

BC HYDRO

T&D SYSTEM OPERATIONS

ATTACHMENT 6 OF SYSTEM OPERATING ORDER 7T-13

ILM 500 kV SYSTEM OPERATION

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Highlight Denotes Revision

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1.0 General System Information and Requirements

1.1 Line Ratings

Refer to System Operating Order (SOO) 5T-10 for the source of the Amp rating. The MW rating is calculated from the corresponding Amp rating. The MW rating is used in the generation shedding tables in this Attachment 6.

1.1.1 Continuous Ratings

500 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Continuous Rating (Amp)		Corresponding Continuous MW Rating		Comments	
		Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)	Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)		
5L41	5L41 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L42	5L42 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L44	5L44 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L81	5L81 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L82	5L82 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L83	5L83 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
5L87	5L87 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1

230 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Continuous Rating (Amp)		Corresponding Continuous MW Rating		Comments	
		Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)	Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)		
2L1	2L1_Norm_Rating	Refer to SOO 7T-14 Attachment 1 – Ratings of Transmission Circuits for Facility Continuous Ratings					Note 2
2L3	2L3_Norm_Rating	Refer to SOO 7T-14 Attachment 1 – Ratings of Transmission Circuits for Facility Continuous Ratings					Note 2
2L20	2L20 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L22	2L22 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L31	2L31 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L51COK	2L51COK Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L51HPN	2L51HPN Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L53	2L53 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L64	2L64 Norm Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.1 for Facility Continuous Ratings					Note 1
2L79	2L79 Norm Rating	1200 (DS limit)	1200 (DS limit)	484 (DS limit)	484 (DS limit)	Note 3, 4	
2L90	2L90 Norm Rating	Refer to SOO 7T-14 – Section 5.11 for 2L90 ratings					Note 2, 5

1.1.2 Overload-Ratings

500 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Over-Rating (Amp)		Corresponding MW Over-Rating (MW = 1.732 * Rating in KA * 500 kV * 0.99 pf)		Comments	
		Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)	Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)		
5L41	5L41 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L42	5L42 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L44	5L44 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L81	5L81 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L82	5L82 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L83	5L83 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
5L87	5L87 Over Rating	Refer to SOO 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1

230 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Over-Rating (Amp)		Corresponding MW Over-Rating		Comments	
		Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)	Apr 1 – Oct 31 (Based on 30° C ambient)	Nov 1 – Mar 31 (Based on 10° C ambient)		
2L1	2L1 Over Rating	Continuous Ratings are used for its Overload Ratings					Note 2
2L3	2L3 Over Rating	Continuous Ratings are used for its Overload Ratings					Note 2
2L20	2L20 Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L22	2L22 Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L31	2L31 Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L51COK	2L51COK Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L51HPN	2L51HPN Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L53	2L53 Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L64	2L64 Over Rating	Refer to 7T-34 Attachment 1 – Section 1.1.2 for Facility Overload Ratings					Note 1
2L79	2L79 Over Rating	1200 (DS limit)	1200 (DS limit)	473 (DS limit)	473 (DS limit)	Note 3, 6	
2L90	2L90 Over Rating	Refer to 7T-14 – Section 5.11 for 2L90 ratings					Note 2, 5

Notes for 1.1.2 Overload-Ratings

- Note 1: Data is from Attachment 1 of SOO 7T-34
- Note 2: Data is from Attachment 1 of SOO 7T-14
- Note 3: 2L79 line DS MLE 2D22 rating: 1200 A
- Note 4: 2L79 MW continuous ratings are calculated by: MW = 1.732 * Rating in KA * 235 kV * 0.99 pf
- Note 5: Single Breaker Closed DS Rating: 800A - BRT 2D2CB1, BRT 2D1CB1
- Note 6: 2L79 MW Overload-Ratings are calculated by: MW = 1.732 * Rating in KA * 230 kV * 0.99 pf

2.0 General Pre-outage Restrictions for Contingencies

None.

3.0 General Post-Contingency Requirements

- Refer to Section 5.5.1, and Section 5.5.2 of SOO 7T-13 for GMS/PCN minimum units online post contingency requirements.
- 5L40 contingency:
If TSA alarms "VIOLATION_5L44_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L44 MDN below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY
If TSA alarms "VIOLATION_5L42_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L42 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY, or
 - Reduce SI generation or import from Alberta
- 5L41 contingency:
If TSA alarms "VIOLATION_5L42_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L42 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY, or
 - Reduce SI generation or import from Alberta
If TSA alarms "VIOLATION_5L87_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L87 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY
If TSA alarms "VIOLATION_5L81_NORM_RATING" or "VIOLATION_5L82_NORM_RATING" or "VIOLATION_5L44_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L81 NIC or 5L82 NIC or 5L44 MDN below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY
- 5L42 contingency:
If TSA alarms "VIOLATION_5L41_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L41 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY, or
 - Reduce SI generation or import from Alberta
If TSA alarms "VIOLATION_5L87_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L87 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY
If TSA alarms "VIOLATION_5L81_NORM_RATING" or "VIOLATION_5L82_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L81 NIC or 5L82 NIC below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY
- 5L41 and 5L83 contingency:
If TSA alarms "VIOLATION_5L42_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L41 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY, or
 - Reduce SI generation or import from Alberta
If TSA alarms "VIOLATION_5L87_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L87 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY
If TSA alarms "VIOLATION_5L81_NORM_RATING" or "VIOLATION_5L82_NORM_RATING" or "VIOLATION_5L44_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L81 NIC or 5L82 NIC below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY
- 5L87 contingency:
If TSA alarms "VIOLATION_5L41_NORM_RATING" or "VIOLATION_5L42_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L41 KLY or 5L42 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY
If TSA alarms "VIOLATION_5L44_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L44 MDN below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY
- By Pass CHP 5CX1 contingency:
If TSA alarms "VIOLATION_5L42_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L42 KLY below its continuous rating within 30 minutes:
 - Reduce GMS or PCN or other generation north of KLY, or
 - Reduce SI generation or import from Alberta
If TSA alarms "VIOLATION_5L44_NORM_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L44 MDN below its continuous rating within 30 minutes:
 - Reduce SI generation or import from Alberta, or
 - Reduce GMS or PCN or other generation north of KLY

4.0 Settings of 2L112 OL RAS and 2L293 OL RAS to Runback NLY PST

(Applicable to generation shedding tables in this Attachment 6)

RAS Name	Variable Name Used in Generation Shedding Tables	RAS Setting (from Apr. 1st to Oct. 31st)	RAS Setting (from Nov. 1st to Mar. 31st)
2L112 OL RAS	2L112OLRAS_PickupMW	Refer to SOO 7T-34 Attachment 1 – Section 4	Refer to SOO 7T-34 Attachment 1 – Section 4
	2L112OLRAS_ResetMW	Refer to SOO 7T-34 Attachment 1 – Section 4	Refer to SOO 7T-34 Attachment 1 – Section 4
2L293 OL RAS	2L293OLRAS_PickupMW	Refer to SOO 7T-34 Attachment 1 – Section 4	Refer to SOO 7T-34 Attachment 1 – Section 4
	2L293OLRAS_ResetMW	Refer to SOO 7T-34 Attachment 1 – Section 4	Refer to SOO 7T-34 Attachment 1 – Section 4

5.0 Removed

6.0 **Outage Tables (Pre-outage and Shedding Requirements)**

Table 1.1 - All NIC/KLY – LM (ILM) 500 kV Circuits and Series Capacitor Banks In-Service

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $3.2 * (0.5 * 5L40 \text{ CBN} + 5L44 \text{ MDN} - 5L44 \text{ Over_Rating})$
5L41	<p>$A1 = 3.6 * (0.4 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over_Rating})$ $a1 = 3.1 * (0.51 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over_Rating})$ $GS1 = \max(0, A1, a1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.066 * 5L41 \text{ KLY} - 0.05 * GS1) < 2L90 \text{ Over_Rating}$, $Y = 2L112 \text{ NLY} + 0.035 * 5L41 \text{ KLY} - 0.108 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.027 * 5L41 \text{ KLY} - 0.101 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $\text{Max}(A1 + 3.6 * 0.20 * (Y - 2L112 \text{OLRAS_ResetMW}), a1 + 3.1 * 0.6 * (Y - 2L112 \text{OLRAS_ResetMW}))$, or • $\text{Max}(A1 + 3.6 * 0.23 * (Z - 2L293 \text{OLRAS_ResetMW}), a1 + 3.1 * 0.7 * (Z - 2L293 \text{OLRAS_ResetMW}))$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.5 * (0.18 * (0.065 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.39 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over_Rating})$ $a2 = 3 * (0.41 * (0.065 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.52 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over_Rating})$ $GS2 = \max(0, A2, a2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.066 * 5L41 \text{ KLY} - 0.05 * GS1) \geq 2L90 \text{ Over_Rating}$, $Y = 2L112 \text{ NLY} + 0.031 * 5L41 \text{ KLY} + 0.032 * 2L90 \text{ KLY} - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.027 * 5L41 \text{ KLY} + 0.029 * 2L90 \text{ KLY} - 0.11 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $\text{Max}(A2 + 3.5 * 0.22 * (Y - 2L112 \text{OLRAS_ResetMW}), a2 + 3.0 * 0.61 * (Y - 2L112 \text{OLRAS_ResetMW}))$, or • $\text{Max}(A2 + 3.5 * 0.25 * (Z - 2L293 \text{OLRAS_ResetMW}), a2 + 3.0 * 0.71 * (Z - 2L293 \text{OLRAS_ResetMW}))$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.4 * (0.29 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over_Rating})$ $a3 = 3.1 * (0.52 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over_Rating})$ $GS3 = \max(0, A3, a3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.033 * 5L41 \text{ KLY} - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.029 * 5L41 \text{ KLY} - 0.11 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $\text{Max}(A3 + 3.4 * 0.23 * (Y - 2L112 \text{OLRAS_ResetMW}), a3 + 3.1 * 0.62 * (Y - 2L112 \text{OLRAS_ResetMW}))$, or • $\text{Max}(A3 + 3.4 * 0.26 * (Z - 2L293 \text{OLRAS_ResetMW}), a3 + 3.1 * 0.71 * (Z - 2L293 \text{OLRAS_ResetMW}))$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS3</p>
5L42	<p>$GS = \max(0, 4.1 * (0.36 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over_Rating}))$</p> <p>If 2L90 I/S and $2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY} - 0.051 * GS < 2L90 \text{ Over_Rating}$, then Shed at GMS/PCN: GS</p> <p>If 2L90 I/S and $2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY} - 0.051 * GS \geq 2L90 \text{ Over_Rating}$, then shed at GMS/PCN: Shed at GMS/PCN: $3.6 * (0.41 * (0.06 * 5L42 + 2L90) + 5L41 \text{ KLY} + 0.36 * 5L42 \text{ KLY} - 5L41 \text{ Over_Rating})$</p> <p>If 2L90 OOS, then shed at GMS/PCN: Shed at GMS/PCN: $4.53 * (0.38 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over_Rating})$</p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p>$A1 = 3.5 * (0.35 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42 \text{ Over_rating})$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.05 * GS1) < 2L90 \text{ Over_rating}$, $Y = 2L112 \text{ NLY} + 0.036 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.111 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.103 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $A1 + 3.5 * 0.2 * (Y - 2L112 \text{OLRAS_ResetMW})$, or • $A1 + 3.5 * 0.25 * (Z - 2L293 \text{OLRAS_ResetMW})$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.5 * (0.35 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.5 * (0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42 \text{ Over_rating})$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.05 * GS1) \geq 2L90 \text{ Over_rating}$, $Y = 2L112 \text{ NLY} + 0.036 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.036 * (2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.111 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.032 * (2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.103 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $A2 + 3.5 * 0.2 * (Y - 2L112 \text{OLRAS_ResetMW})$, or • $A2 + 3.5 * 0.25 * (Z - 2L293 \text{OLRAS_ResetMW})$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.2 * (0.38 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42 \text{ Over_Rating})$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.038 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.111 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.033 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.108 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A3 + 3.2 * 0.2 * (Y - 2L112 \text{OLRAS_ResetMW})$, or • $A3 + 3.2 * 0.23 * (Z - 2L293 \text{OLRAS_ResetMW})$ <p>If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at GMS/PCN: GS3</p>

