In the Matter of the 2020 Wolf Creek Triennial Decommissioning Financing Plan	))	21-WCNE-103-GIE

STAFF DIRECT TESTIMONY

PREPARED BY

LEO M. HAYNOS

UTILITIES DIVISION

KANSAS CORPORATION COMMISSION

December 15, 2020

Q. Would you please state your name and business address?

A. My name is Leo M. Haynos. My business address is 1500 Southwest Arrowhead Road, Topeka Kansas, 66604.

Q. By whom and in what capacity are you employed?

A. I am employed by the Kansas Corporation Commission (Commission), Utilities Division as the Chief Engineer.

Q. Please state your educational and employment background.

A. I received a Bachelor of Science Degree in Petroleum Engineering from New Mexico Institute of Mining and Technology, Socorro, New Mexico. I have worked in various capacities as an engineer for the past 39 years. I am licensed as a professional engineer in the State of Kansas. For the past 22 years, I have worked for the Kansas Corporation Commission where I have been responsible for several functions including managing the pipeline safety program and the administration and enforcement of the underground utility damage prevention program. Prior to working for the Commission, I worked three years as an engineer for the Kansas Department of Health and Environment Bureau of Air and Radiation and 13 years with Atlantic Richfield Corporation.

SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. My testimony provides a review of the Wolf Creek Nuclear Operating Corporation (Wolf Creek) Decommissioning Financing Plan (Plan). My testimony focuses on the Decommissioning Cost Study (DCS)[1], which is the major component of the Plan. I discuss the reasonableness of the study's assumptions in estimating the cost and method used to

[1] See Attachment 2 of Application.

decommission Wolf Creek. I also discuss the Commission's statutory obligations to review and approve a Decommissioning Financing Plan required to be submitted by Wolf Creek.

DECOMMISSIONING FINANCING PLAN

Q. Please discuss the origins of the Plan, the DCS, and the need for this Docket.

A. Kansas statutes require Wolf Creek to submit a Decommissioning Financing Plan[2] to the Commission, and the statutes require the Commission to review such Plan[3] at least every five years. In previous dockets regarding this matter, the Commission modified the frequency of the Plan submittal and the subsequent review to be performed every three years. Docket 20-WCNE-103-GIE represents the triennial filing of the Plan and the 12th time the Plan has come before the Commission for its review. The purpose of this Docket is to: approve a decommissioning methodology; determine a reasonable estimate of the Wolf Creek decommissioning costs; and set a Cost Escalation Rate. These decisions by the Commission will be used to address accrual levels of the respective Decommissioning Trust Accounts of the Owner Utilities[4] to assure sufficient funds are collected from Kansas ratepayers to pay for the decommissioning of the Wolf Creek.

Q. What are the Commission's obligations under the Kansas statutes dealing with nuclear plant decommissioning?

A. For any review of a Decommissioning Financing Plan, K.S.A. 66-128*o* requires the Commission to consider: (1) The estimated date of closing the nuclear power generating facility; (2) the estimated cost of decommissioning; (3) the reasonableness of the method

[2] See K.S.A. 66-128m.
[3] See K.S.A. 66-128*o*.
[4] Evergy Kansas Metro owns 47%; Kansas Gas & Electric dba Evergy Kansas Central owns 47%; and Kansas Electric Power Cooperative owns 6%. Their responsibility for decommissioning costs is proportionate to their ownership. A portion of Evergy Kansas Metro's responsibility is set by the Missouri Public Service Commission.

selected for cost estimate purposes; and (4) the adequacy of plans for financing the decommissioning and any shortfall resulting from a premature closing.

Q. **What are Wolf Creek's obligations under the Kansas statutes dealing with nuclear plant decommissioning?**

A. K.S.A. 66-128m(b) provides a list of 11 requirements that are required to be addressed by the utility responsible for nuclear plant decommissioning. In a previous triennial filing proceeding[5], the Commission approved a Stipulation and Agreement which required Wolf Creek to address each of the 11 requirements found in K.S.A. 66-128m(b). Exhibit LMH-1 provides a summary of the statutory requirements regarding decommissioning.

Q. Do the filings in the current Docket address the 11 requirements found in the statute?

A. Yes. The Joint Pleading contains six attachments which address the 11 statutory requirements of the decommissioning plan. Attachment 7 to the Application provides an update on nuclear plan decommissioning efforts in the United States and the role of the U.S. Department of Energy in meeting its obligations regarding spent nuclear fuel.

Q. Did you review the adequacy of the filed attachments?

A. I have read through the documents and conclude the filing requirement is complete. My review of the adequacy of the filing focused on Attachment 2, the Decommissioning Cost Study, and Attachment 7, Commission Requested Information. Attachments 3 through 6, which deal with the financing of the decommissioning plan, were reviewed by Staff witness, Adam Gatewood. The remaining attachment, Attachment 1, is a copy of the Joint Resolution which was approved by the Commission in the 15-093 Docket.

[5] See 15-WCNE-093-MIS.

DECOMMISSIONING COST STUDY (DCS)

Q. Is the DCS a required component of the Plan?

A. Yes. K.S.A. 66-128o(a)(2) and (3) oblige the Commission to review the estimated cost of decommissioning and the reasonableness of the method selected for cost estimating purposes.

Q. Has the DCS been properly prepared?

A. Yes. The DCS has been properly prepared to meet the statutory requirement found in K.S.A. 66-128*m*. The study is an update/revision of the previous Wolf Creek studies conducted by Wolf Creek's consultant, TLG Services, Inc. (TLG). TLG is a nationally renowned engineering consulting company that specializes in decommissioning of nuclear facilities. As an expert in this field, TLG is fully cognizant of national current events and uses this knowledge to keep its cost estimating model current.

Q. What is the scope of the DCS presented in the Application?

A. The DCS provides cost estimates to decommission Wolf Creek based on the decommissioning scenarios selected by Wolf Creek management. The purpose of the DCS is to provide Wolf Creek's owners and the Commission with sufficient information to assess the financial obligations of decommissioning.

Q. How does Kansas statutes related to nuclear power plants define decommissioning?

A. K.S.A. 66-128*l*(c) defines "decommissioning" as:

> the series of activities undertaken beginning at the time of closing of a nuclear power generating facility to ensure that the **final disposition** of the site or any radioactive components or material, **but not including spent fuel**, associated with the facility is accomplished safely, in compliance with all applicable state and federal laws. Decommissioning includes activities undertaken to prepare such a facility for final disposition, to monitor and maintain it after closing and to effect final disposition of any radioactive components of the facility. (emphasis added)

Q. What is meant by the phrase final disposition of the site?

A. In my opinion, this term would include all processes and costs to dismantle the plant and remove any radioactive materials from the site. Final disposition would include future decommissioning of any spent fuel storage installations on the site.

Q. What is meant by the final disposition of the spent fuel?

A. Although that specific phrase is noted in the statute, it is not defined. I believe it refers to the process and cost of removing the spent nuclear fuel and any other highly radioactive waste (GTCC)[6] from the plant site.

