STATUS REPORT ON THE LICENSING ACTIVITIES AND REGULATORY DUTIES OF THE U.S. NUCLEAR REGULATORY COMMISSION

For the Reporting Period through May 2019

Enclosure

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RESOURCES

1. Will Project Aim 2020 conclude in early 2018, or will it continue pursuing additional improvements? If Project Aim will continue, please describe any new or additional actions taken or planned, including milestones for completion of such actions.

In the June 8, 2015, staff requirements memorandum (SRM) for SECY-15-0015, "Project Aim 2020 Report and Recommendations," the Commission approved 19 separate tasks to address the U.S. Nuclear Regulatory Commission's (NRC) need to improve effectiveness and efficiency, as well as to adjust the workforce to match the workload and skills necessary to accomplish its mission. The NRC staff continues to provide a quarterly Project Aim status report, which will be transmitted with this report each quarter.

The Project Aim effort led to several follow-on activities that are still underway. One such initiative is the enhanced Strategic Workforce Planning (SWP) process (described in response to Question 2 below). This activity is structured to better integrate the agency's workload projections, skills identification, human capital management, employee development, and workforce management activities. SWP reflects efforts in the above areas using a 5-year planning horizon. Another initiative outside the scope of the Project Aim efforts was the creation of a task force to identify process efficiencies to yield savings through the standardization or centralization of specific mission support functions. This task force identified 21 project areas for consideration and developed timelines for implementation for each project area. Some of these implementation plans have been successfully completed while others are underway.

Most recently the NRC has undertaken an initiative to identify potential activities that would transform the NRC regulatory framework, culture, and infrastructure. The initial efforts identified over 700 diverse ideas from external stakeholders, regional, and headquarters staff. A subset has been recommended to the Commission. The NRC continues to seek opportunities for innovation and efficiency improvement in its regulatory functions while it institutionalizes the actions related to Project Aim. The table below describes two activities that continue the objectives of Project Aim and demonstrate the NRC's continued commitment to effectiveness and efficiency.

Initiative	Milestones	Notes
Implement an enhanced SWP process that will improve workforce management by focusing on strategic human capital management and longer-term planning	Annual Process began 07/17/18	Launched Phase II to include the major program offices and regional offices.
	Part I Training of supervisors in SWP concepts and process - 08/31/18	Completed
	Deliverable: Office/Region Environmental Scan Analysis - 11/09/18	Completed
	Deliverable: Workload Forecast (execution year +1 and +5) - 12/14/18	Completed

Initiative	Milestones	Notes
	Deliverable: Workforce Demand Analysis - 02/15/19	Completed
	Part II Training of supervisors in SWP concepts and process - 02/22/19	Completed
	Deliverable: Workforce Supply Analysis - 04/05/19	Completed
	Deliverable: Prioritized list of gaps and surpluses - 05/31/19	Completed
	Deliverable: Strategies to address gaps and surpluses - 06/28/19	
Merge the Offices of Nuclear Reactor Regulation (NRR) and NRO to achieve efficiency gains, improve supervisory ratios, and provide greater flexibility and improved agility to manage a dynamic workload	Major NRR restructure October 2017	Completed
	Minor NRO restructure April 2018	Completed
	Proposed organizational structure submitted to the Commission for consideration December 2018	Completed
	Develop Fiscal Year (FY) 2020 staffing plan with pre-merger consolidations Q4 of FY 2019	
	Implement at least one pre-merger consolidation by 10/01/19	Completed
	Complete the merger late-2019	

2. Consistent with the workload forecast done under Project Aim 2020, to what extent has the NRC incorporated five-year workload planning into its policies and procedures, e.g., strategic planning and budget formulation? Please describe the actions taken or planned.[1]

On July 19, 2017, the NRC's Executive Director for Operations (EDO) formed a working group to develop a comprehensive, integrated, and systematic SWP with the primary objective to enhance the existing SWP to better integrate the agency's workload projections, skills identification, human capital management, and workforce management activities with NRC's strategic planning and budget formulation process. As a part of this effort, a three-office pilot of the enhanced SWP process was performed, incorporating a 5-year workload planning horizon. The pilot demonstrated that the enhanced SWP framework and process, when fully implemented, can identify short- and long-term strategies and action plans that are comprehensive and provide important insights into training needs to address gaps and overages in workforce needs. These outcomes will improve the agency's human capital management activities, help identify employee opportunities for career growth, and provide for a greater understanding of the future workload of the NRC. On June 8, 2018, the pilot implementation team proposed proceeding with all the recommendations in the "Enhanced Strategic Workforce Planning Lessons-Learned Pilot Report, including implementing Phase II of the enhanced SWP process. Phase II includes the five major program offices, two corporate offices, and the four regional offices, which accounts for approximately 79 percent of the workforce. The actions planned for SWP Phase II are outlined in the table in the response to Question 1, above. The enhanced SWP process is designed to be implemented on an annual cycle to develop strategies to address workforce needs in both budget execution year + 1 year and budget execution year + 5 years. At the conclusion of Phase II in June 2019, the Office of the Executive Director for Operations (OEDO) and the Office of the Chief Human Capital Officer (OCHCO) will determine the extent to which the remaining agency offices should be included. When fully implemented, SWP will result in a 5-year workload projection that can be used in the budget formulation process and SWP.

3. Please provide the total number of staff and corporate support staff full-time equivalent (FTE), budgeted vs actual, for the agency and in each of the following offices: NRR, NRO, Nuclear Material Safety and Safeguards (NMSS), Nuclear Security and Incident Response (NSIR), Nuclear Regulatory Research (RES), Uranium Recovery, Decommissioning, and each regional office. Please provide this information for the current month, each of the previous eleven months, and projections for each of the twelve months going forward. Please do not divide by twelve.

[1] No new information was added to this section since the last report.

U.S. Nuclear Regulatory Commission Agency Level FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	Fiscal Year to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	234.3	2139.8		
06/10/2018 - 07/07/2018	234.7	2374.5		
07/08/2018 - 08/04/2018	233.8	2608.3		
08/05/2018 - 09/01/2018	232.2	2840.5		
09/02/2018 - 09/29/2018	231.0	3071.5	3195	FY 2018
09/30/2018 - 10/27/2018	230.0	230.0		
10/28/2018 - 11/24/2018	229.5	459.5		
11/25/2018 - 12/22/2018	229.1	688.6		
12/23/2018 - 01/19/2019	226.7	915.3		
01/20/2019 - 02/16/2019	225.5	1140.8		
02/17/2019 - 03/16/2019	224.3	1365.1		
03/17/2019 - 04/13/2019	223.5	1588.6		
04/14/2019 - 05/11/2019	222.7	1811.3		
05/12/2019 - 06/08/2019	222.3	2033.6		
06/09/2019 - 07/06/2019	222.2	2255.8		
07/07/2019 - 08/03/2019	221.7	2477.5		
08/04/2019 - 08/31/2019	221.3	2698.8		
09/01/2019 - 09/28/2019	220.6	2919.4	3114	FY 2019
09/29/2019 - 10/26/2019	220.8	220.8		
10/27/2019 - 11/23/2019	220.7	441.5		
11/24/2019 - 12/21/2019	220.7	662.2		
12/22/2019 - 01/18/2020	220.7	882.9		
01/19/2020 - 02/15/2020	220.7	1103.6		
02/16/2020 - 03/14/2020	220.7	1324.3		
03/15/2020 - 04/11/2020	220.7	1545.0		
04/12/2020 - 05/09/2020	220.8	1765.8	2993	FY 2020

Notes
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately 1/12th of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes staff in the Office of the Inspector General (OIG).
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.

U.S. Nuclear Regulatory Commission Office of Nuclear Reactor Regulation FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	34.0	310.7		
06/10/2018 - 07/07/2018	33.9	344.6		
07/08/2018 - 08/04/2018	34.0	378.6		
08/05/2018 - 09/01/2018	33.7	412.3		
09/02/2018 - 09/29/2018	33.6	445.9	451	FY 2018
09/30/2018 - 10/27/2018	33.5	33.5		
10/28/2018 - 11/24/2018	34.3	67.8		
11/25/2018 - 12/22/2018	34.4	102.2		
12/23/2018 - 01/19/2019	33.9	136.1		
01/20/2019 - 02/16/2019	33.6	169.7		
02/17/2019 - 03/16/2019	33.4	203.1		
03/17/2019 - 04/13/2019	33.6	236.7		
04/14/2019 - 05/11/2019	34.9	271.6		
05/12/2019 - 06/08/2019	36.1	307.7		
06/09/2019 - 07/06/2019	36.1	343.8		
07/07/2019 - 08/03/2019	36.0	379.8		
08/04/2019 - 08/31/2019	36.1	415.9		
09/01/2019 - 09/28/2019	36.0	451.9	445	FY 2019
09/29/2019 - 10/26/2019	35.9	35.9		
10/27/2019 - 11/23/2019	36.0	71.9		
11/24/2019 - 12/21/2019	36.0	107.9		
12/22/2019 - 01/18/2020	36.0	143.9		
01/19/2020 - 02/15/2020	36.0	179.9		
02/16/2020 - 03/14/2020	35.9	215.8		
03/15/2020 - 04/11/2020	35.9	251.7		
04/12/2020 - 05/09/2020	36.0	287.7	432	FY 2020

Notes:

1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the fiscal year.
4 Includes all staff in NRR.
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.
6 FY 2019 NRR resources decrease from FY 2018 Enacted primarily as a result of NRR/NRO pre-merger consolidation activities transitioning to OCIO. FY 2019 FTE projections currently exclude FY 2019 budget approved FTE realignments. Projections will be updated upon completion of personnel actions.

U.S. Nuclear Regulatory Commission Office of New Reactors FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	20.1	188.7		
06/10/2018 - 07/07/2018	19.7	208.4		
07/08/2018 - 08/04/2018	19.4	227.8		
08/05/2018 - 09/01/2018	19.4	247.2		
09/02/2018 - 09/29/2018	19.2	266.4	275	FY 2018
09/30/2018 - 10/27/2018	18.9	18.9		
10/28/2018 - 11/24/2018	18.2	37.1		
11/25/2018 - 12/22/2018	18.0	55.1		
12/23/2018 - 01/19/2019	17.6	72.7		
01/20/2019 - 02/16/2019	16.8	89.5		
02/17/2019 - 03/16/2019	16.1	105.6		
03/17/2019 - 04/13/2019	15.6	121.2		
04/14/2019 - 05/11/2019	14.3	135.5		
05/12/2019 - 06/08/2019	13.2	148.7		
06/09/2019 - 07/06/2019	13.2	161.9		
07/07/2019 - 08/03/2019	13.2	175.1		
08/04/2019 - 08/31/2019	13.2	188.3		
09/01/2019 - 09/28/2019	13.2	201.5	250	FY 2019
09/29/2019 - 10/26/2019	13.2	13.2		
10/27/2019 - 11/23/2019	13.2	26.4		
11/24/2019 - 12/21/2019	13.2	39.6		
12/22/2019 - 01/18/2020	13.2	52.8		
01/19/2020 - 02/15/2020	13.2	66.0		
02/16/2020 - 03/14/2020	13.3	79.3		
03/15/2020 - 04/11/2020	13.3	92.6		
04/12/2020 - 05/09/2020	13.3	105.9	212	FY 2020

Notes:
1. Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2. Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3. Projection is approximately 1/12th of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4. Includes all staff in NRO.
5. Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.
6. FY 2019 NRO resources decrease from FY 2018 Enacted primarily as a result of NRR/NRO pre-merger consolidation activities transitioning to OCIO. FY 2019 FTE projections shown here do not include approved FTE realignments. Projections will be updated upon completion of the related personnel actions.

U.S. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	22.6	206.1		
06/10/2018 - 07/07/2018	22.4	228.5		
07/08/2018 - 08/04/2018	22.2	250.7		
08/05/2018 - 09/01/2018	22.2	272.9		
09/02/2018 - 09/29/2018	22.4	295.3	312	FY 2018
09/30/2018 - 10/27/2018	22.1	22.1		
10/28/2018 - 11/24/2018	22.0	44.1		
11/25/2018 - 12/22/2018	22.0	66.1		
12/23/2018 - 01/19/2019	22.0	88.1		
01/20/2019 - 02/16/2019	21.8	109.9		
02/17/2019 - 03/16/2019	21.6	131.5		
03/17/2019 - 04/13/2019	21.7	153.2		
04/14/2019 - 05/11/2019	21.5	174.7		
05/12/2019 - 06/08/2019	21.6	196.3		
06/09/2019 - 07/06/2019	21.5	217.8		
07/07/2019 - 08/03/2019	21.5	239.3		
08/04/2019 - 08/31/2019	21.5	260.8		
09/01/2019 - 09/28/2019	21.4	282.2	285	FY 2019
09/29/2019 - 10/26/2019	21.5	21.5		
10/27/2019 - 11/23/2019	21.4	42.9		
11/24/2019 - 12/21/2019	21.4	64.3		
12/22/2019 - 01/18/2020	21.4	85.7		
01/19/2020 - 02/15/2020	21.4	107.1		
02/16/2020 - 03/14/2020	21.4	128.5		
03/15/2020 - 04/11/2020	21.4	149.9		
04/12/2020 - 05/09/2020	21.4	171.3	276	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately 1/12th of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Provides all staff in NMSS, including FTE for Uranium Recovery and Reactor Decommissioning.
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.

U.S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	15.6	137.1		
06/10/2018 - 07/07/2018	16.1	153.2		
07/08/2018 - 08/04/2018	15.9	169.1		
08/05/2018 - 09/01/2018	15.4	184.5		
09/02/2018 - 09/29/2018	15.3	199.8	201	FY 2018
09/30/2018 - 10/27/2018	15.4	15.4		
10/28/2018 - 11/24/2018	15.4	30.8		
11/25/2018 - 12/22/2018	15.3	46.1		
12/23/2018 - 01/19/2019	15.1	61.2		
01/20/2019 - 02/16/2019	14.9	76.1		
02/17/2019 - 03/16/2019	15.0	91.1		
03/17/2019 - 04/13/2019	15.0	106.1		
04/14/2019 - 05/11/2019	15.0	121.1		
05/12/2019 - 06/08/2019	15.3	136.4		
06/09/2019 - 07/06/2019	15.3	151.7		
07/07/2019 - 08/03/2019	15.2	166.9		
08/04/2019 - 08/31/2019	15.0	181.9		
09/01/2019 - 09/28/2019	14.7	196.6	208	FY 2019
09/29/2019 - 10/26/2019	14.7	14.7		
10/27/2019 - 11/23/2019	14.7	29.4		
11/24/2019 - 12/21/2019	14.7	44.1		
12/22/2019 - 01/18/2020	14.7	58.8		
01/19/2020 - 02/15/2020	14.7	73.5		
02/16/2020 - 03/14/2020	14.7	88.2		
03/15/2020 - 04/11/2020	14.7	102.9		
04/12/2020 - 05/09/2020	14.7	117.6	205	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in RES.
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.

U.S. Nuclear Regulatory Commission Office of Nuclear Security and Incident Response FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	12.9	116.7		
06/10/2018 - 07/07/2018	12.9	129.6		
07/08/2018 - 08/04/2018	12.8	142.4		
08/05/2018 - 09/01/2018	12.8	155.2		
09/02/2018 - 09/29/2018	12.6	167.8	176	FY 2018
09/30/2018 - 10/27/2018	12.5	12.5		
10/28/2018 - 11/24/2018	12.5	25.0		
11/25/2018 - 12/22/2018	12.3	37.3		
12/23/2018 - 01/19/2019	12.4	49.7		
01/20/2019 - 02/16/2019	12.5	62.2		
02/17/2019 - 03/16/2019	12.5	74.7		
03/17/2019 - 04/13/2019	12.5	87.2		
04/14/2019 - 05/11/2019	12.4	99.6		
05/12/2019 - 06/08/2019	12.2	111.8		
06/09/2019 - 07/06/2019	12.2	124.0		
07/07/2019 - 08/03/2019	12.0	136.0		
08/04/2019 - 08/31/2019	12.0	148.0		
09/01/2019 - 09/28/2019	11.9	159.9	165	FY 2019
09/29/2019 - 10/26/2019	11.9	11.9		
10/27/2019 - 11/23/2019	11.9	23.8		
11/24/2019 - 12/21/2019	11.9	35.7		
12/22/2019 - 01/18/2020	11.9	47.6		
01/19/2020 - 02/15/2020	11.9	59.5		
02/16/2020 - 03/14/2020	11.9	71.4		
03/15/2020 - 04/11/2020	11.9	83.3		
04/12/2020 - 05/09/2020	11.9	95.2	158	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately 1/12th of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in NSIR.
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations.

U.S. Nuclear Regulatory Commission Uranium Recovery FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	1.3	11.7		
06/10/2018 - 07/07/2018	1.3	13.0		
07/08/2018 - 08/04/2018	1.3	14.3		
08/05/2018 - 09/01/2018	1.3	15.6		
09/02/2018 - 09/29/2018	1.3	16.9	30	FY 2018
09/30/2018 - 10/27/2018	0.7	0.7		
10/28/2018 - 11/24/2018	0.7	1.4		
11/25/2018 - 12/22/2018	0.6	2.0		
12/23/2018 - 01/19/2019	0.6	2.6		
01/20/2019 - 02/16/2019	0.6	3.2		
02/17/2019 - 03/16/2019	0.6	3.8		
03/17/2019 - 04/13/2019	0.6	4.4		
04/14/2019 - 05/11/2019	0.6	5.0		
05/12/2019 - 06/08/2019	0.6	5.6		
06/09/2019 - 07/06/2019	0.6	6.2		
07/07/2019 - 08/03/2019	0.6	6.8		
08/04/2019 - 08/31/2019	0.6	7.4		
09/01/2019 - 09/28/2019	0.6	8.0	15	FY 2019
09/29/2019 - 10/26/2019	0.6	0.6		
10/27/2019 - 11/23/2019	0.6	1.2		
11/24/2019 - 12/21/2019	0.6	1.8		
12/22/2019 - 01/18/2020	0.6	2.4		
01/19/2020 - 02/15/2020	0.6	3.0		
02/16/2020 - 03/14/2020	0.6	3.6		
03/15/2020 - 04/11/2020	0.6	4.2		
04/12/2020 - 05/09/2020	0.6	4.8	8	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately 1/12th of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in the Uranium Recovery Branch of NMSS, and relevant staff in the following: Environmental Review Branch, NMSS; Division of Materials Safety, Security, State, and Tribal Programs, NMSS; Fuel Cycle and Decommissioning Branch, Region IV (R-IV); Office of General Counsel (OGC); and Atomic Safety Licensing Board Panel (ASLBP).

U.S. Nuclear Regulatory Commission Decommissioning FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	3.0	28.9		
06/10/2018 - 07/07/2018	2.9	31.8		
07/08/2018 - 08/04/2018	2.9	34.7		
08/05/2018 - 09/01/2018	3.0	37.7		
09/02/2018 - 09/29/2018	3.0	40.7	37	FY 2018
09/30/2018 - 10/27/2018	3.2	3.2		
10/28/2018 - 11/24/2018	3.1	6.3		
11/25/2018 - 12/22/2018	2.2	8.5		
12/23/2018 - 01/19/2019	2.3	10.8		
01/20/2019 - 02/16/2019	2.3	13.1		
02/17/2019 - 03/16/2019	2.3	15.4		
03/17/2019 - 04/13/2019	2.2	17.6		
04/14/2019 - 05/11/2019	2.2	19.8		
05/12/2019 - 06/08/2019	2.2	22.0		
06/09/2019 - 07/06/2019	2.2	24.2		
07/07/2019 - 08/03/2019	2.3	26.5		
08/04/2019 - 08/31/2019	2.3	28.8		
09/01/2019 - 09/28/2019	2.3	31.1	35	FY 2019
09/29/2019 - 10/26/2019	2.3	2.3		
10/27/2019 - 11/23/2019	2.3	4.6		
11/24/2019 - 12/21/2019	2.3	6.9		
12/22/2019 - 01/18/2020	2.3	9.2		
01/19/2020 - 02/15/2020	2.3	11.5		
02/16/2020 - 03/14/2020	2.3	13.8		
03/15/2020 - 04/11/2020	2.3	16.1		
04/12/2020 - 05/09/2020	2.3	18.4	34	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in the Reactor and Materials Decommissioning Branches of NMSS, plus relevant contributions from staff in OGC, Region I (R-1), and Region III (R-III). No mission support staff, second level and above supervisory staff, or staff support from other offices is included.

U.S. Nuclear Regulatory Commission Region I FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	14.9	135.6		
06/10/2018 - 07/07/2018	15.0	150.6		
07/08/2018 - 08/04/2018	14.9	165.5		
08/05/2018 - 09/01/2018	14.8	180.3		
09/02/2018 - 09/29/2018	14.7	195.0	198	FY 2018
09/30/2018 - 10/27/2018	14.6	14.6		
10/28/2018 - 11/24/2018	14.5	29.1		
11/25/2018 - 12/22/2018	14.4	43.5		
12/23/2018 - 01/19/2019	14.2	57.7		
01/20/2019 - 02/16/2019	14.2	71.9		
02/17/2019 - 03/16/2019	14.2	86.1		
03/17/2019 - 04/13/2019	14.1	100.2		
04/14/2019 - 05/11/2019	13.9	114.1		
05/12/2019 - 06/08/2019	13.8	127.9		
06/09/2019 - 07/06/2019	13.7	141.6		
07/07/2019 - 08/03/2019	13.7	155.3		
08/04/2019 - 08/31/2019	13.7	169.0		
09/01/2019 - 09/28/2019	13.6	182.6	195	FY 2019
09/29/2019 - 10/26/2019	13.7	13.7		
10/27/2019 - 11/23/2019	13.7	27.4		
11/24/2019 - 12/21/2019	13.7	41.1		
12/22/2019 - 01/18/2020	13.7	54.8		
01/19/2020 - 02/15/2020	13.7	68.5		
02/16/2020 - 03/14/2020	13.7	82.2		
03/15/2020 - 04/11/2020	13.7	95.9		
04/12/2020 - 05/09/2020	13.7	109.6	183	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in R-I.

U.S. Nuclear Regulatory Commission Region II FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	18.8	173.9		
06/10/2018 - 07/07/2018	18.8	192.7		
07/08/2018 - 08/04/2018	18.5	211.2		
08/05/2018 - 09/01/2018	18.3	229.5		
09/02/2018 - 09/29/2018	18.1	247.6	253	FY 2018
09/30/2018 - 10/27/2018	17.8	17.8		
10/28/2018 - 11/24/2018	17.8	35.6		
11/25/2018 - 12/22/2018	18.0	53.6		
12/23/2018 - 01/19/2019	17.9	71.5		
01/20/2019 - 02/16/2019	17.7	89.2		
02/17/2019 - 03/16/2019	17.6	106.8		
03/17/2019 - 04/13/2019	17.6	124.4		
04/14/2019 - 05/11/2019	17.6	142.0		
05/12/2019 - 06/08/2019	17.5	159.5		
06/09/2019 - 07/06/2019	17.5	177.0		
07/07/2019 - 08/03/2019	17.5	194.5		
08/04/2019 - 08/31/2019	17.4	211.9		
09/01/2019 - 09/28/2019	17.4	229.3	245	FY 2019
09/29/2019 - 10/26/2019	17.4	17.4		
10/27/2019 - 11/23/2019	17.4	34.8		
11/24/2019 - 12/21/2019	17.4	52.2		
12/22/2019 - 01/18/2020	17.4	69.6		
01/19/2020 - 02/15/2020	17.4	87.0		
02/16/2020 - 03/14/2020	17.4	104.4		
03/15/2020 - 04/11/2020	17.4	121.8		
04/12/2020 - 05/09/2020	17.4	139.2	239	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in Region II (R-II).

U.S. Nuclear Regulatory Commission Region III FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	13.8	126.4		
06/10/2018 - 07/07/2018	13.9	140.3		
07/08/2018 - 08/04/2018	13.7	154.0		
08/05/2018 - 09/01/2018	13.7	167.7		
09/02/2018 - 09/29/2018	13.8	181.5	188	FY 2018
09/30/2018 - 10/27/2018	13.8	13.8		
10/28/2018 - 11/24/2018	13.7	27.5		
11/25/2018 - 12/22/2018	13.8	41.3		
12/23/2018 - 01/19/2019	13.6	54.9		
01/20/2019 - 02/16/2019	13.3	68.2		
02/17/2019 - 03/16/2019	13.3	81.5		
03/17/2019 - 04/13/2019	13.3	94.8		
04/14/2019 - 05/11/2019	13.1	107.9		
05/12/2019 - 06/08/2019	13.1	121.0		
06/09/2019 - 07/06/2019	13.1	134.1		
07/07/2019 - 08/03/2019	13.1	147.2		
08/04/2019 - 08/31/2019	13.2	160.4		
09/01/2019 - 09/28/2019	13.2	173.6	184	FY 2019
09/29/2019 - 10/26/2019	13.2	13.2		
10/27/2019 - 11/23/2019	13.2	26.4		
11/24/2019 - 12/21/2019	13.2	39.6		
12/22/2019 - 01/18/2020	13.2	52.8		
01/19/2020 - 02/15/2020	13.2	66.0		
02/16/2020 - 03/14/2020	13.2	79.2		
03/15/2020 - 04/11/2020	13.2	92.4		
04/12/2020 - 05/09/2020	13.2	105.6	180	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in R-III.

U.S. Nuclear Regulatory Commission Region IV FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE	Annual Budget	
05/13/2018 - 06/09/2018	12.7	114.9		
06/10/2018 - 07/07/2018	12.9	127.8		
07/08/2018 - 08/04/2018	13.1	140.9		
08/05/2018 - 09/01/2018	12.9	153.8		
09/02/2018 - 09/29/2018	12.9	166.7	175	FY 2018
09/30/2018 - 10/27/2018	12.8	12.8		
10/28/2018 - 11/24/2018	12.7	25.5		
11/25/2018 - 12/22/2018	12.6	38.1		
12/23/2018 - 01/19/2019	12.5	50.6		
01/20/2019 - 02/16/2019	12.4	63.0		
02/17/2019 - 03/16/2019	12.3	75.3		
03/17/2019 - 04/13/2019	12.2	87.5		
04/14/2019 - 05/11/2019	12.3	99.8		
05/12/2019 - 06/08/2019	12.3	112.1		
06/09/2019 - 07/06/2019	12.3	124.4		
07/07/2019 - 08/03/2019	12.4	136.8		
08/04/2019 - 08/31/2019	12.4	149.2		
09/01/2019 - 09/28/2019	12.4	161.6	169	FY 2019
09/29/2019 - 10/26/2019	12.5	12.5		
10/27/2019 - 11/23/2019	12.5	25.0		
11/24/2019 - 12/21/2019	12.5	37.5		
12/22/2019 - 01/18/2020	12.5	50.0		
01/19/2020 - 02/15/2020	12.5	62.5		
02/16/2020 - 03/14/2020	12.5	75.0		
03/15/2020 - 04/11/2020	12.5	87.5		
04/12/2020 - 05/09/2020	12.5	100.0	167	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in R-IV.

U.S. Nuclear Regulatory Commission Corporate Support Functions FTE Actuals and Projections 11 Months Prior and 12 Months Future Data as of 5/11/2019				
Period	Actual/ Projected FTE for the Period	FY to Date FTE		
05/13/2018 - 06/09/2018	34.6	317.8		
06/10/2018 - 07/07/2018	35.0	352.8		
07/08/2018 - 08/04/2018	35.1	387.9		
08/05/2018 - 09/01/2018	34.8	422.7		
09/02/2018 - 09/29/2018	34.5	457.2	510	FY 2018
09/30/2018 - 10/27/2018	34.6	34.6		
10/28/2018 - 11/24/2018	34.6	69.2		
11/25/2018 - 12/22/2018	34.7	103.9		
12/23/2018 - 01/19/2019	34.5	138.4		
01/20/2019 - 02/16/2019	34.9	173.3		
02/17/2019 - 03/16/2019	35.0	208.3		
03/17/2019 - 04/13/2019	34.8	243.1		
04/14/2019 - 05/11/2019	34.8	277.9		
05/12/2019 - 06/08/2019	34.8	312.7		
06/09/2019 - 07/06/2019	34.9	347.6		
07/07/2019 - 08/03/2019	34.8	382.4		
08/04/2019 - 08/31/2019	34.7	417.1		
09/01/2019 - 09/28/2019	34.7	451.8	515	FY 2019
09/29/2019 - 10/26/2019	34.7	34.7		
10/27/2019 - 11/23/2019	34.7	69.4		
11/24/2019 - 12/21/2019	34.7	104.1		
12/22/2019 - 01/18/2020	34.7	138.8		
01/19/2020 - 02/15/2020	34.7	173.5		
02/16/2020 - 03/14/2020	34.7	208.2		
03/15/2020 - 04/11/2020	34.7	242.9		
04/12/2020 - 05/09/2020	34.7	277.6	511	FY 2020

Notes:
1 Data are reported in two-pay-period groups because of the biweekly payroll cycle.
2 Actual/projected FTE for the period reflects FTE utilization (or projected utilization).
3 Projection is approximately $1/12^{th}$ of total year FTE expenditures, adjusted for known future gains and losses through the end of the FY.
4 Includes all staff in the following corporate support offices: Office of the Chief Financial Officer (OCFO), OCIO, Office of Administration, Office of Small Business and Civil Rights, and OCHCO.
5 Includes reimbursable FTE for work performed for other Federal agencies and non-Federal organizations. FY 2019 Corporate Support Functions resources increase from FY 2018 Enacted primarily as a result of NRR/NRO pre-merger consolidation activities transitioning to OCIO. FY 2019 FTE projections currently exclude FY 2019 budget approved FTE realignments. Projections will be updated upon completion of personnel actions.

