NRR-PMDAPEm Resource

From: Domeyer, Tamra:(BSC) [Tamra.Domeyer@exeloncorp.com]
Sent: Monday, May 19, 2014 4:37 PM
To: Wiebe, Joel
Cc: Mozafari, Brenda; Tate, Travis
Subject: FW: Exelon Enforcement Conference Slides
Attachments: Final 04-30-2013 PEC Presentation.pptx

Joel:

Thank you for providing Exelon with an opportunity to propose redactions prior to making Exelon Generation's presentation public. All of the redactions pertain to personal information that Exelon Generation requests be redacted for personal privacy under 10 CFR 2.390(a)(6).

Thank you.
Tami

Tamra Domeyer
Associate General Counsel
Exelon Nuclear

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From: Wiebe, Joel [mailto:Joel.Wiebe@nrc.gov]
Sent: Wednesday, May 07, 2014 11:56 AM
To: Domeyer, Tamra:(BSC)
Subject: Exelon Enforcement Conference Slides

Tami,

The NRC has received a request (at this point, I do not know who made the request) to make the attached presentation slides public and we are considering doing so.

Should any information in the attached slides be withheld? If so, could you provide a redacted version?

Joel

Hearing Identifier: NRR_PMDA
Email Number: 1339

Mail Envelope Properties (357227E21471CD4D92F025B61B5C11E62629BA)

Subject: FW: Exelon Enforcement Conference Slides
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Response to Apparent Violation Exelon Decommissioning Funding

Pre-decisional Enforcement Conference Presentation

April 30, 2013

Exelon Generation®

Agenda

Introduction – [redacted]
Discussion of Facts – [redacted]
Review By Independent Expert – [redacted]
Safety Significance/Corrective Actions – [redacted]
Conclusion – [redacted]
Appendix

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Introduction

Exelon understands:

- The importance of accurate reporting and forthright communications with the NRC.
- The NRC investigation preliminarily concluded that four Exelon Decommissioning Funding Status (DFS) reports are inaccurate.
- The matter at issue here is reporting. The NRC does not take issue with "the manner in which" Exelon calculated the values in its reports. (Jan. 31, 2013 NRC letter to Exelon, at 2 n. 2.)

Introduction

Three basic questions arise:

1. Why did Exelon use the reporting methodology it used?
2. Was Exelon's methodology consistent with the regulations?
3. If not, did Exelon submit reports knowing that they were inconsistent with the regulations?

Introduction

The Answers:

1. We believe that the reporting methodology and the contents of our reports were specifically authorized by the regulations and guidance.
2. NRC acceptance of Exelon's filings supported our belief that our reports were consistent with the regulations.
3. No one at Exelon who was involved in the preparation, review, and submittal of the reports doubted the completeness and accuracy of our submittals.

A knowledgeable former NRC Staff subject matter expert agrees that our reports were consistent with both the letter and the purpose of the regulations.

Factual Discussion

An Overview of Exelon Submittals and Correspondence with the NRC

Introduction – [redacted]

Discussion of Facts – [redacted]

Review By Independent Expert – [redacted]

Corrective Actions/Safety Significance – [redacted]

Conclusion – [redacted]

Appendix

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The Issue

	> Amount		Minus the credit	= Funds Required
	Formula Cost Amount per 50.75(c)	Site-specific Cost Estimate Amount	Post-Shutdown Credit	Funds Estimated to be Required
Dresden Unit 2	$448.5 million	N/A	($21.5 million)	$427.0 million
Oyster Creek	$416.1 million	$441.6 million	($71.5 million)	$370.1 million

- Blue reflects value currently expected by NRC Staff.
- Green reflects value reported by Exelon in its 2005 DFS report.
- Red reflects credit deducted from cost amounts.

Overview of Regulatory Reporting Requirements (2009 version)

- The reporting requirement is in 10 CFR 50.75(f)(1), which requires that the information in the report must include:
  - "the amount of decommissioning funds estimated to be required under 10 CFR 50.75(b) and (c) ;" and
  - "the amount [of decommissioning funds] accumulated to the end of the calendar year preceding the date of the report" (*i.e.*, the trust fund balance).
- 10 CFR 50.75(b)(3) requires that "the amount must be covered by one or more of the methods described in paragraph (e)," which allows the 2% post-shutdown credit.

Section 50.75(b) has four subparts, including (b)(3) which allows for the post-shutdown credit by reference to (e).

How Did We Perform the Calculations for the 2005 Decommissioning Fund Status (DFS) Report?

Example: Dresden Unit 2 (Formula Cost Amount)

	Formula Cost Amount per 50.75(c)	Less The Post-Shutdown Credit	Equals The Amount Of Funds Estimated To Be Required Under 50.75(b) and (c)
Dresden Unit 2	$448.5 million	($21.5 million)	$427.0 million
	Calculated using the formula in 50.75(c)	Earnings from date of shutdown for 7 years (less expenditures) – 50.75(b)(3) and 50.75(e)	Amount of money required on the date of shutdown to pay for decommissioning activities

How Did We Perform the Calculations for the 2005 Decommissioning Fund Status (DFS) Report?

