

Data Sheet – Operating Reactor Licensing Resource Estimates

Summary:

This information is a compilation of completed historic actions. Actual costs for future applications may vary depending on the specific circumstances. The NRC is committed to fulfilling its safety mission in a timely and cost-effective manner. The NRC staff has taken a number of actions since completion of the actions that were used to generate the below table to streamline and optimize licensing reviews. The NRC expects that efficiencies gained from these actions will reduce costs for future applicants. The NRC encourages licensees and applicants to engage in pre-application activities with NRC staff to facilitate mutual understanding of the regulatory process, gain schedule alignment, and resolve any foreseen technical challenges before the application is submitted.

These estimates have informed staff resource estimates as part of the acceptance review process, the fee estimate process in support of the annual fee rule, and the operating reactor budget formulation process. Using this data-driven approach, we can identify trends and outliers in licensing action resources and review schedules to help us better engage with our internal and external stakeholders.

Methodology:

The resource and schedule estimates included in this data sheet are based on a large dataset (about 3,700 rows of data) of completed licensing activities from 2020 – 2024. We used this large dataset to create an internal-facing Licensing Schedule and Resource Predictive Tool for calculating median ranges (+/- 25% from median) of staff hours and review durations for almost any type of operating reactor licensing activity, with additional keyword search functionality. In creating this data sheet and the accompanying graphics for the Operating Reactor Licensing Resource Estimator, the staff only included types of licensing actions that had at least four submittals reviewed since 2020, in order to have a sufficiently representative sample of reviews. The data for COVID-19 related licensing actions was excluded from all queries except specifically for the table titled, “COVID-19 Related Licensing Actions,” to ensure that these short-turn reviews did not skew the median values for “normal” licensing actions.

A Note on the NRC Fee Rule:

The estimated hours shown in the tables below represent NRC professional staff hours associated with project management and engineering review but do not include contractor hours (less than 2% of the licensing activities involved contractor support). The distribution of time among professional staff members (job categories) working on a project vary within each activity and from project to project. However, a single professional hourly rate is applied to all hours regardless of which professional staff contributed these hours. Indirect costs are included in the applied hourly rate as published in the current NRC Fee Rule. The median range estimates of hours shown in these tables are only intended to provide an approximate estimate of the total cost of NRC work on a billable activity based upon historical completion data.

Looking for Other Reactor Business Line Resource Estimates?

Periodically, the staff updates a Fee Estimate worksheet that contains high, medium, and low resource estimates for staff reviews across the operating reactor business line, including operating reactor licensing and oversight, operator licensing, and research and test reactor licensing actions. This “traditional” fee estimate data sheet also includes data on estimates when contractors are used to assist NRC in its review of licensing actions.

High-Level Types of Licensing Actions

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs ¹)
Amendments	91.5	184.3	371.5	6.8	9.6	11.5	803
Exemptions	14	28.5	77	2.4	3.4	7.4	111
Relief Requests	47.4	80.1	123.7	4.7	7.2	9.2	432
License Transfers	66.6	150.6	244	1.6	4.7	5.7	18
Power Upgrades ²	1205	1301.3	1358.1	9.8	10.2	10.8	4
Program Change Requiring Prior NRC Approval	30.1	51.3	80.9	3	3.5	5.7	18
Notice of Enforcement Discretion	15	24	36.3	0.1	0.2	0.2	19
Other Licensing Tasks*	14	22.5	37.2	2.7	5	6.9	342

* Other licensing tasks are activities that are not specifically requested by a licensee via correspondence but require NRC resources to review or support. For example, presubmittal public meetings, reviews of steam generator tube inspection reports, reviews of license renewal commitment changes, etc.

¹ Enterprise Project Identifier

² Only requests for Measurement Uncertainty Recapture (MUR) power uprates (PURs) were received during this period. The schedule and resources required to review new PUR applications will be heavily dependent on many factors. The NRC has established timeliness goals to complete new applications for an extended power uprate within 12 months and 5000 hours, a stretch power uprate within 9 months and 1840 hours, and a MUR power uprate within 6 months and 1000 hours. The most up to date information on PURs and NRC's readiness to review new PUR applications can be found on the NRC website <https://www.nrc.gov/reactors/operating/licensing/power-uprates.html>.

License Amendments:

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs ¹)
Amendments - All	91.5	184.3	371.5	6.8	9.6	11.5	803 ²
Exigent*	96.3	159	176	0.3	0.7	1.3	11
One-Time*	204.1	256.9	268.6	0.9	1.9	3.8	14
10 CFR 50.69 ^{2*}	610.6	653.5	744.5	11.5	12.1	14.2	27
EAL ³ Scheme*	123	192.3	262.8	11.1	11.4	12.7	11
ILRT ^{4*}	361	441.3	512.8	10	10.3	10.9	17
AST ^{5*}	261	1022	1417	9.6	10.4	12	5
PT ⁶ Limits*	208	308.8	381.3	9.2	10.6	11.7	14

* Indicates a keyword search – may not return all licensing actions related to this keyword due to spelling or phrasing differences

¹ Enterprise Project Identifier

² Initial implementation of a 10 CFR 50.69 program. Modifications to approved programs included in the “Amendments – All” category above.