4. Please describe the status of actions taken or planned to reduce corporate support costs, including efforts to reduce office space in the Three White Flint North (3WFN) building and in the regional offices. Please include goals for space reductions and cost savings, as well as the estimated date to achieve those goals.[2]

The NRC remains committed to identifying and achieving efficiencies in the corporate support area, including office space reductions and the related cost savings. In the SRM to the Project Aim Report, the Commission directed the staff to re-baseline the agency's workload—focusing on statutory mandates, as well as work pertaining to the agency's safety and security mission. In addition, in SECY-16-0035, "Additional Re-baselining Products", the NRC staff identified other actions that could provide additional efficiencies in the long-term. Planned corporate support reductions are shown in the table below, which will be updated in future reports as the reductions are achieved.

Product Line	Description	Total $ (M)*	FTE	Status	FY
Additional Re-baselining Products (SECY-16-0035)					
Administrative Services	Reduce Office Space in Headquarters**	-5.8	0	In process	FY 2019 – FY 2020
Administrative Services	Reduce Office Space in the Regions	-1.5	0	In process	FY 2019 – FY 2022
Administrative Services and Information Technology (IT)	Space Design Criteria Based on Workstation Efficiencies	TBD	TBD	In process	FY 2019
	Subtotal – Additional Re-baselining Reductions	**-$7.3**	**0.0**		
Other Corporate Support Reductions					
IT	IT Infrastructure Support - the agency expects to realize a 10 to 15 percent drop in contract expenses resulting from a new acquisition strategy.	-3.6	0	In process	FY 2018 – FY 2019
Administrative Services	Utility Savings – Reduction in annual electrical consumption and the related annual cost.	-0.7	0	In process	FY 2019
Administrative Services	Printed Material Savings – Reduction in the amount of printed materials produced for NRC personnel and external stakeholders, both on-site and procured with the Government Publishing Office.	-0.1	0	In process	FY 2019 – FY 2020
	Subtotal – Other Corporate Support	**-$4.4**	**0.0**		
Total		**-$11.7**	**0.0**		

*Total includes any FTE cost.
** Includes 3WFN and warehouse space reductions.

Reduction of Office and Warehouse Space

NRC office space is currently comprised of a Headquarters Campus in Rockville, MD (One White Flint North (OWFN), Two White Flint North (TWFN), and partial space in 3WFN), a warehouse, four regional office buildings, and a technical training center. From FY 2013 through FY 2015, NRC relinquished a net total of 364,997 useable square feet (USF) at its

[2] No new information was added to this section since the last report.

headquarters by shedding a total of eight floors in the 3WFN building and four temporary satellite locations. As of October 1, 2018, the agency's headquarters office space consisted of OWFN; TWFN; and four floors, lobby level conference room space, and the B1 level of 3WFN.

The NRC plans to relinquish a total of 181,000 USF from FY 2019 through FY 2023, by consolidating office space at headquarters and within each regional office location (161,000 USF) and releasing approximately half of the agency's warehouse space in Rockville, MD (20,000 USF). The total space to be released consists of four and a half floors in 3WFN totaling 103,000 USF, approximately 58,000 USF at the regional locations, and 20,000 USF of warehouse space. These reductions will result in an additional 40,000 USF being released than estimated in the FY 2019 though FY 2023 Real Property Efficiency Plan submitted in September 2018. This additional space to be released includes a half floor of 3WFN (10,000 USF), 10,000 USF at NRC's regional location in Arlington, TX, and 20,000 USF of warehouse space in Rockville, MD. The total annual savings for the planned release of the 181,000 USF by the end of FY 2023 is anticipated to be $6.4 million in rent savings and $0.9 million in security savings as compared to FY 2018 baseline costs for a total annual savings of $7.3 million.

The NRC released the second floor of 3WFN in October 2018, vacated the third floor in March 2019, and plans to complete the relinquishment of the remaining two and a half floors (floors eight, nine, and half of the fourth floor) of headquarters space in FY 2020. The National Institutes of Health is anticipated to begin paying the rent and related costs for the third floor in May 2019, and for floors eight, nine, and half of floor four once the work necessary to occupy the space is completed. The warehouse space is anticipated to be released in FY 2020 with an annual rent savings of approximately $400,000.

Significantly reducing costs by releasing the space in the regions will be a challenge due to the non-cancelable terms of the occupancy agreements and leases in Regions I, II, and IV. The NRC is working with General Services Administration (GSA) to identify potential tenants to backfill these spaces. Regional office space reductions can be achieved by reconfiguring the existing space to use fewer square feet, thereby allowing for unused blocks of space to be released. With the exception of NRC's R-III office in Lisle, IL, rent reductions will not be achieved until GSA identifies and places a new tenant into the released space or until such time as the terms of the NRC's current leases allow. The current square footage estimates and schedules for release are as follows: R-III, Lisle, IL, 7,000 USF in late FY 2019; R-II, Atlanta, GA, 15,000 USF in FY 2023; R-IV, Arlington, TX, 21,000 USF in FY 2021; and R-I, King of Prussia, PA, 15,000 USF in FY 2022. The annual reduction in costs for the regional office space is anticipated to save a total of $1.5 million. The timing and scope of the regional reductions will be refined as the NRC works to finalize each location's relinquishment plan. The NRC continues to evaluate opportunities to release additional space in the regions and will update changes to the square footage of the planned reductions accordingly.

The NRC's updated proposed agency-wide total space reduction goals for each FY are shown in the table below.

NRC Square Foot Reduction Goals FY 2019 – FY 2023

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Office Target (Net SF Reduction)	55,000	75,000	21,000	15,000	15,000

Reduction in IT Infrastructure Support Costs

To date, the NRC has realized more than 60 percent of the expected $3.6 million in cost reductions through contract modifications; transitions to government-wide acquisition vehicles and more cost-effective competitive contract awards; transfer of leased end-user and infrastructure assets to NRC ownership; revised eligibility for Government-Furnished Equipment; and award of the Security Operations Center, Mobility, and End User Computing Call Orders under the new Global Infrastructure and Development Acquisition (GLINDA) Blanket Purchase Agreements. The balance of the expected cost reductions will be realized in FY 2019 and beyond through transition to the GLINDA Systems, Network, and Cross-Cutting Services Call Order.

5. Please describe the status of efforts to provide greater transparency, timeliness, and itemization in invoices to applicants and licensees, including any progress toward electronic invoicing (eBilling) and payment. Please include near-term (within 6 months), medium-term (6 to 12 months), and long-term (greater than 12 months) milestones.

Improvements to invoices for greater transparency, timeliness, and itemization.

Near-Term:

- OCFO has been working with an intra-agency working group to implement a standardized Title 10 of the *Code of Federal Regulations* (10 CFR) Part 170 (fees for service) fee billing validation process and establish standardized roles and responsibilities. The working group developed, piloted, refined, and finalized the standardized process along with training materials. OCFO is in the process of providing training to all staff involved in the billing process. The anticipated implementation date is June 30, 2019.

Progress towards eBilling and payment.

The NRC is in the development phase of the eBilling project. Near-term, medium-term, and long-term tasks include the following:

Near-Term:

- Obtain NRC Authorization Official full approval to operate the system (in progress).
- Build the eBilling solution tool (in progress).
- Conduct eBilling pilot 1 session with internal and external stakeholders (complete).
- Conduct eBilling pilot 2 session with internal and external stakeholders.

Medium-Term:

- Deploy the phased approach of the eBilling solution tool on or about October 2019.

Long-Term:

- Provide stakeholders with status of eBilling project on a bimonthly basis (in progress).
- Provide the nine participating eBilling pilot project licensees with status of eBilling project on a monthly basis (in progress).

6. Please provide a list of all new research initiated during the reporting period. For each new project, please provide the estimated timeframe and resources necessary for completion, and a description of the safety significance of the research.[3]

During the month of May 2019, the Office of Nuclear Regulatory Research initiated research on or substantially revised the following research:

Name of New or Revised Project	Estimated Completion	Estimated Resources	Safety Significance of Research Activity
No New or Revised Research Activities to Report for May 2019			

Comments:

The table above provides information about projects that were reviewed and approved during the monthly reporting period that exceed 300 staff hours or $500K of program support.

URANIUM RECOVERY

7. For major uranium recovery licensing actions, please provide a table including the date the application was filed, the duration of the application review, the originally forecasted completion date, the currently forecasted completion date, and the total current amount of fees billed to the licensee/applicant for the review.[4]

Major Uranium Recovery Licensing Actions (1)

The State of Wyoming assumed regulatory responsibilities for uranium recovery activities within their state on September 30, 2018. The NRC does not currently have any major uranium recovery actions under active review. See item #8 below for other actions still pending before the agency.

Licensee	Site/Facility Name	Licensing Action Type	Date of Submittal	Duration of Review (2) (months)	Originally Forecasted Completion Date	Currently Forecasted Completion Date(3)	Total Current Fees Billed (4)
No Major Uranium Recovery Licensing actions currently under active review.							

Notes:

1. NRC staff completed a self-assessment of the uranium recovery licensing process in 2017. The review compared the uranium recovery licensing process to other licensing groups within the NRC to identify best practices. The review identified several recommendations for improvements to the uranium recovery licensing process. A number of these recommendations, such as the use of schedule letters to communicate changes in review schedules and developing tools to better track project status, have already been implemented. In addition, in 2016, the uranium recovery program established an agency metric that tracks the percentage of major milestones completed

[3] No new information was added to this section since the last report.
[4] No new information was added to this section since the last report.

on schedule. The uranium recovery staff anticipates that implementing these changes will result in future efficiencies in the uranium recovery licensing process.

2. The "duration of review" is the total amount of time the application has been under consideration, starting when the application was accepted for review by the NRC staff. The NRC's goal is to complete major reviews within 36 months from acceptance of the application. The duration of review includes periods of delay that could be attributed to the NRC staff, the licensee, or both.
3. Completed actions will remain in the table for this report until the final fees under 10 CFR Part 170 can be included in the Total Current Fees Billed column.
4. Fees for license-specific services under 10 CFR Part 170 are billed quarterly.

8. For major uranium recovery licensing actions, please provide a brief description of the status of each review, including projected budget and timeline for both the environmental impact statement (EIS) and the safety evaluation report (SER).[5]

The table below provides the status of major uranium recovery licensing actions pending before the agency, the timeline for completing the associated EISs and SERs, and the total projected budget per project. As noted above, the NRC does not currently have any major uranium recovery licensing actions under review.

The NRC does not formulate its budget at the project level. The budget for the Uranium Recovery Program is formulated at a higher level using budget models for the number, type, and complexity of reviews anticipated. The projected budget information reported below includes the program staff and contract support resource estimates to perform the safety and environmental reviews from submittal to licensing decision, excluding resources for OGC's reviews, hearings, mission support, supervisory support, travel, and allocated agency corporate support resources. The estimates are based on budget models for different types (such as expansions, renewals, and new licenses) and complexities of major licensing action reviews. The NRC staff's goal is to complete the review of major licensing actions within 3 years; however, the staff estimates that smaller, less complex applications may be reviewed in 2 years, while larger, more complex, applications may require up to 4 years to review.

Uranium Recovery Applicant	Application Accepted for Review	Review Status and Projected Budget
Cameco North Trend Expansion(1) (NE)	08/28/07	The SER for the North Trend expansion was completed in July 2013. On December 16, 2015, the licensee requested the NRC staff to stop its review of the North Trend application and to instead focus its efforts on the review of the Marsland expansion. The NRC staff has suspended its work related to the development of the draft Environmental Assessment (EA) and conduct of Section 106 consultations pursuant to the NHPA. In addition, the hearing to address contentions related to groundwater is on hold, pending completion of the NRC staff's environmental review. By letter dated April 4, 2018, Cameco reiterated its request that the staff continue to hold its review in abeyance. The projected total budget to conduct the review is 3.0 FTE and $600K.

[5] Note (1) to the table, was inadvertently omitted from the last report.

Uranium Recovery Applicant	Application Accepted for Review	Review Status and Projected Budget
Hydro Resources, Inc. (HRI) License Renewal (NM)	06/24/13	The sites, located very close to Navajo Nation lands, were licensed in 1998. Construction has not yet commenced. The license renewal review was placed in abeyance on November 13, 2014, while HRI continues its work with the Navajo Nation Council. In March 2016, the NRC approved the transfer of control of the license from the HRI parent company, Uranium Resources, Inc., to Laramide Resources. The parties finalized the transaction in January 2017. The schedule for remaining milestones associated with the licensing review is to be determined. The projected total budget to conduct the review is 2.6 FTE.

Note (1) On February 9, 2018, Cameco announced that it is ceasing U.S. operations due to an expectation of prolonged poor uranium market conditions. At the request of the licensee, the NRC staff has placed its licensing reviews on hold while seeking further information from Cameco regarding its licensing plans.

9. For minor uranium recovery licensing actions, please provide the following information each reporting period, including any months previously reported, in this format:
   a. Size of inventory;
   b. Number of acceptance reviews completed on time;
   c. The number of items completed in the period being reported; and
   d. Of the items completed in the reporting period, the number completed within the forecasted schedule.
   e. Please identify any "unusually complex" items omitted from the inventory and provide the age of the item, a brief description of the item, the justification for omitting it from the inventory size, and an explanation for any review exceeding its original schedule by 125 percent.

Month/Year	Size of Inventory	Number of Acceptance Reviews Completed on Time[(1)]	Number of Items Completed During Month	Number of Items Completed Within Forecasted Schedule[(2)]	Unusually Complex Items Omitted from Inventory
Nov-2017	21	NA	2	1	0
Dec-2017	21	1	0	0	0
Jan-2018	21[(3)]	1	1	1	0
Feb-2018	19	2	2	2	0
Mar-2018	11	NA	8	8	0
Apr-2018	10	3	2	2	0
May-2018	9	NA	1	1	0
June-2018	8	NA	1	1	0
July-2018	9[(4)]	3[(4)]	1	1	0

Month/Year	Size of Inventory	Number of Acceptance Reviews Completed on Time[1]	Number of Items Completed During Month	Number of Items Completed Within Forecasted Schedule	Unusually Complex Items Omitted from Inventory
Aug-2018	7[4]	NA	2	2	0
Sept-2018	1[5]	NA	3	3	0
Oct-2018	1	0	0	0	0
Nov-2018	2	1	0	0	0
Dec-2018	1	NA	1	1	0
Jan-2019	1	NA	0	0	0
Feb-2019	1	NA	0	0	0
Mar-2019	0	NA	1	1	0
Apr-2019	0	NA	0	0	0
May-2019	1	1	0	0	0

Notes:

1. NA means not applicable - no acceptance reviews were due in the corresponding month.
2. This column represents the total number of minor licensing actions completed within the staff's forecasted schedule in a particular month. At times, the uranium recovery staff has to divert resources from minor licensing actions to address oversight of operating sites, emergent issues, and major licensing actions. When this occurs, the NRC staff tries to accommodate the licensee's priorities for completion of minor licensing actions. However, this has impacted the staff's ability to complete minor licensing actions within the forecasted schedule.
3. The size of the inventory for January has been decreased to account for the completion of a licensing action on January 31, 2018.
4. The size of the inventory for July and August has been increased to account for an additional action that was under review by the NRC staff.
5. On September 30, 2018, the NRC relinquished its oversight responsibilities for uranium recovery facilities to the State of Wyoming under the NRC's Agreement State program. Three of the minor licensing actions completed in September were completed within the forecasted schedule. The remaining three licensing actions were transferred to the State of Wyoming for completion.

10. Please provide a concise summary of the status of the process for the State of Wyoming to become an Agreement State.[6]

On September 10, 2018, the Commission approved the proposed Agreement and on September 25, 2018, Chairman Svinicki and Governor Mead of Wyoming signed the Agreement, with an effective date of September 30, 2018.

11. Please provide a concise summary of the specific actions planned to improve the efficiency of reviews conducted for compliance with the NHPA, including implementation dates for completion. Please describe any progress made during the reporting period.[7]

[6] No new information was added to this section since the last report.
[7] No new information was added to this section since the last report.

The Section 106 process under the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. Based on lessons learned in the uranium recovery licensing functional area, the NRC has taken a number of actions to facilitate and enhance its Section 106 reviews. Because each licensing or regulatory action differs in scope, the specific activities identified to carry out NRC's obligations under NHPA differ from one licensing or regulatory action to another. The following specific actions have been identified and are being carried out to improve and facilitate compliance with the NHPA Section 106 process.

For efficiency, the NRC conducts the Section 106 process in coordination with the National Environmental Policy Act (NEPA) review process. To the extent possible, the NRC's completion date for its NHPA Section 106 review for a specific licensing action aligns with the date for publishing the final NEPA environmental review document.

In FY 2013, the NRC entered into an interagency agreement with the ACHP, under which the ACHP established a dedicated liaison to provide the NRC with technical assistance with Section 106 reviews of specific licensing actions, as well as relevant training and guidance. In FY 2018, ACHP provided the following webinars to NRC staff on the Section 106 process of the NHPA to continue to improve the efficiency of the reviews:

- Planning to Involve the Public in Section 106 (Completed on April 26, 2018)
- Defining the Area of Potential Effect (Completed on May 17, 2018)
- Reasonable and Good Faith Effort (Completed on June 12, 2018)
- Confidentiality & Section 304 (Completed on July 10, 2018)
- Innovative Mitigation (Completed on August 14, 2018)
- Planning for Successful Agreements (Completed on September 11, 2018)

Additionally, the NRC is planning to publish an Interim Staff Guidance (ISG) for conducting the Section 106 process specific to uranium recovery licensing actions, "Guidance for Conducting the Section 106 Process of the National Historic Preservation Act for Uranium Recovery Licensing Actions," by mid-2019.

To further improve the agency's NHPA and NEPA processes for licensing activities, the NRC has updated several documents regarding tribal consultation. The NRC published the final Tribal Policy Statement in the *Federal Register* (FR) on January 9, 2017 (82 FR 2402) and revised its Tribal Protocol Manual. The Tribal Protocol Manual is intended to facilitate effective consultations and interactions between the NRC and Tribes.

Consistent with NRC's memoranda of understanding (MOU) with the Bureau of Land Management (BLM), the NRC staff coordinates with BLM the performance of NEPA and NHPA Section 106 reviews related to facilities that require an NRC license to possess and use source and byproduct materials, on public lands under BLM's regulatory authority. The goal of the MOU is to limit, to the extent possible, duplication of consultation, review, and evaluation efforts on a project.

Activities implemented over the past several years have enhanced and facilitated NRC's Section 106 reviews for uranium recovery licensing actions. For example, the NRC staff continues to proactively reach out and interact with Tribes as early as possible to share information and explain the scope of the licensing actions via letters, e-mails, teleconference calls, and webinars prior to potential tribal site visits. The NRC staff will continue to evaluate its approach to the Section 106 process to identify additional activities that could be taken to better facilitate the process.

12. Please provide a concise summary of the progress of the pilot project to establish flat fees for uranium recovery licensees, including specific near-term (6 months), medium-term (6 - 12 months), and long-term (greater than 10 months) milestones necessary to complete the pilot program.[8]

As directed by the Commission and required by the Nuclear Energy Innovation and Modernization Act (NEIMA), the NRC staff is in the process of conducting a flat fee pilot initiative for routine uranium recovery licensing actions. As described in the staff paper SECY-16-0097, "Fee Setting Improvements and Fiscal Year 2017 Proposed Fee Rule," this pilot will involve evaluation of data to collect a representative sample of the costs for various licensing reviews. The staff believes that using data from the previous data recording structure that had less granularity could result in a proposed flat fee that is skewed either high or low for the work delivered. Collecting representative samples of data under the new data recording structure will allow the NRC to make a determination about flat fees for uranium recovery licensees.

The agency completed development of a new data recording structure on June 30, 2017. By September 30, 2017, the NRC trained staff to record the data using the new structure. The new data structure was deployed on October 1, 2017. During FY 2018, the NRC staff recorded time and attendance and began analysis of the data, which indicated the hours spent on specific work products, using the new data structure. The NRC staff reached out to the affected stakeholder in December 2018 to get feedback on the results of the preliminary data. In addition, the staff has conducted outreach to Agreement States with uranium recovery licensees to understand their fee schedule development process.

On January 14, 2019, NEIMA was signed into law. This law requires the NRC to complete the flat fee pilot initiative and provide a report describing the results to the appropriate congressional committees no later than January 14, 2020.

Near-Term:

- The analysis and draft recommendations have been completed. The NRC staff anticipates sending options to the Commission for its consideration as part of the FY 2020 fee rule in August 2019.

Medium-Term:

- The Commission will provide the report to Congress as required by NEIMA. The FY 2020 proposed fee rule is expected to be published for public comment in January 2020.

Long-Term:

- The FY 2020 final fee rule is scheduled to be published by May 2020.

[8] No new information was added to this section since the last report.

LICENSING

13. For operating reactors, new reactors, and uranium recovery licensees, please provide the following information regarding license amendment reviews:

13.a Please provide the following information for the current reporting period, including any information previously reported in the last six months:

i. Size of inventory;
ii. The number of items completed in the period being reported;
iii. Percentage of acceptance reviews completed on time;
iv. The percentage of these items completed within the forecasted schedule;
v. The percentage of these items completed within 125 percent of the forecasted schedule;
vi. The percentage of items completed within ten months;
vii. The average age for items completed during the month being reported;
viii. The ages of the quickest three items completed; and
ix. The ages of the slowest three items completed.

Operating Reactors

Month/Year	Size of Inventory (Note 1)	No. of Items Completed in the Report Period	Percentage of Acceptance Reviews Completed on Time	Percentage of Items Completed within the Forecasted Schedule (Note 2)	Percentage of Items Completed within 125% of Forecasted Schedule (Note 3)	Percentage of Items Completed within 10 Months	Average Age for Items Completed During Report Period (months)	Ages of the Quickest Three Items Completed (months)			Ages of the Slowest Three Items Completed (months)		
Nov-2018	581	68	85%	100%	100%	84%	7.7	<1	<1	2	13	13	12
Dec-2018	566	60	100%	98%	100%	83%	8.1	<1	<1	<1	12	12	12
Jan-2019	550	74	100%	91%	93%	82%	8.0	<1	1	3	14	15	15
Feb-2019	593	45	100%	95%	100%	77%	7.7	<1	1<	2	12	12	12
Mar-2019	603	57	97%	95%	95%	57%	11.8	3	3	4	30	30	30
Apr-2019	599	79	100%	91%	90%	81%	7.53	2	2	2	17	17	12
May-2019	600	37	91%	88%	92%	40%	9.84	<1	1	2	12	22	22

Note 1: Similar to the licensing actions reported in the yearly Congressional Budget Justification (CBJ), the inventory does not include unusually complex or Fukushima related licensing actions.

Note 2: Internal processes track licensing action completions within forecasted scheduled (+ 1 month) [this percentage does not include unusually complex or Fukushima related licensing actions].

Note 3: Internal processes track licensing action completions within 125 percent of the forecasted schedule [this percentage does not include unusually complex or Fukushima related licensing actions].

New Reactors

Month/Year	Size of Inventory	No. of Items Completed in the Report Period	Percentage of Acceptance Reviews Completed on Time	Percentage of Items Completed within the Forecasted Schedule	Percentage of Items Completed within 125% of Forecasted Schedule	Percentage of Items Completed within 10 Months	Average Age for Items Completed During Report Period (months)	Ages of the Quickest Three Items Completed (months)			Ages of the Slowest Three Items Completed (months)		
Nov-2018	15	2	50%	100%	100%	100%	7	5	8	N/A	8	5	N/A
Dec-2018	17	1	100%	100%	100%	100%	3	3	N/A	N/A	3	N/A	N/A
Jan-2019	13	4	100%	100%	100%	100%	5	5	5	5	6	5	5
Feb-2019	11	2	100%	100%	100%	100%	5	5	5	N/A	5	5	N/A
Mar-2019	13	1	100%	100%	100%	100%	5	5	N/A	N/A	5	N/A	N/A
Apr-2019	9	4	100%	100%	100%	100%	6	4	4	6	8	6	4
May-2019	9	1	100%	100%	100%	100%	6	6	N/A	N/A	6	N/A	N/A

Uranium Recovery

Month/Year	Size of Inventory	Number of Items Completed in the Report Period	Percentage of Acceptance Reviews Completed on Time	Percentage of Items Completed within Forecasted Schedule	Percentage of Items Completed within 125% of Forecasted Schedule	Percentage of Items Completed within 10 Months	Average Age for Items Completed During Report Period (months)[(1)]	Ages of the Quickest Three Items Completed (months)			Ages of the Slowest Three Items Completed (months)		
Nov-2018	2	0	100%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dec-2018	1	1	N/A	100%	100%	100%	5.2	5.2	N/A	N/A	5.2	N/A	N/A
Jan-2019	1	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb-2019	1	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mar-2019	0	1	N/A	100%	100%	100%	4.6	4.6	N/A	N/A	4.6	N/A	N/A
Apr-2019	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May-2019	1	0	100%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note 1: The uranium recovery staff's goal is to complete major licensing actions within 36 months of acceptance and minor licensing actions within 12 months of acceptance. At times, the uranium recovery staff has to divert resources from minor licensing actions to address oversight of operating sites, emergent issues, and major licensing actions. When this occurs, the NRC staff tries to accommodate the licensee's priorities when determining which minor licensing actions to complete first.

13.b For the reporting period, please also provide the following for license amendment requests (LARs):

i. The number not accepted for review; and

ii. A list of the requests that were withdrawn or denied after being accepted for review including the age of the request at the time it was withdrawn or denied.

Operating Reactors

Month/Year	No. of LARs Not Accepted for Review	List the Requests that were Withdrawn or Denied after Being Accepted for Review	Age of the Request at the Time it was Withdrawn or Denied (months)
May 2019	0	Withdrawn: Fermi 2 RR-A36, Alternative Pressure Testing Requirements for RPV Flange Leak-Off Piping/L-2019-LLR-0015 Withdrawn: FENOC FLEET-LAR to Reflect Change in Entity Providing $400 Million Support Agreement for Beaver Valley 1 & Davis Besse/L-2017-LLA-0239	1.5 22

New Reactors

Month/Year	No. of LARs Not Accepted for Review	List the Requests that were Withdrawn or Denied after Being Accepted for Review	Age of the Request at the Time it was Withdrawn or Denied (months)
May 2019	0	N/A	N/A

Uranium Recovery

Month/Year	No. of Amendment Requests Not Accepted for Review	List of the Requests that were Withdrawn or Denied after being Accepted for Review	Age of the Request at the Time it was Withdrawn or Denied (months)
May 2019	0	N/A	N/A

13.c Please identify items considered “unusually complex” items (e.g. criticality reviews, National Fire Protection Association (NFPA) 805 reviews) and omitted from the [licensing amendment] inventory including: the age of the item, a brief description of the item, the justification for omitting it from the inventory size and an explanation for any review exceeding its original schedule by 125 percent.

Operating Reactors

Note: Unusually complex license amendments are not included in the internal performance measures as they do not lend themselves to realistic forecasted schedule development. Rather, they are given escalated management attention to ensure progress is being made towards resolving outstanding issues and completing the reviews in a timely manner.

Review Description[9]	Justification	Age (Months)
Sequoyah Units 1 & 2 – Updated Final Safety Analysis Reports Regarding Changes to Hydrologic Analysis	Resolution depended on a topical report issued in March 2019	80
Saint Lucie Units 1 & 2 – TSTF-505 Review	Risk-Informed and Voluminous	53
Palo Verde Units 1, 2, & 3 – TSTF-505 Review	Risk-Informed and Voluminous	45
Davis-Besse Unit 1 – NFPA 805 Review	Risk-Informed and Voluminous	41
Wolf Creek Generating Station 1– "Transition to Westinghouse Core Design and Safety Analyses"	Voluminous review	23
Indian Point Nuclear Generating 2 – "Spent Fuel Storage and Criticality Safety Analysis Technical Specifications"	First-of-a-kind review	15
Brunswick Units 1 & 2 – Adopt 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems and Components [SSCs] for Nuclear Power Reactors"	Risk-informed and first-of-a-kind review	14
Watts Bar Nuclear Plant 1 & 2 – "Request Authorization to Load Tritium Producing Burnable Absorber Rods (TPBARs)"	Voluminous review	14
Browns Ferry 1, 2, & 3 – MELLLA+ Core Flow Operating Range Expansion	Dependent on Advisory Committee on Reactor Safeguards (ACRS) review	13
Hatch – NFPA 805 Review	Risk-Informed and Voluminous	10
Palo Verde 1, 2 & 3 - Framatome High Thermal Performance Fuel – Amendment & Exemption	First-of-a-kind review	6
Brunswick 1 & 2 – ATRIUM 11 Advanced Fuel Transition	First-of-a-kind review	5

New Reactors

- None

Uranium Recovery

- None

[9] To increase readability/usability, the NRC staff has condensed the previously provided narrative discussion into a more concise table format that continues to provide the requested information.

13.d Please describe any steps taken to provide transparency into the progress of license amendment reviews, such as publicly available, real-time tracking of the completion of review schedule milestones.

Operating Reactors

The staff is currently meeting the metrics for the quantity of licensing actions reviewed annually, the percentage of actions completed within one year, and the percentage of actions completed within two years. The NRC staff's ability to meet these metrics can be affected by emerging safety or security issues, or changes in the licensee's plans. The NRC staff has enhanced communications with licensees concerning metrics. The NRC staff established internal goals to track adherence to initial schedules and resource estimates communicated to licensees. In March 2018, the staff began publishing the monthly performance metrics results on the NRC public Web site. While these metrics do not provide insight into specific licensing reviews, they provide information on the age of the existing inventory and the number of reviews completed. In addition, information on adherence to initial schedules and accuracy of initial resource estimates is also available.

