the licensee information. NRC will issue a draft for comment.

[180] NEI, Industry Comments on June 8 Workshop, p.10, July 13, 2011 (ML11196A203)