Q. Why is the final disposition of spent fuel not included in the definition of decommissioning found in the statute?

A. In 1985 when K.S.A. 66-128*l* was promulgated, it was only three years after the U.S. Congress had promulgated the Nuclear Waste Policy Act (NWPA). This Act assigned the U.S. Department of Energy (DOE) the responsibility for disposal of spent nuclear fuel from commercial nuclear generating plants.[7] Given the commitment of the DOE to dispose of spent fuel, I presume the Kansas legislature saw no need to set up a separate process to collect funds from Kansas ratepayers to pay for removing the spent fuel to its permanent storage site.

Q. How is the NWPA funded?

A. In order to pay for the spent fuel repository, DOE established a Nuclear Waste Fund which was funded by assessing a charge of $0.001/kWh to nuclear generating plants. At this time, the fund has an unspent balance of $35 billion. Because of

[6] Greater than Class C waste (GTCC) refers to a NRC classification for radioactive waste for which disposal responsibility is assigned to the federal government.
[7] See Application, Attachment 2, Page 14.

DOE's inaction in disposing of nuclear waste, federal courts set the assessment at $0.0/kWh as of May 16, 2014.[8]

Q. Would you consider it accurate to presume DOE will accept spent nuclear fuel before the year 2045 when Wolf Creek's license is terminated?

A. The NWPA is still in effect, so the DOE is still the party responsible for disposing of spent fuel from commercial nuclear generating plants. However, the reality of shut-in nuclear plants across the nation demonstrates that DOE is incapable at this time of meeting their responsibility. Appendix G to Attachment 2 of the Application provides a summary nuclear plant decommissioning throughout the United States.

Q. Is there additional information that you can provide regarding decommissioning efforts in the United States?

A. Yes. I reviewed a report found on the website of the Nuclear Regulatory Commission (NRC).[9] In Exhibit LMH-2, I provide additional information on many of the plants discussed in the above referenced Appendix G. My exhibit focuses on the current status of the shut-in plants, the NRC-approved method used to decommission the plants, and the status of disposition of the spent fuel.

Q. How is spent fuel disposition being handled for commercial nuclear generating plants in the United States that have been shut-in?

A. In almost every case, all spent fuel is being stored on site in facilities known as Independent Spent Fuel Storage Installations (ISFSI).

[8] Pages 1-2, Attachment 7 of Joint Pleading.
[9] See https://www.nrc.gov/info-finder/decommissioning/power-reactor/ .

Q. Going back to the DCS prepared for Wolf Creek, does the cost estimate provided in the Application for the Wolf Creek facility appear reasonable?

A. Yes. The cost estimate methodology is based on decommissioning methods approved by the Nuclear Regulatory Commission.[10] For the decommissioning scenarios presented by TLG, the cost estimate appears to be reasonable. Staff witness Adam Gatewood provides additional comments on the forecasted inflation rate included in the study.

Q. Are there any significant changes between the TLG cost estimate in the Application and those that have been presented to the Commission in past decommissioning dockets?

A. Yes. While the cost estimate methodology used by TLG appears to be the same, the predicted decommissioning sequence of events has been changed in this version of the TLG cost estimate.

Q. Please describe the change in the decommissioning sequence of events.

A. In past cost estimates presented to the Commission, the decommissioning scenarios assumed the DOE took possession of all spent fuel within five years of the start of decommissioning. The current version of the proposed costs estimates assume the DOE will take possession of 959 spent fuel assemblies (27% of all spent fuel assemblies) through a ten-year period beginning in 2038 (prior to shutdown) through 2049 (4 years after shutdown). The remainder of spent fuel and all of the GTCC is placed in independent spent fuel storage until it can be worked into the assumed DOE schedule for taking possession

[10] U.S. Code of Federal Regulations, Title 10, Parts 30, 40, 50, 51,70 and 72 "General Requirements for Decommissioning Nuclear Facilities," Nuclear Regulatory Commission, Federal Register Volume 53, Number 123 (p 24018 et seq.), June 27, 1988.

of the spent fuel. TLG's estimate assumes DOE has taken possession of all spent fuel by the year 2078.[11]

Q. Does the spent fuel management program proposed in the TLG cost estimate resemble the spent fuel management programs used in recently shuttered nuclear plants?

A. No. Because DOE has not accepted any spent fuel, all of the recently shut-in plants are storing the fuel on-site. Based on the summary provided in Exhibit LMH-2, even those plants that are projecting decommissioning activity beyond 2045 (when Wolf Creek ceases operation) are not planning for DOE to pick up the spent fuel.

Q. Do you believe the spent fuel management approach in the TLG cost estimate is inaccurate?

A. Not necessarily. Because the TLG report is a cost estimate and not an actual decommissioning plan, I believe it is appropriate to assume the DOE may begin to meet their obligation within the next 18 years. By assuming that DOE only picks up 27% of the Wolf Creek spent fuel by 2049, the cost estimate acknowledges DOE's responsibility to take possession of the fuel while also recognizing the reality of spent fuel interim storage costs. In this way, I believe it provides a balanced approach for estimating the costs related to spent fuel management.

Q. Does the cost estimate provide any contingency in the event that DOE is unable to take possession of the spent fuel beginning in 2038?

A. No. TLG considers that scenario to be a "financial risk" which is not reflected in the cost estimate because there is insufficient historical data from which to project future liabilities.

[11] Response to Staff Data Request 10.

Rather than include this risk in the cost estimate, TLG proposes to address this uncertainty through updates of the base estimates.[12] In other words, TLG proposes to update the base estimate in future decommissioning reviews brought before the Commission.

Q. Do you agree with this approach?

A. Yes, I agree with this approach for two reasons: 1. Wolf Creek will still operate for another 25 years, which will give the Commission additional opportunity to consider this scenario; and 2. Only a small portion of Wolf Creek's spent fuel management costs is based on DOE acceptance before year 2049.

Q. Please continue.

A. In the cost estimates included in the Application, TLG has included costs related to managing 27% of the spent fuel based on their estimate of DOE's unknown timetable to take the spent fuel. Costs for managing the remaining 74% of spent fuel are based on the methods used by plants already shut-in, which is to store the fuel in ISFSI. This approach hedges some of the costs of spent fuel management by providing some savings related to DOE accepting spent fuel by year 2031[13], while the remainder of the costs reflect today's reality that the spent fuel will be stored on site for a period of years. Exhibit LMH-3[14] provides a summary of Wolf Creek's spent fuel management plan used in the DCS.

Q. Does this approach put more costs on the ratepayers at the end of the life of Wolf Creek?

A. If it turns out that DOE will not accept any fuel and all spent fuel must be placed into storage, there may be some exposure to those ratepayers in the last few years of Wolf Creek

[12] Attachment 2 of Application, Page 52.
[13] Attachment 2 of Application, Page 53.
[14] Response to Staff Data Request 10.

operation. But the exposure would be limited to the costs to build additional ISFSI capacity and place 27% of the spent fuel in storage.

Q. Will the ISFSI currently being built have sufficient capacity to store all of Wolf Creek's spent fuel?

A. Yes, it is my understanding that the Wolf Creek ISFSI will have sufficient capacity to store all of the spent fuel and GTCC. However, the TLG cost estimate only includes costs for eventually storing 73% of the spent fuel onsite.[15]

Q. What cost estimating methods were considered in developing the DCS?

A. The methods used to develop the DCS are based on NRC guidelines through its rule "General Requirements for Decommissioning Nuclear Facilities," issued in June 1988. Through that effort, the NRC subsequently developed guidelines to be used in developing cost estimates for decommissioning. The two methods reviewed in the DCS are known by their acronyms, DECON and SAFSTOR. The DECON method has been the basis for the majority of the DCS estimates previously approved by the Commission. In the most recent decommissioning plan review, the Commission required Wolf Creek to use the SAFSTOR method for the cost estimate.[16]

Q. What is the DECON method?

A. The DECON method is based on removal and decontamination of all radioactive or contaminated structures at the plant shortly after cessation of operations.

