

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Compliance and Certification Committee Report on the ERO Enterprise Effectiveness Survey

December 2016

**RELIABILITY | ACCOUNTABILITY**



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# Table of Contents

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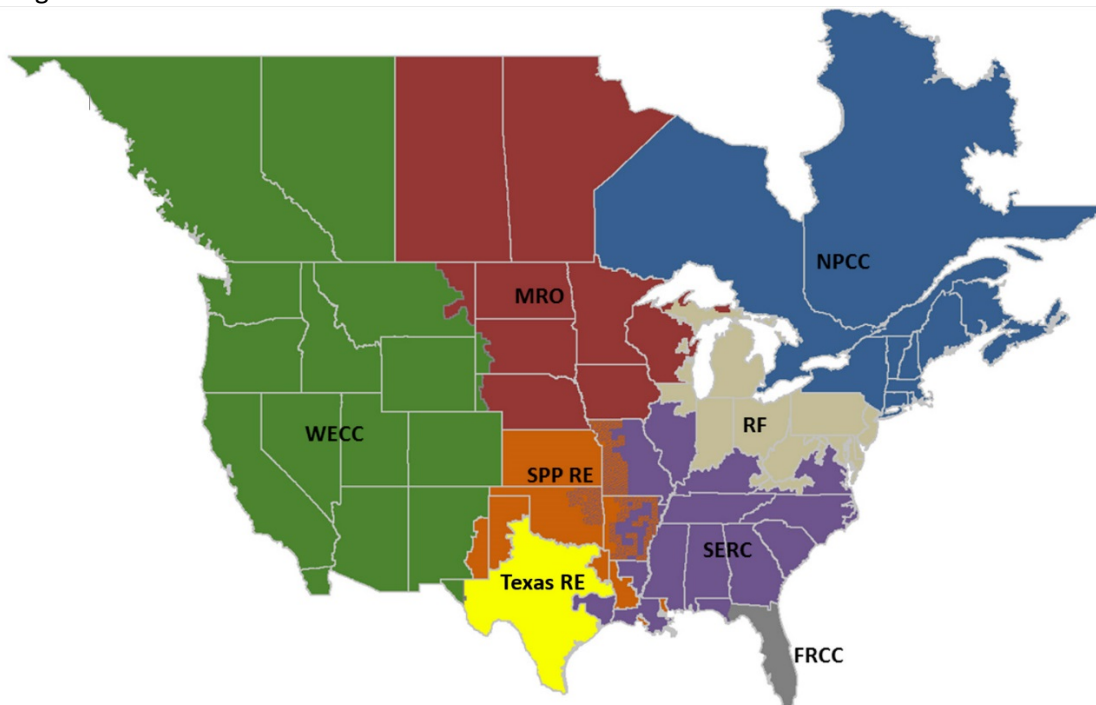
Preface.....	iii
Introduction.....	iv
Response Rates and Demographics .....	v
Summary of Survey Responses.....	1
Topic Area Analyses .....	1
Highest and Lowest-Rated Items .....	1
Regional Comparison Analysis .....	2
Favorability Analyses .....	2
Figure 6: Most Unfavorable Items .....	3
Year-Over-Year Analyses.....	3
Year-Over-Year Averages by Region .....	6
Comment Themes Analysis .....	8
Transition to Risk-Based Compliance Monitoring Enforcement Program (CMEP).....	8
Compliance Monitoring.....	8
Enforcement .....	8
Organizational Certification and Registration .....	8
2016 Conclusions and Recommendations .....	10
Conclusions.....	10
Recommendations.....	10
Transition to risk-based CMEP .....	10
Compliance Monitoring.....	11
Enforcement.....	11
Organization Certification and Registration.....	11
Appendix A .....	12
Appendix B – Highest and Lowest Rated Items by Region.....	14
Appendix C – Favorability Analysis.....	21

## Preface

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The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the reliability of the bulk power system (BPS) in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the BPS through system awareness; and educates, trains, and certifies industry personnel. NERC’s area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico. NERC is the Electric Reliability Organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. NERC’s jurisdiction includes users, owners, and operators of the BPS, which serves more than 334 million people.

The North American BPS is divided into eight Regional Entity (RE) boundaries as shown in the map and corresponding table below.



*The North American BPS is divided into eight RE boundaries. The highlighted areas denote overlap as some load-serving entities participate in one Region while associated transmission owners/operators participate in another.*

<b>FRCC</b>	Florida Reliability Coordinating Council
<b>MRO</b>	Midwest Reliability Organization
<b>NPCC</b>	Northeast Power Coordinating Council
<b>RF</b>	ReliabilityFirst
<b>SERC</b>	SERC Reliability Corporation
<b>SPP RE</b>	Southwest Power Pool Regional Entity
<b>Texas RE</b>	Texas Reliability Entity
<b>WECC</b>	Western Electricity Coordinating Council

# Introduction

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In January 2016, North American Electric Reliability Corporation (NERC) partnered with TalentQuest to conduct an Electric Reliability Organization (ERO) Enterprise Effectiveness survey through an online methodology. The survey measured perceptions regarding policies, practices, and effectiveness of NERC and the Regional Entities (REs). The survey was comprised of 72 rated items in the topic areas of ERO Enterprise Principles, Reliability Standards Development, Compliance Monitoring and Enforcement, Organization Registration and Certification, Personnel Certification, Reliability Assessment and Performance Analysis, Training and Education, Situation Awareness and Infrastructure Security, Annual Business Plan and Budget Development, Stakeholder Communications and Public Relations, Electricity Information Sharing and Analysis Center (E-ISAC), and International ERO.

The Compliance and Certification Committee (CCC) has utilized surveys in the past to support one of its charter obligations, which is to provide comments to NERC with respect to stakeholders' perceptions of the policies, practices, and effectiveness of ERO programs. In an effort to consolidate the number of surveys issued to registered entities, 28 of the 72 survey items included in the ERO Enterprise Effectiveness survey are applicable to the CCC fulfilling this obligation. The topic areas evaluated in previously administered CCC surveys as well as this year's survey include the following:

- Compliance Monitoring and Enforcement
- Organization Registration and Certification

Similar to the previous Enterprise Effectiveness Survey, recipients had the option to respond with a single survey on behalf of all NERC Compliance Registry (NCR) numbers they represent or separate surveys for each NCR number they represent. For the CCC statistical analysis to be consistent with previous CCC survey respondents, only individuals who responded on behalf of an NCR number were used in the analysis. However, the CCC comment theme analysis in this report included comments from all respondents. There were 235 applicable individual responses, representing 368 unique NCR numbers.

The survey items were evaluated via a five-point, agreement-based rating scale ("Strongly Disagree" to "Strongly Agree"). In some instances, respondents were asked to evaluate NERC and the REs separately. Qualitative data was gathered for each Topic Area with the ability to leave open-ended comments for each survey question. The qualitative data was interpreted through a thematic analysis to quantify open-ended perceptions. In addition to Regional topic and item analyses, the survey reported item favorability (item response distribution), and year-over-year trend analyses.

## Response Rates and Demographics

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There were 235 individual respondents representing 368 unique NCR numbers. Each NCR number is associated with a single RE, which accounts for 368 Regional data points. Each Regional percentage represents the percentage of the 368 Regional data points.

Table 1: Regional Responses

REGION	NCR Numbers Represented	% of Total NCR Numbers Represented
WECC	77	20.9%
RF	63	17.1%
SERC	57	15.5%
MRO	32	8.7%
NPCC	42	11.4%
Texas RE	50	13.6%
SPP RE	30	8.2%
FRCC	17	4.6%
Total	368	

# Summary of Survey Responses

## Topic Area Analyses

The first level of analysis, shown in Figure 1, was conducted at the topic area level and considered all survey responses in aggregate (NERC and REs combined).

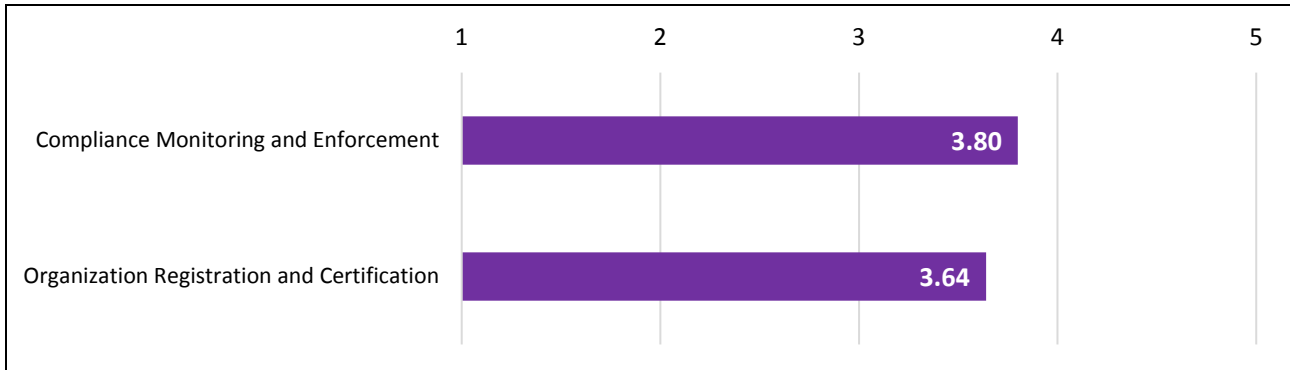


Figure 1: Aggregate Ratings by Topic Area

## Highest and Lowest-Rated Items

All five of the highest-rated items were in the Compliance Monitoring topic area with means of 3.93 and above. The lowest-rated item means ranged from 3.33 to 3.49 and were distributed across topic areas Organization Registration and Certification and Compliance Monitoring and Enforcement. Figures 2 and 3 show the highest- and lowest-rated items, respectively. Appendix B identifies the highest- and lowest-rated items for each RE.

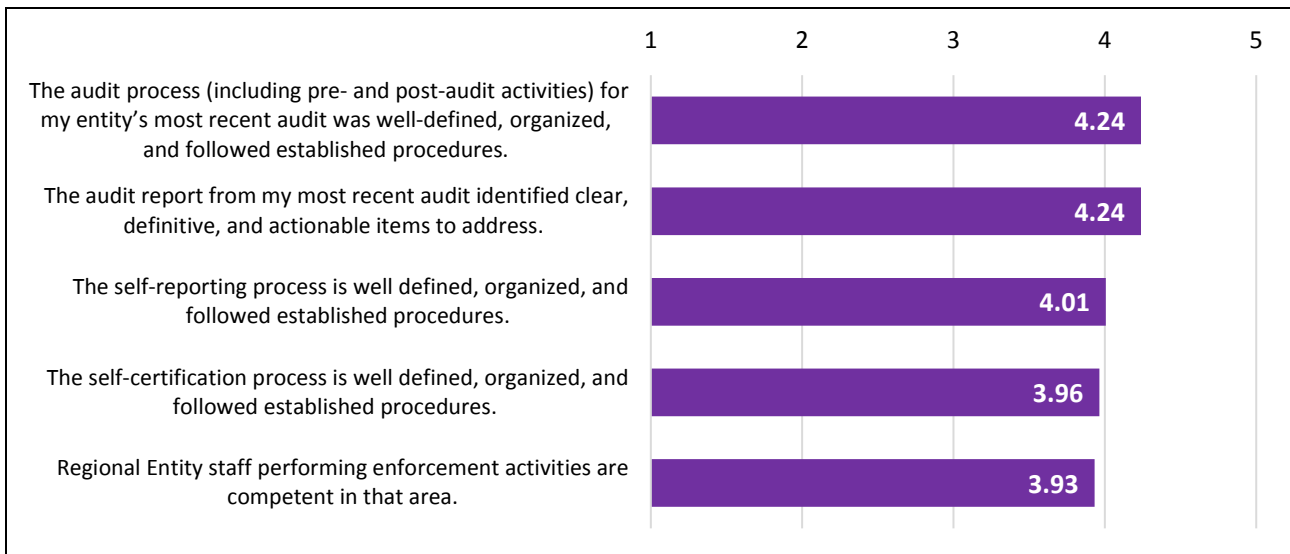


Figure 2: Highest-Rated Items – Overall

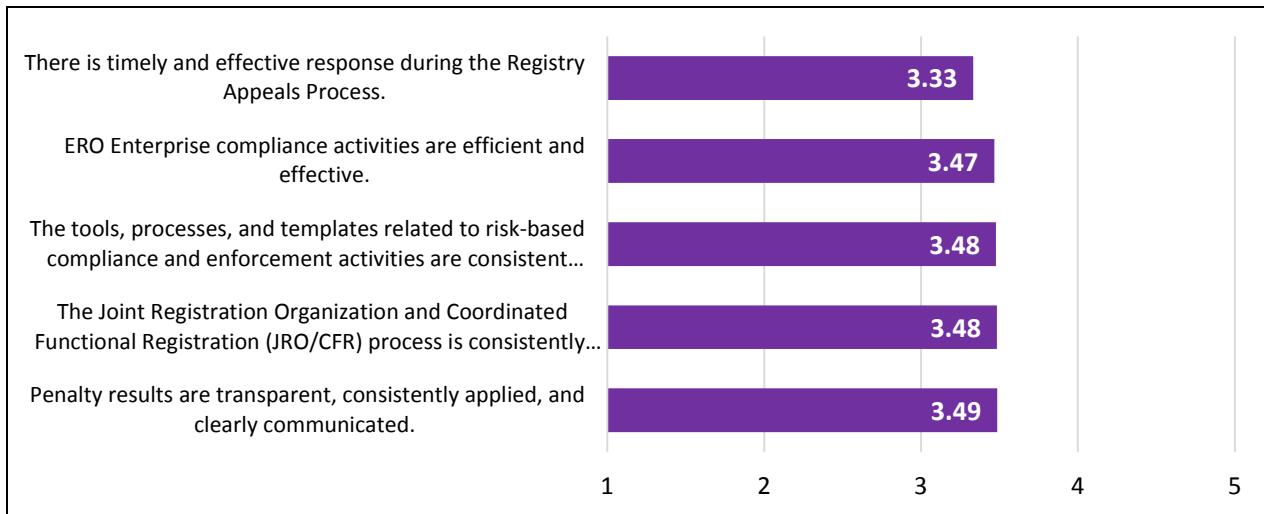


Figure 3: Lowest-Rated Items – Overall

### Regional Comparison Analysis

There were 17 questions asked at the RE level. Figure 4 shows the overall averages for each RE compared to the overall average for the REs combined. T-tests and ANOVA were used to identify statistically significant differences. Between the Regions, a 0.47 difference exists between the highest mean (4.03, Texas RE) and the lowest mean (3.56, SPP RE). There is a statistically significant difference between Texas RE and SPP RE ( $p < .05$ ).<sup>1</sup>

