



February 26, 2013

Attention: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Serial No. 13-075
NL&OS/TJS R0
Docket No. 50-305
License No. DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
UPDATE TO IRRADIATED FUEL MANAGEMENT PLAN PURSUANT TO 10 CFR
50.54(bb)

By letter dated December 19, 2008 (Reference 1), and as supplemented by letter dated July 1, 2009 (Reference 2), Dominion Energy Kewaunee, Inc. (DEK) submitted the Irradiated Fuel Management Plan for Kewaunee Power Station (KPS), pursuant to 10 CFR 50.54(bb). 10 CFR 50.54(bb) requires submittal of this report five years prior to the expiration of reactor operating license. This report was submitted in 2008 because, at that time, KPS was approaching five years from operating license expiration. By letter dated September 28, 2009 (Reference 3) the NRC staff notified DEK that the Irradiated Fuel Management Plan submitted by KPS in references 1 and 2 complied with 10 CFR 50.54(bb) and approved the program on a preliminary basis. Subsequently, on February 11, 2011, NRC issued a renewed operating license for KPS which extended the expiration date of the operating license to December 21, 2033.

By letters dated November 2, 2012, and February 25, 2013 (references 4 and 5), DEK notified NRC of its intention to permanently cease power operations at KPS on May 7, 2013. Pursuant to 10 CFR 50.54(bb), licensees are required to notify the NRC of any significant changes in the proposed Irradiated Fuel Management Plan as described in the initial notification.

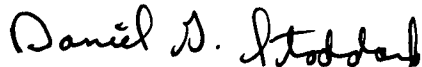
DEK's determination to permanently cease operation of KPS has resulted in changes to both the timing and choice of decommissioning method from that assumed in DEK's previous report pursuant to 10 CFR 50.75(f)(3) (Reference 6), which provided DEK's preliminary decommissioning cost analysis, and report pursuant to 10 CFR 50.54(bb), which provided DEK's Irradiated Fuel Management Plan. DEK is submitting a new site-specific decommissioning cost analysis which includes the projected cost for managing irradiated fuel as Attachment 1 to the KPS Post-Shutdown Decommissioning Activities Report (Reference 7). The changes in the timing and choice of decommissioning methodology have also resulted in changes in the manner in which DEK proposes to provide financial assurance for spent fuel management. Therefore, an update to the Irradiated Fuel Management Plan required by 10 CFR 50.54(bb) is submitted as Attachment 1 to this letter, superseding the prior 50.54(bb) submittals. The analysis provided in Attachment 1 to this letter indicates that the existing decommissioning trust funds for KPS are adequate to fund estimated license termination (radiological decommissioning), spent fuel management, and site restoration costs. DEK recognizes

ADD1
NRK

that use of the decommissioning funds for spent fuel management necessitates further discussions with the NRC Staff. DEK has already initiated these discussions.

If you have any questions or require additional information please contact Mr. Craig Sly at (804) 273-2784.

Sincerely,



Daniel G. Stoddard
Senior Vice President - Nuclear Operations
Dominion Energy Kewaunee, Inc.

Attachment:

1. Kewaunee Power Station Updated Irradiated Fuel Management Plan - 10 CFR 50.54(bb)

References:

1. Letter from J. A. Price to NRC Document Control Desk, "Report Pursuant to 10 CFR 50.54(bb)," dated December 19, 2008. [ADAMS Accession No. ML083540651]
2. Letter from D. A. Heacock to NRC Document Control Desk, "Response to Requests for Additional Information Concerning Reports Submitted Pursuant to 10 CFR 50.54(bb) and 50.75(f)(3)," dated July 1, 2009. [ADAMS Accession No. ML091880776]
3. Letter from K. D. Feintuch (NRC) to D. A. Heacock (DEK), Kewaunee Power Station – Irradiated Fuel Management Program and Preliminary Decommissioning Cost Estimate (TAC Nos. ME0253 and ME0275)," dated September 28, 2009. [ADAMS Accession No. ML092321079]
4. Letter from David A. Heacock (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated November 2, 2012.
5. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated February 25, 2013.
6. Letter from J. A. Price (DEK) to NRC Document Control Desk, "Report Pursuant to 10 CFR 50.73(f)(3)," dated December 18, 2008. [ADAMS Accession No. ML090300120]
7. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Kewaunee Power Station Post-Shutdown Decommissioning Activities Report," dated February 26, 2013.

