

**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 2020 Annual Report on Wide-Area Analysis of Technical Feasibility Exceptions (the “2020 Annual Report”) in compliance with Paragraphs 220 and 221 of the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) Order No. 706<sup>1</sup> and Appendix 4D of the NERC Rules of Procedure (“ROP”). The 2020 Annual Report covers the period from July 1, 2019 through June 30, 2020.

**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.<sup>2</sup> 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

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<sup>1</sup> *Mandatory Reliability Standards for Critical Infrastructure Protection*, 122 FERC ¶ 61,040 (2008) (“Order No. 706”).

<sup>2</sup> *Id.* at P 178.

continued need for the TFE, internal approval by senior managers, and regional approval through the Electric Reliability Organization (“ERO”).<sup>3</sup>

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.<sup>4</sup>

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)<sup>5</sup> 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.<sup>6</sup>

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<sup>3</sup> *Id.* at P 222.

<sup>4</sup> *Id.* at PP 220-21.

<sup>5</sup> Section 411 in the currently effective ROP (January 2019).

<sup>6</sup> *N. Am. Elec. Reliability Corp.*, 130 FERC ¶ 61,050 (2010) (“January 21 Order”), *order on compliance*, 133 FERC ¶ 61,008 (2010) (“October 1 Order”), *order on reh’g*, 133 FERC ¶ 61,209 (2010), *order on compliance*, 135 FERC ¶ 61,026 (2011) (“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.<sup>7</sup> NERC submitted a compliance filing consistent with the directives from the September 2013 Order, which the Commission approved on January 30, 2014.<sup>8</sup> 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. 2020 ANNUAL REPORT**

This section provides the TFE information required by Appendix 4D of the ROP. In accordance with Appendix 4D, NERC prepared the 2020 Annual Report in consultation with the Regional Entities. The Regional Entities provided regular reports to NERC regarding the types of

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<sup>7</sup> *N. Am. Elec. Reliability Corp.*, 144 FERC ¶ 61,180 at PP 14, 17-18 (2013) (“September 2013 Order”).

<sup>8</sup> *N. Am. Elec. Reliability Corp.*, Docket No. RR13-3-001 (Jan. 30, 2014) (delegated letter order).

Covered Assets for which the Regional Entities have approved TFEs.<sup>9</sup> In addition, each Regional Entity provided information on the elements identified in Section 13 of Appendix 4D to be included in the 2020 Annual Report. NERC compiled and analyzed the TFE data provided by the Regional Entities in preparation for the 2020 Annual Report.

For the purposes of this report, any reference to the year 2020 refers to the TFE reporting period between July 1, 2019 and June 30, 2020. For the purposes of demonstrating trends, some figures or table may refer to previous TFE periods, such as 2019 and 2018.

The transition to the CIP cybersecurity Reliability Standards approved in Order No. 791,<sup>10</sup> commonly referred to as the CIP version 5 standards, resulted in a significant decrease to 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 Project will normalize the tracking of TFEs between regions and greatly enhance the ability of NERC to monitor and report.<sup>11</sup> Secondly, multiple NERC standards drafting teams are considering ways to remove or minimize the need for TFEs in each requirement while the standards drafting teams modify the CIP Reliability Standards.

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<sup>9</sup> 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.

<sup>10</sup> *Version 5 Critical Infrastructure Protection Reliability Standards*, 145 FERC ¶ 61,160 (2013) (“Order No. 791”), *order on clarification and reh’g*, 146 FERC ¶ 61,188 (2014).

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

## Summary of 2020 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:<sup>12</sup>

### 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 below shows a breakdown of the number of registered entities with approved TFEs within each region. There are 116 total registered entities with approved TFEs across the ERO Enterprise, a decrease from the 123 registered entities in 2019, which included three from Florida Reliability Coordinating Council.

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<sup>12</sup> Unless stated otherwise, a table or reference to “2020” refers to the reporting period for this report: July 1, 2019 – June 30, 2020.

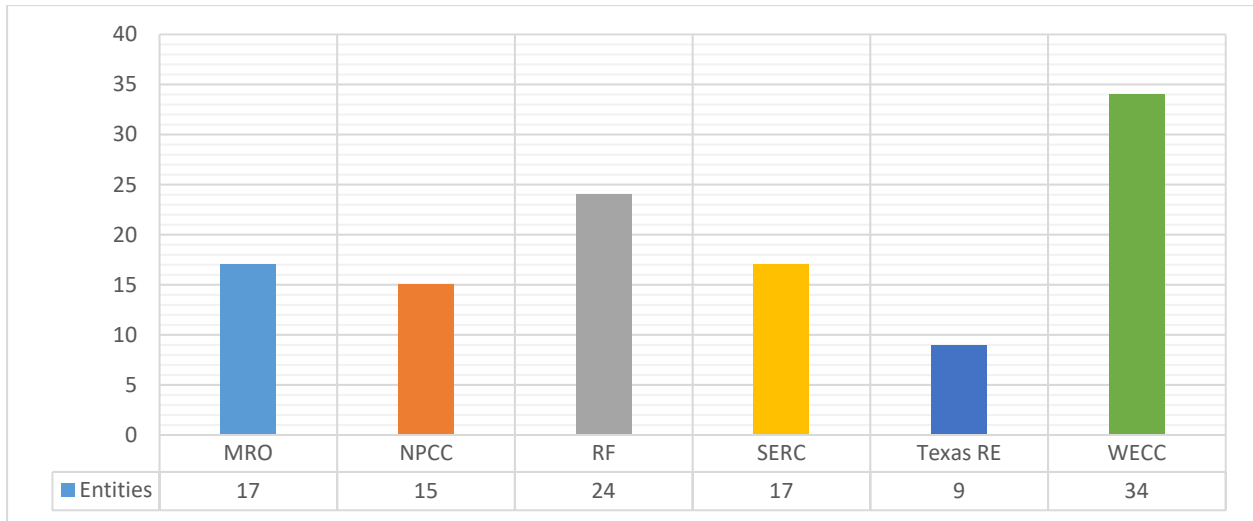


Figure 1: Number of registered entities by Region with approved TFEs as of 6/30/2020

Figure 2 depicts the number of registered entities, by Regional Entity, with TFEs over the last four 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.

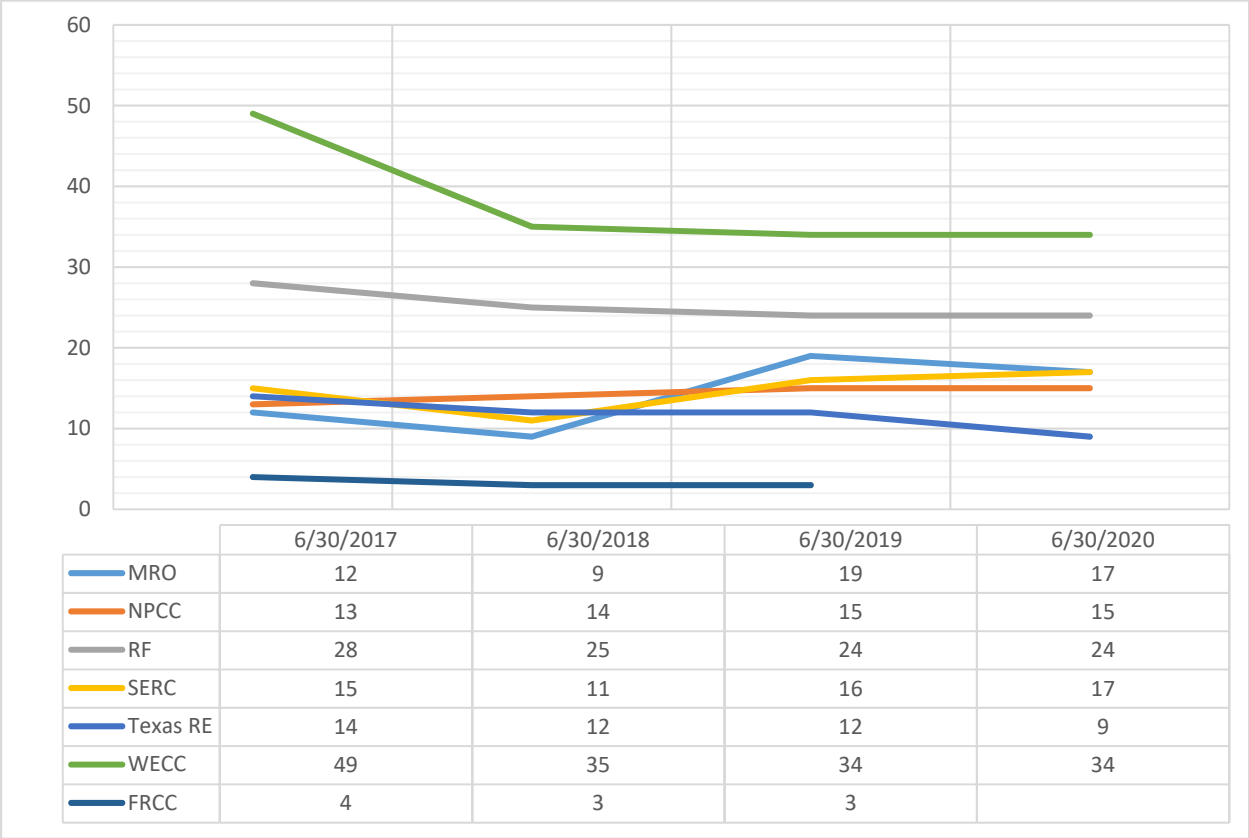


Figure 2: Four Year Trend of registered entities with Approved TFEs

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-014-2 (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 negligibly from 1475 to 1470.