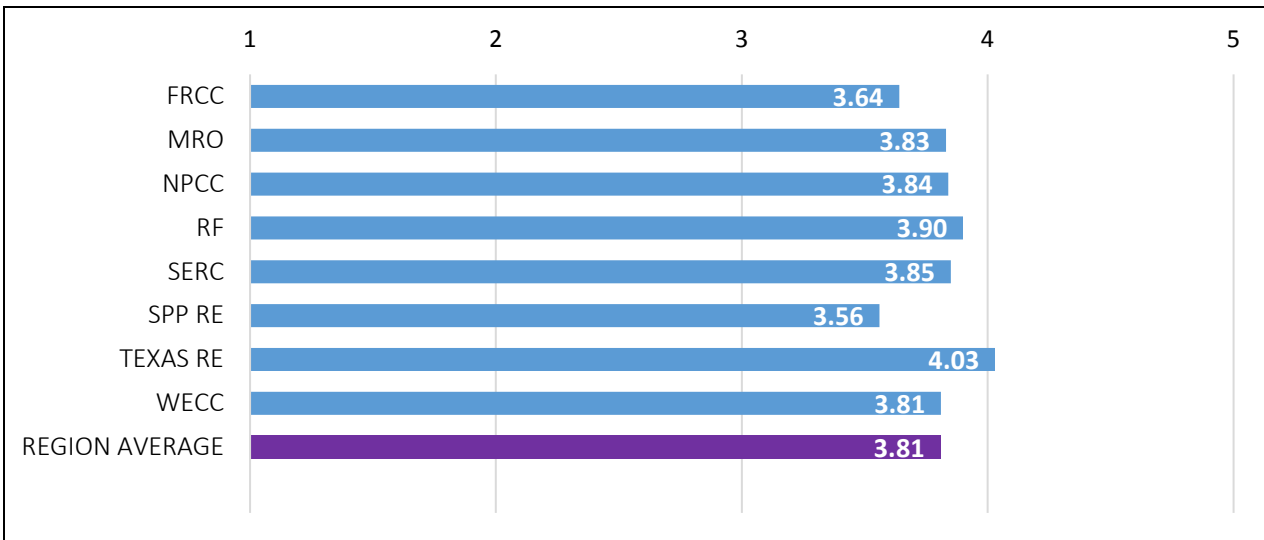


Figure 4: Overall Averages by Region

### Favorability Analyses

Favorability analysis allowed for additional insight into the strength of stakeholder perception through examination of the rating distribution. Responses across all Regions and NERC were re-coded as “Unfavorable” (rating of 1 – Strongly Disagree or 2 – Disagree), “Neutral” (rating of 3 – Neither Disagree or Agree), and “Favorable” (rating of 4 – Agree or 5 – Strongly Agree). The resulting analysis does not graphically represent the number of “Not Applicable” or missing responses.

<sup>1</sup> When you perform a hypothesis test in statistics, a p-value helps you determine the significance of your results. Hypothesis tests are used to test the validity of a claim that is made about a population. A small p-value ( $< .05$ ) indicates strong evidence in favor of your hypothesis.

Across all Regions, the five items with the greatest percentage of favorable ratings, shown in Figure 5, ranged from 79-93% favorable. Conversely, the five items with the highest percentage of unfavorable ratings, shown in Figure 6, ranged from 12-15% unfavorable. Appendix C identifies the favorability analysis for each question in the survey that is applicable to this report.

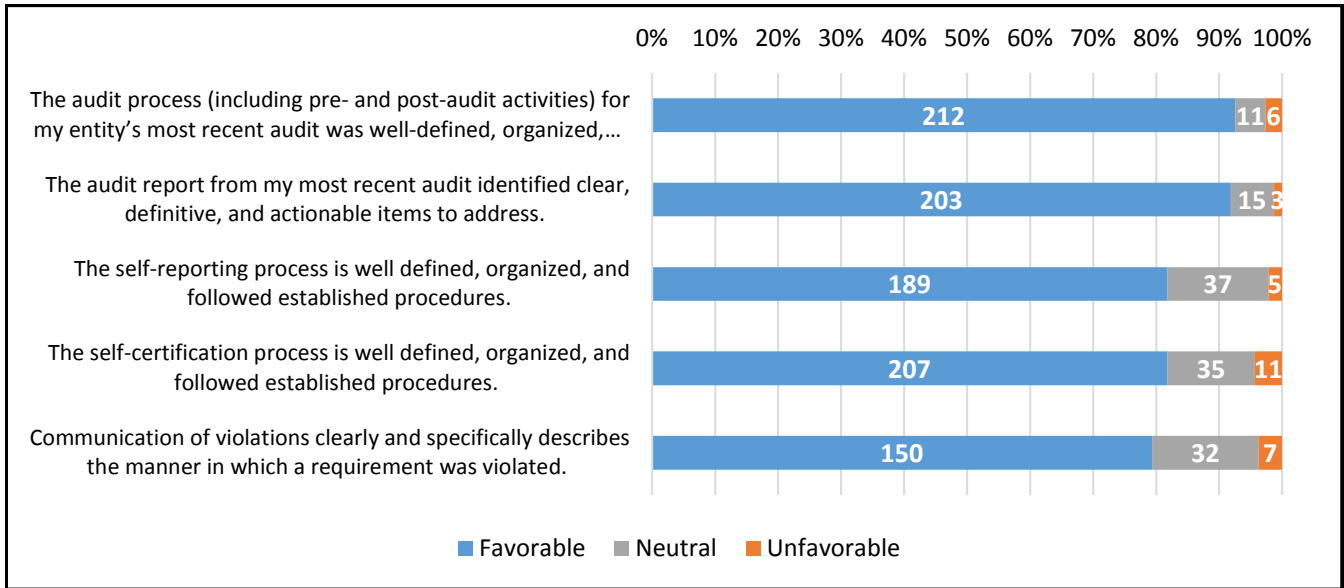


Figure 5: Most Favorable Items

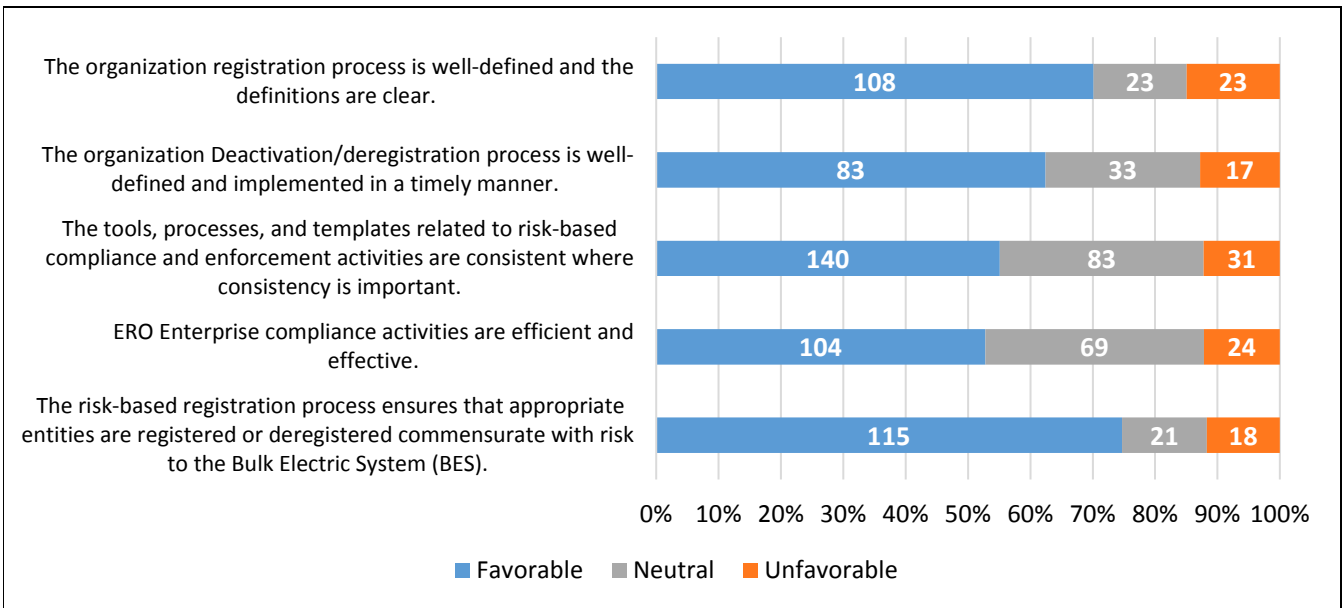


Figure 6: Most Unfavorable Items

## Year-Over-Year Analyses

The following analysis used a subset of 16 questions, identified with an asterisk in **Appendix A**, for the purpose of year-over-year comparison. Only those questions rated in both 2015 and currently in 2016 (or deemed appropriately similar) were used in the year-over-year analysis. Figure 7 compares the number of respondents in 2015 to the number of respondents in 2016 by Regional Entity.



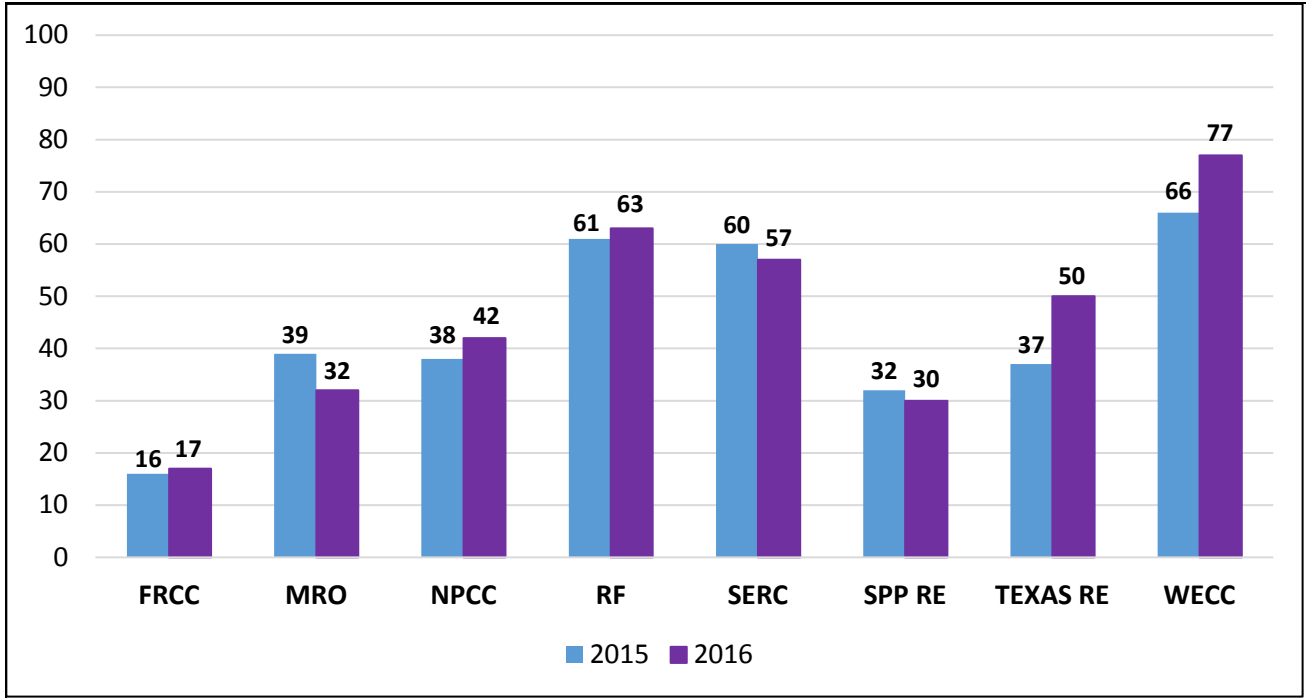


Figure 7: Year-Over-Year Respondents by Regional Entity

Figure 8 shows the year-over-year averages for compliance monitoring and enforcement and organization registration and certification.

