

Question 1. What steps is the agency taking to identify declining workloads and numbers of licensees and propose corresponding resource reductions?

ANSWER.

During the annual budget formulation process, the agency develops a two year projected workload in the Nuclear Reactor Safety and Nuclear Materials and Waste Safety programs, including the anticipated number of licensees and the number and complexity of anticipated license applications. On an annual basis, the NRC 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. The year prior to executing the budget, the agency reviews the resources and associated workload that was previously requested and adjusts them based on the most current information. Lastly, in the year of budget execution, the agency adjusts resources commensurate with the level of work actually received. The most recent budget that was formulated (FY2015) is based on current assumptions regarding the projected workload for fiscal year 2015. The agency will begin to develop the FY2016 budget in the coming months using updated assumptions about operating plants, COL applications, and other indicators of the projected workload.

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 actively engaged in efforts to streamline the organization. For example, the NRC initiated efforts to reduce its overhead by centralizing and consolidating corporate support functions through its Transforming Assets into Business Solutions (TABS) initiative. This effort has resulted in a reduction of Office support FTE of 273 (25%) from FY2011 to FY2015.

Question 2. What Role does the Chairman's office play in the identification of declining trends in agency workloads?

ANSWER.

The Chairman works collegially with the Commission to respond to changes in agency workload by revising budget estimates and determining the distribution of appropriated funds according to major programs and purposes, consistent with the Energy Reorganization Act of 1974, Section 201(a)(5). The initial step in this process 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 and to provide any other documents used to inform the high-level planning objectives to the Commission for review. This is done prior to the start of the annual budget formulation process. The Chairman is also responsible for initiating the update of the agency Strategic Plan and the Commission's annual review of the Performance Budget, presenting the Strategic Plan, Performance Budget, and Congressional Budget Justification to the Commission for its review and approval. During budget execution, the Chairman, along with all other Commissioners, approves any reprogramming requests, significant resource changes due to "fact-of-life" workload adjustments and reductions due to sequestration or rescissions.

Question 3. How is the NRC redistributing its resources in light of the reduction in workload in some areas?

ANSWER.

The NRC has an established add/shed/defer process whereby the agency identifies and reprioritizes existing or planned work when emergent items of higher priority are assigned, when there is a shift in workload priorities, when licensees or applicants change their plans, or when the realized impact of work is greater than what was budgeted. "Fact-of-life" changes frequently occur and result in the need to re-evaluate plans and resources. When there is a reduction of workload, the agency uses this established process to evaluate how resources should be reallocated to support emergent work.

This process was used to address the decision made by the Commission to respond to the Court decision on Waste Confidence. In addition, staff in the Office of New Reactors with expertise in seismology and hydrology were redirected to support the Office of Nuclear Reactor Regulation's efforts to address the post-Fukushima actions. This process will also be used if additional reductions are necessary due to sequestration and to make adjustments for unplanned shutdown of plants.

Question 4. **Please provide a schedule with the dates estimated for the release of each outstanding volume of the Yucca Mountain Safety Evaluation Report.**

ANSWER¹.

In response to the Commission's August 30, 2013 Order seeking comment from the participants in the Yucca Mountain adjudication as to how the agency should continue with the licensing process, the staff estimated that absent any unforeseen issues and with sufficient staff resources, it could complete and issue the remaining volumes of the Yucca Mountain Safety Evaluation Report (SER) concurrently approximately 12 months after initiating work. This estimate was based on inclusion of a start-up period to replace key technical reviewers who no longer work for the agency, to reassemble technical staff assigned to other tasks, and to enable reviewers to regain familiarity with licensing issues and docketed correspondence due to the break in the application review and the shift in staff focus to other agency activities. It was assumed the project would be given a high priority so that appropriate technical staff and resources are available.

