

MSA Compliance Review 2021

April 5, 2022

Taking action to promote effective competition and a culture of compliance and accountability in Alberta's electricity and retail natural gas markets

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EXECUTIVE SUMMARY

The Market Surveillance Administrator (MSA) is a public agency established under the *Alberta Utilities Commission Act* (AUCA) whose mandate includes surveillance, investigation, and enforcement in respect of the Alberta electricity markets.

This Compliance Review 2021 is provided pursuant to section 23(2) of the *Transmission Regulation* for the calendar year 2021. The MSA will continue to provide public updates regarding its compliance activities in its Quarterly Reports.

Promotion of compliance and accountability

The MSA's activities benefit Albertans by ensuring the Alberta electricity markets are competitive and that there is a well-functioning and dependable electricity sector. Through these activities, the MSA contributes to the reliability, efficiency, and competitiveness of the Alberta electricity markets and promotes a culture of compliance and accountability.

ISO rules and Alberta Reliability Standards

Rules are established in Alberta by the Independent System Operator (ISO), operating as the Alberta Electric System Operator (AESO), in consultation with market participants and submitted to the Alberta Utilities Commission (AUC) for approval (ISO rules). The purpose of ISO rules is to promote orderly and predictable actions and to facilitate the operation of the Alberta interconnected electric system (AIES) and associated markets.

As set out in the *Transmission Regulation*, the AESO, in consultation with the electricity industry, reviews North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) standards to assess and recommend to the AUC whether or not those standards are applicable to Alberta. If approved, these standards become Alberta Reliability Standards (ARS), and the AESO and market participants must comply with ARS, as applicable. ARS are comprised of Operations and Planning (O&P) and Critical Infrastructure Protection (CIP) standards.

The purpose of ARS is to ensure that the AESO and those market participants involved in grid operations in Alberta (e.g., generating units, distribution systems, transmission operators) are appropriately implementing procedures, communication, coordination, training, and maintenance, among other practices, to support the reliability of the AIES. Given the scope of the AESO's responsibilities, the majority of ARS apply to the AESO, and a smaller (but in some cases overlapping) fraction of ARS apply to both market participants and the AESO.

Enforcement framework

The AESO has a mandate to conduct compliance monitoring of market participants. The AESO applies its technical and operational expertise to identify suspected contraventions of ISO rules and ARS by market participants and refers these to the MSA. The AESO also self-reports its own suspected contraventions of ISO rules and ARS to the MSA.

The MSA Compliance Process encourages the self-reporting of non-compliance with ISO rules and ARS with the prospect of favourable treatment, including forbearance or reduced penalties, in order to promote self-monitoring and robust compliance programs.

After reviewing self-reported and referred matters, the MSA determines the appropriate disposition in accordance with the MSA Compliance Process. The MSA may impose a specified penalty where appropriate, in accordance with AUC Rules 019 (ISO rules) and 027 (ARS). If a person disputes a notice of specified penalty, the matter is adjudicated following a hearing before the AUC. The MSA may also forbear if the circumstances warrant. The MSA may enter into a settlement agreement concerning a contravention, which is subject to AUC approval. Alternatively, the MSA may request a hearing before the AUC, in which case the AUC determines whether a contravention has occurred and, if a contravention is found, the appropriate penalty.

2021 Outcomes

In 2021, the overall number of ISO rules matters addressed¹ increased compared to 2020. Self-reported matters from market participants continued to represent a large majority of the matters assessed, indicating that market participants continue to actively monitor for and self-disclose non-compliance. The distribution of contraventions across ISO rules was broadly similar to previous years, with ISO rules that govern the most frequent day-to-day market activities accounting for the majority of matters. More than half of the matters addressed with notices of specified penalty were for first contraventions within a 12-month period, which is indicative of the fact there were few persistent compliance problems with ISO rules.

The number of ARS matters addressed by the MSA in 2021 was considerably lower than in 2020, as the MSA resolved a large number of ARS matters received in 2018 and 2019 in 2020. CIP ARS matters continue to represent a majority of ARS matters. In recognition of the potential security risks and in alignment with current international practice, market participant names are not provided regarding CIP ARS matters. The MSA continues to monitor these matters closely and to promote appropriate mitigation activities.

¹ A matter is considered to be addressed once a disposition has been issued. Accordingly, a matter is not always addressed in the same year that it was received by the MSA or that the associated conduct occurred.

2021 NUMBERS AT A GLANCE

- 462 ISO rules matters were addressed in 2021, up from 437 matters addressed in 2020.
- Self-reporting accounted for 91% of ISO rules matters addressed in 2021, up from 82% in 2020.
- 75 ISO rules matters were addressed with notices of specified penalty for contraventions of ISO rules, totalling \$129,250 in financial penalties. No specified penalties were disputed or unpaid.
- 80 O&P ARS matters were addressed in 2021, down from 115 matters addressed in 2020.
- 12 O&P ARS matters were addressed with notices of specified penalty, totalling \$22,000 in financial penalties. No specified penalties were disputed or unpaid.
- 294 CIP ARS matters were addressed in 2021, down from 554 matters addressed in 2020.
- 87 CIP ARS matters were addressed with notices of specified penalty, totalling \$216,350 in financial penalties. No specified penalties were disputed or unpaid.
- Self-reporting accounted for 72% of total ARS matters addressed in 2021, down from 75% in 2020.

1 INTRODUCTION

The MSA has a broad mandate of surveillance, investigation, and enforcement in respect of the Alberta electricity markets. Through enforcement of ISO rules and ARS, the MSA contributes to the reliability and competitiveness of the AIES and promotes a culture of compliance and accountability among the AESO and market participants.

Market participants play a crucial role in promoting compliance; as such, the MSA encourages market participants to self-report instances of non-compliance. When self-reporting, market participants may seek forbearance by the MSA, which the MSA may grant if the circumstances warrant.

The MSA works collaboratively with the AESO and WECC regarding compliance issues, including the referral of suspected contraventions to the MSA. These entities also provide the MSA with subject matter expertise and technical assessments for matters under consideration, upon MSA request. This collaboration continues to pay dividends, ensuring rigorous enforcement decisions are made by the MSA.

The MSA Compliance Process sets out how compliance enforcement of ISO rules and ARS is performed within the mandate of the MSA. The MSA continuously evaluates its processes in light of industry and regulatory developments, with a view to identifying efficiencies and making improvements.

2 ALBERTA UTILITIES COMMISSION RULES DEVELOPMENTS

The AUC rules governing the MSA's application of specified penalties for contraventions of ISO rules and ARS are, respectively, Rule 019 and Rule 027. Since the publication of MSA Compliance Review 2020, both of these rules were revised. Effective January 1, 2022, Rule 027 was amended to reflect new, updated, and retired ARS.² Certain administrative changes were made to Rule 019 effective February 1, 2022.³

3 ISO RULES

3.1 Activity levels

In 2021, the MSA addressed 462 ISO rules matters and had 56 matters unresolved at the end of the year. Of the 462 matters, 75 (16%) resulted in a notice of specified penalty, 341 (74%) resulted in forbearance by the MSA, 44 (10%) were issued a no contravention disposition, and 2 (<1%) were withdrawn or rejected.⁴ No matters were brought before the AUC for a hearing or other

² AUC [Bulletin 2021-19](#) (November 25, 2021)

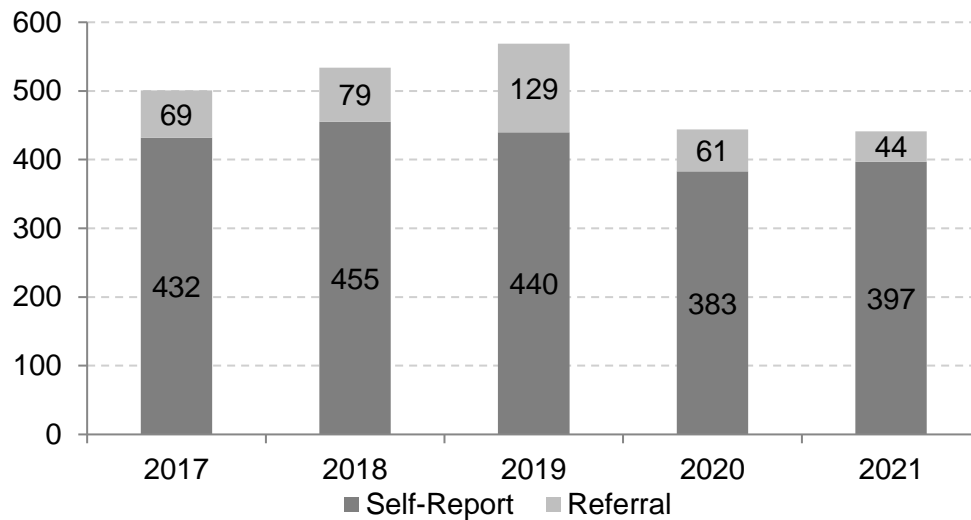
³ AUC [Bulletin 2022-01](#) (January 31, 2022)

⁴ A self-reported matter may be rejected if it is not complete or pertains to conduct not self-identified by the market participant. Market participants may request that a self-report be withdrawn. The MSA may issue a no contravention disposition when the specific conduct at issue has not contravened the requirements of the ISO rules or meets a specific

proceeding, and none of the notices of specified penalty were disputed or remained unpaid at the time of publication of this review.