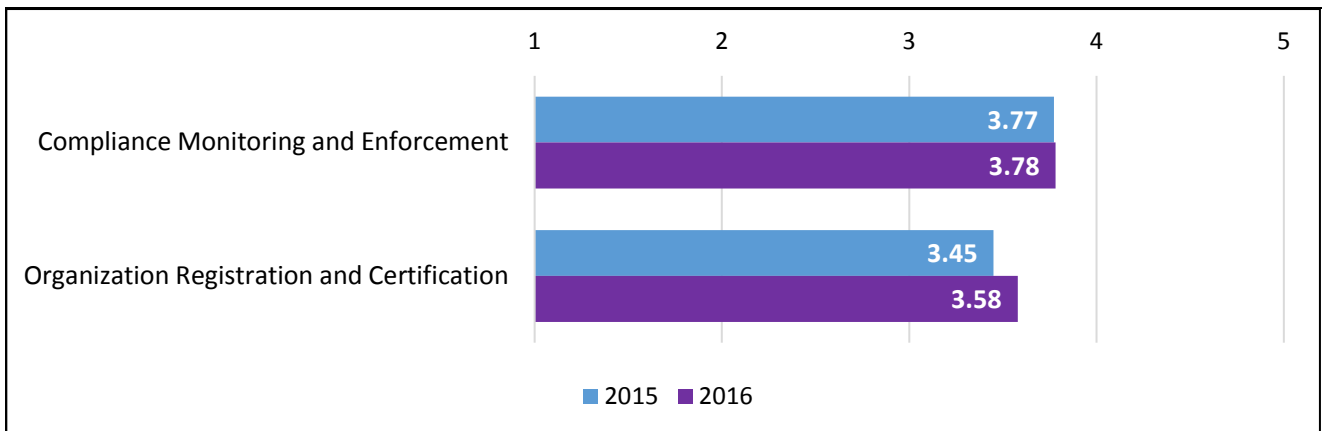


Figure 8: Year-Over-Year Averages by Topic Area

Figures 9 through 11 identify the year-over-year comparison for each of the 16 questions used in this analysis. Of the 16 questions, there was one that showed a statistically significant difference. In Organization Registration and Certification, the average rating for “the risk-based registration process ensures that appropriate entities are registered or deregistered commensurate with risk to the Bulk Electric System (BES)” increased from 3.42 in the January 2015 survey to 3.79 in the May 2016 survey.

Summary of Survey Responses

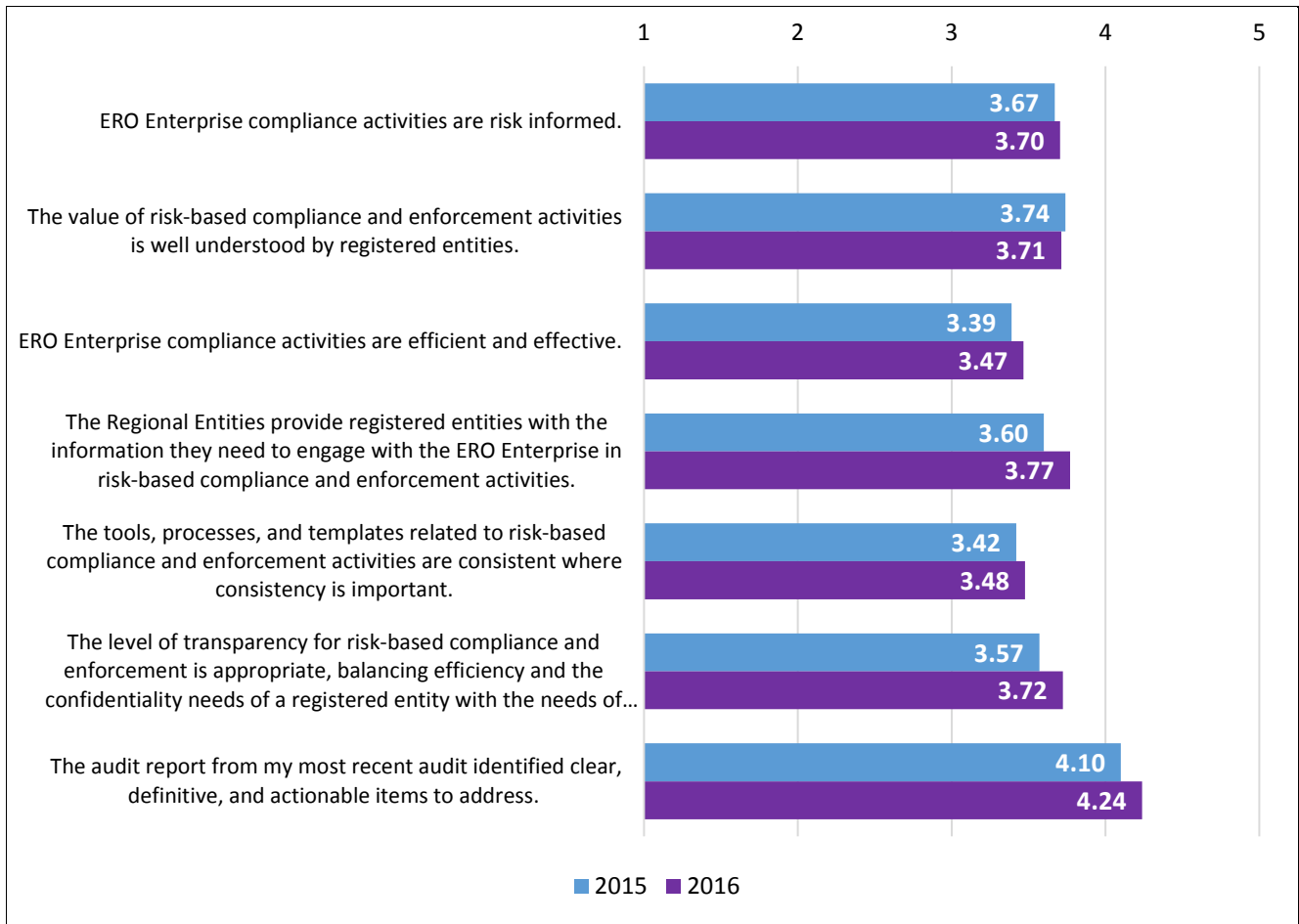


Figure 9: Year-Over-Year Averages for Compliance Monitoring and Enforcement

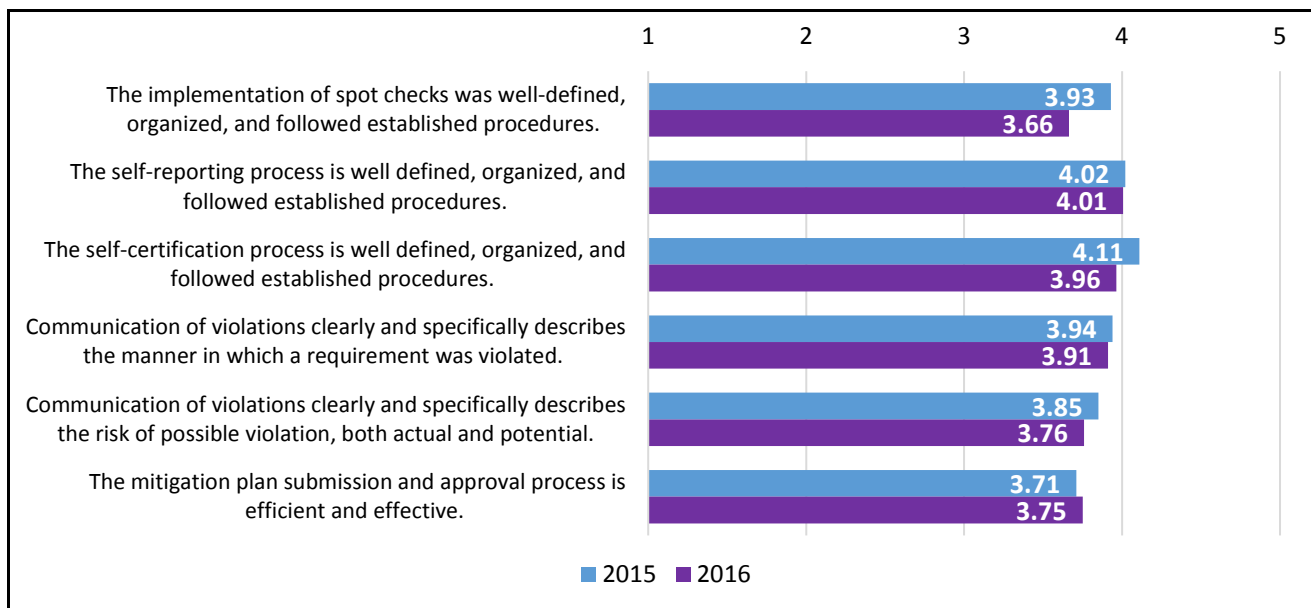
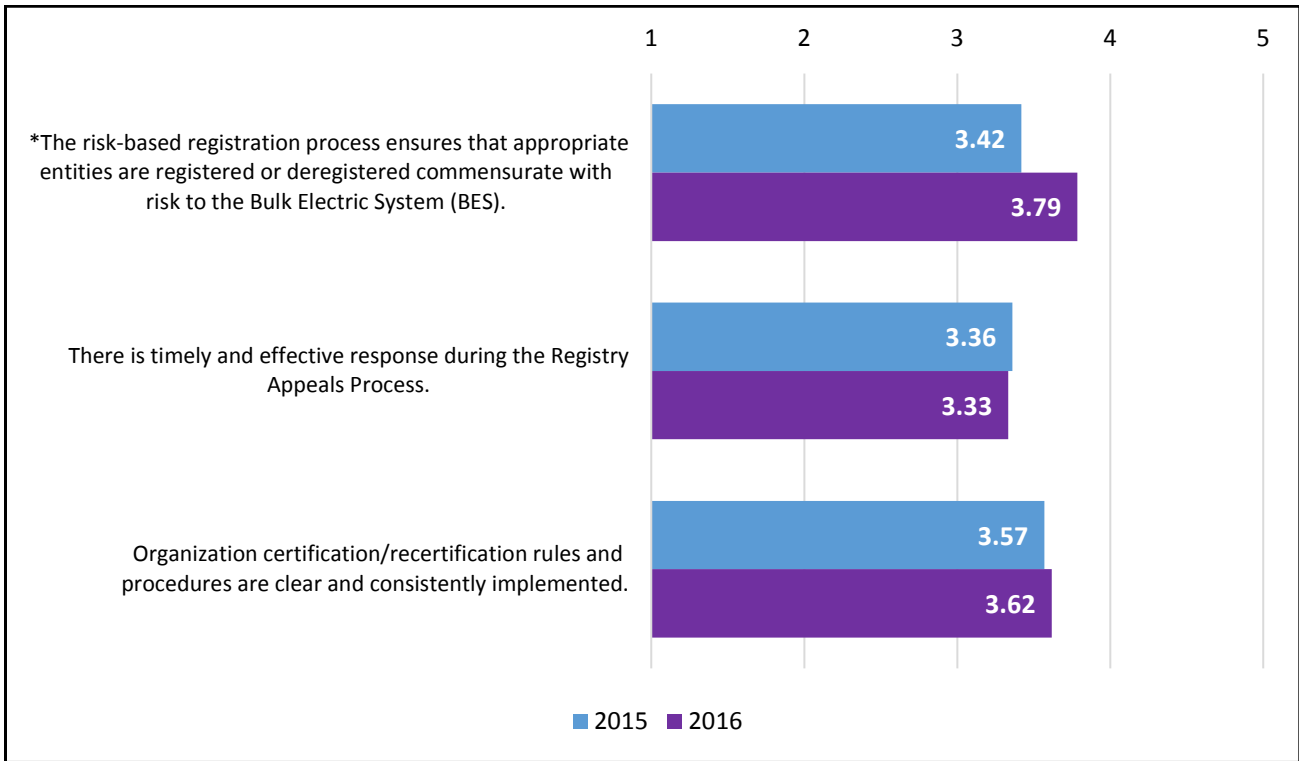


Figure 10: Year-Over-Year Averages for Compliance Monitoring and Enforcement (cont.)



**Figure 11: Year-Over-Year Averages for Organization Registration and Certification**

**Year-Over-Year Averages by Region**

Of the 16 questions used in the year-over-year analysis, 10 questions were asked as the Regional level. Figure 12 identifies the year-over-year aggregate averages by Region for the questions asked at the Regional level. FRCC shows a statistically significant difference in the year-over-year overall response averages ( $p < .05$ ).

