UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

NORTH AMERICAN ELECTRIC	**)**	**Docket No. RR10-1-___**
RELIABILITY CORPORATION	**)**	**Docket No. RR13-3-___**

ANNUAL REPORT OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION ON WIDE-AREA ANALYSIS OF TECHNICAL FEASIBILITY EXCEPTIONS

The North American Electric Reliability Corporation ("NERC") hereby provides the 2022 Annual Report on Wide-Area Analysis of Technical Feasibility Exceptions (the "2022 Annual Report") in compliance with Paragraphs 220 and 221 of the Federal Energy Regulatory Commission's ("FERC" or "Commission") Order No. 706[1] and Appendix 4D of the NERC Rules of Procedure ("ROP"). The 2022 Annual Report covers the period from July 1, 2021 through June 30, 2022.

I. BACKGROUND

In Order No. 706, FERC approved eight Critical Infrastructure Protection ("CIP") Reliability Standards and, among other things, directed NERC to develop a set of conditions or criteria that a registered entity must follow to obtain a Technical Feasibility Exception ("TFE") from specific requirements in the CIP Reliability Standards.[2] The Commission stated that the TFE process must include: mitigation steps, a remediation plan, a timeline for eliminating the use of the TFE unless the registered entity provides appropriate justification, regular review of the

[1] *Mandatory Reliability Standards for Critical Infrastructure Protection*, Order No. 706, 122 FERC ¶ 61,040 (2008) [hereinafter Order No. 706].

[2] *Id.* at P 178.

continued need for the TFE, internal approval by senior managers, and regional approval through the Electric Reliability Organization ("ERO").[3]

Order No. 706 also required that NERC submit an annual report to the Commission that provides a wide-area analysis of the use of TFEs and their effect on Bulk-Power System reliability. The Commission stated:

> The annual report must address, at a minimum, the frequency of the use of such provisions, the circumstances or justifications that prompt their use, the interim mitigation measures used to address vulnerabilities, and efforts to eliminate future reliance on the exception…. [T]he report should contain aggregated data with sufficient detail for the Commission to understand the frequency with which specific provisions are being invoked as well as high level data regarding mitigation and remediation plans over time and by region.[4]

In October 2009, NERC filed amendments to its ROP to implement the Commission's directive in Order No. 706, proposing Section 412 (Requests for Technical Feasibility Exceptions to NERC Critical Infrastructure Protection Reliability Standards)[5] and Appendix 4D (Procedure for Requesting and Receiving Technical Feasibility Exceptions to NERC Critical Infrastructure Protection Reliability Standards). On January 21, 2010, the Commission approved NERC's amended ROP.[6]

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3 *Id*. at P 222.

4 *Id*. at PP 220-21.

5 Section 411 in the currently effective ROP (May 2022).

6 *N. Am. Elec. Reliability Corp.*, 130 FERC ¶ 61,050 (2010) [hereinafter January 21 Order], *order on compliance*, 133 FERC ¶ 61,008 (2010) [hereinafter October 1 Order], *order on reh'g*, 133 FERC ¶ 61,209 (2010), *order on compliance*, 135 FERC ¶ 61,026 (2011) [hereinafter April 12 Order]. The Commission requested further information and clarification regarding certain aspects of the TFE process. On April 21, 2010, NERC submitted its compliance filing in response to the January 21 Order. On October 1, 2010, the Commission issued an order accepting NERC's April 2010 filing as partially compliant and directing further changes to the TFE Procedure. *See* October 1 Order. On December 23, 2010, NERC submitted a compliance filing in response to the Commission's October 1 Order, which the Commission subsequently accepted. *See* April 12 Order.

On April 8, 2013, NERC filed revisions to Appendix 4D of the ROP to streamline the TFE approval process, reflecting NERC, Regional Entity, and industry experience processing TFE requests since the inception of the program. On September 3, 2013, FERC approved the proposed revisions and directed limited revisions to Appendix 4D, including modifications to: (1) specify a time frame for reporting Material Changes to TFEs upon identification and discovery; and (2) require the annual TFE report to include information on Material Change Reports and TFE expiration dates.[7] NERC submitted a compliance filing consistent with the directives from the September 2013 Order, which the Commission approved on January 30, 2014.[8] Sections 11.2.4 and 13 of Appendix 4D set forth the requirements for the annual TFE report, as modified in accordance with the September 2013 Order.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to:

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III. 2022 ANNUAL REPORT

This section provides the TFE information required by Appendix 4D of the ROP. In accordance with Appendix 4D, NERC prepared the 2022 Annual Report in consultation with the

[7] *N. Am. Elec. Reliability Corp.*, 144 FERC ¶ 61,180 at PP 14, 17-18 (2013) [hereinafter September 2013 Order].

[8] *N. Am. Elec. Reliability Corp.*, Docket No. RR13-3-001 (Jan. 30, 2014) (delegated letter order).

Regional Entities. The Regional Entities provided regular reports to NERC regarding the types of Covered Assets for which the Regional Entities have approved TFEs.[9] In addition, each Regional Entity provided information on the elements identified in Section 13 of Appendix 4D to be included in the 2022 Annual Report. NERC compiled and analyzed the TFE data provided by the Regional Entities in preparation for the 2022 Annual Report.

For the purposes of this report, any reference to the year 2022 refers to the TFE reporting period between July 1, 2021 and June 30, 2022. For the purposes of demonstrating trends, some figures or tables may refer to previous TFE periods, such as 2021 and 2020.

The transition to the CIP cybersecurity Reliability Standards approved in Order No. 791,[10] commonly referred to as the CIP version 5 standards, resulted in a significant decrease in the number of TFEs. This decrease has enabled the Regional Entities to better evaluate the risk and impact of TFEs, and gain a more complete understanding of the value of the TFE process compared to the administrative burden it places on registered entities and Regional Entities. NERC continues to consider opportunities to modify or eliminate the current TFE process to reduce that burden in two ways. First, the NERC Align Tool will normalize the tracking of TFEs between regions and greatly enhance the ability of NERC to monitor and report.[11] Second, multiple NERC standards drafting teams are considering ways to remove or minimize the need for TFEs in each requirement.

[9] Appendix 2 of the ROP defines the term "Covered Asset" as "any BES Cyber Asset, BES Cyber System, Protected Cyber Asset, Electronic Access Control or Monitoring System, or Physical Access Control System that is subject to" a TFE.

[10] *Version 5 Critical Infrastructure Protection Reliability Standards*, Order No. 791, 145 FERC ¶ 61,160 (2013) [hereinafter Order No. 791], *order on clarification and reh'g*, Order No. 791-A, 146 FERC ¶ 61,188 (2014).

[11] NERC initiated the Align Project to advance its risk-based posture through platform alignment across NERC and the Regional Entities. Additional information on Align may be found on the initiative webpage, https://www.nerc.com/ResourceCenter/Pages/CMEPTechnologyProject.aspx.

Correction to the 2021 Annual Report

While preparing the 2022 Annual Report, NERC identified an error in the total number of CIP Applicable Entities who have Medium and High Impact BCS in one region. In 2021, this region had reported 123 such entities but in 2022 there were only 56 reported. The correct number of entities claiming High or Medium Impact BCS should have been 296 for 2021. The reporting error was due to the inclusion of Low Impact BCS in that region's total during 2021.

Summary of 2022 TFE Data

The following is the summary of the TFE data reported by each Regional Entity for the elements identified in Section 13.1 of Appendix 4D:[12]

1. **Frequency of use of the TFE Request process**

> *The frequency of use of the TFE Request process, disaggregated by Regional Entity and in the aggregate for the United States and for the jurisdictions of other Applicable Governmental Authorities, including (A) the numbers of TFE Requests that have been submitted and approved/disapproved during the preceding year and cumulatively since the effective date of this Appendix, (B) the numbers of unique Covered Assets for which TFEs have been approved, (C) the numbers of approved TFEs that are still in effect as of on or about the date of the Annual Report; (D) the numbers of approved TFEs that reached their TFE Expiration Dates or were terminated during the preceding year; and (E) the numbers of approved TFEs that are scheduled to reach their TFE Expiration Dates during the ensuing year.*

The data from this reporting period indicates that the number of registered entities that are engaging in the TFE program remains relatively stabilized. Figure 1 shows a breakdown of the number of registered entities with approved TFEs within each region. There are 95 total registered entities with approved TFEs across the ERO Enterprise, a decrease from the 114 registered entities in 2021.

[12] Unless stated otherwise, a table or reference to "2022" refers to the reporting period for this report: July 1, 2021 – June 30, 2022.

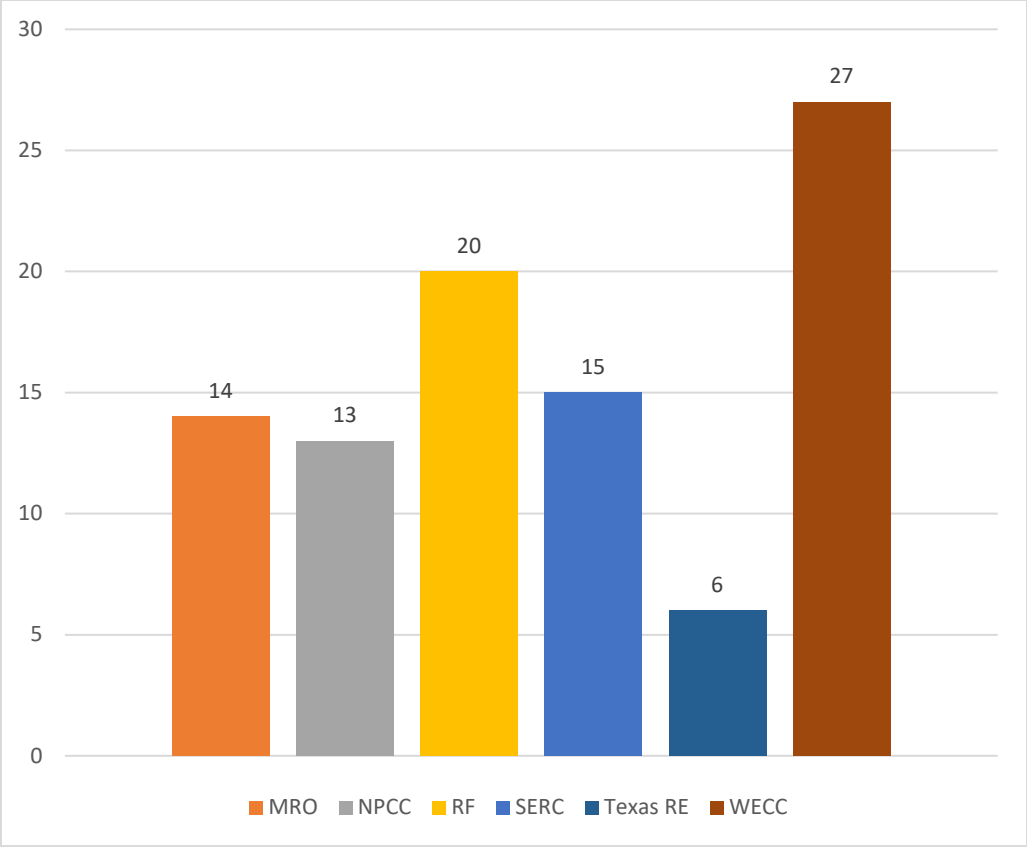


Figure 1: Number of registered entities by Region with approved TFEs as of 6/30/2022

Figure 2 depicts the number of registered entities, by Regional Entity, with TFEs over the last three reporting periods. The overall number of registered entities with approved TFEs has remained relatively consistent over the past two reporting periods. Among all six regions, the ERO saw a small net reduction of registered entities with approved TFEs, with SERC gaining one entity and MRO and Texas RE removing two and three entities, respectively.