Commitments made in this letter: None

cc: U. S. Nuclear Regulatory Commission
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ATTACHMENT 1

KEWAUNEE POWER STATION
UPDATED IRRADIATED FUEL MANAGEMENT PLAN - 10 CFR 50.54(bb)

DOMINION ENERGY KEWAUNEE, INC.

Kewaunee Power Station
Irradiated Fuel Management Plan - 10 CFR 50.54(bb)

I. Background and Introduction

By letter dated December 19, 2008 (Reference 1), and as supplemented by letter dated July 1, 2009 (Reference 2), Dominion Energy Kewaunee, Inc. (DEK) submitted the Irradiated Fuel Management Plan for Kewaunee Power Station (KPS), pursuant to 10 CFR 50.54(bb). 10 CFR 50.54(bb) requires submittal of this report five years prior to the expiration of reactor operating license. This report was submitted in 2008 because, at that time, KPS was approaching five years from operating license expiration. By letter dated September 28, 2009 (Reference 3) the NRC staff notified DEK that the Irradiated Fuel Management Plan for KPS complied with 10 CFR 50.54(bb) and approved the program on a preliminary basis. Subsequently, on February 11, 2011, DEK received a renewed operating license which extended the expiration of the operating license to December 21, 2033.

By letters dated November 2, 2012, and February 25, 2013 (References 4 and 5), DEK notified NRC of its intention to permanently cease power operations at KPS on May 7, 2013.

Pursuant to 10 CFR 50.54(bb), licensees are required to notify the NRC of any significant changes in the proposed Irradiated Fuel Management Plan as described in the initial notification. As a result of DEK's determination to permanently cease operation of KPS and changes to the timing and method of decommissioning, DEK is changing the KPS Irradiated Fuel Management Plan. Therefore, DEK is submitting this plan update to notify the NRC of these changes and comply with the requirements of 10 CFR 50.54(bb).

EnergySolutions, LLC has prepared a site-specific decommissioning cost analysis for KPS. The cost analysis identifies the details, schedules, and costs of spent fuel management activities associated with the Irradiated Fuel Management Plan, along with license termination and site restoration activities and costs. This decommissioning cost analysis is provided as Attachment 1 to the Kewaunee Post-Shutdown Decommissioning Activities Report (Reference 6). The cost analysis describes the basis for the assumptions regarding the Department of Energy (DOE) acceptance of spent fuel. As discussed in the *EnergySolutions* cost analysis, (and subject to the assumptions, qualifications, and reservations stated in the cost analysis), the KPS updated Irradiated Fuel Management Plan is based on commencement of acceptance of spent fuel by DOE in 2021, consistent with the current DOE strategy.

II. Irradiated Fuel Management Strategy

Following core off-load, spent fuel will be stored in the spent fuel pool until transfer to the KPS Independent Spent Fuel Storage Installation (ISFSI). While spent fuel is stored in the spent fuel pool, spent fuel storage and handling systems will be maintained in operation. Following transfer of all spent fuel from the spent fuel pool to the KPS ISFSI, spent fuel storage and handling systems will be removed from operation. All spent fuel will be stored at the KPS ISFSI until transferred to DOE.

The Irradiated Fuel Management Plan major periods, including start and end dates and associated costs for each period are identified in Table 1 below. The identified Spent Nuclear Fuel (SNF) Periods are developed in and align with the site-specific decommissioning cost analysis (Reference 6, Attachment 1).

Table 1

Irradiated Fuel Management Plan - Summary Schedule

Cost and Schedule Summary (2012 Dollars in millions)					
Spent Fuel - 50.54 (bb)					
Period No.	Period Description	Start	End	Years	Total Cost
SNF Pd 1	Spent Fuel Planning, Cooling and Transfer to Dry Storage	7/1/2013	7/1/2020	7.00	\$ 175.2
SNF Pd 2	Dry Storage During Completion SAFSTOR Preparations	7/1/2020	12/28/2020	0.49	\$ 2.7
SNF Pd 3	Dry Storage During Dormancy	12/28/2020	10/19/2050	29.80	\$ 161.7
SNF Pd 4	ISFSI Demolition	3/30/2073	7/31/2073	0.33	\$ 2.6
Category Total				37.62	\$ 342.2

A. Spent Fuel Planning, Cooling, and Transfer to Dry Storage (SNF Period 1)

This period begins when all spent fuel is off-loaded from the reactor vessel into the spent fuel pool and the certification of permanent defueling letter is submitted to the NRC in accordance with 10 CFR 50.82(a)(1)(ii). During this period, measures will be planned, designed and implemented to ensure spent fuel storage and handling systems are capable of functioning to support fuel storage in the spent fuel pool, and to facilitate transfer of the spent fuel to the ISFSI. Total cost of implementation of the measures described above is expected to be approximately \$7.8 million.