In its November 18, 2013, Memorandum and Order, the Commission directed the staff to complete all remaining SER volumes concurrently, but issue each SER volume upon its completion. The Commission requested that the staff, through monthly progress reports, keep the Commission fully informed of the status of the activities the Order and Staff Requirements Memorandum directed the staff to take. The Commission anticipates receiving the staff's plan for implementing the Commission's decision on the path forward by the end of this month. The Commission will keep the Committee fully and currently informed.

¹ Commissioner George Apostolakis did not participate in the development of this response.

Question 5. **Please provide an estimate of the resources necessary to fully comply with the DC Circuit's mandamus decision, complete the review of the Yucca Mountain license application, and issue a decision regarding construction authorization as mandated in the Nuclear Waste Policy Act.**

ANSWER².

The writ of mandamus issued by the D.C. Circuit Court directed NRC to continue with the Yucca Mountain licensing process unless and until Congress authoritatively says otherwise or there are no appropriated funds remaining. When the decision granting the writ of mandamus was issued, the agency had approximately \$11 million in unobligated carryover funding appropriated from the Nuclear Waste Fund. The NRC staff has estimated that, absent any unforeseen issues, these resources are sufficient to complete the Safety Evaluation Report (estimated cost of completion: \$8.3 million) and an adoption determination review of a supplemental Environmental Impact Statement to be prepared by the Department of Energy. Further, the Licensing Support Network document collection currently in the Secretary of the Commission's possession can be loaded into the non-public portion of the NRC's Agencywide Documents Access and Management System for approximately \$700,000. We seek to maintain an adequate margin so as not to jeopardize our ability to complete these tasks and we will re-evaluate our path forward not to resume the adjudication in the event that circumstances materially change.

Following issuance of the Safety Evaluation Report and an adoption determination of the supplemental Environmental Impact Statement, a number of licensing steps remain to reach a

² Commissioner George Apostolakis did not participate in the development of this response.

decision regarding construction authorization for a repository at Yucca Mountain. This includes completion of the adjudicatory hearings, which currently include 15 parties and nearly 300 admitted contentions. At this time, the NRC has not prepared an estimate of resources required to complete this multi-year licensing process.

Question 6. **Has the NRC submitted a supplemental budget request to the Office of Management and Budget? If not, when do you expect to do so?**

ANSWER³.

NRC has not submitted a supplemental budget request to the Office of Management and Budget for additional Nuclear Waste Funds. Nothing in the D.C. Circuit Court of Appeals' mandamus order requires the Commission to do so.

The Commission's focus has been on how to spend the available funds as ordered by the court. Any future decision to seek additional funding would be made by the Commission as a collegial body.

³ Commissioner George Apostolakis did not participate in the development of this response.

Question 7. Please provide a list of the costs billed each year to each applicant for the review of license renewal applications for the past 10 years including ongoing reviews.

ANSWER.

The requested data are attached. The NRC's level of effort, and corresponding costs to applicants, may vary depending on site specific technical issues that arise during the review.

Question 8. **Please provide a list of the costs billed each year to each licensee for the review of new plant COL applications for the past 10 years including previously issued and ongoing reviews.**

ANSWER.

The requested data are attached. The following information has been provided as background.

The timeliness of the safety reviews of the combined licenses referencing designs that are undergoing certification review have been affected by the delayed schedules of the respective design certification reviews (see response to Information Request #9 regarding design certification activities), and by project- and site-specific delays in addressing regulatory requirements (Bell Bend, Calvert Cliffs, Fermi, North Anna, Comanche Peak). The remaining combined license applications (Lee, Levy, Turkey Point, South Texas) are encountering delays stemming from both safety and environmental issues unique to each project that do not have an underlying common theme, and such causes of delay are based on applicant-specific limitations in providing information needed by the NRC to complete the reviews. There were some project specific impacts on the pace of environmental reviews as a result of budget sequestration in FY2013, however, these delays did not affect critical path.

Question 9. Please provide a list of the costs billed each year to each applicant for the review of new design certification applications, amendments, and renewals for the past 10 years including previously issued and ongoing reviews.

