

**Responses to Requests for Information
Senators James Inhofe and Shelley Moore Capito
Letter Dated March 24, 2015**

Request 1.

Please provide all tables in the NRC’s FY 2016 Congressional Budget Justification revised to include the “FY’15 Enacted” figures.

ANSWER.

All tables in the Nuclear Regulatory Commission (NRC) Fiscal Year (FY) 2016 Congressional Budget Justification (CBJ) have been revised to include FY 2015 Enacted amounts and are provided in Attachment 1, Revised FY 2016 Congressional Budget Justification Tables, with the exception of the Office of the Inspector General chapter. The tables in that chapter were not revised as there were no changes between FY 2015 President’s Budget and FY 2015 Enacted amounts. Resources in the CBJ are usually compared to previous fiscal year enacted amounts; however, due to the timing of the Consolidated Appropriations Act of 2015 (Public Law [PL] 113-235), resources in the FY 2016 CBJ are compared to the FY 2015 President’s Budget. P.L. 113-235 provided a FY 2015 Enacted budget which reduced the amount made available for salaries and benefits and expenses by \$44.2 million below the FY 2015 President’s Budget. Specifically, P.L. 113-235 authorized the Commission to reallocate the agency’s unobligated carryover estimate of \$34.2 million to supplement its FY 2015 appropriations.

A list of the CBJ tables that were revised and the corresponding chapter and page number are provided below.

NRC FY 2016 CONGRESSIONAL BUDGET JUSTIFICATION REVISED TABLES

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Request 2.

In testimony to the Senate Energy and Water Subcommittee, "The FY 2015 proposed fee rule will also reflect a positive increase in the agency's staff productivity assumption of 1,375 hours in FY 2014 to 1,420 hours in FY 2015." Please explain in detail this assumption including studies that went into productivity and the methodology used to calculate this figure.

ANSWER.

The productivity assumption used in fee rule calculations represents the average number of working hours a technical staff member in a major program office is engaged in mission-direct work during the course of a year. The number is derived by performing a simple calculation on actual time and labor data. The formula is as follows:

Total mission-direct hours worked by all technical employees	X	Total work hours in a year (2,080)	=	Average productivity of a mission-direct technical employee
Total hours worked by all technical employees				

The ratio is derived by determining the total hours that NRC's technical employees charged to time and labor codes for mission-direct activities in a given fiscal year (FY). Technical employees are staff members in the major program offices—the Office of Nuclear Reactor Regulation, the Office of New Reactors, the Office of Nuclear Material Safety and Safeguards, the Office of Nuclear Security and Incident Response, and the Office of Nuclear Regulatory Research—with position titles such as project engineer, project manager, team leader, technical assistant, inspector, etc. Supervisory and administrative staff members in the program offices are not included in the pool of technical employees, because their time and labor are not directly fee billable, but are charged to codes for overhead activities.

The total hours that NRC's technical employees charged to time and labor codes for mission-direct activities—activities mapped to the Nuclear Reactor Safety Program and Nuclear Reactor Materials and Waste Program in the agency's budget—are then divided by the total hours worked by those same employees during the year, which yields the ratio of mission-direct hours to total hours worked

for the technical staff as a whole. The total hours include mission-direct activities as well as annual leave, sick leave, holiday time, etc., and time spent on administrative activities. This ratio is then multiplied by 2,080, the number of hours in a single employee's work year, to arrive at the number of hours or productivity that the average technical staff member spent engaged in mission-direct activities over the course of the year.

The NRC periodically reviews the past two years of time and labor data to assess changes in the average number of productive hours from year to year, and determine a realistic productivity assumption. The analysis is conducted at the beginning of the budget formulation cycle. The resulting productivity assumption informs workload and resources estimates in the agency's budget request. When the NRC calculates the fees required to recover the budget enacted by Congress, this same productivity assumption is used to calculate the hourly rate.

The productivity assumption of 1,420 hours used in the fee rule calculation for FY 2015 was based on an analysis of actual time and labor data from FY 2011 through FY 2012. This was the most recent data available when the FY 2015 budget was formulated. The analysis showed that the ratio of hours charged to mission-direct activities vs. all hours worked by technical staff increased over the period. The average mission-direct hours per technical employee increased from 1,375 hours in the FY 2014 fee rule to 1,420 in the FY 2015 proposed rule, reflecting an increase in productivity.

Request 3.

Please provide the estimated percentage of employees eligible to retire over the next five years.

ANSWER.

Approximately 37% of NRC employees will be eligible to retire in the next five years.

Request 4.

Please provide the current attrition rate for NRC employees and whether the attrition rate is expected to increase in coming years due to retirement eligibility.

ANSWER.

The attrition rate for fiscal year 2014 was 5.4%. The projected attrition rate of NRC employees for FY 2015 is approximately 5%. The attrition rate is expected to stay relatively level between 2015 and 2020.

Request 5.

Please provide a table listing corporate support costs as indicated in the NRC’s Congressional Budget Justification side by side with corporate support costs as indicated in the NRC’s fee recovery rule for each of the last 15 years. Please explain any discrepancies.

ANSWER.

The table provided below lists support costs as included in the Nuclear Regulatory Commission’s (NRC) Congressional Budget Justification (CBJ) and the NRC’s Fee Rule for the last 15 years.

CORPORATE SUPPORT COSTS		
Fiscal Year	CBJ Enacted* (\$M)	Fee Rule (\$M)
2000	144.1	126.7
2001	146.1	129.3
2002	161.0	135.9
2003	165.8	149.6
2004	173.2	149.4
2005	181.0	157.2
2006	207.7	185.8
2007	252.2	247.8
2008	290.2	266.2
2009	332.2	316.5
2010	343.9	330.4
2011	342.9	474.1
2012	347.5	472.3
2013	362.3	474.8
2014	384.0	486.0
2015	369.7*	455.6 ¹
2015	369.7*	422.3 ²

¹FY 2015 Proposed based on FY 2015 President’s Budget

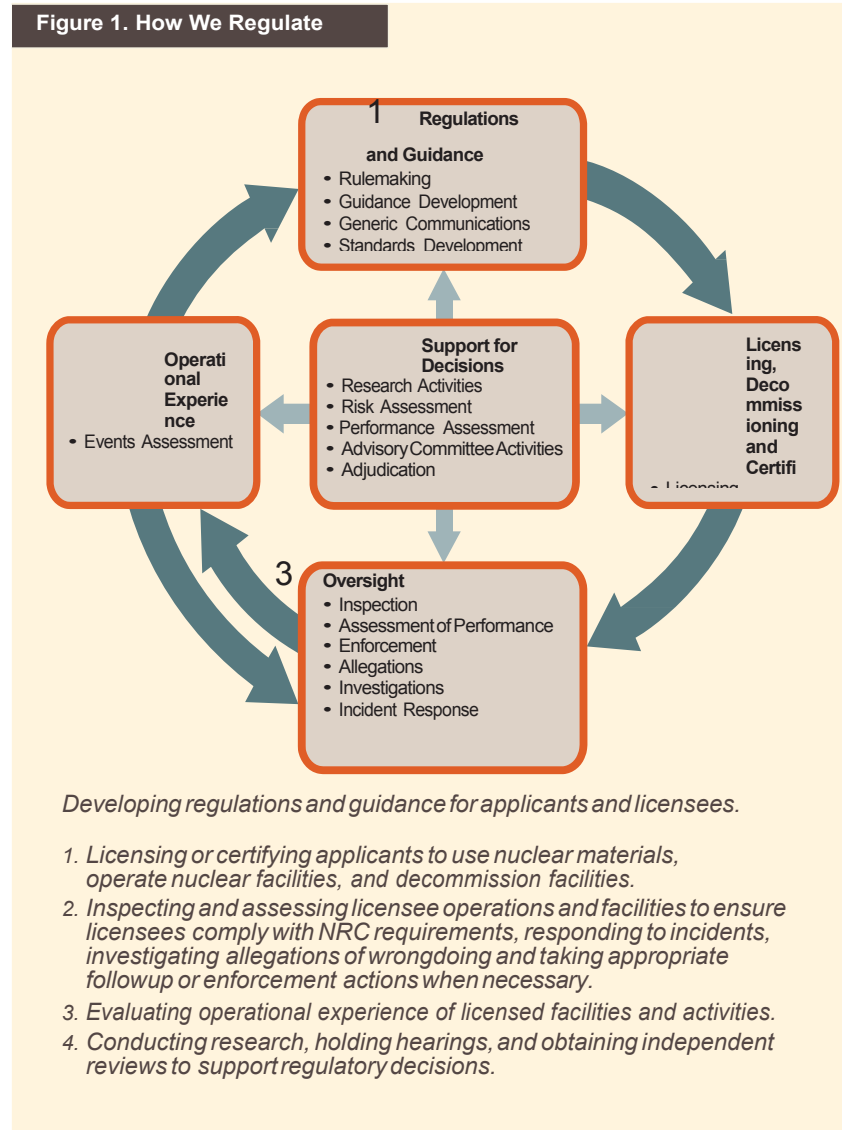
²FY 2015 Estimated Final based on FY 2015 Enacted Budget

*Enacted budget per appropriation as reported in the CBJ.