Systems and structures needed to support the safe storage and transfer of spent fuel, such as security, fire protection, and environmental and radiological monitoring, will be maintained in accordance with applicable requirements. Equipment maintenance, inspection, and operations will be performed on these systems and structures as appropriate. Annual spent fuel management costs during this period are expected to be approximately \$12.5 million.

During this period, the ISFSI capacity will be expanded, at a cost of approximately \$5.1 million, to accommodate transfer of all spent fuel in the SFP to dry storage.

Immediately following full core offload into the spent fuel pool, 1079 fuel assemblies will be in storage in the spent fuel pool, with an additional 256 spent fuel assemblies in storage in multi-purpose canisters (MPCs) at the ISFSI. During this period, sufficient NUHOMS Model 102 or HSM-H Horizontal Storage Modules (HSMs) and NUHOMS KPS32PT or KPS24PT Dry Shielded Canisters will be procured as required to support the transfer of all spent fuel to the ISFSI in accordance with the fuel movement schedule as outlined below in Table 2 "Spent Fuel Shipping Schedule." The total cost to move all spent fuel from the spent fuel pool to the ISFSI is expected to be \$72.7 million.

During this period, spent fuel pool modifications related to Fukushima beyond design basis efforts will be implemented at an expected cost of \$2.3 million

All spent fuel will be in storage at the ISFSI by the completion of SNF Period 1.

B. Dry Storage during Completion of SAFSTOR Preparations (SNF Period 2)

During this period, spent fuel will have been transferred to the ISFSI while SAFSTOR preparations are completed. Programs and procedures needed to support safe operation of the ISFSI will be maintained in accordance with applicable requirements. Equipment maintenance, monitoring, inspection, and operations will be performed as necessary. Annual spent fuel management costs during this period are expected to be \$5.4 million.

C. Dry Storage during Dormancy (SNF Period 3)

This period begins when the plant is in SAFSTOR. The spent fuel remains in the ISFSI while the plant is in a dormant SAFSTOR condition. Programs and procedures required to support safe operation of the ISFSI will be maintained in accordance with applicable requirements. Equipment maintenance, monitoring, inspection, and operations will be performed as necessary. Annual spent fuel management costs during this period are expected to be \$5.4 million.

As stated in the site specific decommissioning cost analysis referenced above, DEK assumes that the DOE will begin accepting spent fuel during this period. Shipments of fuel to the DOE will be from the ISFSI as outlined below in Table 2, "Spent Fuel Shipping Schedule." Upon completion of this period, all spent fuel will have been transferred to the DOE. The total cost of fuel shipments to the DOE from the KPS ISFSI is expected to be approximately \$0.4 million.

Table 2**Spent Fuel Shipping Schedule**

Kewaunee Power Station Unit 1
SAFSTOR Methodology Spent Fuel Shipping Schedule
2021 DOE Acceptance, Dry Storage