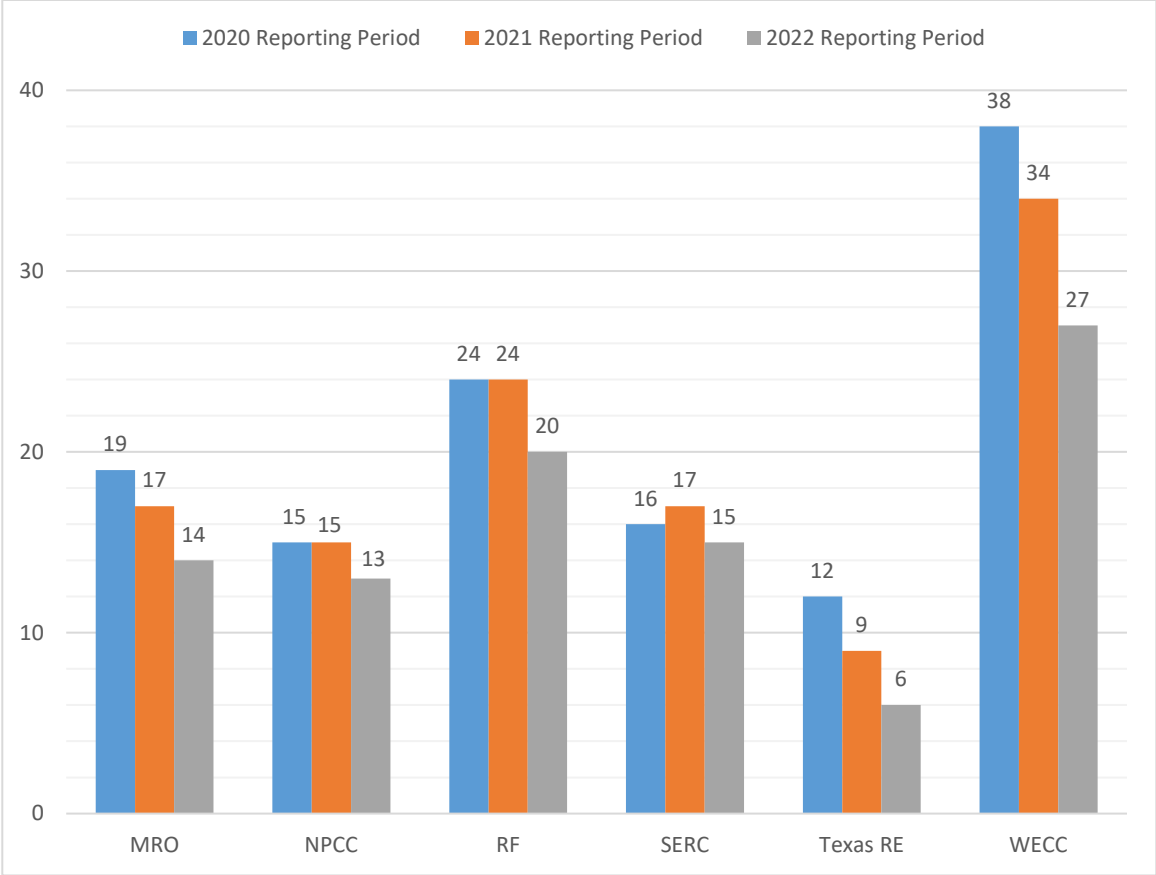


Figure 2: Three Year Trend of registered entities with Approved TFEs

Figure 3 visualizes data on the use of the TFE program for the last three reporting periods. The first set of columns in Figure 3 shows the number of registered entities subject to the CIP Reliability Standards. The CIP Reliability Standards apply to the registered entities designated in Applicability Section 4.1 of CIP-002-5.1a through CIP-014-3 (e.g., Balancing Authority, certain Distribution Providers, etc.). From an industry-wide perspective, the number of "CIP applicable" entities in the U.S. (i.e., with registrations to which the CIP Reliability Standards apply) has decreased from 1562 to 1525.

The second set of columns in Figure 3 depicts the number of CIP applicable registered entities (i.e., those listed in the first column) that report having high or medium impact BES Cyber

Systems.[13] NERC attributes the change from 2021 to 2022 to an error in the RF region data from 2021 which counted entities with Low Impact BCS as well. This led to a reduction from 123 entities in 2021 to 56 entities in 2022. The third set of columns in Figure 3 shows the number of registered entities with high or medium impact BES Cyber Systems (i.e., those listed in the second column) that have approved TFEs. This deviation of 18% from 2021 to 2022 indicates that the industry has made a significant reduction in the last year in the number of entities with approved TFEs.

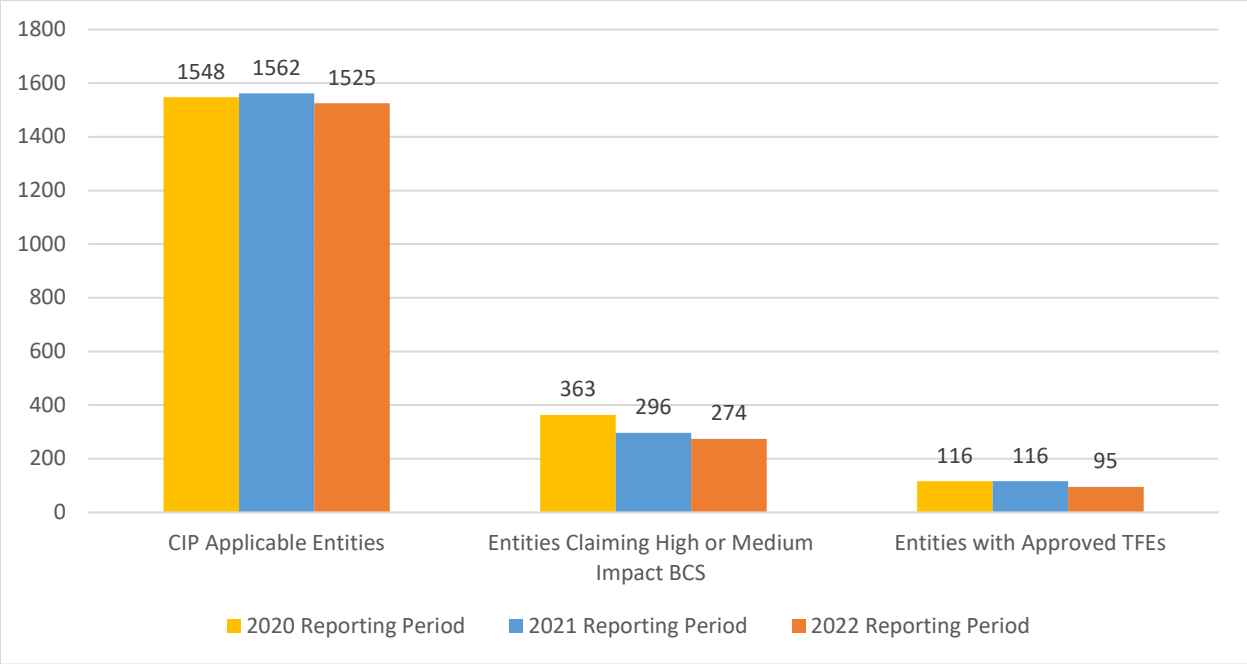


Figure 3: Frequency of TFE Program Use (7/1/2021 to 6/30/2022)

[13] During the reporting period, only requirements applicable to high and medium impact BES Cyber Systems were subject to TFEs.

Figure 4 depicts the percentage of CIP applicable registered entities with TFE activity (e.g., submissions of new requests, amendments, terminations, etc.) in the 2020, 2021, and 2022 report years. The numbers demonstrate a decrease in percentage of TFE activity, dropping from an ERO-wide average of 2.94% to 2.62%. MRO, RF, and WECC saw decreases in TFE activity, while Texas RE, SERC, and NPCC saw slightly increased activity.

