

Alberta Remedial Actions Schemes

Date: March 24, 2023

APS

#	Scheme Name	Owner(s)	Scheme Function
11	Bennett 520S Underfrequency And Power Scheme	AltaLink	Protect AIES from external under frequency events
12	Bennett 520S Undervoltage & Power Scheme	AltaLink	Mitigate voltage instability affects to WECC and Alberta systems from failure of BC Hydro RASs under high BCH export to USA
20	Anderson 801s 240 kV Line 9L933, 9L934 and 9L950 Thermal Protection Scheme to Sheerness Plant	ATCO Electric, Other MP	Mitigates overloads on each line by sending alarm and trip to the Sheerness Plant.
25	Brazeau 62s Generation Tripping Scheme	AltaLink	Protects 138 kV system load from overload by tripping generation in post Category B of 995L.
27	562S Cypress McNeil Power and Undervoltage Scheme	ATCO Electric, AltaLink	Mitigates voltage instability in southeast AIES during export energy schedule to Saskatchewan
28	163S Amoco Empress Reverse Power and Undervoltage Scheme	AltaLink	Mitigates voltage instability in southeast AIES in post C5 of 240 kV lines between 132s Ware Junction and 163s Amoco Empress
29	McNeil (840s) Under Voltage Runback Scheme	ATCO Electric	Mitigates voltage instability in southeast AIES during export energy schedule to Saskatchewan.
33	Cypress (T562s) Reverse Power and Undervoltage Scheme	AltaLink	Mitigate voltage instability in southeast AIES in post C5 of 240 kV lines between 132s Ware Junction and 562s Cypress.
36	Garden City 226s WAGF Trip Scheme	AltaLink	Protects 225L line from potential overload in post 863L open end at 618s Riverbend.
37	Peigan 59s - 616L Overload Mitigation Scheme	AltaLink	Protects line from overload by runback and/or trip generation.

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#	Scheme Name	Owner(s)	Scheme Function
40	Coleman 799s - 786L Overload Mitigation Scheme	AltaLink, Other MP	Protects line from overload by runback and/or trip generation.
43	Stirling 67s - 508L Load Trip Scheme	AltaLink	Protects area load from voltage collapse.
47	Obed Mountain Coal 411s - Load Trip Scheme	AltaLink	Protects area load from low voltage under extreme contingencies.
49	Summit 653s (ENMAX Crossfield) 752L Overload Mitigation Scheme	AltaLink	Protects line from overload by runback and/or trip generation.
50	Summit 653s (ENMAX Crossfield) 688L Overload Mitigation Scheme	AltaLink	Protects line from overload by runback and/or trip generation.
112	Cypress 562s - Power/Under & Over Frequency Scheme	AltaLink	Mitigates potential generation or load trips in AIES during over or under frequency excursions
120	Grassland I-282s AIPac Load Trip Scheme	AltaLink	Protect area load from under voltage in post Al-Pac generation trip.
126	Magrath 225s Generation Trip Scheme	AltaLink	Mitigates overload on 225L.
129	Goose Lake 103s 613L Overload Mitigation Scheme	AltaLink	Mitigates overload on 613L and 240 kV outages.
134	Central East Transfer Out Overload Mitigation Scheme	ATCO Electric, AltaLink	Mitigate potential overload and other reliability concerns in the area
136	Direct Transfer Trip to MATL on Loss of 1201L	AltaLink	Ensures compliance with Category A, B and C events.
137	120S MATL Local Detection Scheme	Other MP	Ensures compliance with Category A, B and C events.
141	498S Voltage Instability Mitigation	AltaLink	Mitigates potential voltage instability under peak load conditions.
142	799L Overload and 77S Low Voltage Mitigation	AltaLink	Mitigates potential voltage instability and overload under peak load conditions.

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145	Shepard RAS - Mitigation of 138 kV Thermal Constraints on ENMAX System	Enmax	Mitigates overload on ENMAX 138 kV system.
151	223S Strome Low Voltage Mitigation	AltaLink	Mitigates low voltage
154	876L Overload Mitigation	TransAlta Corporation	Mitigates 876L overload
155	Kearl Voltage Stability Mitigation	ATCO Electric	Mitigates low voltage and voltage stability
157	Chestermere 419S Overload and Voltage Stability Mitigation	AltaLink	Mitigate overload, low voltage and voltage instability.
158	Ksituan 754S Voltage Stability Mitigation	ATCO Electric	Mitigate voltage instability on the area's 144 kV system
159	936S Norberg Under Voltage Mitigation	ATCO Electric	Mitigates low voltage on the area's 144 kV system
160	Bighorn Instability Mitigation Scheme	AltaLink	Protect generator from instability.
162	7L81 Flow and Related 791s Undervoltage Mitigation	ATCO Electric	Under Voltage Mitigation
163	Vista 1029S Under Voltage Mitigation Scheme	Other MP	Under Voltage Mitigation
164	CBW Area 240 kV Contingency Mitigation	AltaLink	Protects local area system against loss of 1034L and/or 1035L, and against the loss of 983L.
168	172L-83S Overload Mitigation	AltaLink	Mitigate potential overload by tripping generation and opening line
169	725LW-674S Overload Mitigation	City of Lethbridge	Mitigate potential overload by tripping generation
170	1005L-356S Overload Mitigation	AltaLink	Mitigate potential overload by tripping generation
171	H.R. Milner 740S Overload and Transient Instability Mitigation	ATCO Electric	Mitigate overload and transient instability.
172	Garneau – Meadowlark Reconfiguration Scheme	EPCOR	re-configure 72 kV system to mitigate overload