Example: Oyster Creek (Site Specific)

	Formula Cost Amount per 50.75(c)	Site-Specific Cost Estimate (If Greater Than Formula Cost Amount)	Less the Post-Shutdown Credit (from the site-specific cost estimate)	Equals the Amount of Funds Estimated to be Required Under 50.75(b) and (c)
Oyster Creek	$416.1 million	$441.6 million	($71.5 million)	$370.1 million
	Calculated using the formula in 50.75(c)	Escalated to 2004 year end dollars	Earnings from date of shutdown through 23 Year SAFSTOR (less expenditures) – 50.75(b)(3) and 50.75(e)	Amount of money required on the date of shutdown to pay for decommissioning activities

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1998 Rulemaking

- Imposed biennial reporting requirement regarding status of decommissioning funding.
  - Report prior year trust fund balance as of 12/31.
  - Report amount "estimated to be required" for decommissioning activities. This amount is the certification amount for which financial assurance is required.
- Key requirement is to demonstrate sufficient funds for decommissioning at the time termination of operations is expected (shutdown).
- Limited guidance provided in NUREG-1577.

Licensees are to report the amount estimated to be required as of the date of shutdown to pay for decommissioning activities in the future.

NUREG-1577, Rev. 1 (1999)

(2) As long as the information described above is included in the report, no specific reporting format is required. However,

(1) Once a licensee has established the decommissioning cost for each of its reactors in current-year dollars, the reviewer should confirm that the licensee will have this amount (less future estimated earnings as provided in 10 CFR 50.75(e)(1)(I) or (ii)) by the time it plans to shut down by using one of the financial assurance mechanisms allowed in section 50.75(e). Virtually all power reactor

Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance

for permanent disposal are not included in NRC formulas. Therefore, the reviewer will ensure that either—

- Such costs are not included in licensee formula calculations; or
- If such costs are included, they are separately identified and are not used for NRC-required decommissioning funding assurance.

b. Evaluating the Biennial Decommissioning Fund Status Reports

The reviewer should confirm that the following information is contained in the biennial decommissioning fund status reports:

(1) As provided in 10 CFR 50.75(f)(1), each power reactor licensee is required to report to the NRC on a calendar year basis, beginning on March 31, 1999, and every 2 years thereafter, on the status of its decommissioning funding for each reactor or share of a reactor that it owns. The information in this report must include, at a minimum: the amount of decommissioning funds estimated to be required, pursuant to 10 CFR 50.75(b) and (c), or a site-specific estimate, as appropriate; the amount accumulated to the end of the calendar year preceding the date of the report; a schedule of the annual amounts remaining to be collected; the assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections; any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(ii)(C); and any modifications to a licensee's current method of providing financial assurance occurring since the last submitted report. Any licensee for a plant that is within 5 years of the projected end of operation, or where conditions have changed such that it will close within 5 years, or has already closed, is required to submit the report annually.

(2) As long as the information described above is included in the report, no specific reporting format is required. However, each licensee should indicate the assurance mechanism being used as a source of revenues for the external sinking fund (e.g., traditional "cost-of-service" ratemaking, a non-bypassable charge, long-term contracts that the NRC has found to be acceptable pursuant to 10 CFR 50.75(e)(1)(v)).[8] If the assumed real earnings rate on an external sinking fund exceeds 2 percent, each licensee should indicate the specific rate ruling or decision by its rate regulator that documents the earnings rate being used, as provided in 10 CFR 50.75(e)(1)(I) or (ii). If a licensee is using an assurance mechanism other than an external sinking fund, it should include as part of the report adjustments to the assurance mechanisms (e.g., a surety bond or letter of credit) to account for any escalation since the previous report.

c. Verifying Annual Amortization Amounts for External Sinking Funds

The reviewer should verify the accuracy of the annual amortization amounts for external sinking funds using the following procedures:

(1) Once a licensee has established the decommissioning cost for each of its reactors in current-year dollars, the reviewer should confirm that the licensee will have this amount (less future estimated earnings as provided in 10 CFR 50.75(e)(1)(I) or (ii)) by the time it plans to shut down by using one of the financial assurance mechanisms allowed in section 50.75(e). Virtually all power reactor licensees so far have chosen to use an external sinking fund. This assurance

[8] To the extent that power reactor licensees have received rate regulator approval to use market-based rates for a significant portion of their nuclear-related revenues (i.e., greater than 20 percent), the NRC will not consider them to be subject to traditional cost-of-service rate regulation for that portion of their rates.

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2002 Amendments to Section 50.75

- Section 50.75 was amended effective December 24, 2003 to clarify the post-shutdown credit allowed under 50.75(e).

  Before shutdown

  - Licensees may take credit for projected earnings at the rate of a two percent annual real rate of return during operations.