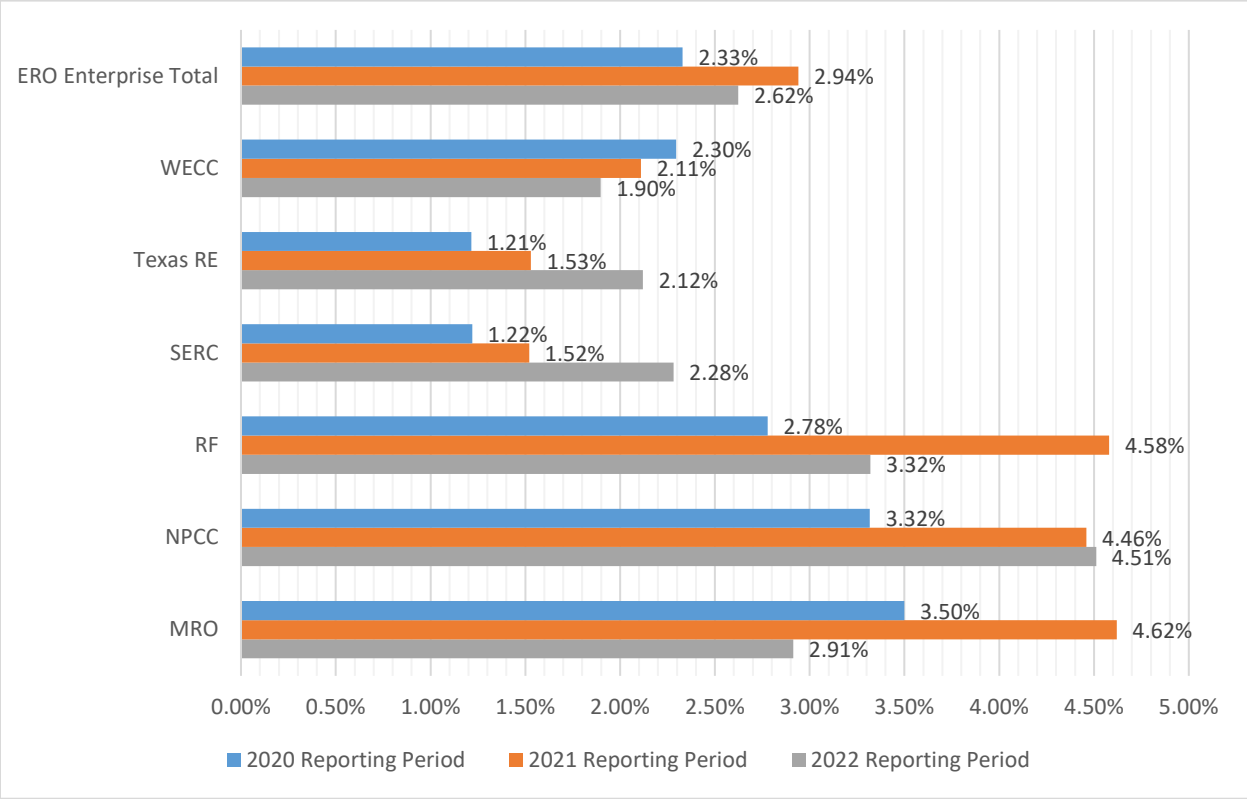
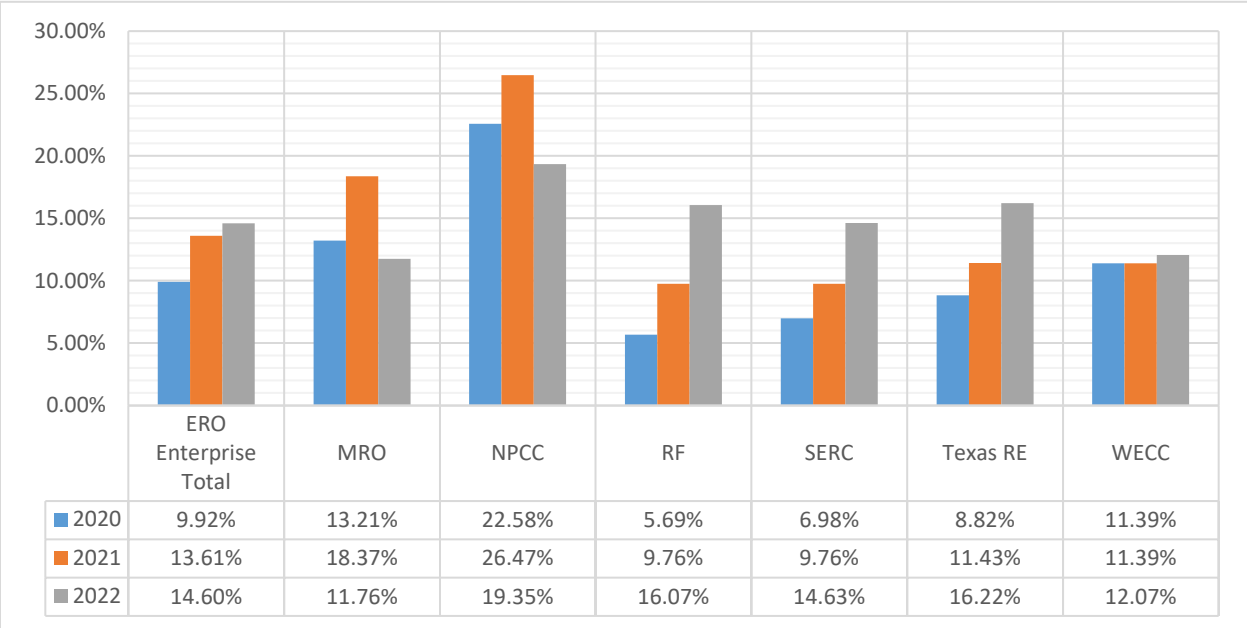


Figure 4: TFE Activities per Number of CIP Applicable registered entities

Figure 5 depicts TFE activity by comparing the number of TFE "transactions" (submittals, modifications, terminations, etc.) to the number of registered entities with high or medium impact BES Cyber Systems. From 2020 to 2021, there was an increase in TFE activity across all regions. From 2021 to 2022, there was a slight increase in activity overall of 0.99%, with four of the six

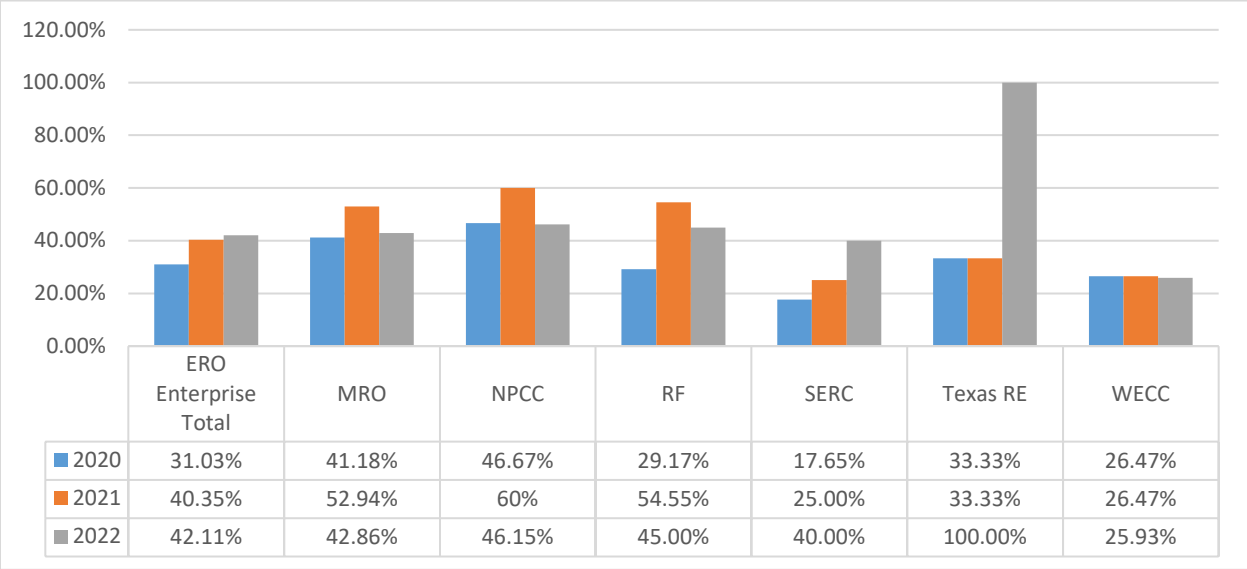
regions reporting increased activity. Only MRO and NPCC had a decrease in activity. The increased activity is likely due to entities migrating TFEs from a different system to Align.



	ERO Enterprise Total	MRO	NPCC	RF	SERC	Texas RE	WECC
2020	9.92%	13.21%	22.58%	5.69%	6.98%	8.82%	11.39%
2021	13.61%	18.37%	26.47%	9.76%	9.76%	11.43%	11.39%
2022	14.60%	11.76%	19.35%	16.07%	14.63%	16.22%	12.07%

Figure 5: TFE Activity Compared to the Number of registered entities with High or Medium Impact BES Cyber Systems

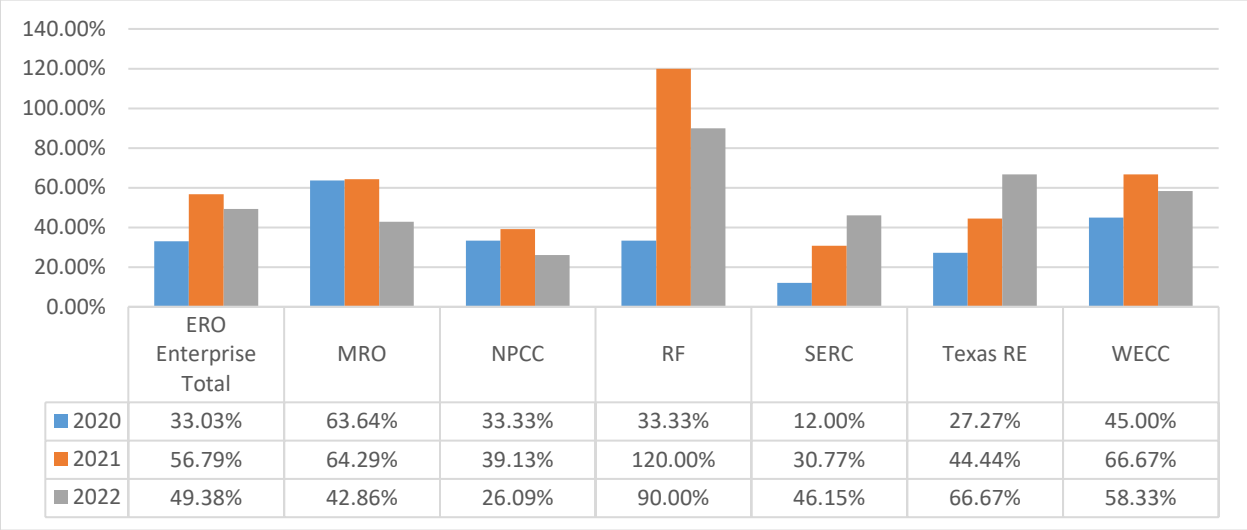
Figure 6 depicts the percentage of registered entities with TFE program activity, compared to the number of registered entities with approved TFEs. This percentage has dropped across all regions except SERC and Texas RE. Texas RE has the largest percentage increase from 2021 to 2022 due to a number of terminations. This increased activity is likely due to entities transitioning TFEs to Align. Overall, the ERO Enterprise experienced a 1.76% increase due to the increased number of registered entities with TFE program activity in SERC and Texas RE.