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.<sup>13</sup> NERC attributes the stability to the minimal changes to the CIP Reliability Standards implemented since 2016. The third set of columns of Figure 3<sup>14</sup> 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 (smaller than 9% between the three years) indicates that the industry has reached a level of equilibrium.

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<sup>13</sup> During the reporting period, only requirements applicable to high and medium impact BES Cyber Systems were subject to TFEs.

<sup>14</sup> This figure includes the corrected number of 112 registered entities with Approved TFEs from 2018.



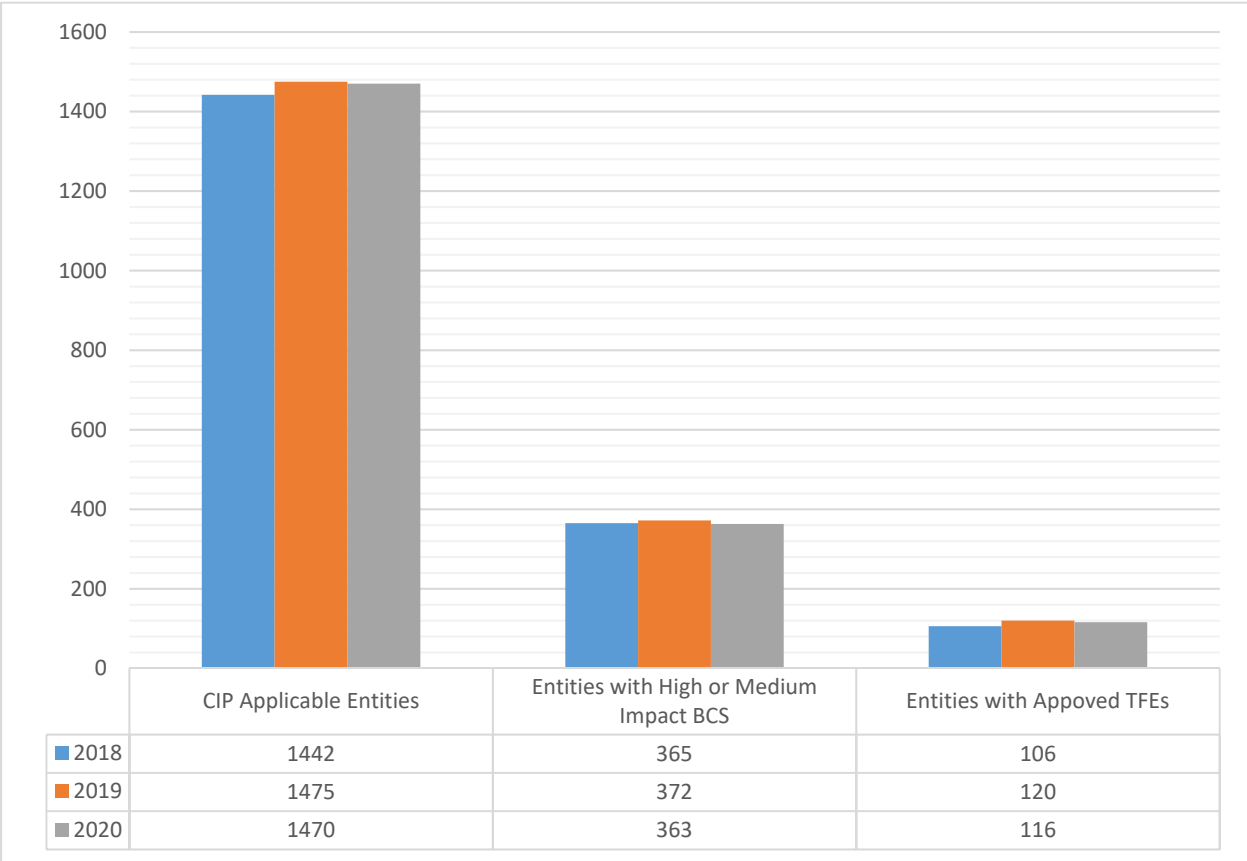


Figure 3: Frequency of TFE Program Use (7/1/2019 to 6/30/2020)

**Error! Reference source not found.**Figure 4 depicts the percentage of CIP applicable registered entities with TFE activity (e.g., submissions of new requests or amendments, terminations, etc.) in the 2018, 2019, and 2020 report years. The numbers demonstrate a general decrease in percentage of TFE activity, dropping from an ERO-wide average of 3.62% to 2.39%. All regions but one saw additional decrease in activity over the previous reporting periods. This could indicate that registered entities have replaced older or otherwise non-conforming equipment, thus reducing risk to the Bulk Electric System year-over-year. In contrast, only NPCC saw an increase in percentage of registered entities with TFE activity.

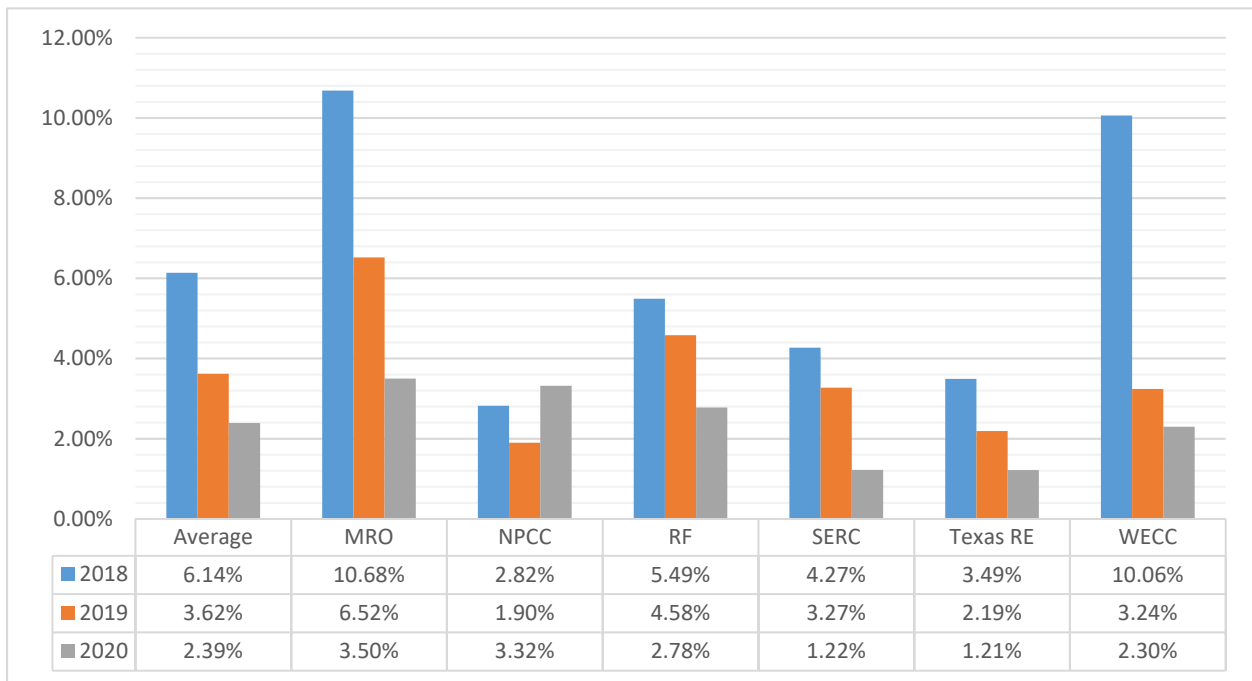
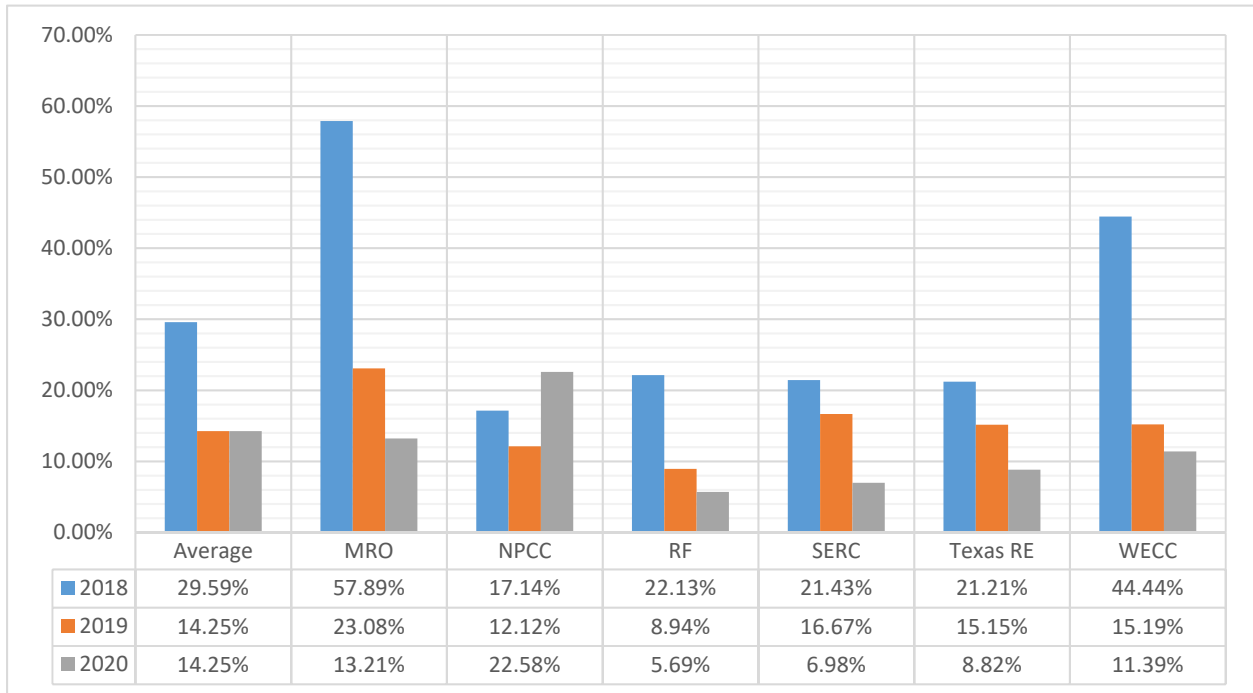


