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**VIA EXPRESS MAIL**

March 30, 2017

72-53

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Mail Stop O-P1-17  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

**Re :** Decommissioning Funding Status Report Pursuant to 10 CFR §50.75(f)(1), including ISFSI Decommissioning Funding (10 CFR §72.30)

Document Control Desk:

Enclosed is a signed original version, and three copies, of MidAmerican Energy Company's Decommissioning Funding Status Report (Report) for MidAmerican's twenty-five (25) percent share of the Quad Cities Nuclear Power Station, submitted pursuant to 10 CFR §50.75(f)(1). The attached Report also includes the decommissioning funding plan for ISFSI, pursuant to 10 CFR §72.30.

If you have any questions regarding this submission, please contact the undersigned.

Respectfully submitted,

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**2016 DECOMMISSIONING FUNDING STATUS REPORT**

10 CFR 50.75(f)(1)

(For The Year Ending December 31, 2016)

**QUAD CITIES NUCLEAR POWER STATION, UNITS 1 & 2**

Submitted by

MidAmerican Energy Company

Dated March 30, 2017

## **OVERVIEW**

This Decommissioning Funding Status Report is being submitted pursuant to 10 CFR 50.75(f)(1) by MidAmerican Energy Company (MEC), a twenty-five percent owner of Quad Cities Nuclear Power Station, Units 1 & 2 (Quad Cities).

## **ADDITIONAL INFORMATION**

### **1.) Amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c).**

Determined in accord with 10 CFR 50.75(b) and applicable formulas in 10 CFR 50.75(c) and reported in end of year 2016 dollars.

	NRC Minimum
Unit 1	\$157,764,688
Unit 2	\$157,764,688
Totals	\$315,529,377

### **2.) Amount accumulated to the end of the calendar year preceding the date of the report.**

As of December 31, 2016, MEC had an accumulated after-tax balance of \$459,930,503.

	External Trust Fund Balance (Fair Market value)
Unit 1	\$229,895,582
Unit 2	\$230,034,921
Totals	\$459,930,503

### **3.) Schedule of the annual amount remaining to be collected.**

Within the meaning of 10 CFR 50.75(e)(1)(ii)(A), MEC collects the estimated total cost of decommissioning through rates established by "cost of service" or similar ratemaking regulation. Pursuant to the Iowa Utilities Board's rate case decision in Docket No. RPU-2013-0004, MidAmerican Energy Company's annual Iowa jurisdictional decommissioning cost included in the cost of service is \$1,595,964, divided equally between the two Quad Cities Units. MidAmerican plans to continue customer collections at that same level through the operating license period of the plant. The Illinois Commerce Commission has not authorized any current, ongoing collections for decommissioning from MEC's Illinois ratepayers. On October 28, 2004 the NRC issued renewed facility operating licenses for Quad Cities Nuclear Power Station Unit 1 (License No. DPR-29) and Unit 2 (License No. DPR-30) effective as of the date of

issuance and which shall expire at midnight on December 14, 2032, in effect extending the licenses an additional twenty years.

**4.) Assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections.**

In filings with the IUB, MEC periodically utilizes appropriate assumptions for decommissioning cost escalations and earnings rates. Solely for purposes of meeting NRC's minimum requirements, MEC has calculated that the current fund balances and annual funding levels, together with earnings at a 2 percent annual real rate of return as permitted by 10 CFR 50.75(e)(1)(ii), satisfy NRC's minimum funding assurance requirements. Given the current fund balances, anticipated earnings on the funds, and planned future contributions, MEC expects that fully adequate funding will be available for each unit at the time of decommissioning.

**5.) Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).**

MEC is not relying upon any contract for purposes of providing decommissioning funding within the meaning of 10 CFR 50.75(e)(1)(v).

**6.) Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report.**

MEC continues to use the external sinking fund method of providing decommissioning funding assurance.

**7.) Any material changes to trust agreements.**

No material changes were made to the trust agreements since MidAmerican's last Decommissioning Funding Status Report, in 2015, and no additional material changes were needed for compliance with 10 CFR 50.75(h)(2). The following table identifies the current Trustee and Investment Manager for each fund.