Year	On-Site Transfers			On-Site Inventory			Off-Site Transfers		
	Fuel Assemblies Discharged	No Dry Modules	Assemblies Transferred from Pool to Dry Storage	Assemblies in Fuel Pool Storage	Assemblies in Dry Storage	Total Assemblies in On Site Storage	Total Assemblies to DOE	Assemblies Shipped to DOE From Pool	Assemblies Shipped to DOE from Dry Storage
2008	45	0	0	1,081	0	1,081	0	0	0
2009	44	2	64	1,061	64	1,125	0	0	0
2010	0	2	64	997	128	1,125	0	0	0
2011	45	4	128	914	256	1,170	0	0	0
2012	44	0	0	958	256	1,214	0	0	0
2013	121	0	0	1,079	256	1,335	0	0	0
2014	0	6	192	887	448	1,335	0	0	0
2015	0	0	0	887	448	1,335	0	0	0
2016	0	0	0	887	448	1,335	0	0	0
2017	0	18	576	311	1024	1,335	0	0	0
2018	0	0	0	311	1024	1,335	0	0	0
2019	0	13	311	0	1335	1,335	0	0	0
2020	0	0	0	0	1335	1,335	0	0	0
2021	0	0	0	0	1271	1,271	64	0	64
2022	0	0	0	0	1271	1,271	0	0	0
2023	0	0	0	0	1239	1,239	32	0	32
2024	0	0	0	0	1207	1,207	32	0	32
2025	0	0	0	0	1143	1,143	64	0	64
2026	0	0	0	0	1047	1,047	96	0	96
2027	0	0	0	0	983	983	64	0	64
2028	0	0	0	0	919	919	64	0	64
2029	0	0	0	0	855	855	64	0	64
2030	0	0	0	0	823	823	32	0	32
2031	0	0	0	0	759	759	64	0	64
2032	0	0	0	0	695	695	64	0	64
2033	0	0	0	0	631	631	64	0	64
2034	0	0	0	0	599	599	32	0	32
2035	0	0	0	0	567	567	32	0	32
2036	0	0	0	0	535	535	32	0	32
2037	0	0	0	0	503	503	32	0	32
2038	0	0	0	0	439	439	64	0	64
2039	0	0	0	0	407	407	32	0	32
2040	0	0	0	0	375	375	32	0	32
2041	0	0	0	0	343	343	32	0	32
2042	0	0	0	0	279	279	64	0	64
2043	0	0	0	0	247	247	32	0	32
2044	0	0	0	0	215	215	32	0	32
2045	0	0	0	0	183	183	32	0	32
2046	0	0	0	0	151	151	32	0	32
2047	0	0	0	0	87	87	64	0	64
2048	0	0	0	0	55	55	32	0	32
2049	0	0	0	0	23	23	32	0	32
2050	0	0	0	0	0	0	23	0	23
2051	0	0	0	0	0	0	0	0	0

No. Post S/D MPCs for fuel 37

No. Post S/D MPCs for GTCC 0

D. ISFSI Decommissioning (SNF Period 4)

The KPS ISFSI was designed and installed under a general license in accordance with 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High Level Radioactive Waste, and Reactor-Related Greater than Class C Waste." The spent fuel storage casks are licensed in accordance with an NRC Certificate of Compliance for the Standardized NUHOMS Spent Fuel Storage System. After DOE acceptance of the spent fuel, any radiological decommissioning associated with the ISFSI would be accomplished as a part of site decommissioning under the Part 50 license. Under these assumptions, the total cost of decommissioning the KPS ISFSI is expected to be approximately \$3.2 million which includes both radiological and non-radiological costs.

III. Financial Assurance

The site-specific decommissioning cost analysis prepared by *EnergySolutions* projects the total cost of Spent Fuel Management activities to be \$342.2 million in 2012 dollars. A cash flow analysis provided in Table 3 below shows that the KPS decommissioning trust fund, with projected earnings, is sufficient to cover the estimated costs of license termination (radiological decommissioning), spent fuel management, and site restoration.

The cash flow analysis, which is based on the site-specific decommissioning cost analysis referenced above, applies an allowed 2% real rate of return during the decommissioning period and reflects the starting balance of the KPS decommissioning trust fund as of December 31, 2012.

Table 3**Annual Cash Flow Analysis**

Kewaunee - SAFSTOR Methodology		
Annual Cash Flow Analysis - Total Decommissioning, Spent Fuel Management and Site Restoration Costs		
(In Millions of Dollars \$)		
	Date	Amount
Current Value of Qualified Fund as of	12/31/2012	\$ 578.609
Current Value of Non Qualified Fund as of	12/31/2012	\$ -
Total Trust Fund Balances as of	12/31/2012	\$ 578.609
NRC Minimum as of	12/31/2012	\$ 449.687
Start of Decommissioning	7/1/2013	
Decommissioning Funds value at Calculation date	12/31/2012	\$ 578.609
Total Estimated Costs at Calculation date	12/31/2012	\$ 919.872

0.000%	Cost Escalation Rate	Start of Decom to End of Decom - Assumes 0% Decom cost escalation rate
2.000%	Fund Growth Rate	Start of Decom to End of Decom - Assumes 2% Real Rate of Return (RRoR)