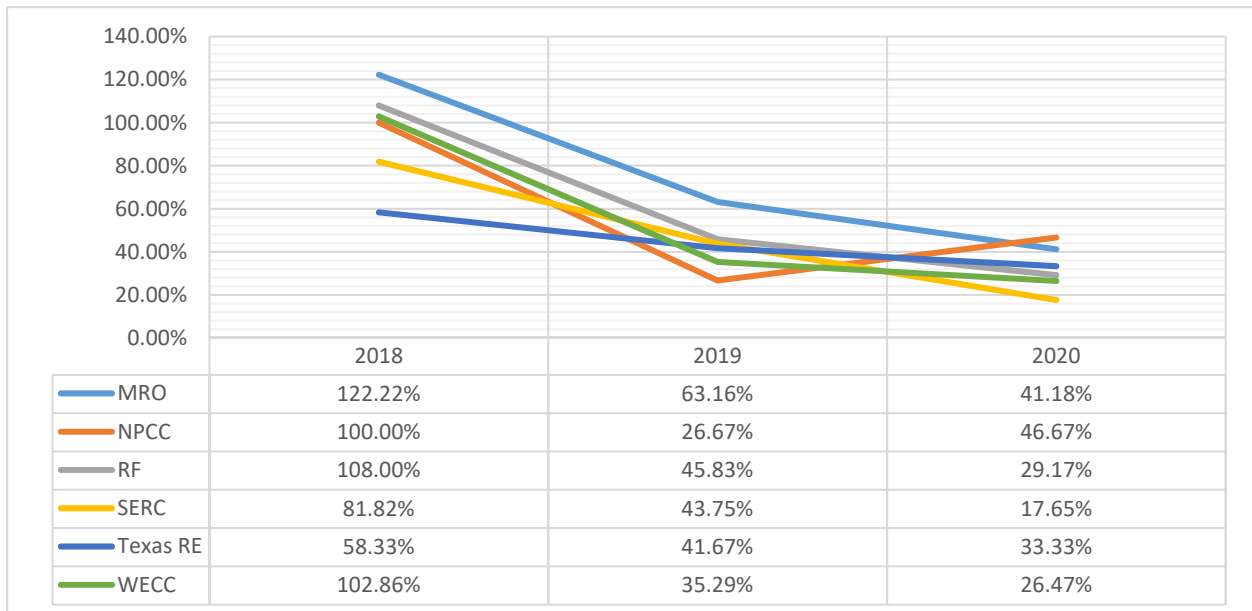
Figure 4: TFE Activities per Number of CIP Applicable registered entities

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. The 2018 TFE report showed that, across the ERO Enterprise, almost 30 percent of registered entities with high or medium impact BES Cyber Systems had TFE activity. In 2019, the overall average of entities with high or medium impact BES Cyber Systems that had TFE activity dropped to almost 14%. The 2020 reporting period remained at the same level. TFE record-keeping, as currently required in Appendix 4D of the NERC ROP, while still burdensome for the Regional Entities and registered entities alike, appears to be normalizing. TFE mitigation efforts are being reviewed as Regional Entities sample and assess devices during compliance monitoring engagements.



*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 the all regions except NPCC. This drop indicates that fewer registered entities with approved TFEs have needed to take administrative action during the reporting period. As such, the administrative burden for maintenance of TFEs continues to decrease overall. NPCC has a smaller number of registered entities with approved TFEs but demonstrated percentage increase due to one registered entity submitting several revisions.



*Figure 6: Percentage of TFE Interaction per Approved TFEs*

Figure 7 depicts the percentage of registered entities with TFE program activity, compared to the number of total approved TFEs. As compared to 2019, the percentages for half the regions declined, with MRO remaining stable and WECC and NPCC increasing between five and ten percentage points. This demonstrates there is some variability in the level of effort to maintain

approved TFEs for entities across the regions. Most of the program activity includes adjustments in registered entities' counts of TFEs during asset life cycles.

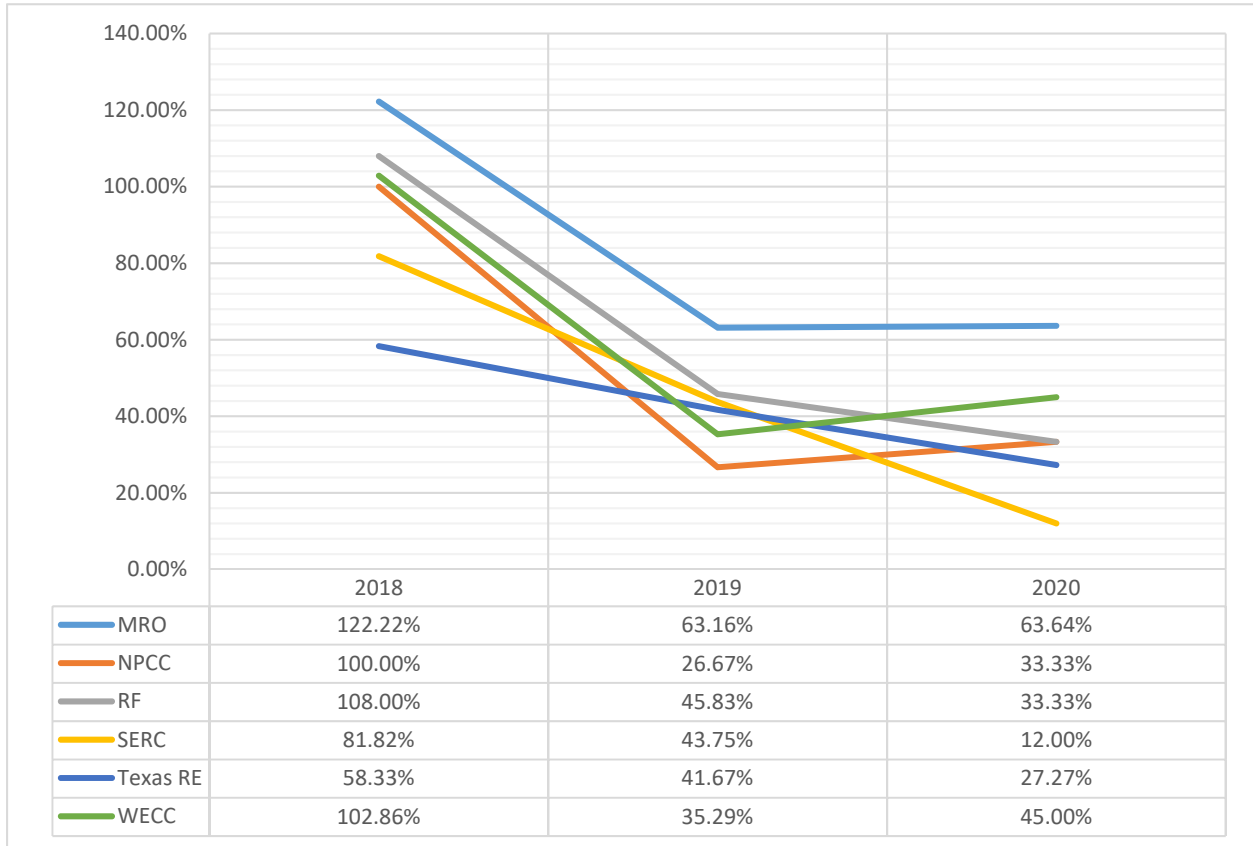
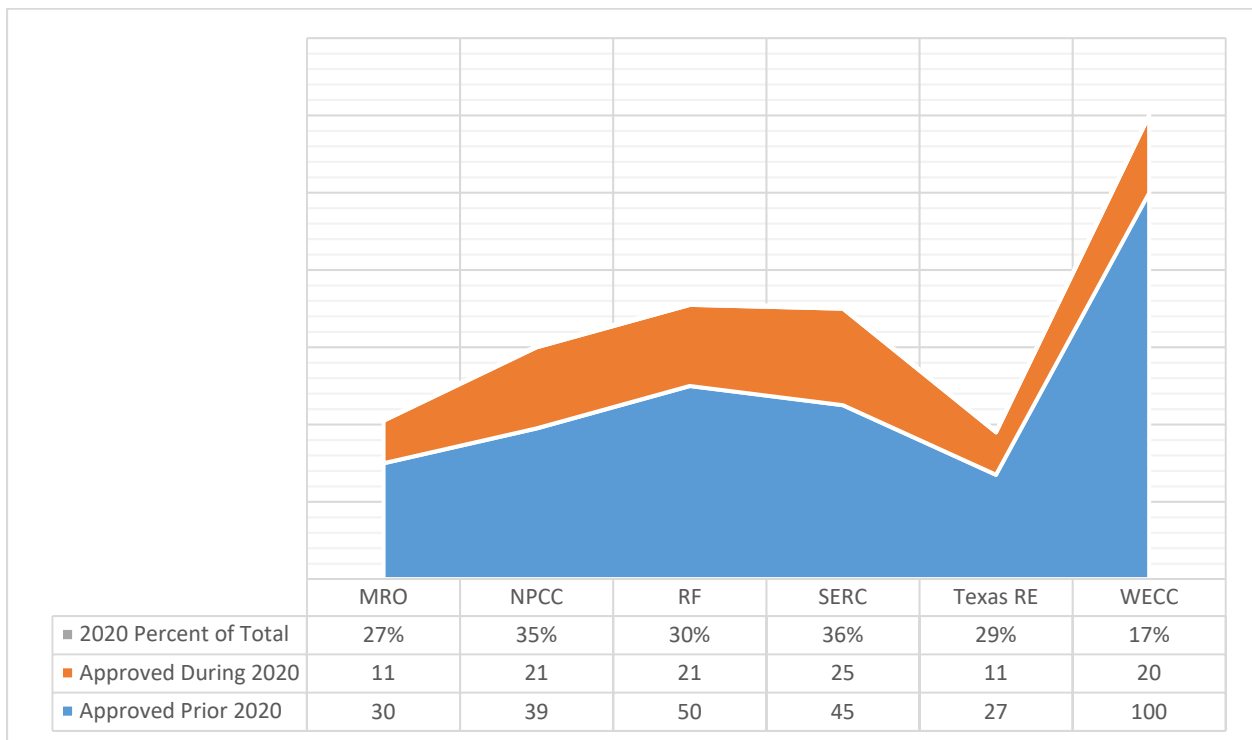