  After shutdown

  - Following shutdown, licensees may also take credit using the two percent real rate of return:
    - through the period of decommissioning (safe storage, final dismantlement, license termination) if reasonable assurance is based on a site specific estimate (1998 rule); or
    - for the first seven years after shutdown, recognizing both cash expenditures and earnings, if reasonable assurance is based on the formula cost amount (2002 rule).

Application of New Rule in Exelon's 2005 Decommissioning Funding Status Report

- For operating plants not using a site specific estimate, Exelon based financial assurance on the formula cost amount contained in Section 50.75(c).
- Consistent with the new rule, we took the formula cost amount and, in accordance with 50.75(e)(1), applied the authorized two percent post-shutdown credit for seven years, recognizing cash expenditures and earnings.
- We reported the amount that reflected the formula cost amount <u>less</u> the post-shutdown credit.

Application of New Rule in Exelon's 2005 Decommissioning Funding Status Report

- For the four units that were already shutdown and one operating unit (within five years of the end of licensed life), we based financial assurance on site-specific cost estimates.
- Consistent with 50.75(e)(1), we applied the authorized post-shutdown credit to these site-specific cost estimates.
- We reported the amount that reflected the site-specific cost estimate <u>less</u> the post-shutdown credit.

Why Did Exelon Take the Credit on the Cost Side?

- Section 50.75(e) allows licensees to take certain credits, but it does not specify how those credits should be taken.
- What we did know is that:
  - Section 50.75(f)(1) makes clear that licensees must report "the amount accumulated to the end of the calendar year preceding the date of the report" (*i.e.*, the trust fund balances), so the credit cannot be taken on the trust fund balance in the report.
  - Licensees are required to report the amount of funds estimated to be required as of the date of shutdown.
- So, consistent with NUREG-1577, we applied the authorized post-shutdown credit to the formula cost amount or to the site-specific cost estimate, yielding the "amount of decommissioning funds estimated to be required under 10 CFR 50.75(b) and (c)" and to be reported under sub-section 50.75(f)(1).

How Was This Explained In The 2005 DFS Report?

- The DFS report transmittal letter stated that:
  - the values reported in Attachment 1 reflect "the amount of decommissioning funds for the operating reactors estimated to be required pursuant to 10 CFR 50.75(b) and (c)."
- In Attachment 1 to the DFS report, Exelon included footnotes explaining that:
  - the amount of funds estimated to be required was "determined in accordance with 10 CFR 50.75(b) and the applicable formulas in 10 CFR 50.75(c)."
  - for Oyster Creek, footnote (4) explained that the site-specific estimate "is $441.6 million before adjusting for growth of the trust funds through the decommissioning period."

10 CFR 50.75(b)(3) provides that the amount of financial assurance must be covered using a method in 10 CFR 50.75(e) – the regulations that specifically authorize post-shutdown credits.

NRC Response to Exelon's 2005 DFS Report

- It was NRC Staff's practice to independently calculate the formula cost amount pursuant to 10 CFR 50.75(c).
  - This was documented later in LIC-205.
- Staff does not need information from Exelon to perform the calculation in 50.75(c).
- We knew the NRC staff would recognize that the amounts Exelon reported are not the same as the values established using only 50.75(c).
- We knew the NRC staff was aware of the new post-shutdown credit allowed when using the formula cost amount in 50.75(c).

NRC Response To Exelon's 2005 DFS Report

- After the NRC completed its analysis, we had discussions about the calculations and values reported and the rate of return applied to Exelon's formerly regulated units in Illinois.
- On March 30, 2006, the NRC issued SECY-06-0073, a report to the Commission on the status of decommissioning funding for all power reactors.
  - Staff took issue with Exelon's use of the higher rate of return during operation for the formerly regulated units in Illinois and required further action for 3 Illinois sites.
  - Nevertheless, the Staff concluded that for all remaining sites, including the remaining Exelon sites, "when earnings credits and scheduled collections are factored in, decommissioning funding assurance now equals or exceeds the latest available (NRC determined) minimum decommissioning funding estimate" (p. 4).

NRC Staff performed its own calculations to determine the 50.75(c) amounts and had to understand the values reported by Exelon.
The NRC Staff accepted Exelon's reported values.

2006 Decommissioning Funding Status Report

- We prepared the 2006 DFS report using the same methodology employed for the 2005 DFS report.
  - For some plants, the formula cost amounts were reported inadvertently.
- In addition, the 2006 transmittal letter explained:
  - To address the NRC's concerns arising from the 2005 DFS report, Exelon committed to provide site-specific cost estimates for the 3 Illinois sites at issue.
  - Exelon explained that these estimates "will be greater than the amount specified in 10 CFR 50.75(c) *and will take credit for projected earnings on the external sinking funds using a 2.0% annual real rate of return through the decommissioning period*."

Exelon did not receive any comments from the NRC on the 2006 DFS Report.