	ERO Enterprise Total	MRO	NPCC	RF	SERC	Texas RE	WECC
2020	31.03%	41.18%	46.67%	29.17%	17.65%	33.33%	26.47%
2021	40.35%	52.94%	60%	54.55%	25.00%	33.33%	26.47%
2022	42.11%	42.86%	46.15%	45.00%	40.00%	100.00%	25.93%

Figure 6: Percentage of TFE Interaction per Approved TFEs

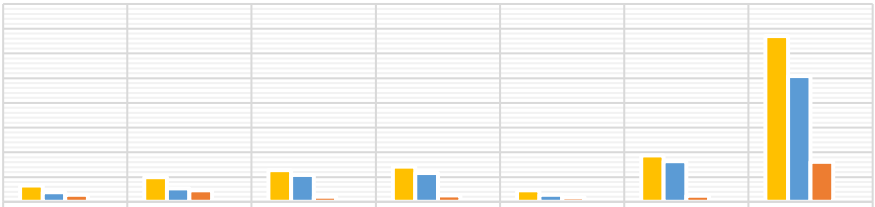
Figure 7 depicts the percentage of registered entities with TFE program activity in 2022, compared to the number of total approved TFEs in 2022. Overall, the ERO Enterprise noticed a decrease in activity. SERC and Texas RE noticed increases due to the number of registered entities with activity compared to the number of 2022 approved TFEs. The other regions noticed decreases due to smaller numbers of registered entities with activity compared to the number of 2022 approved TFEs.



	ERO Enterprise Total	MRO	NPCC	RF	SERC	Texas RE	WECC
2020	33.03%	63.64%	33.33%	33.33%	12.00%	27.27%	45.00%
2021	56.79%	64.29%	39.13%	120.00%	30.77%	44.44%	66.67%
2022	49.38%	42.86%	26.09%	90.00%	46.15%	66.67%	58.33%

Figure 7: Percentage of TFE Program Activity Correlated with Total Approved TFEs

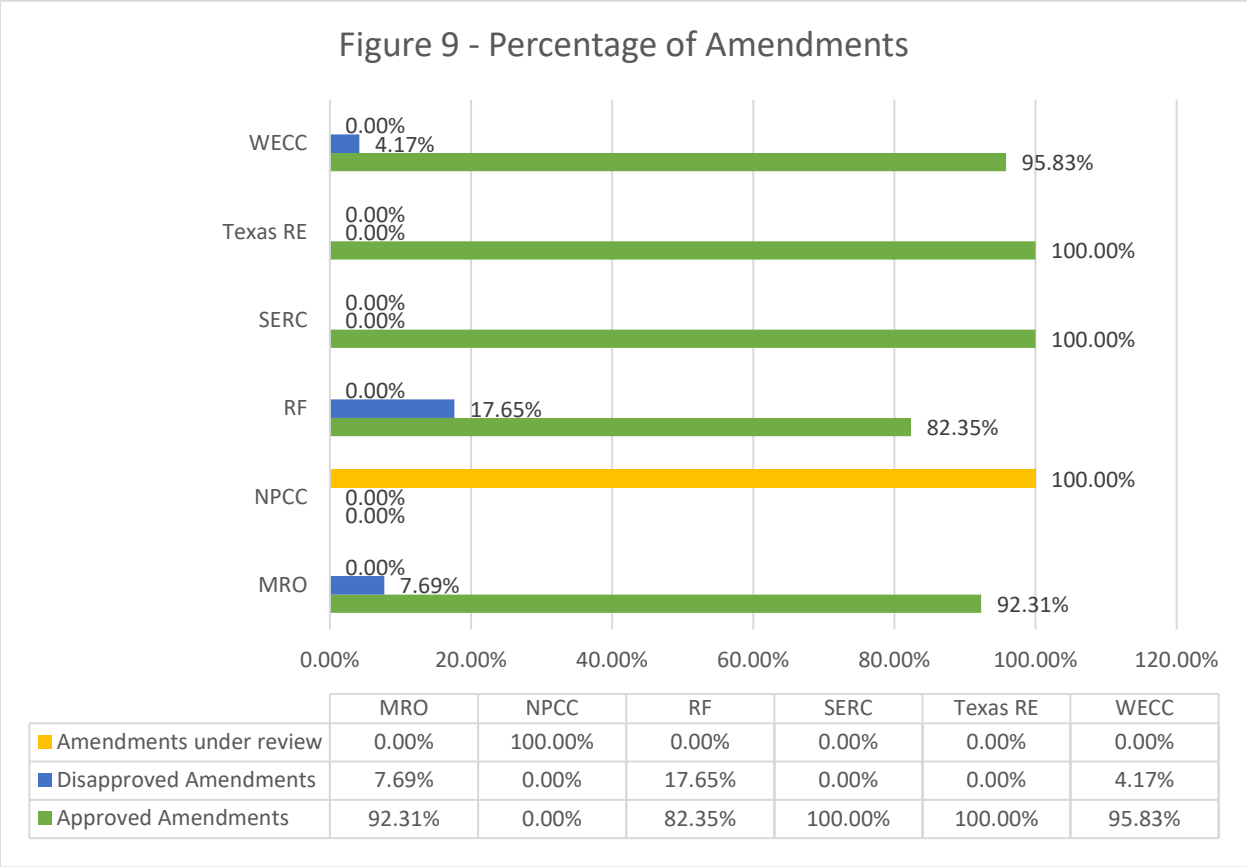
Figure 8 depicts the breakout of the 335 ERO Enterprise approved TFEs for each Regional Entity. For instance, the MRO region maintained 19 active TFEs that were approved prior to 2022 but added or changed 14, bringing the new total to 33, representing 42% of these TFEs. Registered entities in WECC continue to maintain the most total approved TFEs across the Regional Entities, while Texas RE continues to contain the least.



	MRO	NPCC	RF	SERC	Texas RE	WECC	Total
Total TFEs Approved	33	50	64	71	23	94	335
Approved TFEs Prior 2022	19	27	54	58	14	82	254
Approved TFEs During 2022	14	23	10	13	9	12	81
2022 Percent of Total	42%	46%	16%	18%	39%	13%	24%

Figure 8: Total number of Approved TFEs

Registered entities submitted 104 TFE amendments in 2022. The ERO Enterprise noted 98 of the TFE amendments were approved, five were disapproved, and one remains in review as of the end of the reporting period. Figure 9 provides a breakdown of that activity by Regional Entity during the 2022 reporting period. There was only one amendment under review in NPCC as of June 30, 2022. As shown below, Regional Entities approved a majority of the amendments submitted.[14]



	MRO	NPCC	RF	SERC	Texas RE	WECC
Amendments under review	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Disapproved Amendments	7.69%	0.00%	17.65%	0.00%	0.00%	4.17%
Approved Amendments	92.31%	0.00%	82.35%	100.00%	100.00%	95.83%

Figure 9: TFE Amendment Activity for the 2022 Reporting Period

[14] NERC notes that some amendments approved during this reporting period originated from a previous reporting period.

Figure 10 depicts the minimum, mean, and maximum quantity of TFEs for each registered entity with an approved TFE as of June 30, 2022. As shown below, the ERO Enterprise mean average is 3.68 TFEs per registered entity that has an approved TFE (slightly more than the 3.33 mean average in 2021). The fewest number of TFEs a single registered entity has is one TFE. The largest number of TFEs for a single registered entity rose to 22 TFEs in 2022 from 15 in 2021; the registered entity with the largest number of TFEs is in the SERC region. SERC became the region with the highest average at 5.31 average TFEs per registered entity with an approved TFE, and MRO has the lowest mean average of 2.40 TFEs per registered entity that has an approved TFE.

