ENERGYSOLUTIONS

February 22, 2019 CD19-0040

Annette L. Vietti-Cook, Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Rulemakings and Adjudications Staff

Subject: Rulemaking Petition to Amend 10 C.F.R § 50.2 and 10 C.F.R. § 50.82

Dear Ms. Vietti-Cook:

Pursuant 10 C.F.R. §2.802, EnergySolutions, LLC, (*EnergySolutions*) submits the enclosed rulemaking petition (*Petition*) to the U.S. Nuclear Regulatory Commission (NRC) to amend the definition of decommissioning in 10 C.F.R § 50.2 and to amend 10 C.F. R § 50.82, "Termination of License" to provide a regulatory framework that would allow funds from licensees' decommissioning trust funds to be used for the cost of disposal of "major radioactive components" that have been removed from reactors prior to the permanent cessation of operations. These components represent large capital assets and are defined by 10 C.F.R. § 50.2.

Previously, on May 29, 2007, *EnergySolutions* submitted a similar petition for rulemaking but many factors within the nuclear power industry, especially those relative to the decommissioning of nuclear power plants, have changed dramatically since that time. While that petition was ultimately denied by the NRC staff, these compelling changes warrant a fresh consideration and review by the agency. Among those key changes are the following:

1) The NRC Commission and staff have placed a greater emphasis on efficiency and effectiveness as witness by several key agency wide initiatives over the past 4-5 years such as Project Aim, the Enhanced Strategic Workforce Planning Initiative and SECY-18-0060, Achieving Modern Risk-Informed Regulation.

2) Maximizing environmental stewardship through efficient and timely removal of major radioactive components and avoiding higher disposal costs during peak demand periods associated with increased decommissioning in the future are worthwhile industry and regulatory objectives.

3) Significantly more nuclear power plants have recently entered into or will enter into early closure in the next decade, thus placing the importance of decommissioning and utilization of available low-level waste disposal availability at the forefront at this time. It will be important to avoid high demand on existing disposal capacity and the commensurate higher cost of disposal.

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4) The ongoing decommissioning rulemaking designed to address the front-end changes when a nuclear power plant moves from operations to decommissioning with an emphasis on eliminating the need for exemptions from 10 C.F.R Part 50 requirements.

5) Increased interest by stakeholders for prompt decommissioning and removal of all radioactive waste from former operating nuclear power plant locations. Such interest includes maximizing available low-level waste disposal capacity as promptly as possible to ensure prompt and safe disposal of radioactive waste.

6) The number of nuclear power plants requesting renewal of their operating licenses has increased and thus "major radioactive components" originally considered for the "life of the plant" are remaining on site for longer periods of time than originally envisioned.

7) A nuclear power plant's decommissioning trust fund was initially established as a funding plan for contribution to the fund to occur over the initial life of the plant. As a plant reaches the expiration of its initial license, its decommissioning trust fund should be close to or at maturity. Another 20 or more years of license extension gives a utility an extended opportunity to ensure that the decommissioning trust fund is fully funded for decommissioning at the date of cessation of plant operations, even after disposal of the stored MCR's during operations.

Thank you for your consideration of this *Petition*. If you have any questions concerning this *Petition*, please contact me at 704-343-6249 (email gpvannoordennen@energysolutions.com).

Respectfully submitted,

Gerard van Noordennen

Gerard P. Van Noordennen
Vice President, Regulatory Affairs

Enclosure: Rulemaking Petition to Amend 10 C.F.R § 50.2 and 10 C.F.R. § 50.82

Cc:
M. Doane, Executive Director for Operations, NRC
M. Zobler, General Counsel, NRC
S.Moore, Acting Director, Office of Nuclear Materials Safety and Safeguards

RULEMAKING PETITION TO AMEND 10 C.F.R. § 50.2 and 10 C.F.R. § 50.82

I. Introduction and Rulemaking Request

Pursuant to 10 C.F.R. § 2.802, Energy*Solutions*, LLC, *(EnergySolutions)* submits this Rulemaking Petition (*Petition*) to the U.S. Nuclear Regulatory Commission (NRC) to amend 10 C.F.R. § 50.2 "Definitions" and 10 C.F.R. § 50.82, "Termination of License" to provide a process that recognizes that it is useful to remove "major radioactive components" during operations to facilitate later complete decommissioning and that would allow funds from licensees' decommissioning trust funds to be used for the cost of disposal of "major radioactive components" which have been removed from reactors prior to the permanent cessation of operations. These components represent large capital assets and are defined by 10 C.F.R. § 50.2. Hereinafter these components are referred to as "MRC's."