Exelon's February 2007 RAI Responses

- On December 18, 2006, Exelon submitted site-specific SAFSTOR (60 years) estimates for Braidwood, Byron, and LaSalle.
- The NRC issued a Request for Additional Information ("RAI") to Exelon, seeking information about whether the trust funds for Braidwood and Byron were sufficient to assure adequate funding for decommissioning.
- Exelon and NRC Staff held a telephone conference on February 22, 2007 to discuss the methodology for calculations.

Exelon's February 2007 RAI Responses

Our response is critical in considering enforcement action.

- We responded to the NRC's RAI on February 27, 2007.
- This was the first time we took post-shutdown credit for an operating plant based on the use of a 60 year SAFSTOR period described in a site-specific study.
- We provided a year-by-year itemization of expenditures from the trust fund, starting at plant shutdown and going through the completion of decommissioning, approximately 60 years later, for Byron, Braidwood, and LaSalle.

Exelon's February 2007 RAI Responses

Radiological Decommissioning Cash Flows (in thousands, 2007$)

	Braidwood 1
2026	8,647
2027	50,213
2028	15,474
2029	5,180
2030	3,845
[. . .]	
2079	3,845
2080	9,659
2081	40,234
2082	96,672
2083	82,578
2084	46,953
2085	21,251
2086	25,840
2087	78
2088	78
2089	10
Total	595,267
Funding Required at Shutdown	296,449
Funding Available at Shutdown	297,393
Trust Fund Balance (as of 12/31/06)	204,139

Braidwood 1	Amount ($ millions)
Formula cost amount	$380.3
Site-specific cost estimate	$595.3
Post-shutdown credit	($298.9)
Amount reported in 2007 DFS report (site specific cost minus post-shutdown credit)	$296.4
12/31/06 trust fund balance + 2% earnings to shutdown in 2026	$297.4
Actual trust fund balance as of 12/31/06	$204.1

Exelon's February 2007 RAI Responses

- The Cash Flows (expenditures) shown on the previous slide are abbreviated for discussion purposes.
- The 2007 RAI Response shows:
  - Below the expenditures, we identified the "total" estimated cost of decommissioning (all the expenditures added together).
  - We adjusted the total costs by deducting for the post-shutdown credit, which results in the "Funding Required at Shutdown."
  - We also reported the total amount of "Funding Available at Shutdown," which reflected the estimated value of the trust fund at the time of shutdown based on the trust fund balance as of year end 2006 with projected earnings at the rate of 2% to the date of shutdown.
  - The Funding Available at Shutdown exceeded the "Funding Required at Shutdown."

2007 Decommissioning Funding Status Report

- The itemization of costs, estimated revenue, and most importantly, the clear identification of the difference between the "total" estimated cost of decommissioning and the "Funding Required at Shutdown" in Exelon's RAI responses is critical.
- Exelon's methodology, terminology and specific calculations were provided in full to the NRC in early 2007.
- Exelon used that same methodology in its 2005, 2006, 2007, and 2009 reports.
- The values reported in Exelon's March 21, 2007 DFS report as the "amount of decommissioning funds estimated to be required" for Braidwood, Byron, and LaSalle are <u>the same as the "Funding Required at Shutdown" in its February 27, 2007 RAI Responses</u>.

Comparison of Exelon's February 2007 RAI Responses and Its 2007 DFS Report Values

	RAI Responses February 27, 2007 "Funding Required at Shutdown" Values ($ thousands)	March 21, 2007 DFS Report Attachment 1 "Amount of Decommissioning Funds Estimated To Be Required" ($ millions)
Braidwood Unit 1	296,449	296.4
Braidwood Unit 2	303,206	303.2
Byron Unit 1	296,086	296.1
Byron Unit 2	299,970	300.0
LaSalle Unit 1	332,895	332.9
LaSalle Unit 2	327,489	327.5

The values reported in March 2007 were fully explained in the RAI Response.

April 24, 2007 NRC Acceptance of Exelon's Approach Explained In Its 2007 RAI Responses

April 24, 2007

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; BYRON STATION, UNIT NOS. 1 AND 2; AND LASALLE COUNTY STATION, UNITS 1 AND 2 - REVIEW OF SITE-SPECIFIC DECOMMISSIONING COST ESTIMATES (TAC NOS. MD3928 THROUGH MD3932)

Dear Mr. Crane:

The Nuclear Regulatory Commission (NRC) staff completed its review of the Exelon Generation Company, LLC's (Exelon's), submittal dated December 18, 2006 (Agencywide Documents

Based on Exelon's supplemental submittals, the NRC staff has concluded that Exelon has demonstrated reasonable assurance of decommissioning funding for Braidwood Station (Braidwood), Units 1 and 2, Byron Station (Byron), Unit Nos. 1 and 2, and LaSalle County Sation (LaSalle), Units 1 and 2. This closes the issues raised by the Exelon submittal dated March 31, 2005.

real rate of return credit to the trust fund balance for the licensed operating period for these units. Once the units were projected to enter into SAFSTOR, the NRC staff applied a 2 percent real rate of return on the annual fund; however, total annual costs were deducted annually before a 2 percent real rate of return was credited for each prospective years funds.[1]

Based on Exelon's supplemental submittals, the NRC staff has concluded that Exelon has demonstrated reasonable assurance of decommissioning funding for Braidwood Station (Braidwood), Units 1 and 2, Byron Station (Byron), Unit Nos. 1 and 2, and LaSalle County Sation (LaSalle), Units 1 and 2. This closes the issues raised by the Exelon submittal dated March 31, 2005.