Table 3 (cont'd)**Annual Cash Flow Analysis**

Kewaunee - SAFSTOR Methodology Annual Cash Flow Analysis - Total Decommissioning, Spent Fuel Management and Site Restoration Costs (In Millions of Dollars \$)								
Year	Column 1 Beginning of Year Balance	Column 2 Earnings on Trust Funds (Reflects 2% RROR)	Column 3 Total License Termination Expenditures (Reflects 0% Esc)	Column 4 Total Spent Fuel Mgt Expenditures (Reflects 0% Esc)	Column 5 Total Site Restoration Expenditures (Reflects 0% Esc)	Column 6 Total SAFSTOR Expenditures (Reflects 0% Esc)	Column 7 End of Year Balance	Column 8 Total SAFSTOR Expenditures (in 12/31/2012 \$)
2013	\$ 578.609	\$ 11.102	\$ 30.849	\$ 16.200	\$ -	\$ 47.048	\$ 542.662	\$ 47.048
2014	\$ 542.662	\$ 9.875	\$ 68.819	\$ 29.023	\$ -	\$ 97.842	\$ 454.695	\$ 97.842
2015	\$ 454.695	\$ 8.787	\$ 4.492	\$ 26.163	\$ -	\$ 30.655	\$ 432.828	\$ 30.655
2016	\$ 432.828	\$ 8.335	\$ 4.492	\$ 27.700	\$ -	\$ 32.192	\$ 408.971	\$ 32.192
2017	\$ 408.971	\$ 7.858	\$ 4.492	\$ 27.671	\$ -	\$ 32.163	\$ 384.666	\$ 32.163
2018	\$ 384.666	\$ 7.403	\$ 4.492	\$ 24.510	\$ -	\$ 29.002	\$ 363.067	\$ 29.002
2019	\$ 363.067	\$ 7.037	\$ 4.492	\$ 17.963	\$ -	\$ 22.455	\$ 347.649	\$ 22.455
2020	\$ 347.649	\$ 6.684	\$ 18.169	\$ 8.723	\$ -	\$ 26.891	\$ 327.441	\$ 26.891
2021	\$ 327.441	\$ 6.478	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 326.801	\$ 7.119
2022	\$ 326.801	\$ 6.465	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 326.147	\$ 7.119
2023	\$ 326.147	\$ 6.452	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 325.480	\$ 7.119
2024	\$ 325.480	\$ 6.438	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 324.800	\$ 7.119
2025	\$ 324.800	\$ 6.425	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 324.106	\$ 7.119
2026	\$ 324.106	\$ 6.411	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 323.399	\$ 7.119
2027	\$ 323.399	\$ 6.397	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 322.677	\$ 7.119
2028	\$ 322.677	\$ 6.382	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 321.941	\$ 7.119
2029	\$ 321.941	\$ 6.368	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 321.190	\$ 7.119
2030	\$ 321.190	\$ 6.353	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 320.424	\$ 7.119
2031	\$ 320.424	\$ 6.337	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 319.642	\$ 7.119
2032	\$ 319.642	\$ 6.322	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 318.846	\$ 7.119
2033	\$ 318.846	\$ 6.298	\$ 2.517	\$ 5.404	\$ -	\$ 7.922	\$ 317.222	\$ 7.922
2034	\$ 317.222	\$ 6.273	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 316.376	\$ 7.119
2035	\$ 316.376	\$ 6.256	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 315.514	\$ 7.119
2036	\$ 315.514	\$ 6.239	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 314.635	\$ 7.119
2037	\$ 314.635	\$ 6.222	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 313.738	\$ 7.119
2038	\$ 313.738	\$ 6.204	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 312.823	\$ 7.119
2039	\$ 312.823	\$ 6.185	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 311.889	\$ 7.119
2040	\$ 311.889	\$ 6.167	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 310.937	\$ 7.119
2041	\$ 310.937	\$ 6.148	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 309.966	\$ 7.119
2042	\$ 309.966	\$ 6.128	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 308.976	\$ 7.119
2043	\$ 308.976	\$ 6.108	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 307.966	\$ 7.119
2044	\$ 307.966	\$ 6.088	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 306.935	\$ 7.119
2045	\$ 306.935	\$ 6.068	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 305.884	\$ 7.119
2046	\$ 305.884	\$ 6.047	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 304.812	\$ 7.119
2047	\$ 304.812	\$ 6.025	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 303.719	\$ 7.119
2048	\$ 303.719	\$ 6.003	\$ 1.714	\$ 5.404	\$ -	\$ 7.119	\$ 302.604	\$ 7.119
2049	\$ 302.604	\$ 5.978	\$ 1.714	\$ 5.662	\$ -	\$ 7.377	\$ 301.205	\$ 7.377
2050	\$ 301.205	\$ 5.960	\$ 1.721	\$ 4.676	\$ -	\$ 6.398	\$ 300.768	\$ 6.398