This rulemaking is needed because current regulations define decommissioning in 10 C.F.R. § 50.2 as not beginning until the site or facility ceases operations. As a result, NRC regulations in 10 C.F.R. § 50.82(a)(8) only allows withdrawals from decommissioning trust funds for decommissioning expenses, and further limits withdrawals only for planning activities prior to the submittal of the post-shutdown decommissioning activities report (PSDAR) following cessation of operations. Thus, either an exemption or an amendment to 10 C.F.R. § 50.82(a)(8) is required to allow withdrawals of these funds for disposal of MRC's during operations.

Consequently, rather than use limited operating funds, most licensees defer the disposal of the MRC's until the time of decommissioning, when the disposal clearly will be part of decommissioning and the cost of disposal will be paid from the licensee's decommissioning trust funds, as these MRC's will need to be removed from the sites and disposed of to achieve the dose limits of the License Termination Rule, 10 C.F.R. Part 20, Subpart E. In fact, of the approximately 209 steam generators that have been removed or scheduled for removal from reactors, about 130 remain stored or are planned to be stored on-site in specially constructed structures. These contaminated MRC's may remain stored on-site for decades as a result of current and future license extensions. Certainly, this situation becomes more paramount as nuclear power plants seek renewal of their licenses from 60 to 80 years thus extending the amount of time that the MRC's remain on site. This situation represents an unintended consequence of the existing regulatory infrastructure for decommissioning.

The purpose of this *Petition* is to provide a process framework in the NRC regulations to permit a licensee in advance of ceasing operation at a site to facilitate the decommissioning process by allowing decommissioning trust funds, in cases where excess funds can be shown to exist, to be used for disposal of removed MRC's so that:

(1) environmental stewardship is improved as the radioactive inventory associated with the contaminated components at operating reactor sites will be reduced;

(2) the site workers may be exposed to less radiation given the absence of MRC's on site or at the very least ALARA consideration are improved;

(3) unnecessary regulatory burdens can be eliminated as the costs associated with maintaining the components on-sites and providing protection to the workers as a result of those components can be avoided;

(4) the overall costs to decommission sites will be reduced by avoiding future escalation in disposal costs due to spikes in demand resulting from numerous plants waiting until they shut down to dispose, creating a situation where eventually the majority of the fleet is seeking MRC disposal at the same time;

(5) disposal under more optimal market conditions will provide for more funds to be available to decommission reactors at the time the reactors cease operation; and

(6) enhance public confidence that MRC's may be removed from operating nuclear power plants in a timely manner to maximize the use of available disposal capacity and eliminate the need for MRC's to remain on-site for a protracted period.

This *Petition* is not seeking approval to use decommissioning trust funds to cover the cost of removing the MRC's from the reactor rather it is focused upon disposal of the MRCs.

II. Statement of Current Regulation

Current NRC regulations set forth in 10 C.F.R. § 50.2 define decommissioning as removing a facility from service and reducing residual radioactivity to a level that permits release of the property under unrestricted or restricted use and termination of the license. As such, the existing definition does not recognize that there may be significant advantages to removing MRC's during operations such that the ultimate decommissioning of the facility can be completed in a more-timely and cost-effective manner while maximizing the use of available existing low-level waste disposal capacity. In addition, the current definition does not recognize that MRC's are remaining on-site for unanticipated periods of time due to nuclear power plant renewals given the anticipated life-cycle for MRC's. Further, current NRC regulations provide in 10 C.F.R. § 50.82(a)(8)(i) that decommissioning trust funds may be used by licensees if:

(A) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in 10 C.F.R. § 50.2.

(B) The expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the reactor in a safe storage condition if unforeseen conditions or expenses arise.

(C) The withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

In addition, 10 C.F.R. § 50.82(a)(8)(ii) provides a limitation on use of decommissioning trust funds prior to the submittal of a PSDAR. Specifically:

(ii) Initially, 3 percent of the generic amount specified in 10 C.F.R. § 50.75 may be used for decommissioning planning. For licensees that have submitted the certifications required under 10 C.F.R. § 50.82(a)(l) and commencing 90 days after the NRC has received the PSDAR, an additional 20 percent may be used. A site-specific decommissioning cost estimate must be submitted to the NRC prior to the licensee using any funding in excess of these amounts.