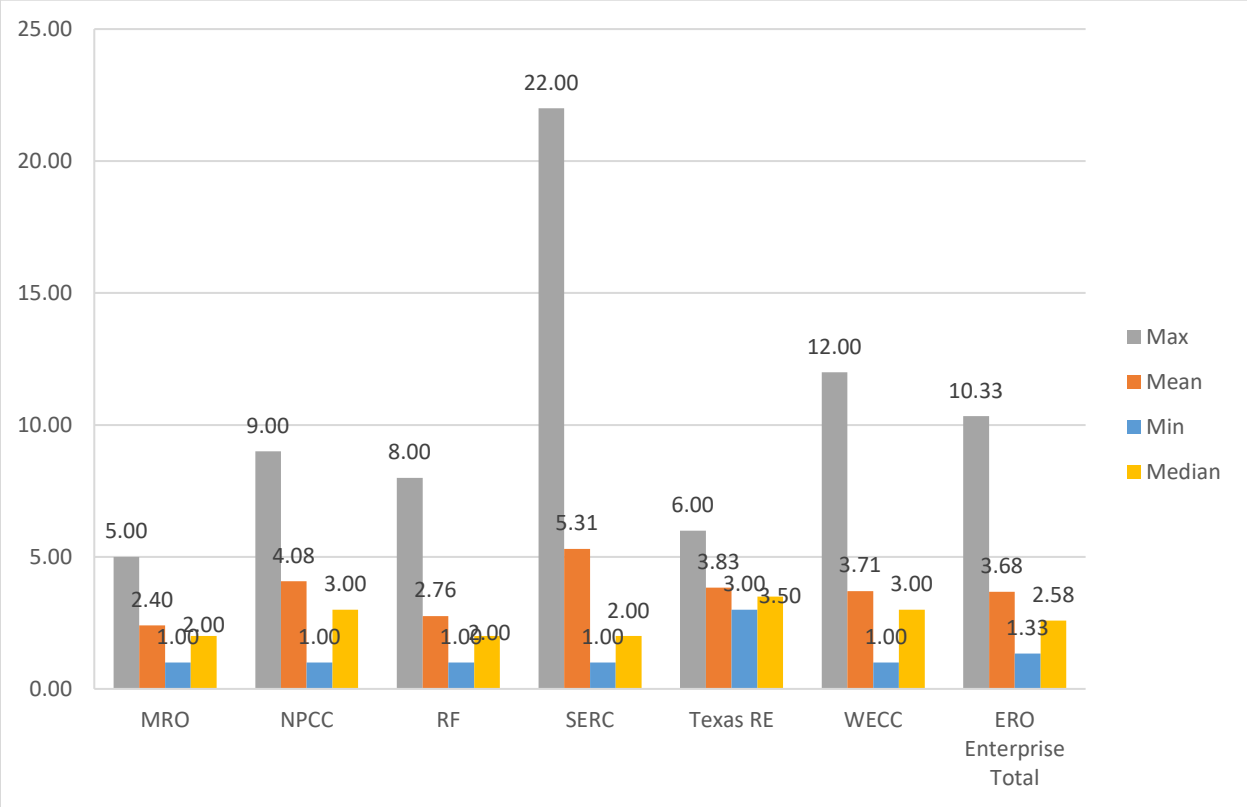


Figure 10: Average TFE Quantity per registered entity with an Approved TFE

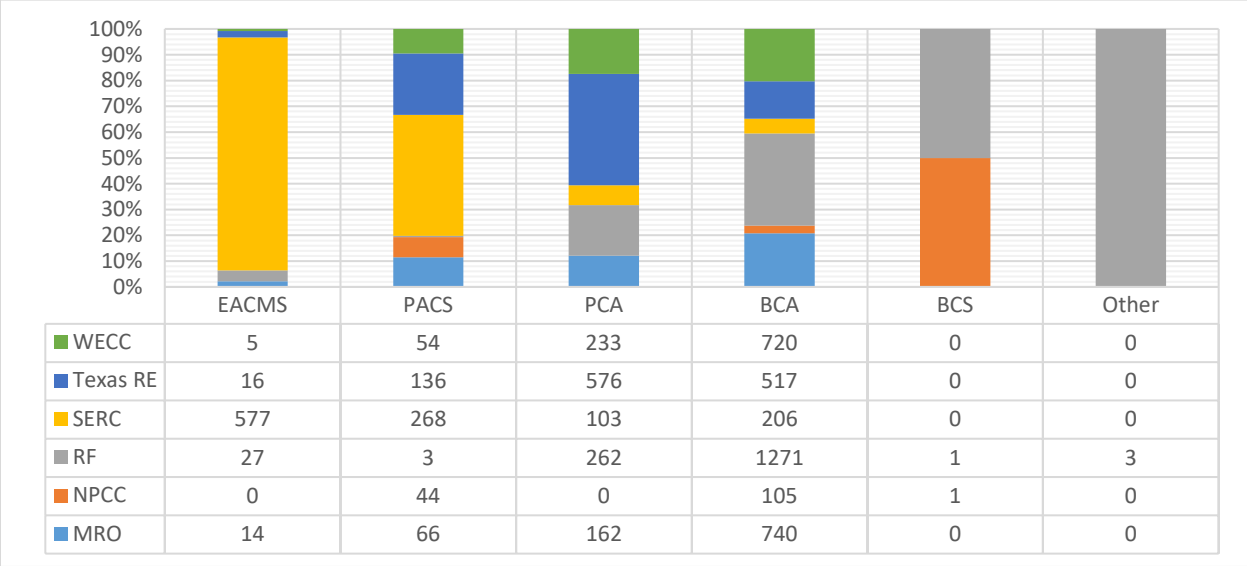
2. Categorization of the submitted and approved TFE Requests

Categorization of the submitted and approved TFE Requests to date by broad categories such as the general nature of the TFE Request, the Applicable Requirements covered by submitted and approved TFE Requests, and the types of Covered Assets that are the subject of submitted and approved TFE Requests.

The total number of unique assets subject to TFEs continues to decrease. In 2019, the first year to use a revised asset categorization from the TFE Task Force, the total assets covered by TFEs was 19,801.[15] In 2020, the second year using the updated categorization, the total number of covered assets subject to TFEs decreased to 17,815. In 2021, the total number of covered assets subject to TFEs decreased to 11,299. Finally, in 2022, the total number of covered assets subject to TFEs continued to decrease to 10,859.

Figure 11 shows the total number of assets within each asset category by Regional Entity for TFEs approved in 2022. BES Cyber Assets remains the largest asset category, except for SERC and Texas RE. In SERC, EACMS were the largest asset category due to an entity requesting new TFEs, the need for which were identified during the conversion to Align.

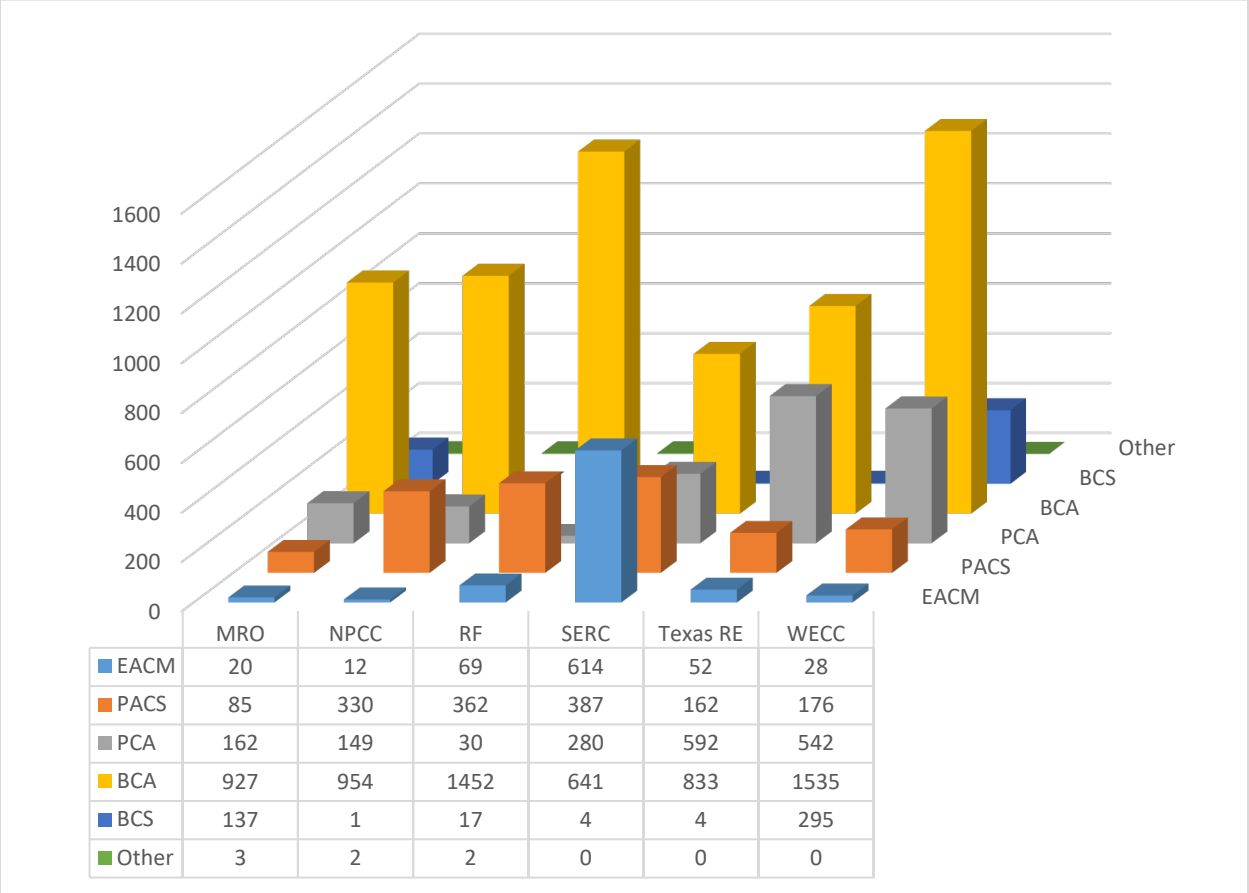
[15] To better align with the CIP standards, the TFE Task Force in 2019 changed the categorization of the assets within TFEs from "Network Data Communications," "Relays," "Workstation/server," and "Other" to "Electronic Access Control and Monitoring System (EACMS)," "Physical Access Control System (PACS)," "Protected Cyber Asset (PCA)," "BES Cyber Asset (BCA)," "BES Cyber System (BCS)," and "Other." The "Other" category remained for those assets that do not fall into the other categories. For instance, telecommunication modems, protective relays, remote terminal units ("RTUs"), satellite clocks, etc.



	EACMS	PACS	PCA	BCA	BCS	Other
WECC	5	54	233	720	0	0
Texas RE	16	136	576	517	0	0
SERC	577	268	103	206	0	0
RF	27	3	262	1271	1	3
NPCC	0	44	0	105	1	0
MRO	14	66	162	740	0	0

Figure 11: Numbers of 2022 Approved Assets with Asset Categories for Each Regional Entity

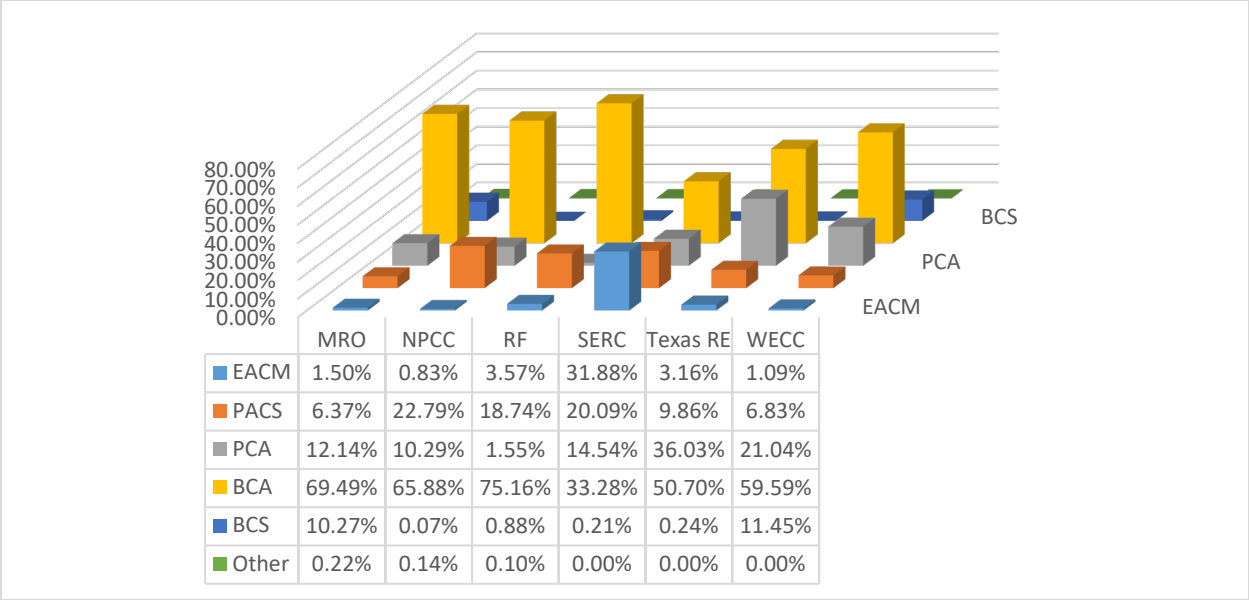
Figure 12 displays the total number of assets within each asset category for all currently active TFEs by region. BES Cyber Assets remain the largest asset category across Regional Entities.



