

Commissioners' Voting Efficiency at the United States Nuclear Regulatory Commission

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INTRODUCTION

The NRC is headed by a commission of up to five members, each having the right and responsibility to vote on the various policies, procedures, and guidance put together by the NRC staff. The NRC staff communicates policy options, technical evaluations, or recommendations through commission papers (SECY), which are sent to the commissioners. The staff then waits for the commission's action or decision. The commissioners deliberate and then vote individually. The votes are documented in Commission Voting Records (CVR). A Staff Requirements Memoranda (SRM) is generated based on the consensus of the vote records and constitutes the Commission's response to the SECY, reflecting the collective voice of the commissioners.

There has been substantial scrutiny on the speed and efficacy of NRC staff in relation to regulatory modernization and licensing actions; however, the voting efficiency of commissioners at the NRC is an important but often neglected piece. A review of voting records and timelines indicates the commission has become less efficient over time in terms of both time spent on voting and the number of SECYs reviewed. The commission has consistently exceeded its own internal deadlines for voting on SECYs. A Commission with three members takes longer and is less effective than a Commission with five members. Reduced efficiency is inversely related to the number of SECYs considered by the Commission, suggesting additional workload is not the cause.

This is a new analysis; to the authors' knowledge, no peer-reviewed papers or research have been published regarding the efficiency of NRC Commissioner votes. In non-academic circles and the broader nuclear-energy community, this issue has been brought up in some recent roundtable discussions. [1] This paper is the first to present a formal quantitative analysis of the commissioners' voting records. Further evaluation of driver variables and variance is reserved for future work.

Methodology

This study employs a novel dataset gathered using publicly available information from the U.S. Nuclear Regulatory Commission (NRC). Commissioner timeline data—including name, party affiliation, role (chair or

commissioner), and term dates—was compiled from the NRC's official Commission webpage. [2] SECY and SRM records were programmatically scraped from the corresponding tables on the NRC's Commission Papers website. [3] CVR documents were downloaded in PDF format from the NRC's CVR archive and parsed to extract detailed information on individual commissioner votes.

Noticeably, there were typos or errors in the online tables or CVR documents from the NRC. By manually fixing those, no logic error is present in the final dataset (e.g., voting date is prior to the SECY introduction date).

The SECY, SRM, and CVR data points were merged using the common SECY number identifier, resulting in a unified dataset of Commission activity. Commissioner timeline data were then integrated into this dataset to enable time-based analysis of individual voting behavior, institutional efficiency, and decision-making patterns.

The Internal Commission Procedure sets the goal for commissioners to vote in 18 business days on the majority of the papers, but longer voting dates are acceptable for rulemakings: 30 business days for the proposed rules and 60 business days for the final rules. [4] SECY types were identified during the data cleaning process using keywords - "Proposed Rule" and "Final Rule" in document description, and the majority were categorized as "other", which is supposed to be voted on within 18 business days. The analysis focuses on two primary metrics: 1) the time to complete the process from submission of a SECY to individual votes, and 2) the time from the last vote to the issuance of a final SRM. The term "efficiency" in this paper relates to the Commissioner's decision-making and voting on timelines set in Commission procedures.

Data Availability

This paper utilizes 1,035 SECY papers that contain complete records for SECY introduction dates, CVR dates, and SRM publication dates, ensuring consistency and comparability across cases. Those SECYs were introduced from 1997 to 2024. The 2025 data were excluded due to incompleteness. Documents with missing records were not included.^a

Although there are 2,575 SECYs without corresponding voting records or SRMs, not all SECYs require a response from the commissioners. Typically, rulemaking and policy

statements SECYs need action from the commission. Weekly information reports or annual reports are standard updates, which do not require a formal response from the commissioners.^b This analysis does not include 30 “open” rulemaking SECYs, those SECYs with “Proposed Rule” or “Final Rule” in their titles that have yet to have a final SRM, as the final vote time is not yet determined.

RESULTS

The processing time for an SECY not only exceeds the required timelines, but it is also inconsistent, unpredictable, and has gotten longer over time. For instance, SECY-16-0033, a draft final rule, was returned to the staff without commission action after 2,106 business days because “the landscape has changed”. [5] Out of the 1,035 SECYs, all votes were submitted on time for only 345 SECYs (33.3%). In over two-thirds of the SECYs, at least one vote was not submitted by the deadline.

Historical Trend

Institutionally, the Commission has been voting more slowly since 2016, while the number of SECYs to act on has also been decreasing.

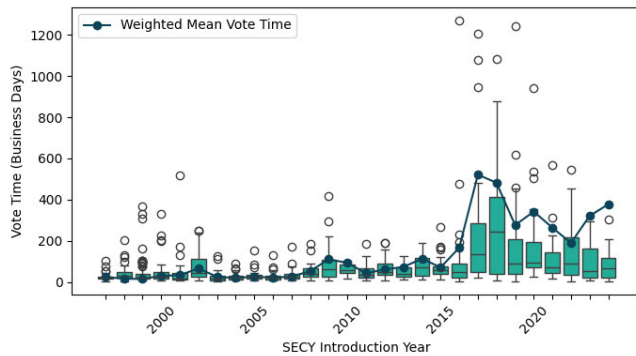


Fig. 1. Distribution and weighted mean vote time in business days by SECY introduction year.