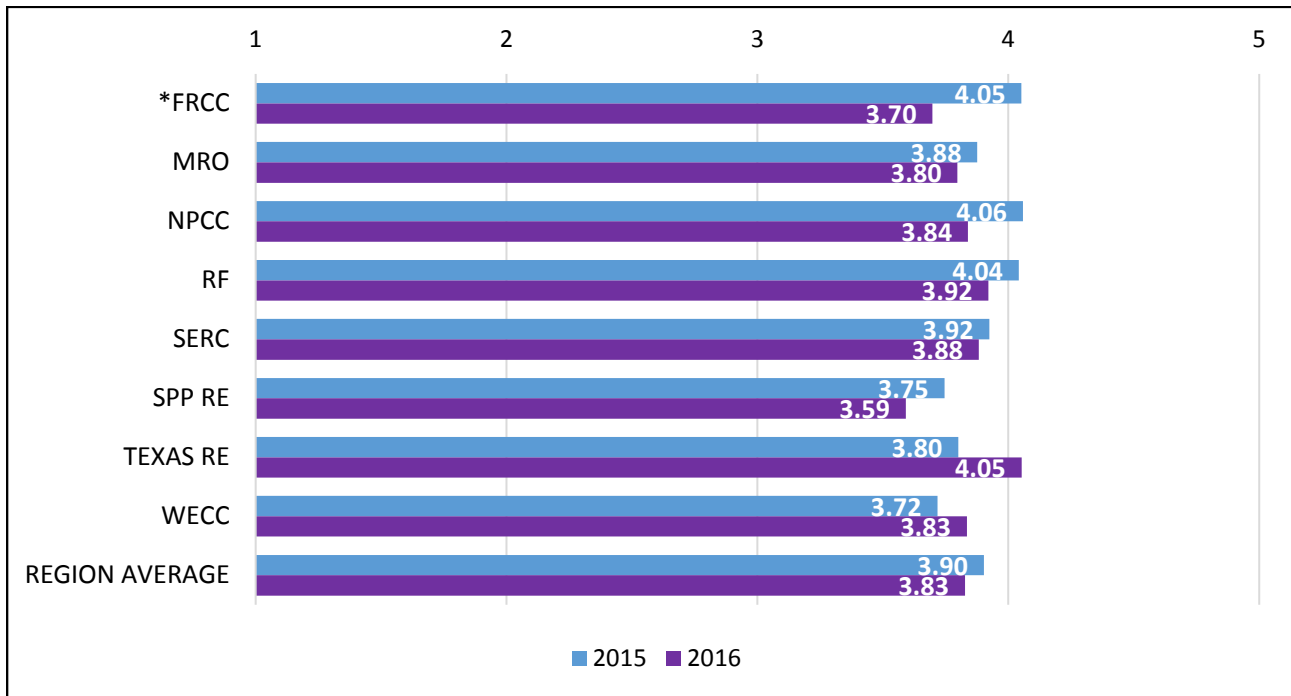


Figure 12: Year-Over-Year Aggregate Averages by Region

## Comment Themes Analysis

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In the 2016 survey, all open-ended responses were reviewed by the CCC and categorized by theme. The CCC then summarized these comments with recommendations for action including recommendations for some additional education and outreach activities. The themes below are based on all responses to survey items as listed in Appendix A.

Within each of the themes, the CCC recognizes the importance of education and outreach as a key tool to addressing many concerns raised by stakeholders in this survey. Three common goals must be achieved to ensure that education and outreach alleviates these concerns: 1) ensuring that adequate funding is continually made available within the NERC budget process to support such activities in the coming years; 2) providing easy up-to-date access to training and educational opportunities, including a master calendar of training events, posted on the website in a manner that is easy to access, and 3) making all public training and webinar materials available to all stakeholders on the NERC website.

### **Transition to Risk-Based Compliance Monitoring Enforcement Program (CMEP)**

Stakeholders understand the value of risk-based CMEP, and are encouraged by NERC's commitment to the program. Comments regarding the transition to risk-based CMEP were generally positive, with a few opportunities for improvement:

- There appears to be various levels of implementation by the REs (expected to improve).
- The quality of the Inherent Risk Assessments (IRAs) seems to vary across the Regions.
- The quality of the Internal Control Evaluations (ICEs) seems to vary across the Regions.

### **Compliance Monitoring**

Comments regarding compliance monitoring were more specific and targeted than in previous surveys:

- The FERC Order No. 693 related audits appeared to be well organized and the audit teams were well prepared.
- The FERC Order No. 706 audit teams were less prepared, and may not be technically as competent.
- Commenters expressed confusion with Spot Checks and Self-Certifications (are they now the same?).

### **Enforcement**

There were two overall themes related to enforcement:

- The process for review and approval of mitigation plans takes too long. Part of the issue involves the second review by enforcement after the information has been provided to the auditors.
- As in previous surveys, inconsistencies in penalties and settlement determinations were highlighted.

### **Organizational Certification and Registration**

There were three themes related to Organization Certification and Registration:

- It is not clear when registration is required and how to register.
- The Joint Registration Organization (JRO)/Coordinated Functional Registration (CFR) processes and requirements are unclear.
- The Re-Certification process is unclear.

# 2016 Conclusions and Recommendations

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## Conclusions

The 2016 Stakeholder Perception Survey and comments generally illustrated positive trends in evaluations, indicating industry's view of continued enhancements to ERO Effectiveness. Consistent with the previous survey results, Compliance Monitoring remains the highest rated topic area (3.78), statistically the same as last survey. Like last year, Organization Registration is ranked lowest (3.58). Year-Over-Year analysis did not yield any statistically significant differences between topic areas, however the trend was positive in both areas. One question in Organization Registration and Certification "the risk-based registration process ensures that appropriate entities are registered or deregistered commensurate with risk to the Bulk Electric System (BES)" increased from 3.42 in the last survey to 3.79 in the 2016 survey (a statistically significant change).

Industry feedback of strengths, as expressed in the "comments" section included:

- Generally positive comments on actual conduct of FERC Order 693 audits.
- Generally positive comments on the transition to risk-based compliance.

Industry feedback for improvement, as expressed in the "comments" section, included the themes:

- FERC Order 706 audits are perceived to be less organized than FERC Order 693 audits, and audit personnel may be in need of additional technical training and experience.
- The process for review and approval of mitigation plans takes too long.
- The JRO/CFR processes and applicability are still not clear.
- The registration process and criteria are still not clear.
- Spot Checks and Self-Certifications are confusing.

## Recommendations

The CCC recognizes the importance of education and outreach as a key tool to addressing many concerns raised by stakeholders in this survey. Three common goals must be achieved to ensure that education and outreach alleviates these concerns: 1) ensuring that adequate funding is continually made available within the NERC budget process to support such activities in the coming years; 2) providing easy up-to-date access to training and educational opportunities, including a master calendar of training events, posted on the website in a manner that is easy to access, and 3) making all public training and webinar materials available to all stakeholders on the NERC website.

The following list of recommendations is based on the comments theme analysis and the statistical analysis of the responses and references activities already identified in the 2017 Business Plan and Budget where appropriate. Additionally, the CCC recognizes that many of these recommendations have been captured in [action plans](#) that were accepted by the NERC Board of Trustees in November 2016.

### Transition to risk-based CMEP

- NERC should provide more guidance and set expectations for the Regional Entities related to risk-based CMEP implementation.
- NERC should develop a specific plan for implementing the following training and education activities identified in the [2017 Business Plan and Budget](#) (BP&B):

- Development and delivery of education and training for ERO Enterprise staff (BP&B page 29).
- Training and outreach activities related to effective implementation of the Physical Security Reliability Standard (BP&B page 29).Initiation of a training program to support implementation of the common audit procedures for each reliability standard (BP&B page 30).
- Training to key Regional Entity staff on the most important elements of risk-based enforcement (BP&B Page 41).

## **Compliance Monitoring**

- NERC and the REs should provide guidance clarifying the difference between Spot-Checks and Self-Certifications.
- NERC should continue with efforts to train auditors, with emphasis on training and experience of auditors involved in FERC Order No. 706 audits.

## **Enforcement**

- NERC should develop a specific plan for implementing the following training and education activities identified in the 2017 Business Plan and Budget:
  - Training to key RE staff regarding the risk assessment of non-compliance and the determination of appropriate penalties and sanctions for non-compliance (BP&B Page 41).

## **Organization Certification and Registration**

- NERC should consider developing a set of standard forms to be used by all Regional Entities for certification and registration.
- NERC should develop a specific plan for implementing the following training and education activities identified in the 2017 Business Plan and Budget:
  - Registration and certification program improvements identified by NERC staff during the development of the 2016-19 ERO Enterprise Strategic Plan, (BP&B page 33).

The CCC thanks the industry for their participation and the feedback provided in the survey. The CCC also recognizes and appreciates NERC's support in facilitation of the CCC Stakeholder Survey.



## Appendix A

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The individual items from the ERO Enterprise Effectiveness Survey that were used in the analysis in this report are identified below by topic area. The questions are numbered from 15 through 42 to match the numbering used in the overarching ERO Enterprise Effectiveness Survey, from which these are a subset. Respondents were asked to evaluate the survey questions in various ways; some for the ERO Enterprise collectively, some for only NERC, some for each of the REs, and some for NERC and each of the REs. The brackets before each item below identifies which organization level applied to the question. Additionally, the items used in the year-over-year analysis are identified with an asterisk.

### Compliance Monitoring and Enforcement

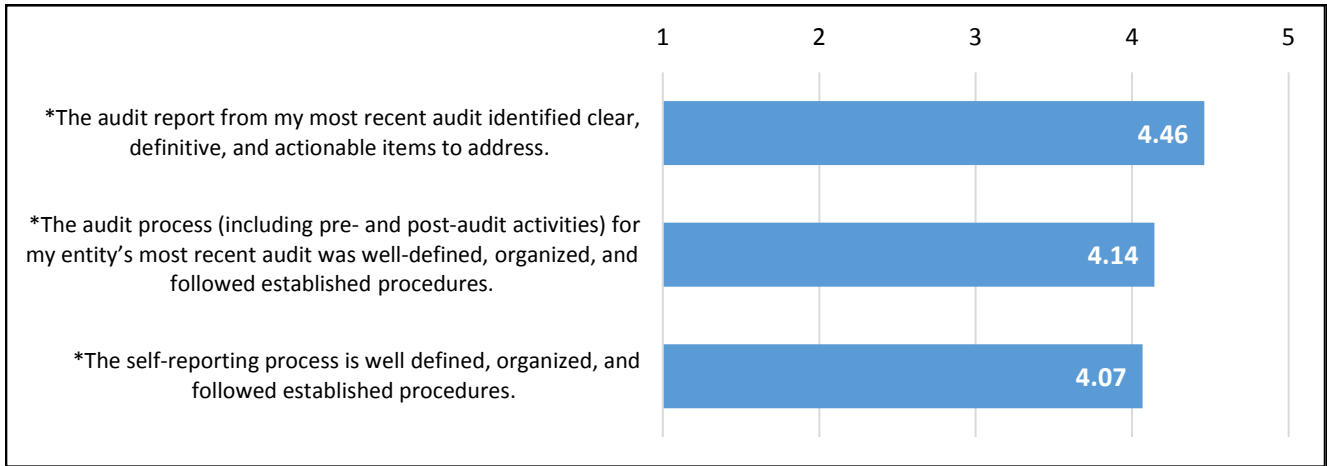
15. [*Regional Entities*] Regional Entity staff performing inherent risk assessments are competent in that area.
16. [*Regional Entities*] Regional Entity staff performing audits and internal controls evaluations are competent in those areas.
17. [*Regional Entities*] Regional Entity staff performing enforcement activities are competent in that area.
18. \*[*ERO Enterprise*] ERO Enterprise compliance activities are risk informed.
19. \*[*ERO Enterprise*] The value of risk-based compliance and enforcement activities is well understood by registered entities.
20. \*[*ERO Enterprise*] ERO Enterprise compliance activities are efficient and effective.
21. \*[*Regional Entities*] The Regional Entities provide registered entities with the information they need to engage with the ERO Enterprise in risk-based compliance and enforcement activities.
22. \*[*Regional Entities*] the tools, processes, and templates related to risk-based compliance and enforcement activities are consistent where consistency is important.
23. \*[*NERC and the Regional Entities separately*] The level of transparency for risk-based compliance and enforcement is appropriate, balancing efficiency and the confidentiality needs of a registered entity with the needs of industry as a whole to learn from others.
24. [*Regional Entities*] The audit process (including pre- and post-audit activities) for my entity's most recent audit was well-defined, organized, and followed established procedures.
25. \*[*Regional Entities*] The audit report from my most recent audit identified clear, definitive, and actionable items to address.
26. \*[*Regional Entities*] the implementation of spot checks was well-defined, organized, and followed established procedures.
27. \*[*Regional Entities*] the self-reporting process is well defined, organized, and followed established procedures.
28. \*[*Regional Entities*] the self-certification process is well defined, organized, and followed established procedures.
29. \*[*Regional Entities*] Communication of violations clearly and specifically describes the manner in which a requirement was violated.