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173	880L-321S Overload Mitigation Scheme	AltaLink, City of Medicine Hat	Mitigate potential overload by tripping generation
174	Queenstown 504S – 161L Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
175	Milo 356S – 924L/927L Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
178	172L (370S-181S) Overload Mitigation	AltaLink	Mitigate potential overload by tripping generation
179	765L overload mitigation scheme	AltaLink	Mitigate overload
180	879L Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
181	610L Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
182	1005L Outage and 940L Contingency Mitigation Scheme	AltaLink	Avoid project radially connected to MATL line
199	7L159-948S Overload Mitigation	ATCO Electric	Mitigates potential overload in the area.
200	901T-801S Anderson Overload Mitigation	ATCO Electric	Mitigates potential overload and other reliability concerns in the area.
201	7L224 Overload Mitigation Scheme	ATCO Electric	Mitigates potential overload in the area.
202	7L171-804S Overload Mitigation	ATCO Electric	Mitigates potential overload and other reliability concerns in the area.
203	7L128-963S Overload Mitigation	ATCO Electric	Mitigates potential overload in the area.
207	658L-562S Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
208	668L-562S Overload Mitigation Scheme	AltaLink	Mitigate potential overload by tripping generation
604	Windy Point/Oldman River Tripping Scheme	AltaLink	Protects area lines from overload by tripping generation

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605	Summerview Tripping Scheme	AltaLink	Protects area lines from overload by tripping generation

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Revision History

Posting Date	Description of Changes
2023-03-24	<p>Administrative amendments:</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #174 - Queenstown 504S-161L Overload Mitigation Scheme • #199 - 7L159-948S Overload Mitigation • #201 - 7L224 Overload Mitigation • #203 - 7L128-963S Overload Mitigation <p>Removed RAS:</p> <ul style="list-style-type: none"> • #121 - Bigstone 86S-Overload Mitigation Scheme
2022-16-11	<p>Administrative amendments:</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #134 - Central East Transfer Out Overload Mitigation Scheme. <ul style="list-style-type: none"> ○ RAS #134 - Central East Transfer Out Overload Mitigation Scheme is a consolidation of RAS/Scheme #134, #138 and #139 to mitigate overload on 174L, 7L50, 901T-766S and other reliability concerns. • #172 - Garneau-Meadowlark Reconfiguration Scheme • #175 - Milo 356S -924L/927L Overload Mitigation Scheme • #178 - 172L(370S-181S) Overload Mitigation • #200 - 901T – 801S Anderson Overload Mitigation • #202 - 7L171-804S Overload Mitigation • #207 - 658L-562S Overload Mitigation Scheme • #208 - 668L-562S Overload Mitigation Scheme <p>Removed RAS:</p> <ul style="list-style-type: none"> • #46 - Bickerdike 39S-740L Load Trip Scheme disabled at AESO direction. • #138 - 7L50-526S Buffalo Creek Overload Mitigation Scheme. <ul style="list-style-type: none"> ○ Replaced with RAS #134 Central East Transfer Out Overload Mitigation Scheme. • #139 - 901T-766s Nevis Overload Mitigation Scheme. <ul style="list-style-type: none"> ○ Replaced with RAS #134 Central East Transfer Out Overload Mitigation Scheme. • #166 - 463L-15S Overload Mitigation was salvaged. <ul style="list-style-type: none"> ○ Replaced with RAS #178 172L(370S-181S) Overload Mitigation.
2022-22-06	<p>Administrative amendments</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #181 - 610L Overload Mitigation Scheme • #154 - 876L Overload Mitigation <p>Removed RAS:</p> <ul style="list-style-type: none"> • # 133 - Beddington 162s Overload Mitigation Scheme

Posting Date	Description of Changes
2022-25-04	<p>Administrative amendments</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #170 - 1005L-356S Overload Mitigation • #179 - 765L overload mitigation scheme • #180 - 879L Overload Mitigation Scheme • #182 - 1005L Outage and 940L Contingency Mitigation Scheme <p>Removed RAS:</p> <ul style="list-style-type: none"> • #149 - EATL HVDC • #150 - WATL HVDC • #153 - Mitigation of 138 kV Thermal Constraints on ENMAX System at SS-65
2021-27-05	<p>Administrative amendments</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #173 - 880L-321S Overload Mitigation Scheme
2021-24-03	<p>Administrative amendments</p> <p>Added RAS:</p> <ul style="list-style-type: none"> • #11 - Bennett 520S Underfrequency And Power Scheme • #12 - Bennett 520S Undervoltage & Power Scheme • #112 - Cypress 562s - Power/Under & Over Frequency Scheme • #160 -Bighorn Instability Mitigation Scheme • #166 - 463L-15S Overload Mitigation • #168 - 172L-83S Overload Mitigation • #169 - 725LW-674S Overload Mitigation