Figure 1 indicates the number of ISO rules matters received in 2021 was about the same as last year and lower than what was received in 2017 through 2019. Accordingly, the number of matters addressed in 2021 decreased compared to the 5-year average. The number of unresolved matters at the end of 2021 was 56, down from 77 in 2020, and the lowest since 2017, as demonstrated in Figure 2.

Figure 1: ISO rules compliance matters received



compliance exception outlined in the ISO rules. None of the no contravention outcomes in 2021 were the result of a difference in interpretation with AESO referral findings.

Figure 2: ISO rules matters addressed or unresolved at the end of the year

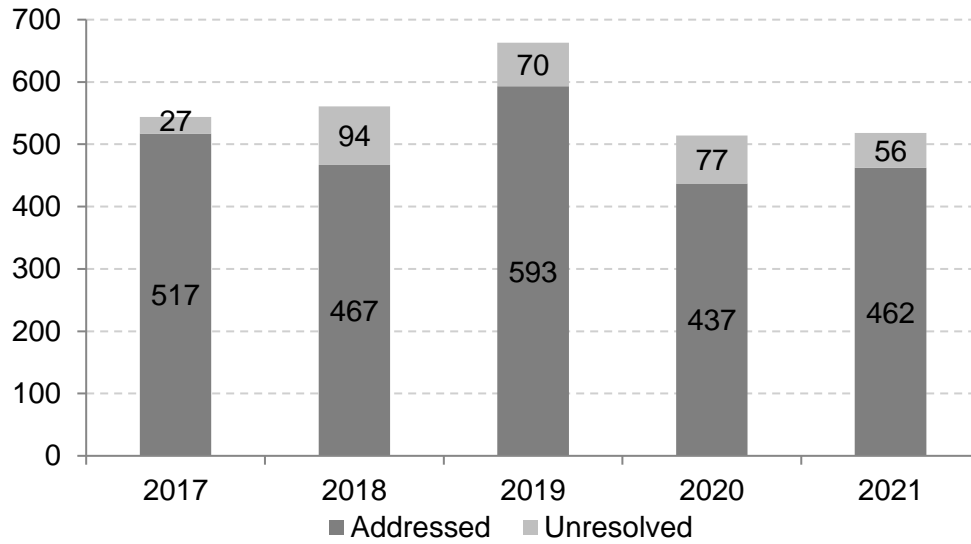
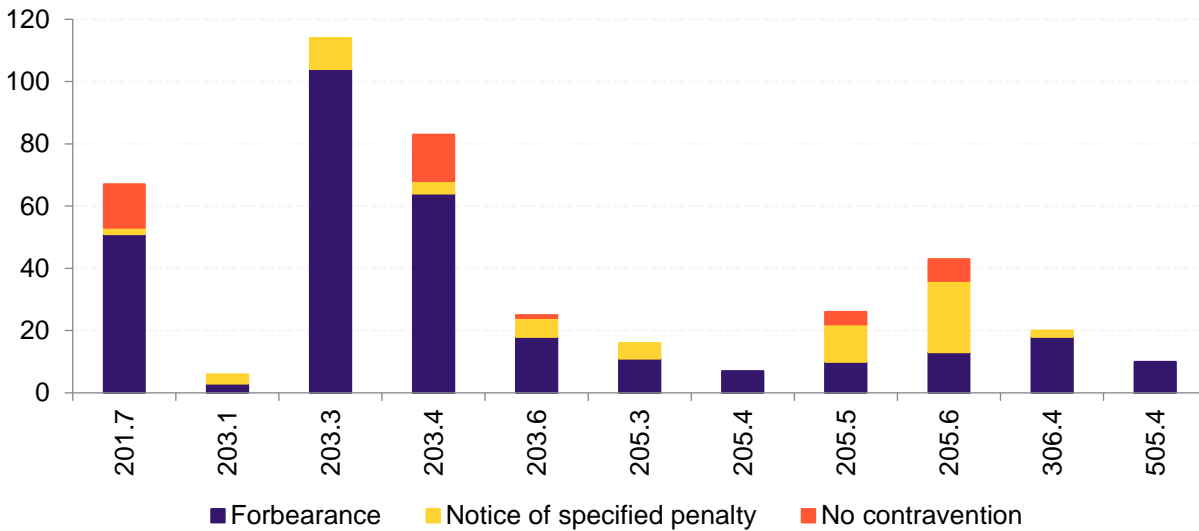


Figure 3: ISO rules compliance outcomes in 2021⁵



⁵ For ISO rules that had at least five matters addressed in 2021. Outcomes for all ISO rules matters are presented in Table A1. The MSA may issue a no contravention disposition when the specific conduct at issue has not contravened the requirements of the ISO rules or meets a specific compliance exception outlined in the ISO rules. None of the no contravention outcomes in 2021 were the result of a difference in interpretation with AESO referral findings.

The sections of ISO rules listed in Figure 3 fall into the following categories:

- 201 General (Markets)
- 203 Energy Market
- 205 Ancillary Services Market
- 306 Outages and Disturbances
- 505 Legal Owners of Generating Facilities

In 2021, the MSA addressed 75 ISO rules matters with notices of specified penalty issued to 34 market participants, resulting in financial penalties totalling \$129,250. In 2020, the MSA addressed 98 matters with notices of specified penalty issued to 38 market participants, totalling \$157,750. As indicated in Figure 4 and Table A2, contraventions of ISO rules sections 205.6 and 205.5 were associated with the highest penalty amounts, totalling \$74,000 and \$21,250, respectively. Penalty amount totals are directly related to the number of penalties issued, as well as the penalty escalation and self-disclosure discount set out in AUC Rule 019.

As indicated in Figure 5 and Table A2, 13 market participants were issued \$1,500 each or more in total penalties over this period. The percentage of matters addressed with a notice of specified penalty for a first contravention within the previous 12 months increased to 56% in 2021 from 54% in 2020. The high proportion of first contraventions remains a positive indicator that there remain few persistent compliance problems with ISO rules in 2021. Among the remaining matters addressed with specified penalties issued in 2021, 19% were second contraventions, 11% were third contraventions, and 15% were the fourth or subsequent contraventions within the previous 12 months. Four market participants received penalties for three or more contraventions. Higher frequency contraventions receive greater specified penalties as per AUC Rule 019.