Program support costs are calculated differently in the CBJ compared to the Fee Rule. The Fee Rule includes most of the corporate support costs included in CBJ, as well as the budget of the Office of the Inspector General, as a component in the calculation of an overall hourly Fees for Services rate under 10 CFR Part 170. Additionally from FY 2011 – FY 2014, the fee rule considers office support (supervisors, administrative assistants, and other program support personnel working in the program offices) as a component in the hourly Fees for Services rate. This reallocation of resources was done in conjunction with centralization of agency activities to achieve overall efficiencies. Since completion of centralization, in FY 2015, most supervisory costs were reallocated back to the business lines that they are directly associated with. In contrast, the CBJ does not include office support in its support costs and allocates office support costs directly to program areas they support (e.g., Operating Reactors, Fuel Facilities). Finally, consistent with all fee relief activities, the University Grants are considered direct resources for the Fee Rule, but the Grants budget is part of corporate support in the CBJ.

Request 6.

The NRC's *Info Digest* includes the following figure labeled "How We Regulate:"



We consider corporate support costs to be any resources not directly engaged in executing the activities listed in this figure.

- a. Please provide a list of any costs not directly engaged in these activities that are not counted as corporate support as accounted for in the Congressional Budget Justification. Please explain an explanation as to why this is the case for each item.**
- b. Please provide a list of any costs not directly engaged in these activities that are not counted as corporate support as accounted for in the fee recovery rule. Please include an explanation as to why that is the case for each item.**

ANSWER.

- a. In accordance with the requirements defined in Section 51.2 of the Office of Management and Budget (OMB) Circular A-11, Requirements for Program Justification, the NRC's Congressional Budget Justification (CBJ) provides the full cost of its programs. The CBJ allocates the agency's corporate support infrastructure and support for centrally managed activities that are necessary for the staff and agency programs to achieve goals more efficiently and effectively. These activities include acquisitions, administrative services, financial management, human resource management, information management, information technology, international activities, outreach, and policy support.

In addition, as described in the response to question 5, the CBJ allocates supervisors, administrative assistants, and other program support personnel directly to the business lines. The office support resources in the FY 2016 request that are allocated to the business lines total \$56 million, including 310 FTE.

- b. As described in the response to question 5, the Fee Rule considers other program support costs, as well as the budget of the Office of the Inspector General, to be components of an overall hourly Fees for Services rate under 10 CFR Part 170. In contrast, the CBJ allocates most of those costs directly to business line and corporate support programs. Additional differences between the fee rule and the CBJ include the Office of the Inspector General, which is not part of full cost in the CBJ, as well as the University Grants budget. The University Grants are considered direct resources for the Fee Rule, but the Grants budget is part of corporate support in the CBJ.

Request 7.

Following Fukushima, NRC staff initiated a consequence study that evaluated the risk of a radioactive release from a spent fuel pool following an earthquake. The NRC staff also prepared a report on the expedited transfer of spent fuel out of pools. Please indicate the FTE and costs expended on these two efforts.

ANSWER.

In 2013, the NRC staff provided two policy papers to the Commission that dealt with or were associated with the topic of expedited fuel movement. The papers were the "Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited

Transfer of Spent Fuel,” dated November 12, 2013 (COMSECY-13-0030; ADAMS Accession No. ML13329A918), and the “Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark 1 Boiling-Water Reactor,” dated October 9, 2013 (SECY-13-0112; ADAMS Accession No. ML13256A334).

The NRC staff concluded (in COMSECY-13-0030) that expedited transfer of spent fuel to dry cask storage would provide only a negligible reduction in risk to public health and safety, and this reduction was not justified in light of the costs associated with expedited transfer. Therefore, the staff also recommended to the Commission that no further generic assessments be pursued related to possible regulatory actions to require the expedited transfer of spent fuel to dry cask storage. The Commission approved this recommendation in May 2014 (SRM-COMSECY-13-0030; ADAMS Accession No. ML14143A360).

The approximate costs associated with the development of SECY-13-0112 and COMSECY-13-0030 are as follows:

NRC staff:

Total FTE:	~10.7 FTE
Cost based on Total Hours:	~\$1,650,000 USD

External (contractors):

Total Costs:	~\$139,000 USD
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Request 8.

Please provide the funding level NRC requested in its budget proposal to carry out its statutorily mandated review of the license application for a permanent repository at Yucca Mountain.

ANSWER.

The President’s fiscal year 2016 budget proposal did not request funds for further review of the license application for a permanent geologic repository at Yucca Mountain.

Request 9.

Post-Fukushima items have been categorized into 3 tiers, with Tier 1 items carrying the greatest safety benefits. For each item in each tier, please provide the level of resources, both funding and staffing levels, budgeted for FY 2016.

ANSWER.

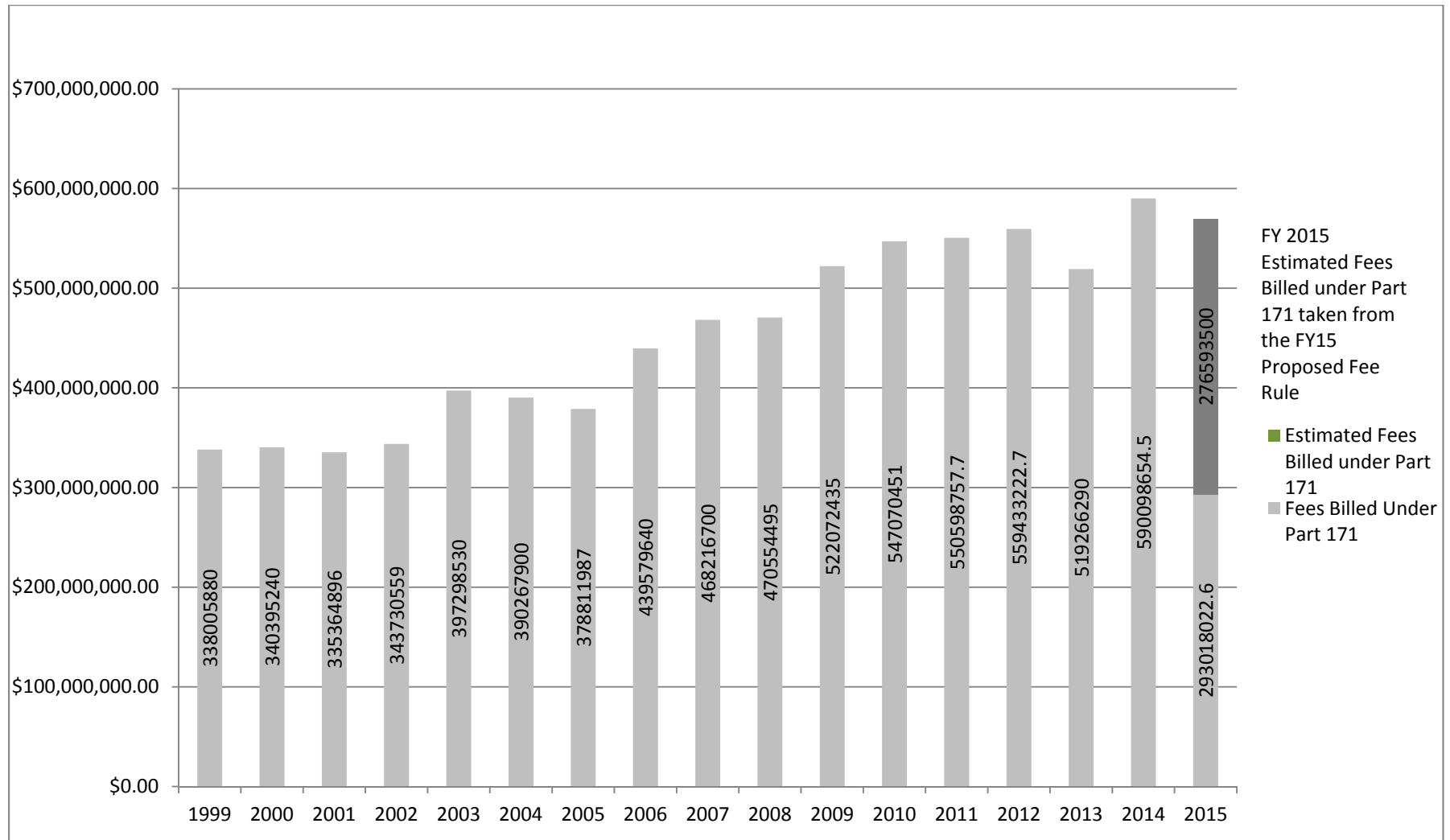
The following table provides estimated direct funding and staffing levels of post-Fukushima activities for FY 2016.