There are several initiatives underway or completed to enhance the operating reactor licensing program. These initiatives are focused on leveraging existing licensing processes and information to enhance efficiency, effectiveness, and predictability as a regulator while maintaining a continued strong safety focus and using modern tools to enhance decisionmaking and increase transparency of the licensing process. NRR has established a working group with representatives from all NRR divisions to focus and align efforts. Some examples of focused improvement areas are discussed below:

- Metrics: While the staff does consider the current performance metrics appropriate to balance efficiency with safety, NRR has been working with the OEDO to develop CBJ indicators that show more direct support for each of the safety and security strategies from the NRC's Strategic Plan for FY 2018-2022. A pilot is underway to develop new CBJ indicators for several specific safety and security strategies. Having high-quality, useful indicators will help improve the effectiveness and transparency of our CBJ in demonstrating and communicating the agency's performance outcomes.

- Risk-Informed Licensing Actions: The NRC staff has taken a number of actions to enhance the integration of risk information into regulatory decisionmaking practices and processes to improve the technical basis for regulatory activities, increase efficiency, and improve effectiveness and consistency with established processes. As outlined in SECY-17-0112, five overarching strategies are being used:

    1. Evaluate and update risk-informed decisionmaking (RIDM) guidance to foster a collaborative review process and a broadened understanding of risk and risk insights.
    2. Develop a graded approach for using risk information in licensing reviews.
    3. Enhance training requirements related to RIDM for managers and staff.
    4. Advance NRC and industry risk-informed initiatives, and
    5. Enhance communication on risk-informed activities.

- Technological Resources: NRR is working collaboratively with the OCIO and the OCFO on improving IT tools to make financial and workload information more readily available to staff and increase staff's capability to analyze information to support informed decisionmaking.

New Reactors

For NRO license amendment reviews, only the final safety evaluation report (FSER) completion date is tracked as a milestone. In the amendment request, the licensee provides a date by which they request to have the amendment issued to best support their current construction schedule. The staff identifies a date for issuing the FSER that supports the staff's workload, while avoiding impact to the construction schedule, to the extent practicable. The date is then sent to the licensee in a letter accepting the amendment application for review within 30 days of receiving the application (unless the amendment is complex). If complications are encountered during the amendment's safety review, the staff and the licensee will discuss and NRC will document a new date in a subsequent letter to the licensee. All letters containing the date(s) for completion of the staff's review are made publicly available. In addition to this, if RAIs are needed and the content is not sensitive, these requests are made available to the public. If the licensee has questions for the NRC staff (and the topic is not sensitive), the discussion occurs during one of the regularly scheduled public calls. If an audit is held, both the plan and the summary of the audit are public once they are completed.

Uranium Recovery

To ensure transparency in the process of licensing reviews, the NRC's uranium recovery staff provides the status of major licensing actions on the agency's public Web site. For minor licensing actions, staff discusses these schedules during phone calls with licensees. In addition, for major licensing action reviews, the uranium recovery staff issues schedule letters at the beginning of each review and subsequent letters are issued, if the schedule changes.

14. For decommissioning transition reviews, please provide the following information for the reporting period, including any months previously reported:

    a. Size of inventory;
    b. The number of items completed in the reporting period;
    c. Of the items completed in the reporting period, the number completed within the originally forecasted schedule;
    d. The number of items completed within 125 percent of the forecasted schedule;
    e. Please identify any "unusually complex" items omitted from the inventory including: the age of the item, a brief description of the item, the justification for omitting it from the inventory size and an explanation for any review exceeding its original schedule by 125 percent.

Decommissioning Transition Open Inventory and Closed Reviews		
Month	**Open Inventory Total (Note 1)**	**Closed Reviews Total**
November 2017	19	1
December 2017	15	4
January 2018	14	1
February 2018	15	0
March 2018	12	7
April 2018	14	0
May 2018	16	0
June 2018	12	4
July 2018	14	0
August 2018	16	0
September 2018	16	1
October 2018	20	5
November 2018	28	0
December 2018	26	4
January 2019	25	1
February 2019	30	0
March 2019	32	0
April 2019	56	5
May 2019	55	1

Note 1: The inventory includes licensing actions and other licensing tasks specifically related to an operating reactor plant transitioning into a decommissioning plant.

Information responsive to #14c-e is included in the response to #13 above.

15. Please provide a list of TSTF "travelers" under review, including the date filed, the milestone schedule for completing the review, and the estimated date for final agency action. Please provide an explanation for any review exceeding the original schedule by 125 percent.

Traveler Under Review	Date Filed	Milestone Schedule (Draft SE)	Estimated Date for Final Agency Action (Final SE)
TSTF-541, "Add Exceptions to Surveillance Requirements When the Safety Function is Being Performed"	09/10/2013	TBD*	TBD*
TSTF-568, "Clarify Applicability of BWR/4 TS 3.6.2.5 and TS 3.6.3.2"	Revision 2 submitted on 5/21/2019	TBD**	TBD**
TSTF-569, "Revise Response Time Testing Definition"	02/08/2018	Issued on 5/29/2019	10/31/2019
TSTF-564, "Revise Reactor Coolant Leakage Requirements"	5/7/2019	TBD***	TBD***

*The NRC staff has paused its work while the TSTF is developing revisions to the travelers.
**The NRC staff is developing the review schedule for TSTF-568, Revision 2.
***A fee exemption request was submitted for TSTF-564. The NRC staff will develop a review schedule once it completes the fee exemption determination.

There were no traveler reviews that exceeded the original schedule by 125 percent.

16. Please describe the actions planned and/or taken to ensure that the TSTF traveler process achieves the regulatory efficiencies that were initially projected. Please include progress reports with regard to any TSTF travelers adopted by the industry.[10]

The TSTF proposes changes to the Standard Technical Specifications (STS) via a "traveler" submitted for NRC review and approval. The traveler process was collaboratively developed between NRC and the nuclear industry 20 years ago as a means to revise the STS to gain regulatory efficiencies and enhance safety. Since then, the NRC has approved over 360 travelers, and has a mature process for review and approval of plant-specific LARs to adopt approved STS changes.

Over the last several years NRC introduced two enhancements to the traveler review process: (1) increased transparency and documentation through publication of SEs; and (2) ensuring that all appropriate technical branches are involved early and working as a team to ensure consistency. More recently, NRC and the TSTF adopted two additional best practices to make reviews more efficient and effective: (1) establishing teams of reviewers who develop expertise on a given traveler; and (2) leveraging the staff expertise on a particular traveler through timely submission of plant specific requests for adoption. The NRC is seeing early successes from these enhancements in the reviews of licensees' adoption of TSTF-542, "Reactor Pressure Vessel Water Inventory Control." Average review times for recent traveler adoptions have dropped to 10 months, in part as a result of these above efficiencies.

The NRC will continue working with the TSTF to make improvements to the STS. In recent years, requested changes from industry stakeholders have become more complex (e.g., risk-informed STS changes). To ensure the traveler process achieves the regulatory efficiencies

[10] No new information was added to this section since the last report.

that were initially intended, and to align on priorities, the NRC holds quarterly public meetings and monthly status calls with the TSTF.

The NRC approved two travelers in 2019. Four travelers are under review. The latest status report of travelers currently under review is publicly available (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19058A023); this report is updated quarterly.

17. For each ongoing license renewal review, please provide the date each application was filed, the duration of the review, the original milestone schedule based on 22 months for uncontested applications and 30 months for contested applications, the actual completion dates for milestones, and the scheduled date for completion of the review. Please provide an explanation for any review exceeding the original schedule by 125 percent.[11]

The NRC staff is not reviewing any initial license renewal applications at this time.

18. Please provide the status of ongoing license renewal reviews.[12]

The NRC staff is not reviewing any initial license renewal applications at this time.

19. Please provide the status of the NRC's readiness to review applications for SLR.[13]

In August 2014, the Commission affirmed that no revisions to either the safety or environmental regulations are needed to support the assessment of a subsequent license renewal application (SLRA). However, the Commission directed the staff to update license renewal guidance, as needed, to provide additional clarity on the implementation of the license renewal regulatory framework. The main guidance documents for initial license renewal are:

- Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (SRP-LR), Revision 2;
- Generic Aging Lessons Learned (GALL) Report, Revision 2; and
- Standard Review Plan for Environmental Reviews for Nuclear Power Plants, Supplement 1: Operating License Renewal (Revision 1).

The guidance in these documents is based on plant operation up to 60 years. The staff evaluated this guidance to determine what, if any, revisions were necessary to address issues for plant operations up to 80 years under SLR. The staff determined that no revisions were needed to the NRC guidance document entitled, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," to support environmental reviews from 60 to 80 years. However, the staff determined that the GALL Report and the SRP-LR should be updated to facilitate more effective and efficient reviews of SLR applications.

On July 14, 2017, the NRC published "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report" (NUREG-2191, Volumes 1 and 2), and "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" (SRP-SLR) (NUREG-2192). On December 29, 2017, the NRC staff published NUREG-2221, "Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG-2191

[11] No new information was added to this section since the last report.
[12] No new information was added to this section since the last report.
[13] No new information was added to this section since the last report.

and NUREG-2192," and NUREG-2222, "Disposition of Public Comments on the Draft Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192."

On November 6, 2015, Dominion Virginia Power notified the NRC of its intent to submit an SLR application in the first quarter of 2019 for the Surry Power Station. On November 9, 2017, Dominion Energy Virginia notified the NRC of its intent to pursue SLR for North Anna Power Station Units 1 and 2, in the 4th quarter of 2020. On January 30, 2018, Florida Power & Light Company (FPL) submitted the first SLR application for Turkey Point Nuclear Generating Units 3 and 4. On July 10, 2018, the NRC received Exelon's application for SLR for Peach Bottom Atomic Power Station, Units 2 and 3. In addition, on October 15, 2018, the NRC received Dominion's application for SLR for Surry Power Station, Units 1 and 2.

On December 20, 2017, the staff issued a letter to the Nuclear Energy Institute (NEI) providing interim approval for use of guidance documents NEI 17-01, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 for Subsequent License Renewal [SLR]," and NEI 17-04, "Model SLR New and Significant Assessment Approach for SAMA, Revision 0." These documents will provide interim guidance to licensees that have notified the NRC of their intent to submit SLR applications while formal NRC endorsement of the NEI guidance document is considered. The NRC expects that issuance of formal revisions to Regulatory Guides (RGs) 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," and 4.2, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications," by the end of FY 2020, will supersede the interim guidance.

On March 28, 2019, the NRC held a public meeting on lessons learned for SLRAs. A meeting summary was issued and may be found at ADAMS Accession No. ML19112A206. Lessons learned thus far from the review of the first three SLRAs were provided by the NRC staff and representatives from the SLR applicant organizations. In general, the meeting participants agreed that the SLR review process was going well, consistent with the 18-month review schedules, and that the interactions between the NRC and applicants were productive. Efficiencies in the process were noted as well as opportunities for improvement, including identification of technical issues for which guidance updates would be considered. The NRC and industry committed to engage approximately quarterly to discuss SLR lessons learned and to align and prioritize steps to be taken to prepare for the next SLR applications. The NRC and industry also committed to continued engagement on defining the scope and schedule for developing updates to the SLR guidance documents.

20. Once SLR reviews begin, please report progress similarly to current license renewal reviews, including: the date each application was filed, the duration of the review, the original milestone schedule based on an 18-month review, the actual completion dates for milestones, and the scheduled date for completion of the review.

Turkey Point

On January 30, 2018, Florida Power & Light Company (FPL) submitted the first SLRA seeking to extend the operating life of Turkey Point Nuclear Generating, Units 3 and 4. The staff issued the acceptance letter dated April 26, 2018, with the review schedule. The notice of application acceptance and opportunity for hearing was published in the FR on May 2, 2018.

The staff completed all of the planned audits during 2018 and issued its associated audit reports in 2018 and 2019.

On May 22, 2018, the staff issued an FRN announcing its intent to conduct the environmental scoping process and to prepare an EIS. On May 31, 2018, the staff held two public environmental scoping meetings in Homestead, FL, near the Turkey Point site to obtain public input on the scope of the environmental review. During the scoping process, the NRC staff solicited comments and participation from the public, including residents in the surrounding community and stakeholder groups. The NRC also consulted with Federal, State, Tribal, regional, and local agencies. In January 2019, the NRC issued its "Supplemental Environmental Impact Statement Scoping Process Summary Report, Turkey Point Nuclear Generating Unit Nos. 3 and 4, Miami-Dade County, Florida," which includes the comments received during the scoping process and the NRC staff's responses to those comments (ADAMS Accession No. ML18342A014). Between June 19 and June 22, 2018, the staff was on-site to conduct an environmental audit in support of the staff's review of the SLRA. A summary of the audit was issued on July 20, 2018 (ADAMS Accession No. ML18178A229).

In early August 2018, three petitions for leave to intervene were submitted for the Turkey Point SLRA by (1) Friends of the Earth, Natural Resources Defense Council, and Miami Waterkeeper (Joint Petitioners), (2) Southern Alliance for Clean Energy (SACE), and (3) Mr. Albert Gomez. The applicant and staff filed answers to the petitions. The ASLB held oral arguments on the petitions on December 4, 2018, in Homestead, FL. The parties subsequently filed additional statements regarding the admissibility of two contentions associated with alternative cooling water systems. On March 7, 2019, the ASLB denied Mr. Gomez's petition for failure to file an admissible contention; granted the petitions filed by the Joint Petitioners and SACE; admitted four contentions (as revised) for litigation; and referred one portion of its ruling to the Commission. On March 21, 2019, the ASLB issued an initial scheduling order for the hearing. In the meantime, SACE has withdrawn from the adjudication. The applicant has appealed the ASLB decision to grant the hearing. The Board's scheduling order specifies that an evidentiary hearing occur 257 days following issuance of the final supplemental environmental impact statement (SEIS) (expected August 2019), which puts the hearing in the May 2020 timeframe. If the application is approved (and assuming all issues in litigation are resolved in favor of the applicant), such an approval would occur after the Board issues an initial decision resolving the contentions, or the adjudication is otherwise terminated.

The partial government shutdown impacted the interim schedule milestones for the environmental review. Specifically, the shutdown delayed the National Park Service (a cooperating agency on this review) from performing a review of those portions of the NRC's draft SEIS pertaining to the areas in and around Biscayne National Park. As a result, the milestones for the issuance of the draft SEIS were delayed from January to March 2019. The staff issued the draft SEIS on March 31, 2019 (ADAMS Accession No. ML19078A330). Two public meetings were held on May 1, 2019, in Homestead, FL to receive comments on the draft SEIS. The deadline for submitting public comments was May 20, 2019. At this time, it is not clear whether the schedule change will impact the overall schedule for issuance of the final SEIS as this depends on the staff's time to resolve comments received on the draft SEIS. The staff is currently reviewing and assessing over 400 individual public comments received.

Notification of schedule changes were provided to the applicant on January 31, 2019 (ADAMS Accession No. ML19028A417), and on May 9, 2019 (ADAMS Accession No. ML19127A070). The staff issued the SER with open items on May 21, 2019. One open item is associated with buried and underground piping, and additional interactions with the applicant are needed to resolve this issue. The ACRS subcommittee meeting has been rescheduled from May 2019 to June 2019, and the ACRS Full Committee meeting date from July 2019 to September 2019.

The original milestone schedule and the scheduled date for completion of the review of the Turkey Point SLRA are provided below.

Turkey Point			
Application Review Time from Acceptance Review Date (Months)			13
Milestone	**Original Schedule**	**Current Schedule**	**Completion Date**
Receive SLRA	01/2018		01/30/2018, as supplemented through 04/10/2018
Publish FRN – License Renewal Application availability	04/2018		04/18/2018
Publish FRN – Acceptance/Rejection and Opportunity for Hearing	05/2018		05/02/2018
Publish FRN – Notice of Intent to Prepare an EIS and Environmental Scoping	05/2018		05/22/2018
Public Meeting – License Renewal Overview and Environmental Scoping meeting	05/2018		05/31/2018
Environmental scoping period ends	06/2018		06/21/2018
Deadline for filing hearing requests and petitions for intervention	07/2018		08/01/2018*
Issue SEIS	01/2019		03/29/2019
Public Meeting – draft SEIS meeting	02/2019		05/01/2019
End of draft SEIS comment period	03/2019		05/20/2019
Issue SER	04/2019		05/21/2019
ACRS subcommittee meeting	05/2019	06/2019	
Issue final SEIS	08/2019	08/2019	
U.S. Environmental Protection Agency FRN Published – availability of final SEIS	08/2019		
ACRS Full Committee meeting	07/2019	09/2019	
Decision – Director, NRR	10/2019 (assuming no hearing)	After Board issues initial decision or adjudication is terminated.	

*Order (Granting a Partial Extension of Time) (ADAMS Accession No. ML18180A185)

Peach Bottom

On July 10, 2018, the NRC received its second application for SLR from Exelon Generating Co. for Peach Bottom Units 2 and 3. The application was made publicly available on July 26, 2018. The staff informed the applicant in a letter dated August 27, 2018, that the application was accepted for detailed technical review. The staff completed all of the planned audits and issued its associated audit reports in 2018 and 2019. In November, a petition for leave to intervene was submitted by Beyond Nuclear, Inc. Staff and applicant answers to the petition were filed on December 14, 2018. The Board heard oral argument on standing and contention admissibility

on March 27, 2019. On June 20, 2019, the Board found that, although Beyond Nuclear had demonstrated standing to intervene, neither of its two proposed contentions was admissible. Therefore, the Board denied Beyond Nuclear's petition to intervene and request for hearing and terminated the proceeding. The original milestone schedule, the actual completion dates for milestones, and the scheduled date for completion of the review of the Peach Bottom SLRA are provided below.

Peach Bottom		
Application Review Time from Acceptance Review Date (Months)		10
Milestone	**Scheduled**	**Actual**
Receive SLRA	07/10/2018	07/10/2018
Publish FRN – LRA availability	08/2018	08/01/2018
Publish FRN – docketing acceptance/rejection and opportunity for hearing	09/2018	09/06/2018
Publish FRN – Notice of Intent to Prepare an EIS and Conduct Scoping Process	09/2018	09/10/2018
Public Meeting – Overview of SLR Process and Environmental Scoping Process	09/25/2018	09/25/2018
Environmental scoping process period ends	10/2018	10/10/2018
Deadline for filing hearing requests and petitions for intervention	11/2018	11/19/2018
Issue draft SEIS	07/2019	
Issue SER	09/2019	
Public Meeting – draft SEIS meeting, if needed	09/2019	
End of draft SEIS comment period	09/2019	
ACRS subcommittee meeting	10/2019	
ACRS Full Committee meeting	12/2019	
Issue final SEIS	01/2020	
U.S. Environmental Protection Agency FRN Published – availability of final SEIS	02/2020	
Decision – Director, NRR	03/2020 (assuming no hearing)	

Surry

On October 15, 2018, Virginia Electric and Power Company (Dominion Energy Virginia or Dominion) submitted its application for subsequent renewal for Surry Power Station, Units 1 and 2. The application was made publicly available on October 24, 2018. The staff informed the applicant in a letter dated December 3, 2018, that the application was accepted for detailed

technical review. The staff completed all of the planned audits and issued its associated audit reports in 2018 and 2019.

On April 29, 2019, the staff issued a schedule change letter to modify the schedule for three milestones (ADAMS Accession No. ML19100A254). For the safety review, the staff moved the scheduled due date for "ACRS Full Committee Meeting" from March 2020 to April 2020. This change was made due to the finalization of the ACRS Full Committee Meeting schedule. For the environmental review, the staff moved the scheduled due dates for "Issue Final SEIS" and "U.S. Environmental Protection Agency FRN Published – Availability of Final SEIS" from March 2020 to April 2020 to support workload prioritization. The overall schedule for issuance of the renewed license is not impacted. The original milestone schedule, the actual completion dates for milestones, and the scheduled date for completion of the review of the Surry SLRA are provided below.

Surry			
Application Review Time from Acceptance Review (Months)			6
Milestone	**Scheduled**	**Current Schedule**	**Completion Date**
Receive SLRA	10/15/2018		10/15/2018
Publish FRN – LRA availability	11/2018		11/01/2018
Publish FRN – docketing acceptance/rejection and opportunity for	12/2018		12/17/2018
Publish FRN – Notice of Intent to Prepare an EIS and Conduct Scoping Process	12/2018		12/21/2018
Public Meeting – Overview of SLR Process and Environmental Scoping Process	01/2019		01/08/2019
Environmental scoping process period ends	02/2019		01/22/2019
Deadline for filing hearing requests and petitions for	02/2019		02/15/2019
Issue draft SEIS	09/2019		
Public Meeting – draft SEIS meeting, if needed	10/2019		
Issue SER	11/2019		
End of draft SEIS comment period	11/2019		
ACRS subcommittee meeting	02/2020		
ACRS Full Committee meeting	03/2020	04/2020	
Issue final SEIS	03/2020	04/2020	
U.S. Environmental Protection Agency FRN Published – availability of final SEIS	03/2020	04/2020	
Decision – Director, NRR	06/2020		

21. For each ongoing power uprate review, please provide:

    a. The date the application was filed;
    b. The duration of the review;
    c. The original milestone schedule;
    d. The actual completion dates for the milestones; and
    e. The scheduled date for completion of the review based on the metrics in SECY-13-0070.[14]

Plant Name	Uprate Type (Note 1)	Date Filed	Planned Issue Date	Actual Issue Date	Planned Review Duration (Months) (Note 2)	Actual Review Duration (Months)	Notes
None							

Note 1: MUR = measurement uncertainty recapture power uprate
EPU = extended power uprate

Note 2: For licensing actions, with an application date of October 1, 2016, or later, the duration of the review of the licensing action will be measured starting when the acceptance review is complete.

22. Please provide a brief status of power uprate application reviews.[15]

No power uprate reviews are ongoing at this time.

[14] No new information was added to this section since the last report.
[15] No new information was added to this section since the last report.

23. Please provide the following information below regarding RAI issued by each of the following offices: NRR, NRO, NSIR, Uranium Recovery, and Decommissioning. The number of RAIs includes the total number of questions or requests contained in a letter or email. For example, if a letter requests five items, the number of RAIs is five. For each office and for the period being reported, please provide:
    a. Number of RAIs issued;
    b. The number of RAIs issued prior to preparation of a draft SE with open items;
    c. The number of RAIs issued in an additional round, subsequent to previous RAIs, in specific technical area or by a technical branch;
    d. The percentage of RAI responses provided by licensees within 30 days of the date mutually agreed upon;
    e. The number of RAIs prepared or responses reviewed by contractors; and
    f. The number of RAIs prepared or responses reviewed by NRC staff.
    g. Once sufficient date becomes available please provide 12-month rolling average number of RAIs issued by each office.

NOTE: Information for NSIR is included within each of the other entities or programs reporting below.

Office of Nuclear Reactor Regulation

Month/Year	Number of RAIs Issued	Number of RAIs Issued Prior to the Preparation of a Draft SE with Open Items	Number of RAIs Issued in an Additional Round, Subsequent to Previous RAI's in Specific Technical Area or by a Technical Branch	The Percentage of RAI Responses Provided by Licensees within 30 Days or the Date Mutually Agreed Upon	The Number of RAIs prepared by NRC staff	The Number of RAI Responses Reviewed by NRC Staff	12 Month Rolling Average, Number of RAIs Issued by Each Office
May-2019	95	Note 1	17	95%	95 Note 2	141	114

Note 1: The database systems do not have readily available information that distinguishes between item 23a and 23b. Accurately compiling the number of RAI questions issued prior to preparation of a draft SE with open items would require extensive manual document searches and analysis to cover the significant volume of project reviews. The count of RAIs is presented collectively under Item 23a.

Note 2: The NRC employs contractors to supplement the staff in selected critical skill areas; however, all RAIs identified by contractors are evaluated by NRC staff to verify that they are necessary to support a regulatory finding. If the RAIs are necessary, they are formally prepared and issued by NRC staff. The NRC does not track the number of draft RAIs prepared by contractors. In addition, the NRC staff is responsible for making the final determination on the acceptability of all RAI responses.

Office of New Reactors

Project Name	Number of RAIs Issued in May 2019	Number of RAIs Issued Prior to Preparation of a Draft SER with Open Items in May 2019	Number of RAIs Issued in an Additional Round, Subsequent to Previous RAIs, in Specific Technical Area or by Technical Branch in May 2019 (Note 1)	Percentage of RAIs Responses Provided by the Applicant/Licensee within 30 Days or the Date Mutually Agreed Upon in May 2019	Number of RAIs Prepared or Responses Reviewed by Contractors in May 2019 (Note 2)	Number of RAIs Prepared or Responses Reviewed by NRC Staff in May 2019 (Note 2)	12-Month Rolling Average
U.S. Advanced Pressurized Water Reactor (US-APWR) DC	0	0	N/A	N/A	0	0	0
Advanced Boiling Water Reactor (ABWR) DC Renewal (General Electric Hitachi (GEH))	0	0	N/A	N/A	0	0	0
Clinch River Early Site Permit (ESP)	0	0	N/A	N/A	0	0	0

Project Name	Number of RAIs Issued in May 2019	Number of RAIs Issued Prior to Preparation of a Draft SER with Open Items in May 2019	Number of RAIs Issued in an Additional Round, Subsequent to Previous RAIs, in Specific Technical Area or by Technical Branch in May 2019 (Note 1)	Percentage of RAIs Responses Provided by the Applicant/Licensee within 30 Days or the Date Mutually Agreed Upon in May 2019	Number of RAIs Prepared or Responses Reviewed by Contractors in May 2019 (Note 2)	Number of RAIs Prepared or Responses Reviewed by NRC Staff in May 2019 (Note 2)	12-Month Rolling Average
NuScale Small Modular Reactor (SMR) DC	1	0	N/A	100%	0	33	10
NuScale Topical Reports	0	0	N/A	N/A	0	5	4
Vogtle LARs	0	0	N/A	N/A	0	0	3

Note 1: NRO does not currently have an electronic system to track how many RAIs are issued in an additional round as a subsequent RAI to a previous RAI issued. To develop this capability within the current electronic system used to track RAIs would be labor and resource intensive.

Note 2: The NRC employs contractors to supplement the staff in selected critical skill areas; however, all RAIs identified by contractors are evaluated by NRC staff to verify that they are necessary to support a regulatory finding. If the RAIs are necessary, they are formally prepared and issued by NRC staff. The NRC does not track the number of draft RAIs prepared by contractors. In addition, the NRC staff is responsible for making the final determination on the acceptability of all RAI responses.

Office of Nuclear Material Safety and Safeguards

Uranium Recovery

Month/Year	Number of RAIs Issued	Number of RAIs Issued Prior to the Preparation of a Draft SE with Open Items	Number of RAIs Issued in an Additional Round, Subsequent to Previous RAIs in Specific Technical Area or by a Technical Branch	The Percentage of RAI Responses Provided by Licensees within 30 Days or the Date Mutually Agreed Upon	The Number of RAIs prepared by Contractors	The Number of RAI Responses Reviewed by Contractors	The Number of RAIs prepared by NRC staff	The Number of RAI Responses Reviewed by NRC Staff	12 Month Rolling Average, Number of RAIs Issued by Each Office
May-2019	0	0	0	N/A	0	0	0	0	0.33

Reactor Decommissioning

Month/Year	Number of RAIs Issued	Number of RAIs Issued Prior to the Preparation of a Draft SE with Open Items	Number of RAIs Issued in an Additional Round, Subsequent to Previous RAIs in Specific Technical Area or by a Technical Branch	The Percentage of RAI Responses Provided by Licensees within 30 Days or the Date Mutually Agreed Upon	The Number of RAIs prepared by Contractors	The Number of RAI Responses Reviewed by Contractors	The Number of RAIs prepared by NRC staff	The Number of RAI Responses Reviewed by NRC Staff	12 Month Rolling Average, Number of RAIs Issued by Each Office
May-2019	3	0	0	N/A	0	0	3	0	1.08

24. Please provide the status of specific actions taken or planned to ensure greater discipline, management oversight, and transparency in the use of the RAI process and to limit RAIs to those necessary for making regulatory decisions. The description should include: management oversight and accountability, the training necessary to provide consistency and sustainable improvement across the applicable program business lines, efforts to establish consistent procedures in relevant offices, and any gaps or trends identified by management or through internal reviews including periodic internal RAI audits.

Efforts to establish consistent procedures throughout the agency are being initiated by the establishment of a working group to align, where appropriate, licensing strategies across the agency including the RAI process. This effort, which is in the initial stages, will include representatives from NMSS, NRR, NRO, NSIR, and OGC.

NRR Activities

NRR continues to take actions to sustain the improvements in the RAI guidance and the accountability in the process. In April 2018, mandatory RAI refresher training was conducted for applicable NRR, NSIR, and NRO staff. The training emphasized (a) the explicit identification of the applicable technical and regulatory bases for RAIs; (b) ensuring that the RAIs issued are relevant to the licensing action being reviewed; (c) the requirements and expectations regarding the RAI administrative processes and records management; and (d) the expectation associated with achieving the RAI issuance target of 5 days. Lessons learned from the NRR RAI process will be incorporated into a new office instruction on RAIs as part of the guidance consolidation effort related to the NRR and NRO merger. Additionally, an NRR desk-top audit review guide and associated RAI quality review template for conducting subsequent RAI audits have been piloted. The pilot was completed in October 2018 and it was determined that the sampled RAIs met quality expectations but needed improvement on administrative processing. The pilot recommended that subsequent RAI audits may not be necessary because quality meets expectations. However, the pilot recommended that additional guidance and training be provided to the administrative staff to improve RAI administrative processing. On May 23, 2019, all NRR administrative assistants received an e-mail reminder on appropriate RAI administrative processing.

NRO Activities

NRO has taken several steps to ensure that its RAIs are consistently of high quality and are necessary to make a safety finding. In 2016, senior managers in NRO undertook initiatives to examine licensing activities with a goal of promoting a continued strong safety focus, consistency, efficiency, and clarity in our reviews of new reactor licensing applications. These initiatives included revising the RAI process to promote the consistent generation of high quality RAIs.