III.Statement of Proposed Amendment

The following proposed amendment to 10 C.F.R. § 50.2 and § 50.§ 50.82(a)(8) to change the definition of decommissioning to allow the disposal of MRCs during operations as part of the overall decommissioning process and add a new paragraph as 10 C.F.R. § 50.82(a)(8)(iii) that would provide a process for NRC to allow funds to be withdrawn from decommissioning trust funds for the purpose of disposal of major radioactive components without the need for a licensee to seek an exemption. The new definition of decommissioning would read as follows: "Decommission means removing major radioactive components during operations to later facilitate complete decommissioning and/or removing a facility or site safely from service and reduce residual radioactivity to a level that permits ..."

The second proposed paragraph relative to 10 C.F.R § 50.82 (a)(8) would read as follows:

(iii) Notwithstanding the limitations of 10 C.F.R. § 50.82(a)(8)(i)(A) and 8(ii), a licensee may use decommissioning trust funds to dispose of major radioactive components that have been removed from the reactor provided:

(A) The licensee has submitted to the NRC with a copy to the Federal or State Government agency (e.g., Federal Energy Regulatory Commission and State Public Utility Commissions), if any, which has rate regulation oversight responsibility for the licensee's decommissioning trust fund:

(1) a request to allow it to withdraw a specified amount from its decommissioning trust fund for the purpose of disposing of specific major radioactive component(s);

(2) a site-specific decommissioning cost estimate that includes the disposal costs for major components stored on-site; and

(3) an analysis demonstrating that if the licensee withdraws funds for the costs of disposing of the particular component(s) from the decommissioning trust fund, the remaining funds in the licensee's decommissioning trust fund are sufficient to meet the provisions of 10 C.F.R. § 50.82(a)(8)(i)(B) and (C); and

(4) the NRC has concluded that there is reasonable assurance that the provisions of 10 C.F.R. § 50.82(a)(8)(B) and (C) will be met with sufficient margin to account for unforeseen events if the licensee withdraws the funds requested under 10 C.F.R. § 50.82(a)(8)(iii)(A)(l).

IV. Interest of the Petitioner

EnergySolutions is a nuclear services firm that provides services to private and government organizations involved in nuclear activities. *EnergySolutions* has broad experience and expertise with the NRC licensing process and with the standards that apply to the regulation of nuclear facilities, the use of radioactive materials, the cleanup and decommissioning of nuclear facilities, and the disposal of radioactive waste. Its employees have significant experience in the nuclear industry. *EnergySolutions* values a safe, efficient, and cost-effective nuclear industry. Accordingly, after discussions with individuals in the nuclear industry and based on the knowledge and experience of *EnergySolutions'* employees, *EnergySolutions* is submitting this *Petition* on its own behalf as it has concluded that it is in the public interest to dispose of MRC's prior to cessation of operations, thereby simplifying decommissioning and reducing sites' radioactive inventories. *EnergySolutions* also has a business interest in having MRC's disposed of at its Clive facility in Utah. This interest is best served if inventory can be managed in the most efficient manner possible by disposing of components that are already available for disposal now so that resources can be less constrained in the future when large numbers of plants enter decommissioning.

Granting this *Petition* will also provide flexibility for licensees to better use limited land areas on licensed sites. Recognizing the substantial costs involved to remove these components from sites and dispose of them, it is *EnergySolutions'* view, that where a licensee has sufficient funds available in its decommissioning trust funds to cover decommissioning consistent with 10 C.F.R. § 50.82(a)(8)(i)(B) and (C), allowing funds to be withdrawn from the decommissioning trust funds would encourage licensees to remove these components from the site for disposal rather than waiting decades until cessation of site operations. As a result, potential exposure can be reduced and ALARA objectives for site workers will be enhanced as significant inventories are removed from sites and properly disposed of decades in advance of the time the MRC's would have been removed if licensees waited until their reactor ceases operation. In addition, avoiding escalations in the cost of disposal due to future demand peaks by using funds now for disposal should improve the ability of the remaining decommissioning trust funds to cover the costs for the remainder of decommissioning activities at the time the reactor ceases operation. Furthermore, public confidence in the overall decommissioning process may be enhanced as the result of removing MRC’s from nuclear facilities in a more expeditious manner to maximize the use of disposal capacity and remove radioactive waste from the facility sooner. Efficient and

timely management of MRC's while maximizing available disposal capacity is favorable for overall environmental stewardship.