Fukushima Tier	CS&T (\$K)	FTE
Tier 1	4,731	117.5
Tier 2	FY 2016 activities folded into Tier 1 rulemaking	
Tier 3	1,400	7
Total	6,131	124.5

Request 10.

Please provide a graph depicting the amount of fee billed under 10 CFR Part 171 for the last 15 years.

ANSWER.



Request 11.

The NRC has entered into a multi-year study on radiation impacts around nuclear power plants using National Academy of Sciences. Please provide the amount of resources spent on this effort to date and the estimated costs for completing this effort.

ANSWER.

Since 2010, the NRC has spent a total of \$1.5 million for a two phase project. In Phase 1 of the study, completed in 2012, NAS recommended two health study designs and a pilot study to determine the feasibility of using the designs on a nation-wide scale. This was followed by the Phase 2: Pilot Planning Project that was just completed in late December 2014.

NAS has recently submitted an \$8 million proposal for the implementation of Phase 2: Pilot Execution Study. The NRC staff is currently reviewing proposal and will communicate with the Commission on the next steps in the summer 2015.

Request 12.

The CBJ makes reference to some 66 research projects without much clarity as to what level of resources each will consume or why they have been initiated. Please provide a list of all ongoing research projects in the NRC's Office of Research and any others within the agency. Please indicate how much each project has cost to date, how much is budgeted for each project for FY 2016, and an estimate to complete any projects that may extend beyond FY 2016. Please also indicate for each project whether it was initiated by NRC staff or as a result of Commission direction. Please rank this list in terms of quantitative risk reductions.

ANSWER.

In creating the agency's FY 2016 budget, research projects are aggregated into "product" areas, rather than budgeted at the individual project level. Most of the research projects listed in the FY 2016 budget request are aggregated in the budget categories listed in the table below, many of which continue into FY 2017. The table includes historical figures on execution of each budget category back to FY 2012. The agency budget information for FY 2017 has not yet been formulated. While some research is Commission-directed, the majority of research activities are initiated through requests for technical support from the program offices to support regulatory decision-making. While the agency does not calculate risk reduction related to these projects, research projects are typically prioritized under a high/medium/low scheme, and the offices work together on a periodic basis to reprioritize the work based on emergent needs, resource limitations, and other changes.

Products	Office	FY 2012 ¹		FY 2013		FY 2014		FY 2015 Enacted Budget ²		FY 2016 Requested Budget	
		Utilized	Utilized	Utilized	Utilized	Utilized	Utilized	\$ K	FTE	\$ K	FTE
		\$ K	FTE	\$ K	FTE	\$ K	FTE	\$ K	FTE	\$ K	FTE
Fukushima Near-Term Task Force	RES	N/A	5.1	745	7.4	1,065	6.3	1,651	6.9	1,342	4.5
Generic Issues Program	RES	N/A	4.7	413	4.9	130	3	225	7.5	225	4
International Research	RES	3,297	5.7	2,696	4.3	434	5	2,946	6	2,658	6
Reactors Research	RES	40,679	138	31,255	126.6	40,084	124	36,689	124.5	38,987	128
Advanced Reactors Research	RES	1,071	4.2	1,703	2.8	500	1.4	820	3.5	820	3.5
New Reactors Research	RES	5,043	9.7	3,293	5.2	4,744	3.4	4,031	13	4,240	13
Waste Research (Decommissioning)	RES	190	3.2	75	3.7	270	1.7	0	2	0	2
Materials Research (Fuel Facilities)	RES	105	0.2	50	0.1	0	0.1	0	0.5	0	0.5
Materials Research (Materials Users)	RES	442	3.1	213	3.1	869	2.6	350	2	450	2
Waste Research (Spent Fuel)	RES	2,762	3.9	1,992	3.9	2,410	3.7	1,553	3.5	1,453	4
Waste Research (Spent Fuel)	NMSS	18	6.4	0	2.4	0	2.3	1,435	4.5	1,435	3.5

Note 1: Utilization data was only collected through FY 2012 due to budget code restructuring that occurred prior to FY 2012 that makes acquiring the comparable product-level data a significant challenge.

Note 2: FY 2015 budget data includes \$22 million of prior-year funding authorized in the FY 2015 appropriation language.

Request 13.

In light of the Government Accountability Office's recent criticism of NRC's cost estimating capabilities, does the NRC have a current estimate of the total cost for the industry to implement the regulatory requirements NRC is imposing post-Fukushima? If so, please provide it.

ANSWER.

The NRC has detailed cost estimates for the revised June 2013 order requiring severe accident capable hardened vents. The total industry cost to implement the June 2013 order at all 31 U.S. boiling water reactors with Mark I and Mark II containments was estimated by the NRC to be between \$102 and \$197 million.

The NRC generally agrees with the GAO's recommendation that the NRC could improve its regulatory analyses and has begun implementing improvements consistent with GAO's recommendation. Recently for informational purposes, the NRC staff estimated the costs for incorporating these improvements that have been or will be incurred as a result of Order EA-12-049, *Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events*, Order EA-12-051, *Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation*, and related industry initiatives. These estimates are detailed in a draft regulatory analysis that was prepared for a proposed rulemaking, not yet published, that would amend 10 CFR Parts 50 and 52 to require mitigation strategies for responding to beyond-design-basis events.¹ The NRC estimates that these actions result in a total present value cost of \$1.7 billion (using a 7-percent discount rate) and \$1.8 billion (using a 3-percent discount rate).

Request 14.

Please provide a list of all reactor power uprates reviewed by the NRC. Please include the duration of the review, the date of the approval, the number of Requests for Additional Information issued, the cost billed to the applicant for each review, and the NRC's costs including corporate support for each one.

ANSWER.

Effective and efficient review of power uprate applications is a high priority for the agency. The NRC staff has been directed to inform the Commission of technical or timeliness issues that arise related to power uprates. The NRC continues to have staff dedicated to the power uprate program, which includes maintaining related procedures, guidance, and timeliness goals. These activities help ensure the efficiency and predictability of the power uprate program, and continued attention by NRC leadership.

The NRC has established goals for reviewing power uprate applications as follows: 9 months for a measurement uncertainty recapture power uprate (power increase of less than 2%), 12 months for a stretch power uprate (power increase up to 7%), and 18 months for an extended power uprate (power increase as high as 20%). The goals provide an appropriate safety review schedule based on application complexity, support management oversight of the review activities, and meet industry needs for timely reviews. The tables below provide review durations for approved power uprate applications and also indicate the type of power uprate to facilitate comparison between the review durations goals and the review duration.