In October 2016, the NRO RAI process was revised (ADAMS Accession No. ML16280A389) to include a new quality check audit process where, in addition to the technical branch's supervisor, the division management of both the technical and project management organizations review an RAI before it is issued to the applicant or licensee. In addition, the NRO Office Director reviews a sample of RAIs to keep abreast of high-priority issues identified in reviews and to support NRO's emphasis on effectiveness and efficiency as it focuses on safety, security, and environmentally significant matters.

On October 7, 2016, the NRO Office Director issued a memorandum titled "Effective Use of Request for Additional Information, Audit, and Confirmatory Analysis in New Reactor Licensing

Review," to all NRO staff, which emphasized the goals of the RAI process, described the revised process, and included a job aid that contains best practices for preparing RAIs. The staff has incorporated many lessons-learned into its review of the active DC and ESP applications. The 2016 initiative to improve the focus of RAIs has improved the quality and safety focus of these requests. The staff is also using the regulatory audit tool earlier in the process to better inform the staff about the bases supporting the applications and therefore, better focus the staff's RAIs on information that directly relates to the staff reaching safety findings.

In early 2018, the staff conducted an audit to assess the effectiveness of the revised NRO RAI process. The audit evaluated whether the revised RAI process has yielded tangible improvements to NRO's licensing process, and if the revised RAI process should be maintained, modified, or eliminated. The audit team evaluated the quality of final RAIs and the effectiveness of the current RAI routing process to make recommendations for improvement to both the current and the future RAI processes. Phase 1 of the audit was a focused, short-term effort to assess the quality of RAIs, to identify examples of high quality RAIs that can be shared with the staff, and to provide constructive, focused feedback to management and staff if concerns were identified. In this phase, the RAI audit team found the quality of the RAIs from the current review process was generally high. Therefore, NRO modified its RAI process such that the leadership for the division from which the RAI originates will now perform the final technical review and approval of all RAIs and removed the requirement for the Office Director to review all RAIs before they are issued. The Director of NRO will only review RAIs on a sampling basis to keep abreast of high-priority issues identified in reviews, and to support the focus on safety, security, and environmentally significant matters.

In August 2018, NRO completed a significant update to its guidance on the development, processing, and issuance of RAIs. The updated guidance identifies the key attributes of high quality RAIs and provides direction for the staff in formulating RAIs to emphasize these attributes. One key attribute is ensuring that each RAI includes the safety, security, risk, and/or environmental significance of the question. This facilitates the NRC's focus on the most risk and safety significant aspects of its reviews.

NMSS Activities

In NMSS, internal guidance for uranium recovery and waste program reviews includes the expectation that RAIs will be developed in conjunction with the draft SER to ensure that each RAI is necessary to reach a safety finding. In addition, the guidance contains the expectation to include a reference in the RAI to the specific relevant requirement and encourages staff to conduct telephone conferences with licensees and applicants to efficiently resolve technical issues on RAIs. The NRC staff recently finalized an internal self-assessment that identifies possible efficiency improvements within the Uranium Recovery Program. The self-assessment includes recommendations for improving the efficiency of the RAI process, such as issuing RAIs as they are written rather than as a group and reemphasizing the expectation that staff develop the draft SE and RAIs in concert.

NMSS is also in the process of studying RAI approaches used by other offices at the NRC, developing office procedures, revising guidance, and evaluating the development of job aids to incorporate applicable RAI approaches from other NRC branches, divisions and offices. Following completion of this effort, NMSS will develop a training plan, as needed, to implement the resulting RAI process products.

In addition, NMSS is revising NUREG-1556, Volume 20, “Guidance about Administrative Licensing Procedures.” Information in this NUREG regarding RAIs for materials licensing actions is being updated to improve consistency and management oversight between NRC headquarters and regional materials licensing staff.

In August 2016, NMSS’s Division of Spent Fuel Management (DSFM) issued Division Instruction (DI) 26, DSFM-26, Rev., 0, which provided management expectations and guidance to employees with regard to meeting division and business line goals of being an independent, transparent, and effective regulator. In DSFM-26, management has specifically indicated that “DSFM’s goal is one round of RAIs for a typical review and a maximum of two rounds of RAIs. RAIs and the applicant’s responses need to converge on the information needed for making a regulatory finding.” As part of the management oversight process, the staff has been seeking concurrence by the division-level management, in-addition to branch-level, when a second round of RAIs is being considered during the review of an application. In addition, the staff has developed further guidance on preparing RAIs that are clear, complete, and specific with respect to the requested information, the justification for the request, and the associated regulatory basis. This guidance has been discussed with all the reviewers as part of continuous training, supplemented by a desk guide and a quick reference card. In the first quarter of 2019, the division completed a self-assessment on spent fuel storage and transportation licensing RAIs that were issued in FY 2017. The self-assessment evaluated the clarity and effectiveness of RAIs issued by DSFM, and it also identified potential improvements to the RAI development process. The staff is currently evaluating the recommendations to develop an implementation plan of actionable enhancements. Implementation of these enhancements is anticipated by the fourth quarter of FY 2019.

The Division of Fuel Cycle Safety, Safeguards, and Environmental Review (FCSE) conducted a review of the FCSE RAI process during the second quarter of FY 2017. Staff reviewed audit reports from the NRC’s OIG and the U.S. Government Accountability Office (GAO) “Statement of Facts” (GAO Job Code 100910). The NRC staff assessment report is at ADAMS Accession No. ML17102A783. The NRC staff also reviewed the internal policies and interviewed subject matter experts in NRR, NRO, and NMSS. The results of this assessment, including staff’s recommendations and proposed actions for implementing recommended improvements, were documented in a report to FCSE management on May 25, 2017. The report proposed revisions to the FCSE Licensing Review Handbook, including:

- Periodically reinforcing expectations of key aspects in the RAI process during licensing seminars or division meetings;
- Promoting a more consistent and uniform use and application of the guidance, particularly following the instructions on interactions with the licensee, drafting the SER as a tool to identify any RAIs, having a sound regulatory basis for the RAIs, and maintaining licensing reviews aligned with its scope;
- The addition of clear instructions specifying that RAIs should not request information available elsewhere; and
- Continuing with current management oversight practice for RAIs process, such as elevating any challenges encountered during the RAI process to Division management for their awareness and involvement.

FCSE has conducted three licensing seminars on RAIs for Project Managers and Technical Reviewers, as well as a team meeting for those involved in the license renewal application review for Honeywell International. The guidance in the Licensing Review Handbook was updated to address the recommendations documented in the report to FCSE management. The final document was issued on October 31, 2018.

No adverse findings were identified in the Final GAO Report GAO-17-344, "*U.S. Nuclear Regulatory Commission: Efforts Intended to Improve Procedures for Requesting Additional Information for Licensing Action are Underway,*" dated May 25, 2017.

Efforts to establish consistent procedures throughout the agency are being initiated by a working group to align, where appropriate, licensing strategies across the agency including the RAI process. This effort includes representatives from NMSS, NRR, NRO, NSIR, and OGC.

25. In keeping with the Commission's policy statement on the use of probabilistic risk assessment (PRA), please describe the agency's actions to enhance the integration of risk information across the agency's activities to improve the technical basis for regulatory activities, to increase efficiency, and to improve effectiveness. Please include actions taken or planned (including milestones, where appropriate) for improving the realism of PRA information used in regulatory decisionmaking, for training staff to more effectively apply risk information, for updating agency processes and procedures accordingly, and for improving consistency among NRC offices and regions.[16]

As directed by the Commission in SRM-M170511, the staff issued SECY-17-0112, which summarizes its plans to increase staff capabilities to use risk information in decisionmaking activities. The paper describes five overarching strategies and summarizes associated staff actions and plans. Strategy I evaluates and updates RIDM guidance to foster a collaborative review process and a broadened understanding of risk and risk insights. Strategy II develops a graded approach for using risk information in licensing reviews. Strategy III enhances training requirements related to RIDM for managers and staff. Strategy IV advances NRC and industry risk-informed initiatives, and Strategy V enhances communication on risk-informed activities. As directed by SRM-M170511, the staff will provide periodic updates to the Commission on its progress.

Each strategy with examples of specific actions taken or planned (including milestones, where appropriate) is summarized in the table below. Additional details are available in SECY-17-0112 and in an action plan that leverages best practices in RIDM from the operating and new reactor programs (current revision at ADAMS Accession No. ML18211A439). Though strategies and actions mainly focus on the reactor program, Strategies III and V will be coordinated across all agency offices and the regions, as appropriate. In addition, risk-informed approaches as applied in the materials safety and waste management arenas are described, along with reactor safety and cross cutting activities, on the "Risk-Informed Activities" page on the NRC public Web site (https://www.nrc.gov/about-nrc/regulatory/risk-informed/rpp.html).

Strategy Description/Background	Actions/Milestones
I. Evaluate and Update Guidance Updated or new guidance will be developed to more fully equip staff with the tools necessary to use quantitative or qualitative risk information in both	• A revision to NUREG-1855, "Treatment of Uncertainties Associated with PRAs in Risk-Informed Decisionmaking" was published in March 2017 (ADAMS Accession No. ML17062A466). • A revision to RG 1.174 "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to The Licensing Basis" was published ahead of schedule in January 2018 (ADAMS Accession No. ML17317A256).

[16] No new information was added to this section since the last report.

Strategy Description/Background	Actions/Milestones
traditionally deterministic and formal risk-informed reactor licensing reviews. Importantly, all other strategies also involve guidance development activities.	• New and revised inspection procedures and field guides are being developed for risk-informed initiatives. • Action plan task 4 included a review of branch technical position (BTP) 8-8, "On-site (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time Extensions," to determine if clarification is needed for use of a 14-day backstop for deterministic evaluations; applicability of the guidance to one-time and permanent extensions; and defense-in-depth considerations, particularly with respect to mitigating the consequences of a loss of offsite power coincident with a loss-of-coolant accident with a single failure. **Milestone:** The staff issued its RIDM Phase 1 Findings and Recommendations report on June 26, 2018 (ADAMS Accession No. ML18169A205; Enclosure 4 consists of proposed changes to BTP 8-8 (ADAMS Accession No. ML18169A214)). The staff completed the Phase 2 report on January 30, 2019 (ADAMS Accession No. ML19007A339).
II. Develop a Graded Approach for Using Risk Information in Licensing Reviews A graded approach seeks to leverage risk insights across the spectrum of licensing review types (i.e., deterministic and formal risk-informed submittals). A framework that supports a graded risk-informed review approach is already described in NUREG-0800 (ADAMS Accession Nos. ML070630046 and ML13207A315).	• The staff created a tool to guide technical reviewers to consider plant design features when formulating the scope and depth of new reactor review activities. This tool was successfully applied to the NuScale design certification review and is a critical element of the ongoing enhanced safety-focused review of this design. • The NRC has made significant progress on initiatives to enhance the regulatory framework for non-LWRs with risk-informed performance-based technology-inclusive approaches. The actions for advanced reactor reviews are described more fully in response to question 52. • Action plan task 3 involves developing a graded approach for using risk information more broadly in operating reactor licensing reviews. This involves creating tools to facilitate the consideration of both qualitative and quantitative risk insights in licensing reviews. Action plan task 1 seeks to expand the use of license review teams with enhanced collaboration between the engineering staff and the PRA practitioners. **Milestone:** The staff issued its RIDM Phase 1 Findings and Recommendations report on June 26, 2018 (ADAMS Accession No. ML18169A205). The staff developed additional milestones for the Phase 2 report (ADAMS Accession No. ML19007A339). Implementation milestones were assigned to responsible NRR Divisions for completion in FY 2019. The milestones address schedules for staff training and detailed RIDM implemented guidance document revisions.

Strategy Description/Background	Actions/Milestones
III. Enhance Training Requirements Related to RIDM for Managers and Staff The NRC provides over 30 formal staff training courses on technical and regulatory aspects associated with RIDM. Courses are available to all staff members; however, currently, only some NRC employees are required to take these courses. Furthermore, many courses focus on the technical aspects of PRA as opposed to describing how risk information can be used to inform regulatory decisions.	• A new course for NRC managers ("Perspectives on Risk Informed Decisionmaking for NRC Managers") has been developed and presented for the first time. It focuses on applications of PRA and describes how risk insights can inform decisionmaking. The pilot course's success is currently being evaluated and management will determine if the course will be made mandatory for all supervisors and senior managers in the reactor program. **Milestone:** Conducted pilot course on June 14, 2018. • The staff continues to offer the "Risk-Informed Thinking Workshop" that provides participants with hands-on experience in applying RIDM using scenarios of practical agency work. • The staff plans to update position-specific qualification requirements to include the newly developed "Risk-Informed Thinking Workshop" for reactor program staff. • The staff is evaluating whether aspects of the "Risk-Informed Thinking Workshop" could be integrated with appropriate modules of the Fundamentals of Reactor Licensing Workshop for Technical Reviewers. This evaluation is still ongoing. • Action plan task 2 seeks to "broaden the definition of risk beyond just a quantitative value." It re-emphasizes the definition of risk to ensure awareness and common understanding between the staff and managers and clarifies the concepts of risk insights in regulatory applications. The staff issued its RIDM Phase 1 Findings and Recommendations report on June 26, 2018 (ADAMS Accession No. ML18169A205). Computer Based Training was implemented for the staff responsible for assessing RIDM in licensing reviews. A new course was developed for managers and staff to teach the concepts in NUREG-1855. The course is in iLearn and on the NRC public Web site available to external stakeholders. The course was made available in June 2018. • A training manual for NUREG-1855 is being developed. This manual will provide actual examples to show how to apply the guidance in NUREG-1855. **Milestone**: Complete the manual by June 30, 2019.
IV. Advance Risk-Informed Initiatives The NRC primarily uses the Risk Informed Steering Committee (RISC) to advance risk-informed initiatives. RISC is a senior management committee with members from each of the program offices. The	• Fire PRA realism: The staff is engaged with industry to evaluate and improve, where applicable, fire PRA realism. Existing processes allow licensees to propose method improvements through the fire PRA frequently asked question (FAQ) process, by submitting a LAR, or by submitting a topical report. The staff has conducted two fire PRA public workshops and four fire PRA public meetings with industry stakeholders since the third quarter of 2017 to elicit and address new fire PRA FAQs and research activities. NRC has completed five fire PRA FAQs to improve realism and is actively working with the Electric Power Research Institute

Strategy Description/Background	Actions/Milestones
industry also has a RISC composed of senior managers. Since inception in 2014, the NRC and industry RISCs meet quarterly. The NRC RISC's objectives include the following: engage industry and listen to concerns relative to the use of PRA to support regulatory decisionmaking; communicate NRC actions in the area of RIDM; discuss what initiatives can be taken by the NRC to incentivize industry to continue to develop PRAs to help both reduce uncertainty and provide a framework to make decisions in light of uncertainty; and discuss industry actions necessary to achieve the vision for future use of PRA to support regulatory decisions. A brief summary of RISC actions to improve the realism of PRA information used in regulatory decisionmaking are provided here. SECY 17-0112 Enclosure 3 provides additional information on all active RISC initiatives including TS Initiative 4b, The Peer Review Facts and Observations Closure Process, 10 CFR 50.69, PRA Methods Vetting Process, and Risk Aggregation. Activities supplemental to the RISC that also advance	(EPRI) under its MOU to improve fire PRA methods in several areas. The NRC and NEI also are working on four additional FAQs. On April 3, 2019, the staff conducted a public workshop for fire PRA realism products (FAQs, EPRI/RES MOU NUREGs, NEI reports). Agreement was reached on next steps and timely schedules for closure of the remaining FAQs, and the completion of in-progress reports. In addition, industry continues to work on an expert elicitation report for enhancements to NUREG-2180 to allow credit for Very Early Warning Detection Systems. Also, the milestones for completion of staff review for NEI reports 00-01 and 04-02, with corresponding Regulatory Guide endorsement reference, were re-confirmed. • Realism in the ROP: The NRC continuously maintains and improves guidance documents and NRC risk tools used to support ROP activities. One such tool is the Risk Assessment Standardization Project Handbook (RASP Handbook). In March 2017, the staff transmitted plans to discuss industry concerns associated with the RASP Handbook. As a result of public meetings, industry proposed pursuing the issue on common cause failure (CCF) as the highest priority and discussed alternatives. Industry provided a document regarding CCF modeling for staff review on December 8, 2017, with a revised White Paper on January 26, 2018. Following review of the White Paper, the staff shared its comments with external stakeholders at a December 12, 2018, public meeting. Informed by the insights gained from these interactions, the staff will use the following approaches on a trial-basis for one year: (a) the staff will perform sensitivity studies to evaluate the impact of CCF when conducting risk evaluations for the Significance Determination Process (SDP); (b) licensees can provide plant-specific CCF "defense strategies" for the SDP; and (c) the staff will initiate a research effort to develop a quantitative approach that would categorize the effects of CCF based on the cause of the failure. • Credit for Diverse and Flexible Coping Strategies (FLEX) in RIDM: FLEX is currently being credited in multiple risk-informed applications. The NRC staff has developed several guidance documents to promote consistency and efficiency in applications in these areas. The staff is continuing to monitor the licensees' use of FLEX and is evaluating the need for additional guidance changes. Additional activities that advance risk-informed initiatives outside the RISC include: • Cooperative Research Activities with EPRI. To conserve resources and to avoid unnecessary duplication of effort, both the NRC and EPRI have agreed to cooperate in selected

Strategy Description/Background	Actions/Milestones
risk-informed initiatives are also briefly described here.	research efforts and to share information and/or costs whenever such cooperation and cost sharing is appropriate and mutually beneficial. An MOU with EPRI (ADAMS Accession No. ML16223A497) currently covers a number of risk-related topics, including fire, seismic, PRA methods, treatment of uncertainties, and flooding. • Update to RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." RG 1.200 provides the staff position of what constitutes an acceptable base PRA and is the agency's vehicle for endorsing the industry consensus PRA standards and related PRA peer review guidance. American Society of Mechanical Engineers' ASME/ANS will publish and NEI has recently published updated industry documents related to PRA standards and peer reviews, respectively. RG 1.200 will be revised to reflect the NRC's endorsement of pertinent industry documents. • Consensus Standards Development: The NRC actively participates in the development and maintenance of consensus standards. This includes PRA standards for all operating reactors, design certification, and combined licenses for advanced LWRs and non-LWR nuclear power plants; these standards address all risk levels of PRA, all reactor operating modes, and all hazards. NRC participation ensures that the NRC's views are considered in the development of the standard and industry guidance. For example, the staff issued two separate letters in May 2017 and March 2018 regarding closure of findings from peer reviews and external hazard PRA peer-review guidance, respectively.
V. Enhance Communication on Risk-Informed Activities The NRC is enhancing communication to ensure that its stakeholders are aware of new and enhanced risk training courses and guidance, ongoing RIDM initiatives, and plans and experience using risk information.	• Staff with risk/PRA expertise are sharing knowledge and experience through presentations at branch and division meetings across the offices on topics such as risk-informed screening tools for operating and new reactor reviews. Knowledge and experience is also being shared through working group and review team meetings. Seminars on RIDM for NRC inspectors and enhanced inclusion of RIDM topics at regional and senior reactor analyst counterpart meetings are now included in the current Regional RIDM action planning. • The RIDM Action Plan, dated November 28, 2018 (ADAMS Accession No. ML18317A117), contained a communication plan with key messages.

26. The NRC has a long-standing effort to establish an efficient, reliable, and predictable licensing process for power reactors to transition from analog to digital instrumentation and control systems for safety-related applications. Please provide the date this effort began, a milestone schedule for implementation of the licensing process including the actual milestone completion dates, and the scheduled date for completion.

The NRC is implementing an integrated strategy plan to modernize the NRC regulatory infrastructure for digital instrumentation and controls (I&C), through strategic and tactical modernization plans (MPs). The plan focuses on topics identified through discussions with stakeholders that will provide confidence in transitioning from analog to digital control systems (Integrated Action Plan - ADAMS Accession No. ML17102B307).

MP #1A: Develop guidance for near term implementation of digital upgrades without prior NRC approval under 10 CFR 50.59 (limited scope of systems) (endorsement clarification of NEI 01-01 via RIS supplement)	
Activity	Completion Date[17]
NRC begins effort: Prepare preliminary drafts of RIS 2002-22, Supplement 1, clarifying the staff's previous endorsement of NEI 01-01	March 2017
Issue Draft RIS for Public Comment	July 2017 (complete)
Issue revised Draft RIS for 2nd Public Comment Period	March 2018 (complete)
RIS issued	May 2018 (complete)

MP #1B: NRC review and endorsement, as appropriate, of industry technical guidance for addressing CCF in digital I&C (NEI 16-16)	
Activity	Completion Date
NRC begins effort: Begin staff evaluation of the partial draft of NEI 16-16 received December 22, 2016, and develop staff comments and gap analysis	December 2016
NEI submits complete NEI 16-16 to the NRC for review	NEI plans to submit a revised NEI 16-16 by the 1st quarter of 2019.
NRC decision on technical adequacy and whether to issue a potential interim endorsement letter	To be determined
NRC formally enters NEI 16-16 into the RG development process (if decision is made to endorse)	To be determined

MP #1C: Modernize NRC's current position on defense against potential CCF in I&C systems and components	
Activity	Completion Date
NRC efforts begin: Begin staff review to identify if there are policy issues that need to be taken to the Commission	July 2017
Present SECY paper to Commission for information	September 2018 (complete)

[17] Actual completion dates noted with "(complete)."

MP #1D: Revise BTP 7-19, Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems	
Activity	Completion Date
NRC efforts begin: Revise licensing review guidance to incorporate CCF guiding principles, as presented in the SECY paper (MP #1C) and address comments from industry stakeholders.	January 2019. A public meeting to discuss the staff's plans to revise BTP 7-19 was held January 31, 2019. (complete)
Category 2 public meeting to discuss topic focused areas of BTP 7-19	June 2019
Complete preliminary draft revision to BTP 7-19	July 2019
Final Category 2 public meeting to discuss BTP 7-19 prior to NRC review and concurrence	August 2019
Issue Draft BTP 7-19 for public comment period (60 day comment period)	December 2019
Finalize draft revision to BTP 7-19	May 2020
Issue Revision 7 to BTP 7-19	June 2020

MP #2A: Issue durable guidance for implementation of digital upgrades without NRC approval under 10 CFR 50.59 (full scope of systems) - Endorsement review of NEI 96-07, Appendix D	
Activity	Completion Date
NRC efforts begin: Initiate review and stakeholder interactions of NEI guidance document, NEI 96-07, Appendix D, Guidelines for 10 CFR 50.59 Evaluations	April 2016
NRC decision on technical adequacy and whether to issue a potential interim endorsement letter	On December 20, 2018, the staff issued a letter to NEI documenting the App D comments that remain unresolved. (complete)
NRC formally enters NEI 96-07 Appendix D into the RG development process (if decision is made to endorse)	Staff expects NEI to submit letter requesting endorsement of App D by January 2019. (complete)
Issue RG endorsing, with exceptions, NEI 96-07, Appendix D	September 2019

MP #2B: 50.59 Guidance Implementation and Inspection Training	
Activity	Completion Date
B1. Complete Inspector Training on RIS 2002-22, Supplement 1 (new item as a result of the issuance of RIS 2002-22 under MP #1A)	June 2019
B2. Complete Lessons Learned Public Meeting on RIS 2002-22, Supplement 1 Implementation	February 27, 2019 (complete)

MP #2B: 50.59 Guidance Implementation and Inspection Training	
B3. Conduct Inspector Training on Appendix D	TBD (dependent on the completion of MP #2A)

MP #3: Review Industry's process for using commercially available digital equipment	
Activity	Completion Date
NRC efforts begin: Public Meeting to discuss resolution of RIS 2016-05 public comments	April 2016
EPRI publishes research results	June 2019
NEI Submits NEI 17-06 for NRC Review	Expected by September 2019.
NRC makes decision on technical adequacy	December 2019
NRC staff completes audits of Safety Integrity Level certification organizations and accrediting entities	NRC is monitoring EPRI's investigative and research activities to evaluate third party process "certification" for digital equipment. Due to delays in publishing of the EPRI research report, the staff's proposed schedule to complete the audits is now September 2019-January 2020.
NRC formally enters NEI 17-06 into the RG development process (if decision is made to endorse)	February 2020

MP #4A: Streamline the licensing process guidance - update to ISG-06	
Activity	Completion Date
NRC begins effort: Conduct a series of public stakeholder meetings (e.g., public workshops) for additional feedback	February 2017
Issue final Draft revision of ISG-06 for public comment	August 2018 (complete)
Issue final revision of ISG-06	December 2018 (complete)

MP #4B: Develop strategic activities for long-term improvements to the regulatory infrastructure	
Activity	Completion Date
NRC begins effort to develop strategic plan to modernize overall regulatory infrastructure	October 2017
Consider evaluation of lessons learned from MP 1-4A progress	April 2018 (complete)

MP #4B: Develop strategic activities for long-term improvements to the regulatory infrastructure	
Activity	Completion Date
Coordinate with stakeholders to identify potential regulatory gaps and potential options for improving the regulatory infrastructure	July 2018 (complete)
Develop additional detailed modernization plan for implementing tactical and strategic improvements to the regulatory infrastructure	November 2018 (complete)
Begin broad assessment of modernization improvement. The assessment will be categorized into three areas: 1) identification and implementation of significant structural changes to the regulations or major RGs to reduce complexity, and focus on the fundamental safety principles that are appropriate for all designs; (2) improvement to NRC review efficiency and enhancement of existing guidance to be more performance-based, and risk-informed; and (3) development of guidance to provide enhanced predictability of reviews and ensure that no unnecessary impediments exist in the review of digital technologies.	January 2019. A public meeting to discuss the staff's assessment plans was held January 31, 2019. (complete)
Identify any remaining barriers to the overall digital I&C regulatory infrastructure	April 2019. A public meeting to discuss I&C regulatory challenges was held on April 4, 2019. (complete)
Complete final assessment	Fall 2019

27. Please describe actions taken and/or planned to prepare to review industry requests to use Accident Tolerant Fuel in existing reactors, including but not limited to actions taken and/or planned for lead test assemblies and fuel loads. Please include a milestone schedule and brief project plan for both evolutionary and revolutionary designs.

The staff issued the final version of the NRC's accident tolerant fuel (ATF) project plan "Project Plan to Prepare the U.S. Nuclear Regulatory Commission for Efficient and Effective Licensing of Accident Tolerant Fuels" (ADAMS Accession No. ML18261A414) on September 30, 2018. The project plan outlines the strategy for timely licensing of near-term and longer-term ATF designs. It covers all aspects of ATF regulation, including fabrication, transportation, the in-reactor performance, and storage. The plan also contains tasks related to regulatory and infrastructure refinement, computational tools and methods to support SEs, and accounts for interactions with our external stakeholders including industry, the U.S. Department of Energy (DOE), international entities and non-governmental organizations.

The staff has initiated the phenomenon identification and ranking table (PIRT) exercise for the chromium-coated cladding ATF concept by issuing a draft report "Degradation and Failure Phenomena of Accident Tolerant Fuel Concepts: Chromium Coated Zirconium Alloy Cladding" (ADAMS Accession No. ML19036A716). The staff conducted an independent panel elicitation with external experts April 23-25, 2019. The panelists were selected based on their expertise in coating application and inspection, coatings for high temperature environments and corrosion protection, metallurgy, radiation effects on materials, and reactor accident analysis. The staff plans to augment the initial report based on the panel discussion and issue a final version in

June 2019. This final report will be used to inform the development of interim staff guidance that is planned for issuance by the end of calendar year 2019.

The staff understands that the industry is planning to seek extensions of current fuel burnup limits. Industry has performed a gap analysis related to data needs to support a burnup extension and published a white paper detailing their work. The NRC staff will consider this information during interactions with the individual fuel vendors over the next several months as the staff seeks to understand potential licensing strategies. The fuel enrichment and burnup increases have implications not just for in-core reactor performance, but they also have ramifications for other aspects of the fuel cycle (e.g., fuel manufacturing, spent fuel storage, and transportation). Moreover, the increased enrichment will require an exemption from portions of the requirements in 10 CFR 50.68. The staff is developing a comprehensive project plan to enable extensions of current burnup and enrichment limits.

The staff also continued engagement with external stakeholders, regarding their plans in this area. The staff held discussions with Framatone on May 8-9, 2019, regarding the ARCADIA/RELAP Integrated Transient Analysis Methodology topical report, which is the methodology proposed for analyzing non-loss-of-coolant-accident transients for ATF.

The staff has also made publicly available a generic communication (ADAMS Accession No. ML18270A019) to obtain timeline details, fuel qualification plans, and licensing strategy information from nuclear fuel vendors pursuing the various ATF concepts and has published a notice requesting public comment in the FR (84 FR 3831; February 13, 2019). Two comment letters were received and reviewed by the staff. Once the generic communication is finalized, it will be sent to Office of Management and Budget for clearance under the Paperwork Reduction Act in June 2019.

As indicated in previous reports, the NRC steering committee for lead test assemblies (LTAs) developed a draft letter to NEI regarding the use of LTAs in commercial operating nuclear reactors, which once finalized, will clarify and supersede the NRC staff's positions stated in its June 29, 2017, letter. The draft letter was published for public comment on June 7, 2018, for 20 days (83 FR 26503). The comment period was extended for an additional 20 days and closed on July 23, 2018 (83 FR 30989). Over 250 comment letters were received and reviewed by the NRC staff. The staff is finalizing the letter and plans to issue it in early summer 2019. A separate comment response document will be released to the public when the letter is issued. In addition, a FR notice announcing the availability of the letter and the comment response document will be issued.

28. Please describe actions taken and/or planned to improve the quality of cost benefit analyses conducted in association with new requirements, backfit analyses, or rulemaking, including the development of metrics for assessing the quality of cost-benefit analyses. Please include milestones for completing these actions and the guidance that is currently under revision.[18]

The NRC has taken specific actions to improve the quality of cost-benefit analyses conducted in association with new requirements, backfit analyses, or rulemaking. The key milestones for these actions are described below.