Table 1.2 – 5L40 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L41	<p>A1 = 3.1 * (0.30 * 5L41 KLY + 5L44 MDN - 5L44_Over_Rating) a1 = 3.6 * (0.38 * 5L41 KLY + 5L42 KLY - 5L42_Over_Rating) If 2L90 I/S and (2L90 KLY + 0.136 * 5L41 KLY - 0.046 * GS1) < 2L90_Over_Rating, Shed at GMS/PCN: GS1 = max (0, A1, a1)</p> <p>A2 = 3.1 * (0.1 * (0.142 * 5L41 KLY + 2L90 KLY) + 0.30 * 5L41 KLY + 5L44 MDN - 5L44_Over_Rating) a2 = 3.4 * (0.42 * (0.142 * 5L41 KLY + 2L90 KLY) + 0.38 * 5L41 KLY + 5L42 KLY - 5L42_Over_Rating) If 2L90 I/S and (2L90 KLY + 0.136 * 5L41 KLY - 0.046 * GS1) >= 2L90_Over_Rating, Shed at GMS/PCN: GS2 = max (0, A2, a2)</p> <p>A3 = 3.2 * (0.31 * 5L41 KLY + 5L44 MDN - 5L44_Over_Rating) a3 = 3.4 * (0.44 * 5L41 KLY + 5L42 KLY - 5L42_Over_Rating) If 2L90 OOS, Shed at GMS/PCN: GS3 = max (0, A3, a3)</p>
5L42	Shed at GMS/PCN: 17.5 * (2L79 CBN + 0.145 * 5L42 KLY - 2L79_Over_Rating)
5L45	Shed at GMS/PCN: 13.04 * (2L79 CBN + 0.11 * 5L45 CKY - 2L79_Over_Rating)
5L87	<p>D = 8.33 * (0.14 * 5L87 KLY + 2L79 CBN - 2L79_Over_Rating)</p> <p>A1 = 1.79 * (0.68 * 5L87 KLY + 5L42 KLY - 5L42_Over_Rating) GS1 = max (0, A1, D) If 2L90 I/S AND 2L90 KLY + 0.06 * 5L87 KLY - 0.07 * GS1 < 2L90_Over_Rating Shed at GMS/PCN: GS1</p> <p>A2 = 1.69 * (0.70 * 5L87 KLY + 0.49 * 2L90 KLY + 5L42 KLY - 5L42_Over_Rating) If 2L90 I/S AND (2L90 KLY + 0.06 * 5L87 KLY - 0.07 * GS1) >= 2L90_Over_Rating Shed at GMS/PCN: GS2 = max (0, A2, D)</p> <p>A3 = 1.69 * (0.70 * 5L87 KLY + 5L42 KLY - 5L42_Over_Rating) If 2L90 OOS, then Shed at GMS/PCN: GS3 = max (0, A3, D)</p>
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p>A1 = 3.1 * (0.4 * (5L41 KLY + 5L83 NIC) + 5L42 KLY - 5L42_Over_rating) GS1 = max (0, A1) If 2L90 I/S and (2L90 KLY + 0.102 * (5L41 KLY + 5L83 NIC) - 0.054 * GS1) < 2L90_Over_rating, Y = 2L112 NLY + 0.048 * (5L41 KLY + 5L83 NIC) - 0.126 * GS1, if 2L112 is in service, otherwise, Y = 0 Z = 2L293 SEL + 0.043 * (5L41 KLY + 5L83 NIC) - 0.115 * GS1, if 2L112 & 2L293 are in service, otherwise, Z = 0 If Y > 2L112OLRAS_PickupMW or Z > 2L293OLRAS_PickupMW, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • A1 + 3.1 * 0.192 * (Y - 2L112OLRAS_ResetMW), or • A1 + 3.1 * 0.233 * (Z - 2L293OLRAS_ResetMW) <p>If Y <= 2L112OLRAS_PickupMW and Z <= 2L293OLRAS_PickupMW, shed at GMS/PCN: GS1</p> <p>A2 = 3.1 * (0.4 * (5L41 KLY + 5L83 NIC) + 0.45 * (0.102 * (5L41 KLY + 5L83 NIC) + 2L90 KLY) + 5L42_KLY - 5L42_Over_rating) GS2 = max (0, A2) If 2L90 I/S and (2L90 KLY + 0.102 * (5L41 KLY + 5L83 NIC) - 0.054 * GS1) >= 2L90_Over_rating, Y = 2L112 NLY + 0.048 * (5L41 KLY + 5L83 NIC) + 0.035 * (2L90 KLY + 0.102 * (5L41 KLY + 5L83 NIC)) - 0.126 * GS2, if 2L112 is in service, otherwise, Y = 0 Z = 2L293 SEL + 0.043 * (5L41 KLY + 5L83 NIC) + 0.031 * (2L90 KLY + 0.102 * (5L41 KLY + 5L83 NIC)) - 0.115 * GS2, if 2L112 & 2L293 are in service, otherwise, Z = 0 If Y > 2L112OLRAS_PickupMW or Z > 2L293OLRAS_PickupMW, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • A2 + 3.1 * 0.192 * (Y - 2L112OLRAS_ResetMW), or • A2 + 3.1 * 0.233 * (Z - 2L293OLRAS_ResetMW) <p>If Y <= 2L112OLRAS_PickupMW and Z <= 2L293OLRAS_PickupMW, shed at GMS/PCN: GS2</p> <p>A3 = 2.9 * (0.43 * (5L41 KLY + 5L83 NIC) + 5L42 KLY - 5L42_Over_Rating) GS3 = max (0, A3) If 2L90 OOS, Y = 2L112 NLY + 0.048 * (5L41 KLY + 5L83 NIC) - 0.13 * GS3, if 2L112 is in service, otherwise, Y = 0 Z = 2L293 SEL + 0.043 * (5L41 KLY + 5L83 NIC) - 0.11 * GS3, if 2L112 & 2L293 are in service, otherwise, Z = 0 If Y > 2L112OLRAS_PickupMW or Z > 2L293OLRAS_PickupMW, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • A3 + 2.9 * 0.188 * (Y - 2L112OLRAS_ResetMW), or • A3 + 2.9 * 0.229 * (Z - 2L293OLRAS_ResetMW) <p>If Y <= 2L112OLRAS_PickupMW and Z <= 2L293OLRAS_PickupMW, shed at GMS/PCN: GS3</p>

Table 1.3 – 5L41 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L42	$GS = \max(0, 1.44 * (5L87 \text{ KLY} + 0.86 * 5L42 \text{ KLY} - 5L87_Over_Rating))$ If $2L90 \text{ I/S}$ and $2L90 \text{ KLY} + 0.093 * 5L42 \text{ KLY} - 0.075 * GS < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S}$ and $2L90 \text{ KLY} + 0.093 * 5L42 \text{ KLY} - 0.075 * GS \geq 2L90_Over_Rating$, Shed at GMS/PCN: $1.32 * (0.86 * (0.093 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 5L87 \text{ KLY} + 0.86 * 5L42 \text{ KLY} - 5L87_Over_Rating)$ If 2L90 OOS, then shed at GMS/PCN: Shed at GMS/PCN: $1.32 * (0.95 * 5L42 \text{ KLY} + 5L87 \text{ KLY} - 5L87_Over_Rating)$
5L45	No generation shedding required.
5L87	$GS = \max(0, 2.20 * (0.125 * 5L87 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating), 1.48 * (0.8 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.09 * 5L87 \text{ KLY} - 0.04 * GS) < 2L90_Over_Rating$ Shed at GMS/PCN: GS If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.09 * 5L87 \text{ KLY} - 0.04 * GS) \geq 2L90_Over_Rating$ Shed at GMS/PCN: $\max(0, 2.09 * (0.12 * 5L87 + 0.33 * 2L90 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating), 1.32 * (0.88 * 5L87 \text{ KLY} + 0.78 * 2L90 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If 2L90 OOS, then Shed at GMS/PCN: $\max(0, 1.3 * (0.88 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating), 2.12 * (0.15 * 5L87 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating))$
By Pass CRK 5CX1	No generation shedding required.
5L83 (use the signal for loss of both 5L41 and 5L83 to shed GMS/PCN generation, if 5L42 is over-loaded)	$A1 = 3.1 * (0.22 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.03 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.057 * GS1) < 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.035 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.123 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.111 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.1 * 0.19 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.1 * 0.235 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 $A2 = 3.1 * (0.22 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.44 * (0.03 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L42_KLY - 5L42_Over_rating)$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.03 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.057 * GS1) \geq 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.035 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.034 * (2L90 \text{ KLY} + 0.03 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.123 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.027 * (2L90 \text{ KLY} + 0.03 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.111 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.1 * 0.19 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.1 * 0.235 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 $A3 = 2.9 * (0.23 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.037 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.13 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.032 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.111 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $A3 + 2.9 * 0.188 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.9 * 0.232 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3

Table 1.4 – 5L42 O.O.S.