¹ U.S. Nuclear Regulatory Commission, "Draft Regulatory Analysis: Proposed Rulemaking to Address Mitigation of Beyond-Design-Basis Events," February 24, 2015, ADAMS Accession No. ML15068A284.

The NRC maintains a public website for power uprates² that includes some of the information requested. The website includes a listing of all 156 power uprates that have been approved, including their approval date, and provides information to help ensure that licensee's provide high quality applications.

Requests for additional information (RAIs) are needed when the application does not contain sufficient technical information for the NRC staff to complete its independent safety review and make the requisite regulatory findings. The staff makes every effort to limit itself to one round of RAIs per technical review area, but has issued additional RAIs when information is needed from the applicant to make the necessary regulatory findings to support issuance of the power uprate license amendment. The NRC does not have readily accessible records of all RAI letters issued on power uprate applications since the first uprate was approved in 1977. However, for the 89 of the NRC-approved power uprate amendments, the NRC public website for power uprates provides linked references to all licensee correspondence, including responses to requests for additional information. Therefore, the number of applicant RAI letter responses is provided for each uprate, where known.

Table 1 below provides information on all NRC-approved power uprates, except capacity recapture power uprates for provisional operating licenses³. For each power uprate, the table lists the date the power uprate was approved, type of power uprate, the duration of the review, and the number of applicant RAI letter responses. Table 2 provides information on power uprate applications which were either withdrawn or denied since 2003. Information on withdrawn or denied power uprate applications prior to this time is not readily available.

Table 1: Approved Power Uprate Applications

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
Calvert Cliffs 1	S	6	9/9/77	3	(Note 4)
Calvert Cliffs 2	S	3	10/19/77	2	
Millstone 2	S	6	6/25/79	Unavailable	
H. B. Robinson	S	64	6/29/79	Unavailable	
Fort Calhoun	S	13	8/15/80	Unavailable	
Crystal River 3	S	32	7/21/81	14	
St. Lucie 1	S	12	11/23/81	11	

² <http://www.nrc.gov/reactors/operating/licensing/power-uprates.html>

³ The following plants were approved for capacity recapture power uprates: Haddam Neck (1969), Oyster Creek (1971), Palisades (1977), Ginna (1972), Maine Yankee (1989), and Indian Point 2 (1990)

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
St. Lucie 2	S	40	3/1/85	Unavailable	
Duane Arnold	S	7	3/27/85	Unavailable	
Salem 1	S	6	2/6/86	Unavailable	
North Anna 1	S	15	8/25/86	4	
North Anna 2	S	15	8/25/86	4	
Callaway	S	12	3/30/88	5	
Three Mile Island 1	S	3	7/26/88	Unavailable	
Fermi 2	S	12	9/9/92	2	
Vogtle 1	S	13	3/22/93	6	
Vogtle 2	S	13	3/22/93	6	
Wolf Creek	S	10	11/10/93	1	
Susquehanna 2	S	5	4/11/94	2	
Peach Bottom 2	S	16	10/18/94	14	
Limerick 2	S	14	2/16/95	7	
Susquehanna 1	S	7	2/22/95	Unavailable	
Nine Mile Point 2	S	21	4/28/95	Unavailable	
Columbia	S	22	5/2/95	9	
Peach Bottom 3	S	25	7/18/95	14	
Surry 1	S	12	8/3/95	10	
Surry 2	S	12	8/3/95	10	
Hatch 1	S	7	8/31/95	2	
Hatch 2	S	7	8/31/95	2	
Limerick 1	S	25	1/24/96	7	
V. C. Summer	S	8	4/12/96	5	\$27,121.50
Palo Verde 1	S	4	5/23/96	3	\$13,714.50
Palo Verde 2	S	4	5/23/96	3	\$17,527.50

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
Palo Verde 3	S	4	5/23/96	3	\$32,041.50
Turkey Point 3	S	9	9/26/96	5	\$87,956.50
Turkey Point 4	S	9	9/26/96	5	\$86,866.00
Brunswick 1	S	7	11/1/96	Unavailable	\$120,470.70
Brunswick 2	S	7	11/1/96	Unavailable	\$104,057.30
Fitzpatrick	S	54	12/6/96	Unavailable	\$136,934.00
Farley 1	S	14	4/29/98	17	\$178,367.50
Farley 2	S	14	4/29/98	17	\$173,903.50
Browns Ferry 2	S	11	9/8/98	15	\$140,242.00
Browns Ferry 3	S	11	9/8/98	15	\$124,853.00
Monticello	E	26	9/16/98	12	\$344,375.30
Hatch 1	E	14	10/22/98	6	\$196,577.70
Hatch 2	E	14	10/22/98	6	\$188,462.10
Comanche Peak 2	MU	9	9/30/99	7	\$173,038.50
LaSalle 1	S	10	5/9/00	9	\$142,072.10
LaSalle 2	S	10	5/9/00	9	\$142,072.10
Perry	S	9	6/1/00	3	\$167,860.50
River Bend	S	15	10/6/00	5	\$303,642.60
Diablo Canyon 1	S	10	10/26/00	5	\$161,985.00
Watts Bar 1	MU	7	1/19/01	6	\$173,974.50
Byron 1	S	10	5/4/01	8	\$121,925.10
Byron 2	S	10	5/4/01	8	\$102,356.10
Braidwood 1	S	10	5/4/01	8	\$124,272.30
Braidwood 2	S	10	5/4/01	8	\$102,916.20
Salem 1	MU	6	5/25/01	6	\$78,753.60
Salem 2	MU	6	5/25/01	6	\$78,465.60

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
San Onofre 2	MU	3	7/6/01	5	\$39,528.00
San Onofre 3	MU	3	7/6/01	5	\$39,528.00
Susquehanna 1	MU	9	7/6/01	4	\$74,232.00
Susquehanna 2	MU	9	7/6/01	4	\$83,678.40
Hope Creek	MU	7	7/30/01	3	\$156,499.20
Beaver Valley 1	MU	8	9/24/01	11	\$92,435.40
Beaver Valley 2	MU	8	9/24/01	11	\$92,413.20
Shearon Harris	S	12	10/12/01	15	\$232,470.00
Comanche Peak 1	MU	6	10/12/01	3	\$2,418.00
Comanche Peak 2	MU	6	10/12/01	3	\$173,038.50
Duane Arnold	E	12	11/6/01	24	\$644,895.95
Dresden 2	E	12	12/21/01	36	\$240,867.60
Dresden 3	E	12	12/21/01	36	\$229,401.60
Quad Cities 1	E	12	12/21/01	34	\$209,272.20
Quad Cities 2	E	12	12/21/01	34	\$209,932.80
Waterford 3	MU	6	3/29/02	3	\$187,344.00
Clinton	E	10	4/5/02	28	\$553,248.60
South Texas 1	MU	8	4/12/02	5	\$110,370.00
South Texas 2	MU	8	4/12/02	5	\$111,780.00
Arkansas Nuclear 2	E	16	4/24/02	38	\$726,756.00
Sequoyah 1	MU	5	4/30/02	1	\$105,960.00
Sequoyah 2	MU	5	4/30/02	1	\$108,510.00
Brunswick 1	E	9	5/31/02	32	\$260,577.00
Brunswick 2	E	9	5/31/02	32	\$240,567.00
Grand Gulf	MU	9	10/10/02	5	\$189,860.40
H. B. Robinson	MU	6	11/5/02	5	\$131,571.00

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
Peach Bottom 2	MU	6	11/22/02	4	\$65,788.80
Peach Bottom 3	MU	6	11/22/02	4	\$54,850.20
Indian Point 3	MU	6	11/26/02	2	\$151,539.60
Point Beach 1	MU	7	11/29/02	5	\$97,077.60
Point Beach 2	MU	7	11/29/02	5	\$97,055.40
Crystal River 3	S	6	12/4/02	5	\$162,856.20
D.C. Cook 1	MU	6	12/20/02	5	\$155,035.20
River Bend	MU	8	1/31/03	5	\$113,701.20
D.C. Cook 2	MU	6	5/2/03	2	\$52,369.20
Pilgrim	MU	10	5/9/03	8	\$256,020.00
Indian Point 2	MU	5	5/22/03	2	\$102,741.60
Kewaunee	MU	6	7/8/03	6	\$141,429.60
Hatch 1	MU	9	9/23/03	6	\$76,377.60
Hatch 2	MU	9	9/23/03	6	\$66,409.20
Palo Verde 2	S	21	9/29/03	13	\$410,350.80
Kewaunee	S	9	2/27/04	6	\$295,744.80
Palisades	MU	12	6/23/04	3	\$129,698.40
Indian Point 2	S	6	10/27/04	7	\$439,127.60
Seabrook	S	8	2/28/05	12	\$644,694.60
Indian Point 3	S	7	3/24/05	5	\$251,185.50
Waterford 3	E	13	4/15/05	33	\$1,197,677.70
Palo Verde 1	S	16	11/16/05	12	\$105,907.30
Palo Verde 3	S	16	11/16/05	12	\$99,619.80
Vermont Yankee	E	25	3/2/06	44	\$2,230,859.50