## Organization Registration and Certification

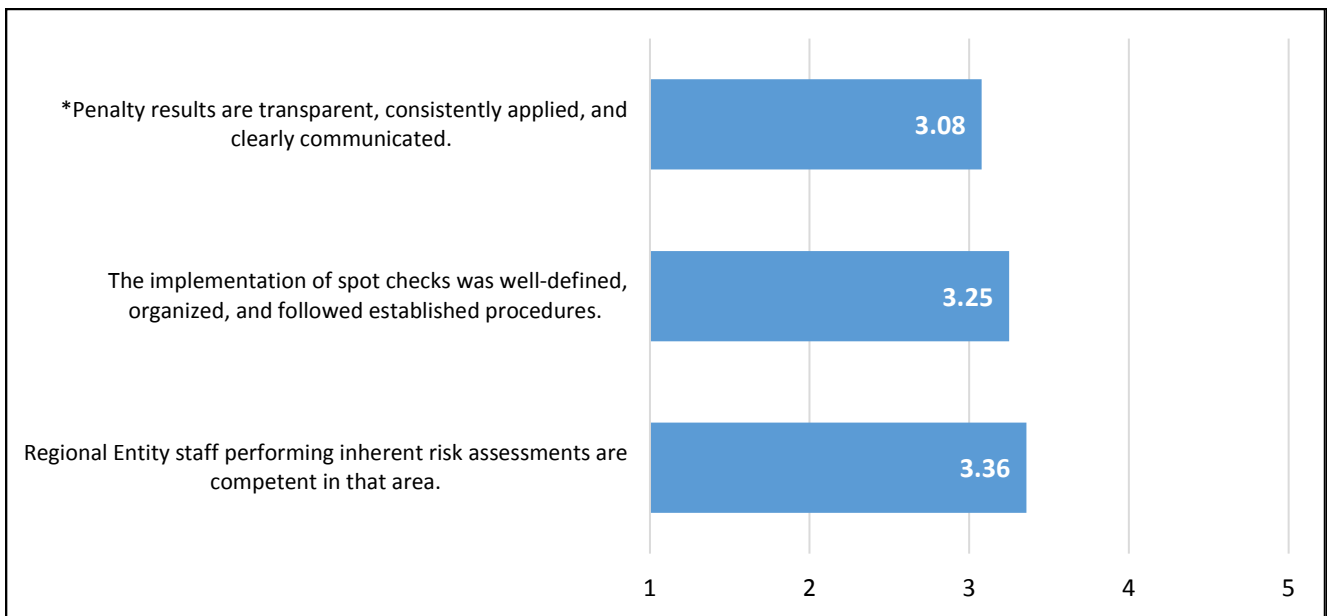
15. \*[*ERO Enterprise*] The risk-based registration process ensures that appropriate entities are registered or deregistered commensurate with risk to the Bulk Electric System (BES).
16. [*ERO Enterprise*] The organization registration process is well-defined and the definitions are clear.
17. [*ERO Enterprise*] The organization Deactivation/deregistration process is well-defined and implemented in a timely manner.
18. [*ERO Enterprise*] My entity's recent experience with the registration and/or Deactivation/deregistration process, if any, was appropriate.
19. [*NERC*] The Joint Registration Organization and Coordinated Functional Registration (JRO/CFR) process is clear.
20. [*Regional Entities*] The Joint Registration Organization and Coordinated Functional Registration (JRO/CFR) process is consistently implemented.
21. \*[*NERC*] There is timely and effective response during the Registry Appeals Process.
22. [*NERC*] The certification process ensures that entities are certified commensurate with risks to the BES.
23. \*[*NERC*] Organization certification/recertification rules and procedures are clear and consistently implemented.

## Appendix B – Highest and Lowest Rated Items by Region

Figures 1 through 16 identify the highest- and lowest- rated items for each RE. The asterisks identify the items that are also represented in the overall highest- and lowest-rated items included in the body of this report. There were too few questions asked at the NERC and ERO Enterprise level to show the highest- and lowest-rated items. Figures 17 and 18 identify all questions asked at the NERC and ERO Enterprise level, respectively, from highest- to lowest-rated.