V. Justification for This Proposed Amendment

A. Background

The Commission in the Statements of Consideration for the 1996 amendments to 10 C.F.R. § 50.82 in responding to a comment stated: "Allowing decommissioning trust funds' withdrawals for disposals by nuclear power plants that continue to operate is not warranted. These activities are more appropriately considered operating activities and should be financed that way." 61 FR 39278, 39293 (July 29, 1996). Consequently, licensees, having been precluded from using decommissioning trust funds, have found it advantageous to store large components on-site rather than expend limited operating funds to dispose of these components as a routine operating cost. However, the MRC's at issue here, consistent with the definitions in 10 C.F.R. § 50.2, are "major radioactive components," the dismantlement of which the NRC did not consider to be "routine operations.", 61 FR at 39286. The components considered to be "routine nuclear power reactor operation activities" were components not within the definition of "major radioactive components." The MRC's which are the subject of this *Petition* were originally intended to be used for the life of the plant. In the *EnergySolutions'* view, the disposals of such MRC's are appropriately funded from decommissioning funds and are not operating expenses. Hence, this *Petition* is being submitted to set up a regulatory framework that recognizes that the removal of MRC's during operations may be part of the overall decommissioning process, while being cost effective, and maximizes the use of available disposal capacity. In addition, it allows funds to be withdrawn from decommissioning trust funds to dispose of these MRC's prior to shutdown in support of this objective.

One clear advantage of the current approach is that by deferring the disposal of the MRC's until the time of decommissioning, the disposal clearly will be part of decommissioning, and the cost of disposal will be paid from the decommissioning trust fund as these MRC's will need to be removed from the site and disposed of to achieve the dose limits of the License Termination Rule, 10 C.F.R. Part 20, Subpart E. In fact, of the approximately 209 steam generators that have been removed at more than 60 nuclear units, about 130 remain stored on-site in specially constructed mausoleums. In addition to the costs to build these structures, these licensees are required to expend funds for maintenance of the structures and environmental monitoring which seems unnecessary in light of the limited potential contamination associated with the MRC's. In other words, funds are spent in the absence of a clear safety issue. Storage of MRC's on-site may not be in the best interest of environmental stewardship or aid in the avoidance of future peak demands for disposal facilities when the issue can clearly be addressed by a regulatory infrastructure that allows timely and efficient disposal of MRC's through the use of decommissioning trust funds.

B. Need for an Amendment

EnergySolutions considers the disposal of the MRC's to be a decommissioning activity because the activity can be described as removal from service of major radioactive components that are large items of capital equipment. However, the NRC definition of "decommission" in 10 C.F.R. § 50.2 implies the entire facility must be removed from service as a prerequisite in order to consider an activity a legitimate decommissioning activity. When the NRC promulgated the decommissioning rule in 1988, it noted in the Statements of Consideration to the final rule that "[d]ecommissioning activities are initiated when a licensee decides to terminate licensed activities." 53 FR 24,018, 24,019 (June 27, 1988). However, as cited throughout this *Petition* overall decommissioning strategies have changed dramatically since the inception of the rule and the overall interest in the NRC to improve and efficiency and effectiveness while bring to bear risk significance has matured.