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
Seabrook	MU	6	5/22/06	2	\$279,825.00
Ginna	E	11	7/11/06	12	\$1,100,204.50
Beaver Valley 1	E	12	7/19/06	25	\$739,270.80
Beaver Valley 2	E	12	7/19/06	25	\$717,074.50
Browns Ferry 1	S	5	3/6/07	1	\$558,623.10
Crystal River 3	MU	5	12/26/07	5	\$279,772.00
Susquehanna 1	E	12	1/30/08	37	\$878,581.90
Susquehanna 2	E	12	1/30/08	37	\$831,911.40
Vogtle 1	MU	3	2/27/08	4	\$207,535.20
Vogtle 2	MU	3	2/27/08	4	\$182,947.80
Hope Creek	E	19	5/14/08	39	\$2,100,963.40
Comanche Peak 1	S	8	6/27/08	12	\$360,967.80
Comanche Peak 2	S	8	6/27/08	12	\$353,073.00
Cooper	MU	6	6/30/08	4	\$226,627.20
Davis-Besse	MU	13	6/30/08	9	\$315,787.40
Millstone 3	S	10	8/12/08	35	\$1,120,969.40
Calvert Cliffs 1	MU	10	7/22/09	9	\$213,129.00
Calvert Cliffs 2	MU	10	7/22/09	9	\$107,980.60
North Anna 1	MU	5	10/22/09	3	\$155,298.00
North Anna 2	MU	5	10/22/09	3	\$106,575.30
Prairie Island 1	MU	6	8/18/10	3	\$195,474.20
Prairie Island 2	MU	6	8/18/10	3	\$103,211.20
LaSalle 1	MU	6	9/16/10	2	\$138,239.50
LaSalle 2	MU	6	9/16/10	2	\$122,641.60
Surry 1	MU	6	9/24/10	2	\$154,078.20

Plant Name	TYPE (Note 1)	Review Duration (months) (Note 2)	DATE APPROVED	Applicant RAI Letter Responses	Cost Billed (Note 3)
Surry 2	MU	6	9/24/10	2	\$132,235.60
Limerick 1	MU	11	4/8/11	11	\$285,556.40
Limerick 2	MU	11	4/8/11	11	\$225,888.00
Point Beach 1	E	18	5/3/11	100	\$1,128,732.20
Point Beach 2	E	18	5/3/11	100	\$941,838.50
Nine Mile Point 2	E	31	12/22/11	27	\$1,765,952.33
Shearon Harris 1	MU	10	5/30/12	15	\$608,788.25
Turkey Point 3	E&MU	15	6/15/12	70	\$1,415,799.00
Turkey Point 4	E&MU	15	6/15/12	70	\$859,096.00
St. Lucie 1	E&MU	16	7/9/12	85	\$2,140,512.50
Grand Gulf 1	E	19	7/18/12	47	\$2,162,050.55
St. Lucie 2	E&MU	15	9/24/12	67	\$1,913,824.71
McGuire 1	MU	13	5/16/13	9	\$345,692.00
McGuire 2	MU	13	5/16/13	9	\$215,045.50
Monticello	E	60	12/9/13	71	\$2,383,849.14
Braidwood 1	MU	29	2/7/14	19	\$308,764.50
Braidwood 2	MU	29	2/7/14	19	\$270,286.75
Byron 1	MU	29	2/7/14	19	\$372,527.00
Byron 2	MU	29	2/7/14	19	\$259,620.00
Fermi 2	MU	10	2/10/14	5	\$598,991.50
Peach Bottom 2	E	17	8/25/14	28	\$1,507,387.87
Peach Bottom 3	E	17	8/25/14	28	\$1,322,851.33

Table 2: Withdrawn or Denied Power Uprate Applications

Plant Name	Type (Note 1)	Review Duration (months) (Note 2)	Final Action	Cost Billed (Note 3)
Fort Calhoun	MU	6	(Note 5)	\$147,763.20
Browns Ferry 1	E	113	Withdrawn 10/2/14	\$2,172,241.07
Browns Ferry 2	E	113	Withdrawn 10/2/14	\$1,350,742.97
Browns Ferry 3	E	113	Withdrawn 10/2/14	\$1,273,650.32
Hope Creek	E	3	Withdrawn 2/10/06	\$181,240.50
Susquehanna 1	E	2	Withdrawn 5/18/06	\$43,706.00
Susquehanna 2	E	2	Withdrawn 5/18/06	\$36,572.00
Calvert Cliffs 1	MU	30	Withdrawn 9/27/07	\$121,493.50
Calvert Cliffs 2	MU	30	Withdrawn 9/27/07	\$122,782.60
Fort Calhoun	MU	28	Denied 9/27/07	\$106,709.50
Monticello	E	3	Withdrawn 6/25/08	\$254,348.60
St. Lucie 1	E	4	Withdrawn 8/13/10	\$422,164.96
Crystal River 3	E	15	Withdrawn 2/7/13	\$2,231,280.99

Notes

1. MU = measurement uncertainty recapture power uprate; S = stretch power uprate; and E = extended power uprate.
2. Currently, the NRC review duration for power uprates is the time from acceptance of the application to the time of approval or final action and is the measure for the power uprate timeliness goals. The NRC accepts an application once it has determined that sufficient information has been provided by the licensee for the staff to begin the technical review. For applications received prior to 2005, a formal acceptance was not common so the review duration is conservatively estimated as the time from the date of application until the date of approval. For applications that were withdrawn prior to being accepted by the NRC, the duration is determined as the time from the date of application until the date of final action. In some cases reviews have been put on hold due to significant delays in licensee responses; however, the review duration does not account for these delays.
3. 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. The amount shown is equal to NRC costs, including corporate support.
4. Fee billing records are no longer available for power uprates prior to early 1996. Government record retention requirements dictate that NRC only keep records in this area from 2008 forward.
5. NRC staff approved a measurement uncertainty recapture 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 withdraw approval of the power uprate on May 14, 2004. The review duration is for the original approval and not the withdrawal.

Request 15.

Please provide a list of all reactor license extensions reviewed by the NRC. Please include the duration of the review, the date of the approval, the number of requests for additional information issued, the cost billed to the applicant for each review, and the NRC's costs including corporate support for each one.

ANSWER.

The NRC has completed the review of 47 license renewal applications involving 77 nuclear power plant units since the first application for a renewed license was submitted on April 10, 1998.* The median duration of an application review by the NRC is 23 months. The renewed license issue date, application review time, number of letters requesting additional information, and cost billed to applicants are provided in the table below.