On March 19, 2013, the Commission issued a SRM regarding SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors with

[18] No new information was added to this section since the last report.

Mark I and Mark II Containments" (ADAMS Accession No. ML13078A017), directing the staff to seek detailed Commission guidance on the use of qualitative factors.

On March 20, 2013, the Commission issued SRM-SECY-12-0110, "Staff Requirements – SECY-12-0110 – Consideration of Economic Consequences within the U.S. Nuclear Regulatory Commission's Regulatory Framework," directing the staff to identify potential changes to current methodologies and tools to perform cost-benefit analysis in support of regulatory, backfit, and environmental analyses. The Commission also directed the staff to provide a regulatory gap analysis before developing new cost-benefit guidance. On January 2, 2014, in response to SRM-SECY-12-0110, the staff submitted SECY-14-0002, "Plan for Updating the U.S. Nuclear Regulatory Commission's Cost-Benefit Guidance." In SECY-14-0002, the staff identified potential changes to current methodologies and tools related to performing cost-benefit analysis in support of regulatory, backfit, and environmental analyses. The staff informed the Commission of its planned two-phase approach for revising the content and structure of cost-benefit guidance documents. Phase 1 aligns regulatory guidance across NRC's business lines by restructuring and incorporating non-policy revisions to NRC cost-benefit guidance. This phase is underway, as described below. In Phase 2, staff will identify and analyze potential policy issues that could affect the NRC's cost-benefit guidance and present these issues to the Commission for consideration and approval. The staff then will incorporate final updates to guidance for conducting cost-benefit analyses that support backfitting decisions.

On August 14, 2014, in response to SRM-SECY-12-0157, the staff submitted SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses." In SECY-14-0087, the staff proposed updating the cost-benefit guidance to include a set of methods that could be used for the consideration of qualitative factors within a cost-benefit analysis for regulatory and backfit analyses.

On December 16, 2014, in response to Commission direction to provide a regulatory gap analysis before developing new cost-benefit guidance, the staff submitted SECY-14-0143, "Regulatory Gap Analysis of the Nuclear Regulatory Commission's Cost Benefit Regulations, Guidance and Practices." In SECY-14-0143, the staff described the review of current NRC guidance, methodologies, and tools used for cost-benefit determinations. The staff also described the results of its review of the NRC regulatory analyses that had been completed and identified differences across NRC business lines (e.g., material users, fuel cycle facilities, new and operating reactors) and procedures (i.e., regulatory analyses, backfit analyses). Finally, SECY-14-0143 included staff's gap analysis, and identified where additional guidance is needed to ensure consistency across the agency.

On March 4, 2015, the Commission issued SRM-SECY-14-0087. The Commission approved the staff's plans for updating guidance regarding the use of qualitative factors, including the treatment of uncertainties, and directed the staff to focus the update on capturing best practices for the consideration of qualitative factors. The Commission also directed the staff to provide a toolkit for analysts regarding the consideration of qualitative factors.

In July 2015 and May 2017, the staff held two public meetings on the proposed cost-benefit guidance updates. The staff also held a public workshop in March 2016 to discuss proposed changes to the cost-benefit guidance. Meeting participants included industry representatives, government and nongovernment organizations, and other interested parties.

The Phase 1 update identified in SECY-14-0002 and described above is underway. In April 2017, the NRC issued draft NUREG/BR-0058, Revision 5, "Regulatory Analysis Guidelines of

the U.S. Nuclear Regulatory Commission," and published a notice requesting public comment in the FR (82 FR 18163; April 17, 2017). The staff received three comment submissions with a total of 58 individual comments from industry stakeholders and members of the public. The NRC staff considered this input when revising the NUREG.

The staff submitted the draft final NUREG/BR-0058, Revision 5, and five appendices to the Commission via a notation vote paper dated March 28, 2018 (SECY-18-0042). The following appendices are included in this update:

- Appendix A, "Qualitative Factors Assessment Tools"
- Appendix B, "Cost Estimating and Best Practices"
- Appendix C, "Treatment of Uncertainty"
- Appendix D, "Guidance on Regulatory Analysis Related to ASME Rules"
- Appendix E, "Special Circumstances and Relationship to Other Procedural Requirements"

Metrics for assessing the quality of cost-benefit analyses are contained in NUREG/BR-0058, Appendix B. Enclosure B-4 to Appendix B discusses the expectations for quality cost estimates and details the steps to ensure high-quality cost-benefit analyses are developed and presented to agency management. Additionally, the enclosure describes the steps to verify the quality of a cost-benefit analysis through various techniques for checking accuracy.

The Commission is reviewing the draft final Revision 5 of NUREG/BR-0058. After the Commission provides direction, the staff will conduct Phase 2 of the activity, as described in SECY-14-0002.

29. Please provide the status of the revised guidance currently under development to clarify the use of qualitative factors, including milestones and the projected date for completion. In addition to this revised guidance, please list and briefly describe any actions taken and/or planned to improve the use of quantitative factors in regulatory analyses required for rulemaking, in the regulatory analyses required under the Backfit Rule, and in the ROP Significance Determination Process.[19]

As noted above, the staff completed the draft final Revision 5 of NUREG/BR-0058 and provided the document to the Commission for its review (SECY-18-0042) on March 28, 2018.

In the interim, a draft of the NUREG was issued for public comment and is available for interim staff use. In conducting its regulatory analyses, the staff is implementing the best practices and lessons learned that are contained within this draft revision of NUREG/BR-0058.

In revising this cost-benefit guidance, the staff focused on improving methods for quantitative analyses, including the treatment of uncertainty and the development of realistic estimates of the cost of implementing proposed requirements. Specifically, the staff developed two appendices to NUREG/BR-0058, Revision 5 to guide the staff in these areas:

- Appendix B, "Cost Estimating and Best Practices," provides expanded guidance on incorporating cost-estimating best practices, including estimating life-cycle costs.
- Appendix C, "The Treatment of Uncertainty," expands on the existing guidance for performing uncertainty and sensitivity analyses for cost-benefit analyses.

[19] No new information was added to this section since the last report.

In addition to the improved methods for quantitative analyses, the revised cost-benefit guidance directs the staff to quantify the estimates of costs and benefits to the extent possible. However, the staff acknowledges that some attributes in regulatory analyses are difficult to quantify and require additional resources to develop a strictly quantitative analysis. To address this gap, staff developed a toolkit to enable analysts to clearly present analyses of qualitative results in a transparent way that decision makers, and stakeholders can understand.

- Appendix A, "Qualitative Factors Assessment Tools," identifies best practices for the consideration of qualitative factors and describes a number of methods that can be used to support the NRC's evidence-based, quantitative, and analytical approach to decisionmaking. The guidance clearly states that these methods (1) should only be used when quantification may not be practical, (2) are not a substitute for collecting accurate information to develop realistic cost estimates, and (3) do not constitute an expansion of the consideration of qualitative factors in regulatory, backfit, or environmental analyses.

Revision 5 of NUREG/BR-0058 is intended to meet the following objectives:

- Refocus and expand guidance on cost-benefit analysis across the agency
- Emphasize quantification and provides methods for creating realistic estimates
- Provide methods for assessing factors that are difficult to quantify
- Incorporate cost estimating best practices identified in GAO guidance and in recommendations from GAO in GAO-15-98, "Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices," dated December 12, 2014
- Expand guidance on the treatment of uncertainties
- Enhance transparency of analysis for the decision maker

With regard to the use of qualitative factors in the ROP's Significance Determination Process, the SRM for SECY-13-0137 (ADAMS Accession No. ML14181B398) directed the staff, in part, to "evaluate the need to provide additional clarity on the use of qualitative factors for operating reactors to provide more transparency and predictability to the process." The staff completed its evaluation, which was documented in Enclosure 2 of SECY-18-0045, "Reactor Oversight Process Self-Assessment for Calendar Year 2017" (ADAMS Accession No. ML18059A155). To address the results of this evaluation, the staff prepared a revision to Appendix M of IMC 0609, "Significance Determination Process Using Qualitative Criteria" (ADAMS Accession No. ML18183A043). This revision, issued on January 10, 2019, clarifies the entry criteria for Appendix M and provides better guidance on the application of existing decision-making attributes in the appendix without expanding its use.

30. Please provide a list of all final generic regulatory actions issued in the last 3 years. Please include:

    a. Whether the item was reviewed by CRGR;
    b. Whether the CRGR review was formal or informal;
    c. The CRGR recommendation; and
    d. The NRC's conclusions with respect to compliance with the Backfitting Rule (i.e., no backfitting, cost-justified substantial increase, compliance exception, adequate protection exception).

The majority of the final generic regulatory actions that the NRC issues do not lead to backfitting. In addition, as discussed in response #34, the agency is working to enhance oversight to prevent unintended and unsupported backfits. The NRC issues many types of final generic regulatory actions, such as rules, orders, bulletins, generic letters (GLs), RISs, RGs, SRPs, and ISGs.

The CRGR Charter, Revision 9 clarifies which issues should be forwarded to the Committee for review where new or revised generic requirements could propose backfits or new staff positions. Items for CRGR review are forwarded by the agency's program offices or are directed for review by the EDO. The table below illustrates that only a few final generic agency actions are reviewed by the CRGR to assess if generic backfitting concerns exist. Most backfitting issues are resolved during management review and legal review or identified during interactions with external stakeholders. Rules, orders, bulletins, GLs, and RISs are final generic regulatory actions that are reviewed and evaluated to screen for potential backfitting concerns and new staff positions. CRGR performs a review of these items in a formal setting with the sponsoring office representatives when certain criteria are met, including:

- Stakeholders or NRC staff identify concerns regarding backfitting or regulatory analysis
- The EDO directs the review or an office director requests review
- Use of the compliance exception or the adequate protection exceptions to justify backfitting
- For rulemaking, if there are finality concerns or possible backfitting qualitative factors were used to justify a rulemaking with significant costs, or substantial statistical uncertainty exists in the qualitative benefit determination in the backfit analysis.

In June 2018, the CRGR Charter, Revision 9, formally adopted criteria for reviewing rulemaking activities. The CRGR began piloting the criteria and guidance in June 2017, when the CRGR reviewed a draft proposed rule on cybersecurity at fuel cycle facilities. Subsequently, CRGR has reviewed several rulemakings over the past year, including a draft final rule on enhanced weapons, firearms background checks, and security event notifications. During its review of these packages, the CRGR requested additional information to ensure that the staff was not unnecessarily imposing backfits on the licensees.

RGs, standard review plans, and ISG, are only reviewed by CRGR when concerns are raised during staff review regarding potential backfitting. These documents are intended to provide acceptable approaches for licensees or applicants to meet NRC requirements, or for the NRC staff to confirm the adequacy of proposed approaches. Additionally, adopting new RGs is intended to be voluntary for licensees and applicants. For limited instances where RGs may result in potential backfits or new staff positions, the CRGR conducts a review.

The table below provides NRC final generic regulatory actions issued within the last 3 years. For the response, the staff has included final rules, orders, bulletins, RISs, and GLs.

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
10 CFR Parts 170, 171	Revision of Fee Schedules; Fee Recovery for Fiscal Year 2019	05/17/2019	None	NA	No Backfitting
10 CFR Part 72	Holtec International HI-STORM 100 Cask System, Certificate of Compliance No. 1014, Amendment No. 13	04/18/2019	None	NA	No Backfitting
RIS-19-02	Preparation and Scheduling of Operator Licensing Examinations	04/17/2019	None	NA	No Backfitting
RIS-19-01	Clarification of Export Reporting Requirements for Nuclear Facilities, Equipment, and Non-Nuclear Materials	03/15/2019	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks: Holtec International HI–STORM 100 Multipurpose Canister Cask System, COC No. 1014, Amendment Nos. 11 and 12	02/19/2019	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks: NAC International, Inc., NAC-MPC Storage System, COC No. 1025, Amendment No. 7 & 8	02/19/2019	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks: Transnuclear, Inc.,	02/15/2019	None	NA	No Backfitting

[20] None – indicates that the item was administrative in nature or did not meet thresholds for CRGR backfitting review. Routine Reviews – were conducted by the members without a meeting. Complex Reviews – those items for which a meeting was conducted to assess potential backfitting concerns.

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
	Standardized Advanced NUHOMS Storage System, Certificate of Compliance (COC) No. 1029, Amendment No. 4				
10 CFR Part 9	Update to Fees for Search and Review of Agency Records by NRC Personnel	02/11/2019	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks: Transnuclear Inc., Standardized NUHOMS Cask System (Amendment No. 15)	12/26/2018	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks: NAC International, Inc., NAC-UMS Storage System, COC No. 1015, Amendment No. 6	12/19/2018	None	NA	No Backfitting
RIS-18-06	Clarification of the Requirements for Reactor Pressure Vessel Upper Head Bare Metal Visual Examinations	12/10/2018	None	NA	No Backfitting
10 CFR Parts 37, 40, 70, 71, 72, 73, 76, and 95	Miscellaneous Corrections – Organizational Changes	11/21/2018	None	NA	No Backfitting
10 CFR Parts 26, 30, 40, 50,	Miscellaneous Corrections	11/20/2018	None	NA	No Backfitting

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
70, 73, and 110					
RIS-18-05	Supplier Oversight Issues Identified During Recent NRC Vendor Inspections	10/05/2018	None	NA	No Backfitting
10 CFR Part 140	Inflation Adjustments to the Price-Anderson Act Financial Protection Regulations	09/24/18	None	NA	No Backfitting
RIS-18-04	Notice of Issuance of Enforcement Guidance Memorandum—Interim Guidance for Dispositioning Apparent Violations of 10 CFR Parts 34, 36, and 39 Requirements Resulting from the Use of Direct Ion Storage Dosimetry During Licensed Activities	09/11/18	None	NA	No Backfitting
10 CFR Parts 30, 32, and 35	Medical Use of Byproduct Material—Medical Event Definitions, Training and Experience, and Clarifying Amendments	07/16/18	None	NA	No Backfitting
10 CFR Parts 1, 2, 34, 37, 50, 70, 71, 73, and 140	Miscellaneous Corrections	06/28/18	None	NA	No Backfitting
10 CFR Parts 170 and 171	Revision of Fee Schedules; Fee Recovery for FY 2018	06/25/18	None	NA	No Backfitting
RIS-18-03	National Terrorism Advisory System and Protective Measures for the Physical	06/01/18	None	NA	No Backfitting

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
	Protection of Category 1 and Category 2 Quantities of Radioactive Material				
RIS-02-22, Supplement 1	Clarifications on Endorsement of NEI Guidance in Designing Digital Upgrades in Instrumentation and Control Systems	05/31/18	Routine Review	NA	No Backfitting
10 CFR Part 75	Modified Small Quantities Protocol	05/04/18	None	NA	No Backfitting
RIS-17-01, Rev. 1	Human Reliability and Human Performance Database	03/29/18	None	NA	No Backfitting
RIS-18-02	Preparation and Scheduling of Operator Licensing Examinations	03/26/18	None	NA	No Backfitting
RIS-18-01	Common Violations Cited During First 2 Years of 10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," Implementation and Guidance Documents Available to Support Rule Implementation	01/22/18 and 03/01/18	None	NA	No Backfitting
10 CFR Part 50	Approval of ASME Code Cases	01/17/18	None	NA	No Backfitting
10 CFR 2 and 13	Adjustment of Civil Penalties for Inflation for FY 2018	01/12/18	None	NA	No Backfitting
RIS-17-08	Process for Scheduling and Allocating Resources for FYs	12/21/17	None	NA	No Backfitting

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
	2020 through 2022 for the Review of New Licensing Applications for LWRs and Non-LWRs				
10 CFR Parts 2, 9, 40, 50, 61, 71, 73, and 110	Miscellaneous Corrections	11/15/17	None	NA	No Backfitting
RIS-17-06	NRC Policy on Use of Combination Dosimetry Devices During Industrial Radiographic Operations	09/19/17	None	NA	No Backfitting
RIS-17-05	Administration of 10 CFR Part 72 COC Corrections and Revisions	09/13/17	None	NA	No Backfitting
RIS-17-04	Clarification on the Implementation of Compensatory Measures for Protective Strategy Deficiencies or Degraded or Inoperable Security Systems, Equipment, or Components	08/30/17	Routine Review	NA	No Backfitting
10 CFR Part 50	ASME Codes and Code Cases	07/18/17	None	NA	Two changes resulted in an adequate protection backfit exception (Code Case N-729-4 and Code Case N-770-2)

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
10 CFR Parts 170 and 171	Fee Recovery for FY 2017	06/30/17	None	NA	No Backfitting
RIS-17-03	Preparation and Scheduling of Operator Licensing Examinations	04/05/17	None	NA	No Backfitting
RIS-17-02	Applicability of 10 CFR Part 37 to Non-Manufacturing and Distribution Service Provider Licensees	02/08/17	None	NA	No Backfitting
RIS-17-01	Human Reliability and Human Performance Database	02/02/17	None	NA	No Backfitting
10 CFR Parts 2 and 13	Adjustment of Civil Penalties for Inflation	01/24/17	None	NA	No Backfitting
10 CFR Part 72	List of Approved Spent Fuel Storage Casks	Published 6 COC rules in 2017	None	NA	No Backfitting
10 CFR Part 140	Increase in the Maximum Amount of Primary Nuclear Liability Insurance	12/30/16	None	NA	No Backfitting
10 CFR Parts 2 and 9	Update to Incorporate Freedom of Information Act Improvement Act of 2016 Requirements	12/30/16	None	NA	No Backfitting
RIS-16-12	NRC Employee Access to Switchyards at Licensee Facilities	11/22/16	None	NA	No Backfitting
RIS-16-11	Requests to Dispose of Very Low-Level Radioactive Waste Pursuant to 10 CFR 20.2002	11/13/16	Routine Review	Endorsed	No Backfitting

Summary of Final Generic Regulatory Actions over the Last 3 Years					
Item #	**Title**	**Issuance Date**	**CRGR[20] Review**	**CRGR Recommendation**	**NRC Backfitting Review**
RIS-15-19, Rev. 1	Decommissioning Timeliness Rule Implementation and Associated Regulatory Relief	09/27/16	None	NA	No Backfitting
RIS-16-10	LARs for Changes to Emergency Response Organization Staffing and Augmentation	08/05/16	Routine Review	Endorsed	No Backfitting
10 CFR Part 2	Update to Transcript Correction Procedures	07/20/16	None	NA	No Backfitting
10 CFR Parts 2 and 13	Adjustment of Civil Penalties for Inflation	07/01/16	None	NA	No Backfitting
10 CFR Parts 9, 170, and 171	Fee Recovery for FY 2016	06/24/16	None	NA	No Backfitting
RIS-16-09	Preparation and Scheduling of Operator Licensing Examinations	06/16/16	None	NA	No Backfitting
RIS-16-08	Process for Scheduling and Allocating Resources in FY 2019 for the Review of New Licensing Applications for LWRs and Non-LWRs	06/07/16	None	NA	No Backfitting

31. Please provide a list and brief description of all facility specific backfits issued in the reporting period.[21]

None

32. For matters reviewed by the CRGR, please provide 12-month and 3-year rolling averages for the following metrics:

[21] No new information was added to this section since the last report.

a. For the number of issues reviewed formally[22]: the percentage accepted for imposition on industry and the percentage rejected based on cost-benefit or Backfit concerns; and
b. For the number of issues reviewed informally: the percentage accepted for imposition on industry and the percentage rejected based on cost-benefit or Backfit concerns.

12-Month Summary of CRGR Review Decisions of Potential Backfit Issues*			
Review Type & Outcome	Percentage Accepted or Endorsed with Backfitting	Percentage Rejected Based on Backfit Concerns	Percentage Endorsed without Backfitting
Routine Reviews			
Complex Reviews			

* No CRGR reviews have been completed in the past 12 months

3-Year Summary of CRGR Review Decisions of Potential Backfit Issues			
Review Type & Outcome	Percentage Accepted or Endorsed with Backfitting	Percentage Rejected Based on Backfit Concerns	Percentage Endorsed without Backfitting
Routine Reviews	0%	0%	100.0%
Complex Reviews	37.5%	12.5%	50.0%

Comments:

1. As of May 31, 2019, for the rolling 3-year period, the CRGR has completed 15 reviews for potential backfits, including 8 routine reviews and 7 complex reviews. In the past 12-months, no CRGR reviews have been completed. These percentages omit ongoing CRGR reviews.
2. These tables provide summaries of CRGR review results for the rolling 12-month and 3-year periods. The percentage accepted includes CRGR endorsements of generic documents that may lead to licensee backfits, the percentage rejected are reviews in which the CRGR disapproved documents due to backfit concerns, and the percentage endorsed were reviews in which the CRGR found no backfit implications.

33. Please provide the status of the application of the Backfit Rule in the licensing and inspection programs across the agency, including:

    a. The need for training on the requirements and application of 10 CFR 50.109;

    b. The need for a process, training, and/or oversight in addressing inspection issues that may redefine or reinterpret the original licensing basis (e.g., unresolved issues, task

[22] In accordance with the new terminology for CRGR reviews as described in the June 2018 Revision 9 of the CRGR charter (ADAMS Accession No. ML17355A532), and as mentioned in the August monthly report the terms “formal” and “informal” are now replaced with the terms “complex” and “routine,” respectively. Consequently, this terminology will not be included in future monthly reports.

interface agreements, disputed violations) to ensure that new requirements are not imposed through the inspection program;

c. A review of proposed regulatory changes that are currently in process to ensure that regulatory actions are appropriately informed by the requirements of 10 CFR 50.109. Examples of such actions could include but are not limited to the following:

   i. The Draft Regulatory Issue Summary on Service Life addressing the treatment of vendor recommendations within the regulatory framework;
   ii. 10 CFR 50.46(c) rulemaking for which the justification utilizes the adequate protection provisions of the backfit rule to obviate the need to compare the benefits of public health and safety with the cost of compliance for the three major portions of the rule;
   iii. Use of the compliance exception backfit as proposed by the NRC staff to address the "open phase condition (OPC)" issue; and
   iv. Possible alteration of the risk reduction credit given for Incipient Fire Protection after the modifications have been installed and received approval from the NRC crediting the technology.

d. Please describe the progress made during each reporting period.[23]

a, b, & d. Consistent with the EDO approved milestones in Response 34, the agency developed and implemented refresher training throughout the agency for those with responsibilities that take backfit into consideration. This refresher or “reset” training was completed in January 2018. In addition, the agency developed and implemented enhanced backfit training for identified staff with backfitting responsibilities in multiple headquarters offices and all regions. This training included interactive examples and case studies to apply backfitting concepts to daily work activities. All sessions were completed by July 31, 2018. Over 1,400 NRC staff received this new training.

More detailed backfitting guidance and procedures will be developed throughout FY 2019 as discussed in Response 34.

c. The agency has incorporated the recent lessons learned from the Exelon backfit appeal decision and the Commission’s direction in SRM-COMSECY-16-0020 into its reviews of proposed regulatory changes and decisionmaking.

The table below provides a summary of the status of regulatory changes and issues as of May 31, 2019.

[23] No new information was added to this section since the last report.

Status of Select Regulatory Activities		
Title	**Status of Regulatory Change**	**Backfitting Considerations**
RIS on Service Life - "Disposition of Information Related to the Time Period That Safety-Related Structures, Systems, or Components are Installed"	RIS (ADAMS Accession No. ML17177A060) was issued for public comment and the public comments have been dispositioned. RIS was reviewed by CRGR on September 12 and 14, 2017. CRGR Meeting Nos. #446, #447 (ADAMS Accession No. ML17276B156).	While the CRGR found that the draft RIS did not contain any specific backfits or new staff positions, it did not endorse the RIS in its current form. The CRGR indicated that a RIS may not be appropriate for addressing these issues. The RIS was officially withdrawn in a FRN dated September 12, 2018 (83 FR 46199).
10 CFR 50.46(c) Rulemaking	The NRC staff prepared a regulatory analysis for the 10 CFR 50.46c draft final rule (ADAMS Accession No. ML15323A122) to identify the benefits and costs of the particular regulatory approach for addressing emergency core cooling system performance. The regulatory analysis focuses on the marginal difference in benefits and costs for each alternative relative to the "no action" baseline alternative for the three major portions of the rule, which is consistent with the requirements of the backfit rule (10 CFR 50.109), Commission direction, and the ongoing revisions to the agency's cost-benefit guidance (e.g., NUREG/BR-0058, Revision 5).	Based on established criteria at the time, the CRGR was not required to review the rulemaking to assess potential backfits. The rulemaking is currently with the Commission for its consideration.
Proposed Rule, 10 CFR 73.53, "Requirements for Cyber Security at Nuclear Fuel Cycle Facilities" and associated draft RG, (DG) 5062 "Cyber Security Programs for Nuclear Fuel Cycle Facilities"	The proposed rule (ADAMS Accession No. ML17145A342), if approved, would require certain Fuel Cycle Facility licensees to establish, implement, and maintain a cyber security program that can detect, protect against, and respond to a cyber-attack capable of causing one or more of the consequences of concern as defined in the proposed rule.	CRGR completed its review in two meetings, June 27 and July 12, 2017. This rule contained backfitting and was endorsed by the CRGR. This rulemaking is currently with the Commission for its consideration.

Status of Select Regulatory Activities		
Title	**Status of Regulatory Change**	**Backfitting Considerations**
RG 5.77, Revision 1, "Insider Mitigation Program"	This RG describes an approach that the NRC staff considers acceptable for an insider mitigation program for nuclear power reactors that contain protected or vital areas.	This item has been closed. The staff did not identify a backfitting concern. This RG is currently being reviewed by the Commission.

34. Please provide a description of actions taken and/or planned to address recommendations made by the CRGR in their report "U.S. Nuclear Regulatory Commission's Implementation of Backfitting and Issue Finality Requirements," dated June 27, 2017. Please include a milestone schedule for completing action on each recommendation.[24]

The actions identified in the CRGR Review Report and approved by the EDO in a memo dated July 19, 2017, have been organized into the following activities:

Backfitting Enhancement Tasks from the June 27, 2017, CRGR Review Report				
Item	Task	Lead	Due Date	Status
1	Update agency-level guidance on backfitting and issue finality to reflect Commission direction on the use of the compliance exception to the backfit rule and submit for Commission approval.	NRR	05/02/2018	Completed
2	Update office-level implementing guidance on backfitting and issue finality, and the Enforcement Manual to reflect Commission-approved agencywide guidance.	NRR, NMSS, NRO, NSIR, RES, all Regions, OE	TBD	On hold[25]
3	Develop and conduct "reset" training for managers and staff on backfitting and issue finality.	CRGR	02/28/2018	Completed
4	Conduct interactive training on backfitting and issue finality for all staff with backfitting responsibilities.	CRGR	08/17/2018	Completed
5	Develop or update training and/or developmental activities on backfitting and issue finality for inclusion in office/regional qualification procedures.	CRGR, NRR, NMSS, NRO, NSIR, RES, all Regions	TBD	On hold

[24] No new information was added to this section since the last report.
[25] Activity on hold consistent with SRM-SECY-17-0006 dated October 29, 2018, in which the Commission directed the staff to hold further development on agency procedures and guidance governing backfitting pending further Commission direction.

Backfitting Enhancement Tasks from the June 27, 2017, CRGR Review Report				
Item	Task	Lead	Due Date	Status
6	Revise office qualification procedures to require initial and refresher training and developmental activities on backfitting and issue finality. (Formerly part of Item #5)	CRGR, NRR, NMSS, NRO, NSIR, RES, all Regions	TBD	On hold
7	Make available "just-in-time" training and references on backfitting and issue finality.	CRGR	10/31/2018	Completed
8	Add backfitting information to agency knowledge management Web site.	CRGR	09/18/2017	Completed
9	Prepare a NUREG/Knowledge Management report on the history and activities of the CRGR.	CRGR	08/31/2019	On track
10	Create a backfitting Community of Practice with office points of contact.	CRGR	08/31/2017	Completed
11	Conduct an effectiveness review of actions taken in response to the June 27, 2017, CRGR report.	CRGR	07/27/2020	On track
12	Propose a revision to the charter for the CRGR to reflect rulemaking criteria, incorporate recent Commission direction, and enhance rigor of CRGR assessments.	CRGR	06/29/2018	Completed
13	Report on the availability of key docketed information categories and the resources needed to make information more readily retrievable.	OCIO	02/28/2018	Completed
14	Report on the resources needed to implement the actions in the July 19, 2017, EDO tasking on backfitting.	CRGR	10/02/2017	Completed

REACTOR INSPECTION

35. Please provide the ROP findings for year-to-date and 3-year rolling metrics, including the total number and for each region for green, white, yellow, and red findings.

Location	# of Findings		2014	2015	2016	2017	2018	2019
Nationally	Total		824	821	704	560	478	116
NSIR (all regions)			18	26	19	N/A (Note 1)	N/A	N/A
RI	Green		167	169	155	126	107	31
	White		3	4	2	2	1	0
	Yellow		0	1	0	0	0	0
	Red		0	0	0	0	0	0
	GTG Security		1	1	0	0	0	0
	Total		171	175	157	128	108	31
	# OP Units		26	25	25	25	25	24
RII	Green		148	159	151	119	113	32
	White		4	1	0	3	0	1
	Yellow		0	0	0	0	0	0
	Red		0	0	0	0	0	0
	GTG Security		0	0	1	2	0	0
	Total		152	160	152	124	113	33
	# OP Units		32	32	33	33	33	33
RIII	Green		221	202	177	133	110	16
	White		4	5	1	4	2	1
	Yellow		0	0	0	0	0	0
	Red		0	0	0	0	0	0
	GTG Security		1	1	1	0	0	0
	Total		226	208	179	137	112	17
	# OP Units		23	23	23	23	23	23
RIV	Green		249	248	196	167	145	35
	White		5	2	1	2	0	0
	Yellow		2	1	0	0	0	0
	Red		0	0	0	0	0	0
	GTG Security		1	1	0	2	0	0
	Total		257	252	197	171	145	35
	# OP Units		19	19	19	19	18	18

NSIR: Office of Nuclear Security and Incident Response
GTG Security: Greater-than-green security
#OP Units: Number of operating units

Note:
1. Starting in FY 2017, these finding are included in the findings for each region.