Q. How does SAFSTOR methodology differ from the DECON estimate?

A. SAFSTOR can be summarized as deferred decontamination where the unit is

[15] Response to Staff Data Request 10.
[16] Docket 18-WCNE-107-GIE Order, August 2, 2018.

shut down, safely locked, and monitored until the unit is removed over a maximum of 60 years.

Q. Can you provide a summary of past Wolf Creek decommissioning cost decisions that have been approved by the Commission?

A. The following table provides a summary of the Commission's past decisions regarding Wolf Creek decommissioning costs along with the costs for options presented in the Application:

Docket Number	Order Date	Nominal Decommissioning Costs (Millions)	Year of Nominal Dollars
142,099-U	September 27, 1985	$140	1985
163,561-U	August 1, 1989	$206	1988
188,904-U	June 9, 1994	$370	1993
97-WCNE-128-GIE	March 3, 1997	$409	1996
00-WCNE-154-GIE	April 26, 2000	$471	1999
03-WCNE-178-GIE	April 16, 2003	$468	2002
06-WCNE-204-GIE	May 24, 2006	$518	2005
09-WCNE-215-GIE	August 31, 2009	$594	2008
12-WCNE-136-GIE	May 16, 2012	$630	2011
15-WCNE-093-GIE	March 24, 2015	$765	2014
18-WCNE-107-GIE	August 2, 2018	$1,093 (SAFSTOR)	2017
21-WCNE-103-GIE	Undecided	$1,074 DECON (with ISFSI storage)	2021
21-WCNE-103-GIE	Undecided	$1,411 SAFSTOR (with ISFSI storage)	2021
21-WCNE-103-GIE	Undecided	$890 DECON (with all spent fuel to DOE by 2050)	2021

Q. Do the cost estimates included in the plans approved by the Commission in prior decommissioning plan reviews include costs for onsite spent fuel storage?

A. Previous cost estimates only included funds for onsite storage for the first five years after the plant is shutdown. For previous estimates, both the DECON and SAFSTOR scenarios assume DOE takes possession of the spent fuel by 2050.

Q What is the difference in costs for spent fuel management for the two spent fuel management approaches?

A. Spent fuel management costs estimated in the DCS that was approved by the Commission in the 18-WCNE-107-GIE Docket were $58 million in 2017 dollars.[17] For the current Application spent fuel management costs (which includes multiple years of onsite spent fuel storage) are $343 million for the DECON alternative and $299 million for the SAFSTOR alternative. Both of these estimates are in 2020 dollars.

Q. Does the NRC allow costs for spent fuel management to be included in a decommissioning cost study?

A. I believe they do. As shown in Exhibit, LMH-2, NRC approval of storing spent fuel on site is evident in the history of plants that are shut-in. While not an expert in nuclear industry regulations, my opinion also is based on the definition of "decommissioning" found in NRC regulation 10 CFR 50.2:

> Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) Release of the property for unrestricted use and termination of the license; or (2) Release of the property under restricted conditions and termination of the license.

[17] Docket 18-WCNE-107-GIE Application, Attachment 2, page 20.

In my opinion, storing the fuel in ISFSI would be viewed as a restricted condition that would require additional NRC approval under 10 CFR 50.45(bb). This regulation states in part:

> …the licensee shall, within 2 years following permanent cessation of operation of the reactor… submit written notification to the [NRC] for its review and preliminary approval of the program by which the licensee intends to manage and provide funding for the management of all irradiated fuel at the reactor following permanent cessation of operation of the reactor until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository.

In further support of my opinion, Exhibit LMH-4 provides excerpts from the existing NRC regulatory guide 1.159 on decommissioning funding and on a proposed revision to the guide. Although still in draft form, the 2018 proposed revision to regulatory guide 1.159 states that funds in a decommissioning trust fund may be used for spent fuel management and ISFSI decommissioning expenses.[18]

Q. Should the Commission consider costs associated with storage and management of spent fuel to be part of a decommissioning financing plan?

A. Yes. Although the Commission is not statutorily obliged to consider spent fuel final *disposition* as part of the DCS, I believe the Commission is obligated to consider the financial impact on ratepayers (both current and future generations) regarding the possibility of managing and storing spent fuel on site at Wolf Creek for a long period of time. As discussed above, the uncertainty of removing the spent fuel from the site will significantly influence the required activity of

[18] NRC Draft Regulatory Guide 1.159 proposed revision 3, DG-1348 page 12.

monitoring and maintaining the plant site after closing until decommissioning[19] is complete.

Q. Do you believe the cost estimates presented in the DCS realistically reflect the cost to Kansas ratepayers for complete decontamination of the Wolf Creek Plant site?

A. I believe the cost estimate accurately follows NRC guidelines in providing a cost estimate that meets regulatory requirements. As such, I would consider it sufficient for the purposes outlined in the Joint Pleading.

Q. Of the three cost estimates, which do you recommend the Commission approve for recovery through the decommissioning financing plan?

A. I recommend the Commission consider the DECON alternative as presented on page 21 of the TLG cost estimate attached to the Application for the amount of $1,073.6 million in 2020 dollars.

CONCLUSIONS

Q. Please summarize your conclusions regarding this Docket.

A. My conclusions are summarized as follows:

- This Docket is the 12th proceeding in a series of dockets over 33 years reviewing the DCS. Each docket notes the assumptions which are part of the DCS.
- The cost estimate methodology included in the Application is consistent with the estimating methodology used in cost studies that have previously been approved by the Commission.
- Assumptions are a fundamental part of the estimating process given the project is 25 years in the future and in an uncharted political environment.

[19] K.S.A. 66-128*l*(c) defines decommissioning as the activities necessary to ensure final disposition of the site or any radioactive material on the site.

- The Commission Order approving the first decommissioning cost estimate in 1985 notes it is dependent on many assumptions of future waste disposition.
- The proposed DECON estimate considers industry recent decommissioning history at shut-in commercial nuclear generating plants.
- By forecasting the DOE will take possession of small amount of the spent fuel shortly after plant shutdown and the remainder over several decades, the DECON estimate strikes a balance between DOE immediate acceptance of the spent fuel and the need to provide for spent fuel storage of a longer period of time.

RECOMMENDATIONS

Q. Please summarize any recommendations you have regarding this matter.

A. My recommendations are summarized as follows:

- I recommend the Commission approve the DECON alternative as presented on page 21 of the TLG cost estimate attached to the Application for the amount of $1,073.6 million in 2020 dollars to be used in determining funding requirements for the Decommissioning Financing Plan. This alternative provides a realistic estimate of decommissioning cost planning.
- Future filings of the Decommissioning Financing Plan to be filed next in 2023 should continue to provide status updates of the information provided in Attachment 7 of the Joint Pleading and in Exhibit LMH-2.