ANSWER.

The requested data are attached. The following information has been provided as background. Design certification applications address the various safety issues associated with the proposed nuclear power plant design independent of a specific site. The NRC is making progress on its ongoing reviews of design certifications and design certification renewals.

Schedules for the review of the pending design certifications and renewals (ESBWR, EPR, U.S. APWR, and renewals of the ABWR) have been delayed based on either (1) the applicant's inability to resolve safety issues identified by the NRC staff during its review in a timely manner, or (2) notifications received from the applicants of limitations on their ability to support the schedules that had previously been established for completion of these reviews, or (3) both. These reviews have not been suspended and the applications have not been withdrawn. However, the pace of the reviews, and the resultant schedules, are being reevaluated in direct response to the applicant's circumstances, but not as the result of limitations on the NRC's ability to complete the required review activities in a timely manner.

Question 10. Please provide a copy of any “lessons learned” reports examining the NRC’s performance in reviewing the first new plant licenses in over 30 years.

ANSWER.

Copies of a lessons learned review (April 2013) and a self-assessment review (July 2013) are attached. We also have included a copy of the Bipartisan Policy Center review conducted in 2010 at the request of the NRC.

Question 11. Please explain what actions the Commission is taking to address shortcomings in meeting performance metrics for reviewing power uprate requests [Part 1]. Please provide a list of the costs billed to each licensee for the review of power uprate requests for the past 10 years including ongoing reviews [Part 2]. Please provide a list of power uprate requests that have been withdrawn, including how long those requests were under consideration and the costs billed to each licensee [Part 3].

ANSWER.

Part 1

The NRC's operating reactor power uprate program has been effective, as demonstrated through the approval of approximately 150 applications for power uprates that added over 6,800 megawatts of electric power capacity to the U.S. electrical grid. This is roughly the equivalent of nearly seven new large electrical generating facilities. The NRC is on schedule to approve an additional power uprate application by the end of 2013, and four more power uprates in the spring of 2014.

Timeliness goals for reviewing power uprate applications depend on licensees providing all of the information the NRC staff needs to determine whether the application meets all regulatory requirements, thus ensuring public health and safety through the completion of the appropriate safety reviews. In some cases, the NRC has been challenged in meeting the timeliness goals for power uprate applications while focusing on the completion of the necessary safety reviews. The timeliness goals have been missed primarily due to the NRC's identification of safety and technical issues, review of operating experience, and the licensees required time to address these issues. Key examples of the issues requiring additional safety review time include complex technical issues related to crediting containment backpressure for equipment needed

for reactor core cooling, structural integrity of steam dryers, and the potential impact of high-energy line breaks on safety-related equipment. Delays have also occurred as a result of licensee revisions to engineering and safety analysis in response to NRC staff questions or errors identified in calculations, inaccuracies in the ability of ultrasonic flow measurement devices to predict feedwater flow, and licensee engineering changes beyond the scope of a typical uprate application. The power uprate applications currently under review have been impacted by the agency's post Fukushima activities, particularly as staff resources in some specialized technical disciplines have been redirected.

While these activities have exceeded the anticipated schedule goals, they have been required to assure the safety of the uprates. As a result, in 2012, as part of a lessons-learned review of the power uprate program, the NRC changed the timeliness goals for uprates based on measurement uncertainty recaptures from 6 to 9 months, stretch power uprates from 9 to 12 months, and extended power uprates from 12 to 18 months. These changes were necessary to reflect NRC safety review requirements and to incorporate experience gained from reviews conducted to date. The revised timeliness goals enable the staff to complete the appropriate safety review, support management oversight of the review activities, and meet industry expectations for timely reviews.

The power uprate applications currently under review have been impacted by the agency's post-Fukushima activities, particularly as staff resources in some specialized technical disciplines have been reduced. The NRC staff has largely overcome these challenges by prioritizing power uprate reviews based on licensees' implementation schedules.