[1] Once a licensee is no longer legally eligible to recover all decommissioning costs from non-bypassable charges, notwithstanding that some non-bypassible charges remain to be collected, the licensee is limited to a 2 percent real rate of return credit for the remaining operating period, and a 2 percent real rate of return credit on the trust fund balance, but only after the total annual costs for the SAFSTOR and decommissioning periods have been deducted.

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Acceptance of Exelon's Certification Amounts

- Based on its review and acceptance of Exelon's February 27, 2007 RAI Responses, the NRC clearly understood Exelon's calculations and methodology for determining the amount "estimated to be required" at shutdown.
- On November 14, 2007, the NRC issued SECY-07-0200, which summarized the staff's review of all of the biennial decommissioning status reports submitted in March 2007.
  - "The staff identified no concerns with the decommissioning funding assurance levels for the 104 operating nuclear power reactors."

Exelon believed that it was accurately reporting the information required for the NRC to make a finding of "reasonable assurance," which is the purpose of the regulation.

2009 Decommissioning Funding Status Report

- In September 2008, [redacted] began assisting [redacted] with the preparation of the DFS reports.
- We prepared the 2009 report using the same methodology and reporting conventions as previously employed and accepted by the NRC.

Exelon reasonably believed that the reporting method used in its 2007 DFS report would be acceptable for use in its 2009 DFS report.

Explanation In Exelon's 2009 DFS Report

- Exelon's 2009 Report provided the same explanations used in prior reports.
- Using the same reporting methodology, the 2009 DFS report transmittal letter identified projected funding shortfalls at Braidwood, Byron, LaSalle, and Limerick.
  - The NRC also identified a shortfall for Clinton, based on the formula cost amount, as opposed to the site-specific estimate relied upon by Exelon.
- The downturn in the financial markets in late-2008 caused these units to have projected shortfalls in decommissioning funding assurance.

RAI Responses Following 2009 DFS Report

- As requested, on July 29, 2009, Exelon provided the NRC with a Decommissioning Funding Plan, describing how it would achieve reasonable assurance for decommissioning the affected units.
- The NRC Staff issued multiple RAIs following Exelon's submission of its 2009 DFS Report and July 29, 2009 Plan.
- Exelon's 2009 DFS Report, July 29, 2009 Decommissioning Funding Plan, and the associated site-specific cost estimates and RAI Responses all relied upon the methodology approved by the NRC in its April 24, 2007 letter.

August 27, 2009 Clinton Site-Specific Estimate

ATTACHMENT 2

Clinton Power Station
Radiological Decommissioning Projected SAFSTOR Cash Flow (continued)
(dollars, thousands)

Year	Radiological Decommissioning Cost (July 31, 2009 dollars)	Radiological Decommissioning Cost less Decommissioning Period Credit
2026	$14,402	$14,402
2027	$81,329	$79,734
2028	$14,299	$13,744
2071	$5,725	$2,348
2072	$5,740	$2,309
2073	$5,725	$2,257
2074	$5,725	$2,213
2075	$5,725	$2,169
2076	$5,740	$2,133
2077	$5,725	$2,085
2078	$5,725	$2,044
2079	$5,725	$2,004
2080	$5,725	$1,965
2081	$18,231	$6,135
2082	$45,423	$14,985
2083	$108,023	$34,939
2084	$100,273	$31,796
2085	$86,981	$27,040
2086	$31,733	$9,672
2087	$77	$23
2088	$77	$23
2089	$1	$0
Total	**$798,737**	**$409,492**
	Total Decommissioning Period Credit:	**$389,245**

[. . .]

Clinton	Amount ($ millions)
Formula cost amount	$576.6
Site-specific cost estimate	$798.7
Post-shutdown credit	($389.2)
Amount Estimated to Be Required at Shutdown	$409.5
7/31/09 trust fund balance + 2% earnings to shutdown	$450.6
Trust fund balance as of 7/31/09	$320.6

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Exelon's Site-Specific Cost Estimate for Clinton

- On August 27, 2009, Exelon submitted its site-specific cost estimate for Clinton to current NRC Staff.
  - This submission highlighted, once again, Exelon's application of the post-shutdown credit.
  - The submittal provided a site-specific, year-by-year itemization of expenditures for Clinton, less the post-shutdown credit (also referred to as the "decommissioning period credit"), from shutdown through the completion of decommissioning.
  - The submittal clearly identified the post-shutdown credit (decommissioning period credit) used to calculate the amount estimated to be required as of July 31, 2009.
  - The credit was based upon a 2% real rate of return and the number of years between shutdown and the year of the expenditure.