Q. Does this conclude your testimony?

A. Yes.

EXHIBIT LMH-1

Kansas Statutes Regarding the Decommissioning of Nuclear Power Generating Facilities

Statute 66-128m: Same; decommissioning financing plan.

(a) Any licensee operating a nuclear power generating facility located in the state on the effective date of this act shall submit a proposed decommissioning financing plan for the facility to the commission not later than December 31, 1985. Any licensee constructing such a facility on the effective date of this act shall submit such a plan to the commission before commercial operation of the facility.

(b) The decommissioning financing plan shall include:

1. An estimate of the date of closing of the nuclear power generating facility;
2. An estimate of the cost of decommissioning the facility, expressed in dollars current in the year the plan is prepared, and based on an engineering report issued within three years of the date the plan is submitted to the commission;
3. the share of the estimated decommissioning costs attributed to each owner;
4. a plan for funding the decommissioning;
5. plans for periodic review and updating of the plan, including the cost of decommissioning estimated under paragraph (2);
6. the amount of money which customers of each owner have been charged for the decommissioning up to the date of submission of the plan and the total amount necessary to meet the projected decommissioning costs of the facility, over the remaining useful life of the facility;
7. plans and options for insuring against or otherwise financing premature closing of the facility;
8. reasonable assurance of responsibility in the event of insufficient assets to fund the decommissioning;
9. a description of the stages by which decommissioning is intended to be accomplished;
10. a fully executed decommissioning financing agreement between the licensee and each owner, evidencing each owner's acceptance of its respective share of the ultimate financial responsibility for decommissioning. In satisfaction of this requirement, the licensee may submit existing ownership agreements together with documentation from each owner of the applicability of the agreement to the case of financial responsibility for decommissioning; and
11. any other information related to the financing of decommissioning which the commission requests.

Statute 66-128n: Nuclear power generating facilities; decommissioning financing plan; hearings; approval or rejection of plan.

(a) The state corporation commission shall hold a public hearing in accordance with the provisions of the Kansas administrative procedure act on each proposed decommissioning financing plan submitted under K.S.A. 66-128m and amendments thereto. The commission may hold such hearing in conjunction with rate proceedings filed by an owner of the facility.

(b) The commission shall approve such a plan if it finds that the licensee has provided reasonable assurances that:

1. The estimated time of closing of the nuclear power generating facility and the estimated cost of decommissioning are reasonable;
2. the licensee and the owners of the facility can adequately fund the decommissioning;
3. the share of the estimated cost of decommissioning for each owner of the facility is reasonable;
4. he plans and options for insuring against or otherwise financing any shortfall in decommissioning funds resulting from a premature closing are adequate and reasonable;
5. the owners are legally bound to accept their respective shares of the ultimate financial responsibility for decommissioning as provided under K.S.A. 66-128p and amendments thereto; and
6. the plan will periodically be reviewed and revised to reflect more closely the costs and available techniques for decommissioning. This update shall occur at least every five years.

(c) If the commission finds that the decommissioning plan does not meet the criteria under subsection (b), it shall reject the plan and order that it be modified as the commission deems necessary to meet such criteria.

Statute 66-128o: Same; review of plan, when; changes.

(a) If the commission approves a decommissioning financing plan under K.S.A. 66-128n and amendments thereto, it shall, at least every five years until the facility's closing and at least annually after the closing, review the financing plan to assess its adequacy. If changed circumstances make a more frequent review desirable or if the licensee requests it, the commission may review the plan after a shorter time interval. The review shall include, but not be limited to, the following considerations:

1. The estimated date of closing the nuclear power generating facility;
2. the estimated cost of decommissioning;
3. the reasonableness of the method selected for cost estimate purposes; and
4. the adequacy of plans for financing the decommissioning and any shortfall resulting from a premature closing.

(b) The commission, after conducting a review under subsection (a), may, after a hearing in accordance with the provisions of the Kansas administrative procedure act, order such changes in the decommissioning financing plan as it deems necessary to make the plan comply with the provisions of subsection (b) of K.S.A. 66-128n and amendments thereto.

EXHIBIT LMH-2
Status of Power Reactor Sites Undergoing Decommissioning
(Excerpted from https://www.nrc.gov/info-finder/decommissioning/power-reactor/)

There are 24 power plants in decommissioning status. The NRC's Office of Nuclear Material Safety and Safeguards (NMSS)[1] has project management responsibilities for 23 power reactors undergoing decommissioning. Additionally, the NRC's Office of Nuclear Reactor Regulation[2] currently has project management responsibility for Indian Point Unit 2 power reactor that recently permanently ceased operations.

Nuclear Power Plant Decommissioning Status
Crystal River – Unit 3 The facility is currently in SAFSTOR condition although they are still considering beginning active decommissioning. The licensee submitted the CR-3 post-shutdown decommissioning activities report, including the site-specific cost estimate, on December 2, 2013. The plant began construction of an ISFSI in 2016, and begin loading fuel in summer 2017. Fuel transfer to the ISFSI was completed in January 2018.
Dresden – Unit 1 All spent fuel from Dresden Unit 1 has been transferred to the on-site Independent Spent Fuel Storage Installation (ISFSI). During the SAFSTOR period (through 2027), the Unit 1 facility will be subjected to periodic inspection and monitoring. The licensee expects that the decontamination and dismantlement of Dresden Unit 1 will take place from 2029 through 2031. A four-year site restoration delay will follow the major decontamination and dismantlement of Dresden Unit 1 to allow for the decontamination and dismantlement of Units 2 and 3, with completion of these activities tentatively planned for 2035. Site restoration is planned for in 2035 and 2036, with the demolition of the remaining structures and removal of contaminated soil. The licensee plans to conduct a final site survey in late 2036. The licensee will monitor the Dresden ISFSI complex with site security and periodic inspections until final transfer of the spent fuel to the Department of Energy for disposal.
Fermi – Unit 1 The facility is in safe storage. There is no spent fuel onsite. Bulk sodium has been removed from the site, and the reactor vessel, primary system piping and major components have been removed.
Fort Calhoun By letter dated November 13, 2016, OPPD certified that all fuel had been removed from the reactor. OPPD submitted the FCS Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC on March 30, 2017. In the PSDAR, OPPD stated its intention to move all of the spent nuclear fuel into dry cask storage by the end of 2022 and put the plant into SAFSTOR until it is ready to fully decommission the facility starting in 2060. License termination is scheduled to take place by 2065. Major regulatory activity to adapt the operating plant license to the needs of the post-shutdown functions of the facility has been completed. The activity focused on adapting the application of the regulations to post-shutdown requirements related to security, emergency planning, finance and insurance. As the