Pre-outage Restrictions

- 5L41 and 5L83 contingency:
 If 2L90 I/S and $(2L90\ KLY + 0.08 * (5L41\ KLY + 5L83\ NIC) - 0.09 * (\text{armed\ GMS/PCN\ gen\ shed\ amount\ for\ 5L41\ \&\ 5L83\ contingency}) - 0.05 * (\text{armed\ MCA/REV\ gen\ shed\ amount\ for\ 5L41\ \&\ 5L83\ contingency})) < 2L90_Over_rating$, limit:
 $2L1\ PEM + 0.02 * (5L41\ KLY + 5L83\ NIC) - 0.019 * (\text{armed\ GMS/PCN\ gen\ shed\ amount\ for\ 5L41\ \&\ 5L83\ contingency}) - 0.011 * (\text{armed\ MCA/REV\ gen\ shed\ amount\ for\ 5L41\ \&\ 5L83\ contingency}) \leq 2L1_Over_rating\ MW$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L41AND5L83CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.
- 5L41 contingency:
 If 2L90 I/S, limit: $2L1\ PEM + 0.02 * 5L41\ KLY \leq 2L1_Over_Rating\ MW$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L41CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.
- 5L40 contingency:
 If 2L90 I/S, limit: $2L1\ PEM + 0.03 * 5L40\ CBN \leq 2L1_Over_Rating\ MW$
 If 2L90 OOS, limit: $2L1\ PEM + 0.023 * 5L40\ CBN \leq 2L1_Over_Rating\ MW$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L40CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $\max(0, 11.4 * (0.31 * 5L40\ CBN + 2L79\ CBN - 2L79\ Over\ Rating))$
5L41	$GS = \max(0, 1.42 * (0.86 * 5L41\ KLY + 5L87\ KLY - 5L87_Over_Rating))$ If 2L90 I/S, and $(2L90\ KLY + 0.11 * 5L41\ KLY - 0.079 * GS) < 2L90_Over_Rating$, Shed at GMS/PCN: GS If 2L90 I/S, and $(2L90\ KLY + 0.11 * 5L41\ KLY - 0.079 * GS) \geq 2L90_Over_Rating$, Shed at GMS/PCN: $1.30 * (0.86 * (0.11 * 5L41\ KLY + 2L90\ KLY) + 0.86 * 5L41\ KLY + 5L87\ KLY - 5L87_Over_Rating)$ If 2L90 OOS, Shed at GMS/PCN: $1.3 * (0.94 * 5L41\ KLY + 5L87\ KLY - 5L87\ Over\ Rating)$
5L45	Refer to SOO 7T-41, Attachment 2 – Table 2.3 Generation Shedding Requirements for the loss of North VI - LM.
5L87	$GS = \max(0, 1.51 * (0.78 * 5L87\ KLY + 5L41\ KLY - 5L41_Over_Rating))$ If 2L90 I/S AND $(2L90\ KLY + 0.1 * 5L87\ KLY - 0.11 * GS) < 2L90_Over_Rating$ Shed at GMS/PCN: GS If 2L90 I/S AND $(2L90\ KLY + 0.1 * 5L87\ KLY - 0.11 * GS) \geq 2L90_Over_Rating$ Shed at GMS/PCN: $1.32 * (0.87 * 5L87\ KLY + 0.82 * 2L90\ KLY + 5L41\ KLY - 5L41_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $1.32 * (0.87 * 5L87\ KLY + 5L41\ KLY - 5L41\ Over\ Rating)$
By Pass CHP 5CX1	No generation shedding required.
5L41 and 5L83	$GS87_1 = \max(0, 1.8 * (0.6 * (5L41\ KLY + 5L83\ NIC) + 5L87\ KLY - 5L87_Over_rating))$ $GS82_1 = \max(0, 3.2 * (0.45 * (5L41\ KLY + 5L83\ NIC) + 5L82\ NIC - 5L82_Over_rating) - 0.23 * GS87_1)$ If 2L90 I/S and $(2L90\ KLY + 0.087 * (5L41\ KLY + 5L83\ NIC) - 0.087 * GS87_1 - 0.047 * GS82_1) < 2L90_Over_rating$, Shed at GMS/PCN: GS87_1 $Y = 2L112\ NLY + 0.048 * (5L41\ KLY + 5L83\ NIC) - 0.120 * GS87_1 - 0.129 * GS82_1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.042 * (5L41\ KLY + 5L83\ NIC) - 0.113 * GS87_1 - 0.122 * GS82_1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, Shed at MCA/REV the greater of <ul style="list-style-type: none"> • $GS82_1 + 3.2 * 0.411 * (Y - 2L112OLRAS_ResetMW)$, or • $GS82_1 + 3.2 * 0.5 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at MCA/REV: GS82_1 $GS87_2 = \max(0, 1.8 * (0.6 * (5L41\ KLY + 5L83\ NIC) + 0.66 * (0.087 * (5L41\ KLY + 5L83\ NIC) + 2L90\ KLY) + 5L87\ KLY - 5L87_Over_rating))$ $GS82_2 = \max(0, 3.2 * (0.45 * (5L41\ KLY + 5L83\ NIC) + 0.46 * (0.087 * (5L41\ KLY + 5L83\ NIC) + 2L90\ KLY) + 5L82\ NIC - 5L82_Over_rating) - 0.23 * GS87_2)$ If 2L90 I/S and $(2L90\ KLY + 0.087 * (5L41\ KLY + 5L83\ NIC) - 0.087 * GS87_1 - 0.047 * GS82_1) \geq 2L90_Over_rating$, Shed at GMS/PCN: GS87_2 $Y = 2L112\ NLY + 0.048 * (5L41\ KLY + 5L83\ NIC) + 0.053 * (2L90\ KLY + 0.087 * (5L41\ KLY + 5L83\ NIC)) - 0.12 * GS87_2 - 0.129 * GS82_2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.042 * (5L41\ KLY + 5L83\ NIC) + 0.045 * (2L90\ KLY + 0.087 * (5L41\ KLY + 5L83\ NIC)) - 0.113 * GS87_2 - 0.122 * GS82_2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at MCA/REV the greater of <ul style="list-style-type: none"> • $GS82_2 + 3.2 * 0.411 * (Y - 2L112OLRAS_ResetMW)$, or • $GS82_2 + 3.2 * 0.5 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at MCA/REV: GS82_2 $GS87_3 = \max(0, 1.6 * (0.6 * (5L41\ KLY + 5L83\ NIC) + 5L87\ KLY - 5L87_Over_rating))$ $GS82_3 = \max(0, 3.1 * (0.48 * (5L41\ KLY + 5L83\ NIC) + 5L82\ NIC - 5L82_Over_rating) - 0.27 * GS87_3)$ If 2L90 OOS, Shed at GMS/PCN: GS87_3 $Y = 2L112\ NLY + 0.055 * (5L41\ KLY + 5L83\ NIC) - 0.128 * GS87_3 - 0.135 * GS82_3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.048 * (5L41\ KLY + 5L83\ NIC) - 0.121 * GS87_3 - 0.128 * GS82_3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at MCA/REV the greatest of <ul style="list-style-type: none"> • $GS82_3 + 3.1 * 0.42 * (Y - 2L112OLRAS_ResetMW)$, or • $GS82_3 + 3.1 * 0.51 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at MVA/REV: GS82_3

Table 1.5 – 5L45 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $14.1 * (0.3 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over Rating})$
5L41	$GS1 = \max(0, 4.8 * (0.41 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating}))$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.084 * 5L41 \text{ KLY} - 0.061 * GS1) < 2L90 \text{ Over Rating}$, Shed at GMS/PCN: GS1 If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.084 * 5L41 \text{ KLY} - 0.061 * GS1) \geq 2L90 \text{ Over Rating}$, Shed at GMS/PCN: $5.9 * (0.191 * (0.084 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.41 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating})$ If 2L90 OOS, Shed at GMS/PCN: $5 * (0.41 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating})$
5L42	Refer to SOO 7T-41, Attachment 2 – Table 2.3 Generation Shedding Requirements for the loss of North VI - LM.
5L87	If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.08 * 5L87 \text{ KLY}) \geq 2L90 \text{ Over Rating}$, then Shed at GMS/PCN: $1.73 * (0.66 * 5L87 \text{ KLY} + 0.79 * 2L90 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over Rating})$ If 2L90 OOS, then Shed at GMS/PCN: $1.45 * (0.75 * 5L87 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over Rating})$
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	$A1 = 4.1 * (0.4 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L82 \text{ NIC} - 5L82 \text{ Over rating})$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.072 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.043 * GS1) < 2L90 \text{ Over rating}$, $Y = 2L112 \text{ NLY} + 0.047 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.140 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.041 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.133 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV the greater of <ul style="list-style-type: none"> $A1 + 4.1 * 0.328 * (Y - 2L112 \text{OLRAS_ResetMW})$, or $A1 + 4.1 * 0.4 * (Z - 2L293 \text{OLRAS_ResetMW})$ If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV: GS1 $A2 = 4.1 * (0.4 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.53 * (0.072 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L82 \text{ NIC} - 5L82 \text{ Over rating})$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.072 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.043 * GS1) \geq 2L90 \text{ Over rating}$, $Y = 2L112 \text{ NLY} + 0.047 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.044 * (2L90 \text{ KLY} + 0.072 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.14 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.041 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.039 * (2L90 \text{ KLY} + 0.072 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.133 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV the greater of <ul style="list-style-type: none"> $A2 + 4.1 * 0.328 * (Y - 2L112 \text{OLRAS_ResetMW})$, or $A2 + 4.1 * 0.4 * (Z - 2L293 \text{OLRAS_ResetMW})$ If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV: GS2 $A3 = 4.15 * (0.41 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L82 \text{ NIC} - 5L82 \text{ Over rating})$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.052 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.154 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.046 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.145 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112 \text{OLRAS_PickupMW}$ or $Z > 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV the greatest of <ul style="list-style-type: none"> $A3 + 4.15 * 0.32 * (Y - 2L112 \text{OLRAS_ResetMW})$, or $A3 + 4.15 * 0.39 * (Z - 2L293 \text{OLRAS_ResetMW})$ If $Y \leq 2L112 \text{OLRAS_PickupMW}$ and $Z \leq 2L293 \text{OLRAS_PickupMW}$, shed at MCA/REV: GS3

Table 1.6 – 5L44 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $A1 = 11.3 * (0.30 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S, $Y = 2L112 \text{ NLY} + 0.035 * 5L40 \text{ CBN} - 0.094 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * 5L40 \text{ CBN} - 0.09 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 11.3 * 0.075 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 11.3 * 0.088 * (Z - 2L293OLRAS_ResetMW)$, If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 11.5 * (0.30 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.036 * 5L40 \text{ CBN} - 0.95 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.078 * 5L40 \text{ CBN} - 0.92 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 11.5 * 0.077 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 11.5 * 0.091 * (Z - 2L293OLRAS_ResetMW)$, If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p>Note: under heavy export situations, 2L3 could be overloaded (up to 8% of its continuous rating), Operator's manual action by reducing generation output at ASL, CMS, BR-1, BR-2 is required to bring the flow under the rating.</p>
5L41	No generation shedding required.
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	No generation shedding required.

