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

COMMISSIONER

February 12, 2014

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-6115

The Honorable John Shimkus
Chairman, Subcommittee on Environment
and the Economy
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-6115

Attn: Mr. Nick Abraham

Dear Chairmen Whitfield and Shimkus:

In response to your letter of January 15, 2014, please find enclosed my answers to the questions for the December 12, 2013 hearing record. These answers include sensitive non-public information. Therefore, it is requested that they be held in confidence with access limited to the Committee and its staff.

Please contact me with any questions you may have.

Sincerely,

George Apostolakis

Enclosures: as stated

cc: The Honorable Bobby L. Rush
The Honorable Paul Tonko

Attachment 1 – Commissioner Apostolakis'
Responses to Additional Questions for the Record

The Honorable Ed Whitfield

1. **According to the NRC staff's FY 2012 report on adverse trends in the industry's safety performance: *"...the staff identified no statistically significant adverse trends in industry safety performance."* In fact, a closer inspection of the long-term trend graphs in that report show that the industry is improving safety in 10 out of the 14 graphs. The staff indicated the remaining four: *"...did not have a statistically significant trend."* However, the nuclear reactor safety budget has grown 48% over the last ten years even though the number of licensing actions and tasks has decreased 40%. Four reactors permanently shut down last year, another one will this year, and reports persist that others may also.**

   a. **Please describe what actions you believe the Commission should take to ensure the budget is commensurate with a decreased workload, a shrinking fleet, and improving industry safety performance.**

      ANSWER: Although the number of active new reactor applications before the NRC has decreased in recent years, there has been a significant increase in the NRC's workload in other areas, most notably, in our response to the accident at Fukushima Daiichi, in our work reviewing fire protection license amendments, and in our work related to Waste Confidence. In addition, although the number of operating power reactors is decreasing, there will still be a great deal of NRC work associated with recently closed plants as they undergo decommissioning.

      Nevertheless, I am committed to ensuring that future NRC budgets are commensurate with our workload. The Commission has a number of opportunities to ensure resource requests are commensurate with workload. On an annual basis, the Commission reviews the baseline budget and adjusts resource allocations based on several factors, including letters of intent from current and prospective licensees, changes in regulatory requirements, and prior year expenditures. In the year of budget execution, the agency works to adjust resources commensurate with the level of work actually received. The agency will begin to develop the FY2016 budget in the coming months using updated assumptions about operating plants, new reactor applications, and other indicators of the projected workload.

      It is worth noting that, as of November 16, 2013, the NRC has 3871 staff (including the Office of the Inspector General) which is down 368 employees from FY2010. The NRC has been engaged in efforts to streamline the organization and should continue to do so.

   b. **Please describe any recommendations you believe would improve the prioritization and application of resources to matters that are safety significant.**

ANSWER: The agency continues to consider ways to further risk-inform our regulatory activities which would support enhanced prioritization based on safety and security significance. For example, in early 2013, the Commission directed the NRC staff to develop approaches for allowing licensees to propose prioritization of the implementation of regulatory actions as an integrated set and in a way that reflects their risk significance on a plant-specific basis. The staff has been interacting with stakeholders and is developing options for Commission action.

The Honorable John Shimkus

1. **Given the DC Circuit Court of Appeals reaffirmed the NRC's obligation under the Nuclear Waste Policy Act to review the Yucca Mountain license application, do you as an individual commissioner believe it is incumbent upon the NRC to request the funding necessary to complete the license review?**

   ANSWER: I am recused from the Yucca Mountain adjudicatory proceeding and have not been participating in the agency's decisions on how to respond to the court's remand and direction. Thus, I have not formed a position on this question.

2. **Do you as an individual commissioner believe the NRC should propose a supplemental budget request to the Office of Management and Budget to support full resumption of the license review? If not, why not?**

   ANSWER: I am recused from the Yucca Mountain adjudicatory proceeding and have not been participating in the agency's decisions on how to respond to the court's remand and direction. Thus, I have not formed a position on this question.