36. Please provide the percentage of Final Significance Determinations made within 90 Days for all potentially Greater-Than-Green findings, monthly for one-year rolling metrics and annually for the past 10 years.

1-Year Rolling Metric	
Month	**Percent Met**
June 2018	N/A
July 2018	N/A
August 2018	N/A
September 2018	N/A
October 2018	N/A
November 2018	N/A
December 2018	100
January 2019	N/A
February 2019	N/A
March 2019	N/A
April 2019	50
May 2019	N/A

10-Year Annual Determinations Within 90 Days	
Year	**Percent Met**
2009	100
2010	93
2011	100
2012	100
2013	100
2014	86
2015	88
2016	100
2017	93
2018	100

Comments:

This metric, reported in the NRC's CBJ, measures the time from the issuance date of the first official correspondence that describes the inspection finding, until the final significance determination letter is sent to the licensee, which is expected to be 90 days or less.

During the April reporting period, the NRC issued a final significance determination of a White finding for Clinton Power Station (ADAMS Accession No. ML19092A212), which exceeded 90 days from the date when the issue was first described in official correspondence (ADAMS Accession No. ML18235A170). Additionally, during the April reporting period, the NRC issued a final significance determination of a White finding for Watts Bar Nuclear Plant (ADAMS Accession No. ML19105B198) within 90 days from the date when the issue was first described in official correspondence (ADAMS Accession No. ML19036A682). Therefore, the April timeliness metric is reported as 50%.

No Greater-than-Green findings were issued during the May reporting period.

37. For each reporting period, please describe each instance where IMC 609 Appendix M, "Significance Determination Process Using Qualitative Criteria," has been applied in the ROP Significance Determination Process, including the justification for doing so.

Appendix M was used to disposition two inspection findings of very low safety significance (Green) during this reporting period. First, a performance deficiency identified at Calvert Cliffs Nuclear Power Plant, which was associated with the licensee's failure to identify and correct an inadequate procedure resulting in exceeding the licensed maximum power level, met the procedure-based entry criteria for Appendix M. Additional details on this finding are available in the Calvert Cliffs integrated inspection report (ADAMS Accession No. ML19128A279). Second, a performance deficiency identified at Catawba Nuclear Station, which was associated with the licensee's failure to follow procedures following manual reactivity manipulations and allowing reactor power to exceed the licensed thermal power limit, met the procedure-based entry criteria for Appendix M. Additional details on this finding are available in the Catawba integrated inspection report (ADAMS Accession No. ML19129A089).

38. Please provide the status of potential changes to the ROP, and identify any changes that may require Commission approval prior to implementation.

Significant potential changes to the ROP include the following:

- The NRC staff is conducting an assessment of key components of the ROP – including the reactor assessment process and the baseline inspection program – based on feedback from both internal and external stakeholders. Recommendations for enhancing the ROP will be provided to the Commission in a SECY paper in the near term.

- The NRC staff has recommended changes to the engineering inspections that are intended to improve effectiveness and efficiency of the inspections (see SECY-18-0113 available at ADAMS Accession No. ML18144A567). The Commission is currently considering the staff's proposal.

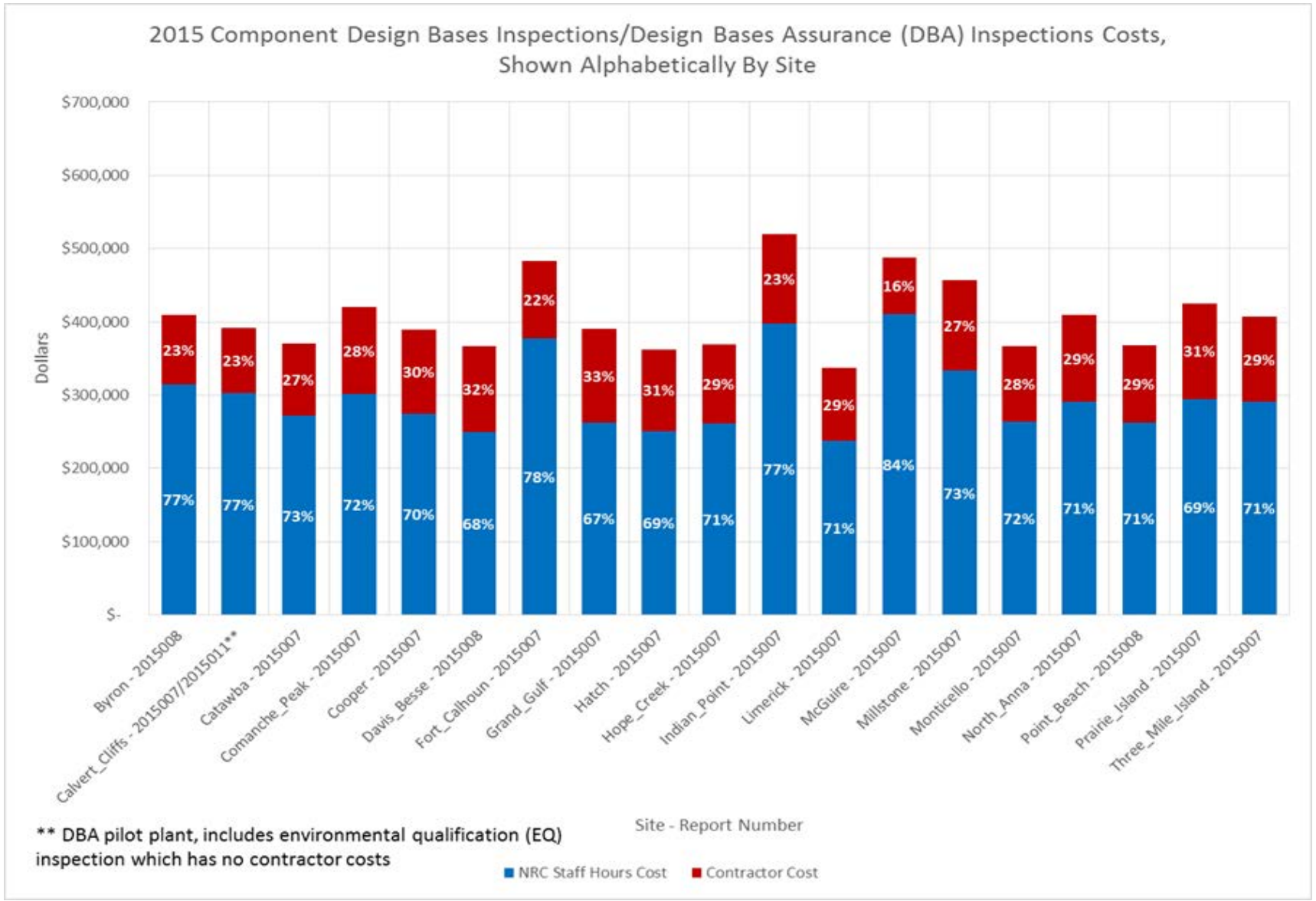
39. Please describe the progress toward utilizing an industry consensus document as a means of accomplishing predictability and consistency in operability determinations.

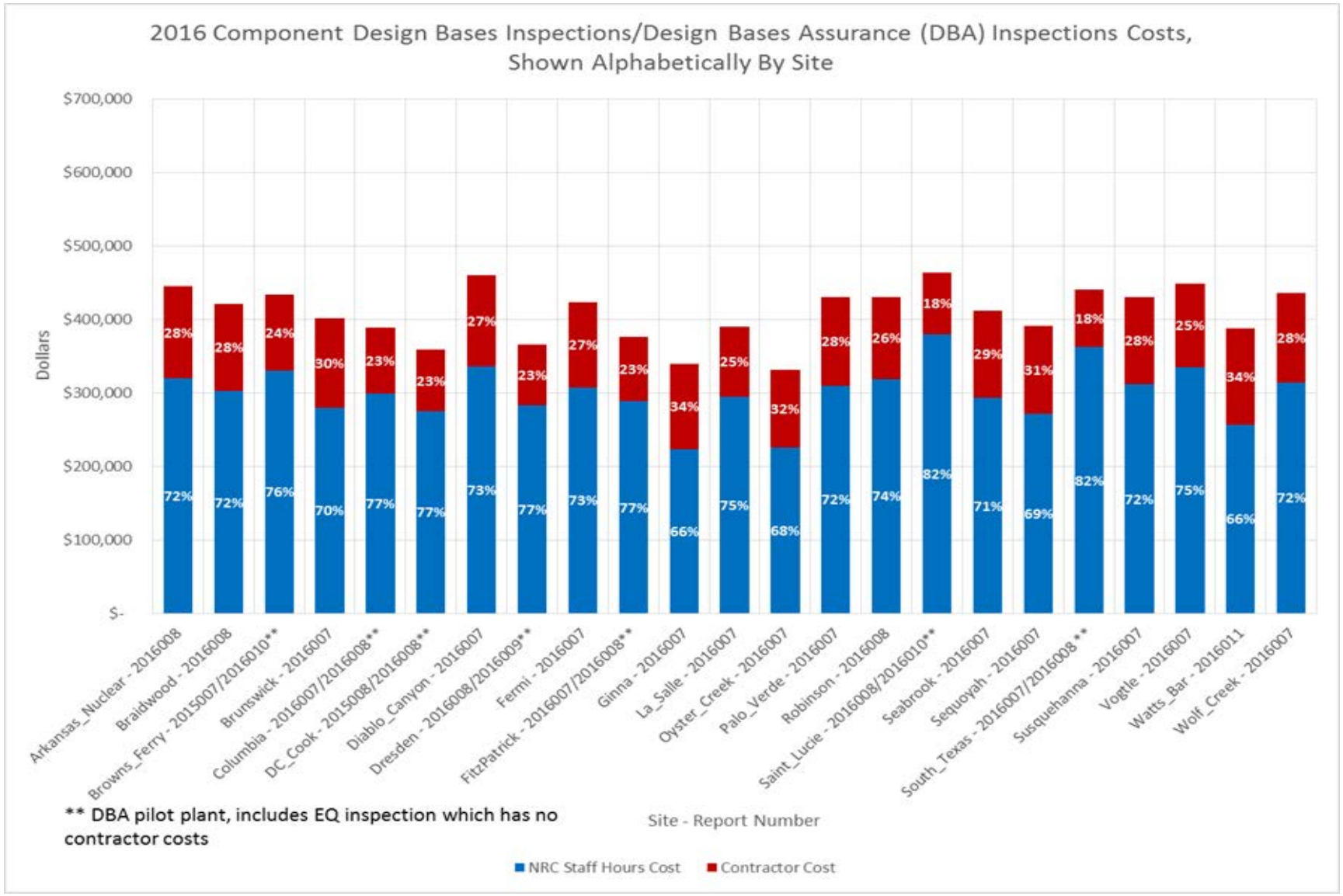
The NRC is engaged with nuclear industry stakeholders on their efforts to develop a consensus document for operability determinations. On June 26, 2018, the NRC staff held a public meeting with nuclear industry stakeholders where they presented issues for the staff's consideration in revising IMC 0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety," to improve efficiency and regulatory predictability in operability determinations. The NRC and the industry are presenting their views through a series of public meetings covering six areas where the industry has identified potential opportunities to enhance efficiency and regulatory predictability for operability determinations. To date, the NRC staff has held five focused public meetings and is evaluating the feedback on IMC 0326. The most recent public meeting took place on April 3, 2019. The NRC staff presented feedback on industry's earlier presentation regarding the American Society of Mechanical Engineers code compliance, as it relates to operability. The next public meeting is planned for July 18, 2019. During this meeting, the NRC and industry stakeholders will discuss draft changes under consideration for IMC 0326 and NEI 18-03, "Operability Determination."

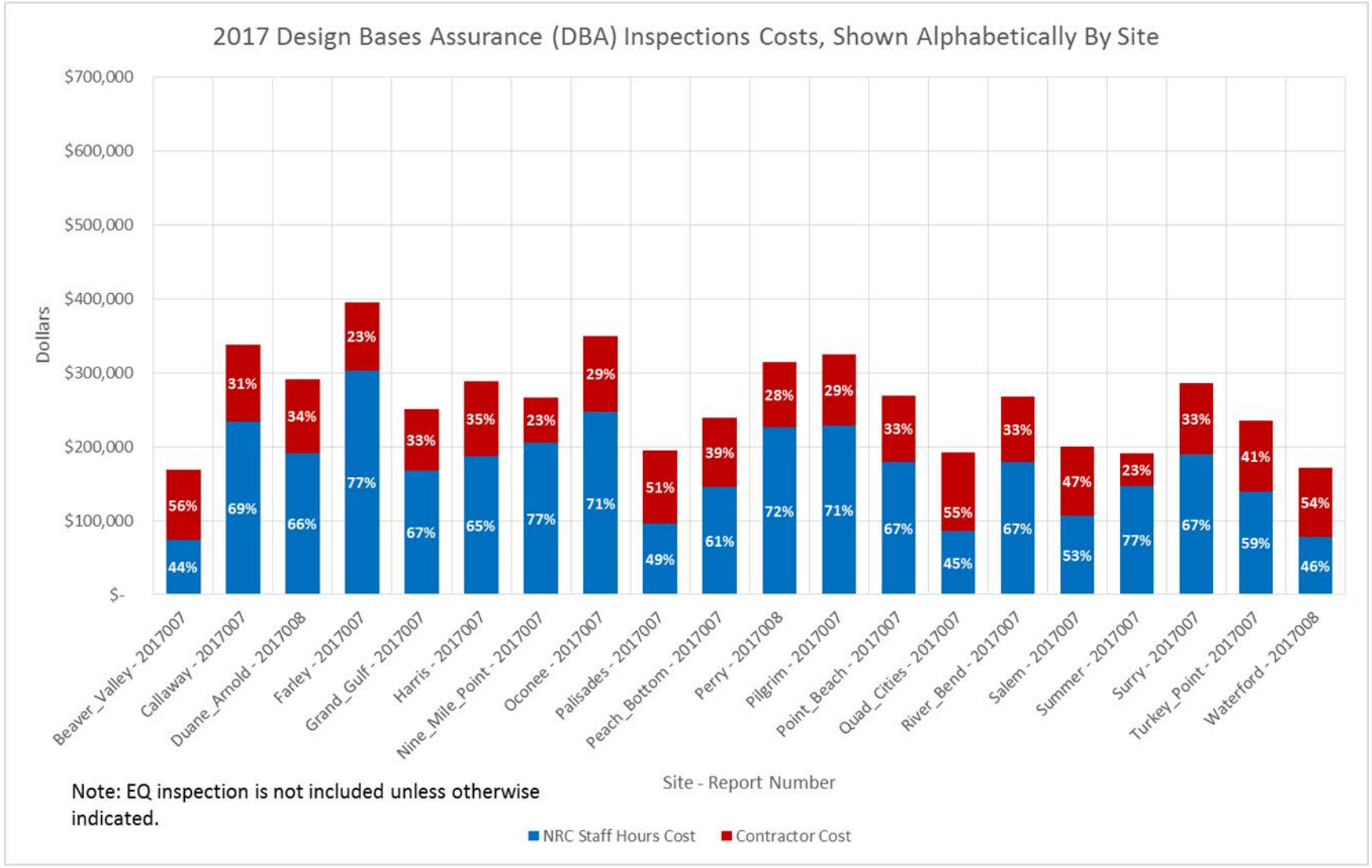
40. For each Design Bases Assurance (DBA) Inspection (formerly known as the Component Design Basis Inspection) completed in the last three years, please list the duration, amount of fees billed, and percentage of fees used to reimburse contractors.[26]

The fees are grouped per DBA inspection in order to allow easier review by the reader and facilitate comparison between the costs of DBA inspections performed at each site. Monthly comparison of DBA inspection fees will not provide an accurate representation of each licensee's charges due to the fact that the DBA inspections span 2 months.

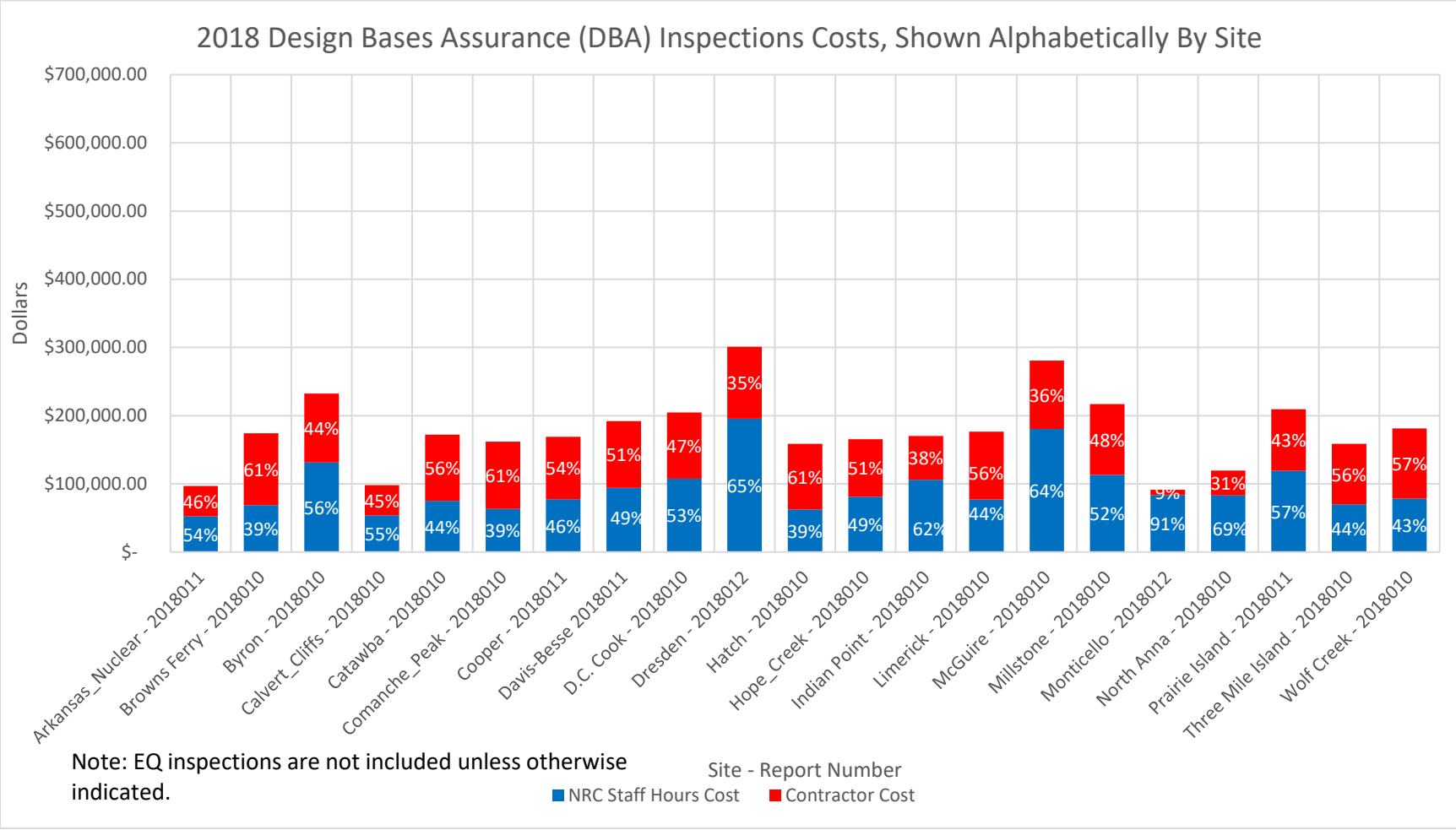
[26] No new information was added to this section since the last report.


2015 Component Design Bases Inspections/Design Bases Assurance (DBA) Inspections Costs, Shown Alphabetically By Site
$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$-
Dollars
23%
77%
23%
77%
27%
73%
28%
72%
30%
70%
32%
68%
22%
78%
33%
67%
31%
69%
29%
71%
23%
77%
29%
71%
16%
84%
27%
73%
28%
72%
29%
71%
29%
71%
31%
69%
29%
71%
Byron - 2015008
Calvert_Cliffs - 2015007/2015011**
Catawba - 2015007
Comanche_Peak - 2015007
Cooper - 2015007
Davis_Besse - 2015008
Fort_Calhoun - 2015007
Grand_Gulf - 2015007
Hatch - 2015007
Hope_Creek - 2015007
Indian_Point - 2015007
Limerick - 2015007
McGuire - 2015007
Millstone - 2015007
Monticello - 2015007
North_Anna - 2015007
Point_Beach - 2015008
Prairie_Island - 2015007
Three_Mile_Island - 2015007
Site - Report Number
** DBA pilot plant, includes environmental qualification (EQ) inspection which has no contractor costs
NRC Staff Hours Cost
Contractor Cost

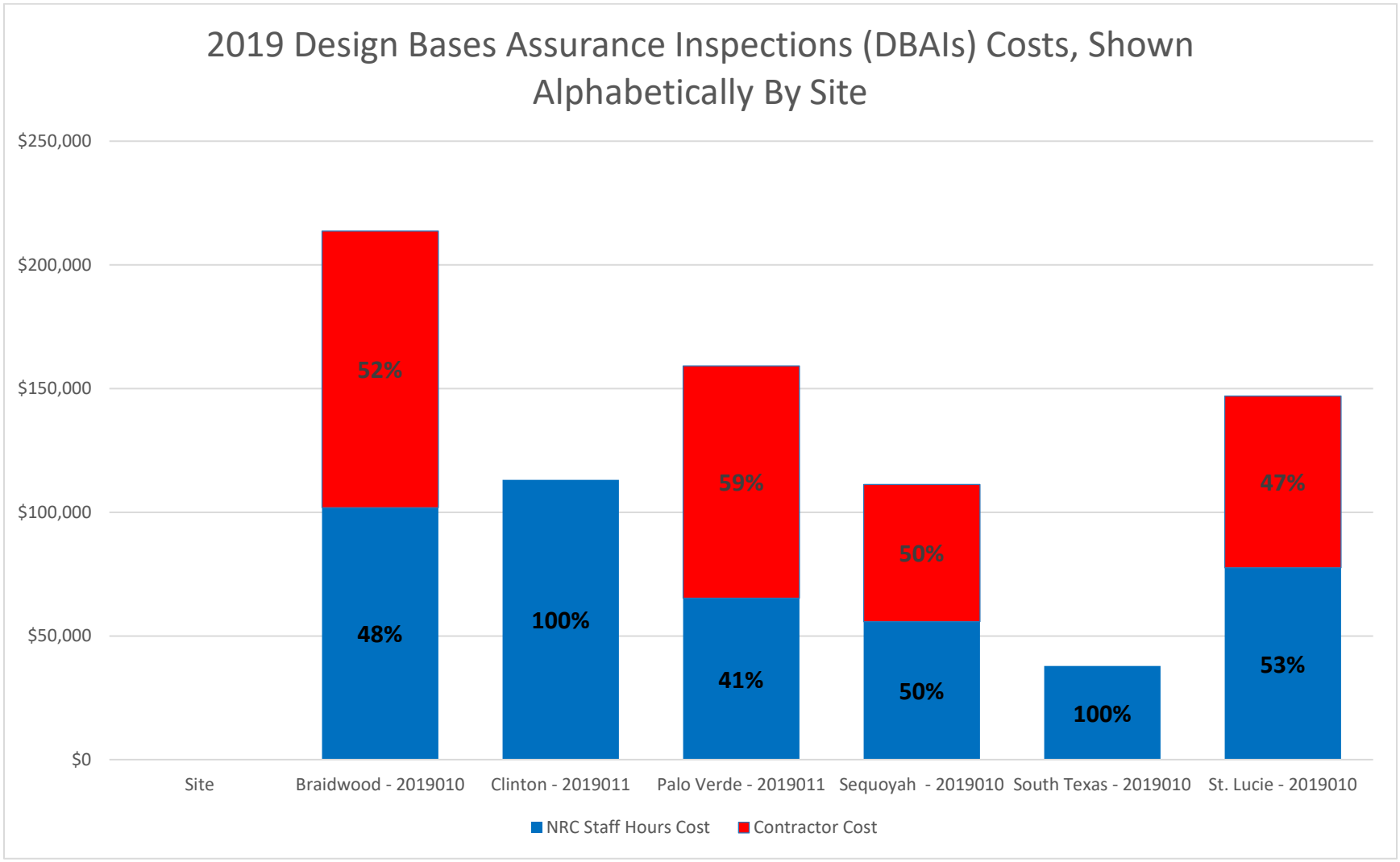

2016 Component Design Bases Inspections/Design Bases Assurance (DBA) Inspections Costs, Shown Alphabetically By Site
Dollars
$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$-
Arkansas_Nuclear - 2016008
Braidwood - 2016008
Browns_Ferry - 2015007/2016010**
Brunswick - 2016007
Columbia - 2016007/2016008**
DC_Cook - 2015008/2016008**
Diablo_Canyon - 2016007
Dresden - 2016008/2016009**
Fermi - 2016007
FitzPatrick - 2016007/2016008**
Ginna - 2016007
La_Salle - 2016007
Oyster_Creek - 2016007
Palo_Verde - 2016007
Robinson - 2016008
Saint_Lucie - 2016008/2016010**
Seabrook - 2016007
Sequoyah - 2016007
South_Texas - 2016007/2016008**
Susquehanna - 2016007
Vogtle - 2016007
Watts_Bar - 2016011
Wolf_Creek - 2016007
28% 72%
28% 72%
24% 76%
30% 70%
23% 77%
23% 77%
27% 73%
23% 77%
27% 73%
23% 77%
34% 66%
25% 75%
32% 68%
28% 72%
26% 74%
18% 82%
29% 71%
31% 69%
18% 82%
28% 72%
25% 75%
34% 66%
28% 72%
** DBA pilot plant, includes EQ inspection which has no contractor costs
Site - Report Number
NRC Staff Hours Cost
Contractor Cost



Note: EQ inspection is not included unless otherwise indicated.



Note: EQ inspections are not included unless otherwise indicated.


2019 Design Bases Assurance Inspections (DBAIs) Costs, Shown Alphabetically By Site
$250,000
$200,000
$150,000
$100,000
$50,000
$0
52%
48%
100%
59%
41%
50%
50%
100%
47%
53%
Site
Braidwood - 2019010
Clinton - 2019011
Palo Verde - 2019011
Sequoyah - 2019010
South Texas - 2019010
St. Lucie - 2019010
NRC Staff Hours Cost
Contractor Cost

41. Please provide the status of the holistic review of engineering inspection procedures and any actions taken and/or planned because of the review.[27]

In late November 2018, SECY-18-0113 (ADAMS Accession No. ML18144A567) was provided to the Commission with recommendations to improve the effectiveness and efficiency of the engineering inspections. Many of the recommendations contained in the Commission paper are also reflected in a staff memorandum (ADAMS Accession No. ML18103A174) that captures the recommendations of the ROP Engineering Inspection Working Group to improve the ROP engineering inspections.

NRR management and staff are also currently working with the industry to review and provide feedback on an industry initiative associated with the use of licensee self-assessments in the engineering inspection program.

[27] No new information was added to this section since the last report.

NEW REACTORS

42. Please provide a table showing the funds budgeted, the resources spent, and the total Part 170 fees billed each year for the last ten years for NRO.

	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Enacted ($M)	106.10	102.66	101.27	94.11	92.49	103.49	87.58	81.92	64.34	65.46	55.55
Expended ($M)	81.16	90.55	89.75	76.06	89.16	67.03	61.46	62.63	54.84	51.69	27.41
Part 170 Billed ($M)			75.73	71.83	60.28	60.18	59.79	60.15	55.67	46.44	15.44

Enacted: Beginning in FY 2018, the NRC eliminated the allocation of mission indirect resources in the agency's budget request to increase transparency (see NRC FY 2018 CBJ page 161 for detailed explanation). To allow for comparison of historical budget data, FY 2009 - FY 2017 are presented in a consistent manner.

Expended: Expenditures include contracts, travel and FTE utilization as of May 31, 2019. The expenditure includes both fee and non-fee recoverable costs for NRO.

Part 170 Billed: For FY 2009 - FY 2010, the data in the legacy billing system is not available at the office level. The next quarterly billing is scheduled for July 2019.

43. For each design certification, Construction and Operating License (COL), and ESP application reviewed since 2007, please provide:
    a. The date of the first pre-application meeting;
    b. The date the application was filed;
    c. Whether the acceptance review was completed in 60 days;
    d. The originally scheduled dates for completion of the SER and EIS;
    e. The actual dates for completion of the SER and EIS;
    f. For ongoing reviews, the projected date for final agency action;
    g. For terminated or suspended reviews, the dates of the termination or suspension; and the total fees billed for each review.[28]

[28] No new information was added to this section since the last report.