Figure 7: Percentage of TFE Program Activity Correlated with Total Approved TFEs

Figure 8 depicts the breakout, per Regional Entity, of the 400 ERO Enterprise approved TFEs for the reporting period. For instance, the MRO region maintained 30 active TFEs that were approved prior to 2020 but added or changed 11, bringing the new total to 41 and representing 27% of total TFEs.

Registered entities in WECC continue to maintain the majority of total approved TFEs, while Texas RE contains the least. SERC approved the largest number and percentage of TFEs in the 2020 reporting period, but 18 of those TFEs were requested by a single entity that commissioned a new facility with medium impact BES Cyber Systems.



*Figure 8: Total number of Approved TFEs*

Registered entities submitted 129 TFE amendments during the reporting period, of which 99 were approved and 30 remain in review. Figure 9 provides a breakdown of that activity by Regional Entity during the 2020 reporting period.

As shown below, Regional Entities approved a majority of the amendments submitted.<sup>15</sup>

There were no disapprovals this reporting period.

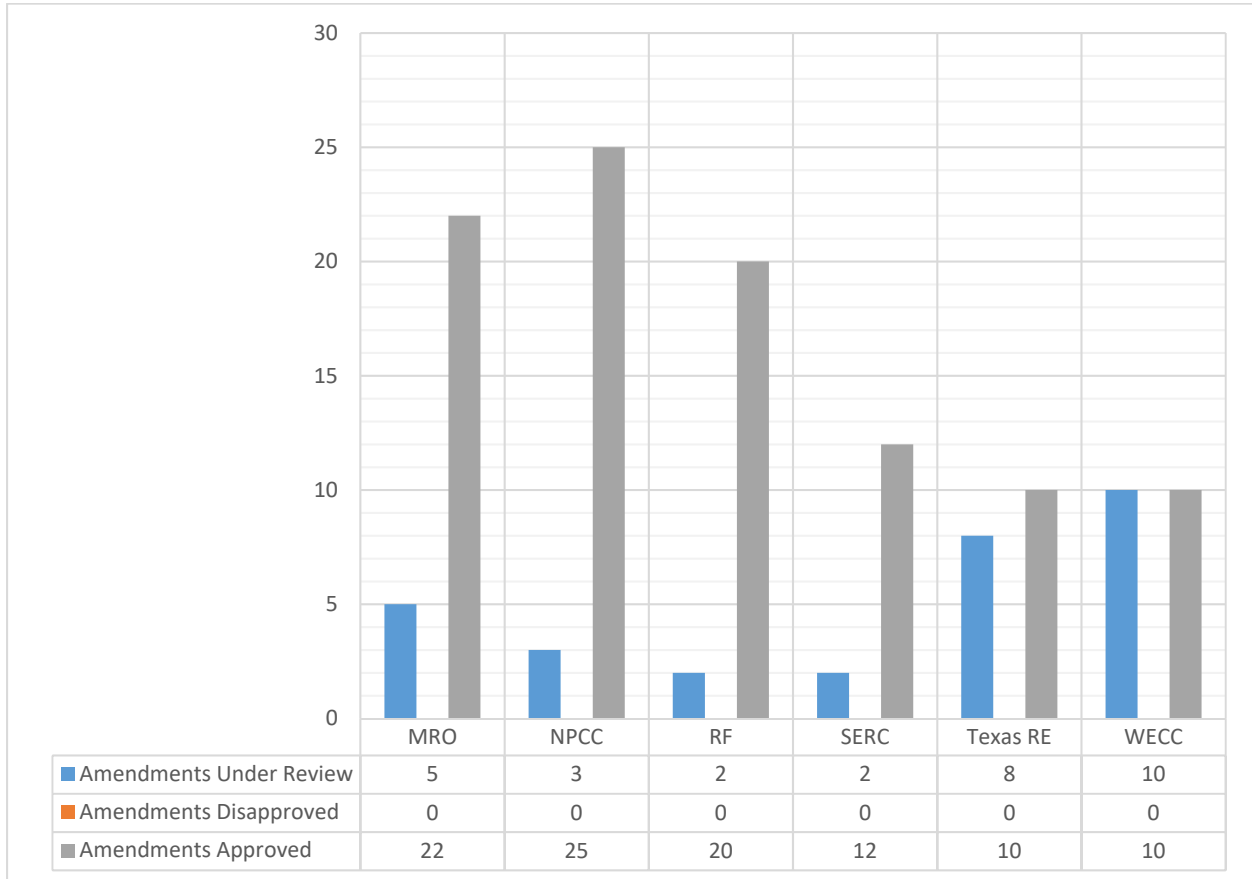


Figure 9: TFE Amendment Activity for the 2020 Reporting Period

<sup>15</sup> 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, 2020. As shown below, the ERO Enterprise mean average is 3.41 TFEs per registered entity that has an approved TFE (similar to 2019). The fewest number of TFEs a single registered entity has is one TFE. The largest number of TFEs for a single registered entity fell to 28 TFEs in 2020 from 32 in 2019; the registered entity with the largest number of TFEs is in the SERC region. SERC became the region with the highest average at 4.12 average TFEs per registered entity that has an approved TFE due to a newly commissioned facility with medium impact BES Cyber Systems, as described previously. MRO has the lowest mean average of 1.54 TFEs per registered entity that has an approved TFE.