[1] See https://www.nrc.gov/about-nrc/organization/nmssfuncdesc.html
[2] See https://www.nrc.gov/about-nrc/organization/nrrfuncdesc.html

licensee moves to place all spent fuel remaining in the spent fuel pool into onsite dry storage, licensing activities will begin for adapting the regulations to the dry storage only condition. In June 2018 the licensee requested to release a non-impacted part of their site from their 10 CFR Part 50 license for unrestricted use. The request was approved in April 2019.
General Electric Co. – ESADA Vallecitos Experimental Superheat Reactor (EVESR) On April 15, 1970, NRC authorized the licensee to possess but not operate the reactor. The license was renewed on June 11, 1976, and remains in effect under the provisions of 10 CFR 50.51(b). The facility has been maintained in SAFSTOR condition. The facility is next to the Vallecitos Boiling Water Reactor which is also in SAFSTOR. The licensee plans to maintain the facility in SAFSTOR until other ongoing nuclear and radioactive activities are also to be decommissioned to provide an integrated site decommissioning.
General Electric Co. – Vallecitos Boiling Water Reactor (VBWR) The VBWR was shutdown in 1963 and NRC issued a possession-only license in 1965. The license was renewed in 1973 and has remained effective under the provisions of 10 CFR 50.51(b). The facility has been maintained in SAFSTOR condition. The licensee plans to maintain the facility in SAFSTOR until ongoing site nuclear activities are terminated and the entire site can be decommissioned in an integrated fashion. The spent fuel has been removed from the site. Major Technical or Regulatory Issues In 2015, the licensee, GE Hitachi, began a licensing process to exempt the VBWR from the 60-year decommissioning schedule limit of 10 CFR 50.82(a)(3). The request is currently under NRC review.
Humboldt Bay: On July 16, 1985, the U.S. Nuclear Regulatory Commission (NRC) issued Amendment No. 19 to the HBPP Unit 3 Operating License to change the status to possess-but-not-operate, and the plant was placed into a SAFSTOR status. SAFSTOR is the decommissioning method in which a nuclear facility is placed and maintained in a condition that allows the safe storage of radioactive components of the nuclear plant and subsequent decontamination to levels that permit license termination. In December 2003, PG&E formally submitted a license application to the NRC for approval of a dry-cask Independent Spent Fuel Storage Installation (ISFSI) at the Humboldt Bay site. A license and safety evaluation for the Humboldt Bay ISFSI were issued on November 17, 2005. The transfer of spent fuel from the fuel storage pool to the ISFSI was completed in December 2008, and decontamination and dismantlement of HBPP Unit 3 decommissioning commenced. Virtually all of the plant related structures have been removed from the site including the caisson. A caisson is a water tight structure used as a foundation or to carry out work below grade. At Humboldt Bay, the caisson was a first of its kind to house a nuclear containment structure, pressure suppression chamber, and nuclear steam supply system below grade. Remaining activities include site restoration and radiological final status surveys. Major Technical or Regulatory Issues Remaining regulatory activity include review of the licensee's final status surveys and the performance of NRC confirmatory radiological surveys prior to license termination.
Indian Point – Unit 1 The NRC order approving SAFSTOR was issued in January 1996. A PSDAR public meeting was held on January 20, 1999. The licensee does not plan to begin active decontamination and decommissioning of IP-1 until after Unit 2 (IP-2) ceases operation. The permanent

shutdown of IP-2 is expected to occur by April 30, 2020. IP-1 spent fuel is in dry storage at the Indian Point Energy Center ISFSI in 5 casks. IP-1 operated commercially from August 1962 until October 31, 1974. The plant was shut down because the emergency core cooling system did not meet regulatory requirements. By January 1976, all spent fuel was removed from the reactor vessel. Low levels of groundwater contamination have been identified as originating at IP-1. The primary radionuclides involved are Sr-90 and tritium, and appear to be leaking from the spent fuel building. Entergy has moved IP-1 spent fuel to dry storage, has drained and cleaned the IP-1 spent fuel pool, and will continue long-term monitoring and reporting of site groundwater.
Indian Point – Unit 2: Power operations ceased at Indian Point Unit 2 on April 30, 2020, and the fuel was permanently removed from the reactor vessel and placed in the spent fuel pool on May 12, 2020. On November 21, 2019, Entergy and Holtec submitted a License Transfer Application requesting NRC approval to transfer the Indian Point Facility Operating Licenses for Units 1, 2, and 3, as well as the general license for the Independent Spent Fuel Storage Installation (ISFSI) to Holtec, as the licensed owner, and to Holtec Decommissioning International (HDI), as the licensed operator. The license transfer request is under NRC staff review.
Kewaunee submitted its post-shutdown decommissioning activities report (PSDAR) and conducted a public meeting near the site on April 24, 2013. The facility retains its Part 50 license but is no longer authorized to operate or emplace fuel in the reactor vessel. KPS currently has an independent spent fuel storage installation (ISFSI) on site. KPS completed transfer of spent fuel from its spent fuel pool to its ISFSI in June 2017. Major decommissioning and dismantlement activities are scheduled to begin in 2069.
LaCrosse Boiling Water Reactor: LACBWR was shut down on April 30, 1987. The SAFSTOR decommissioning plan (DP) was approved on August 7, 1991. The DP is considered the post-shutdown decommissioning activities report (PSDAR). The PSDAR public meeting was held on May 13, 1998. DPC developed an onsite independent spent fuel storage installation (ISFSI) and moved the spent fuel to the ISFSI in 2012. DPC had been conducting incremental dismantlement and decommissioning activities until the middle of 2014, when it was decided to return the facility to SAFSTOR until additional personnel resources could be acquired to complete the decommissioning effort. On June 1, 2016, the operating license was transferred from DPC to LaCrosse Solutions for the purpose of completing decommissioning at LACBWR. On September 24, 2019, the NRC approved an order that will allow the LACBWR license to be transferred back to DPC upon completion of decommissioning at the site and termination of the Part 50 license outside of the ISFSI. Final decommissioning activities at LACBWR, including final status surveys, are currently underway and are scheduled to be completed in 2020, with the license transfer to DPC to be executed soon after. 3.0 Major Technical or Regulatory Issues The license termination plan (LTP) for LACBWR was submitted on June 27, 2016. The staff issued the LTP amendment, safety evaluation, and environmental assessment on May 21, 2019.