Figure 4: Total specified penalties for contraventions of ISO rules in 2021⁶

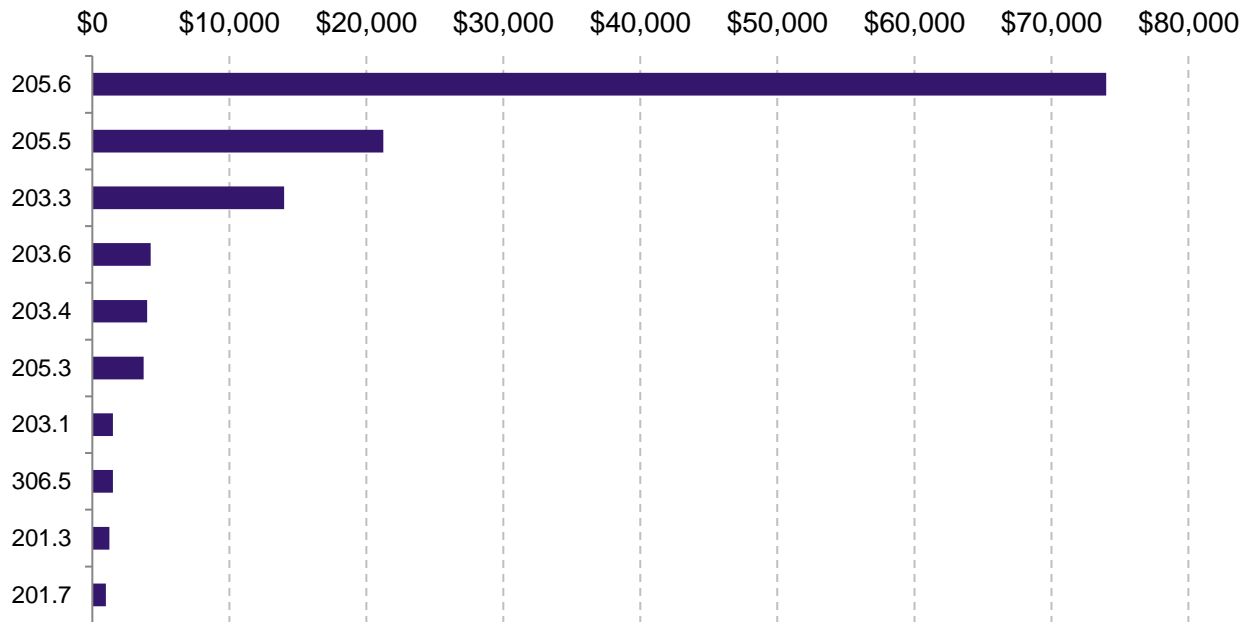
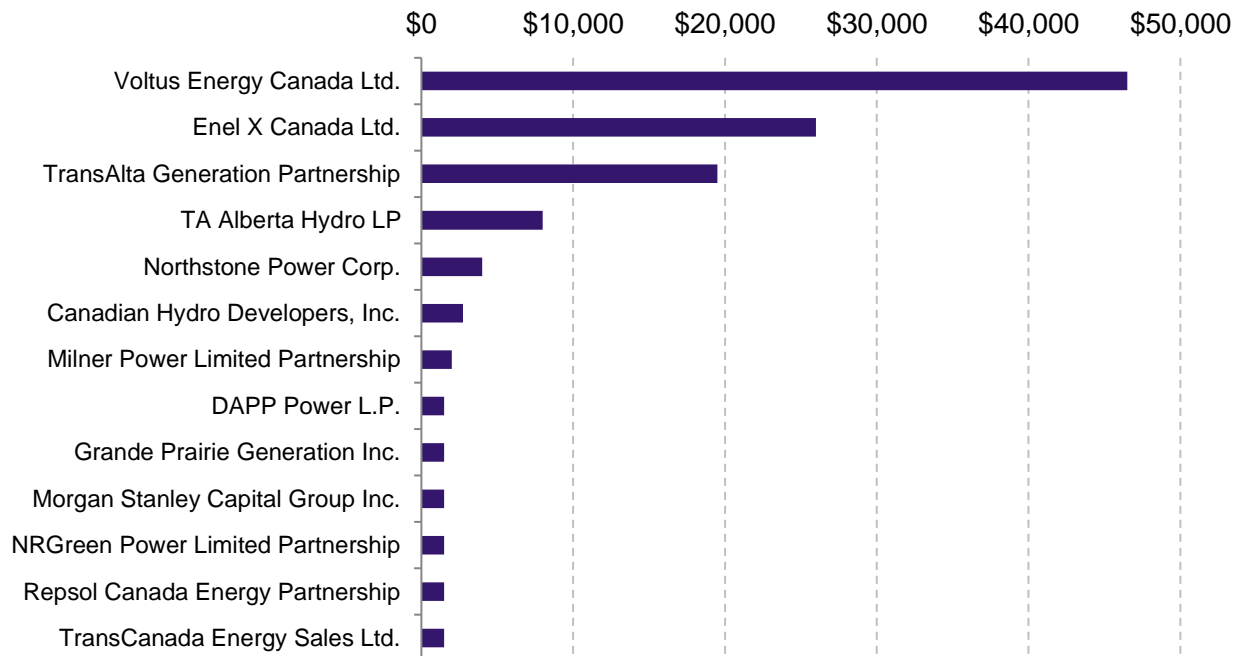


Figure 5: Total specified penalties for contraventions of ISO rules by market participant in 2021⁷

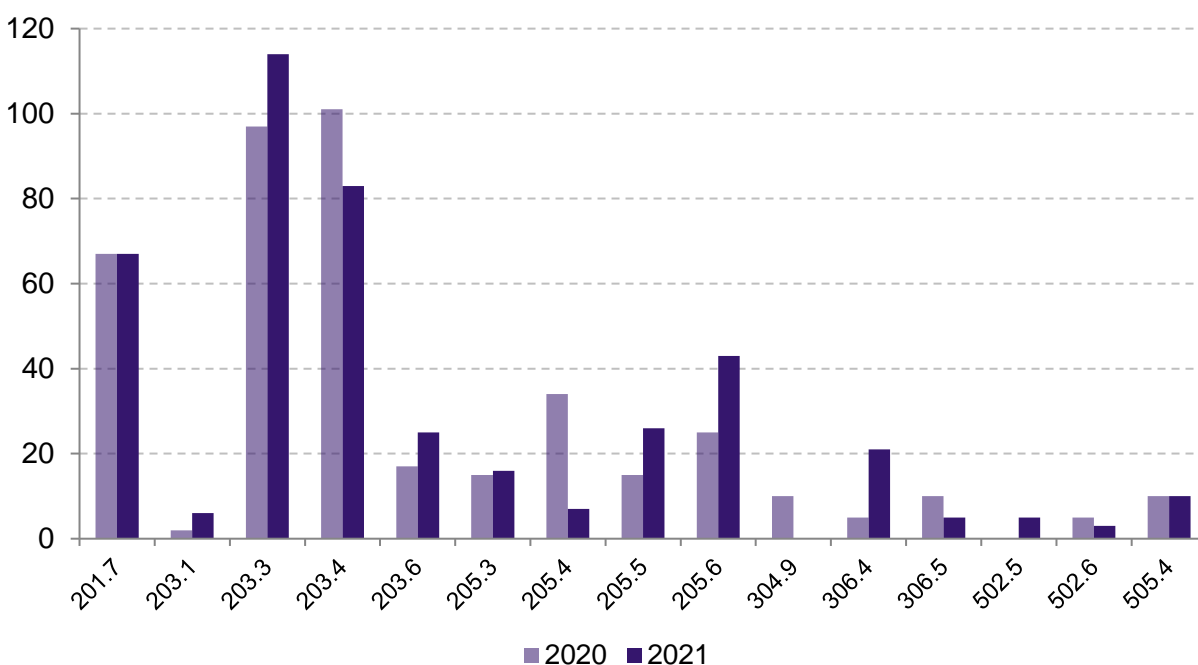


⁶ Only sections of the ISO rules with penalties totalling at least \$1,000 are included in this figure. See Table A2 for more detail.

⁷ Only sections of the ISO rules with penalties totalling at least \$1,500 are included in this figure. See Table A2 for more detail.

In 2021, 31 different sections of the ISO rules were addressed in self-reports and referrals,⁸ compared to 32 sections in 2020. There were no significant changes in the sections of ISO rules matters that were addressed between 2020 and 2021; however, there were increases in the share of section 205.6 (+4%) and 306.4 (+3%) matters and a decrease in the share of section 205.4 (-6%) and 203.4 (-5%) matters. As seen in Figure 6, the majority of matters reviewed by the MSA relate to ISO rules governing the most common day-to-day market activities. These include the submission of energy restatements (section 203.3), delivery of energy or operating reserves in response to a dispatch or directive (sections 203.4 for energy and 205.4 through 205.6 for operating reserves), and acknowledging dispatches (section 201.7).

Figure 6: 2020 and 2021 addressed ISO rules matters⁹



The sections of ISO rules presented in Figure 6 fall into the following categories:

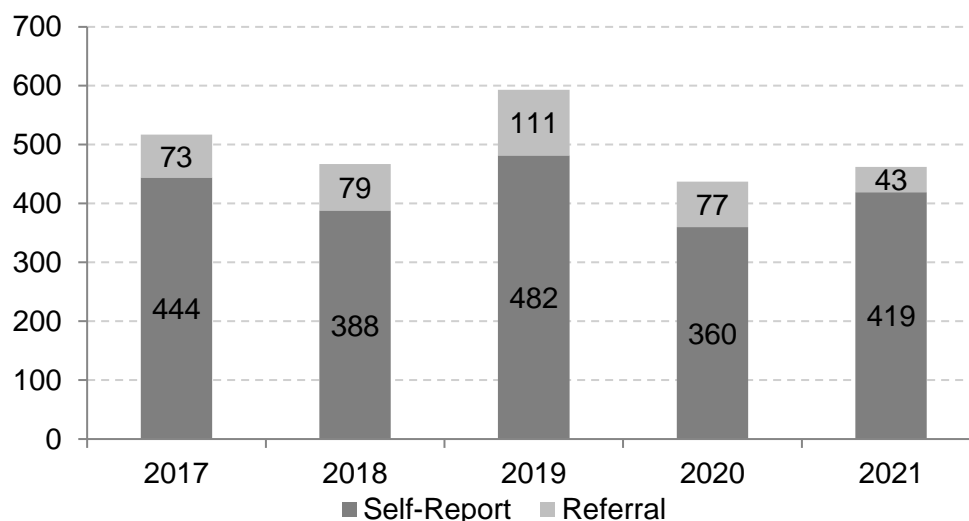
- 201 General (Markets)
- 203 Energy Market
- 205 Ancillary Services Market
- 304 Routine Operations
- 306 Outages and Disturbances
- 502 Technical Requirements
- 505 Legal Owners of Generating Facilities

⁸ See Table A1 for more detail.

