

POLICY ISSUE

(NOTATION VOTE)

September 28, 2011

SECY-11-0133

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

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

PURPOSE:

The purpose of this paper is to request Commission direction on options regarding licensee requests to use a discounted parent company guarantee (PCG) for funding of decommissioning costs for power reactors.

SUMMARY:

On October 25, 2010, the Commission issued Staff Requirements Memorandum (SRM) SECY-10-0084, "Explanation of Changes to Revision 2 to Regulatory Guide (RG) 1.159, 'Assuring the Availability of Funds for Decommissioning Nuclear Reactors'" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102980565). The Commission directed the staff of the U.S. Nuclear Regulatory Commission (NRC) to revise RG 1.159, Revision 2, in accordance with the SRM and to engage stakeholders and relevant experts in a workshop to develop an options paper on the net present value (NPV) approach for discounting a PCG. This paper provides the staff response.

RG 1.159 was revised as directed by the Commission. It is currently in process for final issuance. A workshop was held on March 2, 2011, to obtain comments from experts and relevant stakeholders. A follow-up meeting was held on June 8, 2011, to better understand stakeholder views and to determine the extent of agreement among stakeholders and the NRC staff.

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The two meetings produced 13 presentations, 7 written sets of comments, and over 500 pages of transcripts discussing many aspects of the NPV approach and its potential effects on the stakeholder community. The Nuclear Energy Institute (NEI) submitted comments and presentations on 6 occasions since August 2009. NEI requested NRC to allow discounted PCGs. The State of New York Office of the Attorney General submitted comments and presentations on 5 occasions since November 2010. Among other issues, New York requested NRC not to allow discounted PCGs. This paper presents the options for consideration. Enclosure 1 provides the resource estimates. The other enclosures to this paper present the details of the staff's evaluation, including a discussion of the information reviewed to prepare the options, responses to comments, and questions and answers on financial assurance.

BACKGROUND:

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.

The March 2011 workshop attracted a distinguished panel of speakers from the financial community, State and Federal agencies, nuclear professionals, and the industry. Presentations included the use of NPV, or discounting, approach; the rise in decommissioning costs; historical NDT investment performance; the probability of funding success; risks to local communities, States, and Tribal governments; and the burden on industry when using PCGs. Participants stated that they found the range of topics informative and relevant to their issues. Stakeholders varied in their views about the impact of allowing discounted PCGs

In addition to the information developed at the workshops, the staff reviewed the regulatory history of Title 10 of the *Code of Federal Regulations* (10 CFR) § 50.75 since 1988; NRC license transfer orders; Commission memoranda and orders; and licensee decommissioning fund status reports. The staff also reviewed information from licensee parent company financial reports; filings with the U.S. Securities and Exchange Commission; the use of Monte Carlo analysis by the U.S. Federal Reserve for bank stress testing following the 2008 market crisis; generally accepted accounting procedures specified by the Financial Accounting Standards Board; academic articles on investment expectations, Monte Carlo analysis of NDTs, and the financial risks of energy trading; reports by the U.S. Government Accountability Office on the application of Monte Carlo probability methods for assessing the likelihood of success of trust fund investments; regulations issued by other Federal agencies specifying financial responsibility requirements; Federal case law on enforcement of U.S. Environmental Protection Agency financial responsibility regulations; and filings with State Public Service Commissions regarding decommissioning funding.

DISCUSSION:

In its last comment on NPV discounting, NEI agreed that all combinations of methods of decommissioning financial assurance (DFA), save one, are subject to the equivalency test specified in 10 CFR 50.75(e)(1)(vi).¹ The exception, according to NEI, 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 (hereinafter called the "sinking fund discount combination").² NEI stated that the sinking fund discount combination should equal the total amount of funds estimated to be necessary for decommissioning, with the understanding that the total amount would be reduced by a discount calculated using an NPV approach.

Three options are described below: (1) do not allow the sinking fund discount combination, (2) allow the sinking fund discount combination without approval, conditions, or evaluation of equivalency, or (3) allow the sinking fund discount combination with conditions on a case-by-case basis. Enclosure 1 lists the pros and cons for each option and the associated resource estimates. The staff recommends Option 3.