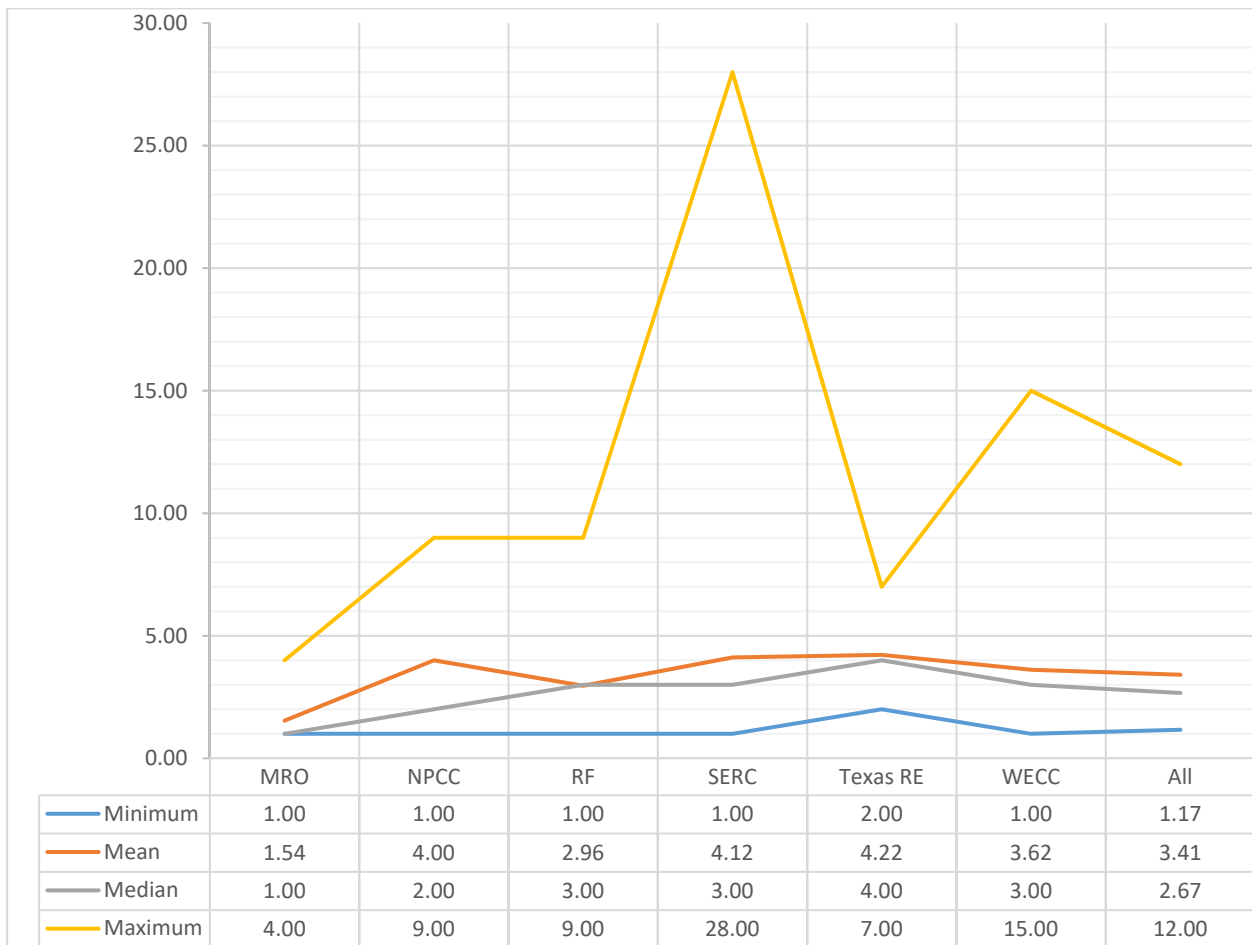


Figure 10: Average TFE Quantity per registered entity with an Approved TFE



Figure 11 depicts the average percentage of TFE transactions per approved TFE during the report period. Across the ERO Enterprise, almost a third of registered entities with one or more TFEs had a TFE transaction in 2020. The WECC region maintained the lowest average among the regions at 8.33%. This is due to the high number of approved TFEs in WECC compared to a small number of transactions. WECC saw a minimal increase in its average while NPCC saw a significant increase. In this case, the NPCC percentage increase stems from a smaller pool of approved TFEs but a moderate rise in amendments.

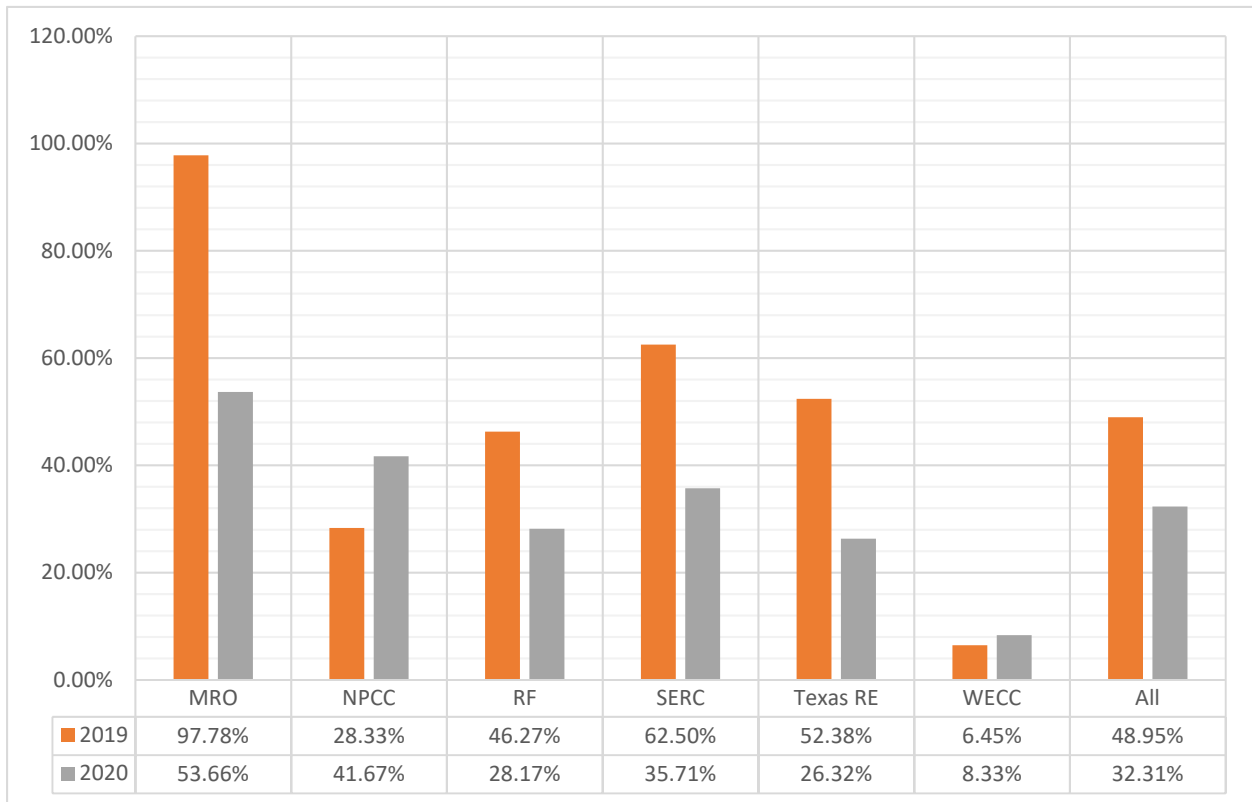


Figure 11: Average TFE Percentage per registered entities with TFE Activity

## 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.*

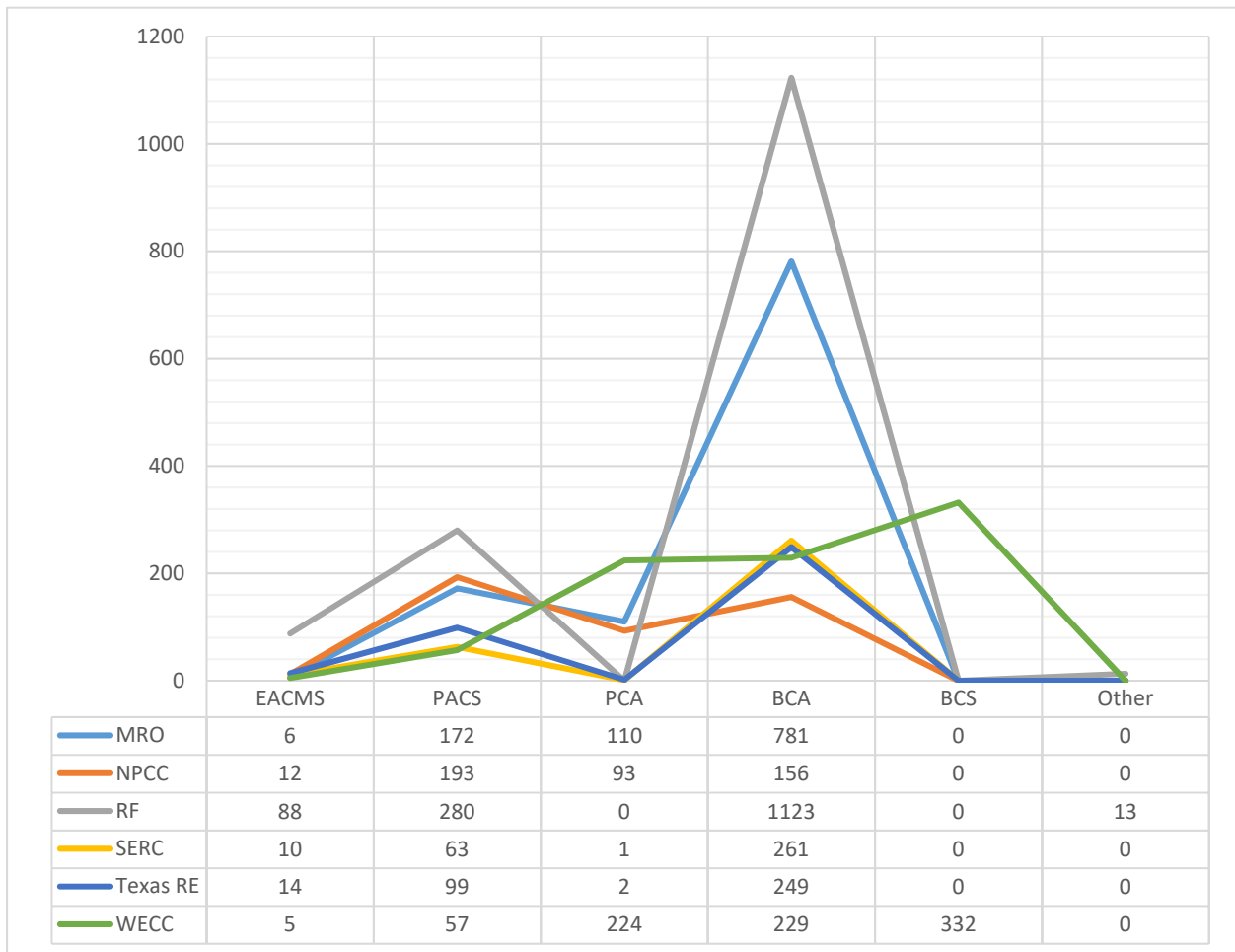
The total number of unique assets subject to TFEs continues to decrease. In 2019, the first year to use a revised asset categorization from the TFE Task Force, the total unique assets covered by TFEs was 19,801.<sup>16</sup> In 2020, the second year using the updated categorization, the total number of unique assets subject to TFEs decreased to 17,815.