Plant Name and Unit(s)	Renewed License Issuance Date	License Renewal Application Review Time (Months)	No. of Request for Additional Information Letters Issued	Cost Billed to Applicants**
Calvert Cliffs 1 & 2	03/23/2000	23	38	\$2,504,158.48
Oconee 1, 2, & 3	05/23/2000	23	41	\$2,279,750.85
Arkansas Nuclear One 1	06/20/2001	17	9	\$2,326,579.90
Turkey Point 3 & 4	06/06/2002	21	16	\$2,905,768.29
Edwin I. Hatch 1 & 2	06/15/2002	28	4	\$1,935,890.30
North Anna 1 & 2 and Surry 1 & 2***	03/20/2003	22	8	\$3,066,292.33
Peach Bottom 2 & 3	05/07/2003	22	12	\$2,753,373.26
St. Lucie 1 & 2	10/02/2003	22	6	\$2,608,824.50
Fort Calhoun	11/04/2003	22	2	\$1,818,033.67

Plant Name and Unit(s)	Renewed License Issuance Date	License Renewal Application Review Time (Months)	No. of Request for Additional Information Letters Issued	Cost Billed to Applicants**
McGuire 1 & 2 and Catawba 1 & 2	12/05/2003	30	17	\$3,794,516.34
H.B. Robinson 2	04/19/2004	22	2	\$2,357,672.79
V.C. Summer	04/23/2004	21	21	\$3,108,422.24
R.E. Ginna	05/19/2004	22	4	\$2,113,027.13
Dresden 2 & 3 and Quad Cities 1 & 2	10/28/2004	22	12	\$2,487,039.19
Joseph M. Farley 1 & 2	05/12/2005	20	18	\$1,173,082.51
Arkansas Nuclear One 2	06/30/2005	21	13	\$2,420,661.77
D.C. Cook 1 & 2	08/30/2005	22	21	\$2,220,418.91
Millstone 2 & 3	11/28/2005	22	5	\$2,726,786.56

Plant Name and Unit(s)	Renewed License Issuance Date	License Renewal Application Review Time (Months)	No. of Request for Additional Information Letters Issued	Cost Billed to Applicants**
Point Beach 1 & 2	12/22/2005	22	27	\$3,409,478.76
Browns Ferry 1, 2 & 3	05/04/2006	28	27	\$4,739,727.35
Brunswick 1 & 2	06/26/2006	20	5	\$3,754,813.36
Nine Mile Point 1 & 2	10/31/2006	29	32	\$4,050,986.91
Monticello	11/08/2006	20	13	\$2,805,492.81
Palisades	01/17/2007	22	28	\$2,245,505.72
FitzPatrick	09/08/2008	26	11	\$3,386,100.85
Wolf Creek 1	11/20/2008	26	18	\$3,325,036.10
Shearon Harris 1	12/17/2008	25	12	\$2,147,152.75
Oyster Creek	04/08/2009	45	16	\$4,601,455.81

Plant Name and Unit(s)	Renewed License Issuance Date	License Renewal Application Review Time (Months)	No. of Request for Additional Information Letters Issued	Cost Billed to Applicants**
Vogle 1 & 2	06/03/2009	24	6	\$2,508,306.96
Three Mile Island 1	10/22/2009	22	13	\$2,188,222.07
Beaver Valley 1 & 2	11/05/2009	27	25	\$2,773,655.93
Susquehanna 1 & 2	11/17/2009	38	39	\$3,019,046.44
Cooper	11/29/2010	26	22	\$4,030,939.81
Duane Arnold	12/16/2010	27	12	\$3,098,535.95
Kewaunee	02/24/2011	30	19	\$3,313,313.95
Vermont Yankee	03/21/2011	62	15	\$4,350,379.16
Palo Verde 1, 2, & 3	04/22/2011	28	20	\$4,227,487.62
Prairie Island 1 & 2	06/27/2011	38	21	\$3,708,362.26

Plant Name and Unit(s)	Renewed License Issuance Date	License Renewal Application Review Time (Months)	No. of Request for Additional Information Letters Issued	Cost Billed to Applicants**
Salem 1 & 2	06/30/2011	22	35	\$3,480,334.88
Hope Creek 1	07/20/2011	23	25	\$2,509,288.89
Columbia Generating Station	05/22/2012	28	42	\$4,919,175.37
Pilgrim 1	05/29/2012	76	18	\$3,489,044.44
Crystal River 3	****	50	27	\$4,390,546.26
Limerick 1 & 2	10/20/2014	40	35	\$5,369,833.74
Callaway 1	03/06/2015	39	32	\$6,862,536.51

*The NRC has approved 46 license renewal applications and renewed 76 licenses.

**This amount is equal to NRC costs, including corporate support.

***North Anna 1 & 2 and Surry 1 & 2 submitted individual license renewal applications on May 29, 2001; however, the NRC reviewed the applications jointly and issued one safety evaluation report for both sites.

****The Crystal River 3 application was withdrawn by the applicant on February 6, 2013.

Request 16.

Please provide a list of all reactor design certifications reviewed by the NRC since 2000. Please include the duration of the review, the date of the approval or estimated date for completion, the number of Requests for Additional Information issued, the cost billed to the applicant for each review and the NRC's costs including corporate support for each one.

ANSWER.

The NRC considers an application to be "under review" once the application has been docketed, or accepted for review. Upon docketing of an application, the application is provided a docket number to be associated with all review activities for that project going forward. Therefore, the project duration only includes the review time after the project was docketed. In response to Question 16, the NRC has prepared the attached spreadsheet that contains all reactor design certification applications under review by the NRC since 2000 including: the approval or estimated completion dates, number of requests for additional information (RAIs), and the total cost billed to each applicant. The total cost billed to the applicant may contain pre-application charges that took place prior to the official review of the application. These costs were included for completeness.

See attached spreadsheet titled "Nuclear Regulatory Commission's New Reactor Projects Information Since 2000" for detailed information. The total cost billed to the applicant includes the amount that is equal to the total NRC costs, including corporate support.

Request 17.

Please provide a list of all reactor construction and operating license applications reviewed by the NRC since 2000. Please include the duration of the review, the date of the approval or estimated date for completion, the number of Requests for Additional Information issued, the cost billed to the applicant for each review, and the NRC's costs including corporate support for each one.

ANSWER.

The NRC considers an application to be "under review" once the application has been docketed. Upon docketing of an application, the application is provided a docket number to be associated with all review activities for that project going forward. Therefore, the project duration only includes the review time after the project was docketed. In response to Question 17, the NRC has prepared the attached spreadsheet that contains all combined license applications and one operating license application under review by the NRC since 2000 including the approval or estimated completion dates, number of requests for additional information (RAIs), and the total cost billed to each applicant. The total cost billed to the applicant may contain pre-application charges that took place prior to the official review of the application. These costs were included for completeness.

See attached spreadsheet titled "Nuclear Regulatory Commission's New Reactor Projects Since 2000" for detailed information. The total cost billed to the applicant includes the amount that is equal to the total NRC costs, including corporate support. .

Request 18.

Please provide a list of all reactor early site permit applications reviewed by the NRC since 2000. Please include the duration of the review, the date of the approval or estimated date for completion, the number of Requests for Additional Information issued, the cost billed to the applicant for each review, and the NRC's costs including corporate support for each one.

ANSWER.

The NRC considers an application to be "under review" once the application has been docketed. Upon docketing of an application, the application is provided a docket number to be associated with all review activities for that project going forward. Therefore, the project duration only includes the review time after the project was docketed. In response to Question 18, the NRC has prepared the attached spreadsheet that contains all early site permit applications under review by the NRC since 2000; including the approval or estimated completion dates, number of requests for additional information (RAIs), and the total cost billed to each applicant. The total cost billed to the applicant may contain pre-application charges which took place prior to the official review of the application. These costs were included for completeness.

See attached spreadsheet titled "Nuclear Regulatory Commission's New Reactor Projects Since 2000" for detailed information. The total cost billed to the applicant includes the amount that is equal to the total NRC costs, including corporate support.