⁹ Only sections of the ISO rules with at least five addressed matters in one year are displayed.

In 2021, the MSA addressed 419 ISO rules matters that were received via self-report and 43 matters that were received through AESO referrals (91% and 9% of total matters addressed, respectively). The number of referred matters both received and addressed in 2021 was smaller than in 2020, as seen in Figure 1 and Figure 7.

Figure 7: ISO rules matters addressed, self-reports versus AESO referrals



Of the 419 self-reported ISO rules matters addressed in 2021, 42 (10%) were addressed with notices of specified penalty, while 33 of the 43 (77%) addressed matters referred by the AESO were issued a notice of specified penalty.

4 ALBERTA RELIABILITY STANDARDS

4.1 Monitoring and enforcement of the AESO's compliance with ARS

The MSA has ARS enforcement responsibilities regarding the compliance of market participants and the AESO. The majority of ARS are applicable to the AESO, given the scope of its responsibilities and its mandate to maintain system stability and reliability. WECC assists the MSA in its monitoring of the AESO's compliance with ARS, pursuant to a services agreement.¹⁰

As a guide to monitoring the AESO's compliance with ARS, the MSA and WECC use the Compliance Monitoring Program developed by the AESO to monitor market participants. Efforts are made to maintain consistency, where possible, with the program WECC applies to other entities. Each year the MSA works with WECC to develop a plan to monitor the AESO's compliance with ARS. The plan sets out the scope of compliance monitoring, including audits and self-certification. Due to the COVID-19 pandemic, the scheduled audit of the AESO's compliance with O&P ARS was delayed from 2020 until 2021. Accordingly, audits of the AESO's compliance

¹⁰ WECC is the regional entity responsible for assuring the reliability of the bulk electric system in the Western Interconnection. See [MSA WECC Services Agreement](#) (April 30, 2010).

with both O&P and CIP ARS occurred in 2021 and were successfully conducted remotely. In 2022, the AESO will perform its annual self-certification of ARS compliance.

4.2 Activity levels: Operations and Planning

The MSA addressed 80 O&P ARS matters in 2021. At the end of 2021, 25 O&P ARS matters remained under review. Of the 80 matters addressed in 2021, 68 (85%) resulted in forbearance, and 12 (15%) resulted in a notice of specified penalty.

As indicated in Figure 8, the MSA opened 70 O&P ARS matters in 2021, compared with 97 in 2020. In 2021, there was a decrease in the number of O&P ARS matters addressed compared to 2020, as seen in Figure 9 and Figure 10. The number of O&P ARS matters varies from year to year due to the three-year audit cycle.