Weighted Wait Time

The weighted mean wait time is calculated as the average wait time multiplied by the ratio of the average number of SECYs across all years to the number of SECYs introduced in a given year. This metric accounts for workload variation and provides a normalized measure of institutional efficiency.

$$\bar{x} = \frac{\sum W_t x_t}{\sum x_t} \quad (1)$$

Where W is the weight given by the number of SECYs in year t relative to SECYs in all years, and x is the average voting time in year t .

Fig. 1 shows stable trends of vote time for SECY papers introduced before 2016. While median vote times show moderate increases over time and decrease after the peak in 2018, the weighted mean reveals sharp spikes in voting delay from 2016 to 2020, suggesting that delays were especially severe when workload was lower than average.

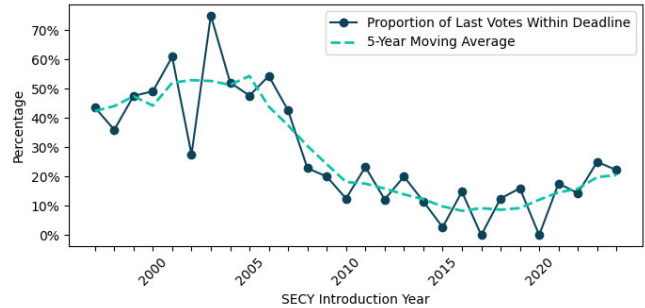


Fig. 2. Proportion of last vote completed on time by SECY introduction Year, based on SECY type.

Fig. 2 illustrates the proportion of SECYs for which the final commissioner's vote was completed within a deadline, depending on the type of SECY. The trend reveals a sharp decline in on-time voting performance after 2006, with on-time rates falling below 20% for much of the following decade.

While earlier years show moderate to strong adherence to internal timelines, peaking at around 70% in 2003, the Commission's ability to vote on SECYs within expected timeframes appears to have significantly deteriorated from 2008 onward. This sustained decline suggests a growing procedural or institutional delay that is not explained by SECY type or the number of SECYs.

Number of Members in the Commission

Historically, there have been several periods during which the NRC operated with fewer than five commissioners. Notably, from mid-year 2016 to mid-year 2018, the Commission only had three members. That time period matches the sudden voting time increase for SECYs introduced in 2016. A three-member commission is far less efficient than a five-member full commission.

Chairman David Wright's second term expired in June 2025, creating a three-member Commission. He was reconfirmed in July 2025, but Commissioner Caputo resigned concurrently, perpetuating a three-member Commission for the foreseeable future.

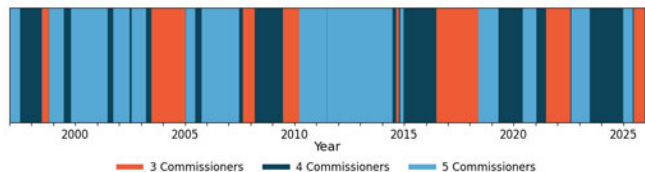


Fig. 3. NRC Commissioner count over time (Jan 1997-Dec 2025)

A linear regression (OLS) shows that having a three-member commission increases voting time by almost 100%.^c A three-member commission allows for any one member to withhold their vote to avoid action (i.e., pocket veto), increasing time and resources to reach consensus.^d

Table I. OLS regression estimate of vote time.

DEPENDENT VARIABLE:	
VOTE TIME IN BUSINESS DAYS	
5 COMMISSIONERS	OMITTED
4 COMMISSIONERS	7.19** (3.56)
3 COMMISSIONERS	48.27*** (4.51)
CONSTANT	43.50*** (2.11)
OBSERVATIONS	4,346
R-SQUARED	0.026
ADJUSTED R-SQ.	0.026

From CVR to SRM

After all commissioner votes are cast, a draft SRM will be generated based on the voting consensus, reviewed by the commission, and the Office of the Secretary will issue a final SRM. By calculating the business days between the last vote of the commissioners and the issuance date of SRM, the median SRM preparation time ranges from 4 to 14 business days, which indicates the process of preparing SRM is not as slow as the commissioner voting and did not experience a sudden time spike as the commissioner voting does.

CONCLUSION

This study evaluated the patterns of Commissioner votes at the NRC. This study finds that the Commission does not operate efficiently and often cannot meet the established timelines. This effect is especially apparent in the past decade and may significantly impact the licensing of new nuclear energy projects. Overall, the Commission must act quickly and demonstrate leadership to provide a positive example for the NRC staff. Detailed recommendations are:

- 1) The commissioners should adhere to voting policies and timelines in Commission procedures.
- 2) Outliers that result in voting delays should be expected to occur on occasion, but should be less than 2%^e of SECYs.

- 3) Extensions should have limited use cases, and no more than one extension should be used per SECY for each Commissioner.
- 4) Commission efficiency metrics should include both staff and Commission activity.

ENDNOTES

^a There are 2 cases with CVR record only, 21 cases with SRM record only, 17 cases with SECY and CVR record, 146 cases with SECY and SRM record, and 6 cases with CVR and SRM records. Those were excluded from this analysis.
^b For simplicity, the business days calculation only accounts for weekends but does not account for federal holidays. The final results could differ by around 11 days each year.
^c The number of Commissioners was counted on the SECY introduction date.
^d Please note that there are other possible factors for a delayed decision that may not be included here in the model, and correlation is not causation.
^e 2% is a reasonable standard for “rare” cases, between 2 standard deviations at 95% and 3 standard deviations at 99.7%.

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