EXECUTIVE SUMMARY

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

The Nuclear Energy Institute (NEI) requested that NRC grant licensees permission to licensees to use discounted parent company guarantees (PGCs) as financial assurance for decommissioning costs without approval, conditions, or evaluation of equivalency as required by 10 CFR 50.75(e)(1)(vi). NEI proposed that NRC should grant its permission by revising the guidance of Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors." The Commission directed the staff to engage stakeholders and relevant experts in a workshop to develop an option paper on the net present value (NPV) approach for discounting a PCG.

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.

NRC regulations do not allow a discounted PCG to be used by licensees. However, the regulations allow NRC to approve a request to use a non-standard method, such as a discounted PCG, on a case-by-case basis, pursuant to the requirements of § 50.75(e)(1)(vi), if the decommissioning funding assurance (DFA) method(s) provide assurance of decommissioning funding equivalent to that provided by the mechanisms specified in §§ 50.75 (e)(1)(i) through (v). The NRC may impose conditions to achieve the requisite equivalent assurance. Therefore, granting permission to use the discounted PCG without applying the provisions of 10 CFR 50.75(e)(1)(vi) would require rulemaking.

The options for responding to NEI's request are:

1. do not allow the use of discounted PCGs;
2. amend the regulations to allow the use of discounted PCGs without approval, conditions, or evaluation for equivalency; and
3. allow the use of discounted PCGs with conditions on a case-by-case basis under the provisions of 10 CFR 50.75(e)(1)(vi).

The staff recommends Option 3, to allow the use of discounted PCGs with conditions on a case-by-case basis. The following discussion provides background information and summarizes the information presented in the enclosed documents titled Additional Information, Response to Comments, and Questions and Answers on Decommissioning Financial Assurance.

BACKGROUND

A workshop was held on March 2, 2011, to obtain comments from experts and relevant stakeholders, as directed by the Commission. 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 discussion of the NPV approach; the rise in decommissioning costs; historical nuclear decommissioning trust (NDT) performance; the probability of funding success; risks to local communities, States, and tribal governments; and the burden on industry when using the PCG. Participants stated they found range of topics informative and relevant to their issues. 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.

The 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. In addition to the information developed at the workshops, the staff reviewed the regulatory history since 1988; NRC license transfer cases; 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 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; financial responsibility regulations issued by other Federal agencies; Federal case law on enforcement of U.S. Environmental Protection Agency financial responsibility regulations; and filings with State Public Service Commissions regarding decommissioning funding.

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. The State of Vermont Department of Public Service stated that licensees could put money into their NDTs rather than use a PCG.

DISCUSSION

- NEI's Proposal

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 of 10 CFR 50.75(e)(1)(vi). 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"). 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.

- Regulations

A review of the regulatory history verifies that the NRC did not intend nor does the regulation (10 C.F.R.§ 50.75) permit discounting of the amount of financial assurance a licensee must provide. The history is discussed in the Additional Information section titled, “Regulatory History of the Parent Company Guarantee.” A legal analysis of the regulatory language in the response to Comment 1 supports the conclusion that NRC had no intent to allow discounting of DFA requirements. The Additional Information section titled, “Cases Applying the Equivalency Test of 10 CFR 50.75(e)(1)(vi),” discusses the Commission’s interpretation of the regulations for evaluating, approving, and placing conditions on DFA methods that are outside the parameters of the existing five methods set forth in 10 CFR 50.75(e)(1)(i) through (v). The Additional Information section titled, “NEI’s Discounting Proposal Compared to 10 CFR 50.75,” describes the reasons NEI’s request does not meet the requirements.

The PCG was requested by licensees and authorized by the NRC for power reactors in 1998 as a low cost method to provide DFA, and to increase flexibility. A number of concerns with the use of the PCG are discussed in the Additional Information section titled, “1998 Decommissioning Rule,” and the section titled, “Vulnerabilities of the PCG and Self-Guarantee.” For example, the PCG provides incentives for licensees to delay or cease contributions to their NDT. In addition, because the PCG is a non-secured promise to pay, without funds or collateral to secure performance, it is vulnerable to the claims of creditors and bankruptcy. As a result of these concerns, conditions would be necessary to assure equivalent DFA in cases where a discounted PCG is approved.

NEI’s final comment on combining DFA methods focused on the use of the external sinking fund in combination with a discounted PCG, which would apply to merchant plant licensees. Interestingly, in response to the 1998 Decommissioning Rule, NEI proposed a framework for DFA that would have extended use of the external sinking fund to a larger number of merchant plant licensees than the regulations would allow, without a requirement for case-by-case evaluation for equivalency of DFA. The NRC declined the proposal on grounds that it would increase the risk of inadequate decommissioning funding. The response to Comment 5 discusses the reasons the external sinking fund is subject to greater oversight when used by a merchant plant licensee.

A number of other comments on the regulations are discussed in the enclosed Comments on Regulations.