The MRC's that are covered by this rulemaking have already been removed from service but await disposal. Absent a rule amendment or an exemption, the current regulations encourage licensees to delay disposal of the MRC's until the facility ceases operation. Review of this regulatory history for licensees seeking an amendment for the purpose of removing MRC's from their facilities early, as well as the results of the former petition review, reveals that a rule amendment or exemption approval is not likely and has resulted in numerous MRC's remaining on-site for many years. Accordingly, an amendment with respect to 10 C.F.R. § 50.2 and 10 C.F.R. § 50.82(a)(8)(i)(A) is needed because the facility and site are not being removed from service and, therefore, under the definition of "decommission" the disposal activity requested to be paid from the decommissioning trust fund is not a "decommissioning activity." It should be noted that by the exact language of the definitions in 10 C.F.R. § 50.2, the permanent removal "major radioactive components" is considered as a "major decommissioning activity." Based upon the denial of a similar *Petition* and at least two exemption requests, the NRC has not properly interpreted these definitions as the NRC staff has not concluded that the removal of about 200 steam generators, which are defined as "major radioactive components," during operations is a "major decommissioning activity." This action by the NRC has resulted in MRCs remaining on-site for many years unnecessarily and resulted in increased costs to the operating utility to construct structures in support of the stored MRCs. Furthermore, this approach by the NRC does not take into consideration the internationally recognized fundamental principle (NEA/RWM/R(2012) of maximizing the use of disposal capacity which serves to enhance environmental stewardship. In addition, an amendment is also needed because 10 C.F.R. § 50.81(a)(8)(ii) allows only planning costs to be paid from decommissioning trust funds in advance of submittal of a PSDAR. As explained below, granting the relief being sought in this *Petition* will be limited to situations where there is ample margin in trust fund balances to assure that sufficient funds will be maintained to fully decommission the facility even in the face of unforeseen events. The rulemaking would allow a process to authorize withdrawal of funds from a decommissioning trust fund for the purpose of removing the MRC's from the plant sites and disposing of them irrespective of the 10 C.F.R. § 50.82 (a)(8)(ii) restrictions.

C. Justification

This *Petition* should be granted for the following reasons:

1. Granting This *Petition* Is Consistent With The Purpose of the Rule

The underlying purpose of 10 C.F.R. § 50.82(a)(8) is to provide adequate funds for ultimate decommissioning of the site. The purpose of the restrictions on fund withdrawal is to protect the health and safety of the public by assuring that there will be adequate funds available to complete the NRC-required decommissioning activities following termination of the operating license. A blanket prohibition on the use of decommissioning trust funds to dispose of MRC's is unnecessary to achieve the underlying purpose of the rule. In fact, such a blanket prohibition is clearly contrary to recognizing that there will be bow waves of decommissioning activity and the related need for disposal capacity in the future. Furthermore, the decommissioning approach including the timeline for decommissioning nuclear power plants is increasingly moving toward DECON rather than SAFSTOR, which serves to expedite the demand for disposal capacity and related costs. The amended rule would require a current site-specific decommissioning cost estimate to be submitted to the NRC and a demonstration that the decommissioning trust fund is more than adequate to complete decommissioning even if funds are withdrawn for disposals of the MRC's. The licensee's analysis would be required to demonstrate that 10 C.F.R. § 50.82(a)(8)(i)(B) and (C) are met. Specifically:

(B) The expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the reactor in a safe storage condition if unforeseen conditions or expenses arise.

(C) The withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

It is noteworthy that under the current rule, a licensee can exceed the 3 and 20 percent limitations of 10 C.F.R. § 50.82(a)(8)(ii) if a site-specific cost estimate is submitted to the NRC, though only after the reactor ceases operation in the case of the 20 percent limitation. Once this cost estimate is provided to the NRC, the licensee, according to the 1996 Statements of Consideration, may withdraw funds without obtaining additional approvals from the NRC 61 FR 39278, 39285 (July 29, 1996).

Importantly, under the proposed amendment, the NRC would not only have received the licensee's site-specific decommissioning cost estimate, NRC would need to make a finding that there was reasonable assurance that the provisions of 10 C.F.R. § 50.82(a)(8)(B) and (C) will be met with adequate margin if the licensee withdraws the requested funds. In addition, before making that finding, the NRC while not bound to accept the views, would be able to consider the views from the appropriate Federal or State agency, if any, with oversight responsibility for the licensee's decommissioning trust fund. Thus, this amendment

continues the assurance that adequate funds will be available for ultimate decommissioning of the site based on a site-specific analysis consistent with the purpose of the rule.

2. Granting This *Petition* Avoids a Conflict with the NRC Philosophy Underlying Other Rules

Application of the regulations in 10 C.F.R. § 50.82(a) is in conflict with the philosophy underlying the approach the Commission took for timeliness requirements set up for materials licensees as it may provide an unnecessary economic barrier for the removal of inventories from reactor sites. Material licensees of the NRC are subject to the 1994 Decommission Timeliness Rule, 10 C.F.R. § 30.36, 40.42, 70.38, and 72.54, which requires those licensees to decontaminate and decommission certain unused portions of operating nuclear materials facilities. Allowing contaminated land, buildings, or equipment to remain on-site was seen as a possible public and environmental liability and the Commission looked for ways to achieve early decommissioning of unused portions of material facilities. For valid and sound reasons, reactor licensees are not subject to this rule and, in fact, are allowed the SAFSTOR option under 10 C.F.R. § 50.82. Nevertheless, NRC should not create barriers for the reactor licensees who seek to make prudent economic and environmental stewardship decisions to remove radioactive materials from their sites.