Table 3 (cont'd)**Annual Cash Flow Analysis**

Kewaunee - SAFSTOR Methodology								
Annual Cash Flow Analysis - Total Decommissioning, Spent Fuel Management and Site Restoration Costs								
(in Millions of Dollars \$)								
Year	Column 1 Beginning of Year Balance	Column 2 Earnings on Trust Funds (Reflects 2% RRoR)	Column 3 Total License Termination Expenditures (Reflects 0% Esc)	Column 4 Total Spent Fuel Mgt Expenditures (Reflects 0% Esc)	Column 5 Total Site Restoration Expenditures (Reflects 0% Esc)	Column 6 Total SAFSTOR Expenditures (Reflects 0% Esc)	Column 7 End of Year Balance	Column 8 Total SAFSTOR Expenditures (in 12/31/2012 \$)
2051	\$ 300.768	\$ 5.998	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 305.035	\$ 1.731
2052	\$ 305.035	\$ 6.083	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 309.388	\$ 1.731
2053	\$ 309.388	\$ 6.170	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 313.827	\$ 1.731
2054	\$ 313.827	\$ 6.259	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 318.356	\$ 1.731
2055	\$ 318.356	\$ 6.350	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 322.975	\$ 1.731
2056	\$ 322.975	\$ 6.442	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 327.686	\$ 1.731
2057	\$ 327.686	\$ 6.536	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 332.492	\$ 1.731
2058	\$ 332.492	\$ 6.633	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 337.394	\$ 1.731
2059	\$ 337.394	\$ 6.731	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 342.393	\$ 1.731
2060	\$ 342.393	\$ 6.831	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 347.493	\$ 1.731
2061	\$ 347.493	\$ 6.933	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 352.695	\$ 1.731
2062	\$ 352.695	\$ 7.037	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 358.001	\$ 1.731
2063	\$ 358.001	\$ 7.143	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 363.413	\$ 1.731
2064	\$ 363.413	\$ 7.251	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 368.933	\$ 1.731
2065	\$ 368.933	\$ 7.361	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 374.563	\$ 1.731
2066	\$ 374.563	\$ 7.474	\$ 1.731	\$ -	\$ -	\$ 1.731	\$ 380.307	\$ 1.731
2067	\$ 380.307	\$ 7.474	\$ 13.169	\$ -	\$ -	\$ 13.169	\$ 374.612	\$ 13.169
2068	\$ 374.612	\$ 7.266	\$ 22.670	\$ -	\$ -	\$ 22.670	\$ 359.208	\$ 22.670
2069	\$ 359.208	\$ 6.507	\$ 67.698	\$ -	\$ -	\$ 67.698	\$ 298.017	\$ 67.698
2070	\$ 298.017	\$ 4.874	\$ 108.612	\$ -	\$ -	\$ 108.612	\$ 194.279	\$ 108.612
2071	\$ 194.279	\$ 2.893	\$ 99.265	\$ -	\$ -	\$ 99.265	\$ 97.907	\$ 99.265
2072	\$ 97.907	\$ 1.626	\$ 11.087	\$ -	\$ 22.132	\$ 33.219	\$ 66.314	\$ 33.219
2073	\$ 66.314	\$ 1.172	\$ 0.109	\$ 2.622	\$ 12.671	\$ 15.402	\$ 52.084	\$ 15.402
Cash Flow Cost Estimate (in 12/31/2012\$)							\$ 919.872	
Cash Flow Cost Estimate (Reflects 0% Escalation)			\$ 542.841	\$ 342.228	\$ 34.803	\$ 919.872		
Estimated Fund Balance - end of Decommissioning (Reflects 0.0% Escalation & 2.0% Real Rate of Return Fund Growth Rate)							\$ 52.084	
Estimated Fund Balance - end of Decommissioning (Discounted to 2013 \$)					Discount Rate = 2.00%		\$ 15.874	

Table 3 Definitions:**Column 1: Beginning of Year Balance**

Reflects the beginning-of-year Trust Fund balance at a 0.0% escalation rate and 2% Real Rate of Return (RRoR) on fund growth.