Additionally, NERC provides a follow up on a TFE in Texas RE that comprised over half of the covered assets in that region that was first identified in the 2018 report. Texas RE completed a compliance monitoring engagement that had the applicable Reliability Standard and requirement within the audit scope in 2019 and verified the TFE. This TFE underwent modification during the 2020 reporting year and was approved. NERC will continue to monitor and report on this TFE until the registered entity terminates it as no longer needed.

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<sup>16</sup> 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.

Figure 12 show the total number of assets within each asset category by Regional Entity for TFEs approved in 2020. The consistency across Regional Entities is that BES Cyber Assets remains the largest asset category, except for WECC. Only entities within WECC use the BES Cyber Systems category, which contains the largest category for assets approved in 2020 in that region.



*Figure 12: Numbers of 2020 Approved Assets with Asset Categories for Each Regional Entity*

Figure 13 displays the total number of assets within each asset category for all currently active TFEs by region. The two largest categories by number of assets are in the WECC region.

These two categories cover 3290 BES Cyber Systems and 4318 “Other” Cyber Assets (such as Remote Terminal Units and Relays). As a result, the majority of assets covered by TFEs are located within the WECC region covered under two TFEs. NERC will continue to work with the WECC region to monitor these TFEs.

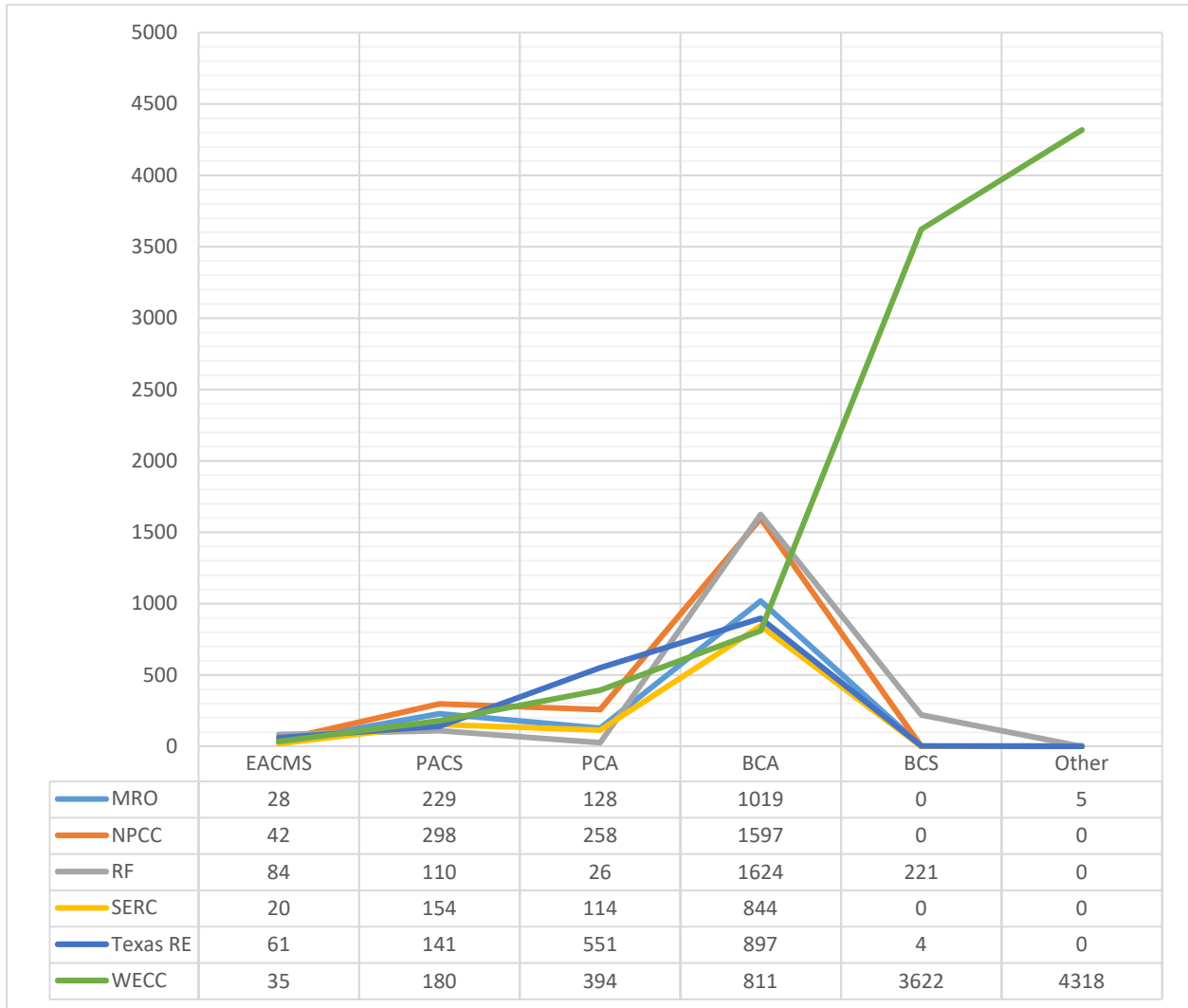


Figure 13: All Active Count of Assets in Asset Categories for Each Regional Entity

Figure 14 below shows the percentage of assets within each asset category, and separated by region, compared to the total number of assets covered by TFEs in the entire ERO Enterprise for the 2020 reporting period. The BES Cyber Assets category constitutes the largest percentage of TFEs for the 2020 reporting period, with 50-75% of each region's assets other than WECC. The second highest number of assets is in the BES Cyber Asset category, making up almost 21% of the assets covered by TFEs.

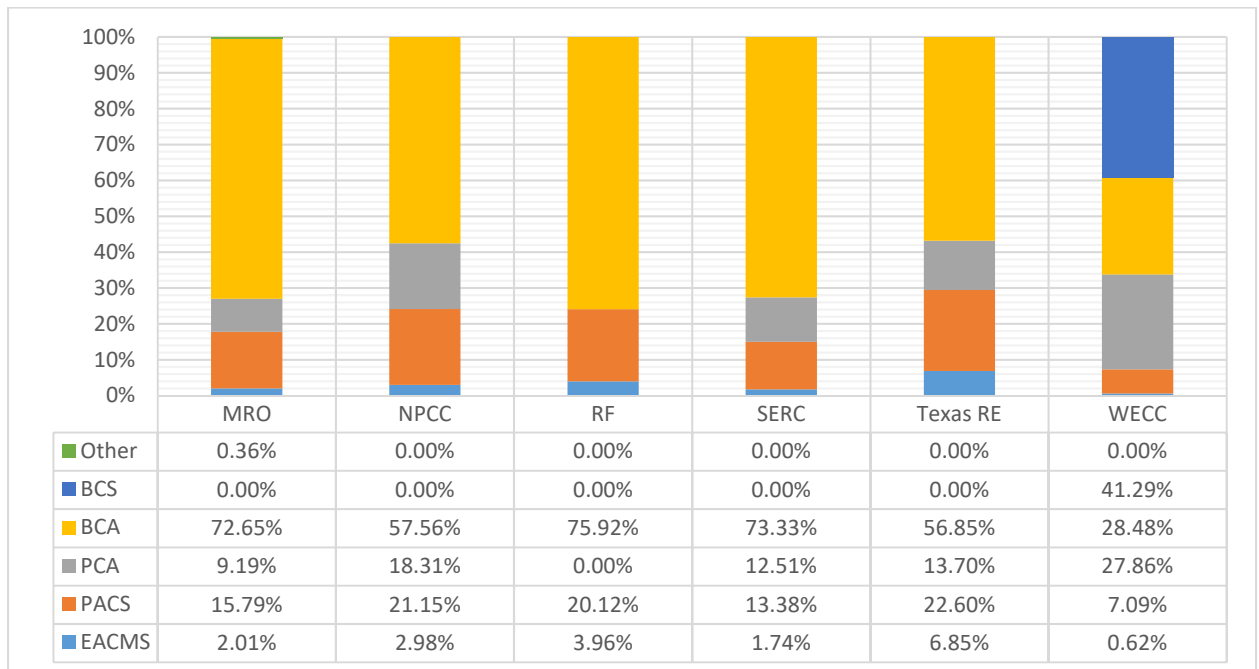


Figure 14: Percentage of Assets in each Asset Categories by percentage across the ERO Enterprise

### 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.*

Figure 15 depicts the disapproved TFEs for United States registered entities by region. In 2020, only two TFEs were disapproved. The Regional Entities disapproved one new TFE and did not approve one TFE modification.<sup>17</sup> For the new TFE, WECC discussed the TFE with the registered entity and determined that not all devices within the submittal actually required a TFE. The entity stated it would verify the issues, update the list of devices, and then resubmit. For the disapproved modification, MRO discussed the modification with the registered entity and ultimately determined the TFE was unnecessary. One disapproved TFE request would have covered two BES Cyber Systems for a registered entity in MRO under CIP-007-6 Requirement R4, Part 4.3. The other disapproved TFE request would have covered 87 PACS for a single registered entity in the WECC region under CIP-007-6 Requirement R5, Part 5.7.