In addition, application of the regulations in 10 C.F.R. § 50.82(a) is in conflict with the philosophy underlying the approach the Commission took for the license termination rule in modifications to its regulations in 1997. NRC added 10 C.F.R. § 20.1406 which reads:

> *"Applicants for licenses, other than renewals, after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize to the extent practicable, the generation of radioactive waste."*

The intent of 10 C.F.R. § 20.1406 is to diminish the occurrence and severity of site contamination by taking measures that will control contamination and facilitate eventual decommissioning. Consistent with this philosophy, while most unlikely to cause radioactive contamination issues, early removal of large components would comply with the Commission's fundamental intent under 10 C.F.R. § 20.1406. We understand the NRC staff is working on plans to modify 10 C.F.R. § 20.1406 to apply to existing facilities.

Nuclear reactor licensees, though not required to do so, should be permitted to utilize decommissioning trust funds that are intended to cover the removal expense in advance of cessation of operations when such components no longer have a useful purpose. Early removal could take advantage of the current favorable disposal pricing in some cases.

However, without a rule amendment or an exemption from the rule, such items could remain on-site for additional decades, particularly given current trends towards license renewal. Moreover, delaying disposal escalates disposal costs. For example, experience with non-reactor decommissioning sites indicates that clean-up costs can escalate significantly when

unmanaged contamination is left on-site for long periods of time. Over the years the NRC staff has performed numerous decommissioning cost analyses on such sites and cited this information in the NRC staff's annual report on the status of the decommissioning program. The latest version of this extensive timeline information is set forth in "Status of the Decommissioning Program 2017 Annual Report".

3. Withdrawals Under This *Petition* Would Be Permitted Only For Limited Activities

The requested amendment would only allow withdrawn funds to be used for the disposal of MRC's and associated costs such as preparation for and transportation to the disposal site. It is limited to "major radioactive components" that were expected at the time of initial licensing to last the life of the plant. When initially licensed, it was not anticipated that MRC's such as steam generators and reactor vessel heads would need to be replaced during operations. These are the types of components that would clearly be covered as "legitimate decommissioning activities" if remained on-site until the reactor ceases operation. The proposed amendment does not apply to valves, pumps, and other components that at the time of initial licensing had the clear potential for replacement during operations. Consequently, granting this *Petition* does not create a "slippery slope" that may result in what clearly are ordinary operating expenditures to be taken out of decommissioning trust funds especially when considering the adequate margin approach set forth in this *Petition*.

4. The Proposed Amendment Does Not Depend On the Adequacy of The Minimum Funding Requirement In 10 C.F.R. § 50.75

It is recognized that some have questioned the sufficiency of decommissioning trust funds based on the formula amount set forth in 10 C.F.R. § 50.75(c). Both the NRC Inspector General and the Government Accountability Office (GAO) have raised questions about the adequacy of some decommissioning trust funds: *Nuclear Regulation: NRC Needs More Effective Analysis to Ensure Accumulation of Funds to Decommission Nuclear Power Plants, GAO-04-032 (October 2003)*. However, as noted above, before funds can be withdrawn under the proposed amendment, the licensee will need to submit:

(1) a site-specific decommissioning cost estimate, and

(2) a demonstration of the adequacy with margin of the amount of funds in the decommissioning trust fund.

It would be expected that the licensee's analysis for this demonstration would address factors such as:

(1) the status of the decommissioning trust fund including: the amount of current funds, a comparison of the current funds in the decommissioning trust fund to the site-specific decommissioning cost estimate, the fund performance in relation to the 2% earning rate set forth in 10 C.F.R. § 50.75, the status of ongoing contributions, and the time available to accumulate additional funds;

(2) the comprehensiveness of the site-specific decommissioning cost estimate including the basis for concluding that the licensee understands the elements impacting the cost for decommissioning and the estimate comprehensively addresses these elements; and

(3) the reliability of the decommissioning cost estimate including how the site-specific decommissioning cost estimate factored in the lessons learned from recent reactor decommissioning cases.