NRC Current Staff's December 10, 2009 Acceptance of Clinton Site-Specific Cost Estimate

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 10, 2009

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, UNIT NO. 1 – STATUS OF DECOMMISSIONING FUNDING ASSURANCE (TAC NO. ME0503)

Dear Mr. Pardee:

The Nuclear Regulatory Commission (NRC) staff has reviewed your submittal, dated July 29,

October 2007. The NRC staff has reviewed the licensee's plan and determined that the licensee provides reasonable assurance of adequate decommissioning funding at the time permanent termination of operations is expected. Accordingly, the NRC staff concludes that no further action is required at this time to demonstrate adequate decommissioning funding assurance, according to NRC standards for Clinton.

October 2007. The NRC staff has reviewed the licensee's plan and determined that the licensee provides reasonable assurance of adequate decommissioning funding at the time permanent termination of operations is expected. Accordingly, the NRC staff concludes that no further action is required at this time to demonstrate adequate decommissioning funding assurance, according to NRC standards for Clinton.

Sincerely,

Cameron S. Goodwin, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-461

cc: Distribution via Listserv

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Summary

- We had a reasonable basis for believing that the DFS Reports and RAI Responses Exelon submitted were consistent with:
  - the plain language of the regulations;
  - the requirement to provide "reasonable assurance";
  - NUREG-1577; and
  - the NRC Staff's repeated conclusions regarding compliance with the requirements of 10 CFR 50.75.
- The current Staff's expectations regarding the contents of the DFS Reports reflects a change from our experience with the prior reports.
  - Exelon altered its reporting format for the 2011 DFS Report to be more consistent with the expectations of the current Staff reviewers.

Review By Independent Expert

Introduction – [redacted]
Discussion of Facts – [redacted]
Review By Independent Expert – [redacted]
Corrective Actions/Safety Significance – [redacted]
Conclusion – [redacted]
Appendix

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[redacted] Report

- [redacted] reviewed Exelon's 2005, 2006, 2007, and 2009 DFS reports (and related documents).
- [redacted] the 1998 rule, which created the biennial reporting requirement and authorized the post-shutdown credit for plants using a site-specific estimate.
- [redacted] NUREG-1577 and other relevant documents.
- [redacted] views and conclusions deserve considerable weight.

Key Observations on the Regulations

EVALUATION OF DECOMMISSIONING FUNDING ASSURANCE AND REPORTING BY EXELON GENERATION COMPANY: 2005-2010

By

[redacted]

March 7, 2013

e funds' collection through the projected decommissioning period. This
des the periods of safe storage, final dismantlement, and license termination .

1577, Rev. 1 (1999), the NRC staff provided guidance to the industry on how it
eview these reports. In part, this guidance stated, "As long as the information
ove is included in the report, no specific reporting format is required."
77, Section III.2.b.(2), p.17 of text version) Thus, licensees were advised by the
at they had considerable discretion in how they prepared and submitted their reports.

t to the 2% annual real rate of return, the NRC staff determined that licensees were to
at reflected earnings on the trust fund, less projected inflation in decommissioning
ated in the Statement of Considerations for the 1998 final rule, in addressing
t a 2% rate of return was too low, the NRC noted that: "The commenter's concern
t is less than the 7 percent and 3 percent discount rates called for in NRC's
nalysis guidance is not relevant. Discount rates are used for capital investment
other decision-making purposes but, if used to calculate contributions to
oning funds, could result in financial assurance levels that are not adequate to pay for
bligations." (63 FR 50465, at p. 50477) (footnote omitted). In essence, the 2% rate
rate, but one that is more conservative for this specific purpose than the 7 percent

(NUREG-1577, Section III.2.b.(2), p.17 of text version) Thus, licensees were advised by the NRC staff that they had considerable discretion in how they prepared and submitted their reports.

echanisms allowed in section 50.75(e)." (NUREG-1577, Section III.2.c(1), p. 18 of
emphasis added.) Likewise, "other licensees will project decommissioning costs
anned time of permanent shutdown by inflating costs at some predetermined
. They will most likely also discount the fund by the expected earnings rate on the
basis of these calculations, licensees will be able to calculate an annual amortization
, coupled with projected earnings, will equal the inflated certification amount."
77, p. 19.)

aff developed somewhat more detailed procedures for analyzing decommissioning
rance for operating nuclear power reactors in NRR Office Instruction, LIC-205,
Revision 1, issued on April 24, 2006. Paragraph 4.1, Step 4, LIC-205, Revision 1 incorporates
by reference the guidance contained in NUREG-1577, as cited above.