Table 1.7 – 5L81 O.O.S.

Pre-outage Restrictions

Limit: 5L44 MDN < 5L44_Normal_Rating MW

If TSA alarms "VIOLATION_5L44_NORM_RATING", the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L44 MDN below their rating within 30 minutes:

- Reduce GMS or PCN or other generation north of KLY, or
- Reduce SI generation or import from Alberta.

For 5L41 contingency, if the required gen shedding amount is greater than 2500 MW, then dispatcher shall reduce generation from GMS/PCN power plants and correspondingly increase generation in South Interior so that the total required generation shedding amount will be less than 2500 MW.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 15.3 * (0.28 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$ $A1 = 3.7 * (0.31 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 2.35 * (0.62 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1, A2, D)$ If 2L90 I/S and $(2L90\ KLY + 0.010 * 5L40\ CBN - 0.040 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.030 * 5L40\ CBN - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.026 * 5L40\ CBN - 0.09 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A1 + 3.7 * 0.16 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.7 * 0.2 * (Z - 2L293OLRAS_ResetMW)$, or • $A2 + 2.35 * 0.79 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.35 * 0.93 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.51 * (0.31 * (0.010 * 5L40\ CBN + 2L90\ KLY) + 0.31 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $A4 = 2.35 * (0.12 * (0.010 * 5L40\ CBN + 2L90\ KLY) + 0.62 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A3, A4, D)$ If 2L90 I/S and $(2L90\ KLY + 0.010 * 5L40\ CBN - 0.040 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.031 * 5L40\ CBN + 0.029 * (2L90\ KLY + 0.010 * 5L40\ CBN) - 0.10 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.027 * 5L40\ CBN + 0.025 * (2L90\ KLY + 0.010 * 5L40\ CBN) - 0.095 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A3 + 3.51 * 0.2 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.51 * 0.24 * (Z - 2L293OLRAS_ResetMW)$, or • $A4 + 2.35 * 0.8 * (Y - 2L112OLRAS_ResetMW)$, or • $A4 + 2.35 * 0.94 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.55 * (0.32 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $A6 = 2.35 * (0.62 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A5, A6, D)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.038 * 5L40\ CBN - 0.12 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.032 * 5L40\ CBN - 0.11 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A5 + 3.55 * 0.17 * (Y - 2L112OLRAS_ResetMW)$, or • $A5 + 3.55 * 0.21 * (Z - 2L293OLRAS_ResetMW)$, or • $A6 + 2.35 * 0.80 * (Y - 2L112OLRAS_ResetMW)$, or • $A6 + 2.35 * 0.94 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L41	<p> $A1 = 3.2 * (0.43 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 2.35 * (0.66 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If 2L90 I/S and $(2L90\ KLY + 0.073 * 5L41\ KLY - 0.053 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.039 * 5L41\ KLY - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.034 * 5L41\ KLY - 0.10 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A1 + 3.2 * 0.25 * (Y - 2L112OLRAS_ResetMW), A2 + 2.35 * 0.8 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A1 + 3.2 * 0.3 * (Z - 2L293OLRAS_ResetMW), A2 + 2.35 * 0.94 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.1 * (0.45 * (0.073 * 5L41\ KLY + 2L90\ KLY) + 0.43 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A4 = 2.4 * (0.3 * (0.073 * 5L41\ KLY + 2L90\ KLY) + 0.66 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If 2L90 I/S and $(2L90\ KLY + 0.073 * 5L41\ KLY - 0.053 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.039 * 5L41\ KLY + 0.042 * 2L90\ KLY - 0.105 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.034 * 5L41\ KLY + 0.038 * 2L90\ KLY - 0.10 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A3 + 3.1 * 0.29 * (Y - 2L112OLRAS_ResetMW), A4 + 2.4 * 0.8 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A3 + 3.1 * 0.33 * (Z - 2L293OLRAS_ResetMW), A4 + 2.4 * 0.94 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.1 * (0.46 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A6 = 2.3 * (0.69 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.042 * 5L41\ KLY - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.037 * 5L41\ KLY - 0.10 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A5 + 3.1 * 0.28 * (Y - 2L112OLRAS_ResetMW), A6 + 2.3 * 0.83 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A5 + 3.1 * 0.32 * (Z - 2L293OLRAS_ResetMW), A6 + 2.3 * 0.97 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Generation Shedding Requirements Continued on Next Page for Table 1.7 – 5L81 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.7 – 5L81 O.O.S.

Table 1.7 – 5L81 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	<p> $A1 = 3.7 * (0.38 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY} - 0.051 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L42 \text{ KLY} - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} - 0.98 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.7 * 0.24 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.7 * 0.28 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.5 * (0.44 * (0.06 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.38 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY} - 0.051 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L42 \text{ KLY} + 0.04 * (2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY}) - 0.10 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} + 0.035 * (2L90 \text{ KLY} + 0.06 * 5L42 \text{ KLY}) - 0.10 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.5 * 0.26 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.5 * 0.30 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.41 * (0.41 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.028 * 5L42 \text{ KLY} - 0.10 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.025 * 5L42 \text{ KLY} - 0.10 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.41 * 0.26 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.41 * 0.31 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	<p> $A1 = 2.82 * (0.68 * 0.40 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.071 * 0.40 * 5L41 \text{ KLY} - 0.043 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.041 * 0.40 * 5L41 \text{ KLY} - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.035 * 0.40 * 5L41 \text{ KLY} - 0.096 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 2.82 * 0.72 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 2.82 * 0.85 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 2.8 * (0.20 * (0.071 * 0.40 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.68 * 0.40 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.071 * 0.40 * 5L41 \text{ KLY} - 0.043 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.041 * 0.40 * 5L41 \text{ KLY} + 0.034 * 2L90 \text{ KLY} - 0.105 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.036 * 0.40 * 5L41 \text{ KLY} + 0.029 * 2L90 \text{ KLY} - 0.1 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 2.8 * 0.74 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.8 * 0.87 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 2.75 * (0.71 * 0.40 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.044 * 0.40 * 5L41 \text{ KLY} - 0.105 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.038 * 0.40 * 5L41 \text{ KLY} - 0.098 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 2.75 * 0.73 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.75 * 0.87 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Generation Shedding Requirements Continued on Next Page for Table 1.7 – 5L81 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.7 – 5L81 O.O.S.

Table 1.7 – 5L81 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p> $A1 = 2.81 * (0.4 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B1 = 4.9 * (0.46 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L82 \text{ NIC} - 5L82_Over_rating)$ $C1 = 2.5 * (0.23 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L44 \text{ MDN} - 5L44_Over_rating)$ $GS1 = \max(0, A1, B1, C1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.064 * GS1) < 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.054 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.119 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.048 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.113 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of: <ul style="list-style-type: none"> • $A1 + 2.81 * 0.206 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 2.81 * 0.254 * (Z - 2L293OLRAS_ResetMW)$ • $B1 + 4.9 * 0.406 * (Y - 2L112OLRAS_ResetMW)$, or • $B1 + 4.9 * 0.5 * (Z - 2L293OLRAS_ResetMW)$ • $C1 + 2.5 * 0.15 * (Y - 2L112OLRAS_ResetMW)$, or • $C1 + 2.5 * 0.185 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS1 </p> <p> $A2 = 2.81 * (0.4 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.49 * (0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B2 = 4.9 * (0.46 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.364 * (0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L82 \text{ NIC} - 5L82_Over_rating)$ $C2 = 2.5 * (0.23 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.367 * (0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L44 \text{ MDN} - 5L44_Over_rating)$ $GS2 = \max(0, A2, B2, C2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.064 * GS2) \geq 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.054 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.067 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.119 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.048 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.062 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.113 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of <ul style="list-style-type: none"> • $A2 + 2.81 * 0.206 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.81 * 0.254 * (Z - 2L293OLRAS_ResetMW)$ • $B2 + 4.9 * 0.406 * (Y - 2L112OLRAS_ResetMW)$, or • $B2 + 4.9 * 0.5 * (Z - 2L293OLRAS_ResetMW)$ • $C2 + 2.5 * 0.15 * (Y - 2L112OLRAS_ResetMW)$, or • $C2 + 2.5 * 0.185 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS2 </p> <p> $A3 = 2.58 * (0.45 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B3 = 4.35 * (0.48 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L82 \text{ NIC} - 5L82_Over_rating)$ $C3 = 2.37 * (0.25 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L44 \text{ MDN} - 5L44_Over_rating)$ $GS3 = \max(0, A3, B3, C3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.058 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.123 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.051 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.117 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of: <ul style="list-style-type: none"> • $A3 + 2.58 * 0.268 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.58 * 0.328 * (Z - 2L293OLRAS_ResetMW)$ • $B3 + 4.35 * 0.455 * (Y - 2L112OLRAS_ResetMW)$, or • $B3 + 4.35 * 0.556 * (Z - 2L293OLRAS_ResetMW)$ • $C3 + 2.37 * 0.368 * (Y - 2L112OLRAS_ResetMW)$, or • $C3 + 2.37 * 0.45 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS3 </p>

Table 1.8 – 5L82 O.O.S.