Figure 8: O&P ARS matters received

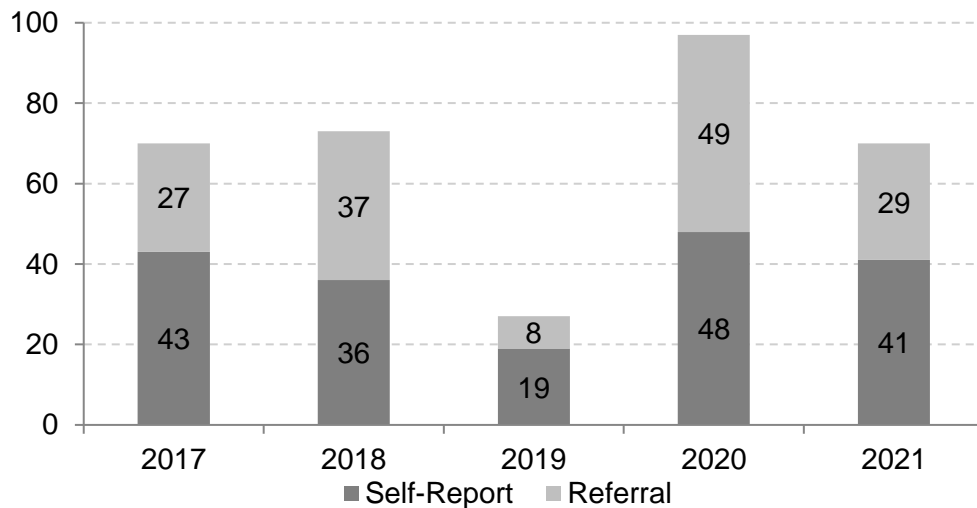


Figure 9: O&P ARS matters addressed or unresolved at the end of the year

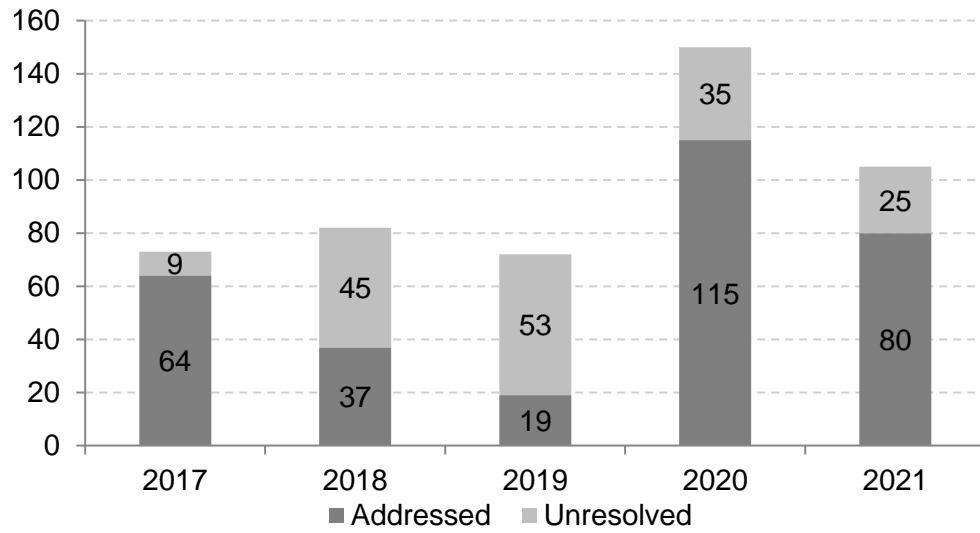


Figure 10: O&P ARS matters addressed, self-reports and AESO referrals

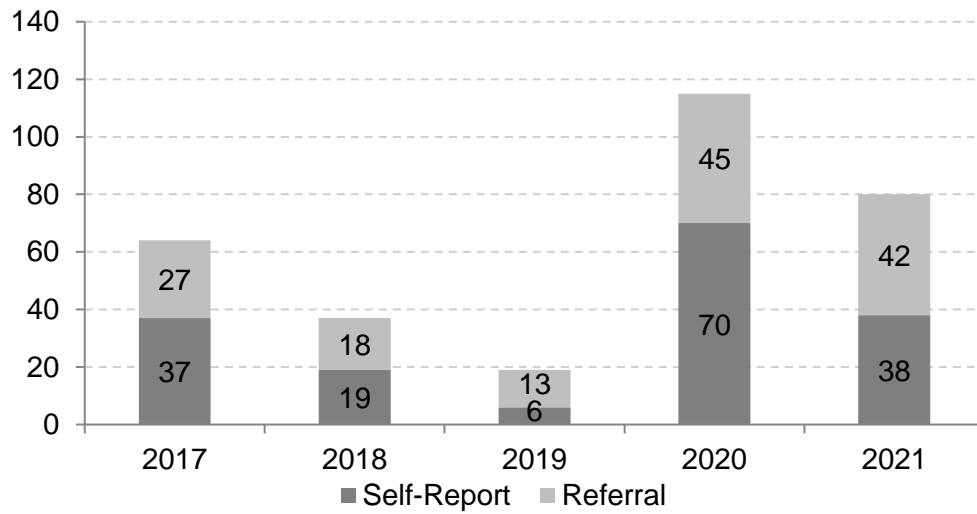
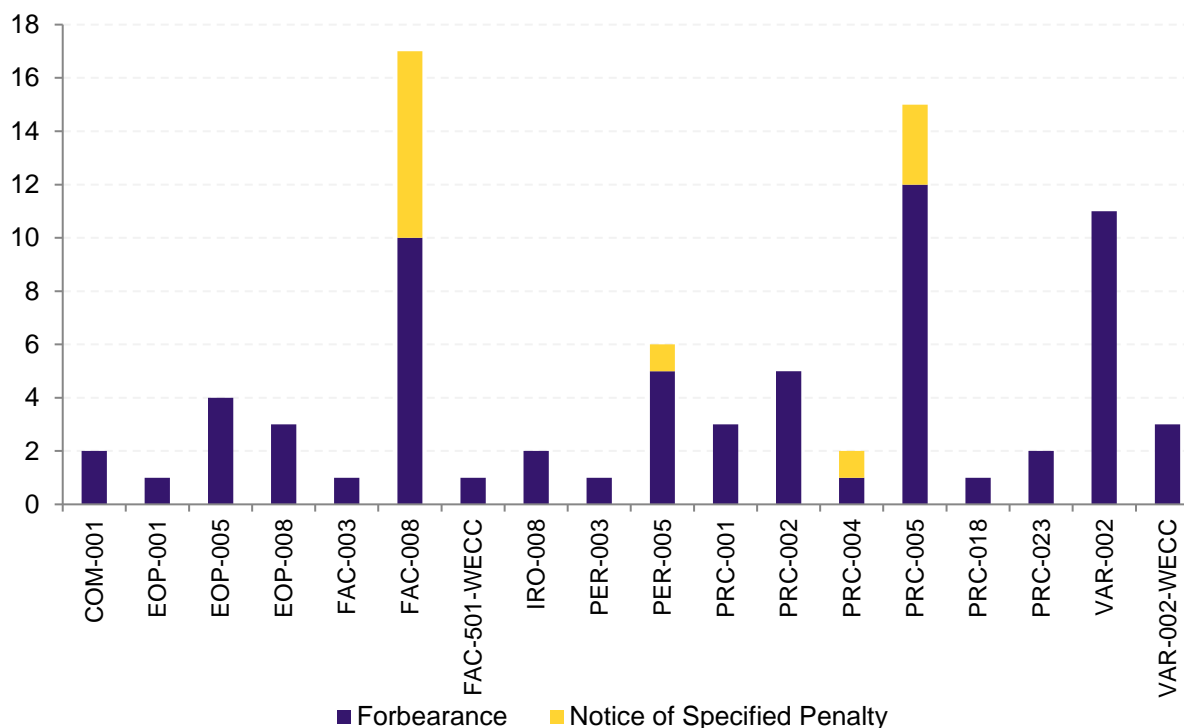


Figure 11: O&P ARS compliance outcomes in 2021¹¹

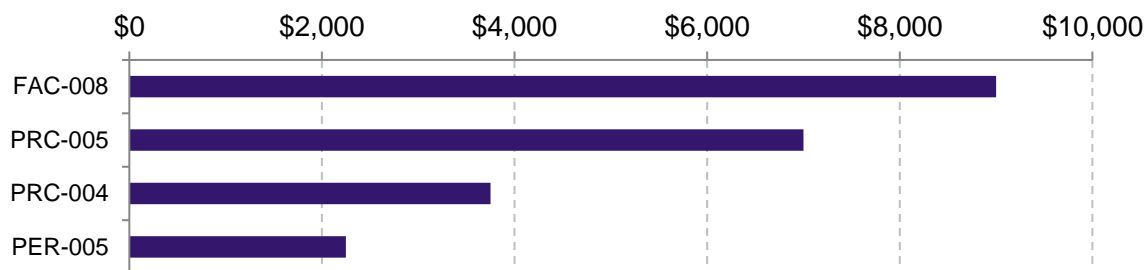
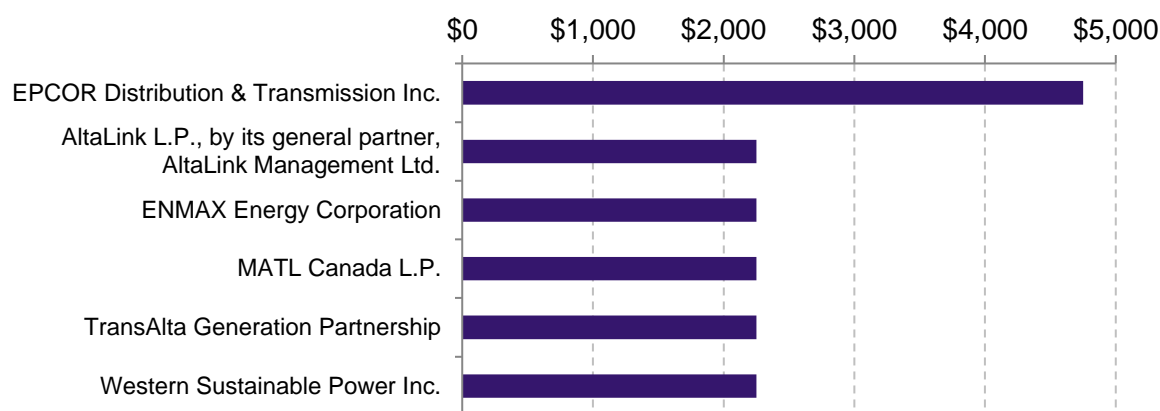
The ARS listed in Figure 11 fall into the following categories:

- COM Communications
- EOP Emergency Preparedness and Operations
- FAC Facilities Design, Connections, and Maintenance
- IRO Interconnection Reliability Operations and Coordination
- PER Personnel Performance, Training, and Qualifications
- PRC Protection and Control
- VAR Voltage and Reactive

As demonstrated by Figure 11, the most frequent O&P ARS contraventions addressed this year related to FAC-008, followed by PRC-005 and VAR-002. On January 1, 2020, FAC-008 became effective for existing facilities. During 2020 and 2021, certain requirements of PRC-005 became effective for an expanding range of maintenance activities.

In 2021, 12 matters involving four ARS were addressed with notices of specified penalty, resulting in financial penalties totalling \$22,000. In 2020, 16 matters involving eight ARS were addressed with notices of specified penalty, resulting in total penalties of \$39,000. Figure 12 and Figure 13 show the total penalty amount in 2021 by ARS and by market participant.

¹¹ See Table A3 for more detail.

Figure 12: Total specified penalties for O&P ARS addressed in 2021¹²Figure 13: Total specified penalties for contraventions of O&P ARS by market participant in 2021¹³

4.3 Activity levels: Critical Infrastructure Protection

The MSA addressed 294 CIP ARS matters in 2021, including 108 matters carried over from 2020 and three from 2019. At the end of 2021, 77 CIP ARS matters remained under review.¹⁴ Of the 294 matters, 87 (30%) were addressed with notices of specified penalty, 197 (67%) resulted in forbearance, 9 (3%) were issued a no contravention disposition, and 1 (<1%) was rejected.¹⁵

While the number of CIP ARS matters received in 2021 was considerably higher than in 2020, this represented a return towards levels seen in 2018 and 2019 (Figure 14). The number of CIP ARS matters is likely to vary from year to year due to the three-year audit cycle.

¹² See Table A4 for more detail.

¹³ See Table A4 for more detail.

¹⁴ As unresolved files are reviewed, the number of files remaining under review at the end of 2021 may change. At the time of publication of the [MSA Quarterly Report for Q4 2021](#), this number was 76.

¹⁵ A self-reported matter may be rejected if it is not complete or pertains to conduct not self-identified by the market participant. The MSA may issue a no contravention disposition when the specific conduct at issue has not contravened the requirements of the ARS. None of the no contravention outcomes in 2021 were the result of a difference in interpretation with AESO referral findings.

While fewer CIP ARS matters were addressed in 2021 than in 2020 (Figure 15 and Figure 16), the large number of CIP ARS matters addressed in 2020 was the result of resolving a backlog of CIP ARS matters, which had accumulated from previous years.