- License Transfer Orders Referenced as Precedents

NEI suggested that three license transfer orders provided a precedent that NRC must follow in considering a request to discount the PCG. The NRC staff concluded that the orders were decided in error with respect to DFA, and are not precedents. A discussion of the reasons for concluding the three license transfer orders were erroneously decided is included in the responses to Comments 2 through 4.

However, even if the orders had been correctly decided, the Commission has 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).[1] [Emphasis in original]

Thus, the three license transfer orders have no precedential value.

- Zion Facility Financial assurance

The financial assurance arrangements negotiated by Exelon and ZionSolutions for the license transfer of the retired Zion facility are discussed in the Additional Information section titled Financial Assurances Required by Exelon from ZionSolutions, LLC. The parties included extensive financial assurances that exceeded NRC requirements to protect against non-performance of the new licensee. The risks mitigated by their agreements were essentially the same risks that concern stakeholders from local communities, States, and tribal governments.

The financial assurances for the Zion decommissioning include:

- The NDT ($788 million as of 12/31/2010)
- $200 million Letter of Credit (LOC)
- Unlimited parent company performance guarantee
- No-cost easement for disposal capacity
- 90 day time limit to cure a shortfall in financial assurance
- 120% excess financial assurance at start of decommissioning
- 200% excess financial assurance of remaining cost before reducing LOC
- Exelon is protected from any increases in cost due to government requirements
- Exelon is a member of ZionSolutions, LLC
- Exelon has the right to appoint a Director to the ZS Board of Directors, with power, among other actions, to block ZS from instituting bankruptcy proceedings

- Historical Data

NDT fund contributions have declined since 1999, the year following the issuance of the 1998 Decommissioning Rule. The enclosed response to Comment 24 discusses the trend. In 2009, approximately 80% of the dollar shortfall of $2.4 billion occurred at facilities that had delayed or ceased contributions to their NDTs. Shortfalls are discussed in the response to Comment 23.

The regulations allow licensees to take credit for up to a 2% per annum real rate of return on funds held in the NDT. Utility licensees may take credit for a higher real rate of return if authorized by its rate regulatory authority. However, publicly available data suggest that the

[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)

actual real rate of return may be less than 2% per annum, and possibly negative, when actual fund performance is compared to the rate of increase of decommissioning costs. Consequently, a request to use a discounted PCG would need to address the licensee's actual real rate of return.

The effects of the 2008 market downturn on the six parent companies whose reactor facilities reported shortfalls in 2009 are shown in the enclosed Additional Information. Their financial performance did not change much during the recession of 2008 – 2009, with the exception of Constellation Energy Group. Constellation experienced large losses in its energy trading program in 2008, and sold a substantial interest in its nuclear business to Èlectricitè de France in 2009.

The table in Enclosure 3 titled, "Nuclear Decommissioning Cost Estimates and Cost Escalation Rates," presents information published by NRC in NUREG-1307, "Report on Waste Burial Charges." The table shows that the compound growth rate of decommissioning costs since 1986 ranges from 4.7% to 9% per annum, depending on reactor type and location. The range exceeds the general inflation rate. This is material because it indicates that the general inflation rate may not be the appropriate measure to determine the real rate of return of a NDT used to provide DFA.

- Probability Insights

The probability that a NDT will reach its target amount in discussed in the Additional Information section titled, "Probability Insights," and the responses to Comments 25 and 26. As expected, the major factors include the rate of return on the investments and the rate of cost escalation. However, delaying or ceasing contributions to the NDT may significantly reduce the probability that the NDT will meet its funding goal. A study of a hypothetical NDT fund with a shortfall estimated that the probability of successfully meeting the funding goal without adding funds to the NDT ranged from 2/3 down to 1/100. Higher rates of increase in decommissioning costs drove down the probability of success. In addition, as shown in a study by the U.S. General Accountability Office (GAO), market volatility can significantly reduce the probability of funding success. Lengthening the time horizon to wait for additional earnings may increase the likelihood of shortfalls. As a result, delaying or ceasing contributions to the NDT, on the assumption that SAFSTOR or license renewal will produce earnings in excess of the rise in decommissioning costs, may not be conservative.

- Costs of the PCG

A number of issues regarding costs are discussed in the enclosed responses to Comments 11 through 19. The conclusion is that minimal costs are incurred to provide a PCG to a licensee-subsidiary. A licensee for a large number of reactors stated at the March 2011 workshop that it incurred no direct or indirect costs as a result of issuing $219 million in PCGs in 2010. NEI and some licensees stated that the financial test required for a PCG places limits on parent company's financial operations. However, the situation is the reverse - the parent company's financial operations limit the amount of PCGs it can issue. If the parent company is unable to pass the financial test for a PCG, the licensee can choose another DFA method that does not require passing a financial test.

- Other Comments

NEI stated that a number of presentations and comments from the stakeholder community mischaracterize the NRC's regulations, are incorrect and misleading, not germane to the issue, or have no value. See the responses to Comment 7, 20, 22 and 24 for a discussion.

- Questions and Answers on Decommissioning Financial Assurance

Questions and answers on NPV, the earnings credit, the PCG, and related topics are included.