Millstone – Unit 1: The owner's current plan is to leave the plant in SAFSTOR until 2048. The owner submitted its required PSDAR on June 14, 1999, and has chosen a combination of the DECON and SAFSTOR options. Owner responsibility for the Millstone site was transferred from Northeast Utilities to Dominion Nuclear Connecticut on March 31, 2001. Safety related structures, systems, and components (SSCs) and SSCs important to safety remaining at Millstone Unit 1 are associated with the spent fuel pool island where the Millstone Unit 1 spent fuel is stored. Other than non-essential systems supporting the balance of plant facilities, the remaining plant equipment has been de-energized, disabled and abandoned in place or removed from the unit and can no longer be used for power generation. Irradiated reactor vessel components not able to eventually be disposed of with the reactor vessel have been removed. The reactor cavity and vessel has been drained and abandoned with a radiation shield installed to limit dose to workers. After a formal assessment of spent fuel storage options in 2007, the licensee concluded that they would keep the Millstone Unit 1 fuel in the Spent Fuel Pool, in a SAFSTOR status, until 2048 rather than move the fuel to an ISFSI.
Oyster Creek: In the PSDAR, Exelon stated its intention to move all of the spent nuclear fuel into dry cask storage by the end of 2024 and put the plant into SAFSTOR until it is ready to fully decommission the facility starting in 2075. On August 31, 2018, Exelon and Holtec submitted a License Transfer Application (LTA) requesting NRC approval to transfer the Oyster Creek Renewed Facility Operating License and the General License for the Oyster Creek Independent Spent Fuel Storage Installation (ISFSI) to Oyster Creek Environmental Protection, LLC (OCEP), as the licensed owner. The Application also requested Holtec Decommissioning International (HDI) be the licensed operator. The license transfer was approved by the NRC staff and became effective on July 1, 2019. The NRC staff is currently reviewing the revised PSDAR submitted by HDI on September 28, 2018, which includes a revised Site-Specific Decommissioning Cost Estimate and notify the NRC of changes to accelerate the schedule for the prompt decommissioning (DECON) of Oyster Creek. License termination would take place by 2035.
Peach Bottom – Unit 1 The facility is currently in a SAFSTOR condition. The post-shutdown decommissioning activities report meeting was held on June 29, 1998. Final decommissioning is not expected until after the permanent shutdown of Units 2 and 3.
Pilgrim Nuclear Power Station: Power operations ceased at Pilgrim on May 31, 2019, and that the fuel was permanently removed from the reactor vessel and placed in the spent fuel pool on June 9, 2019. PNPS is also the site of the generally-licensed Pilgrim Independent Fuel Storage Installation (ISFSI). The PNPS and the Pilgrim ISFSI are currently owned by Holtec International and the licensed decommissioning operator is Holtec Decommissioning International, LLC (HDI). The HDI decommissioning strategy is DECON. HDI estimates that it will complete radiological decommissioning and release for unrestricted use of all portions of the site to NRC requirements by September 2027, except for the ISFSI ("partial site release"). HDI's decommissioning schedule is depicted in the HDI Fleet Annual Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations (ADAMS Accession No. ML20091M858). Figure 1 to Enclosure 2 of this annual report provides the current Pilgrim decommissioning schedule revised from the schedule provided in the November 16, 2018, Revised Post-Shutdown Decommissioning Activities Report (ADAMS Accession No. ML18320A040). At the end of July 2020, HDI completed Phase I of its Spent Fuel Transfer

Campaign (loading 11 new casks onto the existing Independent Spent Fuel Storage Installation (ISFSI) pad). The licensee is in the process of building a new ISFSI which will eventually hold all the Pilgrim spent fuel casks. Construction of the new ISFSI is estimated to be completed by the end of 2020; however it cannot be used until the ISFSI Physical Security Plan license amendment application review is completed, amendment approval is obtained, and any implementation requirements are met. Also, the HDI now is preparing for plant systems removal and is currently conducting some building decontamination and some non-nuclear island building demolition. Reactor Pressure Vessel segmentation plans are being developed but actual implementation is planned after the completion of the Phase II Spent Fuel Transfer Campaign. HDI estimates that all the spent fuel will be transferred to dry storage onto the new ISFSI by January 2022.

In an adjudicatory matter regarding a transfer of the Pilgrim license from ENOI to Holtec and HDI, two separate petitions (one filed by Pilgrim Watch and the other filed by the Commonwealth of Massachusetts) to intervene were filed before the Commission. Separately, the Commonwealth of Massachusetts also filed a petition for review in the DC Circuit, challenging the NRC's decisions on the transfer, exemption (to use some of the decommissioning trust fund for spent fuel management and site restoration), and license amendment. At that time, the Commission did not yet rule on the hearing requests. There were subsequent legal filings on June 30, 2020 (ADAMS Accession No. ML20183A122), and on July 22, 2020 (ADAMS Accession Nos. ML20210M018 and ML20206K854). As a result, the petitions associated with the Commonwealth of Massachusetts were dismissed. The Commission has not yet ruled on the open hearing request.

San Onofre – Unit 1: On December 15, 1998, following a change in NRC decommissioning regulations, SCE submitted a post shutdown decommissioning activities report (PSDAR) for SONGS-1, to commence DECON in 2000. SCE actively decommissioned the facility, and most of the structures and equipment have been removed and sent to a disposal facility. The NRC issued a license amendment in February 2010 releasing the off-shore portions of the Unit 1 cooling intake and outlet pipes in place, under the Pacific Ocean seabed, for unrestricted use. The fuel from Unit 1 was transferred to Phase 1 of the independent spent fuel storage installation (ISFSI). Starting in 2015, the ISFSI was being expanded onto the area previously occupied by Unit 1 in order to store all Unit 2 and Unit 3 spent fuel.

San Onofre – Units 2 & 3: On September 23, 2014, SCE submitted to the NRC the SONGS Post-Shutdown Decommissioning Activities Report (PSDAR), including the Decommissioning Cost Estimate, and the Irradiated Fuel Management Plan. The safe initial interim storage of SONGS Units 2 and 3 irradiated fuel will be "wet storage" in each unit's respective spent fuel pool. The spent fuel pools will be isolated from their normal support systems and those systems replaced by stand-alone cooling and filtration units (also termed a "spent fuel pool island"). Doing so facilitates earlier system abandonment and parallel decommissioning activities. Subsequently, all irradiated fuel in the SONGS Units 2 and 3 spent fuel pools will be safely transferred to "dry storage" at the common Independent Spent Fuel Storage Installation (ISFSI) located on the SONGS site. Dry storage is also considered interim storage pending transfer to the US DOE.

Three Mile Island – Unit 1 Power operations ceased at TMI-1 on September 20, 2019, and that the fuel was permanently removed from the reactor vessel and placed in the spent fuel pool on September 26, 2019. TMI-1 is preparing to construct an Independent Fuel Storage Installation (ISFSI). TMI-1 is

licensed to Exelon Generation Company, LLC (Exelon). The Exelon decommissioning strategy for TMI-1 is SAFSTOR. Exelon estimates that it will complete radiological decommissioning and release for unrestricted use to NRC requirements by 2079. Exelon's decommissioning schedule is provided in their April 5, 2019, Post-Shutdown Decommissioning Activities Report (ADAMS Accession No. ML19095A041). The NRC continues its oversight after the permanent shutdown of the facility to ensure the reactor is being decommissioned safely and that spent fuel is safely and securely stored onsite. The NRC staff will periodically inspect operations at the site to ensure that decommissioning activities are being conducted in accordance with all applicable regulations and commitments. The licensee is in the process of licensing and building an ISFSI which will eventually hold all the TMI-1 spent fuel casks. Construction of the ISFSI is estimated to be completed by the end of 2021. Exelon estimates that all the spent fuel will be transferred to dry storage onto the new ISFSI by the end of 2022.

Three Mile Island – Unit 2: The removed fuel is currently in storage at Idaho National Laboratory, and the U.S. Department of Energy has taken title and possession of the fuel. TMI-2 has been defueled and decontaminated to the extent the plant is in a safe, inherently stable condition suitable for long-term management. This long-term management condition is termed post-defueling monitored storage, which was approved in 1993. There is no significant dismantlement underway. The plant shares equipment with TMI Unit 1 (TMI-1), which permanently ceased operations on September 20, 2019. TMI-1 was sold to AmerGen (now Exelon) in 1999. GPU Nuclear retains the license for TMI-2 and is owned by FirstEnergy Corp. GPU contracts with Exelon for maintenance and surveillance activities.