Option 1: Do Not Allow the Sinking Fund Discount Combination

A review of the regulatory history confirmed that discounts to the amount of DFA required from the licensee were never intended and are not permitted by the regulations. The regulations permit an earnings credit for funds held in the NDT. If this option is selected, licensees would be informed via generic communication.

However, pursuant to § 50.75(e)(1)(vi), the NRC has discretion to consider methods that are not allowed by the regulations on a case-by-case basis. In the 2001 license transfer of Fitzpatrick and Indian Point Unit 3 from the Power Authority of New York (PASNY) to Entergy Nuclear Operations (PASNY transfer) the Commission explained that other methods may be considered:

[It is] the Commission's intention to at least consider, on a case-by-case basis, funding assurance mechanisms not expressly permitted under subsections [§ 50.75(e)(1)](i) through (v).³

Nevertheless, disallowing the sinking fund discount combination may be appropriate for several reasons. First, disallowing it would avoid potential increased risks to stakeholders. Significantly, while combinations of methods are allowed for all NRC licensees, only reactor licensees are subject to case-by-case evaluation and an equivalency test.⁴ Some stakeholders stated that the discounted PCG shifts risk to local communities, States, and Tribal governments.⁵ The Statement of Considerations ("SOC") for the 1998 Decommissioning Rule identified potential risks when the PCG is used by power reactor licensees.⁶

¹ NEI, Industry Comments on June 8 Workshop, p.10, July 13, 2011 (ML11196A203)

² Id. at 9

³ 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 53 NRC 488]

⁴ Compare § 30.35, § 40.36, § 50.75, § 70.25, § 72.30. See 63 FR 50465, 50469 and 50473 for a discussion of the need for case-by-case evaluation of non-standard financial assurance methods for reactor licensees.

⁵ State of New York Office of the Attorney General, Comments Submitted by the State of New York Concerning the March 2, 2011, Decommissioning Funding Workshop and Related Issues, April 7, 2011 (ML111030522)

⁶ See discussion on 1998 Decommissioning Rule in the enclosed Additional Information

- questionable applicability of the PCG's financial test to reactors⁷
- incentive to shift costs and avoid greater responsibility⁸
- incentive to delay or cease contributions to the NDT⁹

A second concern is that the minimum amount prescribed by § 50.75(c) is designed to provide only the “bulk” of the decommissioning cost, not the full cost.¹⁰ A discounted PCG used by a merchant plant licensee, without access to rate-payer funds, increases the risk that unfunded decommissioning obligations may occur, due to delay or cessation of contributions to the NDT.

As the NRC stated in the SOC for the 1998 Decommissioning Rule:

Making riskier financial assurance mechanisms available to riskier licensees compounds risk to the public that adequate funds will not be available when needed. Thus, prudent public policy may limit the range of mechanisms that should be offered to certain categories of licensees.¹¹

Details are enclosed in the section of Enclosure 3 entitled, “Regulatory History of the Parent Company Guarantee.”

Third, disallowing discounts is not expected to have a significant cost impact on licensees. The PCG is less costly than other methods of providing DFA.¹² Exelon issued \$219 million in PCGs in 2010. At the March 2011 workshop, Exelon stated that: “there currently are no direct costs associated with issuing a guarantee.”¹³ Exelon also stated that it did not experience any indirect costs for the \$219 million in PCGs that it issued in 2010.¹⁴

NEI and Exelon stated that the financial test requirement limits the amount of PCGs a parent company can issue. Enclosure 4, which provides responses to comments, discusses cost under the heading, “Comments on Cost.” However, the recently issued Decommissioning Planning Rule will allow intangible assets to be counted toward the financial test, which will allow a significant increase in the amount of PCGs a parent company can issue.¹⁵

Option 2: Allow the Sinking Fund Discount Combination Without Approval, Conditions, or Evaluation of Equivalency

The staff would need to undertake rulemaking to implement this option, because the regulations would need amendment. Prior Commission positions would also require revision.

The requirements of 10 CFR 50.75(b)(1), (b)(3), and (e)(1)(vi) would need amendment. Option 2

⁷ 1998 Decommissioning Rule, 63 FR 50465, 50473

⁸ Id.