	MRO	NPCC	RF	SERC	Texas RE	WECC
EACM	20	12	69	614	52	28
PACS	85	330	362	387	162	176
PCA	162	149	30	280	592	542
BCA	927	954	1452	641	833	1535
BCS	137	1	17	4	4	295
Other	3	2	2	0	0	0

Figure 12: All Active Count of Assets in Asset Categories for Each Regional Entity

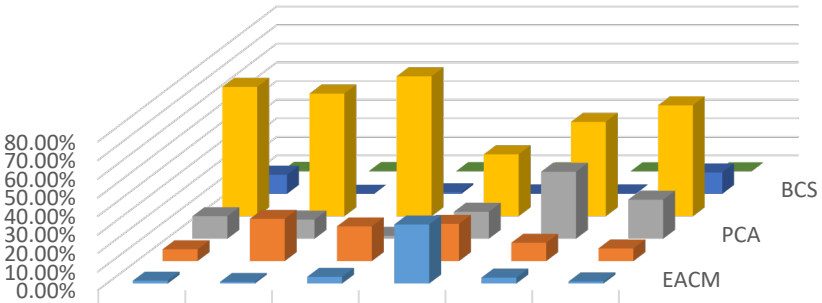
Figure 13 below shows the percentage of assets within each asset category and region compared to the total number of assets covered by TFEs in the entire ERO Enterprise for the 2022 reporting period. Figure 13 is consistent with Figure 11 and Figure 12 with the BCA category accounting for the largest percentage in each region. Due to the large addition of TFEs for EACMS in the SERC region, the percentages of EACMS and BCA is almost identical.



	MRO	NPCC	RF	SERC	Texas RE	WECC
EACM	1.50%	0.83%	3.57%	31.88%	3.16%	1.09%
PACS	6.37%	22.79%	18.74%	20.09%	9.86%	6.83%
PCA	12.14%	10.29%	1.55%	14.54%	36.03%	21.04%
BCA	69.49%	65.88%	75.16%	33.28%	50.70%	59.59%
BCS	10.27%	0.07%	0.88%	0.21%	0.24%	11.45%
Other	0.22%	0.14%	0.10%	0.00%	0.00%	0.00%

Figure 13: Percentage of Assets in each Asset Category by percentage across the ERO Enterprise

Figure 14 shows the total asset allocation broken out by Regional Entity by displaying the proportion of assets covered by TFEs in each region attributed to each category. Consistent with Figure 11, Figure 12, and Figure 13, the BCA category accounts for the largest percentage in each region. In the SERC region, there was a large increase in EACMS which far outpaces the other regions. This led to the share of BCA decreasing significantly.



	MRO	NPCC	RF	SERC	Texas RE	WECC
EACM	1.50%	0.83%	3.57%	31.88%	3.16%	1.09%
PACS	6.37%	22.79%	18.74%	20.09%	9.86%	6.83%
PCA	12.14%	10.29%	1.55%	14.54%	36.03%	21.04%
BCA	69.49%	65.88%	75.16%	33.28%	50.70%	59.59%
BCS	10.27%	0.07%	0.88%	0.21%	0.24%	11.45%
Other	0.22%	0.14%	0.10%	0.00%	0.00%	0.00%

Figure 14: Percentage of Assets by Type in each Region

3. Categorization of the circumstances or justification

Categorization of the circumstances or justifications on which the approved TFEs to date were submitted and approved, by broad categories such as the need to avoid replacing existing equipment with significant remaining useful lives, unavailability of suitable equipment to achieve Strict Compliance in a timely manner, or conflicts with other statutes and regulations applicable to the registered entity.

The following are criteria that a registered entity may use to request a TFE:

- Not technically possible
- Operationally infeasible
- Precluded by technical limitations
- Adverse effect on bulk electric system reliability
- Cannot achieve by compliance date
- Excessive cost that exceeds reliability benefit
- Conflicts with other statutory or regulatory requirement
- Unacceptable safety risks

As in past years, registered entities tend to request a TFE based on one of the first three criteria listed above. To date, there have been no reports of Regional Entities approving TFEs based on the last two criteria.

4. Categorization of the compensating measures and mitigating measures implemented and maintained

Categorization of the compensating measures and mitigating measures implemented and maintained by registered entities pursuant to approved TFEs, by broad categories of compensating measures and mitigating measures and by types of Covered Assets.

The ERO Enterprise continues to evaluate the extent and effectiveness of compensating measures documented in TFE requests. The registered entities accomplish the majority of compensating or mitigating measures by compliance with requirements in related CIP Standards. As most TFEs relate to the same types of assets, the registered entities are applying the same mitigation measures for each of the TFEs to address the known risks.

5. TFE rejection or disapproval

For each TFE Request that was rejected or disapproved, and for each TFE that was terminated, but for which, due to exceptional circumstances as determined by the Regional Entity, the TFE Termination Date was later than the latest date specified in Section 5.2.6, or 9.3, as applicable, a statement of the number of days the registered entity was not subject to imposition of findings of violations of the Applicable Requirement or imposition of Penalties or sanctions pursuant to Section 5.3.

In 2022, there were five TFEs that were disapproved. Of these, there was one in MRO, three in RF, and one in WECC. The disapproved TFEs consisted of one new TFE and four amended TFEs. The new TFE disapproval was for CIP-007-6 Requirement R5, Part 1.1. Among the four amended TFE disapprovals were three for CIP-007-6 Requirement R5, Part 5.6 and one for CIP-007-6 Requirement R5, Part 5.7.

6. Compliance Audit results and findings concerning the implementation and maintenance of compensating measures and mitigating measures

A discussion, on an aggregated basis, of Compliance Audit results and findings concerning the implementation and maintenance of compensating measures and mitigating measures, and the implementation of steps and the conduct of research and analyses to achieve Strict Compliance with the Applicable Requirements, by registered entities in accordance with approved TFEs.

Appendix 4D of NERC's ROP is part of the Compliance Monitoring and Enforcement Program ("CMEP") that forms the framework for Regional Entities to review and audit TFE requests. During a compliance monitoring engagement, the Regional Entity would not evaluate the registered entity on a particular requirement from the applicable Reliability Standard for which a TFE was accepted and approved, but instead would evaluate the registered entity against the alternative compliance obligations assumed by the registered entity (i.e., compensating and mitigating measures).

All Regional Entities continue to conduct compliance monitoring engagements where applicable approved TFEs are within the determined scope. Typically, during a compliance monitoring engagement of a registered entity, TFEs will be reviewed as applicable (i.e., based on relevant factors such as quantity, locations, etc.). Reviews include interviewing subject matter experts specifically about TFEs and sampling evidence pertaining to a TFE's mitigating and compensating measures, among other things. Regional Entities continue to report that registered entities are managing and maintaining their TFEs within the procedural requirements of Appendix 4D. Regional Entities and registered entities continue to handle TFEs consistent with the CMEP framework.

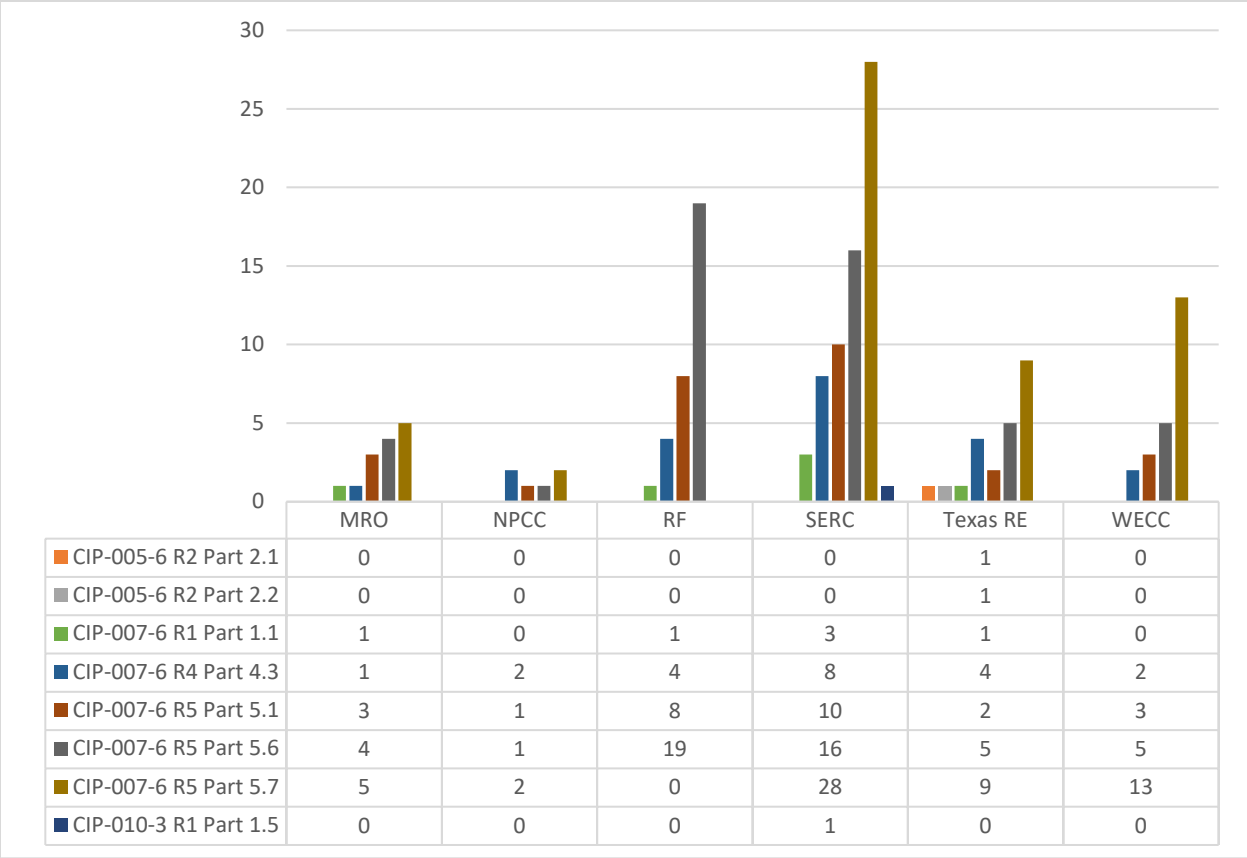
7. Assessments of impacts on the reliability of the BES