**Figure 1: Highest-Rated Items – FRCC**



**Figure 2: Lowest-Rated Items – FRCC**

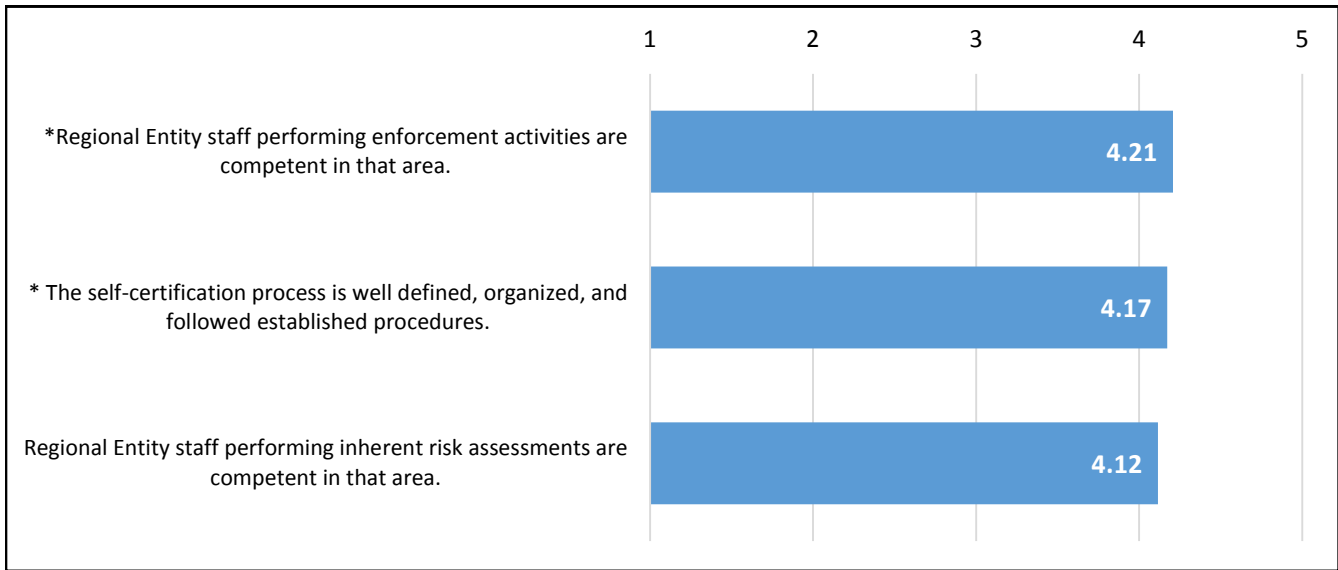


Figure 3: Highest-Rated Items – MRO

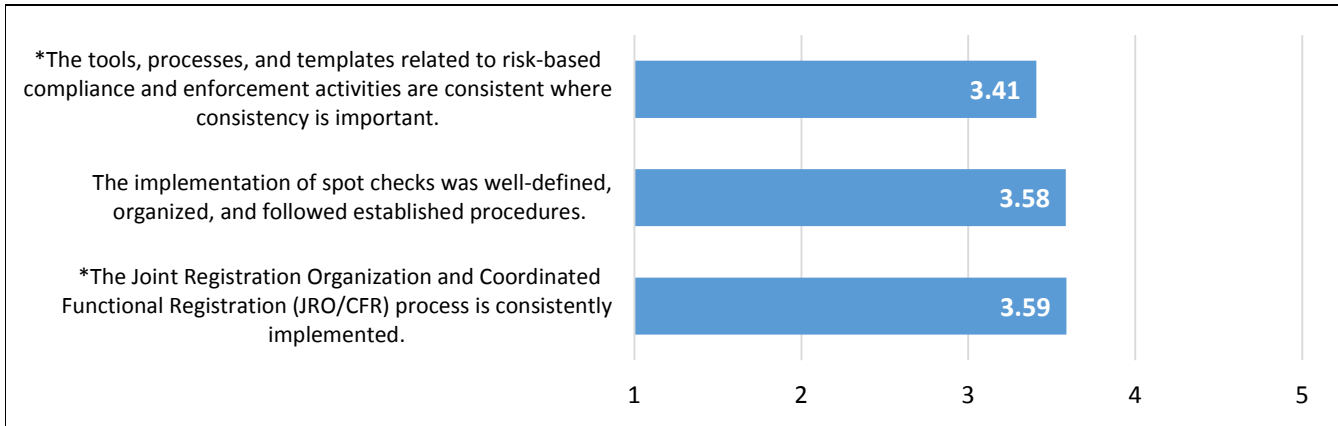


Figure 4: Lowest-Rated Items – MRO

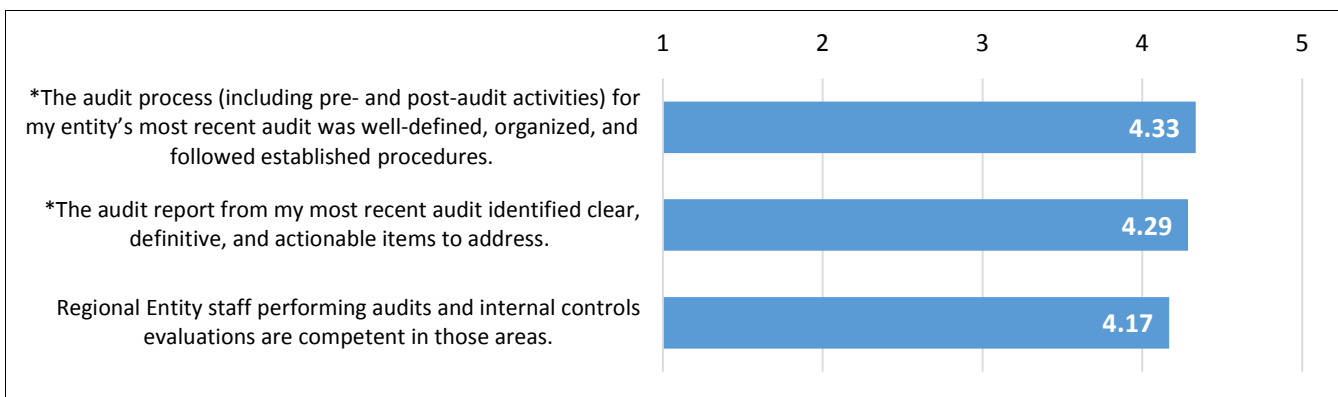


Figure 5: Highest-Rated Items – NPCC

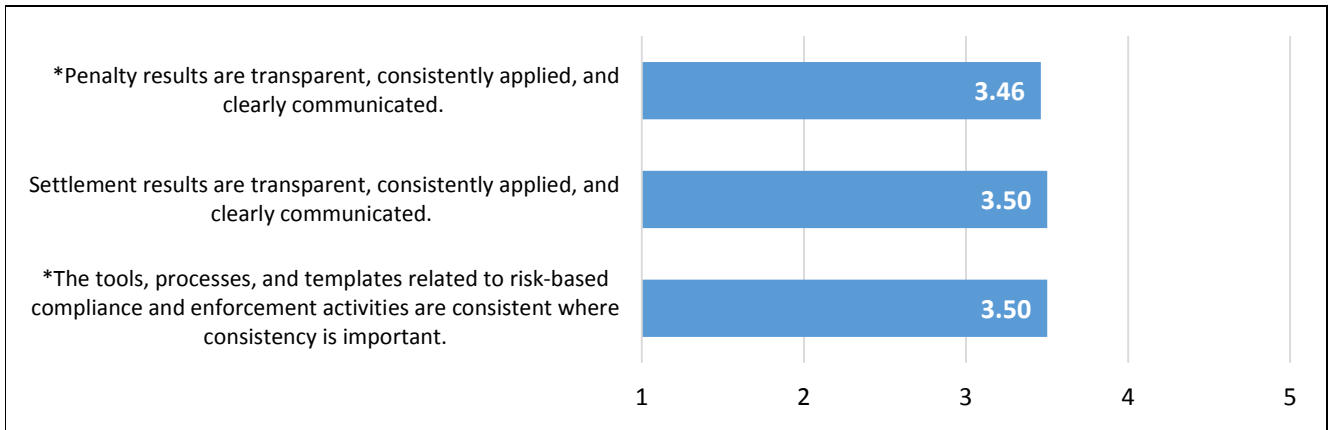


Figure 6: Lowest-Rated Items – NPCC

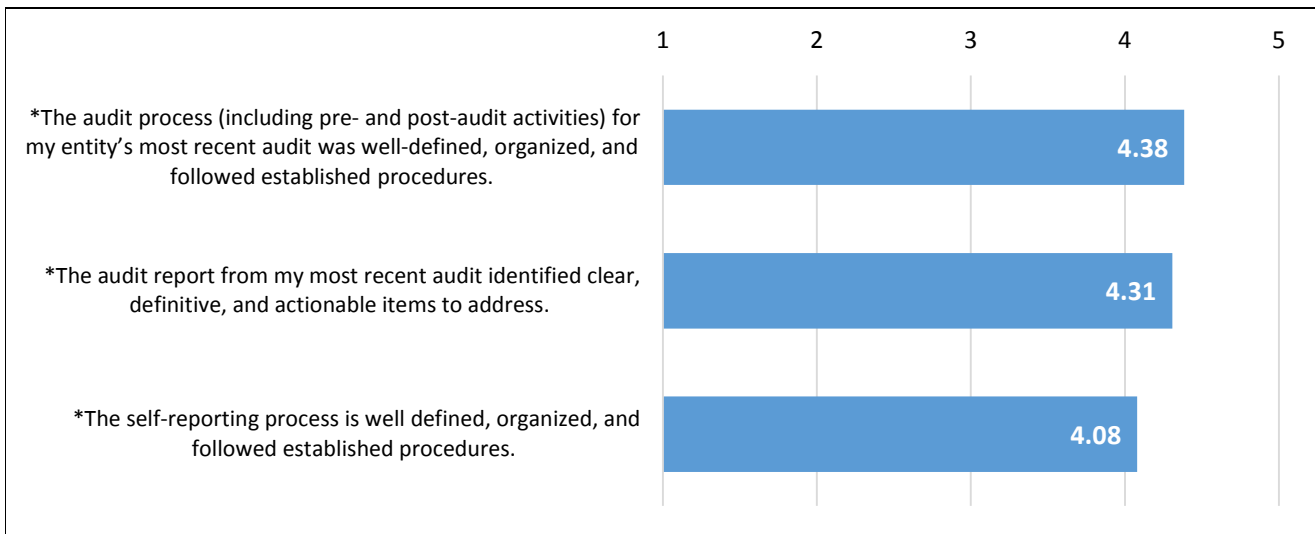


Figure 7: Highest-Rated Items – RF

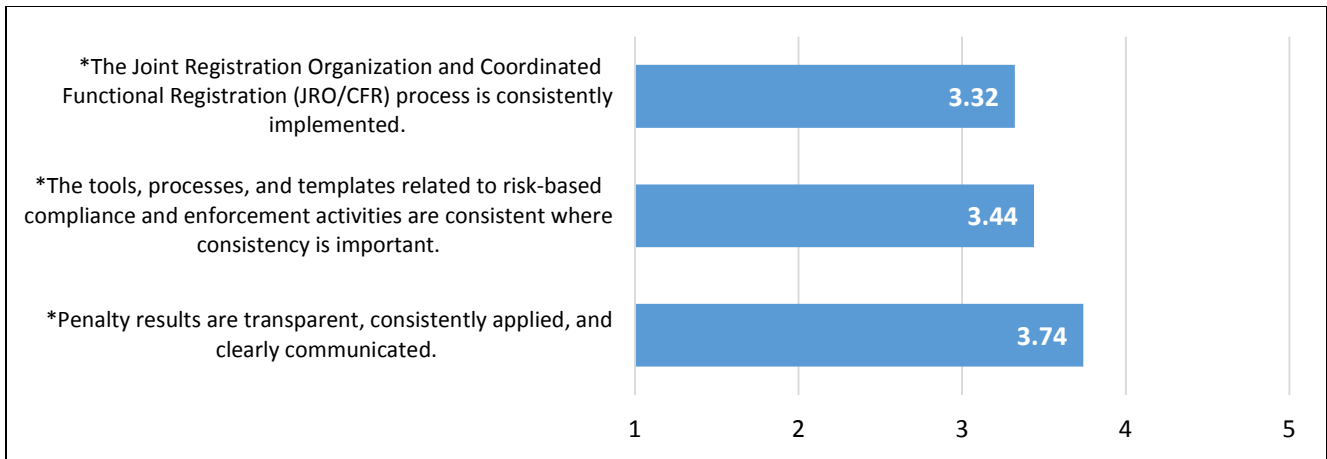


Figure 8: Lowest-Rated Items – RF

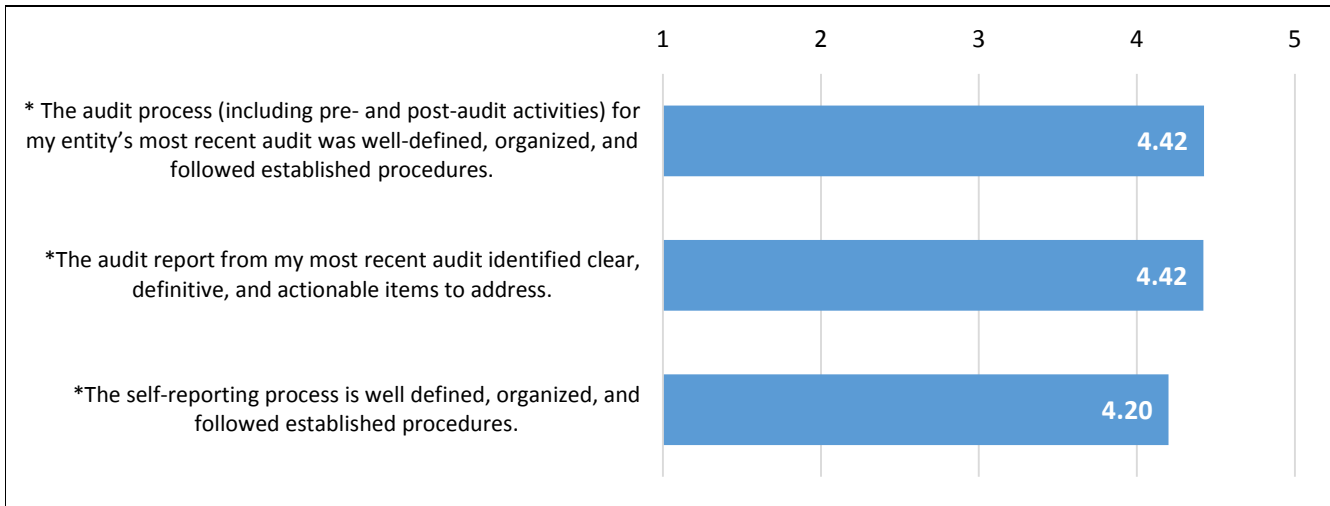


Figure 9: Highest-Rated Items – SERC



Figure 10: Lowest-Rated Items – SERC