3. **If the Commission fails to request funding for completing the Yucca Mountain licensing process, do you as an individual commissioner believe that would weaken the basis for Waste Confidence findings?**

   ANSWER: I am recused from the Yucca Mountain adjudicatory proceeding and have not been participating in the agency's decisions on how to respond to the court's remand and direction. Thus, I have not formed a position on this question.

4. **Given the fact that the NRC routinely issues draft SERs during other license reviews and later revises them, do you as an individual commissioner believe the Commission should utilize the same approach on the Yucca Mountain license review for the sake of transparency? If not, why not?**

   ANSWER: I am recused from the Yucca Mountain adjudicatory proceeding and have not been participating in the agency's decisions on how to respond to the court's remand and direction. Thus, I have not formed a position on this question.

5. **Recently, the NRC staff provided a 400-page report to the Commission: *"Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor."* The cover memo for that report states:**

"This study shows the likelihood of a radiological release from the spent fuel after the analyzed severe earthquake at the reference plant to be very low (about 1 time in 10 million years or lower)."

The staff has provided the Commission with a 200-page report entitled *"Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel".* In this report, the staff concluded that:

- ***"The costs of expedited transfer of spent fuel to dry cask storage outweigh the benefits";***
- ***"Additional studies are not needed";* and**
- ***"No further regulatory action is recommended for the resolution of this issue and this Tier 3 item should be closed".***

a. As an individual commissioner, do you have any reason to doubt the NRC staff's competence in this regard?

ANSWER: No. I might add that, although there are varying views on whether the conclusions of the report are well supported, the NRC's Advisory Committee on Reactor Safeguards, a statutory committee that advises the Commission with regard to reactor safety issues, commented on the staff's work in a letter dated December 18, 2013. The Committee concluded, among other things:

1. The staff's safety goal screening analysis has adequately evaluated the safety benefits of expedited transfer from spent fuel pools (SFPs) to dry cask storage systems (DCSSs).

2. The safety goal screening evaluation has demonstrated that the NRC Safety Goal Policy and Quantitative Health Objectives (QHOs) are met with orders of magnitude margin for both current high-density SFP loadings and proposed low-density fuel loadings. Based on these results, the staff has concluded that there is insufficient safety benefit to justify the expedited transfer of spent fuel from U.S. pools to DCSSs. We agree with this conclusion.

<u>The Honorable Joe Barton</u>

1. In November 2013, NRC released a report entitled "A comparison of U.S. and Japanese regulatory requirements in effect at the time of the Fukushima accident."

a. Do you support all of the findings of the staff report?

ANSWER: I have no basis to disagree with the findings. The findings appear to be sound.

b. The authors of the report acknowledge that the staff's comparison was not an exhaustive review. Do you think it is appropriate for the Commission to consider revising the NRC's regulatory framework without having an exhaustive review as a solid basis for such a revision?

ANSWER: In my view, the Commission acted appropriately in the instances where it has considered and approved new requirements based on lessons learned from the Fukushima accident. Following the accident, the NRC focused on the course of events leading up to, during, and after the Fukushima accident and established a task force to conduct a systematic and methodical review of NRC processes and regulations to determine whether the agency should make additional improvements to its regulatory system in light of that accident. As an example, the mitigating strategies implemented at U.S. plants following the terrorist attacks of September 11, 2001, to cope with large fires and explosions might have helped in responding to an extended loss of electrical power and core cooling capability such as that which occurred at Fukushima. However, this equipment was not designed or required to handle multi-unit events or survive extreme natural phenomena, such as a beyond design basis flood.