The NRC would then need to make a finding that it had reasonable assurance concerning the adequacy of the funds. Thus, current concerns about the formula funding requirement in 10 C.F.R. § 50.75 should not affect the consideration of this *Petition*.

5. Using Decommissioning Trust Funds Now To Dispose Of MRC's At A Site Will Likely Result In More Funds Available To Decommission The Remainder Of That Site

The Petition filed in 2007 cited a review of NUREG-1307, "Report on Waste Burial Charges" (February 2007), demonstrated that the cost of disposal is increasing. It appeared that the cost of disposal was rising at a rate higher than the 2% rate of return allowed to be assumed by 10 C.F.R. § 50.75. Similarly, a review of NUREG-1307, 15th Revision, dated July 2016 continues to demonstrate this trend. There were certain increases and decreases in disposal costs for certain of the commercial disposal facilities as compared to 2012 but the overall trend is upward for disposal costs and is expected to continue. By disposing of MRC's that are now being stored on a site, the overall cost of decommissioning the site will be reduced since that activity is already completed. As a result, disposing of MRC's now is equivalent to adding funds to cover future decommissioning expenses. In addition, permitting the use of the funds now removes the potential that future disposal costs for MRC's may go up more than currently anticipated. Thus, allowing the release of funds under the process proposed under this *Petition* should provide additional assurance that the trust fund will remain viable at the time of decommissioning by removing this disposal cost uncertainty. Moreover, this assurance should increase the longer is the period of time for fund accumulation. License extensions, therefore, contribute to the added assurance. *EnergySolutions* has not submitted detailed information to support this position because the *Petition* seeks only to establish a process. The analysis for any given site would be specific to that site and submitted as part of the demonstration required should the NRC grant this *Petition*.

6. Granting This *Petition* Promotes Sound Environmental Stewardship at Reactor Sites

Granting this *Petition* will provide for a regulatory framework that will encourage licensees to remove MRC's from sites for disposal resulting in removal of radioactive inventories decades in advance of the time they would otherwise be removed if the sites waited until the reactors cease operation. Prompt disposal by removing large inventories created by the contamination in these MRC's furthers the objective of maintaining radiation exposures as

low as reasonably achievable pursuant to 10 C.F.R. § 20.1101(b) by minimizing the potential for long-term exposure. This is a clear benefit that can now be implemented as there is disposal capacity for these MRC's. In addition, disposing of waste prior to the permanent cessation of operations is consistent with the NRC policy to minimize the costs and complexity of decommissioning, which can only improve safety as the site undergoes active decommissioning. Furthermore, many public stakeholders are likely to find the removal as the MRC's earlier as favorable given that certain radioactive low-level waste is removed from the facility, and thus, would not pose a problem later which might impact ultimate decommissioning. As such, early removal avoids any potential environmental impact from storing these MRC's on-site and permits other uses of the land used for storage and the storage buildings.

7. Granting This *Petition* Would Prevent Unnecessary Regulatory Burdens

Granting this *Petition* will remove an unnecessary burden from licensees who have had to store MRC's on their sites due to their inability to use decommissioning trust funds.

To store these MRC's on-site, licensees have had to build large, dedicated structures to avoid spreading environmental contamination associated with storage of contaminated MRC's and to reduce exposures to workers. In addition to the costs associated with building these structures, which are in the order of a million dollars, there are operational costs for maintaining and monitoring releases and exposures from the sources contained within them. Fundamentally, it can be argued that these actions serve to divert scarce site resources when there is a more efficient and cost-effective way to manage the disposal of MRC's if decommissioning trust funds can be used by the utility along the way. In addition, these structures take up limited site space within restricted areas that may reduce operational as well as decommissioning flexibility at various sites.

These costs are unnecessary from a health and safety perspective if the licensee has sufficient funds with adequate margin in its decommissioning trust funds to meet the provisions of 10 C.F.R. § 50.82(a)(8)(i)(B) and (C). Moreover, the current regulatory process causes licensees to use operating funds to build and maintain mausoleums and monitor releases in order to store these MRC's on-site rather than to use decommissioning trust funds that were collected to cover the costs of disposing of these MRC's.