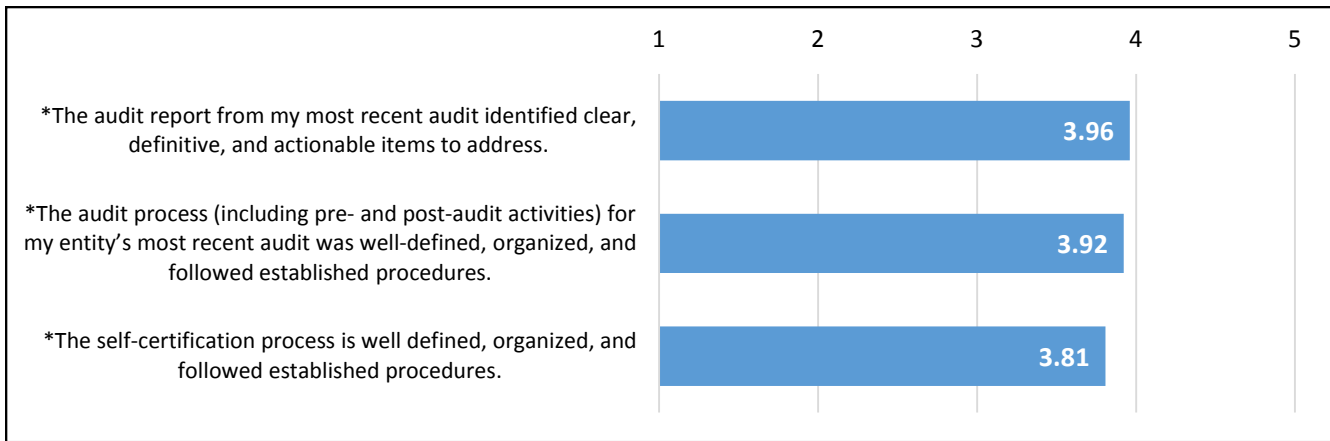


Figure 11: Highest-Rated Items – SPP RE

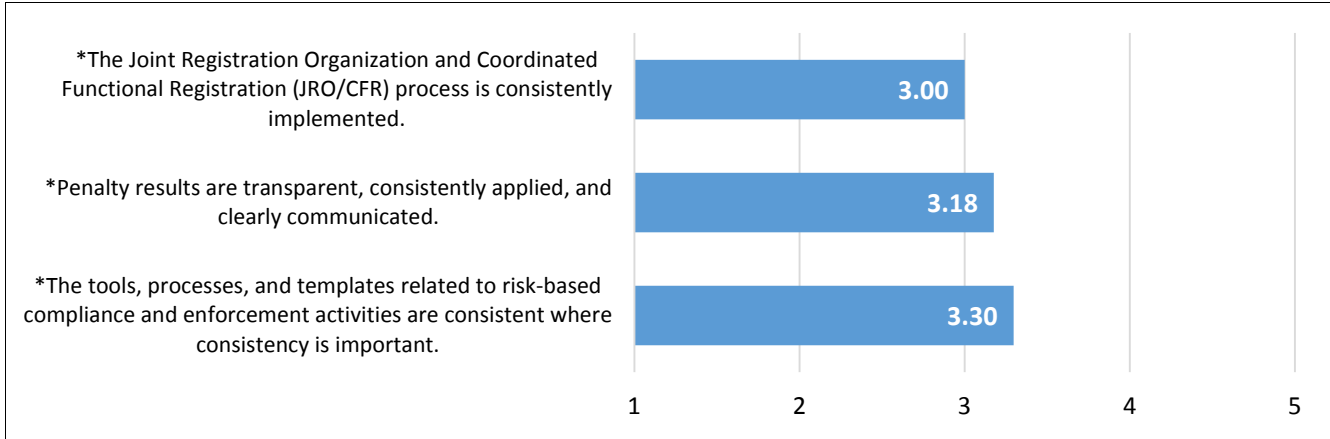


Figure 12: Lowest-Rated Items – SPP RE

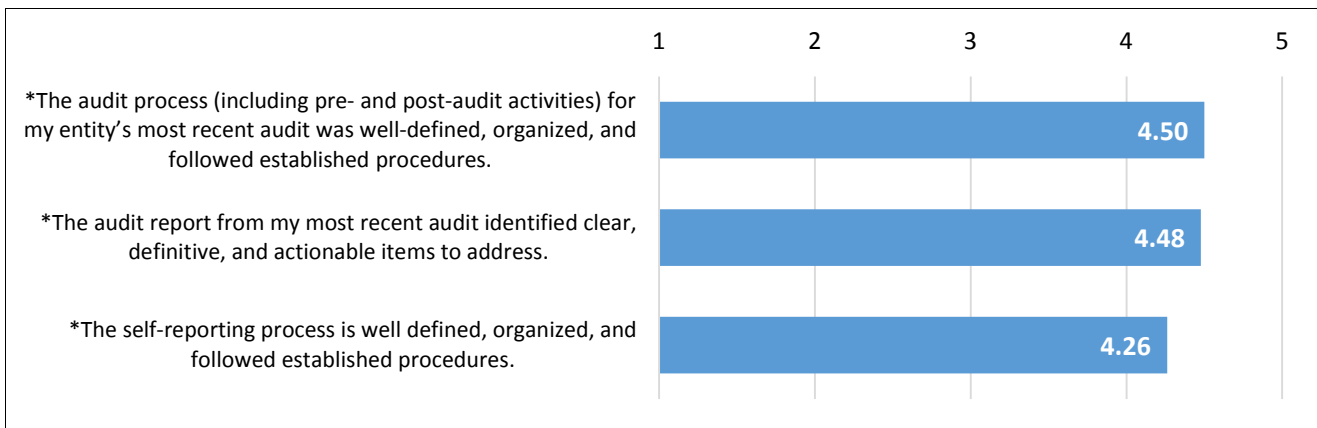


Figure 13: Highest-Rated Items – Texas RE

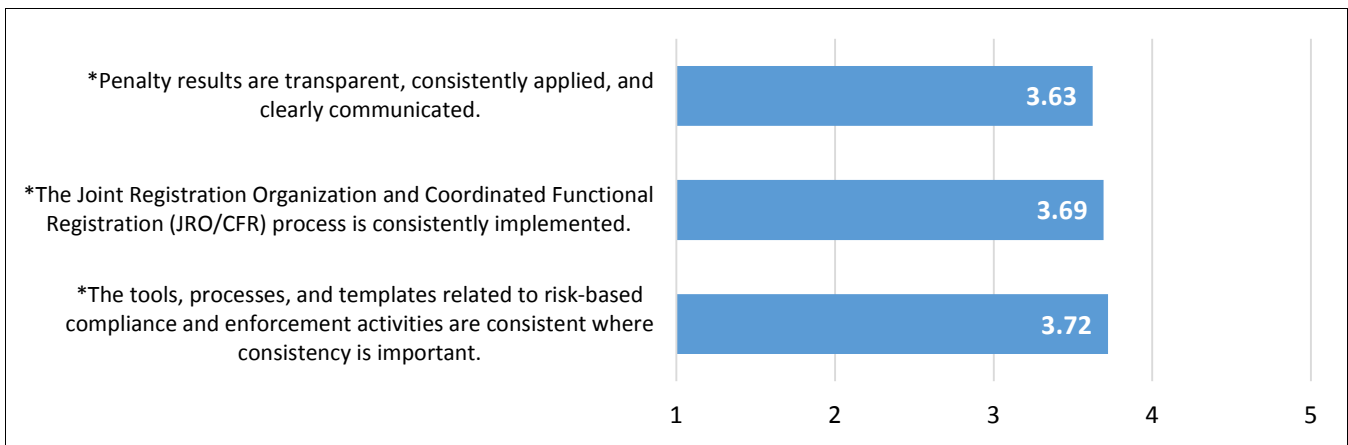


Figure 14: Lowest-Rated Items – Texas RE

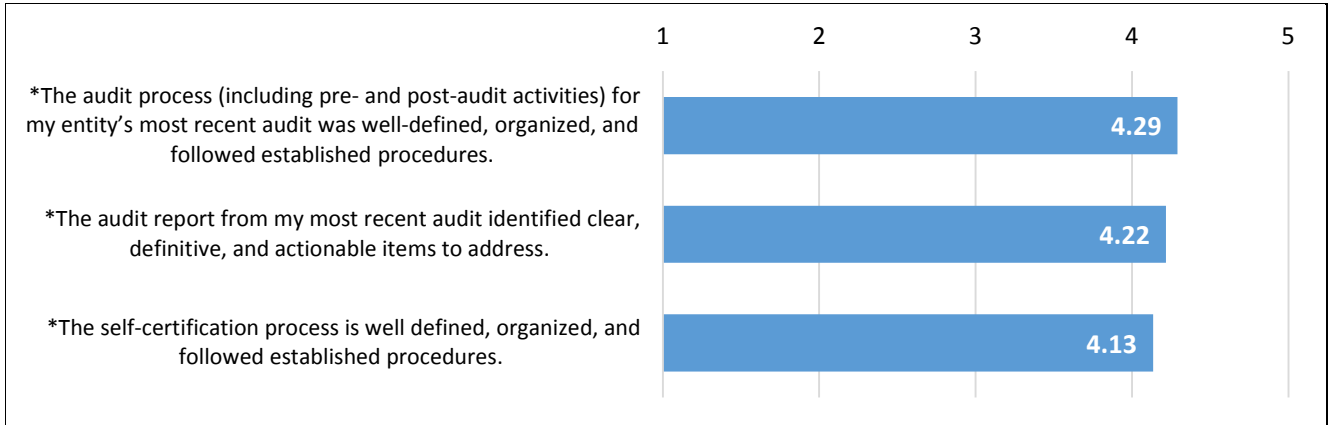


Figure 15: Highest-Rated Items – WECC

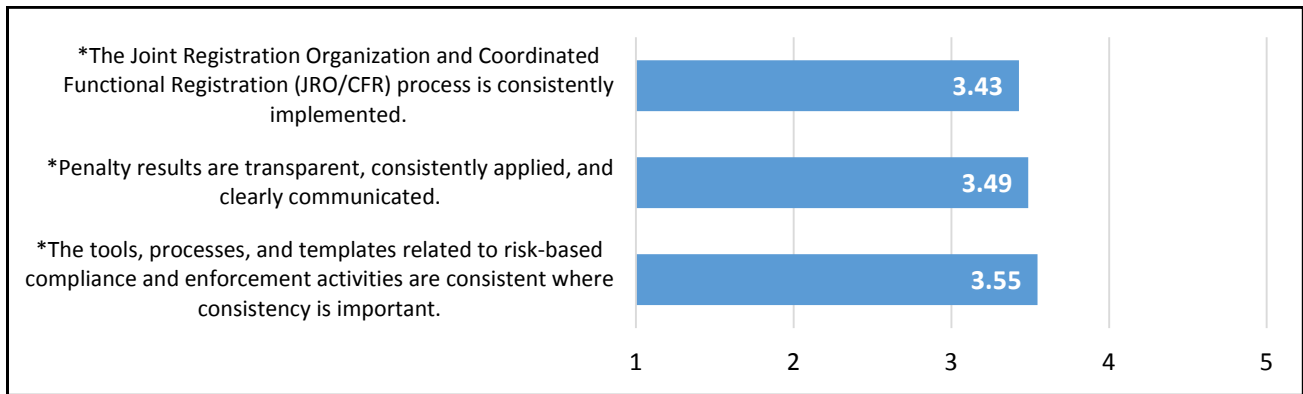


Figure 16: Lowest-Rated Items – WECC

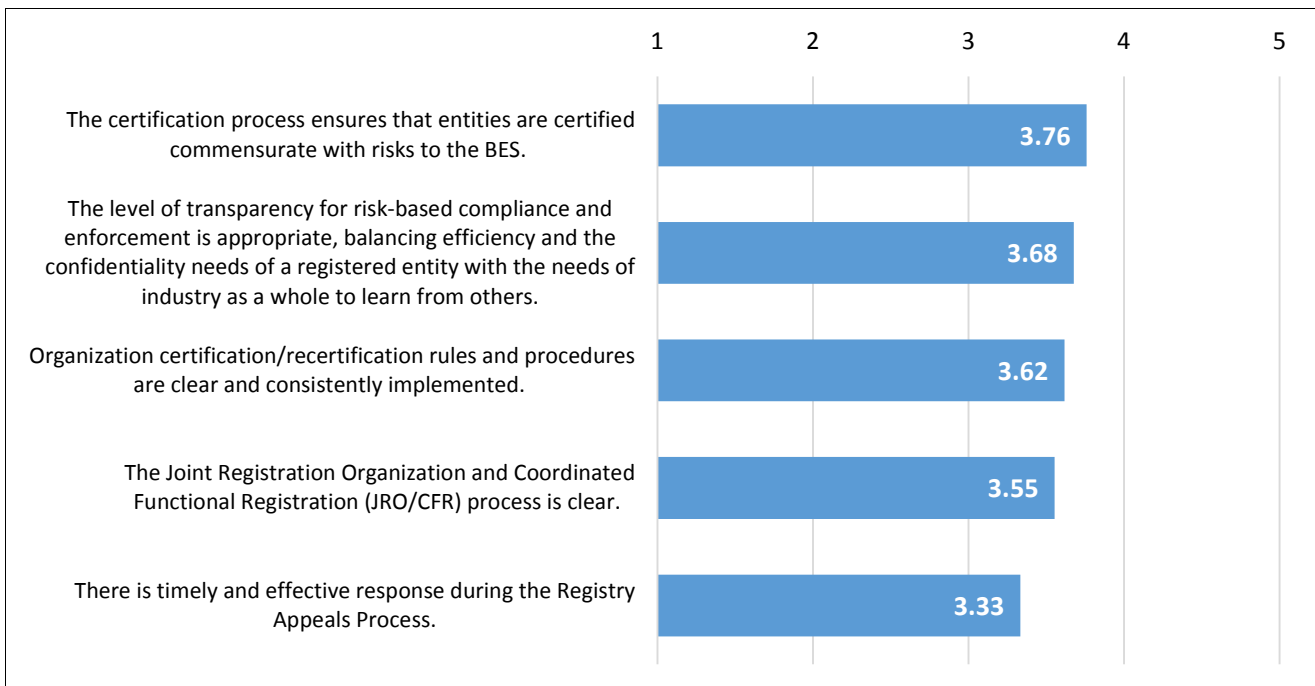


Figure 17: Overall Averages for NERC Items



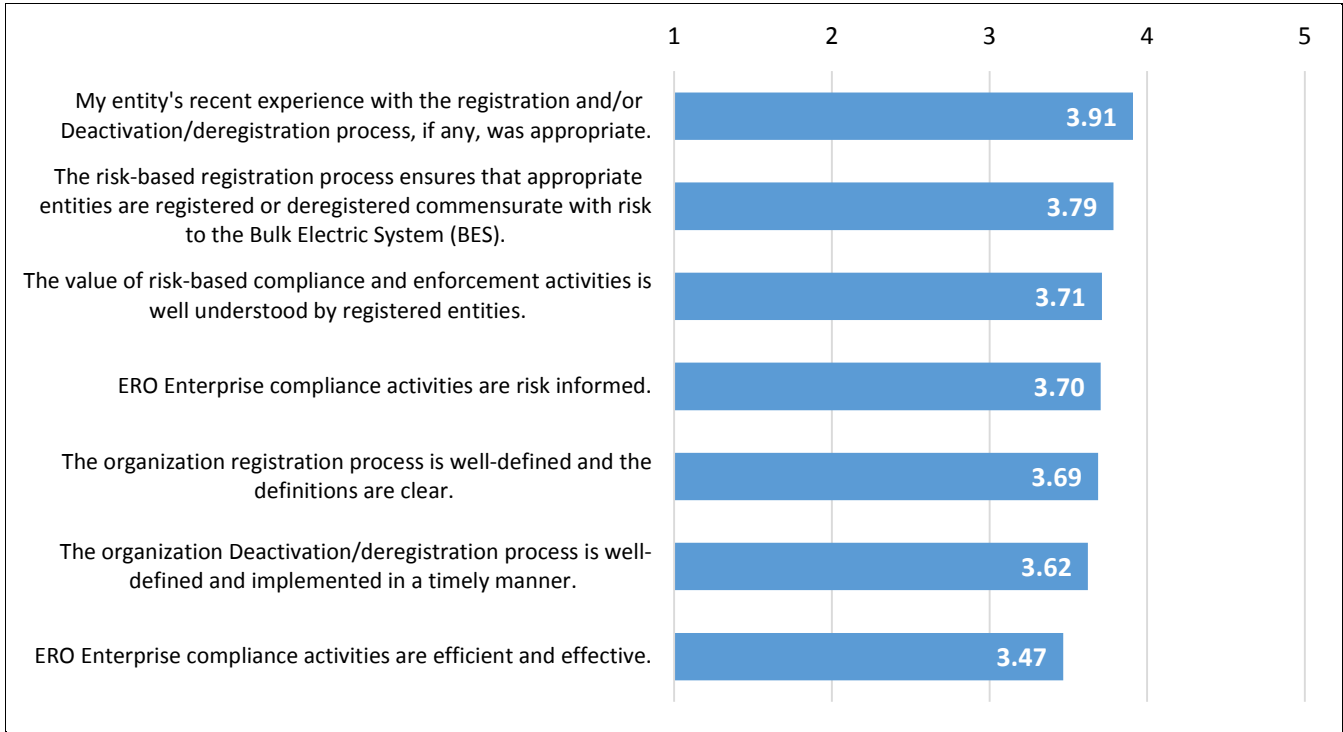
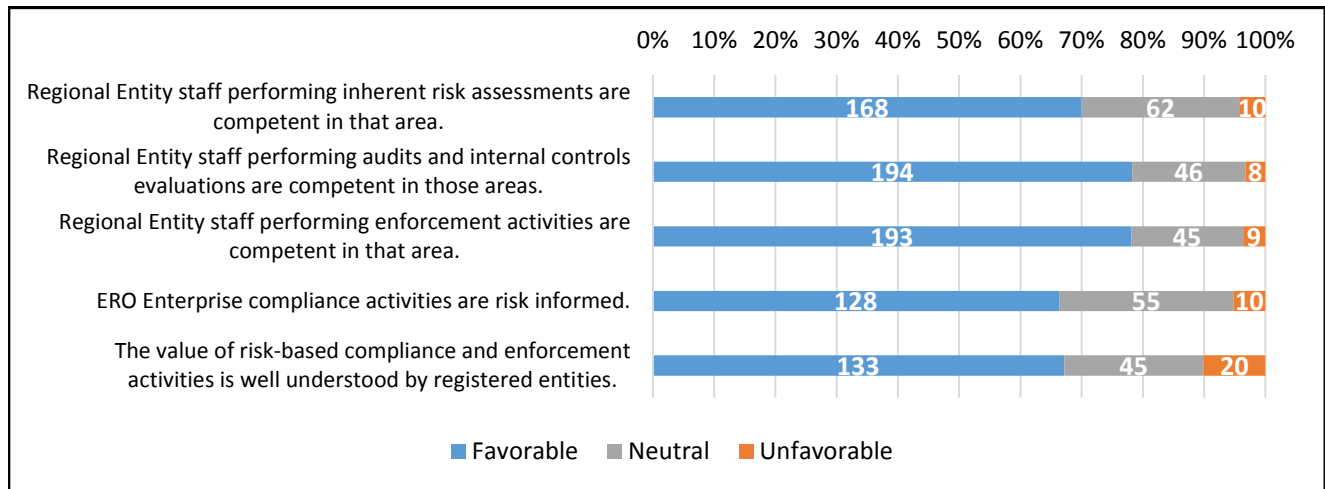