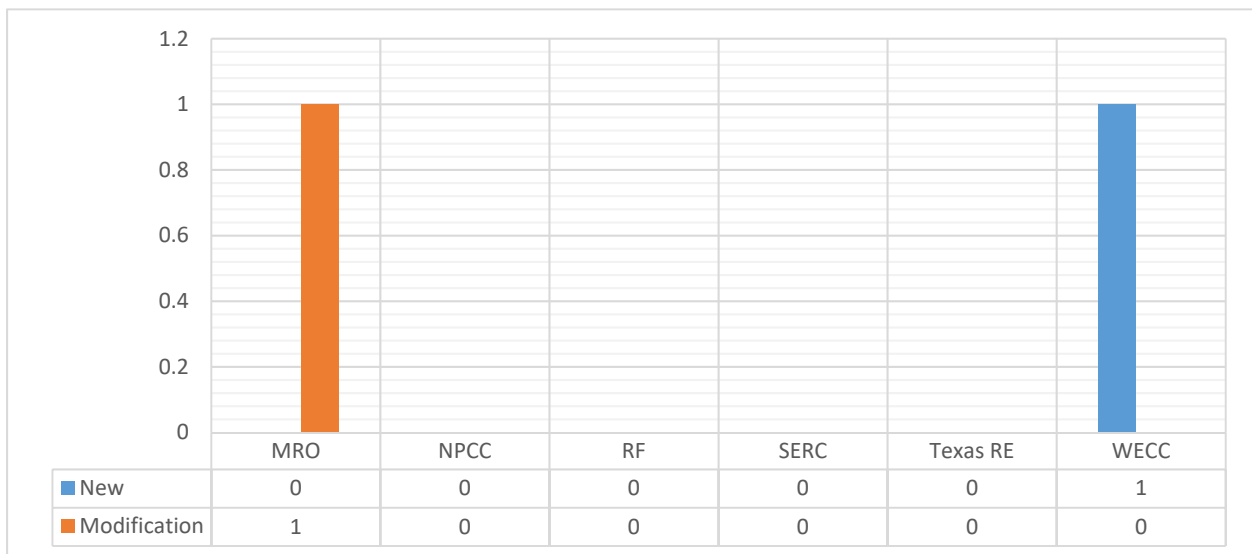


Figure 15: 2020 Disapproved TFEs

<sup>17</sup> This modification did not require an amendment, which is why there were no disapprovals of amendments this reporting period.

## **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 evaluated 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 process 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 16 shows, by region, the number of TFEs for each requirement that registered entities submitted to the Regional Entities in the 2020 reporting period. The majority of the approved TFEs are for CIP-007-6 Requirement R5 Part 5.7. Many devices still used cannot be configured to automatically lock out or generate an alert after a number of unsuccessful login attempts. Typically “appliance” type devices lack this capability, regardless of manufacturing age. CIP-007-6 Requirement R5 Part 5.6 also has TFEs for devices that cannot enforce or otherwise obligate periodic password changes. Most TFE activity in 2020 occurred in Reliability Standard CIP-007-6, with the exception of two TFEs in CIP-005-5 for Texas RE, which are both still in the initial submission stage.

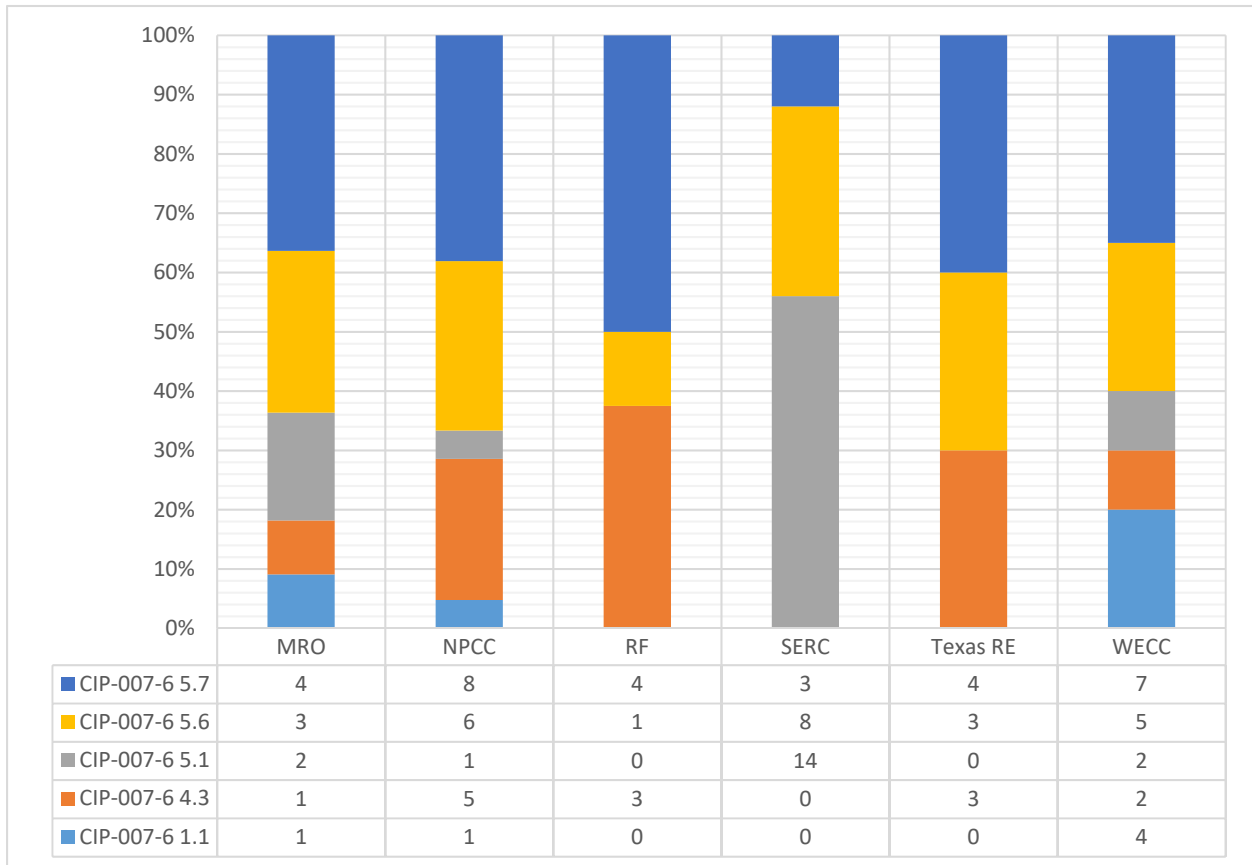


Figure 16: 2020 Approved TFE Breakout per Requirement and Part

Figure 17 demonstrates the same breakdown by Reliability Standard and requirement as Figure 16, but includes all active TFEs, not just those from the reporting period of 2020.