Upon identifying these limitations, the NRC's response was to issue orders to U.S. plants to install additional portable power supplies and pumps that would be protected from extreme natural phenomena to ensure that equipment would be available to cool the reactors if all electrical power is lost, no matter what causes the loss of power. This new requirement is a result of one of the most safety significant lessons to be learned from the Fukushima accident, and it was identified by reviewing the event itself, rather than studying the differences in the U.S. and Japanese regulations. The staff's efforts to identify and implement the remaining Fukushima lessons learned follow a similar methodology.

The staff's November 2013 assessment identified the difficulties in fully comparing Japanese and U.S. regulatory requirements and did not alter the NRC's view that appropriate actions should be identified by focusing on U.S. plants and potential improvements to address beyond design basis events. The comparisons of U.S. and Japanese regulations in effect at the time of the accident has not identified new issues or resulted in the NRC revising its planned regulatory improvements to U.S. nuclear power plants. The NRC staff has had extensive discussions with other foreign national regulators, including the Japanese Nuclear Regulation Authority, to compare lessons learned and implementation strategies for improvements to plant designs and operations. These discussions have informed the NRC's effort.

c. What differences between U.S. and Japanese regulatory framework were left out of the final report? Why were they not deemed to merit further analysis?

The comparison did not assess differences in administrative requirements, plant licensing or license amendment processes, reporting and inspection programs, or technical areas unrelated to the sequence of events at Fukushima. Examples of technical areas that were not directly related to the sequence of events and therefore not included in the comparison are fire protection, security, and design basis accidents (e.g., losses of heat removal or inventory with AC power available).

Given the resource implications of a detailed comparison and the availability of insights from a variety of Japanese and international reviews, the NRC's

comparison appropriately focused on those areas most relevant to the sequence of events and accident mitigation capabilities at Fukushima.

The Honorable Lee Terry

1. **Prior to this hearing did Chairman Macfarlane inform you of her intention to declare her opposition to H.R. 3132?**

   ANSWER: The Chairman had informed me that she opposed the bill.

2. **Do you support or oppose the policy goals of HR 3132? Would you be willing to work with staff to perfect it?**

   ANSWER: I agree with the goals of some parts of the legislation. I would be willing to support efforts to address issues or areas of concern.

3. **The June 26, 2012 NRC IG Report *"Possible Violations of the Reorganization Plan No. 1 of 1980 and NRC's Internal Commission Procedures by NRC Chairman"* (2012 IG Report) states:**

   "President Carter said that the Chairman has a functional duty under the Reorganization Plan to declare emergency authority, and if he enacted emergency authority without a declaration, he would have been in violation of the Reorganization Plan. President Carter envisioned a Chairman exercising emergency authority for a specific transient emergency lasting a matter of days, not emergency authority for a matter of months."

   a. **Do you agree with President Carter that a chairman has a functional duty to declare emergency authority? If not, why not?**

      ANSWER: I agree with President Carter that a chairman should declare emergency authority if exercising the emergency authority. Section 3 of Reorganization Plan No. 1 of 1980 does not explicitly address when or how a Chairman must or should exercise the authority to make a declaration apart from the reference to the transfer of "all the functions vested in the Commission pertaining to an emergency concerning a particular facility or materials licensed or regulated by the Commission . . . ." However, a provision of the new Appropriations Act requires that an NRC Chairman provide notification to the Commission and Congress within one day after beginning to exercise emergency authority.

   b. **How long do you believe a chairman should be allowed to exercise emergency authority?**

      ANSWER: Thirty days, although somewhat arbitrary, seems like a reasonable time. However, circumstances would vary, so a mechanism for extension would be necessary.

4. **The 2012 IG Report states:**

> ***"President Carter stated it would have been inappropriate for the Chairman to exercise emergency authority for a nuclear incident in Japan. Absent a domestic emergency, the authority lies with the full Commission and any review of the nuclear incident in Japan should have been in the hands of the Commission."***

Do you believe the use of emergency authority for foreign events is warranted? Why or why not?