Figure 14: CIP ARS matters received

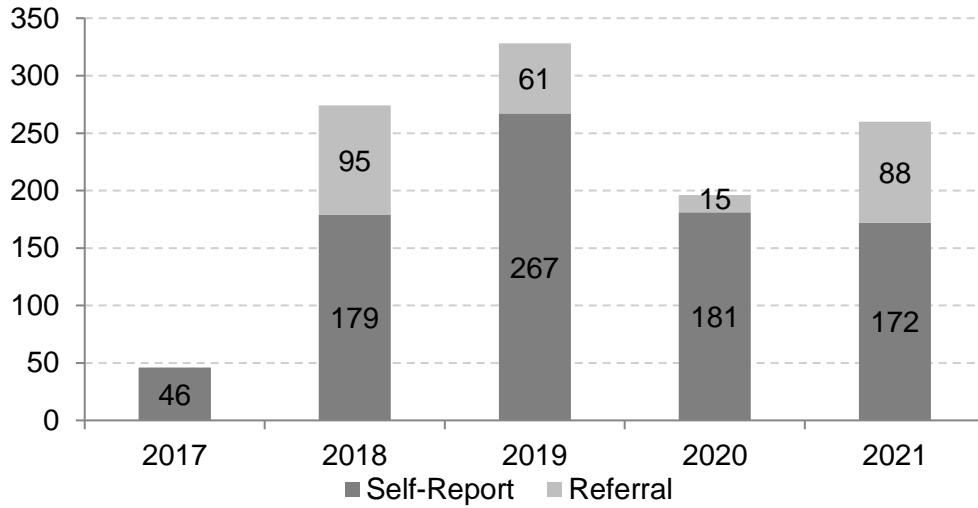


Figure 15: CIP ARS matters addressed or unresolved at the end of the year

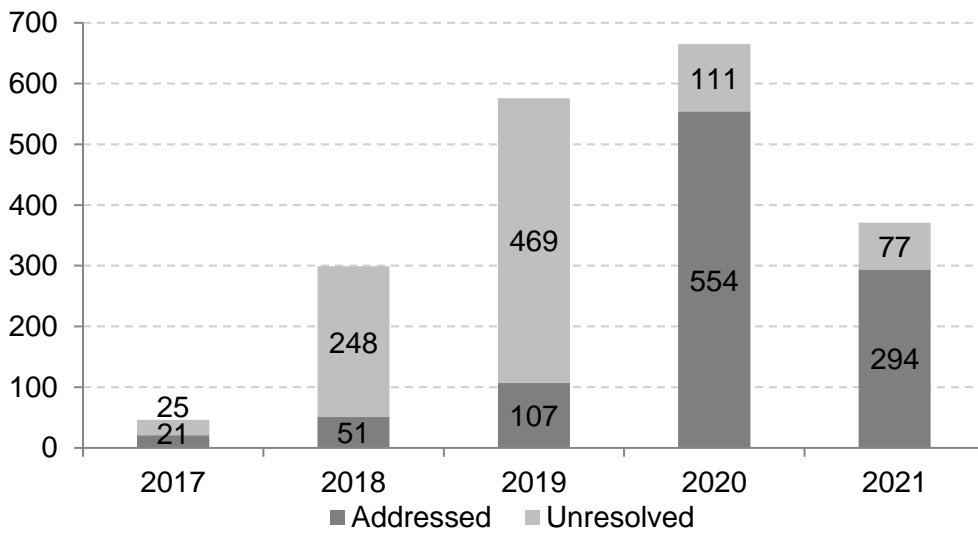


Figure 16: CIP ARS matters addressed, self-reports and AESO and WECC referrals

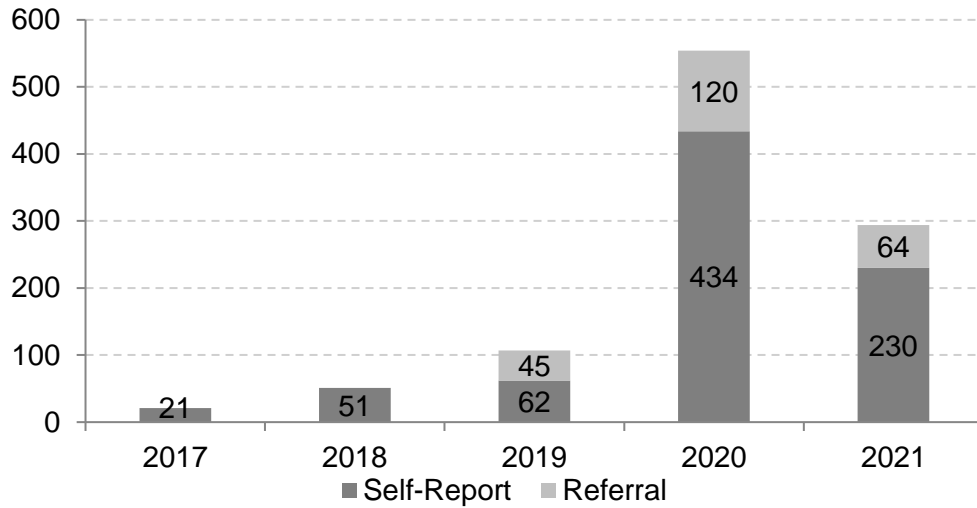
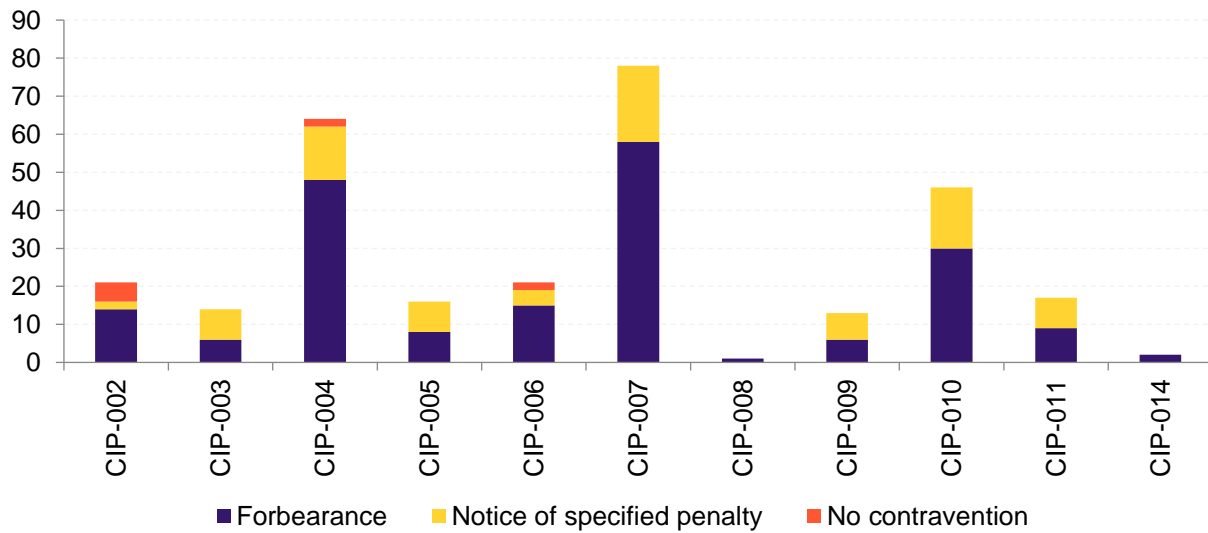


Figure 17: CIP ARS compliance outcomes in 2021¹⁶



The ARS listed in Figure 17 fall into the following categories:

- CIP-002 BES Cyber System Categorization
- CIP-003 Security Measurement Controls
- CIP-004 Personnel & Training
- CIP-005 Electronic Security Perimeter(s)

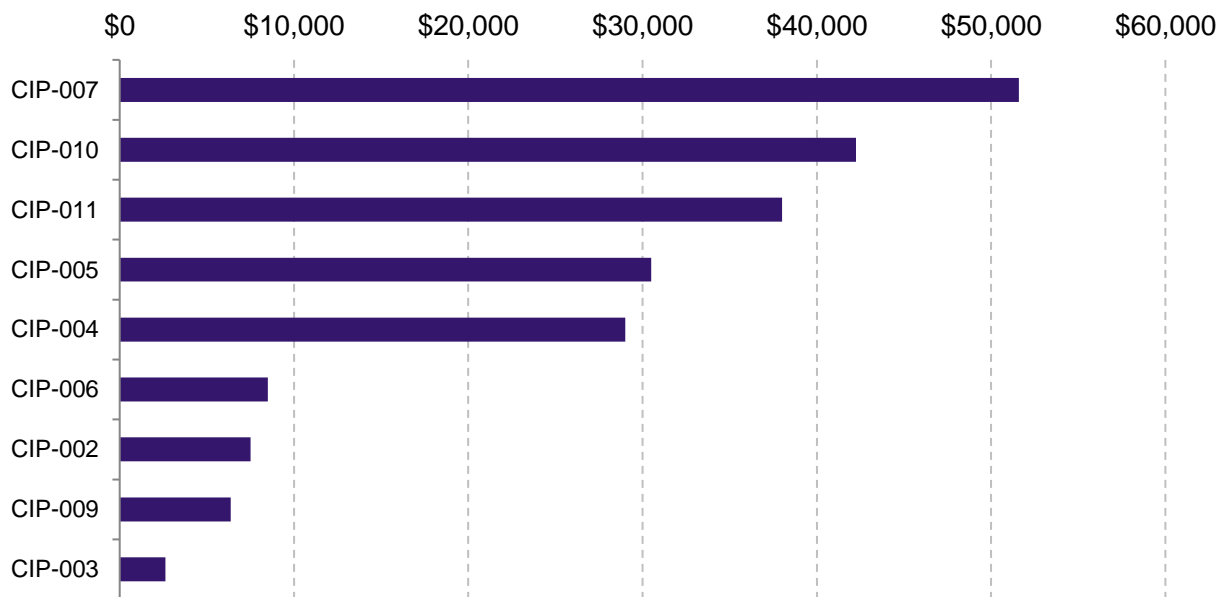
¹⁶ See Table A5 for more detail. The MSA may issue a no contravention disposition when the specific conduct at issue has not contravened the requirements of the ARS. None of the no contravention outcomes in 2021 were the result of a difference in interpretation with AESO referral findings.