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
U.S. APWR DC	05/12/2006	12/31/2007	Yes	FSER: 06/2012 FEIS: N/A	Application is currently under review	Not Scheduled (Note 2)	N/A	$78,311,970
APR1400 DC	11/05/2009	12/23/2014	Yes	FSER: 09/2018 FEIS: N/A	FSER: 09/28/2018	09/2019	N/A	$61,990,839
ABWR DC Renewal (GEH)	02/23/2010	12/07/2010	Yes	FSER: 03/2018 FEIS: N/A	Application is currently under review	Schedule currently under review	N/A	$6,504,635
Turkey Point COL	02/10/2009	06/30/2009	Yes	FSER: 12/2012 FEIS: 10/2012	FSER: 12/2016 FEIS: 10/2016	COLs issued on 04/12/2018	N/A	$34,790,538*
Clinch River ESP	12/14/2010	05/12/2016	No (Note 3)	FSER: 08/2019 FEIS: 06/2019	Application is currently under review	02/2020	N/A	$11,429,682
NuScale SMR DC	07/09/2008	01/06/2017	Yes	FSER: 09/2020 FEIS: N/A	Application is currently under review	01/2021	N/A	$42,275,836
North Anna ESP	Information not known	09/25/2003	Yes	FSER: 06/2005 FEIS: 06/2005	FSER: 08/2006 FEIS: 12/2006	ESP issued on 11/27/2007	N/A	$8,579,177

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
Vogtle ESP	Information not known	08/15/2006	Yes	FSER: 05/2008 FEIS: 05/2008	FSER: 02/2009 FEIS: 08/2008	ESP issued on 08/26/2009	N/A	$11,680,269
South Texas Project COL	Information not known	09/20/2007	Yes	FSER: 09/2011 FEIS: 03/2011	FSER: 09/2015 FEIS: 02/2011	COL terminated on 07/12/2018	6/22/2018 *(withdrawal request)*	$58,469,726
Bellefonte COL	Information not known	10/30/2007	Yes	FSER: 02/2011 FEIS: 01/2010	Application withdrawn by the applicant	N/A	03/28/2016 *(withdrawal request)* *12/02/2016 Withdrawn*	$21,916,556
North Anna COL	Information not known	11/26/2007	Yes	FSER: 08/2010 FEIS: 12/2009	FSER: 01/2017 FSEIS: 02/2010	COLs issued on 06/02/2017	N/A	$33,032,004*
Lee COL	Information not known	12/12/2007	Yes	FSER: 02/2011 FEIS: 03/2010	FSER: 08/2016 FEIS: 12/2013	COLs issued on 12/19/2016	N/A	$22,778,515

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
U.S. EPR DC	02/08/2005	12/11/2007	Yes	FSER: 05/2011 FEIS: N/A	Application review is suspended at the applicant's request	N/A	02/25/2015 *(suspension request)*	$82,585,674
Shearon Harris COL	Information not known	02/18/2008	Yes	FSER: 04/2011 FEIS: 05/2010	Application review is suspended at the applicant's request	N/A	05/02/2013 *(suspension request)*	$10,106,258
Vogtle COL	Information not known	03/28/2008	Yes	FSER: 12/2010 FEIS: 01/2010	FSER: 08/2011 FEIS: 04/2011	COLs issued on 02/10/2012	N/A	$29,770,625
V.C. Summer COL	Information not known	03/27/2008	Yes	FSER: 02/2011 FEIS: 02/2011	FSER: 08/2011 FEIS: 04/2011	COLs terminated on 03/06/2019	12/27/2017 *(termination request)*	$28,057,913
Levy COL	Information not known	07/30/2008	Yes	FSER: 05/2011 FEIS: 09/2010	FSER: 05/2016 FEIS: 04/2012	COL terminated on 04/26/2018	01/25/2018 (*termination request)*	$26,901,490*

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
Fermi COL	Information not known	09/18/2008	Yes	FSER: 03/2012 FEIS: 08/2011	FSER: 11/2014 FEIS: 01/2013	COL issued on 05/01/2015	N/A	$25,704,722*
Comanche Peak COL	Information not known	09/18/2008	Yes	FSER: 12/2011 FEIS: 01/2011	FSER: N/A FEIS: 05/2011 Application review is suspended at the applicant's request	N/A	11/07/2013 *(suspension request)*	$23,278,377
River Bend COL	Information not known	09/25/2008	Yes	A review schedule was not developed for this application	Application withdrawn by the applicant	N/A	01/09/2009 *(suspension request)* 12/04/2015 *(withdrawal request)*	$1,350,316
Callaway COL	Information not known	07/24/2008	No	A review schedule was not developed for this application	Application withdrawn by the applicant	N/A	06/23/2009 *(suspension request)* 08/12/2015 *(withdrawal request)*	$4,066,138

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
Bell Bend COL	Information not known	10/10/2008	Yes	FSER: 03/2012 FEIS: 03/2011	FSER: N/A FEIS: 04/2016 Application withdrawn by the applicant	N/A	02/25/2015 *(suspension request)* 08/30/2016 *(withdrawal request)*	$20,026,574
PSEG ESP	Information not known	05/25/2010	Yes	FSER: 07/2013 FEIS: 03/2013	FSER: 09/2015 FEIS: 11/2015	ESP issued on 05/05/2016	N/A	$17,917,093
ABWR DC Renewal (Toshiba)	Information not known	10/27/2010	Yes	A review schedule was not developed for this application	Application withdrawn by the applicant	N/A	06/09/2016 *(withdrawal request)*	$686,911
Victoria County ESP	Information not known	03/25/2010	Yes	FSER: 04/2013 FEIS: 08/2013	Application withdrawn by the applicant	N/A	08/28/2012 *(withdrawal request)*	$6,146,248
Calvert Cliffs COL	Information not known	07/13/2007 (Part 1 of application) 03/14/2008 (Part 2 of application)	No Yes	FSER: 07/2012 FEIS: 03/2010	FSER: N/A FEIS: 05/2011 Application withdrawn by the applicant	N/A	02/27/2015 *(suspension request)* 06/08/2015 *(withdrawal request)*	$31,400,772

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
Nine Mile Point COL	Information not known	09/30/2008	Yes	A review schedule was not developed for this application	Application withdrawn by the applicant	N/A	12/01/2009 *(suspension request)* 11/26/2013 *(withdrawal request)*	$2,687,822
Grand Gulf COL	Information not known	02/27/2008	Yes	FSER: 03/2011 FEIS: 05/2010	Application withdrawn by the applicant	N/A	02/09/2015 *(withdrawal request)*	$4,719,505
Grand Gulf ESP	Information not known	10/21/2003	Yes	FSER: 10/2005 FEIS: 10/2005	FSER: 10/2005 FEIS: 04/2006	ESP issued on 04/05/2007	N/A	$5,352,875
Clinton ESP	Information not known	09/25/2003	Yes	FSER: 08/2005 FEIS: 08/2005	FSER: 02/2006 FEIS: 07/2006	ESP issued on 03/15/2007	N/A	$5,186,587
AP1000 DC Amendment	Information not known	05/26/2007	Yes	FSER: 08/2010 FEIS: N/A	FSER: 08/2011 FEIS: N/A	Final Rule published on 12/30/2011	N/A	$33,036,394
Economic Simplified Boiling Water Reactor DC	6/20-21/2002	08/24/2005	No	FSER: 06/2009 FEIS: N/A	FSER: 03/2011 Supplement FSER: 09/2014 FEIS: N/A	Final Rule published on 10/15/2014	N/A	$68,153,802

Project Name	Date of First Pre-Application Meeting	Date the Application was Filed	Acceptance Review Completed in 60 Days (Note 1)	Original Review Schedule Dates for FSER and FEIS (or EA) Completion	Actual FSER and FEIS (or EA) Completion Dates	Projected Date for Final NRC Action	Date of Withdrawal or Suspension Request (for terminated projects only)	Total Fees Billed for Each Review (Note 4)
ABWR DC Amendment	Information not known	06/30/2009	Yes	FSER: 04/2010 FEIS: N/A	FSER: 10/2010 FEIS: N/A	Final Rule published on 12/16/2011	N/A	$1,145,852
Victoria County COL	Information not known	09/03/2008	Yes	A review schedule was not developed for this application	Application withdrawn by the applicant	N/A	06/11/2010 *(withdrawal request)*	$1,493,183

*Reflects refund for erroneous charges related to contested hearings

Note 1: NRO's acceptance review metric is to complete the acceptance review within 60 days and to issue a letter to the applicant documenting the staff's findings on acceptability within 75 days.

Note 2: The NRC is performing the review of the US APWR at a very reduced pace at the request of the applicant and will continue at this pace until notified by the applicant of a change in its plans. Therefore, no completion date has been established.

Note 3: The acceptance review for the Clinch River ESP application was extended at the request of the applicant, Tennessee Valley Authority (TVA), by letter dated August 19, 2016.

Note 4: The NRC's 10 CFR Part 170 charges are billed on a quarterly basis. Therefore, updates will be provided in this report to Question 43.h during the reporting periods for January, April, July, and October.

44. Please provide a concise summary of the status of ongoing design certification, COL, and ESP application reviews. Please include a discussion of the issuance of RAIs and receipt of responses.

In addition to the updates provided here, each of the DC, COL, and ESP milestone schedules that are under review are publicly available on the NRC Web site.

DC Applications

The NRC employs a 6 Phase schedule to monitor progress towards completion of the safety review. These phases are:

- Phase 1 – Preliminary SER with RAIs issued to applicant
- Phase 2 – SER with Open Items issued
- Phase 3 – Response to ACRS regarding SER with Open Items issued
- Phase 4 – Advanced SER with no Open Items issued
- Phase 5 – Response to ACRS regarding SER with no Open Items issued
- Phase 6 – Final SER issued

US-APWR

Mitsubishi Heavy Industries (MHI) submitted its US-APWR DC application on December 31, 2007. The staff is currently in Phase 2 of the review. By letter dated November 5, 2013, MHI initiated a coordinated slowdown of NRC licensing activities in order to focus its resources towards supporting the restart of the Mitsubishi-designed reactors in Japan following the Fukushima event. The NRC staff has been performing the review of the US-APWR DC application at a reduced pace and is making progress on the Phase 4 review for six DC chapters. As of May 31, 2019, the staff has issued 5,683 RAIs and the applicant has responded to 5,534 of them.

NuScale

On January 6, 2017, NuScale submitted the first SMR DC application for review by the NRC. On March 15, 2017, the NRC completed its acceptance review and docketed the application. The staff then issued the acceptance review letter to NuScale on March 23, 2017, and developed a full review schedule with public milestones that was transmitted to NuScale on May 22, 2017. On April 11, 2018, the staff completed Phase 1 of the review. The staff's review is currently in Phases 2, 3, and 4. The staff identified 29 challenging issues. Sixteen of these issues have been resolved to date. Of the remaining 13 issues, six have a clear path forward toward resolution. For the remaining issues, a path forward for resolution is being developed. On May 16, 2019, the NRC staff issued a letter to NuScale communicating the status of Phase 2 of the DC application review. This letter is a follow up to the January 17, 2019, DC application review status letter. Specifically, the May letter conveyed that the NRC staff has met the Phase 2 public milestone for most of the 21 DC application chapters through the completion and issuance of safety evaluations (SEs) with open items and has completed Phase 3 actions for many of these chapters with presentations made to the ACRS. The letter also stated that the staff has not met the Phase 2 milestone of May 16, 2019, because several issues remain unresolved without a mutually understood and clearly defined path toward resolution. The letter further emphasized that to meet the overall 42-month schedule for review, NuScale must resolve the remaining issues with the NRC staff and the open items identified in the completed Phase 2 SEs to meet the December 12, 2019, Phase 4 milestone for completion of an

Advanced SER with no open items. As of May 31, 2019, the staff has issued 519 RAIs, which included 1,319 questions and the applicant has responded to 1,295 of these questions. Of the 519 RAIs issued, 317 RAIs (~61%) are now closed. As of May 31, 2019, NuScale has responded to approximately 70 percent of RAI questions within the 60 days agreed to in the staff's May 22, 2017, schedule letter for the design certification review.

DC Renewal Applications

ABWR Renewal GEH

On December 7, 2010, GEH submitted an application for renewal of the ABWR DC. The NRC staff is currently preparing the SE with no open items. The NRC staff issued a letter to GEH on July 20, 2012, describing 28 design changes that GEH should have included in the application. By letter dated September 17, 2012, GEH stated it planned to address the 28 items in its Revision 6 of the ABWR DCD. By letter dated February 19, 2016, GEH submitted its revised application incorporating the changes to the ABWR DCD. On August 30, 2016, the staff issued a schedule letter to GEH based on resolving all open items by January 2017. However, some open items associated with the review of the application remain unresolved. On August 3, 2017, the staff issued a letter to GEH stating that the NRC will not be able to meet the original schedule outlined in the August 30, 2016, letter due to unresolved issues with the application. The letter also stated that the NRC will issue a revised schedule letter to GEH after additional interactions with the applicant are held to resolve these issues and the staff receives complete responses to the NRC's RAIs. In a letter dated January 21, 2019, GEH provided the NRC staff with the final RAI response regarding the peak cladding temperature issue. As of May 31, 2019, the staff has issued 37 RAIs and the applicant has responded to all of them. GEH has addressed all of the open items and the staff is expected to complete the Advanced Final SER (Phase B) by the end of June 2019. In a letter dated May 31, 2019, the NRC staff projected the completion of the ABWR DC Renewal Advanced Final Safety Evaluation Report by the end of June 2019. The ACRS subcommittee meeting has been scheduled for August 20, 2019, with an ACRS Full Committee meeting to be held in October 2019.

ESP Applications

The NRC employs a 4 Phase schedule to monitor the progress towards completion of the safety review. These phases are:

- Phase A – Preliminary SER and RAIs issued to the applicant
- Phase B – Advanced SER with No Open Items Developed
- Phase C – ACRS meeting on Advanced SER
- Phase D – Final SER issued

The NRC also employs a 4 Phase schedule to monitor completion of the EIS. These phases are:

- Phase 1 – Scoping Summary Report issued
- Phase 2 – Draft EIS issued to the U.S. Environmental Protection Agency (EPA)
- Phase 3 – Responses to draft DEIS comments completed
- Phase 4 – Final EIS issued to EPA

Clinch River

On May 12, 2016, TVA submitted an ESP application for the Clinch River Nuclear Site located in Oak Ridge, Tennessee. By letter dated August 11, 2016, TVA identified certain aspects of the application for which it intended to provide supplemental information. The NRC responded to TVA in a letter dated August 19, 2016, and informed TVA that its application would remain in a tendered but not docketed status until all of the supplemental information was provided to NRC. By December 15, 2016, TVA had provided the supplemental information in support of its application, and by letter dated January 5, 2017, the NRC staff informed TVA that its application, as supplemented, was acceptable for docketing and detailed technical review.

The NRC staff began its detailed technical review of the ESP application in January 2017 and developed a full review schedule with public milestones that was transmitted to TVA on March 17, 2017. The Phase A safety review for all chapters of the application was completed by the staff on August 4, 2017. The staff completed Phase B of its review on October 17, 2018.

Phase C review activities took place in parallel with Phase B for some SEs sections. On December 6, 2018, the NRC staff completed safety public milestone, Phase C – "ACRS Review and Meetings on Advanced SEs". Phase C was scheduled to be completed by March 26, 2019, thus the staff's review is currently significantly ahead of schedule. As of March 31, 2019, the staff has issued 50 safety-related RAI questions and the applicant has responded to all 50 RAI questions. One hundred percent of the RAI questions issued and responded to are closed. The final SER is currently scheduled to be issued before August 2019. For the environmental review, NRC staff completed Phase 1 of the review on October 30, 2017. Additionally, the NRC staff completed Phase 2 by issuing the draft EIS on April 27, 2018. The public comment period for the draft EIS closed on July 13, 2018. Based on one of the comments received from the applicant, the staff issued one environmental RAI question in September 2018, and the applicant responded to the RAI in October 2018. The final EIS was issued on April 3, 2019, which is more than two months ahead of schedule.

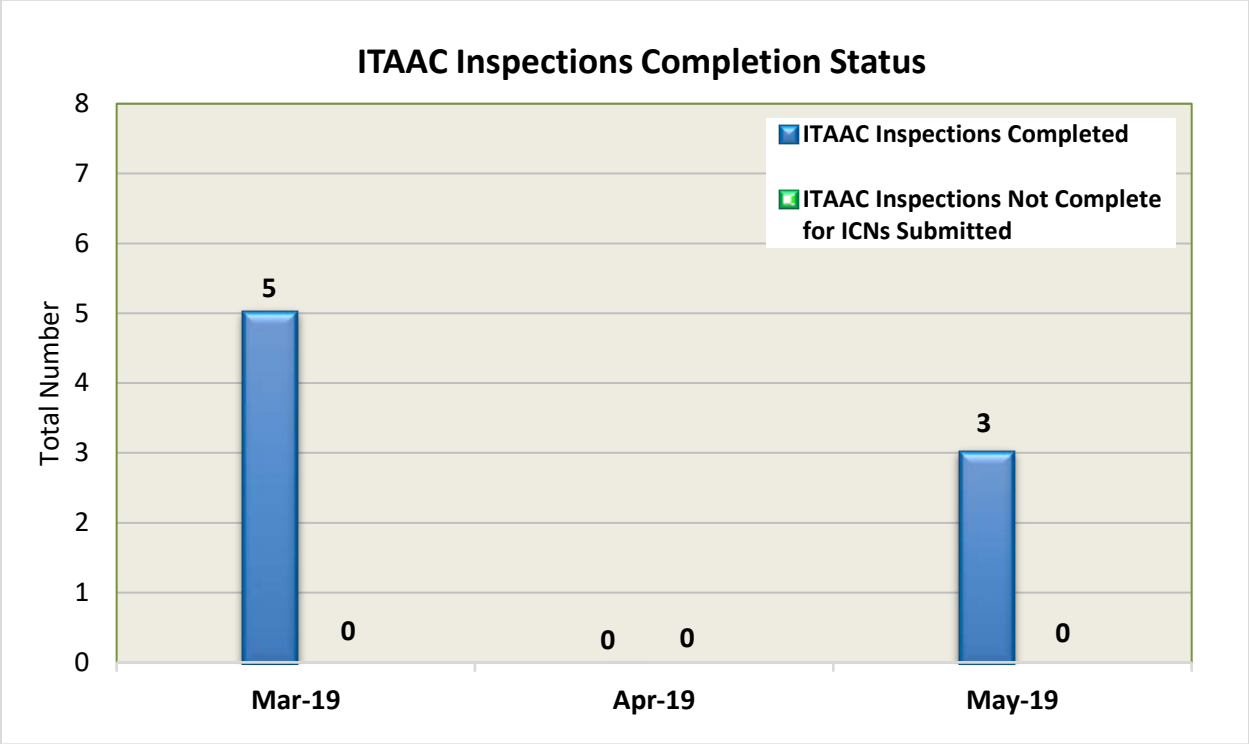
On June 12, 2017, the SACE, Tennessee Environmental Coalition, and Blue Ridge Environmental Defense League filed petitions seeking a hearing. The ASLB denied the Blue Ridge Environmental Defense League's petition to intervene and granted the SACE and the TEC's joint petition to intervene and admitted two contentions. Separately, TVA appealed the admission of the two contentions to the Commission, and the Commission upheld the admission of one contention and dismissed the other. In April 2018, the staff published its draft EIS two months ahead of the public milestone. On May 21, 2018, SACE/TEC submitted two new contentions on the draft EIS. On July 31, 2018, the ASLB issued a memorandum and order (LBP-18-04) denying the Intervenors' motion for leave to file new contentions, granted TVA's and the NRC Staff's Motions to dismiss the remaining admitted contention, and terminated the contested proceeding. The Board's decision was not appealed. The Commission will conduct the mandatory hearing on the application. The schedule for the mandatory hearing will be established after the final EIS and FSER are completed.

45. For reactors under construction, please provide:

Project Name	Project Type	Licensing Status
Vogtle Unit 3	COL Holder	COL issued on 02/10/2012
Vogtle Unit 4	COL Holder	COL issued on 02/10/2012

a. <u>The number of NRC inspections and ITAAC reviews forecast to be completed per month versus the number completed each month</u>;

NRC Inspections ITAAC Inspections:



Comments:

The graph above tracks, by month, the number of ITAAC inspections completed and the number of ITAAC inspections not completed for ITAAC Closure Notifications (ICNs) that had been received. For each ITAAC, there are predetermined inspections to be completed in order to provide assurance that the licensee has met the design commitments and that the ITAAC acceptance criteria are met. An ITAAC inspection is comprised of multiple inspection activities that may be performed over days, weeks, or months.

For this graph, the term "ITAAC Inspections Completed" means that all the associated NRC inspection activities tied to that ITAAC have been completed, verified, and marked "Inspection Complete" in the NRC database. The term "ITAAC Inspections Not Complete for ICNs Submitted" represents the number of ITAACs for which the completed box in the NRC database has not been checked for ICNs that had been submitted by the licensee.

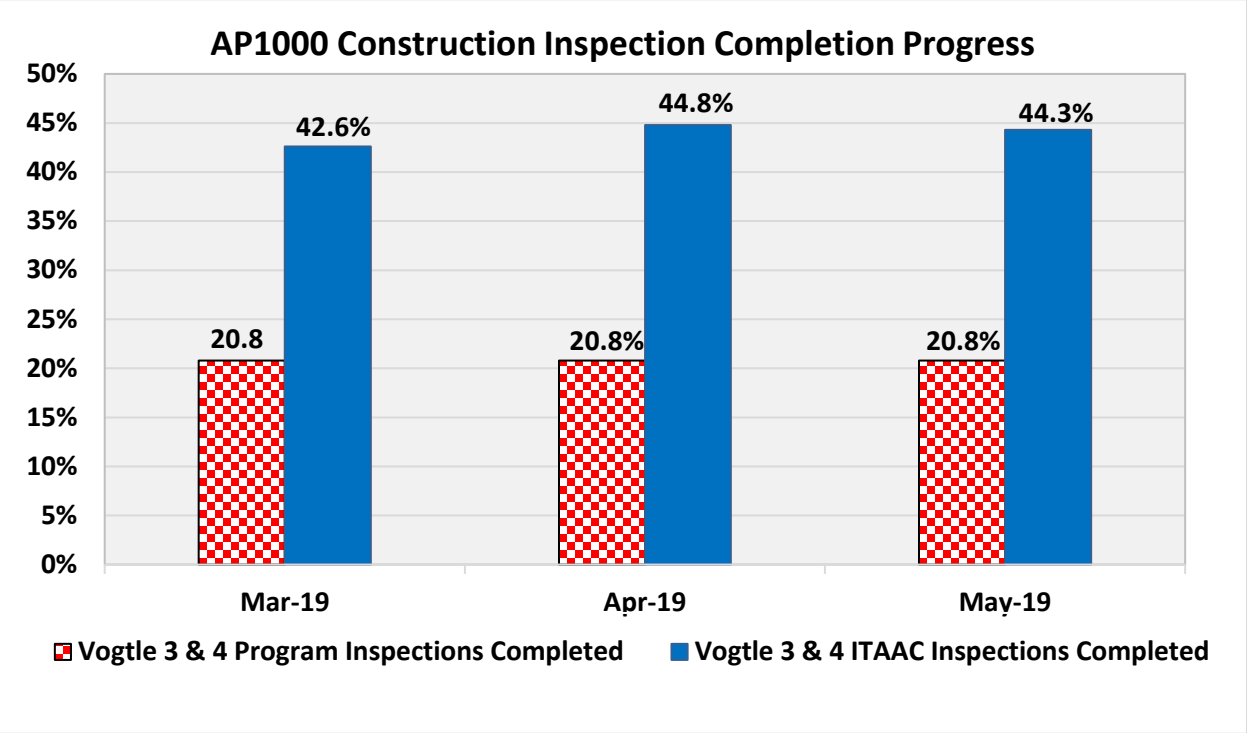
Because of the coordination between the NRC's inspections and the licensee's construction activities, the majority of the required inspections are scheduled and completed prior to the ICN submittal. The completion of these ITAAC-related inspections closely mirrors the completion status of the licensee's (Southern Nuclear Operating Company) associated work activities. Changes to the licensee's construction schedule due to weather conditions, work sequencing, and other factors impact when NRC inspections can be performed.

ITAAC Closure Notifications Reviews:

The NRC's goal is to complete 90 percent of ICN reviews within 60 days. However, some ICN reviews may be completed in significantly less time. Conversely, complex ICN reviews may require more than 60 days to complete. For this reason, it is difficult for the NRC to forecast in which month a specific ICN review will be completed based on its submittal date. Therefore, the NRC relies on the metrics reported in its response to question 45.b.

b. The percentage of NRC inspections and the percentage of ITAAC reviews completed within 30 days and within two months;

New Reactor Inspection Status:



Comments:

This graph represents the percentage of NRC inspections associated with ITAAC that have been completed with respect to the total number of inspections required for the Vogtle facility. Planned inspection activities are evaluated and updated to ensure they align with licensee's work activities.

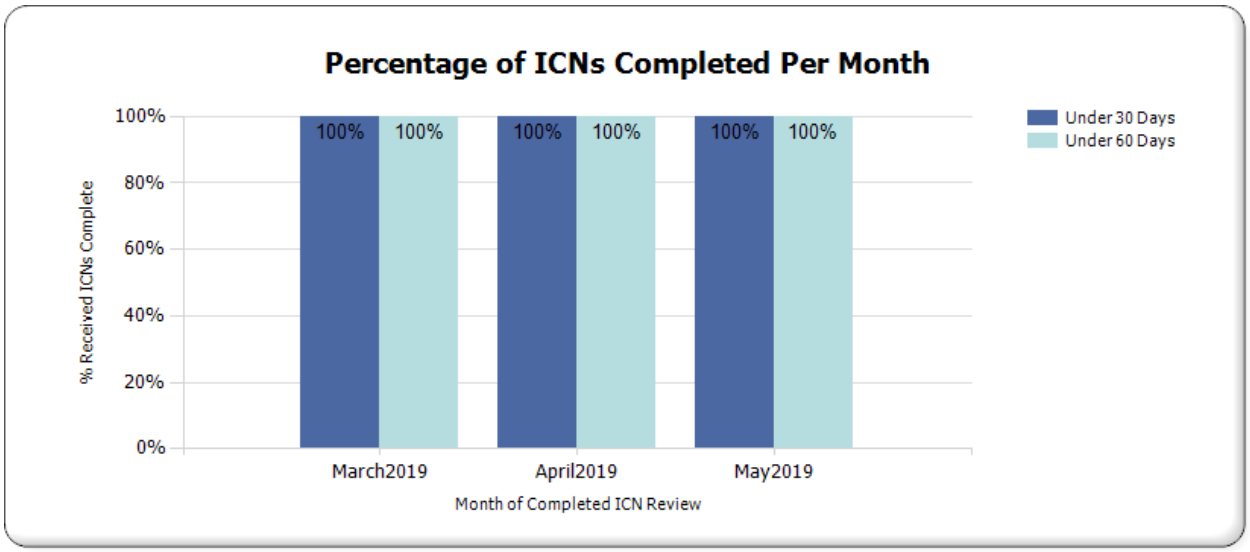
For this graph, the term "ITAAC Inspections Completed" means a specific inspection activity/plan is completed, verified, and approved in the NRC database. Monthly, this number of completed ITAAC inspection activities is compared to the total number of all the required ITAAC inspection activities/plans for the Vogtle Units 3 and 4 ITAAC inspection program.

Once all the associated ITAAC inspection activities are completed, verified, and approved, then "Inspection Complete" is marked in the NRC database. This information is presented earlier in Graph 45.a.

The graph reports “Program Inspections Completed” since the start of construction for the Vogtle facility, which include both programs required for construction and operation of Units 3 and 4. There are a total of five construction programs, which include Quality Assurance, Fitness for Duty, and ITAAC Management. In addition, there are a total of 20 operational programs, which include Fire Protection, Emergency Preparedness, Reactor Operator Training, and Security. The graph depicts the percentage of planned inspections that are completed and does not account for the level of effort required for inspections.

At this time, the majority of the work surrounding development of the ITAAC inspection plans has been completed. Region II Division of Construction Oversight is transitioning from development to maintenance and will continue to revisit the inspection plans and associated processes, with respect to changes in Southern Nuclear Operating Company’s construction schedule and licensing requirements, to ensure the effectiveness and efficiency of the inspection plans and to maintain readiness.

Timeliness of ITAAC Closure Notification Reviews:



Comments:

This bar chart shows the percentage of ICN reviews completed each month within 30 days and within 60 days.

c. For ITAAC reviews completed during the reporting period, please provide the date when the NRC received the ITAAC closure notice and the date when the review was completed.

For the current reporting period of May 2019, three ICN reviews were completed.

Review Month	Unit	ITAAC	Received Date	Approval Date	Under 60 Days
May 2019	VOG3	3.3.00.02g	5/8/2019	5/17/2019	✓
	VOG3	2.3.04.11	05/03/2019	5/8/2019	✓
	VOG3	2.2.03.09a.iii	4/29/2019	5/7/2019	✓

46. For reactors under construction, please provide:
    a. The number of license amendment reviews forecast to be completed in the reporting period;
    b. The number completed in the reporting period; and
    c. The number of those that were completed within 30 days.

Reporting Period	Number of License Amendment Reviews Forecast to be Completed in the Reporting Period	Number Completed in the Reporting Period	Number of Those that were Completed within 30 Days
May 2019	1	1	0

47. For reactors under construction, please provide the budgeted resources versus actual expenditures each month for the last 24 months.

The NRC does not formulate the budget on a monthly basis. The annual budget for construction resources is provided below. The monthly budgeted resources provided below are calculated as 1/12th of the annual budgeted construction resources.