ANSWER: Generally not, but it is difficult to address all possible circumstances. An NRC chairman may exercise normal authority as official spokesman and principal executive officer in circumstances not involving an NRC licensee. Also, other Federal agencies may have a lead role in the event of an emergency originating in another country.

5. **During an emergency, the chairman or a designee acts as the Executive Team Director. NRC briefing materials list the Executive Team Director's key responsibilities for an activated operations center as the following:**

- ***"Receive initial and periodic briefings on the nature and progression of the incident***
- ***Ensure other Commissioners are kept informed***
- ***Manage external interface (Federal agencies, White House, States, Congressional officials, State Department, IAEA, tribal organizations)***
- ***Call to Governor's designee and DHS Secretary***
- ***Review and approve Situation Report (SITREP) and Press Releases***
- ***Determine if Site Team (expanded activation mode) is necessary***
- ***Prepare/Act as agency spokesperson for news center and interagency events (e.g. WH briefings)***

Please explain whether you think the inclusion of an emergency declaration would be burdensome considering these key responsibilities already exist and procedures have been established for managing necessary communications.

ANSWER: No, it should not be burdensome if the Chairman or designee has made a determination of such an emergency.

6. **The 2012 IG Report states:**

> ***"Several officials commented that NRC has no procedures to follow for the Chairman to assert his emergency authority."***

Do you believe the NRC should have a procedure that clearly articulates the circumstances or actions that would require a chairman to exercise emergency authority and describes the process for doing so?

   a. **If so, please describe what you believe should be included in such a procedure.**

b. If not, why not?

ANSWER: It would be difficult to articulate all circumstances under which a chairman would need to exercise emergency authority. In addition, a strict list of such circumstances could unnecessarily constrain a chairman's decision making. The new Appropriations Act includes requirements relating to the exercise of emergency powers. A more detailed process might not be optimal for all circumstances.

7. **According to NRC briefing materials, licensees are required to notify the NRC of an event within 15 minutes. The NRC then expects to notify within one hour EPA, DOE, DHS, HHS, USDA, and FEMA. For what length of time do you believe a chairman should be allowed to unilaterally exercise the power of the full commission before notifying the public, the Congress, and fellow commissioners?**

ANSWER: Notification within 24 hours is a reasonable expectation and is now a legal requirement under the recent Appropriations Act. In practice, I expect that an NRC Chairman will provide notice in the future as soon as reasonably possible in advance of 24 hours.

8. **The Office of Public Affairs leads one of the teams staffing the operations center during an emergency. Wouldn't this be an appropriate and efficient manner to notify the public in the event a chairman decides to exercise emergency authority? If not, why not?**

ANSWER: Yes.

9. **One of the chairman's responsibilities as the Executive Team Director is to keep the commissioners informed. Do you believe the procedures in place to meet that responsibility would be adequate to notify fellow commissioners in the event a chairman decides to exercise emergency authority? If not, why not?**

ANSWER: I anticipate that the Chairman or a designee would carry out the requirements of the new Appropriations Act whatever procedures are in place. It is not clear that new procedures are necessary but the question is likely to be considered further. There are a number of ways in which a Chairman could accomplish notification of fellow Commissioners and others.

10. **The Office of Congressional Affairs participates on one of the teams staffing the operations center during an emergency. Do you believe this be an appropriate and efficient manner to notify Congressional officials in the event a chairman decides to exercise emergency authority? If not, why not?**

ANSWER: Yes.

11. **NRC's procedures reference communications that are pre-planned. Do you believe developing preplanned notifications of a chairman's decision to exercise emergency authority might be an effective way to ensure the timeliness and efficiency of such notifications? If not, why not?**

ANSWER: Yes.