Assessments, by Regional Entity (and for more discrete areas within a Regional Entity, if appropriate) and in the aggregate for the United States and for the jurisdictions of other Applicable Governmental Authorities, of the Wide-Area impacts on the reliability of the Bulk Electric System of approved TFEs in the

aggregate, including the compensating measures and mitigating measures that have been implemented.

The ERO Enterprise TFE Task Force, comprised of subject matter experts from each Regional Entity and NERC, reviews TFE requests to verify sufficiency and consistency of the requests' disposition. In addition, the ERO Enterprise TFE Task Force verifies the TFEs are available for review; the ERO Enterprise performs the review when initially submitted or modified and during compliance monitoring engagements. The ERO Enterprise TFE Task Force reports that the use of TFEs has not had an adverse impact on BES reliability. The members of the ERO Enterprise TFE Task Force reported similar experiences (among different regions) with the execution and management of the TFE process and the manner in which it impacted BES reliability. Additionally, the TFE Task Force reports that a large majority of registered entities have implemented multiple compensating and mitigating measures for Covered Assets. In general, the mitigating and compensating measures implemented for approved TFEs in lieu of strict compliance with applicable CIP Reliability Standards have accomplished the stated alternate compliance objectives. As a result, the level of BES security achieved through the TFE process is comparable to strict compliance with the applicable Reliability Standards.

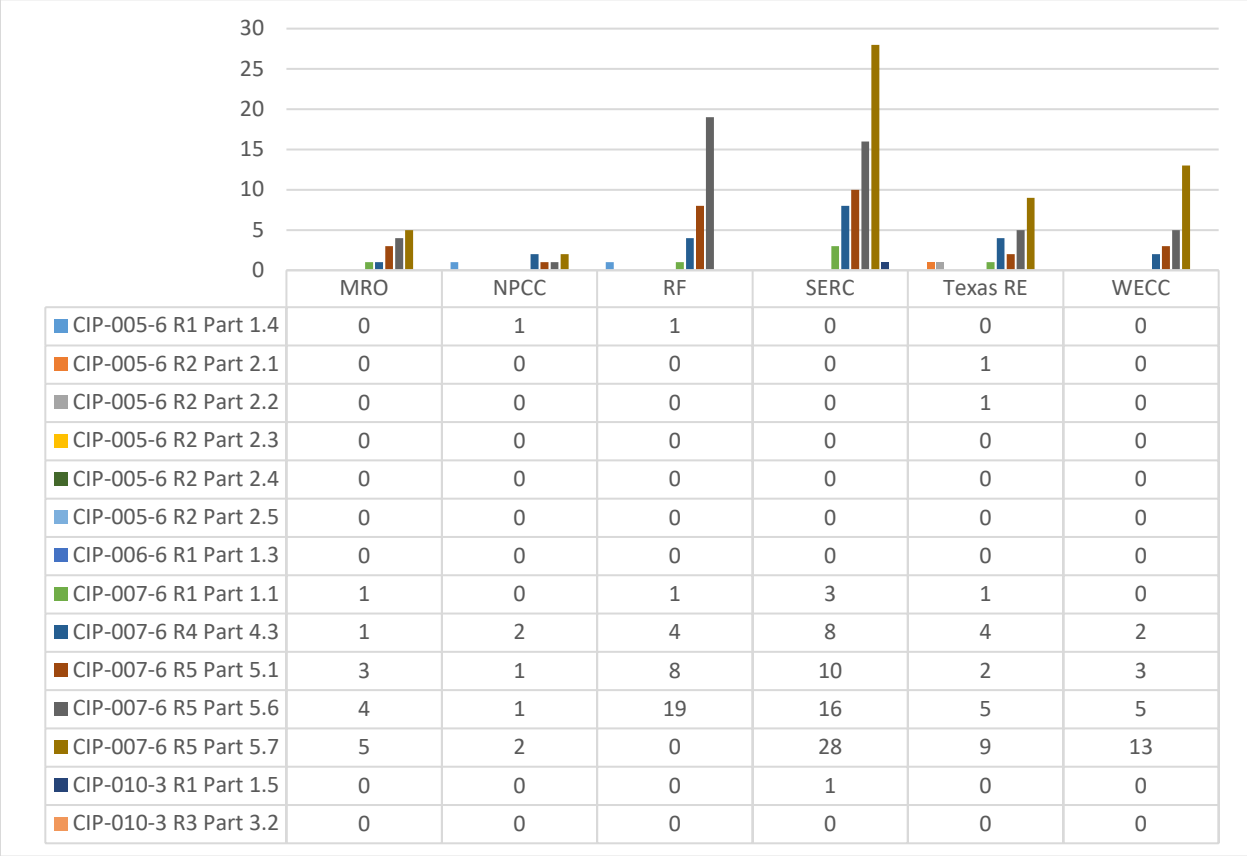
Figure 15 shows, by region, the number of TFEs for each requirement that registered entities submitted to the Regional Entities in 2022. The largest number of approved TFEs in 2022 was for CIP-007-6 Requirement R5 Part 5.7. In contrast, CIP-005 R2 Parts 2.1 and 2.2 and CIP-010-3 Requirement R1, Part 1.5 only have one TFE.



	MRO	NPCC	RF	SERC	Texas RE	WECC
CIP-005-6 R2 Part 2.1	0	0	0	0	1	0
CIP-005-6 R2 Part 2.2	0	0	0	0	1	0
CIP-007-6 R1 Part 1.1	1	0	1	3	1	0
CIP-007-6 R4 Part 4.3	1	2	4	8	4	2
CIP-007-6 R5 Part 5.1	3	1	8	10	2	3
CIP-007-6 R5 Part 5.6	4	1	19	16	5	5
CIP-007-6 R5 Part 5.7	5	2	0	28	9	13
CIP-010-3 R1 Part 1.5	0	0	0	1	0	0

Figure 15: 2022 Approved TFE Breakout per Requirement and Part

Figure 16 demonstrates the same breakdown by Reliability Standard and requirement as Figure 15, but includes all active TFEs, not just those from 2022. Again, the majority of the approved TFEs are for CIP-007-6 Requirement R5, Part 5.6 and CIP-007-6 Requirement R5, Part 5.7. In contrast, CIP-005-6 R2, Part 2.1, CIP-005-6 R2, Part 2.2, and CIP-010-3 R1 Part 1.5 only have one TFE each.



	MRO	NPCC	RF	SERC	Texas RE	WECC
CIP-005-6 R1 Part 1.4	0	1	1	0	0	0
CIP-005-6 R2 Part 2.1	0	0	0	0	1	0
CIP-005-6 R2 Part 2.2	0	0	0	0	1	0
CIP-005-6 R2 Part 2.3	0	0	0	0	0	0
CIP-005-6 R2 Part 2.4	0	0	0	0	0	0
CIP-005-6 R2 Part 2.5	0	0	0	0	0	0
CIP-006-6 R1 Part 1.3	0	0	0	0	0	0
CIP-007-6 R1 Part 1.1	1	0	1	3	1	0
CIP-007-6 R4 Part 4.3	1	2	4	8	4	2
CIP-007-6 R5 Part 5.1	3	1	8	10	2	3
CIP-007-6 R5 Part 5.6	4	1	19	16	5	5
CIP-007-6 R5 Part 5.7	5	2	0	28	9	13
CIP-010-3 R1 Part 1.5	0	0	0	1	0	0
CIP-010-3 R3 Part 3.2	0	0	0	0	0	0

Figure 16: All Active TFE Breakout per Requirement and Part

8. Efforts to eliminate future reliance on TFEs

Discussion of efforts to eliminate future reliance on TFEs.

In the past, the value of a TFE was the safe harbor it provides when a registered entity could not achieve strict compliance to certain Reliability Standards. As referenced in Order No. 706, TFEs are rooted in the problem of legacy equipment and the economic considerations involved in the replacement of such equipment before the end of its useful life.[16] As registered entities increasingly move away from legacy equipment, the value of the TFE program, as currently constructed, is diminishing in comparison to the program's administrative burden. The decrease in the number of approved TFEs and the total assets covered by TFEs has allowed the level of effort required of the registered entity and Regional Entity to maintain and administer a TFE to decrease as well. ERO Enterprise CMEP processes regularly assess general compliance with the CIP Reliability Standards and evaluate compensating and mitigating measures. The ERO Enterprise would likely find additional efficiency by reviewing TFEs in the context of the rest of the registered entity's compliance program, rather than separately. As the overall numbers dwindle, this may become an attractive option.

During quarterly meetings, the ERO Enterprise TFE Task Force focuses on TFE management, administrative processes, and approaches to making the processes more effective and efficient for the Regional Entities and registered entities. The ERO Enterprise TFE Task Force has stated that there may be opportunities to retain the same awareness and risk mitigation of the TFE program while reducing the administrative burden. For example, NERC could allow a registered entity to maintain the exception without prior approval, provided that the registered entity could demonstrate during compliance monitoring engagements that: (i) the exception is

[16] Order No. 706 at P 157.

reasonable; and (ii) the registered entity implemented appropriate mitigation measures in lieu of strict compliance. As NERC considers alternatives to the TFE program as presently constituted, it will consult with Commission staff. NERC will seek Commission approval for any proposed changes to the NERC ROP. Additionally, the standards drafting team for Project 2016-02 Modifications to CIP Standards[17] may propose changes to the TFE language as found in currently approved CIP Reliability Standards.