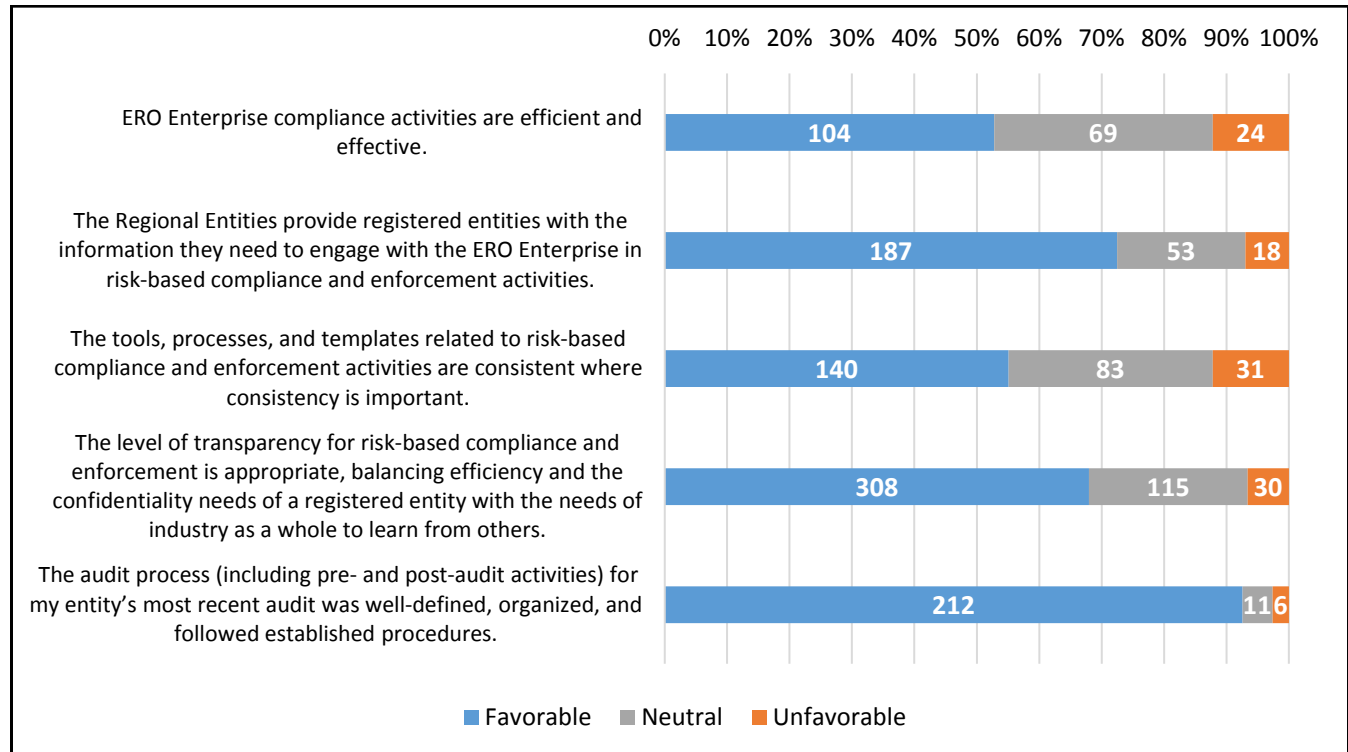
Figure 18: Overall Averages for ERO Enterprise Items

## Appendix C – Favorability Analysis

Favorability analysis allowed for additional insight into the strength of stakeholder perception through examination of the rating distribution. Responses across all Regions and NERC were re-coded as “Unfavorable” (rating of 1 – Strongly Disagree or 2 – Disagree), “Neutral” (rating of 3 – Neither Disagree nor Agree), and “Favorable” (rating of 4 – Agree or 5 – Strongly Agree). The resulting analysis does not graphically represent the number of “Not Applicable” or missing responses. Figures 1 through 6 identify the favorability analysis for each rated item by program area.



**Figure 1: Favorability Analysis for Compliance Monitoring and Enforcement**



**Figure 2: Favorability Analysis for Compliance Monitoring and Enforcement (cont.)**

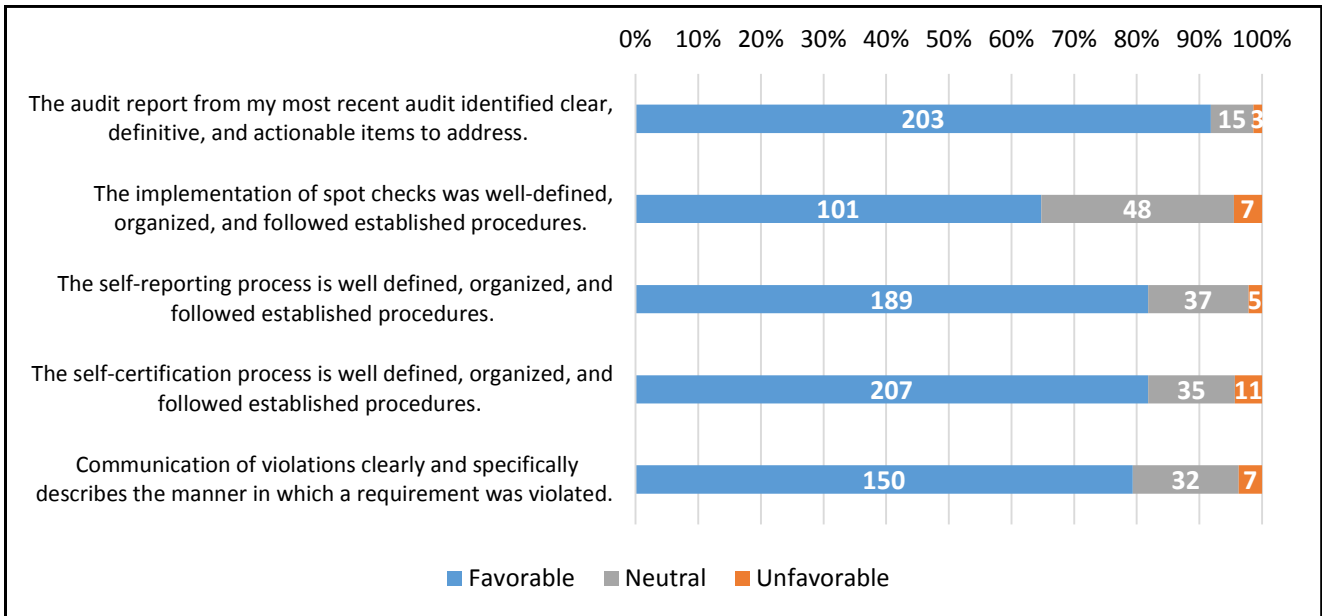


Figure 3: Favorability Analysis for Compliance Monitoring and Enforcement (cont.)

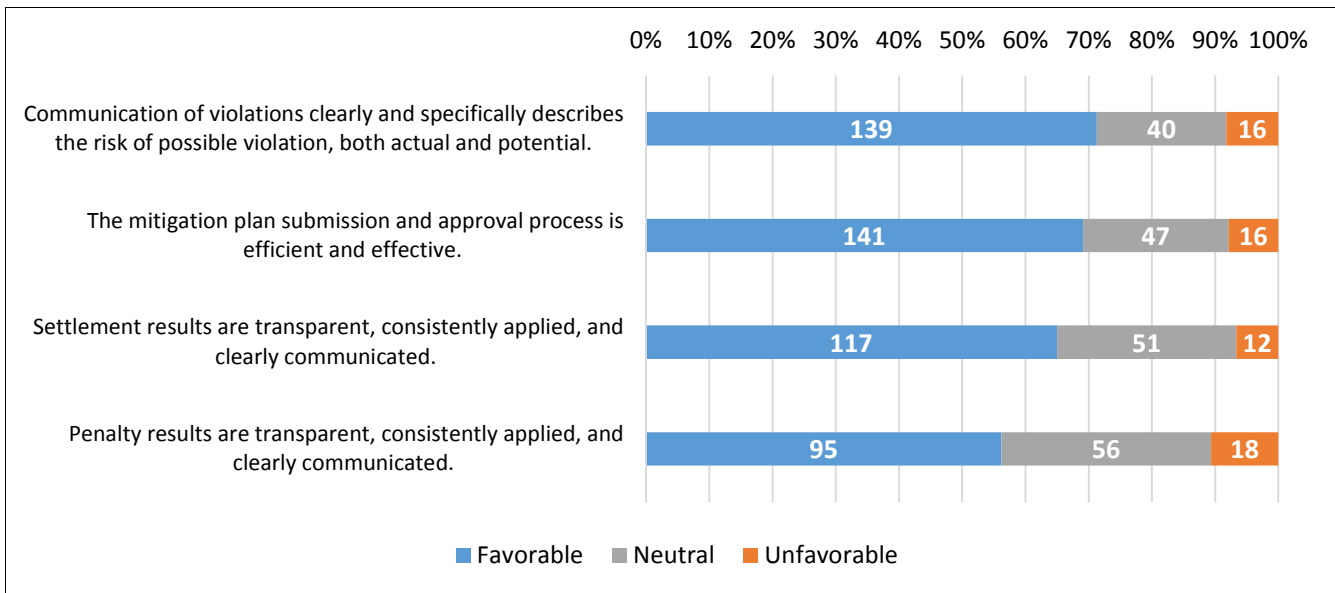


Figure 4: Favorability Analysis for Compliance Monitoring and Enforcement (cont.)

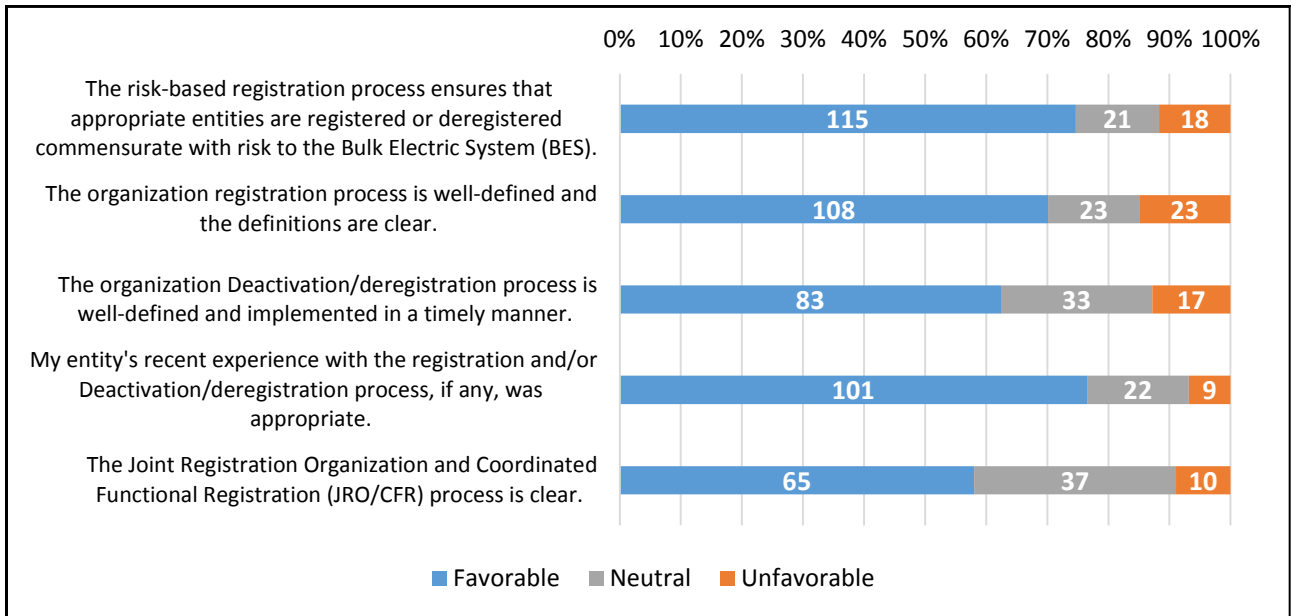


Figure 5: Favorability Analysis for Organization Registration and Certification

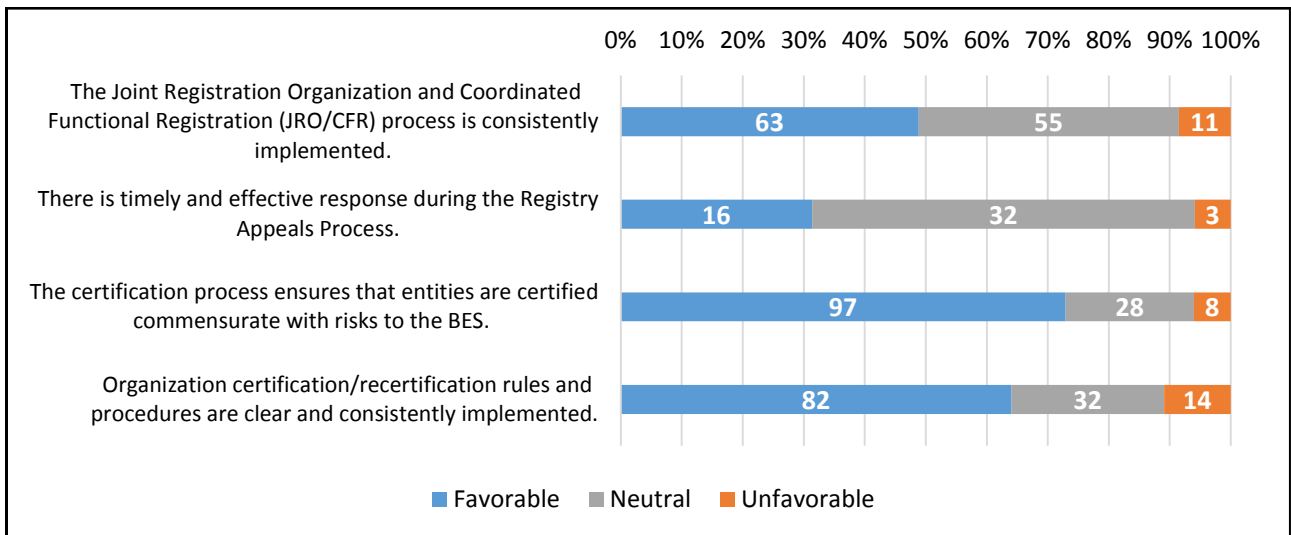


Figure 6: Favorability Analysis for Organization Registration and Certification (cont.)