- CIP-006 Physical Security of BES Cyber Systems
- CIP-007 System Security Management
- CIP-008 Incident Reporting and Response
- CIP-009 Recovery Plans for BES Cyber Systems
- CIP-010 Configuration Change Management and Vulnerability Assessments
- CIP-011 Information Protection
- CIP-014 Physical Security

As demonstrated in Figure 17 the most frequent CIP ARS contraventions addressed in 2021 related to CIP-007, followed by CIP-004 and CIP-010. These three ARS made up 64% of the CIP ARS matters addressed in 2021. This distribution of CIP ARS matters is similar in other jurisdictions.¹⁷

In 2021, 87 matters involving nine CIP ARS were addressed with notices of specified penalty, resulting in a total financial amount of \$216,350. Figure 18 presents the total penalty amounts by standard in 2021. Of the matters addressed with notices of specified penalty in which AUC Rule 027 requires a determination of severity level, 56% were low severity, 29% were moderate severity, 9% were high severity, and 5% were severe severity.

Figure 18: Total specified penalties for CIP ARS addressed in 2021



¹⁷ NERC [Compliance Monitoring and Enforcement Program and Organization Registration and Certification Program Annual Report](#) (February 9, 2022)

Figure 19: 2020 and 2021 addressed matters by totals

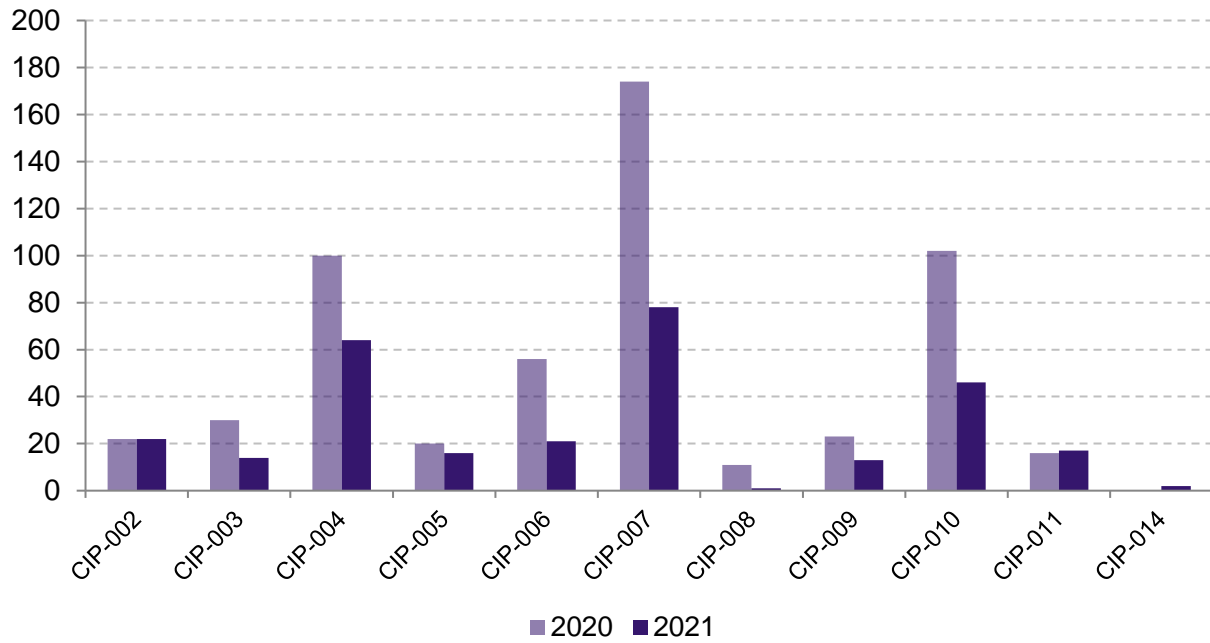
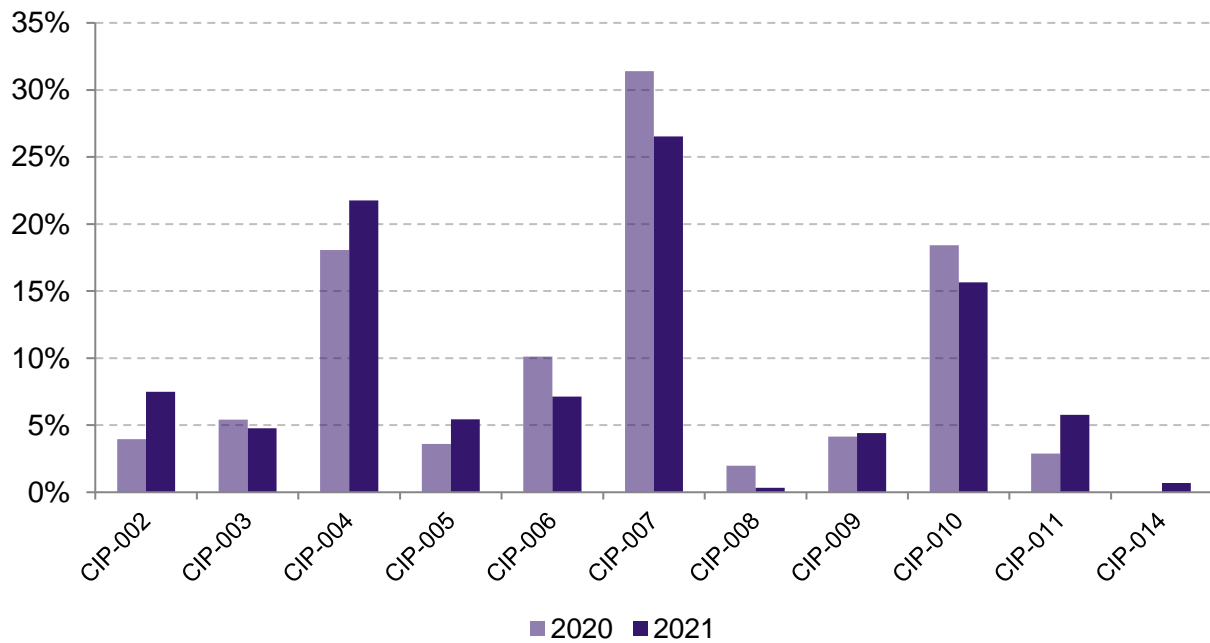


Figure 20: 2020 and 2021 addressed matters by percentage



REFERENCES

Legislation

Alberta Utilities Commission Act

http://www.qp.alberta.ca/1266.cfm?page=A37P2.cfm&leg_type=Acts&isbncln=9780779785322

Electric Utilities Act

http://www.qp.alberta.ca/1266.cfm?page=E05P1.cfm&leg_type=Acts&isbncln=9780779813551

Hydro and Electric Energy Act

http://www.qp.alberta.ca/1266.cfm?page=H16.cfm&leg_type=Acts&isbncln=9780779814848

Transmission Regulation

http://www.qp.alberta.ca/1266.cfm?page=2007_086.cfm&leg_type=Regs&isbncln=9780779782314

Alberta Utilities Commission

AUC Rules

<https://www.auc.ab.ca/rules/rules-home>

Alberta Electric System Operator

AESO Compliance Monitoring

<https://www.aeso.ca/rules-standards-and-tariff/compliance-monitoring/>

Alberta Reliability Standards

<https://www.aeso.ca/rules-standards-and-tariff/alberta-reliability-standards/>

ISO Rules

<https://www.aeso.ca/rules-standards-and-tariff/iso-rules/>

Market Surveillance Administrator

MSA Compliance Process

<https://www.albertamsa.ca/assets/Documents/2020-12-04-MSA-Compliance-Process.pdf>