<b>Trust</b>	<b>Trustee</b>	<b>Investment Manager</b>
Unit 1, Qualified	The Bank of New York Mellon	NISA Investment Advisors
Unit 1, Non-Qualified	The Bank of New York Mellon	NISA Investment Advisors

Unit 2, Qualified	The Bank of New York Mellon	NISA Investment Advisors
Unit 2, Non-Qualified	The Bank of New York Mellon	NISA Investment Advisors

**8.) ISFSI Decommissioning Funding Plan.**

See Attachment No. 1.

MIDAMERICAN ENERGY COMPANY

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**ATTACHMENT No. 1**  
**ISFSI Decommissioning Funding Plan**

**1.0 SUMMARY DESCRIPTION**

MidAmerican Energy Company (MidAmerican) is a minority owner, with a 25% ownership share, of Quad Cities Nuclear Power Station (QCNPS) Units 1 and 2. MidAmerican co-owns QCNPS with Exelon Generation Company, LLC (Exelon). Exelon owns a 75% share of Units 1 and 2 and operates both units as well. Exelon and MidAmerican maintain decommissioning cost estimates for QCNPS, which are periodically updated. Imbedded in these decommissioning cost estimates are the costs associated with decommissioning the Independent Spent Fuel Storage Installation (ISFSI) located at QCNPS. The decommissioning cost estimate for the ISFSI has been extracted from the decommissioning cost estimate and is provided herein.

As Exelon has noted in its own 10 CFR 72.30(b) filing, the radiological decommissioning costs for an ISFSI typically consist of the costs associated with removing and disposing of small volumes of neutron-activated concrete and certain structural steel components. Exelon has indicated that no impact is expected upon soil and groundwater at the QCNPS site during the storage period contemplated in the decommissioning cost estimate for the site. Exelon has also noted that induced radioactivity at the QCNPS ISFSI is not expected to result in residual radioactivity in excess of 25 mRem/yr in an unrestricted release scenario, were no action to be taken to remediate the site.

Finally, Exelon has noted that it anticipates small, but measurable amounts of induced radioactivity to be present, and release of this material from the QCNPS site will require it to be disposed of at a NRC-licensed radioactive waste disposal facility. Therefore, Exelon has included the costs of this disposal in the decommissioning cost estimates.

**2.0 DETAILED DESCRIPTION**

**2.1 Reasonable Assurance of Funds Availability**

MidAmerican's trust fund balances for QCNPS Units 1 and 2 currently exceed the costs required for radiological decommissioning—see Tables 1 and 2, below. The excess assets will be used to decommission the on-site ISFSI. Table 1, below, shows the costs estimated for radiological decommissioning under 10 CFR 50.75(b) and (c), using the NRC Minimum formulas, and Table 2 shows MidAmerican's trust fund balances as of December 31, 2016. Both the radiological decommissioning costs and the trust fund balances are stated in 2016 dollars and are adjusted for MidAmerican's 25% ownership share.

## 2.2 Detailed Cost Estimate

Table 3, below, which is based upon the TLG decommissioning cost estimate for QCNPS, details the costs of ISFSI decommissioning in 2016 dollars. Table 3 shows the costs of performing this work (discussed further in the assumptions below), with an adequate contingency factor, to meet the 10 CFR 20.1402 criteria for unrestricted use. The cost of performing this ISFSI decommissioning work is approximately \$1,842,500 ( $\$3,685,000 \times \frac{1}{2} = \$1,842,500$  per Table 3, see the "Total Costs" column) per unit for MidAmerican's 25% share.

## 2.3 Assumptions

Consistent with the assumptions made by Exelon in its own 10 CFR 72.30(b) filing, MidAmerican has made the following assumptions with respect to ISFSI decommissioning:

1. Decommissioning costs in Table 3 are in 2016 dollars.
2. All values in Tables 1 - 4 are stated at MidAmerican's 25% ownership share for QCNPS. Costs for ISFSI decommissioning have been equally split between the two (2) units at QCNPS.
3. The costs for ISFSI decommissioning are expected to be incurred in the year in which DOE has accepted all spent fuel from the QCNPS site for disposal.