12. In the hearing, Chairman Macfarlane testified that the agency's budget is developed by NRC staff. Section 201 of the Energy Reorganization Act of 1974 states:

> ***"Each Member of the Commission, including the Chairman, shall have equal responsibility and authority in all decisions and actions of the Commission, shall have full access to all information relating to the performance of his duties or responsibilities, and shall have one vote."***

The prior NRC chairman asserted budget authority to unilaterally close down the legally- mandated review of the Yucca Mountain repository license application. Since the budget is a major instrument of policymaking, which is the purview of the Commission, please describe whether you believe the Chairman should be allowed to influence budget development prior to consideration by the full commission.

ANSWER: Yes. Under the current law, the Chairman shall present the budget estimate to the Commission for its consideration. The preparation of the budget estimate shall be delegated to the Executive Director for Operations, subject to the Chairman's direction and supervision. In my view, this is appropriate. However, the Commission should also have access to staff views and information pertaining to the development of the Chairman's proposed budget when the Commission reviews the Chairman's proposed budget.

The initial step in the process at the Commission level is for the Chairman to provide high-level planning objectives for budget development and prioritization of planned activities to the Commission for review and approval. Based on the high-level planning objectives, the Executive Director for Operations and the Chief Financial Officer submit to the Chairman a budget with their workload estimates, resource requirements and narrative justifications. The Chairman reviews the senior management budget input and submits his or her decisions to the Commission for review, analysis and approval through the Commission voting process.

13. Section 201 of the Energy Reorganization Act of 1974 states:

> ***"In carrying out any of his functions under the provisions of this section the Chairman shall be governed by general policies of the Commission and by such regulatory decisions, findings, and determinations as the Commission may by law be authorized to make."***

Section 2 of the Reorganization Plan of 1980 states:

> ***"The Chairman as principal executive officer and the Executive Director for Operations shall be governed by the general policies of the Commission and by such regulatory decisions, findings, and determinations, including those for reorganization proposals, budget revisions and distribution of appropriated funds, as the Commission may by law, including this Plan, be authorized to make."***

If a majority of the Commission believes that the Chairman is failing to operate in accordance with the internal commission procedures, what action do you

think commissioners should take? Do you believe legislation authorizing such action would provide clarity to such a situation?

ANSWER: Commissioners should make every effort to address this matter directly with the Chairman. In my view, legislation on this matter is not necessary and could undermine collegiality. Matters of this sort are best resolved within the Commission.

14. **The NRC Inspector General issued a report *"NRC Chairman 's Unilateral Decision to Terminate NRCs Review of DOE Yucca Mountain Repository License Application"* on June 6, 2011 (2011 OIG Report):**

> ***"OIG reviewed the Commissioners' voting process associated with SECY-10-0102 and learned that the Internal Commission Procedures were not followed relative to voting deadline, extension requests, or polling of other Commissioners to determine whether they agree with extension requests."***

And:

> ***"Although the notational voting process associated with SECY-10-0102 was complete as of October 29, 2010, as of the date of this report the Commission has not held an affirmation vote on the matter and the draft order continues to sit in deliberation before the Commission for affirmation."***

a. **Please indicate how long you believe a chairman or commissioner should be allowed to prevent an adjudicatory decision from being finalized.**

ANSWER: An individual commissioner or a chairman should not prevent an adjudicatory decision from being finalized if a majority of the commission has determined that a reasonable period for deliberation has been exhausted. In such cases, an adjudicatory decision should be finalized promptly. However, cases may vary considerably in their complexity and the amount of time necessary to reach a well-supported and well-articulated resolution. The current Internal Commission Procedures provide reasonable general deadlines and a reasonable process for extensions and consideration of differing views in arriving at a final position.

b. **Please describe what you believe would be the best mechanism to ensure Internal Commission Procedures are enforced.**

ANSWER: Specific adjudicatory cases vary in the time required for completion. In general, the existing procedures provide good mechanisms for finalizing adjudicatory voting matters. For instance, requests for an extension of the voting time for an adjudicatory paper or a delay in an affirmation in the vote on a matter may be granted only by a majority of the Commission.

c. **Please provide any other resolution to such a situation that you believe would be effective at ensuring adjudicatory decisions are not unnecessarily delayed.**

ANSWER: Legislative solutions would be one possibility but an inflexible deadline could affect the quality of the Commission's decision making.