Thus, the NRC staff expected licensees to use various approaches to determine their 10 CFR 50.75 funding certification amounts. Some licensees could choose to report the current amounts of their decommissioning trust funds, escalated at a real rate of 2% to reflect earnings from the trust investments until shutdown, if the generic formula amounts in 10 CFR 50.75(c) are used (prior to the 2002 amendments), or through a SAFSTOR period, if site-specific studies are used. They would then compare the escalated decommissioning fund amounts to the estimated costs of decommissioning. The escalated decommissioning amounts are funds escalated at a nominal

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Thus, the NRC staff expected licensees to use various approaches to determine their 10 CFR 50.75 funding certification amounts. Some licensees could choose to report the current amounts

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[redacted] Conclusions

Reasonable assurance of decommissioning funding at termination of operations can be demonstrated by either expressing the amount needed at shutdown to fund the formula amount over the seven year DECON period, or by showing that the balance available at shutdown plus the earnings during the following seven year DECON period would cover the formula amount. Either method yields the same level of financial assurance.

(Report at 9.)

nominal or discounted dollars. As stated above, as long as a SAFSTOR estimate is provided (in reporting year dollars), and the amounts to be funded using that estimate is at least equal to the generic cost estimate (also in reporting year dollars), calculated from the formula amounts in 10 CFR 50.75(c), then the discounted value of the site-specific estimate is an acceptable means of certification.

(Report at 14.)

[redacted] Conclusion

I do not believe that the record of EGC's performance demonstrates any deliberate or willful violation of NRC decommissioning funding assurance reporting requirements by submitting inaccurate or incomplete information in its 2005 to 2009 reports. [redacted]

(Report at 15.)

Corrective Actions/Safety Significance

Introduction – [redacted]

Discussion of Facts – [redacted]

Review By Independent Experts – [redacted]

Corrective Actions/Safety Significance – [redacted]

Conclusion – [redacted]

Appendix

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Corrective Actions

- In June 2010, prior to the NRC investigation, Exelon initiated a "Focused Area Self-Assessment" (FASA) of its decommissioning reports.
  - The FASA team included Exelon personnel from multiple disciplines.
  - The review determined that all regulatory requirements had been met.
  - The FASA team made recommendations for reporting that are more consistent with the current Staff's expectations.
- Exelon's March 2011 DFS report reflected changes made based on the recommendations from the self-assessment.
  - The NRC has acknowledged that the 2011 report meets the Staff's current reporting expectations.

Corrective Actions

- Exelon has adopted practices for additional levels of internal review of the funding analysis and reports.
  - Exelon procedures now require a preparer, an independent reviewer, and an approver.
  - The decommissioning funding spreadsheet and calculations have been validated through Exelon's Nuclear Software QA Program.
- Exelon has identified a computational issue from 2011 that Exelon corrected internally and through an amendment to its 2011 report.

Exelon's Reporting Had No Adverse Impact On Safety

- The methodology used for reporting did not impact:
  - the actual funding status;
  - the magnitude of any shortfalls identified; or
  - Exelon's certification of financial assurance.
- Therefore, no adverse impact to safety or funding assurance.

Conclusion

Introduction – [redacted]
Discussion of Facts – [redacted]
Review By Independent Expert – [redacted]
Corrective Actions/Safety Significance – [redacted]
Conclusion – [redacted]
Appendix

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Conclusion

1. Why did Exelon use this reporting methodology?
   - We read the regulations and NUREG-1577 to authorize a credit for post-shutdown growth.
   - Subtracting that credit from the greater of the formula amount or a site-specific estimate provided the "amount of decommissioning funds estimated to be required" at shutdown, and we reported that amount.
   - Our correspondence with NRC, and subsequent findings by NRC, supported our belief that our reports fully complied with the requirements.
2. Was Exelon's methodology consistent with the regulations?
   - Yes - - and a [redacted] subject matter expert agrees.
3. If not, did Exelon submit reports knowing that they were inconsistent with the regulations?
   - Absolutely not.

Conclusion

- Although we dispute these allegations, we do not dispute the importance of accurate reporting and forthright communications with the NRC.
- This is a disagreement over the proper reporting convention. This dispute does not warrant enforcement action.
- Exelon's reporting convention and format had no effect on the amount of financial assurance required or the amount and adequacy of financial assurance provided.
- Exelon has consistently provided reasonable assurance that adequate funds will be available for the decommissioning of its plants, which is the purpose of the rule.

Questions and Answers

Appendix

Introduction – [redacted]
Regulatory Background – [redacted]
Discussion of Facts – [redacted]
Review By Independent Expert – [redacted]
Conclusion – [redacted]
Appendix

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Overview of Regulatory Requirements

- The purpose of the 50.75 reporting requirements is to "provide reasonable assurance that funds will be available" for decommissioning. 10 CFR 50.75(a).
- "Reasonable assurance consists of a series of steps as provided in paragraphs (b), (c), (e), and (f)" of Section 50.75.

The requirement is to provide reasonable assurance. Reasonable assurance, in turn, requires consideration of the requirements in subsections (b), (c), (e), and (f).