Over the years, the NRC has taken numerous actions to improve the power uprate program. Examples of these actions include: issuing guidance on the content of measurement

uncertainty recapture power uprate applications; issuing a review standard for extended power uprates; issuing generic guidelines for extended power uprate testing programs; revising guidance on dynamic testing and analysis of systems, components, and equipment, reactor pressure vessel internals, and the comprehensive vibration assessment program for reactor internals during preoperational and initial startup testing; and approving generic models and analytical approaches developed by the nuclear industry, such as the applicability of General Electric thermal hydraulic analysis.

More recently, the NRC staff addressed recommendations provided by the NRC's Office of the Inspector General on areas for enhancement, including inspection procedures, safety evaluations, and program coordination. As a result, the NRC revised guidance to support the early identification of information gaps in licensee applications, revised the power uprate inspection procedure, and revised guidance to strengthen coordination of power uprate activities and clarify roles and responsibilities. In 2011, the Commission approved an approach to credit containment backpressure for equipment needed for reactor core cooling. This is important, as credit for containment backpressure impacted several power uprate applications.

The NRC's power uprate program is a high priority, and the staff continues to participate in discussions with stakeholders, including the nuclear industry, on enhancements to the program. As an example, the staff participates in activities such as the Nuclear Energy Institute Licensing Action Task Force. As part of that effort, the NRC staff piloted a pre-application meeting process to improve the quality of discussions and the documenting of decisions regarding power uprate applications. Additionally, the NRC staff is reviewing topical reports supporting resolution of long-standing technical issues associated with steam dryer analysis and a methodology for containment backpressure. Recently, NRC staff has been notified by several licensees that their plans to submit power uprate applications have changed due to evolving economics in the

electrical sector as a result of lower natural gas prices. Therefore, NRC staff does not anticipate receiving many more power uprate applications over the next year or so.

Part 2

Over the past 10-years, the NRC staff has approved 49 power uprate applications as fully meeting all NRC requirements, which ensure public health and safety. These power uprates added approximately 2730 megawatts of electrical power capacity to the U.S. electrical grid. Additionally, NRC is reviewing 14 power uprate applications, which, if approved, would add an additional 1000 megawatts of electric power capacity. The NRC staff review costs for these activities is provided in the following tables:

Approved Power Uprate Applications

Plant Name (type of uprate)	NRC staff costs billed to licensee (Note 1)
Fort Calhoun (measurement uncertainty recapture) – (Note 2)	\$147,763.20
Kewaunee (stretch power uprate)	\$295,744.80
Palisades (measurement uncertainty recapture)	\$129,698.40
Indian Point 2 (stretch power uprate)	\$439,127.60
Seabrook (stretch power uprate)	\$644,694.60
Indian Point 3 (stretch power uprate)	\$251,185.50
Waterford (extended power uprate)	\$1,197,677.70
Palo Verde 1 (stretch power uprate)	\$105,907.30
Palo Verde 2 (administrative change) – (Note 3)	\$12,367.00
Palo Verde 3 (stretch power uprate)	\$99,619.80
Vermont Yankee (extended power uprate)	\$2,230,859.50
Ginna (extended power uprate)	\$1,100,204.50
Beaver Valley 1 (extended power uprate)	\$739,270.80
Beaver Valley 2 (extended power uprate)	\$717,074.50
Browns Ferry 1 (stretch power uprate)	\$558,623.10