## 2.4 Method of Assurance

In accordance with 10 CFR 72.30(b)(4), Tables 1 - 3 demonstrate the method of assuring funds for ISFSI decommissioning, from 10 CFR 72.30(e). Exelon and MidAmerican periodically update the decommissioning cost estimate for QCNPS, and MidAmerican adjusts the funding levels, as necessary, in accordance with 10 CFR 50.75. (MidAmerican's annual Iowa jurisdictional decommissioning cost included in the cost of service is \$1,595,964, per the Iowa Utilities Board's rate case decision in Docket No. RPU-2013-0004. The Illinois Commerce Commission has not authorized any current, ongoing collection from MidAmerican's Illinois ratepayers.)

## 2.5 Volume of Subsurface Residual Radioactivity Requiring Remediation

Per review of site-specific 10 CFR 50.75(g) logs, Exelon indicates it has not identified any onsite, subsurface material containing residual radioactivity at the ISFSI located at QCNPS.

## 2.6 Certification of Financial Assurance

In accordance with 10 CFR 72.30(b), financial assurance, for decommissioning, has been provided in an amount that meets or exceeds the requirements of 10 CFR 50.75(b). As demonstrated in Tables 1 - 4, this provides the requisite financial assurance for the ISFSI decommissioning costs.

**Table 1**

	NRC Minimum as of 12/31/16, in 2016 Dollars
Unit 1	\$157,764,688
Unit 2	\$157,764,688
Totals	\$315,529,377

**Table 2**

	External Trust Fund Balance (Fair Market Value) as of 12/31/16, in 2016 Dollars
Unit 1	\$229,895,582
Unit 2	\$230,034,921
Totals	\$459,930,503

**Table 3 (ISFSI Decommissioning Costs)**  
(\$ 1,000s)

MidAmerican's Ownership Share Unit 1 & Unit 2 (2016 Dollars)	Removal Costs	Packaging Costs	Transport Cost	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	Cu.FT Class A LLRW	Burial / Processed Weight (lbs)	Craft Manhours	Utility and Contractor Manhours
ISFSI License Termination	155	91	345	1,223	752	642	3,207	29,308	1,589,603	6,451	528
Insurance	-	-	-	-	39	10	48	-	-	-	-
Property Taxes	-	-	-	-	82	21	103	-	-	-	-
Heavy Equipment Rental	84	-	-	-	-	21	105	-	-	-	-
Plant Energy Budget	-	-	-	-	12	3	15	-	-	-	-
Security Staff Cost	-	-	-	-	76	19	95	-	-	-	1,245
Utility Staff Cost	-	-	-	-	91	23	114	-	-	-	943
<b>Total</b>	<b>239</b>	<b>91</b>	<b>345</b>	<b>1,223</b>	<b>1,051</b>	<b>737</b>	<b>3,685</b>	<b>29,308</b>	<b>1,589,603</b>	<b>6,451</b>	<b>2,716</b>



**Table 4 (Total Decommissioning Costs per NRC Minimum Formulas)**  
(2016 Dollars)

**MidAmerican Energy Company**  
**Quad Cities, Units 1 & 2**  
(2,957 MWT)  
As of 12/31/2016

REACTOR TYPE: BWR  
 BASE COST (1986 Cost) \$ 130,613,000  
 (\$104 + 0.009P (in MWT))

Escalation Factors	12/31/2016	Base Factor	Base Year	Source:
Labor	125.7	2.08	2005	Bureau of Labor Statistics: Series CIU2010000000230I
Energy				
Power (P)	215.0	114.2	1986	Bureau of Labor Statistics: Series WPU0543
Fuel (F)	152.0	82.0	1986	Bureau of Labor Statistics: Series WPU0573
Waste Burial (B)	13.132			NUREG-1307, Rev 16, Table 2-1
<b>Calculation</b>				
Labor Factor (L)	2.61	x 0.65 =	1.70	Labor Formula: L=Labor_CurrentYear Factor * Labor_Base Factor
Energy Factor (E)	1.87	x 0.13 =	0.24	Energy Formula: E = 0.54*(Power_CurrentYearFactor/Power_BaseYear)+ 0.46*(Fuel_CurrentYearFactor/Fuel_BaseYear)
Waste Factor (B)	13.132	x 0.22 =	2.89	
<b>Total Escalation Factor:</b>			<b>4.83</b>	Total Escalation Formula: 0.65L + 0.13E + 0.22B

Total Minimum Assurance Unit 1 & 2 (100%):

**\$ 1,262,117,508**

**MidAmerican**

Minimum Assurance (25%):

\$ 315,529,377