It should also be noted that when 10 C.F.R. § 50.82(a)(8) was adopted, the NRC might not have recognized that MRC's would be removed from reactors and stored on-site until permanent cessation of operation because decommissioning trust funds did not include sub-accounts to address the need for early disposal of large components. Apparently, the NRC anticipated that sub-accounts would be used to separate the funds collected for NRC jurisdiction decommissioning from other decommissioning uses, 61 FR 39,278, 39,285 (1996). In fact, in many cases licensees commingle the funds for the NRC jurisdictional decommissioning and the non-NRC jurisdictional decommissioning in their decommissioning trust funds. Under the current regulatory framework in 10 C.F.R. § 50.82(a)(8), the NRC regulations restricts the withdrawal of funds to dispose of these MRC's, even if the non-radiological portion of the decommissioning funds could clearly

cover the costs without impacting achieving the purpose of the fund because, in the absence of sub-accounts, these funds are commingled with the NRC-required funds in the decommissioning trust fund. Preventing the use of those funds solely because they are commingled creates an unnecessary regulatory burden as it does not have a corresponding safety benefit if the licensee has sufficient funds in its decommissioning trust funds to meet the provisions of 10 C.F.R. § 50.82(a)(8)(i)(B) and (C).

Thus, granting this *Petition* will provide for a process that will encourage early disposal and allow licensees with adequate decommissioning trust funds to avoid an unnecessary regulatory burden.

VI. Conclusion

Granting this *Petition* is prudent and consistent with the underlying purpose of 10 C.F.R. § 50.2, 10 C.F.R. § 50.82(a)(8), and 10 C.F.R. § 20.1406. In sum, it should facilitate the decommissioning process by providing the regulatory framework to allow removing the MRC's from sites resulting in: (1) the inventory at the site being reduced; (2) the site workers potentially being exposed to less radiation; (3) eliminating an unnecessary regulatory burden associated with maintaining the MRC's on-site and providing protection to the workers as a result of those components being removed; (4) the overall cost to decommission the site being reduced by avoiding escalated cost associated with peak demand; (5) optimizing the use of available disposal resources so that more funds can be available to decommission the reactor at the time the reactor ceases operation and (6) enhancing overall environmental stewardship through timely removal of MRC's. Finally, the framework would provide the demonstration by a site-specific decommissioning cost estimate and the associated funding program that excess-funds are available to dispose of these components as well as complete site decommissioning for unrestricted release consistent with the NRC requirements.

Many important circumstances have changed since *EnergySolutions* submitted a Petition for Rulemaking to Amend 10 C.F.R. § 50.82 in 2007. For example, more nuclear power plants are entering into early closure with the commensurate use of DECON rather than SAFSTOR. To demonstrate this point, we are now observing an ongoing major change in the approach and timing of decommissioning of nuclear power plants driven by new business models identified as "shared stewardship" and "asset acquisition" which is driving the timeline for decommissioning from as much as the allowed sixty years to potentially as few as ten years post closure. In addition, many MRC's have remained on-site for unexpected and protracted periods of time due to license renewal which was not anticipated at the time that the current applicable regulation in Part 50 were promulgated to address decommissioning. Further, the Commission and NRC staff have placed an emphasis on increasing efficiency and effectiveness in its regulatory process including questioning "why do we do this" and "why do we do it this way". In keeping with such questions, the NRC has undertaken many recent efforts to improve NRC regulations and seek feedback on its regulatory approaches. These include Project Aim in January 2015; a stakeholder meeting with the Commission in July 2016; and the Enhanced Strategic Workforce Planning initiative in April 2017. More recently in SECY-18-0060, Achieving Modern Risk-Informed

Regulation the NRC staff stated, “Risk-informed and performance-based approaches provide focus on items of highest safety or security significance, enable more efficient use of agency resources, and reduce unnecessary burdens to licensees”. Further, the NRC staff stated, “However, recent changes in the external environment (e.g. the introduction of new technologies, the difficult market conditions for the nuclear industry) provide a compelling opportunity to better focus NRC resources on the most safety and security significant aspect of our work, while continuing to enhance the **effectiveness, efficiency and agility of our licensing and oversight functions (**emphasis added). All of these circumstances argue in support of modifying 10 C.F.R. § 50.2 and 10 C.F.R. § 50.82(a)(8) to modernize the nuclear power plant decommissioning process and allow the flexibility for licensees to remove MRC’s from their facilities in a timely manner while not compromising the required decommissioning trust fund.