Crystal River 3 (measurement uncertainty recapture)	\$279,772.00
Susquehanna 1 (extended power uprate)	\$878,581.90
Susquehanna 2 (extended power uprate)	\$831,911.40
Vogtle 1 (measurement uncertainty recapture)	\$207,535.20
Vogtle 2 (measurement uncertainty recapture)	\$182,947.80
Hope Creek (extended power uprate)	\$2,100,963.40
Comanche Peak 1 (stretch power uprate)	\$360,967.80
Comanche Peak 2 (stretch power uprate)	\$353,073.00
Cooper (measurement uncertainty recapture)	\$226,627.20
Davis-Besse (measurement uncertainty recapture)	\$315,787.40
Millstone 3 (stretch power uprate)	\$1,120,969.40
Calvert Cliffs 2 (measurement uncertainty recapture)	\$107,980.60
Calvert Cliffs 1 (measurement uncertainty recapture)	\$213,129.00
North Anna 1 (measurement uncertainty recapture)	\$155,298.00
North Anna 2 (measurement uncertainty recapture)	\$106,575.30
Prairie Island 1 (measurement uncertainty recapture)	\$195,474.20
Prairie Island 2 (measurement uncertainty recapture)	\$103,211.20
LaSalle 1 (measurement uncertainty recapture)	\$138,239.50
LaSalle 2 (measurement uncertainty recapture)	\$122,641.60
Surry 1 (measurement uncertainty recapture)	\$154,078.20
Surry 2 (measurement uncertainty recapture)	\$132,235.60
Limerick 1 (measurement uncertainty recapture)	\$285,556.40
Limerick 2 (measurement uncertainty recapture)	\$225,888.00
Point Beach 1 (extended power uprate)	\$1,128,732.20
Point Beach 2 (extended power uprate)	\$941,838.50
Nine Mile Point 2 (extended power uprate)	\$1,765,952.33
Harris 1 (measurement uncertainty recapture)	\$608,788.25
Turkey Point 3 (extended power uprate)	\$1,415,799.00
Turkey Point 4 (extended power uprate)	\$859,096.00

St. Lucie 1 (extended power uprate)	\$2,140,512.50
Grand Gulf 1 (extended power uprate)	\$2,162,050.55
St. Lucie 2 (extended power uprate)	\$1,913,824.71
McGuire 1 (measurement uncertainty recapture)	\$345,692.00
McGuire 2 (measurement uncertainty recapture)	\$215,045.50

Ongoing Power Uprate Reviews

Plant Name (type of uprate)	NRC staff costs billed to licensee (Note 1)
Browns Ferry 1 (extended power uprate)	\$2,172,241.07
Browns Ferry 2 (extended power uprate)	\$1,350,742.97
Browns Ferry 3 (extended power uprate)	\$1,273,650.32
Monticello (extended power uprate)	\$2,286,671.79
Braidwood 1 (measurement uncertainty recapture)	\$289,588.50
Braidwood 2 (measurement uncertainty recapture)	\$253,082.75
Byron 1 (measurement uncertainty recapture)	\$324,247.00
Byron 2 (measurement uncertainty recapture)	\$241,736.00
Oconee 1 (measurement uncertainty recapture)	\$194,581.25
Oconee 2 (measurement uncertainty recapture)	\$139,913.00
Oconee 3 (measurement uncertainty recapture)	\$116,983.00
Peach Bottom 2 (extended power uprate)	\$1,059,105.62
Peach Bottom 3 (extended power uprate)	\$918,021.27
Fermi 2 (measurement uncertainty recapture)	\$485,975.50

Notes on NRC estimated costs

1. Cost estimates are based on NRC staff review of the hours billed to licensees and do not include inspection activities associated with implementation of the power uprate approval.
2. NRC staff approved a measurement uncertainty power uprate for Fort Calhoun on January 16, 2004. Subsequently, the licensee, Omaha Public Power District, was informed by Westinghouse that the potential instrument inaccuracies in the Advanced Measurement and Analysis Group ultrasonic flow meter would not allow

implementation of the power uprate. The NRC amended the license to withdrawal approval of the power uprate.

3. The NRC approved a three percent power uprate for Palo Verde 2 by amendment dated September 29, 2003. Subsequently, by letter dated November 16, 2006, NRC approved a three percent power uprate amendment for Palo Verde 1 & 3. This required an administrative change to the Unit 2 technical specifications to clarify that the uprate applied to all three Palo Verde Units.