Column 2: Earnings on Trust Funds

Reflects earnings on funds remaining in the trust. A 2.0% RRoR Fund growth rate is used for 2013 through 2073 which reflects the allowed 2.0% real rate of return over a 0.0% cost escalation rate. The annual 2.0% RRoR earnings are calculated on the beginning balance plus 50% of the projected annual expenditure for each year.

Column 3: Total License Termination Expenditures

Reflects the annual License Termination Plan cost portion of the *EnergySolutions* Cost Analysis (Attachment 1 to Reference 6) at a 0.0% escalation rate.

Column 4: Total Spent Fuel Management Expenditures

Reflects the annual Irradiated Fuel Management Plan cost portion of the *EnergySolutions* Cost Analysis (Attachment 1 to Reference 6) at a 0.0% escalation rate.

Column 5: Total Site Restoration Expenditures

Reflects the annual Site Restoration Plan cost portion of the *EnergySolutions* Cost Analysis (Attachment 1 to Reference 6) at a 0.0% escalation rate.

Column 6: Total SAFSTOR Expenditures

Reflects the annual Total Decommissioning Plan cost from the *EnergySolutions* Cost Analysis (Attachment 1 to Reference 6) at a 0.0% escalation rate.

Column 7: End of Year Balance

Reflects the end of year Trust Fund Balance after all projected earnings are added and all projected expenditures are deducted for the year specified at a 0.0% escalation rate and 2.0% RRoR on fund growth.

Column 8: Total SAFSTOR Expenditures

Reflects the total of License Termination, Spent Fuel Management, and Site Restoration annual costs from the *EnergySolutions* Cost Analysis (Attachment 1 to Reference 6) in 2012 dollars.

This cash flow analysis indicates that approximately \$52 million will remain in the KPS decommissioning trust fund after all decommissioning activities including radiological decommissioning, spent fuel management, and site restoration are completed based on a 0.0% escalation rate and a 2.0% Real Rate of Return on Trust Funds.

A Parent Support Agreement in the amount of \$60 million is in place for the purposes of supplementing DEK in the event of an operational outage lasting six months or more and for decommissioning of the plant. This Parent Support Agreement will remain in place and provides additional financial assurance for decommissioning and spent fuel management.

IV. NRC Approvals

This spent fuel management plan assumes withdrawals from the decommissioning trust for spent fuel management purposes. DEK recognizes that use of the decommissioning funds for spent fuel management necessitates further discussions with and approval by the NRC Staff, which may include an exemption from 10 CFR 50.82(a)(8)(i)(A). DEK has initiated these discussions.

In accordance with 10 CFR 50.82(a)(8)(vii), DEK will annually submit to the NRC by March 31st a report on the status of the funding for managing spent fuel. The report will include, current through the end of the previous calendar year, the amount of funds accumulated to cover the cost of managing the spent fuel, the projected cost of managing spent fuel until title to the fuel and possession of the fuel is transferred to the

Secretary of Energy, and if the funds accumulated do not cover the projected cost, a plan to provide additional funding assurance using one of the methods allowed by NRC regulations.

V. Summary

The spent fuel management activities described in this updated Irradiated Fuel Management Plan must be performed in conjunction with license termination activities. The annual cash flow analysis in this plan demonstrates that the KPS decommissioning trust fund with projected earnings is sufficient to cover the estimated costs of License Termination (radiological decommissioning), Spent Fuel Management, and Site Restoration.

References:

1. Letter from J. A. Price to NRC Document Control Desk, "Report Pursuant to 10 CFR 50.54(bb)," dated December 19, 2008. [ADAMS Accession No. ML083540651]
2. Letter from D. A. Heacock to NRC Document Control Desk, "Response to Requests for Additional Information Concerning Reports Submitted Pursuant to 10 CFR 50.54(bb) and 50.75(f)(3)," dated July 1, 2009. [ADAMS Accession No. ML091880776]
3. Letter from K. D. Feintuch (NRC) to D. A. Heacock (DEK), "Kewaunee Power Station – Irradiated Fuel Management Program and Preliminary Decommissioning Cost Estimate (TAC Nos. ME0253 and ME0275)," dated September 28, 2009. [ADAMS Accession No. ML092321079]
4. Letter from David A. Heacock (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated November 2, 2012.
5. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated February 25, 2013.
6. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Kewaunee Power Station Post-Shutdown Decommissioning Activities Report," dated February 26, 2013.