Pre-outage Restrictions

- None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 16.71 * (0.28 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$ $A1 = 3.72 * (0.303 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS1 = \max(0, A1, D)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.009 * 5L40\ CBN - 0.041 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.029 * 5L40\ CBN - 0.11 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.025 * 5L40\ CBN - 0.105 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D or • $A1 + 3.72 * 0.19 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.72 * 0.23 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.6 * (0.31 * (0.009 * 5L40\ CBN + 2L90\ KLY) + 0.303 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS2 = \max(0, A2, D)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.009 * 5L40\ CBN - 0.041 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.029 * 5L40\ CBN + 0.032 * 2L90\ KLY - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.025 * 5L40\ CBN + 0.028 * 2L90\ KLY - 0.107 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D or • $A2 + 3.6 * 0.21 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.6 * 0.25 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.6 * (0.31 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $GS3 = \max(0, A3, D)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.029 * 5L40\ CBN - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.025 * 5L40\ CBN - 0.106 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D or • $A3 + 3.6 * 0.21 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.6 * 0.24 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L41	<p> $A1 = 3.5 * (0.42 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $a1 = 7.5 * (0.25 * 5L41\ KLY + 5L81\ NIC - 5L81_Over_Rating)$ $GS1 = \max(0, A1, a1)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.071 * 5L41\ KLY - 0.05 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.039 * 5L41\ KLY - 0.11 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.034 * 5L41\ KLY - 0.105 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A1 + 3.5 * 0.23 * (Y - 2L112OLRAS_ResetMW), a1 + 7.5 * 0.38 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A1 + 3.5 * 0.27 * (Z - 2L293OLRAS_ResetMW), a1 + 7.5 * 0.45 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.22 * (0.45 * (0.071 * 5L41\ KLY + 2L90\ KLY) + 0.42 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $a2 = 6.92 * (0.24 * (0.071 * 5L41\ KLY + 2L90\ KLY) + 0.25 * 5L41\ KLY + 5L81\ NIC - 5L81_Over_Rating)$ $GS2 = \max(0, A2, a2)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.071 * 5L41\ KLY - 0.05 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.039 * 5L41\ KLY + 0.047 * 2L90\ KLY - 0.115 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.034 * 5L41\ KLY + 0.041 * 2L90\ KLY - 0.109 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A2 + 3.22 * 0.27 * (Y - 2L112OLRAS_ResetMW), a2 + 6.92 * 0.41 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A2 + 3.22 * 0.31 * (Z - 2L293OLRAS_ResetMW), a2 + 6.92 * 0.49 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.21 * (0.45 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $a3 = 6.85 * (0.27 * 5L41\ KLY + 5L81\ NIC - 5L81_Over_Rating)$ $GS3 = \max(0, A3, a3)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.042 * 5L41\ KLY - 0.115 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.036 * 5L41\ KLY - 0.105 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A3 + 3.21 * 0.26 * (Y - 2L112OLRAS_ResetMW), a3 + 6.85 * 0.40 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A3 + 3.21 * 0.29 * (Z - 2L293OLRAS_ResetMW), a3 + 6.85 * 0.46 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Generation Shedding Requirements Continued on Next Page for Table 1.8 – 5L82 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.8 – 5L82 O.O.S.

Table 1.8 – 5L82 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	<p> $A1 = 4.0 * (0.39 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $a1 = 8.5 * (0.19 * 5L42 \text{ KLY} + 5L81 \text{ NIC} - 5L81_Over_Rating)$ $GS1 = \max(0, A1, a1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.065 * 5L42 \text{ KLY} - 0.057 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.034 * 5L42 \text{ KLY} - 0.12 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.030 * 5L42 \text{ KLY} - 0.11 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A1 + 4.0 * 0.21 * (Y - 2L112OLRAS_ResetMW), a1 + 8.5 * 0.36 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A1 + 4.0 * 0.26 * (Z - 2L293OLRAS_ResetMW), a1 + 8.5 * 0.43 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.91 * (0.42 * (0.065 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.39 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $a2 = 7.8 * (0.21 * (0.065 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.20 * 5L41 \text{ KLY} + 5L81 \text{ NIC} - 5L81_Over_Rating)$ $GS2 = \max(0, A2, a2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.065 * 5L42 \text{ KLY} - 0.057 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.035 * 5L42 \text{ KLY} + 0.039 * 2L90 \text{ KLY} - 0.12 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.031 * 5L42 \text{ KLY} + 0.033 * 2L90 \text{ KLY} - 0.114 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A2 + 3.91 * 0.25 * (Y - 2L112OLRAS_ResetMW), a2 + 7.8 * 0.40 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A2 + 3.91 * 0.29 * (Z - 2L293OLRAS_ResetMW), a2 + 7.8 * 0.47 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.8 * (0.41 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $a3 = 7.6 * (0.21 * 5L42 \text{ KLY} + 5L81 \text{ NIC} - 5L81_Over_Rating)$ $GS3 = \max(0, A3, a3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.038 * 5L42 \text{ KLY} - 0.127 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.034 * 5L42 \text{ KLY} - 0.119 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $\max(A3 + 3.8 * 0.24 * (Y - 2L112OLRAS_ResetMW), a3 + 7.6 * 0.39 * (Y - 2L112OLRAS_ResetMW))$, or • $\max(A3 + 3.8 * 0.29 * (Z - 2L293OLRAS_ResetMW), a3 + 7.6 * 0.46 * (Z - 2L293OLRAS_ResetMW))$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.

Generation Shedding Requirements Continued on Next Page for Table 1.8 – 5L82 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.8 – 5L82 O.O.S.

Table 1.8 – 5L82 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
By Pass CHP 5CX1	<p> $A1 = 4.05 * (0.42 * 0.41 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.069 * 0.41 * 5L41 \text{ KLY} - 0.042 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.039 * 0.41 * 5L41 \text{ KLY} - 0.108 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.034 * 0.41 * 5L41 \text{ KLY} - 0.10 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 4.05 * 0.15 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 4.05 * 0.18 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.82 * (0.36 * (0.069 * 0.41 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.42 * 0.41 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.069 * 0.41 * 5L41 \text{ KLY} - 0.042 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.039 * 0.41 * 5L41 \text{ KLY} + 0.037 * 2L90 \text{ KLY} - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.034 * 0.41 * 5L41 \text{ KLY} + 0.032 * 2L90 \text{ KLY} - 0.10 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.82 * 0.18 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.82 * 0.21 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.82 * (0.45 * 0.40 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.043 * 0.40 * 5L41 \text{ KLY} - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.037 * 0.40 * 5L41 \text{ KLY} - 0.10 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.82 * 0.18 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.82 * 0.21 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p> $A1 = 2.8 * (0.42 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B1 = 4.7 * (0.45 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS1 = \max(0, A1, B1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.064 * GS1) < 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.055 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.12 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.049 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.114 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of <ul style="list-style-type: none"> • $A1 + 2.8 * 0.173 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 2.8 * 0.213 * (Z - 2L293OLRAS_ResetMW)$ • $B1 + 4.7 * 0.333 * (Y - 2L112OLRAS_ResetMW)$, or • $B1 + 4.7 * 0.41 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS1 </p> <p> $A2 = 2.8 * (0.42 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.556 * (0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B2 = 4.7 * (0.45 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.37 * (0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS2 = \max(0, A2, B2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.064 * GS1) \geq 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.055 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.049 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.12 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.049 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.041 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.114 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of <ul style="list-style-type: none"> • $A2 + 2.8 * 0.173 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.8 * 0.213 * (Z - 2L293OLRAS_ResetMW)$ • $B2 + 4.7 * 0.333 * (Y - 2L112OLRAS_ResetMW)$, or • $B2 + 4.7 * 0.41 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS2 </p> <p> $A3 = 2.54 * (0.46 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B3 = 4.12 * (0.46 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS3 = \max(0, A3, B3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.062 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.131 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.054 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.122 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV the greatest of <ul style="list-style-type: none"> • $A3 + 2.54 * 0.268 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.54 * 0.329 * (Z - 2L293OLRAS_ResetMW)$ • $B3 + 4.12 * 0.428 * (Y - 2L112OLRAS_ResetMW)$, or • $B3 + 4.12 * 0.525 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN first, then MCA/REV: GS3 </p>

Table 1.9 – 5L87 O.O.S.

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	$D = 7.2 * (0.32 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79_Over_Rating)$ $A1 = 1.82 * (0.54 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1, D)$ If 2L90 I/S and $2L90 \text{ KLY} + 0.03 * 5L40 \text{ CBN} - 0.06 * GS1 < 2L90_Over_Rating$, then Shed at GMS/PCN: GS1 $A2 = 1.71 * (0.50 * (0.03 * 5L40 \text{ CBN} + 2L90 \text{ KLY}) + 5L42 \text{ KLY} + 0.54 * 5L40 \text{ CBN} - 5L42_Over_Rating)$ If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.03 * 5L40 \text{ CBN} - 0.06 * GS1 \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $GS2 = \max(0, A2, D)$ $A3 = 1.72 * (0.56 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $GS3 = \max(0, A3, D)$
5L41	$GS = \max(0, 1.49 * (0.79 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating), 2.33 * (0.66 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating))$ If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.073 * 5L41 \text{ KLY} - 0.052 * GS < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.073 * 5L41 \text{ KLY} - 0.052 * GS \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $\max(0, 1.36 * (0.8 * (2L90 \text{ KLY} + 0.12 * 5L41 \text{ KLY}) + 0.80 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating), 2.4 * (0.3 * (2L90 \text{ KLY} + 0.073 * 5L41 \text{ KLY}) + 0.66 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If 2L90 OOS, then Shed at GMS/PCN: $\max(0, 1.37 * (0.88 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating), 2.3 * (0.69 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating))$ Additional gen shed requirement for transient stability purpose: If One of (5L1, 5L2, 5L3, 5L4, 5L7) AND One of (5L11, 5L12, 5L13) OOS, then Shed GMS/PCN/BMW/DKW/MCM down to 3100 MW
5L42	$GS = \max(0, 2.7 * (0.78 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating))$ If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.11 * 5L42 \text{ KLY} - 0.058 * GS < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.11 * 5L42 \text{ KLY} - 0.058 * GS \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $2 * (0.8 * (0.11 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 5L41 \text{ KLY} + 0.79 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ If 2L90 OOS, then shed at GMS/PCN: $2.1 * (0.87 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$
5L45	No generation shedding required.
By Pass CHP 5CX1	$GS = \max(0, 2.11 * (0.80 * 0.35 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.04 * 0.35 * 5L41 \text{ KLY} - 0.064 * GS < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.04 * 0.35 * 5L41 \text{ KLY} - 0.064 * GS \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $1.96 * (0.56 * (0.04 * 0.35 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 5L42 \text{ KLY} + 0.80 * 0.35 * 5L41 \text{ KLY} - 5L42_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $1.96 * (0.89 * 0.34 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	$GS1 = \max(0, 1.52 * (0.82 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If $2L90 \text{ I/S and } (2L90 \text{ KLY} + 0.125 * 5L41 \text{ KLY} - 0.102 * GS1) < 2L90_Over_Rating$, Shed at GMS/PCN: GS1 $GS2 = \max(0, 1.52 * (0.82 * 5L41 \text{ KLY} + 0.762 * (0.125 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If $2L90 \text{ I/S and } (2L90 \text{ KLY} + 0.125 * 5L41 \text{ KLY} - 0.102 * GS1) \geq 2L90_Over_Rating$, Shed at GMS/PCN: GS2 $GS3 = \max(0, 1.35 * (0.91 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If 2L90 is OOS, shed at GMS/PCN: GS3

Table 1.10 – CHP 5CX1 O.O.S.