Vermont Yankee: The reactor was permanently shut down on December 29, 2014, and the fuel was removed from the reactor on January 12, 2015. Entergy, which operated the facility, submitted the Vermont Yankee Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC on Dec. 19, 2014. In the PSDAR, Entergy stated its intention to move all of the spent nuclear fuel into dry cask storage by 2020 and put the plant into SAFSTOR until it is ready to fully decommission the facility. In the 2014 PSDAR, license termination was scheduled to take place by 2073. On February 9, 2017, Entergy and NorthStar Group Services, Inc. (NorthStar) submitted a request to transfer the Vermont Yankee Nuclear Power Station license from Entergy to NorthStar for the purposes of expedited decommissioning. The NRC issued an Order approving the transfer of the plant operating license in October 2018. The transfer included the plant's dry cask spent fuel storage facility. Under the accelerated timeline, the completion of decommissioning work at Vermont Yankee is expected by 2030.

Zion – Units 1 & 2: The fuel was transferred to the spent fuel pool, and the owner submitted the certification of fuel transfer on March 9, 1998. On September 1, 2010, the facility license was transferred from Exelon to ZionSolutions for the express purpose of expediting the decommissioning of the site. ZionSolutions is using a rip and ship process that will reduce the labor intensive separation of contaminated materials and transport the facility in bulk to the EnergySolutions disposal site in Utah and to WCS in Texas. The licensee submitted the PSDAR, site-specific cost estimate, and fuel management plant on February 14, 2000. Decontamination and dismantlement began in 2011. Completion of fuel transfer to the ISFSI was completed in January 2015. Submittal of the LTP occurred in December 2014, and an NRC LTP public meeting was held in April 2015. The LTP was approved in September 2018.

All of the above grade plant structures have been removed. Final site survey and license reduction to the ISFSI is currently planned for 2020. Remaining regulatory activity includes the review of the licensee's final status surveys and the performance of NRC confirmatory radiological surveys prior to license termination.

Wolf Creek Nuclear Operating Company
Wolf Creek Spent Fuel Decommissioning Analysis
60 Year Operations

Shutdown:	2045	11-Mar-45		DOE Start Date	2031		
SFP Capacity (w/193 FCR)	1940						
DSC Size (number of assemblies)	37	assemblies		GTCC Canisters	5.00		
Transport/Aging/Disposal Canister (TADs)	21	assemblies					
Cost of TAD for direct DOE pickup from pool	n/a			ISFSI Capacity at Shutdown	40		
Cost of DSC for ISFSI	$484,474						
Cost of Storage Overpack for ISFSI	$239,709						
Cask Loading and Transfer Cost (Pool to ISFSI or DOE)	457,358						
ISFSI Unloading Costs (to DOE)	$228,679						

							Annual Costs					
Date	Assemblies Discharged	Pool Inventory	ISFSI Inventory	Assemblies Loaded From Pool To DOE	Assemblies Loaded From Pool To ISFSI	Assemblies Loaded From ISFSI to DOE	Pool to DOE (Loading Costs)	Pool to ISFSI (Loading Costs)	Storage Casks (Capital Cost)	ISFSI to DOE (Unloading Costs)	Date	TOTAL COST
1986	52	52	-									
2020		1,847	-									
2021	84	1,635	296		296							
2022	81	1,716	296									
2023		1,716	296									
2024	80	1,796	296									
2025	85	1,881	296									
2026		1,548	629		333							
2027	84	1,632	629									
2028	81	1,713	629									
2029		1,713	629									
2030	84	1,797	629									
2031	85	1,882	629									
2032		1,475	1,036		407							
2033	84	1,559	1,036									
2034	81	1,640	1,036									
2035		1,640	1,036									
2036	84	1,724	1,036									
2037	85	1,809	1,036									
2038		1,305	1,480	60	444							
2039	84	1,316	1,480	73								
2040	81	1,321	1,480	76								
2041		1,217	1,480	104								
2042	80	1,229	1,480	68								
2043	81	1,230	1,480	80								
2044		1,117	1,480	113								
2045	193	1,221	1,480	89			n/a	-	-		2045	$0
2046		1,136	1,480	85			2,286,789	-	-		2046	$2,286,789
2047		1,047	1,480	89			2,286,789	-	-		2047	$2,286,789
2048		-	2,439	88	959		2,286,789	11,891,302	18,828,758		2048	$33,006,848
2049						0	-	-	-		2049	$0
2050						74	-	-	-	$457,358	2050	$457,358
2051						74				$457,358	2051	$457,358
2052						111				$686,037	2052	$686,037
2053						74				$457,358	2053	$457,358
2054						74				$457,358	2054	$457,358

Wolf Creek Nuclear Operating Company
Wolf Creek Spent Fuel Decommissioning Analysis
60 Year Operations

Shutdown:	2045	11-Mar-45		DOE Start Date	2031
SFP Capacity (w/193 FCR)	1940				
DSC Size (number of assemblies)	37	assemblies		GTCC Canisters	5.00
Transport/Aging/Disposal Canister (TADs)	21	assemblies			
Cost of TAD for direct DOE pickup from pool	n/a			ISFSI Capacity at Shutdown	40
Cost of DSC for ISFSI	$484,474				
Cost of Storage Overpack for ISFSI	$239,709				
Cask Loading and Transfer Cost (Pool to ISFSI or DOE)	457,358				
ISFSI Unloading Costs (to DOE)	$228,679				

							Annual Costs					
Date	**Assemblies Discharged**	**Pool Inventory**	**ISFSI Inventory**	**Assemblies Loaded From Pool To DOE**	**Assemblies Loaded From Pool To ISFSI**	**Assemblies Loaded From ISFSI to DOE**	**Pool to DOE (Loading Costs)**	**Pool to ISFSI (Loading Costs)**	**Storage Casks (Capital Cost)**	**ISFSI to DOE (Unloading Costs)**	**Date**	**TOTAL COST**
2055						111				$686,037	2055	$686,037
2056						74				$457,358	2056	$457,358
2057						74				$457,358	2057	$457,358
2058						111				$686,037	2058	$686,037
2059						74				$457,358	2059	$457,358
2060						74				$457,358	2060	$457,358
2061						111				$686,037	2061	$686,037
2062						74				$457,358	2062	$457,358
2063						74				$457,358	2063	$457,358
2064						111				$686,037	2064	$686,037
2065						74				$457,358	2065	$457,358
2066						74				$457,358	2066	$457,358
2067						111				$686,037	2067	$686,037
2068						74				$457,358	2068	$457,358
2069						111				$686,037	2069	$686,037
2070						74				$457,358	2070	$457,358
2071						74				$457,358	2071	$457,358
2072						111				$686,037	2072	$686,037
2073						74				$457,358	2073	$457,358
2074						74				$457,358	2074	$457,358
2075						111				$686,037	2075	$686,037
2076						74				$457,358	2076	$457,358
2077						74				$457,358	2077	$457,358
2078						34				$228,679	2078	$228,679
2079						0				$0	2079	$0
2080										$0	2080	$0
Totals	3,364		2,439	925	2,439	2,439	$6,860,366	$11,891,302	$18,828,758	$15,092,806		**$52,673,232**
Decommissioning	(assemblies)		959	262	959	2,439						
	(DSCs/NUHOMs)		26	13	26	66	15	26	26	66		
Including GTCC	(DSCs/NUHOMs)				31	71						

Exhibit LMH-4
Excerpts from
U.S. Nuclear Regulatory Commission
Regulatory Guide 1.159, October 2011, Revision 2
Assuring the Availability of Funds for Decommissioning Nuclear Reactors

Rev. 2 of RG 1.159, Page 5 ***[Staff Emphasis Added]***

According to 10 CFR 50.2, "Definitions," "Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) Release of the property for unrestricted use and termination of the license; ***[or]*** (2) Release of the property under restricted conditions and termination of the license." As used in this context, "facility" refers to the contaminated components (or noncontaminated components required to be dismantled to obtain access to contaminated components) of the site, buildings and contents, and equipment associated with all NRC-licensed activities within the scope of 10 CFR 50.75.