Nuclear Regulatory Commission's New Reactor Projects Information Since 2000

Name		Date Approved or Estimated Completion Date	Current Status	Project Duration (months)	No. of RAIs Issued*	Total Cost Billed to Applicant (since FY2000)***
Issued Design Certifications (DCs) and DC Amendments	South Texas Project ABWR DC Rule Amendment	12/16/2011	Approved	29	16	\$1,048,648.99
	Advanced Passive 1000 (AP1000)	01/27/2006	Approved	45	742	\$45,331,697.79
	Advanced Passive 1000 (AP1000) Amendment	09/2011	Approved	35	852	
	Economic Simplified Boiling-Water Reactor	10/15/2014	Approved	109	5037	\$68,153,802.25
DCs Currently Under Review	U.S. EPR	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	629	\$82,585,673.86
	U.S. Advanced Pressurized-Water Reactor (US-APWR)	N/A	Review Delayed by Applicant - Currently Not Scheduled	N/A	1111	\$86,455,693.90
	ABWR DC Renewal (Toshiba)	N/A	Review Delayed by Applicant - Currently Not Scheduled	N/A	0	\$686,910.84
	ABWR DC Renewal (GEH)	N/A	Review Delayed by Applicant - Currently Not Scheduled	N/A	15	\$1,401,040.40
	Advanced Power Reactor 1400 (APR1400)	06/03/2019	Under Review	53	0	\$7,424,695.81
Issued Combined Licenses (COLs)	V.C. Summer Unit 2	03/30/2012	Approved	48	202	\$28,057,913.27
	V.C. Summer Unit 3	03/30/2012	Approved			
	Vogtle Unit 3	02/10/2012	Approved	46	215	\$29,770,625.03
	Vogtle Unit 4	02/10/2012	Approved			

	Name	Date Approved or Estimated Completion Date	Current Status	Project Duration (months)	No. of RAIs Issued*	Total Cost Billed to Applicant (since FY2000)***
COL Applications Received	Bell Bend Nuclear Power Plant	04/2016 (for FEIS only)	Safety Review Suspended by Applicant / Environmental Under Review	N/A	351	\$20,026,573.97
	Bellefonte Nuclear Station Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	312	\$21,916,556.23
	Bellefonte Nuclear Station Unit 4	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A		
	Callaway Plant Unit 2	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	28	\$4,066,137.51
	Calvert Cliffs Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	937	\$31,400,772.24
	Comanche Peak Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	433	\$23,278,376.65
	Comanche Peak Unit 4	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A		

Name		Date Approved or Estimated Completion Date	Current Status	Project Duration (months)	No. of RAIs Issued*	Total Cost Billed to Applicant (since FY2000)***
	Fermi Unit 3	02/04/2015 ⁴	Under Review	77	863	\$26,413,205.82
	Grand Gulf Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	76	\$4,719,506.05
COL Applications Received (Cont.)	Levy County Unit 1	01/29/2016	Under Review	89	238	\$26,792,103.77
	Levy County Unit 2	01/29/2016	Under Review			
	Nine Mile Point Unit 3	N/A	Withdrawn by Applicant	N/A	0	\$2,687,821.63
	North Anna Unit 3	07/29/2016	Under Review	104	769	\$26,041,387.77
	River Bend Station Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	0	\$1,350,316.17
	Shearon Harris Unit 2	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A	206	\$10,106,258.61
	Shearon Harris Unit 3	N/A	Review Suspended by Applicant - Currently Not Scheduled	N/A		
	South Texas Project Unit 3	01/29/2016	Under Review	100	1821	\$54,537,130.57

⁴ The staff's effort was complete on February 4, 2015, with completion of the mandatory hearing. Issuance of a combined license is pending Commission decision.

	Name	Date Approved or Estimated Completion Date	Current Status	Project Duration (months)	No. of RAIs Issued*	Total Cost Billed to Applicant (since FY2000)***
	South Texas Project Unit 4	01/29/2016	Under Review			
	Turkey Point Unit 6	02/28/2017	Under Review	91	117	\$22,766,306.47
	Turkey Point Unit 7	02/28/2017	Under Review			
	Victoria County Station Unit 1	N/A	Withdrawn by Applicant	N/A	42	\$1,493,183.33
	Victoria County Station Unit 2	N/A	Withdrawn by Applicant			
	Williams States Lee III Unit 1	04/29/2016	Under Review	100	371	\$21,449,787.93
	Williams States Lee III Unit 2	04/29/2016	Under Review			
Operating License	Watts Bar Unit 2	07/2015	Under Review	96	150	\$42,627,947.32
Issued Early Site Permits (ESPs)	Clinton ESP Site	03/15/2007	Approved	41	50**	\$5,186,587.20
	Grand Gulf ESP Site	04/05/2007	Approved	41	122**	\$5,352,874.98
	North Anna ESP Site	11/27/2007	Approved	50	85**	\$8,579,177.24
	Vogtle ESP Site	08/26/2009	Approved	36	167**	\$11,680,269.39
ESP Applications Received	Victoria County Station	N/A	Withdrawn by Applicant	N/A	76	\$6,146,248.18
	PSEG Site	01/29/2016	Under Review	68	91	\$14,433,123.21

*The RAIs for the projects listed are estimates based on the NRC staff's search. The actual numbers could be higher than what is provided. The new reactor program has an automated system for tracking the resolution of particular topics where additional input from applicants has been needed, as opposed to the number of letters sent to applicants requesting additional information. Each item in this system, referred to as a request for additional information (RAI), comprises one or more questions related to a single topic. This table provides the total number of tracked RAIs rather than the total number of letters sent to applicants.

**The RAIs for these projects represent a portion of the NRC staff's requests for additional information regarding the environmental review only. The RAIs for the safety review were not able to be retrieved due to the review period being completed prior to the use of the agency's electronic RAI tracking system.

***Total cost billed to applicant includes corporate support.

Request 19.

The NRC has begun reviewing an application to certify a foreign design, the KHNP-1400. Please provide the amount the NRC budgeted for this review for fiscal years 2015 and 2016, and the costs estimated to be billed to the applicant for FY 2015.

ANSWER.

The amount budgeted in FY 2015 is \$8,778K (19 FTE and \$5,681K).

The amount requested in the FY 2016 President's Budget is \$7,111K (18.9 FTE and \$3,973K).

The amount estimated to be billed to the applicant for FY 2015 is roughly \$8,696K (24 FTE and \$2,000K)

Request 20.

How often has the Commission imposed regulatory changes based on a Backfit analysis in which qualitative factors were determined to override the result [of] quantitative analysis?

ANSWER.

Table 1. List of Final Rules Since 2005 Where Backfit Analysis Addressed Both Quantitative and Qualitative Factors and the NRC Conclusion Was Based Upon a Determination that the Qualitative Factors Result Overrode the Quantitative Factors Result

Title	Publication Date FR Citation	RIN # Docket ID	Backfit Analysis ADAMS Accession No.	Qualitative Justification
Fitness for Duty Programs	3/31/2008 73 FR 16966	3150-AF12 ⁵	ML080580135	<p>Benefits were identified as:</p> <ol style="list-style-type: none"> 1. Strengthening the effectiveness of fitness-for-duty (FFD) programs through fatigue management requirements; 2. Enhancing regulatory consistency between 10 CFR Part 26 and other related Federal rules and guidelines; 3. Improving effectiveness and efficiency of FFD drug and alcohol testing programs (e.g., anti-subversion provisions); 4. Improving clarity in the organization and language of 10 CFR Part 26; 5. Eliminating or modifying unnecessary FFD requirements; 6. Enhancing FFD program integrity and protection of individual rights; and 7. Improving consistency between the NRC's FFD programs and access authorization programs. <p>Benefits were not quantified because of the lack of specific quantitative information on the risks of accidents within a nuclear power plant's protected area due to worker fatigue or the undetected use of drugs or alcohol, or due to potential inconsistencies between the FFD and access authorization programs. Quantification of any of these attributes would have required estimation of factors such as the types, frequencies, and results of damage that occurred before this rule went into effect and would occur after the rule went into effect. The NRC quantified certain costs, as described in the analysis listed in the "Backfit Analysis ADAMS Accession No." column of this table.</p>
Power Reactor Security Requirements Regulatory Guide 5.75, Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities	3/27/2009 74 FR 13926	3150-AG63 NRC-2008-0019	ML083390372 (final rule regulatory analysis and backfit analysis) ML091690037 (implementing regulatory guide)	<p>Benefits were identified as:</p> <ol style="list-style-type: none"> 1. Safeguards and security: increased level of assurance that nuclear power plants are safeguarded from attacks up to, and including the design basis threat for radiological sabotage; 2. Regulatory efficiency: enhanced regulatory efficiency through regulatory and compliance improvements, including changes in industry's planning efforts and in NRC's review and inspection efforts; 3. Public health (accident): reduced risk that public health will be affected by radiological releases resulting from radiological sabotage; 4. Occupational health (accident): reduced risk that occupational health will be affected by radiological releases resulting from radiological sabotage; 5. Off-site property: reduced risk that off-site property will be

⁵ NRC Docket ID not assigned at this time.