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $3.2 * (0.45 * 5L40 \text{ CBN} + 5L44 \text{ MDN} - 5L44_Over_Rating)$
5L41	Same as Table 1.1 – System Normal.
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	Same as Table 1.1 – System Normal.

Table 1.11 – CRK 5CX1 O.O.S.

Pre-outage Restrictions

- 5L41 contingency:
 If 2L90 I/S and $2L90\ KLY + 0.083 * 5L41\ KLY < 2L90_Over_Rating$, limit: $2L1\ PEM + 0.015 * 5L41\ KLY < 2L1_Over_rating\ MW$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L41CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.
- 5L40 contingency:
 If 2L90 I/S, Limit: $2L1\ PEM + 0.023 * 5L40\ CBN < 2L1_Over_rating\ MW$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L40CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $22 * (0.28 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$
5L41	Shed at GMS/PCN: $3.6 * (0.52 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$
5L42	Shed at GMS/PCN: $3.9 * (0.39 * 5L42\ KLY + 5L41\ KLY - 5L41_Over_Rating)$
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
5L41 and 5L83	No generation shedding required.

Table 1.12 – AMC 5CX1 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 14.9 * (0.27 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$ $A1 = 2.75 * (0.55 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1, D)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.0074 * 5L40\ CBN - 0.035 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.026 * 5L40\ CBN - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.023 * 5L40\ CBN - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A1 + 2.75 * 0.62 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 2.75 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 2.72 * (0.063 * (0.0074 * 5L40\ CBN + 2L90\ KLY) + 0.55 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A2, D)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.0074 * 5L40\ CBN - 0.035 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.026 * 5L40\ CBN + 0.025 * 2L90\ KLY - 0.105 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.023 * 5L40\ CBN + 0.022 * 2L90\ KLY - 0.1 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A2 + 2.72 * 0.62 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.72 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 2.72 * (0.55 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A3, D)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.026 * 5L40\ CBN - 0.105 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.023 * 5L40\ CBN - 0.1 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A3 + 2.72 * 0.62 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.72 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L41	<p> $A1 = 3.4 * (0.40 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 2.75 * (0.57 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.070 * 5L41\ KLY - 0.050 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.035 * 5L41\ KLY - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.031 * 5L41\ KLY - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.4 * 0.21 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.4 * 0.24 * (Z - 2L293OLRAS_ResetMW)$, or • $A2 + 2.75 * 0.63 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 2.75 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.1 * (0.43 * (0.070 * 5L41\ KLY + 2L90\ KLY) + 0.40 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A4 = 2.7 * (0.22 * (0.070 * 5L41\ KLY + 2L90\ KLY) + 0.57 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.070 * 5L41\ KLY - 0.050 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.035 * 5L41\ KLY + 0.039 * 2L90\ KLY - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.031 * 5L41\ KLY + 0.034 * 2L90\ KLY - 0.105 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.1 * 0.23 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.1 * 0.27 * (Z - 2L293OLRAS_ResetMW)$, or • $A4 + 2.7 * 0.63 * (Y - 2L112OLRAS_ResetMW)$, or • $A4 + 2.7 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.1 * (0.43 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A6 = 2.7 * (0.58 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.038 * 5L41\ KLY - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.033 * 5L41\ KLY - 0.105 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A5 + 3.1 * 0.23 * (Y - 2L112OLRAS_ResetMW)$, or • $A5 + 3.1 * 0.27 * (Z - 2L293OLRAS_ResetMW)$, or • $A6 + 2.7 * 0.63 * (Y - 2L112OLRAS_ResetMW)$, or • $A6 + 2.7 * 0.73 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L42	<p> $A1 = 4.0 * (0.37 * 5L42\ KLY + 5L41\ KLY - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.057 * 5L42\ KLY - 0.050 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.024 * 5L42\ KLY - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.021 * 5L42\ KLY - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 4 * 0.2 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 4 * 0.23 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.8 * (0.43 * (0.057 * 5L42\ KLY + 2L90\ KLY) + 0.37 * 5L42\ KLY + 5L41\ KLY - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.057 * 5L42\ KLY - 0.050 * GS1) \geq 2L90_Over_Rating$, </p>

	<p> $Y = 2L112\ NLY + 0.023 * 5L42\ KLY + 0.037 * 2L90\ KLY - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.021 * 5L42\ KLY + 0.033 * 2L90\ KLY - 0.105 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A2 + 3.8 * 0.22 * (Y - 2L112OLRAS_ResetMW)$, or $A2 + 3.8 * 0.26 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 $A3 = 3.8 * (0.39 * 5L42\ KLY + 5L41\ KLY - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.027 * 5L42\ KLY - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.024 * 5L42\ KLY - 0.105 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A3 + 3.8 * 0.22 * (Y - 2L112OLRAS_ResetMW)$, or $A3 + 3.8 * 0.26 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	<p> $A1 = 3.3 * (0.58 * 0.40 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90\ KLY + 0.067 * 0.40 * 5L41\ KLY - 0.039 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.035 * 0.40 * 5L41\ KLY - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.03 * 0.40 * 5L41\ KLY - 0.097 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A1 + 3.3 * 0.57 * (Y - 2L112OLRAS_ResetMW)$, or $A1 + 3.3 * 0.68 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 $A2 = 3.3 * (0.13 * (0.067 * 0.40 * 5L41\ KLY + 2L90\ KLY) + 0.58 * 0.40 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90\ KLY + 0.067 * 0.40 * 5L41\ KLY - 0.039 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.035 * 0.40 * 5L41\ KLY + 0.03 * 2L90\ KLY - 0.105 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.03 * 0.40 * 5L41\ KLY + 0.026 * 2L90\ KLY - 0.099 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A2 + 3.3 * 0.58 * (Y - 2L112OLRAS_ResetMW)$, or $A2 + 3.3 * 0.68 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 $A3 = 3.3 * (0.60 * 0.40 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.037 * 0.40 * 5L41\ KLY - 0.105 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.032 * 0.40 * 5L41\ KLY - 0.099 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A3 + 3.3 * 0.58 * (Y - 2L112OLRAS_ResetMW)$, or $A3 + 3.3 * 0.68 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p> $A1 = 3.3 * (0.35 * (5L41\ KLY + 5L83\ NIC) + 5L42\ KLY - 5L42_Over_rating)$ $B1 = 3.15 * (0.12 * (5L41\ KLY + 5L83\ NIC) + 5L44\ MDN - 5L44_Over_rating)$ $GS1 = \max(0, A1, B1)$ If 2L90 I/S and $(2L90\ KLY + 0.057 * (5L41\ KLY + 5L83\ NIC) - 0.057 * GS1) < 2L90_Over_rating$, $Y = 2L112\ NLY + 0.044 * (5L41\ KLY + 5L83\ NIC) - 0.118 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.039 * (5L41\ KLY + 5L83\ NIC) - 0.111 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A1 + 3.3 * 0.225 * (Y - 2L112OLRAS_ResetMW)$, or $A1 + 3.3 * 0.276 * (Z - 2L293OLRAS_ResetMW)$ $B1 + 3.15 * 0.364 * (Y - 2L112OLRAS_ResetMW)$, or $B1 + 3.15 * 0.447 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 $A2 = 3.3 * (0.35 * (5L41\ KLY + 5L83\ NIC) + 0.454 * (0.057 * (5L41\ KLY + 5L83\ NIC) + 2L90\ KLY) + 5L42\ KLY - 5L42_Over_rating)$ $B2 = 3.15 * (0.12 * (5L41\ KLY + 5L83\ NIC) + 0.407 * (0.057 * (5L41\ KLY + 5L83\ NIC) + 2L90\ KLY) + 5L44\ MDN - 5L44_Over_rating)$ $GS2 = \max(0, A2, B2)$ If 2L90 I/S and $(2L90\ KLY + 0.057 * (5L41\ KLY + 5L83\ NIC) - 0.057 * GS1) \geq 2L90_Over_rating$, $Y = 2L112\ NLY + 0.044 * (5L41\ KLY + 5L83\ NIC) + 0.05 * (2L90\ KLY + 0.057 * (5L41\ KLY + 5L83\ NIC)) - 0.118 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.039 * (5L41\ KLY + 5L83\ NIC) + 0.044 * (2L90\ KLY + 0.057 * (5L41\ KLY + 5L83\ NIC)) - 0.111 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A2 + 3.3 * 0.225 * (Y - 2L112OLRAS_ResetMW)$, or $A2 + 3.3 * 0.276 * (Z - 2L293OLRAS_ResetMW)$ $B2 + 3.15 * 0.364 * (Y - 2L112OLRAS_ResetMW)$, or $B2 + 3.15 * 0.447 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 $A3 = 2.96 * (0.38 * (5L41\ KLY + 5L83\ NIC) + 5L42\ KLY - 5L42_Over_rating)$ $B3 = 3.05 * (0.13 * (5L41\ KLY + 5L83\ NIC) + 5L44\ MDN - 5L44_Over_rating)$ $GS3 = \max(0, A3, B3)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.047 * (5L41\ KLY + 5L83\ NIC) - 0.122 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.042 * (5L41\ KLY + 5L83\ NIC) - 0.116 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> $A3 + 2.96 * 0.226 * (Y - 2L112OLRAS_ResetMW)$, or $A3 + 2.96 * 0.276 * (Z - 2L293OLRAS_ResetMW)$ $B3 + 3.05 * 0.366 * (Y - 2L112OLRAS_ResetMW)$, or $B3 + 3.05 * 0.447 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Table 1.13 – AMC 5CX2 O.O.S.