⁹ Id.

¹⁰ 1988 Decommissioning Rule, 53 FR 24018, 24030

¹¹ 1998 Decommissioning Rule, 63 FR 50465, 50468

¹² 1998 Decommissioning Rule, 63 FR 50465, 50471

¹³ Official Transcript of Proceedings, Decommissioning Funding Workshop, Common Sessions, Statement of Mr. Hayes (Exelon Treasury Department) p. 145, US NRC, March 2, 2011 (ML110810747) [Hereinafter Common Sessions Transcript]

¹⁴ Id., Statement of Mr. Hayes (Exelon Treasury Department), p. 195

¹⁵ Decommissioning Planning, Final Rule, 76 FR 35512, 35524, June 17, 2011

does not meet (b)(1) because the amount of DFA actually provided is less than the minimum amount prescribed in § 50.75(c). It does not meet (b)(3) because the combination of the external sinking fund, a discounted PCG, and a commitment to make annual adjustments is not one of the methods specified in § 50.75(e)(1)(i) - (v). It does not meet § 50.75(e)(1)(vi) because it eliminates NRC approval and evaluation for equivalency. Enclosure 3 provides details in the section entitled, "NEI's Discounting Proposal Compared to 10 CFR 50.75."

Two Commission positions would need revision. First, in the PASNY transfer case, the Commission emphasized that reactor licensees must meet the equivalency test when they propose a combination of methods to satisfy the DFA requirements:

[A]s our rules state, a funding arrangement qualifies for approval under [§ 50.75(e)(1)](vi) if it provides a level of decommissioning funding assurance "equivalent" to the level provided by the arrangements set forth in subsections (i) through (v). Applicants may *combine* different mechanisms to achieve this required equivalence. Subsection (vi) itself plainly establishes an "equivalence" test:

(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.¹⁶ [Emphasis in original]

Second, the Commission determined that the imposition of conditions to the NRC's consent may be required to achieve the requisite equivalent assurance for combinations of methods:

We find that a multitude of provisions in the applications, as conditioned by the NRC Staff, collectively give us the requisite assurance, "equivalent" to the assurance given by the particular funding devices authorized by our rules, that the decommissioning funds will be available to PASNY.¹⁷

A discussion of the regulation is provided in Enclosure 3 in the section entitled, "Transfer Orders Applying The Equivalency Test of § 50.75(e)(1)(vi)," and the responses to Comments 2 – 5 in Enclosure 4. If this option is selected, rulemaking could address a number of clarification issues and the potential revision of the cost formula in § 50.75(c).

Option 3: Allow the Sinking Fund Discount Combination with Conditions on Case-by-Case Basis

This option would implement the provisions of § 50.75(e)(1)(vi). If this option is selected, the staff would issue regulatory guidance to establish the process. One factor to consider is the Commission conclusion in the PASNY transfer case that the guarantee method is a "mere promise...to pay the money at some future time," which provides less assurance than money already deposited in a NDT.¹⁸ The noncash nature of the PCG makes it unsuitable for discounting, since it cannot produce any earnings. Enclosure 3 discusses the PCG in the sections entitled, "1998 Decommissioning Rule," and "Vulnerabilities of the PCG and Self-

¹⁶ 53 NRC 488, 546

¹⁷ Id.

¹⁸ 53 NRC 488, 550

Guarantee.”

A second factor to consider is the incentive provided by the PCG to delay or cease contributions to the NDT. Delaying or ceasing contributions to the NDT may present a significant probability that the NDT will not meet its funding goal. At the March 2, 2011, workshop, an experienced NDT fund advisor presented the results of a Monte Carlo analysis of a hypothetical NDT fund with a shortfall. The probability of successfully meeting the funding goal without adding funds to the NDT ranged from 2/3 down to 1/100, depending on the rate of increase in decommissioning costs.¹⁹ Using Monte Carlo methods to assess the probability of success for a trust fund is discussed in the Enclosure 3 section entitled, “Probability Insights.”