MSA WECC Services Agreement

<https://www.albertamsa.ca/assets/Documents/Services-Agreement-MSA-WECC-Signed.pdf>

MSA Reports

[https://www.albertamsa.ca/documents?category\[\]=Annual+Report+to+the+Minister&category\[\]=Compliance+Review&category\[\]=MSOC&category\[\]=Quarterly+Reports&category\[\]=Other+Reports](https://www.albertamsa.ca/documents?category[]=Annual+Report+to+the+Minister&category[]=Compliance+Review&category[]=MSOC&category[]=Quarterly+Reports&category[]=Other+Reports)

APPENDIX A: DATA SUPPLEMENT

Table A1: ISO rules compliance outcomes in 2021

ISO rule	Forbearance	Notice of specified penalty	No contravention	Rejected	Withdrawn	Total
103.12	2	1	-	-	-	3
201.1	1	-	-	-	-	1
201.3	-	3	-	-	-	3
201.4	2	-	-	-	-	2
201.7	51	2	14	-	-	67
203.1	3	3	-	-	-	6
203.3	104	10	-	-	-	114
203.4	64	4	15	-	-	83
203.6	18	6	1	-	-	25
205.3	11	5	-	-	-	16
205.4	7	-	-	-	-	7
205.5	10	12	4	-	-	26
205.6	13	23	7	-	-	43
205.8	2	-	-	-	-	2
301.2	1	-	-	-	1	2
303.1	-	-	2	-	-	2
304.3	1	-	-	-	-	1
304.4	2	1	-	-	-	3
306.4	18	2	-	1	-	21
306.5	4	1	-	-	-	5
502.1	1	-	-	-	-	1
502.4	-	1	1	-	-	2
502.5	5	-	-	-	-	5
502.6	3	-	-	-	-	3
502.8	1	1	-	-	-	2
502.9	1	-	-	-	-	1
502.10	1	-	-	-	-	1
505.3	3	-	-	-	-	3
505.4	10	-	-	-	-	10
9.1.3	1	-	-	-	-	1
9.1.4	1	-	-	-	-	1
Total	341	75	44	1	1	462

The sections of ISO rules listed in Table A1 and Table A2 fall into the following categories:

- 103 Administration
- 201 General (Markets)
- 203 Energy Market
- 205 Ancillary Services Market
- 301 General (System Reliability and Operations)
- 303 Interties
- 304 Routine Operations
- 306 Outages and Disturbances
- 502 Technical Requirements
- 505 Legal Owners of Generating Facilities
- 9 Transmission

Table A2: Specified penalties issued between January 1, 2021 and December 31, 2021 for contraventions of ISO rules

Market participant	Total specified penalty amounts by ISO rule (\$)															Total (\$)	Matters
	103.12	201.3	201.7	203.1	203.3	203.4	203.6	205.3	205.5	205.6	304.4	306.4	306.5	502.4	502.8		
Alberta Electric System Operator														500		500	1
ATCO Electric Ltd.												500				500	1
Balancing Pool								500								500	2
Campus Energy Partners LP								500								500	1
Canadian Hydro Developers, Inc.		250						500	2,000							2,750	4
Capital Power (Genesee) L.P.									250							250	1
Capital Power (Whitla) L.P.						750										750	1
City of Medicine Hat					250											250	1
CNOOC Marketing Canada / ENMAX Balzac LP					750											750	1
DAPP Power L.P.						1,500										1,500	1
Enel X Canada Ltd.										26,000						26,000	7
ENMAX Cavalier LP					750											750	1
ENMAX Generation Portfolio Inc.				1,000												1,000	2
Grande Prairie Generation Inc.					1,500											1,500	1
Hut 8 Holdings Inc.								750								750	1
Macquarie Energy Canada Ltd.							250									250	1
Mercer Peace River Pulp Ltd.									500							500	1
Millar Western Forest Products Ltd.										250						250	1
Milner Power Limited Partnership by its General Partner Milner Power Inc.				500									1,500			2,000	2
Morgan Stanley Capital Group Inc.							1,500									1,500	1
Northstone Power Corp.			1,000		2,250					750						4,000	5
NRGreen Power Limited Partnership					1,500											1,500	1
Powerex Corp.							750									750	1

Table A2: Specified penalties issued between January 1, 2021 and December 31, 2021 for contraventions of ISO rules (continued)

Market participant	Total specified penalty amounts by ISO rule (\$)															Total (\$)	Matters
	103.12	201.3	201.7	203.1	203.3	203.4	203.6	205.3	205.5	205.6	304.4	306.4	306.5	502.4	502.8		
Repsol Canada Energy Partnership						1,500										1,500	1
Shell Energy North America (Canada) Inc.							250									250	1
Suncor Energy Inc.												250				250	1
TA Alberta Hydro LP					5,000			2,000	500	500						8,000	5
TransAlta Corporation															500	500	1
TransAlta Generation Partnership	500	500			1,250	250			16,500		500					19,500	8
TransCanada Energy Sales Ltd.							1,500									1,500	2
Voltus Energy Canada Ltd.										46,500						46,500	13
WCSB Power Holdings GP Ltd.									1,000							1,000	2
West Fraser Mills Ltd.					750											750	1
Whitcourt Power Ltd.		500														500	1
Total	500	1,250	1,000	1,500	14,000	4,000	4,250	3,750	21,250	74,000	500	750	1,500	500	500	129,250	75

Table A3: O&P ARS compliance outcomes in 2021

Reliability standard	Forbearance	Notice of specified penalty	Total
COM-001	2	-	2
EOP-001	1	-	1
EOP-005	4	-	4
EOP-008	3	-	3
FAC-003	1	-	1
FAC-008	10	7	17
FAC-501-WECC	1	-	1
IRO-008	2	-	2
PER-003	1	-	1
PER-005	5	1	6
PRC-001	3	-	3
PRC-002	5	-	5
PRC-004	1	1	2
PRC-005	12	3	15
PRC-018	1	-	1
PRC-023	2	-	2
VAR-002	11	-	11
VAR-002-WECC	3	-	3
Total	68	12	80

The ARS listed in Table A3 and Table A4 fall into the following categories:

- COM Communications
- EOP Emergency Preparedness and Operations
- FAC Facilities Design, Connections, and Maintenance
- IRO Interconnection Reliability Operations and Coordination
- PER Personnel Performance, Training, and Qualifications
- PRC Protection and Control
- VAR Voltage and Reactive

Table A4: Specified penalties issued between January 1, 2021 and December 31, 2021 for contraventions of O&P ARS

Market participant	Total specified penalty amounts by ARS (\$)				Total (\$)	Matters
	FAC-008	PER-005	PRC-004	PRC-005		
AltaLink L.P., by its general partner, AltaLink Management Ltd.	2,250				2,250	1
ATCO Electric Ltd.		2,250	3,750		6,000	2
ENMAX Energy Corporation	2,250				2,250	2
EPCOR Distribution & Transmission Inc.				4,750	4,750	2
MATL Canada L.P.	2,250				2,250	2
TransAlta Generation Partnership				2,250	2,250	1
Western Sustainable Power Inc.	2,250				2,250	2
Total	9,000	2,250	3,750	7,000	22,000	12

Table A5: CIP ARS compliance outcomes in 2021

Reliability standard	Forbearance	Notice of specified penalty	No contravention	Rejected	Total
CIP-002	14	2	5	1	22
CIP-003	6	8	-	-	14
CIP-004	48	14	2	-	64
CIP-005	8	8	-	-	16
CIP-006	15	4	2	-	21
CIP-007	58	20	-	-	78
CIP-008	1	-	-	-	1
CIP-009	6	7	-	-	13
CIP-010	30	16	-	-	46
CIP-011	9	8	-	-	17
CIP-014	2	-	-	-	2
Total	197	87	9	1	294

The ARS listed in Table A5 fall into the following categories:

- CIP-002 BES Cyber System Categorization
- CIP-003 Security Measurement Controls
- CIP-004 Personnel & Training
- CIP-005 Electronic Security Perimeter(s)
- CIP-006 Physical Security of BES Cyber Systems
- CIP-007 System Security Management
- CIP-008 Incident Reporting and Response
- CIP-009 Recovery Plans for BES Cyber Systems
- CIP-010 Configuration Change Management and Vulnerability Assessments
- CIP-011 Information Protection
- CIP-014 Physical Security