There are three primary methods of decommissioning nuclear reactors:
DECON is the method in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for use, ***[in accordance with the NRC's definition of decommissioning]***, shortly after cessation of operations.

SAFSTOR is the method in which the nuclear facility is placed and maintained in a condition that allows it to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit its release for use ***[in accordance with the NRC's definition of decommissioning].***

So that a lack of funds does not result in delays in, or improper conduct of, decommissioning that may adversely affect public health and safety, the rule on decommissioning requires that applicants and licensees provide reasonable assurance that adequate funds for performing decommissioning will be available at the end of operation. ***[To provide this assurance, the rule requires that two factors be considered; namely, the amount of funds needed for decommissioning and the method used to provide financial assurance].***

Rev. 2 of RG 1.159, Page 11 ***[Staff Emphasis Added]***
In general, decommissioning cost estimates are provided by major activity and major decommissioning phase or time period. The cost estimate must account for the entire decommissioning work scope but not for items that are outside the scope of the decommissioning process. Examples of activities outside the scope of decommissioning include, but are not limited to, (1) the maintenance and storage of spent fuel, (2) the design and/or construction of a spent fuel dry storage facility, (3) activities that are not directly related to supporting long-term storage of the facility, or (4) any other activities not directly related to radiological decontamination of the site. If nondecommissioning cost items are included, these items should be identified separately.

Excerpts from
U.S. Nuclear Regulatory Commission
Regulatory Guide 1.159, 2018, Proposed Revision 3
Assuring the Availability of Funds for Decommissioning Production or Utilization Facilities
[Staff emphasis added]

DG-1348, Page 6
this revision of the RG clarified the guidance for non-power production or utilization facilities and fuel reprocessing plants. The revision was issued as part of a rulemaking to amend the Commission's regulations relating to decommissioning.

According to 10 CFR 50.2, "Definitions," decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) release of the property for unrestricted use and termination of the license; or (2) release of the property under restricted conditions and termination of the license. As used in this context, "facility" refers to the contaminated components (or noncontaminated components required to be dismantled to obtain access to contaminated components) of the site, buildings and contents, and equipment associated with all NRC-licensed activities within the scope of 10 CFR 50.75.

DG-1348, Page 12
In general, decommissioning cost estimates are provided by major activity and major decommissioning phase or period. The cost estimate must account for the entire decommissioning work scope but not for items that are outside the definition of decommission in 10 CFR 50.2. [***Examples of activities outside the definition of decommission include, but are not limited to, (1) spent fuel management, (2) the design and/or construction of an independent spent fuel storage installation (ISFSI), (3) activities that are not directly related to supporting long-term storage of the facility, and (4) any other activities not directly related to radiological decontamination of the facility or site***]. ***[However, licensees may use excess funds in the decommissioning trust fund (e.g., funds that are greater than those reasonably needed to complete decommissioning of the facility or site and terminate the license) for spent fuel management and specific license ISFSI decommissioning expenses]*** if (1) the NRC has docketed the licensee's certifications required under 10 CFR 50.82(a)(1) or 10 CFR 52.110(a) to permanently cease operations and defuel, (2) at least 90 days have passed since the NRC has received the licensee's PSDAR, and (3) the licensee continues to meet 10 CFR 50.82(a)(8)(i)(B) and (C) or 10 CFR 52.110(h)(1)(ii) and (iii). The licensee should identify the proposed use of this funding option in the site-specific decommissioning cost estimate and clearly identify any excess funds. In addition, licensees should identify the availability of excess funds in the annual decommissioning financial assurance status report required under 10 CFR 50.82(a)(8)(v) or 10 CFR52.110(h(5).

STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

VERIFICATION

Leo M. Haynos, being duly sworn upon his oath deposes and states that he is the Pipeline Safety Chief Engineer for the Utilities Division of the Kansas Corporation Commission of the State of Kansas, that he has read and is familiar with the foregoing *Testimony*, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.

Leo M. Haynos

Leo M. Haynos
Chief Engineer
State Corporation Commission of the
State of Kansas

Subscribed and sworn to before me this 18 day of December, 2020.

Sally A. Conn

Notary Public

My Appointment Expires:

SALLY A. CONN
NOTARY PUBLIC
My Appt. Exp.
July 21, 2022
STATE OF KANSAS

CERTIFICATE OF SERVICE

21-WCNE-103-GIE

I, the undersigned, certify that a true and correct copy of the above and foregoing Testimony was served electronically this 18th day of December, 2020, to the following:

JOSEPH R. ASTRAB, ATTORNEY
CITIZENS' UTILITY RATEPAYER BOARD
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3116
j.astrab@curb.kansas.gov

TODD E. LOVE, ATTORNEY
CITIZENS' UTILITY RATEPAYER BOARD
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3116
t.love@curb.kansas.gov

DAVID W. NICKEL, CONSUMER COUNSEL
CITIZENS' UTILITY RATEPAYER BOARD
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3116
d.nickel@curb.kansas.gov

SHONDA RABB
CITIZENS' UTILITY RATEPAYER BOARD
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3116
s.rabb@curb.kansas.gov

DELLA SMITH
CITIZENS' UTILITY RATEPAYER BOARD
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3116
d.smith@curb.kansas.gov

CATHRYN J. DINGES, CORPORATE COUNSEL
EVERGY KANSAS CENTRAL, INC
818 S KANSAS AVE
PO BOX 889
TOPEKA, KS 66601-0889
Fax: 785-575-8136
cathy.dinges@evergy.com

ROGER W. STEINER, CORPORATE COUNSEL
EVERGY METRO, INC
D/B/A EVERGY KANSAS METRO
One Kansas City Place
1200 Main St., 19th Floor
Kansas City, MO 64105
Fax: 816-556-2787
roger.steiner@evergy.com

BRIAN G. FEDOTIN, GENERAL COUNSEL
KANSAS CORPORATION COMMISSION
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3354
b.fedotin@kcc.ks.gov

CARLY MASENTHIN, LITIGATION COUNSEL
KANSAS CORPORATION COMMISSION
1500 SW ARROWHEAD RD
TOPEKA, KS 66604
Fax: 785-271-3354
c.masenthin@kcc.ks.gov

SUSAN B. CUNNINGHAM, SVP, REGULATORY AND GOVERNMENT AFFAIRS, GENERAL COUNSEL
KANSAS ELECTRIC POWER CO-OP, INC.
600 SW CORPORATE VIEW
PO BOX 4877
TOPEKA, KS 66604-0877
Fax: 785-271-4888
scunningham@kepco.org

CERTIFICATE OF SERVICE

21-WCNE-103-GIE

/s/ Vicki Jacobsen

Vicki Jacobsen