9. Material Change Reports

Data and information regarding Material Change Reports, including the number of Material Change Reports filed annually and information regarding the types of circumstances or events that led to Material Changes, as well as any additional information NERC believes would be useful.

When registered entities modify the information associated with approved TFEs, the registered entity submits updates to the relevant Regional Entity via a Material Change Report ("MCR"). An MCR requires approval by the Regional Entity, which can then refer to the updated, current data during compliance monitoring activities (e.g., Compliance Audits, Spot Checks, Self-Certifications, etc.). Figure 17 shows the percentage of amendments per approved TFEs within each region. The majority of requested changes occur for asset count changes and administrative updates, such as changing the primary contact's information. The 2022 average across the ERO Enterprise is 34.57%, when calculated as an average across the percentage of each region. This means that for over one-third of the TFEs, a registered entity submitted an MCR to modify an approved TFE.

[17] Project 2016-02 Modifications to CIP Standards, https://www.nerc.com/pa/Stand/Pages/Project 2016-02 Modifications to CIP Standards.aspx.

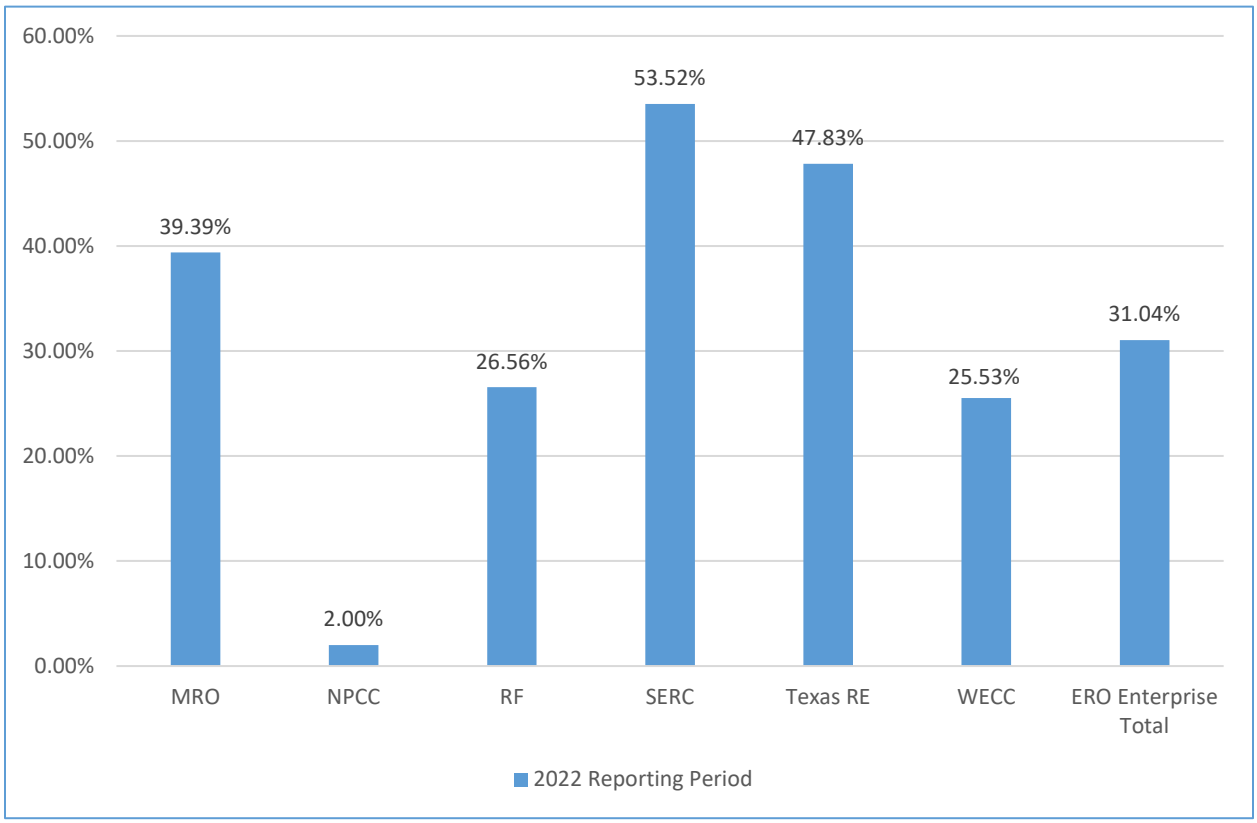


Figure 17: TFE Amendments to Approved TFEs per Regional Entity

10. Additional information about TFEs and their TFE Expiration Dates

Additional information about TFEs and their TFE Expiration Dates, including the number of TFEs by expiration year and CIP Standard requirement, the percentage of currently approved TFEs without TFE Expiration Dates, and the number of new TFEs approved without expiration dates annually.

In its September 2013 Order, the Commission directed NERC to provide additional information in the annual TFE reports related to TFEs with and without expiration dates. As reported previously, most TFEs do not have expiration dates. During the TFE reporting period, July 1, 2021 to June 30, 2022, 30 TFEs were terminated.

In addition, four TFEs are scheduled to expire in the future, unless further amended by the registered entity. Figure 18 shows the breakdown of TFEs with future expiration dates. The vast majority of approved TFEs have no planned expiration date.

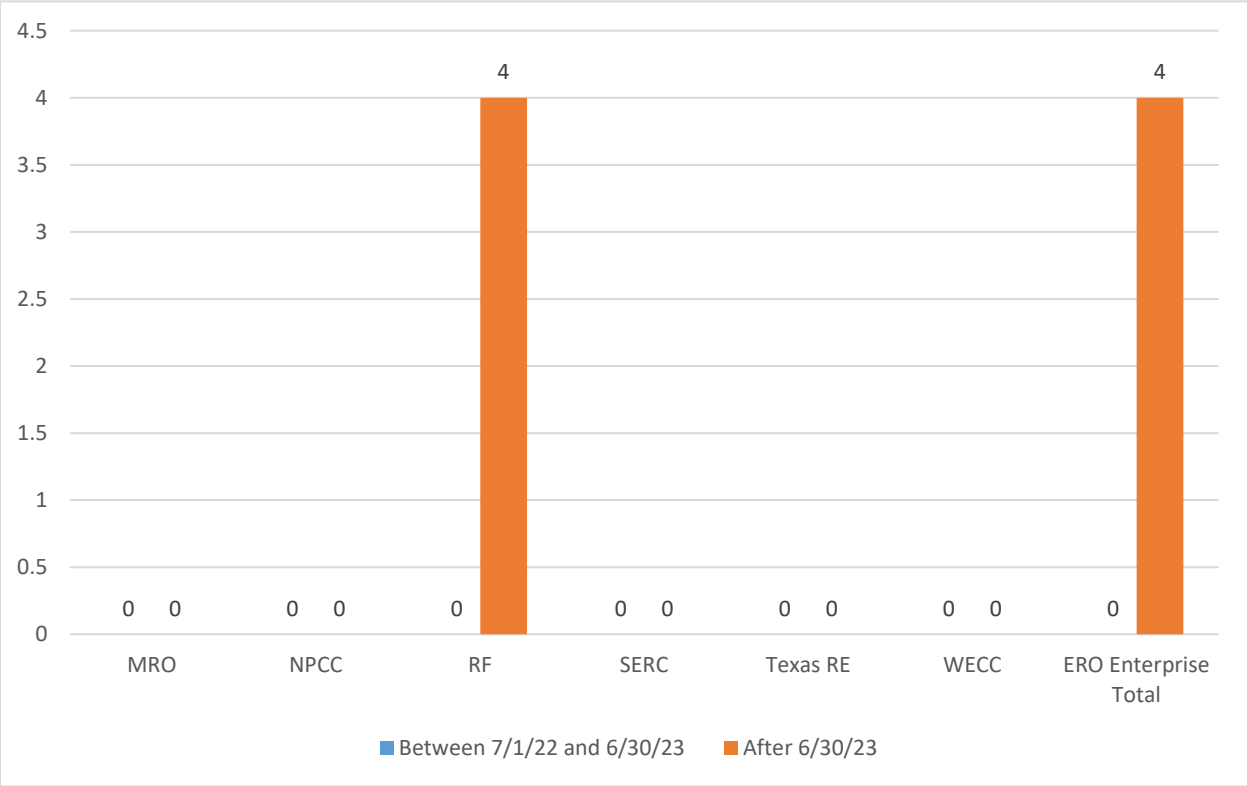


Figure 18: TFEs to Expire in Future

11. Consistency in Review, Approval, and Disapproval of TFE Requests

Appendix 4D, Section 11.1 of the NERC ROP requires that NERC and the Regional Entities collaborate to assure "consistency in the review, approval and disapproval of TFE Requests. . . ." Also, as noted above, Section 11.2.4 of Appendix 4D requires that NERC submit with each Annual TFE Report certain information concerning the manner in which Regional Entities have made determinations to approve or disapprove TFE requests. The scope document

for the ERO Enterprise TFE Task Force describes activities and deliverables that support this effort:

- Review Regional Entities' processes and performance in administering TFE Requests and Material Change Reports;
- Evaluate whether the administration of TFE activities among the Regional Entities yields consistent results;
- Assess compensating and mitigating measures described in TFEs for quality and sufficiency;
- Review approved and disapproved TFE Requests or Material Change Reports for consistency; and
- Monitor approved TFEs throughout their life cycle to determine whether they remain necessary and effective.

NERC and the ERO Enterprise TFE Task Force will continue to collaborate on these actions in 2022 and 2023. Additionally, NERC and the ERO Enterprise TFE Task Force continue to rigorously review the TFE data throughout the year in an effort to present the best information and analysis possible to FERC.

IV. CONCLUSION

For the foregoing reasons, NERC respectfully requests that the Commission accept the 2022 Annual Report.

Respectfully submitted,

/s/ Edwin G. Kichline

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