Overview Of Regulatory Requirements

- 10 CFR 50.75(b)(1) requires that the report contain "certification that financial assurance for decommissioning has been provided in an amount which may be more, but not less, than the amount" resulting from the calculation in 10 CFR 50.75(c) (the "formula cost amount").
- 10 CFR 50.75(b)(3) requires that "the amount must be covered by one or more of the methods described in paragraph (e)."
- 10 CFR 50.75(e) allows a credit when certifying, as follows:
  - For the formula cost amount: pro-rata credit for projected earnings on the funds at the rate of 2% (or as set by the rate authority) during the first seven years following shutdown
  - For a site-specific cost estimate: credit for projected earnings on the funds from the time of shutdown through the projected decommissioning period.

Overview of Regulatory Requirements

- Exelon's DFS reports:
  - Provided certification of financial assurance for decommissioning that used the formula cost amount in 50.75(c) or a site-specific cost estimate (if greater) and the allowed credit in 10 CFR 50.75(e), as referenced in 50.75(b);
  - Identified the amount presented in the report as the "Amount of Radiological Decommissioning Funds Estimated To Be Required" at the date of shutdown.
- Applying the allowed credit to the formula cost amount or site-specific cost estimate was appropriate as it provided what was described in the regulation as "the amount of money estimated to be required" at the time of shutdown.

Recap of Exelon's Position

- The manner in which Exelon reported funding assurance complies with the spirit, intent, and language of Section 50.75.
- We respectfully disagree with an interpretation of the regulations that requires licensees to report the formula cost amount or a greater value.
  - Section 50.75 does not say licensees must report the formula cost amount or a greater value.
  - Rather, Section 50.75 requires licensees to certify that "financial assurance" has been provided. The amount of that financial assurance must be based on an amount that is at least as great as the formula cost amount.
  - And, Section 50.75 requires that licensees "report" the amount of "funds estimated to be required under 10 CFR 50.75(b) and (c)."
  - 50.75(b) specifically requires that the amount reported account for the post-shutdown credit authorized in 50.75(e).
- In its DFS reports, Exelon reported amounts reflecting the "amounts of decommissioning funds estimated to be required" under 50.75(b) and (c) and those reported amounts were clearly based on the formula cost amount or a greater site-specific cost estimate.

Executive Positions at Exelon

[redacted]

Florida Power Corporation Violation of 50.75

- Florida Power Corporation (FPC) submitted a decommissioning funding status report on March 25, 2009, in which it asserted that its report complied with the requirement in 50.75(f)(1).
  - 50.75(f)(1) requires licensees to report "the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report" (i.e., the trust fund balance).
- FPC reported a value lower than the actual trust fund balance as of December 31, 2008.
- In a March 14, 2011 letter, the NRC concluded that FPC's "failure to accurately report the amount accumulated to the end of the calendar year preceding the date of the report in the 2009 report [was] a violation of 10 CFR 50.75(f)(1)."
- Nonetheless, the Staff determined that the regulatory violation was "minor" and "not subject to enforcement action" because the actual fund balance was greater than reported and than the minimum amount required under 10 CFR 50.75(b) and (c).

50.75 Reporting Has Required Clarification

- RIS 2001-07, Rev. 1, January 2009 demonstrates that reporting expectations are not always as clear to utilities as exemplified by the statement "the NRC staff has learned that some licensees, in response to the requirement that they report the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report, have reported as part of that amount funds accumulated to address State costs and spent fuel management costs."
- The original RIS stated that licensees "are expected to separate funding estimates related to the costs of decommissioning included in the NRC's definition of decommissioning in 10 CFR 50.2."

"Technical" Reading of the Reporting Requirement Before September 2007

- Prior to late 2007, Section 50.75(b)(1) required certification that financial assurance for decommissioning had been 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."
  - Subsection (c) contained two subparts: (1) a table of minimum amounts to demonstrate reasonable assurance and (2) an adjustment factor.
- On September 27, 2007 the regulations were changed to require certification "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."

"Technical" Reading of the Reporting Requirement Before September 2007

- If Staff is going to impose an overly technical and limited interpretation of the regulations, then based on that interpretation, no violation can be found with respect to Exelon's 2005, 2006, and 2007 DFS Reports.
- Prior to September 2007, the amount to certify decommissioning funding assurance was based only on the value in the table in (c)(1) – without any adjustment for escalation factors.
  - The maximum amount stated in the (c)(1) Table is:
    - $105 million for PWRs; and
    - $135 million for BWRs.
- The amounts Exelon reported in 2005-2007 were all greater than these amounts.

Statute of Limitations

- The applicable statute of limitations requires the NRC to initiate an action imposing a civil penalty or issuing an order to modify, suspend, or revoke a license, or to prohibit an individual's involvement in licensed activity within 5 years from when the event occurred.
- Accordingly, the statute of limitations has run with regard to the 2005, 2006, and 2007 DFS Reports.