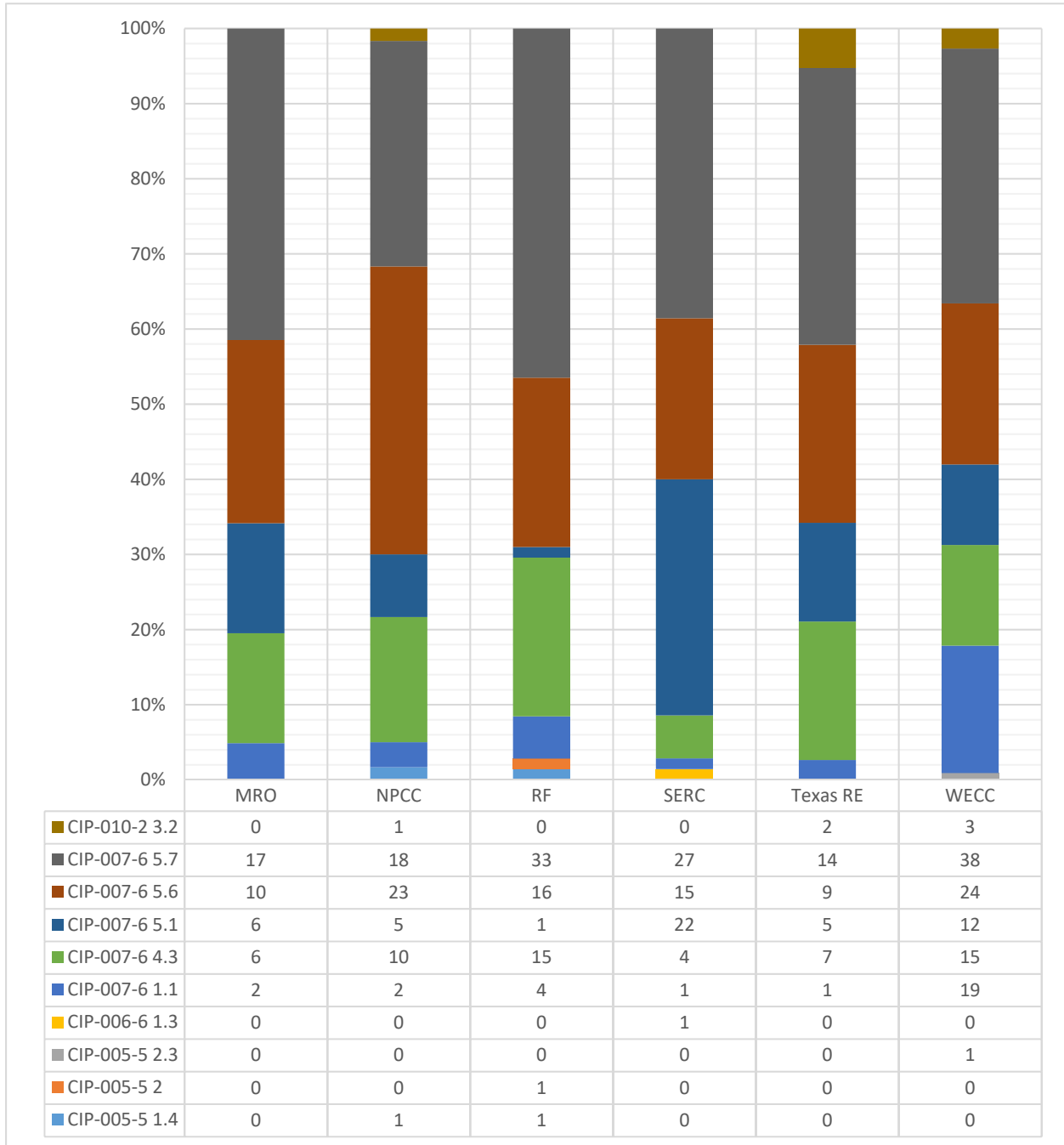


Figure 17: All Active TFE Breakout per Requirement and Part

## **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.<sup>18</sup> 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. If TFEs remain a part of the NERC CIP standards, in the next few years, the level of active TFEs may drop to a number low enough to once again allow review and maintenance as a part of the CMEP process. 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

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<sup>18</sup> Order No. 706 at P 157.

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 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<sup>19</sup> 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 when undertaking compliance monitoring activities (e.g., Compliance Audits, Spot Checks, Self-Certifications, etc.). Figure 18 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. MCR requests declined from 2019 to 2020, mirroring a decline in the previous year. The 2020 average across the ERO Enterprise is just over 39%, when calculated as an average across the percentage of each region. This means that over one third of the time, a registered entity will submit an MCR to

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<sup>19</sup> Project 2016-02 Modifications to CIP Standards, [https://www.nerc.com/pa/Stand/Pages/Project 2016-02 Modifications to CIP Standards.aspx](https://www.nerc.com/pa/Stand/Pages/Project%202016-02%20Modifications%20to%20CIP%20Standards.aspx).

modify an approved TFE. It should be noted that the trend is downward, from 49% in 2019 to 39% on average in 2020.

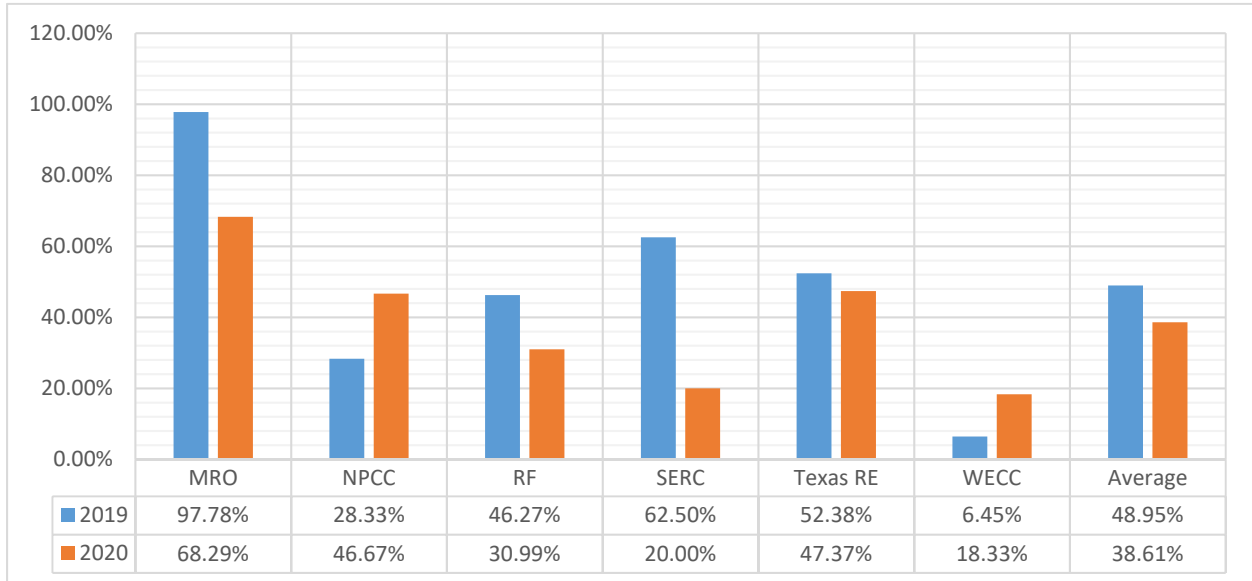


Figure 18: TFE Amendments to Approved TFEs per Regional Entity

## 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, 2019 to June 30, 2020, seven TFEs were terminated.

In addition, two TFEs are scheduled to expire in the future, unless further amended by the registered entity. These TFEs originate at a single entity and cover eight total Cyber Assets for CIP-007-6 Requirement R4, Part 4.2 and Requirement R5, Part 5.7.

**Error! Reference source not found.** shows the breakdown of TFEs with future expiration dates. The vast majority of approved TFEs have no planned expiration date.

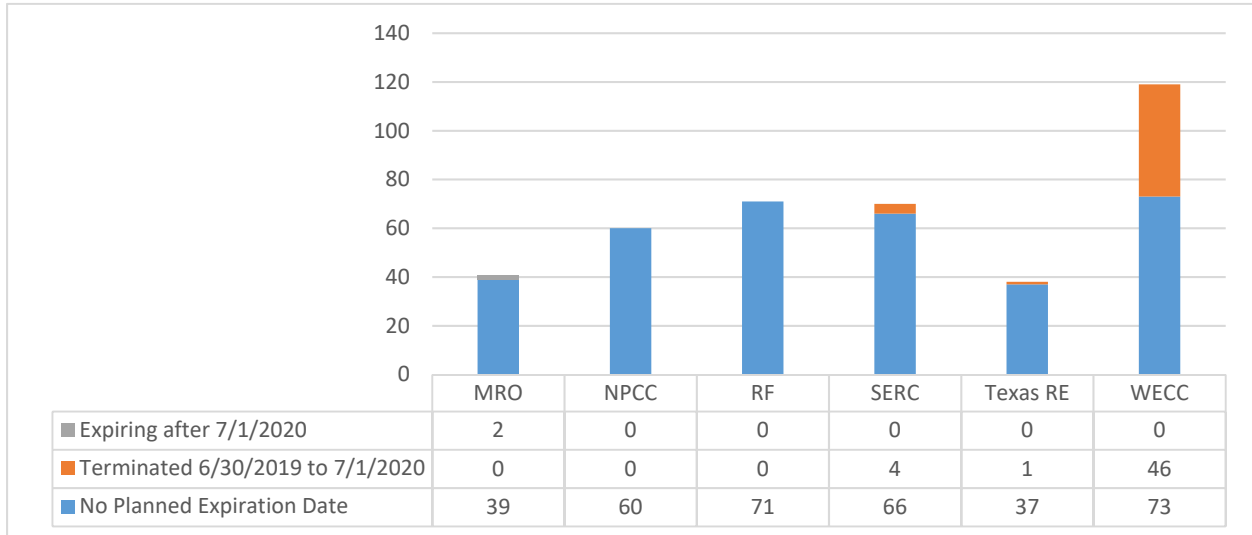


Figure 19: TFEs to Expire in Future

## 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 the 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 2020 and 2021. 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 2020 Annual Report.

Respectfully submitted,

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