15. Please describe any unintended consequences you believe H.R. 3132 presents. For each postulated consequence, please provide legislative language you believe would adequately mitigate it.

ANSWER: An effort to describe or estimate unintended consequences is likely to involve a large element of uncertainty. As a general matter, the Commission is currently working well in accomplishing its responsibilities in a collegial manner, and more detailed legislative directives, including requirements that the Commission promptly establish more detailed procedures in several areas, may unnecessarily affect collegiality and constrain the avenues for collegial resolution of issues.

In my view, reasonable concerns about the potential for unintended consequences are associated with a number of the proposals. For example, limiting or eliminating a Chairman's responsibility to present to the Commission budget estimates and proposals for the distribution of appropriated funds may adversely affect the timeliness of the submission of proposed budgets and limit the broad agency-wide perspectives that a Chairman can provide.

Another area of concern relates to some of the proposals regarding emergency powers. These include the proposed requirement that, "To the extent practicable, the Chairman shall consult with the full Commission on any regulatory or policy actions taken under an emergency" and the proposed requirement that the Commission shall establish procedures relating to the Commission's roles "during an emergency," including "(1) complete access to records and information relating to actions taken during the emergency; (2) complete access to Commission staff involved in the management of the emergency; (3) complete access to the location or locations where decisions are made during the emergency . . . ." Such provisions have the potential to limit the Chairman's ability to exercise emergency powers in a fully effective and efficient manner, consistent with lessons learned from Three Mile Island as reflected in the current law. It may also be unduly constraining to provide that the Chairman may only exercise emergency authority in the case of an "imminent threat . . . ." Circumstances will vary in whether they allow for a certain determination that a threat is imminent.

16. Please provide any other opinions you believe may further inform the Committee's consideration of H.R. 3132.

ANSWER: I have nothing further to offer at this time.

The Honorable Cathy Castor

1. During the hearing, I raised the issue of official international travel by the Commissioners. As I requested during the hearing, please provide an explanation of why your international travel is worth the taxpayer expense and time away from your responsibilities at the Commission.

ANSWER: International activities are an integral part of the NRC's work. Since the beginning of my tenure on the Commission in 2010, I have strived to execute my duties with the utmost respect for the responsibilities entrusted to me by the President and

Congress. Foreign travel has become an important part of a Commissioner's activities, particularly after the Fukushima accident. I have derived many benefits from my meetings with foreign regulators and technical experts, as well as from site visits to foreign nuclear facilities. Some specific benefits include collaborating with regulatory counterparts on the sharing of nuclear power plant operating experience and considerations for improving regulatory oversight. My overseas travels give me a first-hand appreciation of the many pressing issues that are affecting or will affect nuclear safety and security in the U.S.

I have had the opportunity to visit several international nuclear plant sites. For example, I toured one of the Swiss plants in which a filtered containment venting system had been installed. In addition, I visited the Fukushima Daiichi site last year. Nothing brings home the enormous challenges and complexities facing those dealing with the aftermath of the accident like being there.

The manufacture of nuclear parts and the provision of nuclear services have been significantly reduced in the U.S. for domestic nuclear power plant construction which has created a dependence on the global marketplace among U.S. nuclear power plant owners/operators. I have visited a number of manufacturing and research facilities where work is being done that will be directly applied in the U.S. In addition, my participation in international conferences and bilateral meetings enhances the NRC's influence with nuclear regulatory officials around the world.

While on international travel, I continue to conduct my domestic responsibilities as a Commissioner. I participate in voting on issues before the Commission and regularly interact with my staff via email and conference calls, even if this requires working at non-traditional hours. The Commission's work does not stop while I am away, whether on domestic or foreign travel. I assure you that my priority is on nuclear safety and security in the U.S.