FY 2017 Enacted Budget ($K)	$14,191
FY 2018 Enacted Budget ($K)	$10,467
FY 2019 Enacted Budget ($K)	$10,203

Month	Budgeted Resources ($K)	Total Expended ($K)
June-2017	$1,183	$1,058
July-2017	$1,183	$1,129
Aug-2017	$1,183	$886
Sept-2017	$1,183	$808
Oct-2017	$872	$753
Nov-2017	$872	$763
Dec-2017	$872	$623
Jan-2018	$872	$770
Feb-2018	$872	$767

FY 2017 Enacted Budget ($K)	$14,191
FY 2018 Enacted Budget ($K)	$10,467
FY 2019 Enacted Budget ($K)	$10,203

Month	Budgeted Resources ($K)	Total Expended ($K)
Mar-2018	$872	$879
Apr-2018	$872	$895
May-2018	$872	$858
June-2018	$872	$788
July-2018	$872	$776
Aug-2018	$872	$884
Sept-2018	$872	$678
Oct-2018	$850	$785
Nov-2018	$850	$765
Dec-2018	$850	$736
Jan-2019	$850	$700
Feb-2019	$850	$684
Mar-2019	$850	$639
Apr-2019	$850	$716
May-2019	$850	$727

48. Please provide a concise summary of the status of licensing and inspection for Vogtle 3 & 4, including any challenges to the timely resolution of: licensing issues, 10 CFR Part 52 interpretations, completion of inspections, or completion of ITAAC reviews.[29]

The NRC issued COLs to SNC and several co-owners on February 10, 2012, for two AP1000 units at the Vogtle site near Augusta, GA. As construction progresses, the NRC has increased the pace of construction inspections to verify compliance with the agency's regulations and to ensure that the new plants are constructed in accordance with their COLs. A summary of the license amendment inventory for Vogtle 3 & 4 is included in response to question 13. There are currently no challenges with timely resolution of licensing issues for Vogtle 3 & 4.

The graphs provided in Item 45 of this report represent the completion status of ITAAC inspections and ICN reviews. The completion of these ITAAC-related inspections closely mirrors the completion status of the licensee's work activities associated with the ITAAC. The graphs also display the percentage of completed program inspections, which are separate from the ITAAC-related inspections, and include both construction and operational programs. For ITAAC reviews, the NRC tracks the timeliness of ICNs reviewed and closed. In the past year the NRC has increased communication with the licensee and other external stakeholders through various public meetings and workshops to improve processes that support ICN closure, including inspection related activities. The NRC is implementing an integrated project plan that overlays key NRC activities on top of the licensee's construction and start-up schedule. In addition, the Vogtle Readiness Group (VRG) was created to provide division-level management attention to the timely implementation of the integrated project plan. NRC management is in

[29] No new information was added to this section since the last report.

regular contact with the VRG and the licensee to ensure effective communication and the timely resolution of issues.

Additionally, NRC has established metrics to represent the different aspects of the ICN review process and the inspection program. The metrics track performance, reinforce accountability, and communicate issues needing attention at the appropriate management levels. These metrics enhance early engagement of NRC management and are key internal and external communications tools. With the improvements identified to the processes and increased communication with the licensee, the staff does not foresee any major challenges in 2019.

49. Please describe any actions taken in the past 3 years or planned to improve the efficiency of new plant reviews, including milestone schedules to implement efficiency improvements. Please include any concerns arising from review experience in the past 3 years.[30]

The NRC proactively identifies ways to increase the effectiveness and efficiency of its new reactor reviews. For oversight of licensing activities at the Vogtle site, NRO senior managers have established quarterly meetings with the licensee executives to monitor progress of licensing activities supporting construction at the site. The Licensing Action Review Meetings provide an opportunity for both the NRC and SNC to be strategic in identifying and resolving topics that are needed to support construction.

Similarly, for the NuScale review, the NRC senior managers meet with NuScale executives quarterly. These meetings provide executives from both organizations the opportunity to discuss progress on known review challenges, to identify emerging issues, and to establish timelines for resolving these emerging issues to keep the project review on schedule.

Starting in mid-2017, the NRO management team developed and implemented new internal metrics to better track the timeliness related to the review of LARs supporting Vogtle licensing efforts. These metrics have identified license amendments that have been under lengthy reviews and have focused management's attention on the actions necessary to complete these reviews. The management and project managers meet biweekly to identify amendment requests that may require elevated management attention and to track the progress of license amendments, with particular attention to amendment requests that have been in review for 120 days or longer. NRO management has set an internal goal of completing all license amendment reviews within 180 days of their acceptance. With additional management attention and better use of pre-application meetings, NRO has been able to improve the timeliness of reviews.

NRO has also incorporated many of the lessons-learned from previous new reactor reviews into its review activities for the active DC and ESP applications. As discussed in response to question 24, NRO implemented an initiative in 2018 to improve the quality and safety focus of RAIs. The staff is also enhancing use of the regulatory audit tool.

NRO has instituted an "Enhanced Safety Focus Review" initiative for the NuScale design certification review. This initiative focuses the staff's review on first-of-a-kind or high safety, high risk areas of the design, and simplifies the review of lower safety or risk significant areas.

[30] No new information was added to this section since the last report.

In addition, the NRC has made significant progress on initiatives to enhance the regulatory framework for non-LWRs. For example, in December 2017, the NRC issued the "Regulatory Review Roadmap for Non-Light Water Reactors," which described flexible review options including the use of a staged-review process and the use of conceptual design assessments during the pre-application period. The actions for advanced reactor reviews are described more fully in response to question 52.

50. Please provide a list of any unresolved policy issues with regard to the licensing of SMRs. Please include an approximate date for when each issue was first raised, any actions taken or planned to resolve the issue, the milestone scheduled for resolution, and the projected date for resolution.

Issue Title/Applicability	Status	References
I. Appropriate Source Term, Dose Calculations, and Siting for SMRs Applicability: SMRs and non-LWRs	In the December 29, 2011, memorandum to the Commission, the staff stated it would remain engaged with SMR stakeholders regarding applications of mechanistic source term (MST) methods, review of pre-application white papers and topical reports it receives from potential SMR applicants concerning source term issues that discuss design-specific proposals to address MST, and considerations of research and development in this area. If necessary, the staff would propose revised review guidance or regulations, or propose new guidance to support reviews of SMRs. In Commission memoranda dated May 30, 2013, and June 20, 2014, the staff provided updates on interactions with DOE and nuclear industry organizations regarding MST. On February 7, 2016, the staff provided the Commission SECY-16-0012, which addressed this item. The paper concluded that (1) SMR and non-LWR applicants can employ modern analysis tools to demonstrate quantitatively the safety features of those designs, and (2) MST analysis methods can also be used by applicants to demonstrate the ability of the enhanced safety features of plant designs to mitigate accident releases, allow future COL applicants to consider reduced distances to Exclusion Area Boundaries and Low Population Zones and potentially increase proximity to population centers. **Disposition:** The staff continues to engage with interested stakeholders on this issue. The staff developed a draft white paper summarizing the assessment of current siting regulations, guidance, and Commission policy and	Staff Draft White Paper (11/29/17) SECY-16-0012 (02/07/16) Commission Memo (06/20/14) Commission Memo (05/30/13) Commission Memo (12/29/11)

Issue Title/Applicability	Status	References
	discussed it in a public meeting on December 14, 2017. During a May 3, 2018, public meeting, NEI provided feedback on this topic on behalf of the nuclear industry. The NEI stated their position that RG 4.7, "General Site Suitability Criteria for Nuclear Power Stations," should be updated to scale the population density guidance based on the smaller source term and lower probability of release anticipated for SMRs and advanced reactors. The staff is working with the Oak Ridge National Laboratory to develop a draft technical report to identify potential alternative siting criteria for SMRs and non-LWRs that recognizes the possible reduced offsite releases for advanced reactor designs. The report will provide insights to the staff for informing its plans to develop additional regulatory guidance, as appropriate, for SMR and non-LWR siting. The report is scheduled to be finalized by mid-2019. The staff will report to the Commission on any proposed actions, as described in SECY-16-0012.	
II. Offsite Emergency Planning (EP) Requirements for SMRs and other new technology. Applicability: SMRs and non-LWRs	In SECY-11-0152, the staff identified a possible approach for a scalable EP zone for SMRs. The NRO staff is working with NSIR and NRR on an internal working group to review these issues further. As part of the approach, the staff would liaise with other stakeholders (Department of Homeland Security/Federal Emergency Management Agency, the Environmental Protection Agency, Department of State, Department of Commerce, NEI, American Nuclear Society (ANS), and the public), consider NEI position papers on this topic and develop recommendations. In a May 30, 2013, Commission memorandum, the staff provided updates on its EP activities. The staff stated that it would not propose new policy or revise guidance for specific changes to EP requirements absent specific proposals from industry stakeholders. On December 23, 2013, NEI submitted a white paper on this topic. The staff conducted a public meeting to discuss the white paper on April 8, 2014, issued follow-up questions to NEI on June 11, 2014, and received NEI responses in November 2014. On May 29, 2015, the staff issued SECY-15-0077 regarding EP for SMRs	SECY-18-0103 10/12/18 Final Regulatory Basis (10/16/17) SRM-SECY-16-0069 (06/22/16) SECY-16-0069 (05/31/16) SRM-SECY-15-0077 (08/04/15) SECY-15-0077 (05/29/15) NEI Response to NRC Questions on White Paper (11/19/14) NRC Letter to NEI (R. Bell) (06/11/14)

Issue Title/Applicability	Status	References
	and non-LWRs. On August 4, 2015, the Commission approved the staff's recommendation to initiate a rulemaking. The staff developed SECY-16-0069, which discussed the rulemaking plan and schedule. On June 22, 2016, the Commission approved the staff's plan and schedule for the rulemaking. **Disposition:** The rulemaking will address EP issues for future SMRs, non-LWRs, and other new design technologies such as isotope producing facilities. The Commission directed the staff to utilize exemptions in the interim (e.g., for the TVA ESP) until completion of the EP rulemaking. The draft regulatory basis was published for public comment in the FR on April 13, 2017. A public meeting was held May 10, 2017, to discuss the draft regulatory basis. The public comment period closed on June 27, 2017. After considering the public comments, the staff issued the final regulatory basis on October 16, 2017. The staff discussed this rulemaking during a June 14, 2018, stakeholder meeting. The staff released the draft proposed rule language on August 1, 2018, (ADAMS Accession No. ML18213A264) to support ACRS briefings on August 22 and October 4, 2018. The proposed rule was provided to the Commission for its consideration in SECY-18-0103 on October 12, 2018.	NEI White Paper (12/23/13) Commission Memo (05/30/13) SECY-11-0152 (10/28/11)
III. Insurance and Liability for SMRs Applicability: SMRs and non-LWRs	In SECY-11-0178, the staff identified a potential inequity between the insurance requirements for facilities with power reactors that produce electrical power equal or greater than 100 MWe per unit and multi-module facilities with SMR designs that individually produce less than 100 MWe, but, in combination, produce more than 100 MWe. Specifically, the staff raised the question of whether, under the current Price-Anderson Act and associated regulatory language, insurance and indemnity coverage would be sufficient to pay all public claims in the case of an insurable event at a multi-module facility where an individual module is sized at less than 100 MWe. Since completing that paper, the staff prepared a comparative analysis of different SMR designs to further explore the potential inequity. The staff is also evaluating the differences in	SECY-11-0178 (12/22/11)

Issue Title/Applicability	Status	References
	potential consequences for postulated accidents for non-LWR designs in relation to insurance and liability requirements. The staff is using these analyses, and other inputs, to identify whether to recommend any changes to the Price-Anderson Act for SMRs and non-LWRs. **Disposition:** In accordance with the latest version of the Price-Anderson Act, the NRC will prepare a report to Congress, and an associated SECY paper, for the Commission's consideration, recommending the need for continuation or modification of the provisions of the Price-Anderson Act by December 31, 2021. This report and SECY paper will address any changes that the staff recommends for non-LWRs and SMRs. The staff engaged stakeholders on this topic during a November 2, 2017, public meeting and the staff will continue to keep stakeholders informed as the report to Congress is prepared.	
IV. Security and Safeguards Requirements for SMRs Applicability: SMRs and non-LWRs	In SECY-11-0184, the staff informed the Commission of its determination that the current regulatory framework is adequate to certify, approve, and license light-water SMRs, the manufacturing of SMR fuel, transportation of special nuclear material and irradiated fuel, and the interim storage of irradiated fuel proposed for light-water SMRs under 10 CFR Parts 50, 52, 70, 71, and 72, respectively. The staff also determined that security and material control and accounting requirements in 10 CFR Parts 72, 73, and 74, respectively, are also adequate. In the case of non-LWRs, the staff's preliminary conclusion is that the current security regulatory framework is comprehensive and sufficiently robust to certify, approve, and license non-LWRs. Sufficient provisions are available to provide flexibility for designers and applicants to meet performance-based and prescriptive security requirements and to apply methods or approaches to achieve the objective of high assurance that activities involving special nuclear materials are not inimical to the common defense and security and do not constitute an unreasonable risk to public health. On December 14, 2016, NEI submitted a white paper on a "Proposed Consequence-Based Physical Security Framework for Small Modular	SRM-SECY-18-0076 (11/20/18) SECY-18-0076 (08/01/18) Staff Draft White Paper (11/29/17) NEI White Paper (12/14/16) SECY-11-0184 (12/29/11)

Issue Title/Applicability	Status	References
	Reactors and Other New Technologies." This paper "... proposes an approach to security that considers the enhanced safety and security incorporated into these designs and provides a more effective and efficient means to protect the public health and safety." In the transmittal letter, NEI requests that "... the NRC establish regulatory positions on this approach and the associated policy and technical issues." NEI submitted a fee waiver request for NRCs review of this white paper. **Disposition:** The NRC approved NEI's fee waiver request and met with NEI on May 3, 2017, to discuss the review of their submittal. The NRC provided feedback on NEI's white paper in July 2017 and met with NEI again on October 12, 2017. The staff prepared a draft white paper to facilitate stakeholder interactions. The staff discussed this white paper with NEI and other stakeholders on December 13, 2017. The staff considered stakeholder input and prepared SECY-18-0076, "Options for Physical Security for Light-Water Small Modular Reactors and Non-Light-Water Reactors," which was sent to the Commission on August 1, 2018. On November 19, 2018, the Commission directed the staff to initiate a limited-scope revision to regulations and guidance related to physical security for advanced reactors and approved, subject to edits, a related rulemaking plan. During a December 13, 2018, Advanced Reactor Stakeholder meeting, participants discussed the scope of potential changes to physical security requirements. The staff is preparing the regulatory basis to issue for public comment in FY 2019 as described in the rulemaking plan.	
V. Functional Containment Performance Applicability: Non-LWRs	In SECY-93-0092, "Issues Pertaining to the Advanced Reactor (PRISM, MHGTR, and PIUS) and Candu 3 Designs and their Relationship to Current Regulatory Requirements," the staff proposed to evaluate the acceptability of proposed designs using a standard based upon containment functional performance rather than to rely exclusively on prescriptive containment design criteria. The staff also informed the Commission that it intended to approach this by comparing containment performance with the accident evaluation criteria. In SRM-SECY-93-	SRM-SECY-18-0096 (12/04/18) SECY-18-0096 09/28/18 Staff Draft White Paper (11/27/17)

Issue Title/Applicability	Status	References
	0092, the Commission approved the staff's recommendation. Subsequently, in SECY-03-0047, the staff recommended that the Commission approve the use of functional performance requirements to establish the acceptability of a containment or confinement structure (i.e., a non-pressure retaining building may be acceptable provided the performance requirements can be met) and the staff proposed that functional performance requirements be developed. In SRM-SECY-03-0047, the Commission disapproved the staff's recommendation stating that there was insufficient information at the time for the Commission to prejudge the best options and make a decision on the viability of a confinement building. The Commission directed the staff to develop performance requirements and criteria working closely with industry experts (e.g., designers, EPRI, etc.) and other stakeholders regarding options in this area, taking into account such features as core, fuel, and cooling systems design. The Commission also directed the staff to pursue the development of functional performance standards and then submit options and recommendations to the Commission. In SECY-05-0006, the staff discussed many of the concepts developed in previous communications between the staff and Commission on the topic of functional containment performance and, as directed in SRM-SECY-03-0047, outlined the attributes for a functional containment. The topic of functional containment was also addressed as part of the next-generation nuclear plant project in the context of high-temperature gas-cooled reactors. In light of the broad range of non-light water designs under consideration, the staff engaged the Commission to confirm whether the existing Commission direction in SRM-SECY-93-0092 should be applied more broadly to additional advanced reactor designs and to propose a risk-informed, performance-based approach to establishing performance criteria for structures, systems, and components and corresponding programs to limit the release of radioactive materials from advanced reactors.	SECY-05-0006 (01/07/05) SRM-SECY-03-0047 (06/26/03) SECY-03-0047 (03/28/03) SRM-SECY-93-092 (07/30/93) SECY-93-092 (04/08/93)

Issue Title/Applicability	Status	References
	Disposition: The staff has engaged stakeholders on this topic at several public meetings. The staff prepared a draft white paper on functional containment performance to facilitate stakeholder interactions. The staff discussed this white paper with stakeholders on December 14, 2017, and February 1, 2018, and with the ACRS on February 22, 2018, and April 5, 2018. The ACRS provided a letter on May 10, 2018. The staff considered ACRS and stakeholder feedback and prepared SECY-18-0096, "Functional Containment Performance Criteria for Non-Light-Water-Reactors," that was provided to the Commission on September 28, 2018. In SECY-18-0096, the staff recommended Commission approval of a proposed methodology for establishing functional containment performance criteria for non-LWRs in a manner that is technology inclusive, risk informed, and performance based. In SRM-SECY-18-0096, the Commission approved the staff's proposed methodology for establishing functional containment performance criteria for non-LWRs. The Commission also requested that the staff continue to keep them informed as it develops the licensing framework for non-LWRs and notify the Commission if future policy issues arise as this work progresses. The staff is incorporating the methodology for functional containment performance criteria in ongoing activities, such as the preparation of DG-1353, future revisions of RG 1.232, and interactions with specific designers.	

51. Please provide a list of any unresolved policy issues with regard to the licensing of advanced non-LWRs. Please include an approximate date for when each issue was first raised, any actions taken or planned to resolve the issue, the milestone schedule, and the projected date for resolution.[31]

See response to question 50. All of the SMR policy issues listed in that response are also applicable to non-light-water designs. In addition, there is one non-light-water specific issue included on that list: functional containment performance.

52. Please describe the status of preparations to review non-LWR applications including a milestone schedule and completion dates.

The agency has developed a vision and strategy to assure NRC readiness to conduct its mission for these technologies effectively and efficiently as described in "NRC Vision and

[31] No new information was added to this section since the last report.

Strategy: Safely Achieving Effective and Efficient Non-Light-Water Reactor Mission Readiness," which was published in the FR on July 21, 2016, for stakeholder input. The NRC updated this document (ADAMS Accession No. ML16356A670) to reflect stakeholder feedback and made it publicly available in December of 2016.

The NRC's non-LWR vision and strategy has three strategic objectives—enhancing technical readiness, optimizing regulatory readiness, and optimizing communication. The NRC has developed implementation action plans (IAPs) to identify the specific activities the NRC will conduct in the near-term (0-5 years), mid-term (5-10 years), and long-term (beyond 10 years) timeframes to achieve non-LWR readiness. In the fall of 2016, the NRC released its draft near-term IAPs to obtain stakeholder feedback. The staff also developed draft mid- and long-term IAPs, which were released to the public in February of 2017. The staff updated its IAPs to reflect stakeholder feedback in July of 2017 (ADAMS Accession Nos. ML17165A069 and ML17164A173).

The staff issued SECY-19-0009, "Advanced Reactor Program Status" (ADAMS Accession No. ML18346A075) on January 17, 2019. This paper provides the status of the NRC staff's activities related to advanced reactors, including the progress and path forward on each of the IAP strategies. It also provides an overview of the various external factors influencing the staff's activities to prepare for possible licensing and deployment of advanced reactors.

There are 6 individual strategies addressed in the near-term IAPs. These strategies, and the activities in support of each strategy, are discussed below.

Strategy	**Activities in support of the strategy**
1) Acquire/develop sufficient knowledge, technical skills, and capacity to perform non-LWR regulatory activities	• NRC contracted with the Oak Ridge National Laboratory to develop a 12-module training course on Molten Salt Reactors (MSRs). The course provided background on various MSR concepts presently under development, including history of earlier MSR projects, descriptions of conceptual designs, and expected technical and regulatory challenges. About 90 NRC staff attended the training along with several DOE staff in three separate 2-day sessions in May, August, and November 2017. Additional training on sodium-cooled fast reactors was held on March 26-27, 2019, and additional training on high-temperature gas-cooled reactors is scheduled for July 16-17, 2019. The NRC staff also contracted with Brookhaven National Laboratory to prepare a report on the "NRC Regulatory History of Non-Light Water Reactors," which will be finalized this year. This report will serve as a knowledge management and training tool for NRC staff on non-LWR licensing and policy issues. • NRC developed models of the competencies required for reviewing advanced reactor designs. Project managers and technical reviewers in NRO are currently in the process of assessing their skills against the models. Supervisors will also be able to

Strategy	Activities in support of the strategy
	complete an independent assessment of their employees' skills. Based on assessment results, any skill gaps that may exist can be identified and the system will help the employee identify developmental activities and create an individual development plan to close those gaps.
2) Acquire/develop sufficient computer codes and tools to perform non-LWR regulatory reviews	• The staff attended DOE and NRC-sponsored workshops and technology working groups, sought additional information through pre-application interactions, and focused its training efforts to better understand the reactor systems under development. In the near-term, these efforts are focused on the following areas: Reactor Kinetics and Criticality, Fuel Performance, Thermal-Fluid Phenomena, Severe Accident Phenomena, Offsite Consequence Analysis, Materials and Component Integrity, and PRA. • An initial screening of analysis codes for design-basis and beyond-design-basis event simulation was completed, and a suite of tools for further examination and consideration has been identified. The code suite comprises both NRC-developed and DOE-developed codes. Future efforts will evaluate codes in the code suite against analysis requirements. • A PIRT exercise was conducted for molten salt reactors. The PIRT focused attention on fuel salt MSRs due to their novel and unique feature of fuel being part of the coolant. The PIRT is considered preliminary in that design specifics are not available, but it is useful in that several phenomena requiring simulation could be identified based on existing information. • The staff completed a PRA report that summarizes previous work and issues for non-LWRs and identifies several policy decisions that may need to be made for non-LWRs. • On August 21, 2018, DOE briefed the ACRS on advanced computer models for reactor safety applications including models under development for non-LWRs. A follow-up ACRS briefing was held November 16, 2018, where the NRC staff briefed the ACRS on the role of confirmatory calculations in regulatory decisionmaking, and non-LWR developers discussed their plans for modeling and simulation tools.

Strategy	Activities in support of the strategy
	• The staff drafted reports that provide a coherent basis and technical rationale for the selection of computer codes, and related development activities, in support of safety reviews of non-LWR designs. The reports describe the factors used to select the codes, the work necessary to achieve readiness to support the safety reviews, and the approach that will be taken in prioritizing resources for code development activities. The staff briefed the ACRS on the draft reports on May 1, 2019. The staff plans to engage stakeholders in a public meeting on August 15, 2019, and meet with the ACRS on September 17, 2019, before finalizing the reports in late 2019.
3) Develop guidance for a flexible non-LWR regulatory review process within the bounds of existing regulations, including the use of conceptual design reviews and staged-review processes	• In October 2017, the staff issued a preliminary draft of "A Regulatory Review Roadmap for Non-Light-Water Reactors" (ADAMS Accession No. ML17279B177) and discussed it with stakeholders on November 2, 2017. The NRC issued the final regulatory review roadmap on December 26, 2017 (ADAMS Accession No. ML17312B567). • In June 2017, the NRC issued a preliminary draft document, "Nuclear Power Reactor Testing Needs and Prototype Plants for Advanced Reactor Designs," to solicit stakeholder feedback (ADAMS Accession No. ML17025A353). This document describes the relevant regulations governing the testing requirements for advanced reactors, describes the process for determining testing needs to meet the NRC's regulatory requirements, clarifies when a prototype plant might be needed and how it might differ from the proposed standard plant design, and describes licensing strategies and options that include the use of a prototype plant to meet the NRC's testing requirements. The NRC addressed stakeholder feedback and issued the final prototype document as part of the Regulatory Review Roadmap on December 26, 2017. • On February 3, 2017, the NRC issued DG-1330, "Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors" for formal public comment. The staff briefed the ACRS subcommittee on the draft final RG in February 2018 and the ACRS Full Committee in March 2018. On April 3, 2018, the NRC issued the final RG 1.232 (ADAMS Accession No. ML17325A611), along with the, "Public Comment Resolution Table" (ADAMS Accession No.

Strategy	Activities in support of the strategy
	ML17325A616). The notice of availability of RG 1.232 was published in the FR on April 9, 2018. • The NRC has engaged with the Licensing Modernization Project (LMP) being led by Southern Company, coordinated by the NEI, and cost-shared by DOE. The LMP's objective is to develop technology-inclusive, risk-informed, and performance based regulatory guidance for licensing non-LWRs for the NRC's consideration and possible endorsement. The NRC has reviewed four LMP white papers and sent a letter to the LMP on February 21, 2018, concluding its review of the white papers. After a series of public meetings, industry issued its consolidated LMP document (as NEI 18-04) on September 28, 2018 (ADAMS Accession No. ML18271A172). NEI 18-04 outlines an approach for use by reactor developers to select licensing basis events; classify structures, systems, and components; determine special treatments and programmatic controls; and assess the adequacy of a design in terms of providing layers of defense in depth. The staff and industry briefed the ACRS Future Plant Subcommittee on LMP in June and October 2018, and the ACRS full committee in February 2019. The NRC published draft regulatory guide DG-1353, "Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," in the FR on May 3, 2019, for public comment. This draft RG endorses, with clarifications, the principles and methodology in NEI-18-04 as one acceptable method for determining the appropriate scope and level of detail for parts of applications for licenses, certifications, and approvals for non-LWRs. The methodology described in NEI 18-04 and the draft RG also provides a general methodology for identifying an appropriate scope and depth of information to be provided in applications to the NRC for licenses, certifications, and approvals for non-LWRs. The NRC plans to issue a final regulatory guide in late 2019.
4) Facilitate industry codes and standards needed to support the non-LWR life cycle (including fuels and materials)	• The staff is actively participating in subgroups and working groups associated with the development of ASME Boiler and Pressure Vessel (B&PV) Code, Section III, Division 5. The staff is also participating in the “Task Group on ASME/NRC Liaison for Division 5” that seeks NRC, DOE, and industry stakeholder input in identifying gaps in ASME B&PV Code Section III,

Strategy	Activities in support of the strategy
	Division 5, which need to be resolved prior to considering endorsement in 10 CFR 50.55a. ASME sent a letter to the staff confirming that advanced reactor developers support NRC endorsement of the 2017 edition of ASME Section III, Division 5. Therefore, the staff is initiating the endorsement process. ASME also plans to submit a technical basis document for the 2017 edition. The staff discussed its plans for endorsement of ASME Section III Division 5 during the NRC's annual standards forum on September 11, 2018, and during a periodic advanced reactor stakeholder meeting held on September 13, 2018. The staff plans to discuss this topic again during a June 27, 2019, public meeting. • The staff is actively participating on several ANS standards working groups and consensus committees related to non-LWR safety standards and the joint ASME/ANS non-LWR PRA standard. On February 7, 2019, the NRC Standards Executive issued a letter to ASME Board Chair and ANS Standards Board Chair (ADAMS Accession No. ML19031C904) communicating the priority of various PRA standard development activities. The NRC has identified completion of the non-LWR PRA standard as a high priority consistent with NEIMA. The staff plans to discuss its plan for endorsement of the standard during a June 27, 2019, public meeting. • On September 26, 2017, the NRC held the second annual NRC Standards Forum, which was attended by representatives from many standards development organizations (SDOs), representatives from industry (NEI, the EPRI, and Technology Working Groups for non-LWRs), and representatives from DOE and DOE national labs. A portion of this year's standards forum was devoted to non-LWRs with the intent of working with stakeholders to identify new codes and standards needed for non-LWR development and to facilitate the codes and standards development and eventual endorsement by the NRC, as appropriate. A follow-up workshop on advanced reactor standards development was hosted by ANS and the NRC on May 2, 2018. On September 11, 2018, the staff held the third annual NRC Standards Forum, during which ANS provided an update on advanced reactor codes and standards development activities. The staff will continue to interface with SDOs, reactor developers, and other stakeholders to encourage standards

Strategy	Activities in support of the strategy
	development activities and to identify high priority standards for NRC involvement and potential endorsement. The next standards forum is planned in September 2019.
5) Identify and resolve technology-inclusive (not specific to a particular non-LWR design or category) policy issues that impact regulatory reviews, siting, permitting, and/or licensing of non-LWR nuclear power plants	• The NRC's key activities related to the resolution of policy issues in support of near-term IAP strategy 5 are discussed in response to questions 50 and 51 above. In addition, an April 2018 Commission briefing on advanced reactors included an overview of near term policy issues.
6) Develop and implement a structured, integrated strategy to communicate with internal and external stakeholders having interests in non-LWR technologies	• The NRC is conducting public meetings with stakeholders every 4 to 6 weeks. The most recent of these meetings was held on March 28, 2019, and the next one is scheduled for June 27, 2019. The NRC uses these stakeholder meetings to solicit input on policy and process issues related to the possible licensing and regulation of non-LWR technologies. • The NRC and DOE hosted a series of three Advanced Non-LWR Workshops. The most recent workshop was held on April 25 and 26, 2017. This series of workshops focused on opening a dialogue between key stakeholders to discuss challenges in the commercialization of non-LWR technologies and to discuss possible solutions. • On November 10, 2016, the NRC and DOE signed an MOU (ADAMS Accession No. ML16215A382) on the Gateway for Accelerated Innovation in Nuclear (GAIN) Initiative. GAIN is an initiative that is intended to provide the nuclear energy community with increased access to the technical, regulatory, and financial support necessary to move new or advanced nuclear reactor designs toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet. As described in the MOU, the NRC is responsible for providing DOE and the nuclear energy community with accurate, current information on the NRC's regulations and licensing processes. • The NRC will continue to share information with various international groups, including the NEA, the International Atomic Energy Agency, the Generation IV International Forum, and the NRC's

Strategy	Activities in support of the strategy
	international regulatory counterparts. The NRC chairs NEA's ad hoc group for international regulators of non-LWRs known as the Group on the Safety of Advanced Reactors. The purpose of the group is to bring interested regulators together to discuss common interests, practices, and problems, and address both the regulatory interests and research needs.