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 16.6 * (0.27 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over Rating})$ $A1 = 3.8 * (0.29 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS1 = \max(0, A1, D)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.0068 * 5L40 \text{ CBN} - 0.036 * GS1) < 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.026 * 5L40 \text{ CBN} - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L40 \text{ CBN} - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A1 + 3.8 * 0.20 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A1 + 3.8 * 0.23 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.7 * (0.3 * (0.0068 * 5L40 \text{ CBN} + 2L90 \text{ KLY}) + 0.29 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS2 = \max(0, A2, D)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.0068 * 5L40 \text{ CBN} - 0.036 * GS1) \geq 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.026 * 5L40 \text{ CBN} + 0.025 * 2L90 \text{ KLY} - 0.105 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L40 \text{ CBN} + 0.022 * 2L90 \text{ KLY} - 0.1 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A2 + 3.7 * 0.21 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A2 + 3.7 * 0.25 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.7 * (0.30 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS3 = \max(0, A3, D)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.026 * 5L40 \text{ CBN} - 0.105 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L40 \text{ CBN} - 0.1 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • D, or • $A3 + 3.7 * 0.21 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A3 + 3.7 * 0.25 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS3 </p>
5L41	<p> $A1 = 3.6 * (0.40 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $A2 = 3.32 * (0.50 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating})$ $GS1 = \max(0, A1, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.070 * 5L41 \text{ KLY} - 0.048 * GS1) < 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.034 * 5L41 \text{ KLY} - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.030 * 5L41 \text{ KLY} - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.6 * 0.23 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A1 + 3.6 * 0.26 * (Z - 2L293OLRAS \text{ ResetMW})$, or • $A2 + 3.32 * 0.57 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A2 + 3.32 * 0.66 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.4 * (0.43 * (0.070 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.40 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $A4 = 3.35 * (0.15 * (0.070 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.50 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating})$ $GS2 = \max(0, A3, A4)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.070 * 5L41 \text{ KLY} - 0.048 * GS1) \geq 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.034 * 5L41 \text{ KLY} + 0.038 * 2L90 \text{ KLY} - 0.108 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.030 * 5L41 \text{ KLY} + 0.034 * 2L90 \text{ KLY} - 0.10 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.4 * 0.25 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A3 + 3.4 * 0.29 * (Z - 2L293OLRAS \text{ ResetMW})$, or • $A4 + 3.35 * 0.57 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A4 + 3.35 * 0.65 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.4 * (0.43 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $A6 = 3.35 * (0.50 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44 \text{ Over Rating})$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.037 * 5L41 \text{ KLY} - 0.108 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.032 * 5L41 \text{ KLY} - 0.10 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS \text{ PickupMW}$ or $Z > 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A5 + 3.4 * 0.25 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A5 + 3.4 * 0.29 * (Z - 2L293OLRAS \text{ ResetMW})$, or • $A6 + 3.35 * 0.57 * (Y - 2L112OLRAS \text{ ResetMW})$, or • $A6 + 3.35 * 0.65 * (Z - 2L293OLRAS \text{ ResetMW})$ If $Y \leq 2L112OLRAS \text{ PickupMW}$ and $Z \leq 2L293OLRAS \text{ PickupMW}$, shed at GMS/PCN: GS3 </p>

Generation Shedding Requirements Continued on Next Page for Table 1.13 – AMC 5CX2 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.13 – AMC 5CX2 O.O.S.

Table 1.13 – AMC 5CX2 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	<p> $A1 = 4.0 * (0.37 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.058 * 5L42 \text{ KLY} - 0.049 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.027 * 5L42 \text{ KLY} - 0.11 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.024 * 5L42 \text{ KLY} - 0.103 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 4 * 0.24 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 4 * 0.27 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.9 * (0.42 * (0.058 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.37 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.058 * 5L42 \text{ KLY} - 0.049 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.027 * 5L42 \text{ KLY} + 0.04 * 2L90 \text{ KLY} - 0.115 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.024 * 5L42 \text{ KLY} + 0.035 * 2L90 \text{ KLY} - 0.109 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.9 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.9 * 0.29 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.9 * (0.39 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.03 * 5L42 \text{ KLY} - 0.116 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.026 * 5L42 \text{ KLY} - 0.109 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.9 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.9 * 0.29 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	<p> $A1 = 3.15 * (0.36 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B1 = 5.91 * (0.34 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS1 = \max(0, A1, B1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.058 * GS1) < 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.043 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.114 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.038 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.108 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.15 * 0.231 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.15 * 0.281 * (Z - 2L293OLRAS_ResetMW)$ • $B1 + 5.91 * 0.376 * (Y - 2L112OLRAS_ResetMW)$, or • $B1 + 5.91 * 0.458 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.15 * (0.36 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.462 * (0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B2 = 5.91 * (0.34 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.282 * (0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 2L90 \text{ KLY}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS2 = \max(0, A2, B2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.057 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.058 * GS1) \geq 2L90_Over_rating$, $Y = 2L112 \text{ NLY} + 0.043 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.047 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.114 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.038 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 0.044 * (2L90 \text{ KLY} + 0.067 * (5L41 \text{ KLY} + 5L83 \text{ NIC})) - 0.108 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.15 * 0.231 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.15 * 0.281 * (Z - 2L293OLRAS_ResetMW)$ • $B2 + 5.91 * 0.376 * (Y - 2L112OLRAS_ResetMW)$, or • $B2 + 5.91 * 0.458 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 2.9 * (0.39 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L42 \text{ KLY} - 5L42_Over_rating)$ $B3 = 5.33 * (0.36 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) + 5L81 \text{ NIC} - 5L81_Over_rating)$ $GS3 = \max(0, A3, B3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.047 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.118 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.041 * (5L41 \text{ KLY} + 5L83 \text{ NIC}) - 0.112 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 2.9 * 0.228 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 2.9 * 0.278 * (Z - 2L293OLRAS_ResetMW)$ • $B3 + 5.33 * 0.375 * (Y - 2L112OLRAS_ResetMW)$, or • $B3 + 5.33 * 0.457 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Table 1.14 – GUI 5CX1 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $A1 = 3.05 * (0.51 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.012 * 5L40\ CBN - 0.040 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.02 * 5L40\ CBN - 0.10 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.018 * 5L40\ CBN - 0.095 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A1 + 3.05 * 0.471 * (Y - 2L112OLRAS_ResetMW)$, or $A1 + 3.05 * 0.57 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.07 * (0.04 * (0.012 * 5L40\ CBN + 2L90\ KLY) + 0.51 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.012 * 5L40\ CBN - 0.040 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.02 * 5L40\ CBN + 0.021 * 2L90\ KLY - 0.10 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.018 * 5L40\ CBN + 0.018 * 2L90\ KLY - 0.097 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A2 + 3.07 * 0.49 * (Y - 2L112OLRAS_ResetMW)$, or $A2 + 3.07 * 0.58 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.07 * (0.51 * 5L40\ CBN + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.021 * 5L40\ CBN - 0.10 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.018 * 5L40\ CBN - 0.097 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A3 + 3.07 * 0.49 * (Y - 2L112OLRAS_ResetMW)$, or $A3 + 3.07 * 0.58 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L41	<p> $A1 = 2.8 * (0.48 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 2.9 * (0.53 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.076 * 5L41\ KLY - 0.056 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.03 * 5L41\ KLY - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.025 * 5L41\ KLY - 0.098 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A1 + 2.8 * 0.14 * (Y - 2L112OLRAS_ResetMW)$, or $A1 + 2.8 * 0.16 * (Z - 2L293OLRAS_ResetMW)$, or $A2 + 2.9 * 0.53 * (Y - 2L112OLRAS_ResetMW)$, or $A2 + 2.9 * 0.62 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A3 = 2.51 * (0.50 * (0.076 * 5L41\ KLY + 2L90\ KLY) + 0.48 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A4 = 2.8 * (0.19 * (0.076 * 5L41\ KLY + 2L90\ KLY) + 0.53 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If $2L90\ I/S$ and $(2L90\ KLY + 0.076 * 5L41\ KLY - 0.056 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.028 * 5L41\ KLY + 0.032 * 2L90\ KLY - 0.107 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.024 * 5L41\ KLY + 0.028 * 2L90\ KLY - 0.10 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A3 + 2.51 * 0.16 * (Y - 2L112OLRAS_ResetMW)$, or $A3 + 2.51 * 0.18 * (Z - 2L293OLRAS_ResetMW)$, or $A4 + 2.8 * 0.53 * (Y - 2L112OLRAS_ResetMW)$, or $A4 + 2.8 * 0.62 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A5 = 2.51 * (0.52 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A6 = 2.8 * (0.54 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.031 * 5L41\ KLY - 0.107 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293\ SEL + 0.027 * 5L41\ KLY - 0.10 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> $A5 + 2.51 * 0.16 * (Y - 2L112OLRAS_ResetMW)$, or $A5 + 2.51 * 0.18 * (Z - 2L293OLRAS_ResetMW)$, or $A6 + 2.8 * 0.53 * (Y - 2L112OLRAS_ResetMW)$, or $A6 + 2.8 * 0.62 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>

Generation Shedding Requirements Continued on Next Page for Table 1.14 – GUI 5CX1 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 1.14 – GUI 5CX1 O.O.S.

Table 1.14 – GUI 5CX1 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	<p> $A1 = 3.2 * (0.45 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * 5L42 \text{ KLY} - 0.058 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.017 * 5L42 \text{ KLY} - 0.11 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.015 * 5L42 \text{ KLY} - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.2 * 0.13 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.2 * 0.15 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.0 * (0.48 * (0.067 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.45 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * 5L42 \text{ KLY} - 0.058 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.017 * 5L42 \text{ KLY} + 0.034 * 2L90 \text{ KLY} - 0.108 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.015 * 5L42 \text{ KLY} + 0.03 * 2L90 \text{ KLY} - 0.1 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.0 * 0.13 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.0 * 0.15 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.07 * (0.48 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.02 * 5L42 \text{ KLY} - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.018 * 5L42 \text{ KLY} - 0.107 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.07 * 0.14 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.07 * 0.17 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	Same as Table 1.1 - System Normal.

Table 1.15 – RYC 5CX1 O.O.S.