The 2010 transfer of the Zion facility from Exelon to ZionSolutions, LLC (ZS) provides a comparison of NRC DFA requirements to a market-based resolution of the financial risks. Exelon used Monte Carlo analysis to evaluate the financial risks of nonperformance by ZS.²⁰ Exelon required EnergySolutions, Inc. (ES), parent company of ZS, to provide a PCG that exceeded NRC requirements. The ES guarantee is “absolute, unconditional and irrevocable, and nothing whatever except actual full payment and performance of the Guaranteed Obligations” will satisfy the guarantee.²¹ The guarantee has no cap and no discounts. If a shortfall occurs in financial assurance (e.g., the NDT balance does not cover the cost to complete the decommissioning), ZS has 30 days to report the deficiency to Exelon, and 90 days to cure it.²² The licensee must maintain excess financial assurance starting at 120 percent of the cost estimate and increasing to 200 percent as the project proceeds.²³ The agreement between Exelon and ZS contained many other financial assurance mechanisms. The risks mitigated by the contracts between Exelon and ZS are the same risks that concern stakeholders in local communities, States, and Tribal governments.²⁴ Enclosure 3 provides details in the section entitled, “Financial Assurance Required by Exelon from ZionSolutions, LLC.”

The evaluation of a discounted PCG would depend on the specifics of each case. However, some broad outlines can be anticipated at this time. In order to mitigate the incentive to delay or cease contributions to the NDT, and consistent with license transfer orders that applied § 50.75(e)(1)(vi), the discounted PCG could be treated as a means to smooth out the cash flow into the NDT over a defined period of time. Consistent with RG 1.159, merchant plant licensees should pay the amount of the discounted PCG into the NDT within two years, and utility licensees within five years, provided that all funds are paid over by the time of permanent shutdown. Government agencies may be allowed longer periods of time to make the payment, if warranted. The discounted PCG should not be permitted after permanent shutdown, when the licensee no longer produces revenue. The regulation provides *up to* a 2 percent real rate of return, it does not guarantee a 2 percent return. The actual real rate of return can be negative when compared to the escalation rate of decommissioning costs. The rate of return is discussed in the Enclosure 3 section entitled, “Rate of Return Compared to Decommissioning Cost Escalation.” Therefore, the licensee would have to justify the discount rate it proposed to use.

¹⁹ LCG Assoc., Nuclear Decommissioning Trust Asset/Liability Modeling, Slide 18, March 2, 2011 (ML110560778)

²⁰ Transcript, Decommissioning Funding Workshop, Common Sessions 1 & 2, statement of Mr. Levin (Exelon), March 2, 2011, p.191 (ML110810747)

²¹ Application for License Transfers, Enclosure 7, Form of EnergySolutions Performance Guaranty, January 25, 2008 (ML080310521) [Hereinafter Zion Application]

²² Zion Application, Asset Sale Agreement, Section 6.21.6 (ML080310521)

²³ Zion Application, Credit Support Agreement, Section 2.2 (ML080310521)

²⁴ State of New York Office of the Attorney General, Issues Related to Decommissioning Funding, March 2, 2011 (ML110560594)

Conditions may be needed to achieve the requisite equivalent assurance.²⁵ A licensee's commitment to make annual adjustments would not be adequate, since it is not enforceable. The sinking fund discount combination would be conditioned to ensure performance and approved via a license amendment or in an Order, as appropriate. Both methods permit hearing rights, which would provide a venue for public participation. The use of probabilistic methods, such as Monte Carlo analysis, should be developed to risk-inform the evaluations and screen out requests that would significantly increase the probability of funding shortfalls.

RECOMMENDATION:

Option 3 is recommended. This option preserves the flexibility intended when the 1998 Decommissioning Rule was issued. It allows NRC to evaluate licensee requests to determine that the degree of assurance provided by the licensee's proposed method meets the equivalency requirement, and to impose conditions where needed to ensure performance.

COORDINATION:

The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and concurs with requesting resources through the fiscal year 2014 Planning, Budgeting, and Performance Management process. The Office of the General Counsel has reviewed this paper and has no legal objection.

/RA by Martin J. Virgilio for/

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Enclosures:

1. Resources
2. Executive Summary
3. Additional Information
4. Response to Comments
5. Q&A On Financial Assurance
6. Millstone License Transfers

²⁵ 53 NRC 488, 546

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²⁶ 53 NRC 488, 546