Part 3

The staff has identified, from the actual applications submitted by licensees to the NRC, eight power uprate applications that have been withdrawn and one denied application within the past ten years. These applications include Hope Creek (date of application November 7, 2005, and date of withdrawal February 10, 2006), Susquehanna 1 & 2 (date of application March 31, 2006, and date of withdrawal May 18, 2006), Calvert Cliffs 1 & 2 (date of application January 31, 2005, and date of withdrawal September 27, 2007), Fort Calhoun (date of application March 31, 2005, and date of denial September 27, 2007), Monticello (date of application March 31, 2008, and date of withdrawal June 25, 2008), St. Lucie 1 (date of application April 16, 2010, and date of withdrawal August 13, 2010), and Crystal River 3 (date of application June 15, 2011, and date of withdrawal February 7, 2013). The Hope Creek, Susquehanna 1 & 2, Monticello, and St. Lucie 1 applications were withdrawn due to issues identified during the NRC staff's acceptance review of the application. The Calvert Cliffs 1 & 2 applications were withdrawn and the Fort Calhoun application was denied following the NRC staff decision to suspend its approval of the Westinghouse Crossflow ultrasonic flow meter topical report. The Crystal River 3, application was withdrawn due to the business decision to retire the unit. These applications and the associated NRC staff review costs are provided in the following table:

Withdrawn or Denied Power Uprate Applications

Plant Name (type of uprate)	NRC staff costs billed to licensee
Hope Creek (extended power uprate)	\$181,240.50
Susquehanna 1 (extended power uprate)	\$43,706.00
Susquehanna 2 (extended power uprate)	\$36,572.00
Calvert Cliffs 1 (measurement uncertainty recapture)	\$121,493.50
Calvert Cliffs 2 (measurement uncertainty recapture)	\$122,782.60
Fort Calhoun 1 (denial of measurement uncertainty recapture)	\$106,709.50
Monticello (extended power uprate)	\$254,348.60
St. Lucie 1 (extended power uprate)	\$422,164.96
Crystal River 3 (extended power uprate)	\$2,231,280.99

Question 12. **Please provide a statement on what principles and factors will guide the Commission's FY '15 budget deliberations.**

ANSWER.

The NRC's FY 2015 budget request to the Office of Management and Budget provides resources necessary to allow the agency to accomplish its mission of protecting public health and safety, promoting the common defense and security, and protecting the environment for existing and future NRC licensees in the Nuclear Reactor Safety program and Nuclear Material and Waste Safety program. These include the resources necessary to accomplish activities related to ensuring the safety of operating reactors and nuclear facilities (new and current) and the oversight of the construction of new nuclear power reactors and other nuclear facilities. In developing the FY 2015 budget, the Commission first established the high-level planning guidance to guide the development of the FY 2015 budget proposal. Upon receipt of the FY 2015 budget proposal, the Commission then ensured that it provided adequate funding for high-priority activities that are required to meet the agency's mission and goals while identifying efficiencies to offset growing costs and limited funding.

The NRC has formulated its Fiscal Year FY2015 Performance Budget to support the agency's Safety and Security strategic goals and objectives. The NRC's FY 2015 Performance Budget provides the necessary resources for the Nuclear Reactor Safety and Nuclear Materials and Waste Safety Programs to carry out the agency's mission and achieve the stated goals and desired outcomes for the American public.

Question 13. In what ways does the Commission seek to ensure that the budget appropriately adheres to the NRC's *Principles of Good Regulation*?

ANSWER.

The NRC strives to conduct all of its activities in accordance with its Principles of Good Regulation. The Commission recognizes the importance of being an effective and efficient regulator. In making budgetary decisions, the Commissioners take into account the NRC's commitment to independence, openness, efficiency, clarity, and reliability. These principles are embedded in the budget development process and are reinforced by the Commission in reviewing and approving a budget request.