				<p>affected by radiological releases resulting from radiological sabotage; and</p> <p>6. On-site property: reduced risk that on-site property will be affected by radiological releases resulting from radiological sabotage.</p> <p>Benefits were not quantified because of the lack of specific quantitative information on risk of a security event leading to the outcomes to which the regulation was directed (post 9-11 rulemaking). Quantification would have required estimation of factors such as: (1) the frequency of attempted radiological sabotage, (2) the frequency with which radiological sabotage attempts were (i.e., pre-rule) and would be (i.e., post-rule) successful, and (3) the impacts of successful radiological sabotage attempts. The NRC quantified certain costs, as described in the analysis listed in the "Backfit Analysis ADAMS Accession No." column of this table.</p>
Enhancements to Emergency Preparedness Regulations	11/23/2011 76 FR 72560	3150-AI10 NRC-2008-0122	ML112971541	<p>Benefits were identified as:</p> <ol style="list-style-type: none"> 1. Reduced risk that public health and occupational health will be affected by radiological releases resulting from radiological emergencies, including hostile action, and reduced risk that off-site and on-site property will be affected by radiological releases resulting from emergencies, including hostile action, by improving the response to initiating events that could lead to severe accidents in the absence of mitigative response; and 2. Enhanced regulatory efficiency through regulatory and compliance improvements, including changes in industry's planning efforts and in NRC's review and inspection efforts. <p>Benefits were not quantified because of the lack of specific quantitative information and NRC's inability to estimate factors such as: (1) the frequency of various types of emergencies and emergency events, including hostile action; (2) the radiological consequences of such emergencies; and (3) pre-rule and post-rule impacts associated with such emergencies. The NRC quantified certain costs, as described in the analysis listed in the "Backfit Analysis ADAMS Accession No." column of this table.</p>

Request 21.

Please provide a list of licensing actions and reviews that have been delayed due to Fukushima-related work. Will such delays continue as the NRC proceeds on Tier 3 post-Fukushima issues? If so, please explain.

ANSWER.

Currently, a total of 137 licensing actions and reviews have taken longer than 12 months since the onset of Fukushima-related work. Of these, 48 actions remain open, are under review, and are listed below. Some of these delays are directly related to Fukushima-related work competing for the same critical skill sets; however, the NRC continues to prioritize all licensing action reviews in accordance with their safety significance, ensuring that resources are available for the highest priority actions, recognizing that more complex actions can require longer than typical review times. The NRC has reallocated resources from lower priority work across the Reactor Safety Program to stabilize and begin to recover the backlog and mitigate delays in licensing reviews. We expect that timeliness of reviews will continue to recover to pre-Fukushima performance in the coming years, and do not anticipate additional significant delays related work on Tier 3 post-Fukushima issues.

MCGUIRE 2 – Technical Specifications (TS) 3.7.7 Nuclear Service Water System

MCGUIRE 1 - TS 3.7.7 Nuclear Service Water System

CATAWBA 1 - Moderator Temp Coeff Surveillance Requirements (SR) changes TS 3.1.3 and 5.6.5

CATAWBA 2 - Moderator Temp Coeff SR changes TS 3.1.3 and 5.6.5

MCGUIRE 1 - Moderator Temp Coeff SR changes TS 3.1.3 and 5.6.5

MCGUIRE 2 - Moderator Temp Coeff SR changes TS 3.1.3 and 5.6.5

INDIAN POINT 3 - Emergency Diesel Generator Fuel Oil System

RIVER BEND 1 – River Bend Station Heavy Load Movement Over Fuel Assemblies

PALO VERDE 3 - Palo Verde Application for TS Change Regarding Moderator Temperature Coefficient (MTC) Surveillance for STAR Program (TSTF-486, TSTF-406)

PALO VERDE 2 - Palo Verde Application for TS Change Regarding MTC Surveillance for STAR Program (technical specifications task force (TSTF)-486, TSTF-406)

PALO VERDE 1 - Palo Verde Application for TS Change Regarding MTC Surveillance for STAR Program (TSTF-486, TSTF-406)

BYRON 1 - Clarification of Licensing Basis Assumptions for a Natural Circulation Cooldown Event
BRAIDWOOD 1 - Clarification of Licensing Basis Assumptions for a Natural Circulation Cooldown Event
BYRON 2 - Clarification of Licensing Basis Assumptions for a Natural Circulation Cooldown Event
BRAIDWOOD 2 - Clarification of Licensing Basis Assumptions for a Natural Circulation Cooldown Event
BYRON 2 - License Amendment Request (LAR) for the use of an Auxiliary Feedwater Cross-tie Between Units
BRAIDWOOD 1 - License Amendment Request for the use of an Auxiliary Feedwater Cross-tie Between Units
BRAIDWOOD 2 - License Amendment Request for the use of an Auxiliary Feedwater Cross-tie Between Units
BYRON 1 - License Amendment Request for the use of an Auxiliary Feedwater Cross-tie Between Units
PRAIRIE ISLAND 1 – License Amendment Request to Revise TS 3.5.3 ' ECCS – Shutdown'
PRAIRIE ISLAND 2 - LAR to Revise TS 3.5.3 ' Emergency Core Cooling System (ECCS) – Shutdown'
ARKANSAS NUCLEAR 2 - Adoption of TSTF-422, Revision 2, "Change in Technical Specifications End States (CE NPSD-1186)"
OCONEE 1 - Add Emergency Power (KHU) Electrical Frequency Requirements to Technical Specifications
OCONEE 2 - Add Emergency Power (KHU) Electrical Frequency Requirements to Technical Specifications
OCONEE 3 - Add Emergency Power (KHU) Electrical Frequency Requirements to Technical Specifications
ROBINSON 2 - Robinson Unit 2: LAR to Modify TS 3.1.7 to Delete the Monthly Rod Position Indication Surveillance Requirements
SEQUOYAH 1 - Modify Ice Condenser TSs to Address Revisions In Westinghouse Mass and Energy Release Calculation
SEQUOYAH 2 - Modify Ice Condenser TSs to Address Revisions In Westinghouse Mass and Energy Release Calculation
BROWNS FERRY 3 - Tech Spec Changes to Revise the Leak Rate through MSIVs (TS-485)
SEQUOYAH 2 - Custom TS Conversion to Standard ITS, NUREG-1431, Rev. 4 (SQN-TS-11-10)

CATAWBA 1 - Methodology Report DPC-NE-3001-P, Revision 1, Multidimensional Reactor Transients and Safety Analysis

SEQUOYAH 1 - Custom TS Conversion to Standard ITS, NUREG-1431, Rev. 4 (SQN-TS-11-10)

BROWNS FERRY 2 - Tech Spec Changes to Revise the Leak Rate through MSIVs (TS-485)

BROWNS FERRY 1 - Tech Spec Changes to Revise the Leak Rate through MSIVs (TS-485)

MCGUIRE 2 - Methodology Report DPC-NE-3001-P, Revision 1, Multidimensional Reactor Transients and Safety Analysis

CATAWBA 2 - Methodology Report DPC-NE-3001-P, Revision 1, Multidimensional Reactor Transients and Safety Analysis

MILLSTONE 3 - TS Changes to Refueling Water Storage Tank Allowable Temperatures

WATERFORD 3 - Review & Approval of Change to UFSAR Clarifying Pzr Heaters Function for Natural Circulation

MCGUIRE 1 - Methodology Report DPC-NE-3001-P, Revision 1, Multidimensional Reactor Transients and Safety Analysis

PERRY 1 - Full Implementation of Alternative Accident Source Term (L-13-306)

DRESDEN 2 - Amendment to TS Section 5.6.5, "Core Operating Limits Report (COLR)"

DRESDEN 3 - Amendment to TS Section 5.6.5, "Core Operating Limits Report (COLR)"

QUAD CITIES 1 - Amendment to TS Section 5.6.5, "Core Operating Limits Report (COLR)"

QUAD CITIES 2 - Amendment to TS Section 5.6.5, "Core Operating Limits Report (COLR)"

CALVERT CLIFFS 1 - Atmospheric Dump Valves TS

CALVERT CLIFFS 2 - Atmospheric Dump Valves TS