³ Emergency Action Level

⁴ Integrated Leakage Rate Testing/Leak Rate Test

⁵ Alternate/Alternative Source Term

⁶ Pressure and Temperature

License Amendments Adopting Technical Specifications Task Force Travelers (TSTFs)

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs)
TSTFs - All	62.4	98.4	184.4	5.4	8.2	10.8	264
TSTF-425	364.6	403.3	436.4	10	10.8	13.2	7
TSTF-439	126	136.5	154.5	10.7	11	11.1	5
TSTF-490	115.3	165.9	193.2	8.7	9.1	9.9	4
TSTF-501	49	83	91.4	4.9	8.5	10.2	7
TSTF-505	1234.3	1424.3	1554	11.9	12.7	13.4	25
TSTF-529	46.8	54.8	60.6	5.3	6	7.2	8
TSTF-541	53	83	156	6	6.4	8.5	9
TSTF-547	164.9	200.3	205.8	8.7	8.9	10.2	4
TSTF-554	65.3	83	129	5.2	5.6	6.3	11
TSTF-563	80	100.5	125.8	7.7	8.8	9.9	15
TSTF-564	119	157.6	192.1	7.3	8.9	9.8	10
TSTF-566	51.1	57.5	70.7	7	9.2	11	6
TSTF-567	44.3	64.6	72.9	5.4	6.7	7.6	8
TSTF-568	34	55.3	81.4	3.7	4.8	7.7	6

TSTF-569	59.6	76	102.4	5.5	6.3	8.4	11
TSTF-577	47.3	60.4	105.9	4.6	4.8	5.8	18
TSTF-580	48.4	69.3	92	5	6.1	6.2	6
TSTF-582	72.7	89.8	100.9	4.3	4.8	7.3	16
TSTFs - All Non- CLIIP ¹	72.5	110.8	199.3	6.2	8.8	11	224
TSTFs - All CLIIP	45.3	62.8	85.4	4.8	5.3	6	40

¹ Consolidated Line-Item Improvement Program

Relief Requests

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs)
Relief Requests - All	47.3	80	123.5	4.7	7.2	9.2	433
IST ¹	46	59.5	92.5	4	6	7.8	45
ISI ²	55.6	95.3	150	6.6	8.8	10	155
Impractical*	117.4	121	179.2	7.5	8.2	9.8	12
Code Case (All)*	41.5	67.5	125.0	4.7	6.0	8.9	45
OMN ³ *	29.5	43	54.3	4.8	5.1	6.4	12
ASME ⁴ Code Case N-729-6*	42.9	47.1	74.8	1.6	3	4.7	6
ASME Code Case N-752*	290.4	345.5	378	13	14.8	17.4	4
Code Case OMN-28	27.7	29.5	35.3	2.6	4.1	5.5	4
Verbal*	79.7	81.9	117.1	4.1	4.7	5.1	10

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¹ Inservice Testing

² Inservice Inspection

³ An Operations and Maintenance ASME Code Case

⁴ American Society of Mechanical Engineers

Exemptions

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs)
Exemptions - All	14	28.5	77	2.4	3.4	7.4	111
10 CFR 73* - All	10.5	15	20.5	2.3	2.7	3.3	53
10 CFR 73.5*	7.5	14.3	19.5	2.1	2.5	3.0	33
Record Retention*	19.8	23	26.3	4.4	6.9	9.4	4
10 CFR 50.54*	61.6	78.1	109.5	6.1	7.1	7.7	4
10 CFR 50.71, FSAR Schedule*	17	34	43	2.8	4.1	5.6	7

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Covid-19 Related Licensing Actions

	Median -25%	Median Hours	Median +25%	Median -25%	Median Project Duration (Months)	Median +25%	Sample Size (EPIDs)
Licensing Actions - All	10	20	39.7	0.4	0.8	1.4	290
License Amendments	75.6	139	251.2	0.8	1.3	2.4	20
Relief Requests	28.5	48.3	67	2.1	4.1	5.9	41
Exemptions - All	9	14.5	24.8	0.4	0.7	1	225
Exemptions – 10 CFR Part 26	8.1	10	17	0.1	0.3	0.4	59
Exemptions – 10 CFR Part 73	9	15	22.5	0.5	0.8	1.0	111
Exemptions – 10 CFR 50, Appendix E	13.4	23	35.6	0.6	1.1	1.8	48

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