Pre-outage Restrictions
None.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L41	<p> $A1 = 3.6 * (0.40 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $A2 = 3.4 * (0.49 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * 5L41 \text{ KLY} - 0.048 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.034 * 5L41 \text{ KLY} - 0.105 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.03 * 5L41 \text{ KLY} - 0.1 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 3.6 * 0.23 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.6 * 0.27 * (Z - 2L293OLRAS_ResetMW)$, or • $A2 + 3.4 * 0.56 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.4 * 0.65 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.25 * (0.43 * (0.067 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.40 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $A4 = 3.4 * (0.15 * (0.067 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.49 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.067 * 5L41 \text{ KLY} - 0.048 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.034 * 5L41 \text{ KLY} + 0.038 * 2L90 \text{ KLY} - 0.11 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.03 * 5L41 \text{ KLY} + 0.033 * 2L90 \text{ KLY} - 0.105 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.25 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.25 * 0.29 * (Z - 2L293OLRAS_ResetMW)$, or • $A4 + 3.4 * 0.55 * (Y - 2L112OLRAS_ResetMW)$, or • $A4 + 3.4 * 0.64 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.25 * (0.43 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $A6 = 3.4 * (0.50 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.036 * 5L41 \text{ KLY} - 0.11 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.032 * 5L41 \text{ KLY} - 0.105 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A5 + 3.25 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A5 + 3.25 * 0.29 * (Z - 2L293OLRAS_ResetMW)$, or • $A6 + 3.4 * 0.55 * (Y - 2L112OLRAS_ResetMW)$, or • $A6 + 3.4 * 0.64 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L42	<p> $A1 = 4 * (0.37 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.058 * 5L42 \text{ KLY} - 0.049 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L42 \text{ KLY} - 0.109 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} - 0.104 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A1 + 4 * 0.24 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 4 * 0.27 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.9 * (0.42 * (0.058 * 5L42 \text{ KLY} + 2L90 \text{ KLY}) + 0.37 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.058 * 5L42 \text{ KLY} - 0.049 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L42 \text{ KLY} + 0.04 * 2L90 \text{ KLY} - 0.115 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} + 0.035 * 2L90 \text{ KLY} - 0.109 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A2 + 3.9 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.9 * 0.29 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.9 * (0.39 * 5L42 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.029 * 5L42 \text{ KLY} - 0.115 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.026 * 5L42 \text{ KLY} - 0.109 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greater of <ul style="list-style-type: none"> • $A3 + 3.9 * 0.25 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.9 * 0.29 * (Z - 2L293OLRAS_ResetMW)$ If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3 </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.
5L41 and 5L83	Same as Table 1.1 – System Normal.

Table 1.16 – 5L83 O.O.S.

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L41	<p>$A1 = 3.3 * (0.42 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.07 * 5L41 \text{ KLY} - 0.054 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.031 * 5L41 \text{ KLY} - 0.09 * GS1$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.027 * 5L41 \text{ KLY} - 0.09 * GS1$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A1 + 3.3 * 0.21 * (Y - 2L112OLRAS_ResetMW)$, or • $A1 + 3.3 * 0.25 * (Z - 2L293OLRAS_ResetMW)$ <p>If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.13 * (0.42 * 5L41 \text{ KLY} + 0.45 * (0.07 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.07 * 5L41 \text{ KLY} - 0.054 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.032 * 5L41 \text{ KLY} + 0.034 * 2L90 \text{ KLY} - 0.09 * GS2$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.028 * 5L41 \text{ KLY} + 0.029 * 2L90 \text{ KLY} - 0.09 * GS2$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A2 + 3.13 * 0.22 * (Y - 2L112OLRAS_ResetMW)$, or • $A2 + 3.13 * 0.26 * (Z - 2L293OLRAS_ResetMW)$ <p>If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.07 * (0.45 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.034 * 5L41 \text{ KLY} - 0.1 * GS3$, if 2L112 is in service, otherwise, $Y = 0$ $Z = 2L293 \text{ SEL} + 0.029 * 5L41 \text{ KLY} - 0.1 * GS3$, if 2L112 & 2L293 are in service, otherwise, $Z = 0$ If $Y > 2L112OLRAS_PickupMW$ or $Z > 2L293OLRAS_PickupMW$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A3 + 3.07 * 0.22 * (Y - 2L112OLRAS_ResetMW)$, or • $A3 + 3.07 * 0.27 * (Z - 2L293OLRAS_ResetMW)$ <p>If $Y \leq 2L112OLRAS_PickupMW$ and $Z \leq 2L293OLRAS_PickupMW$, shed at GMS/PCN: GS3</p>
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.2 – 5L83 AND 5L40 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L41	No generation shedding required.
5L42	Shed at GMS/PCN: $12.0 * (2L79 \text{ CBN} + 0.144 * 5L42 \text{ KLY} - 2L79 \text{ Over Rating})$
5L45	Shed at GMS/PCN: $7.70 * (2L79 \text{ CBN} + 0.124 * 5L45 \text{ CKY} - 2L79 \text{ Over Rating})$
5L87	GS = Max (0, $1.88 * (0.65 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$) If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.06 * 5L87 \text{ KLY} - 0.06 * \text{GS}) < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.06 * 5L87 \text{ KLY} - 0.06 * \text{GS}) \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $1.79 * (0.68 * 5L87 \text{ KLY} + 0.48 * 2L90 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $1.77 * (0.67 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.3 – 5L83 AND 5L41 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L42	GS = max (0, $1.42 * (5L87 \text{ KLY} + 0.86 * 5L42 \text{ KLY} - 5L87_Over_Rating)$) If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.11 * 5L42 \text{ KLY} - 0.09 * \text{GS} < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S and } 2L90 \text{ KLY} + 0.11 * 5L42 \text{ KLY} - 0.09 * \text{GS} \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $1.3 * (5L87 \text{ KLY} + 0.95 * 5L42 \text{ KLY} + 0.84 * 2L90 \text{ KLY} - 5L87_Over_Rating)$ If 2L90 OOS, then shed at GMS/PCN: Shed at GMS/PCN: $1.3 * (5L87 \text{ KLY} + 0.95 * 5L42 \text{ KLY} - 5L87_Over_Rating)$
5L45	No generation shedding required.
5L87	GS = max(0, $1.51 * (0.79 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$) If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.1 * 5L87 \text{ KLY} - 0.1 * \text{GS}) < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.1 * 5L87 \text{ KLY} - 0.1 * \text{GS}) \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $1.35 * (0.87 * 5L87 \text{ KLY} + 0.8 * 2L90 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $1.35 * (0.85 * 5L87 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$
By Pass CRK 5CX1	No generation shedding required.

Table 2.4 – 5L83 AND 5L42 O.O.S.

Pre-outage Restrictions

- 5L41 contingency:
 If 2L90 I/S, limit: $2L1 \text{ PEM} + 0.02 * 5L41 \text{ KLY} \leq 2L1_Over_Rating \text{ MW}$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L41CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.
- 5L40 contingency:
 If 2L90 I/S, limit: $2L1 \text{ PEM} + 0.03 * 5L40 \text{ CBN} \leq 2L1_Over_Rating \text{ MW}$
 If 2L90 OOS, limit: $2L1 \text{ PEM} + 0.023 * 5L40 \text{ CBN} \leq 2L1_Over_Rating \text{ MW}$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L40CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $\max(0, 11.35 * (0.31 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over Rating}))$
5L41	GS = max(0, $1.40 * (0.85 * 5L41 \text{ KLY} + 5L87 \text{ KLY} - 5L87_Over_Rating)$) If $2L90 \text{ I/S, and } (2L90 \text{ KLY} + 0.11 * 5L41 \text{ KLY} - 0.08 * \text{GS}) < 2L90_Over_Rating$, Shed at GMS/PCN: GS If $2L90 \text{ I/S, and } (2L90 \text{ KLY} + 0.11 * 5L41 \text{ KLY} - 0.08 * \text{GS}) \geq 2L90_Over_Rating$, Shed at GMS/PCN: $1.30 * (0.86 * (0.11 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.85 * 5L41 \text{ KLY} + 5L87 \text{ KLY} - 5L87_Over_Rating)$ If 2L90 OOS, Shed at GMS/PCN: $1.29 * (0.94 * 5L41 \text{ KLY} + 5L87 \text{ KLY} - 5L87 \text{ Over Rating})$
5L45	Referred to SOO 7T-41, Attachment 2 – table 2.3 Generation Shedding Requirements for the loss of North VI - LM.
5L87	GS = max(0, $1.6 * (0.75 * 5L87 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$) If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.11 * 5L87 \text{ KLY} - 0.11 * \text{GS}) < 2L90_Over_Rating$, then Shed at GMS/PCN: GS If $2L90 \text{ I/S AND } (2L90 \text{ KLY} + 0.11 * 5L87 \text{ KLY} - 0.11 * \text{GS}) \geq 2L90_Over_Rating$, then Shed at GMS/PCN: $1.4 * (0.84 * 5L87 \text{ KLY} + 0.78 * 2L90 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$ If 2L90 OOS, then Shed at GMS/PCN: $1.4 * (0.83 * 5L87 \text{ KLY} + 5L41 \text{ KLY} - 5L41_Over_Rating)$
By Pass CHP 5CX1	No generation shedding required.

Table 2.5 – 5L83 AND 5L45 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $13.05 * (0.3 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over_Rating})$
5L41	No generation shedding required.
5L42	Referred to SOO 7T-41, Attachment 2 – table 2.3 Generation Shedding Requirements for the loss of North VI - LM.
5L87	If 2L90 I/S AND $(2L90 \text{ KLY} + 0.08 * 5L87 \text{ KLY}) \geq 2L90 \text{ Over_Rating}$, then Shed at GMS/PCN: $1.85 * (0.69 * 5L87 \text{ KLY} + 0.62 * 2L90 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over_Rating})$ If 2L90 OOS, then Shed at GMS/PCN: $1.85 * (0.69 * 5L87 \text{ KLY} + 5L41 \text{ KLY} - 5L41 \text{ Over_Rating})$
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.6 – 5L83 AND 5L44 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	If 2L53 and 2L90 I/S, $A1 = 24.2 * (0.046 * 5L40 \text{ CBN} + 2L51 \text{ COK} - 2L51 \text{ Over_Rating})$ $A2 = 25.4 * (0.048 * 5L40 \text{ CBN} + 2L3 \text{ WLT} - 2L3 \text{ Over_Rating})$ $A3 = 11.2 * (0.30 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over_Rating})$ $GS1 = \max(0, A1, A2, A3)$ $Y = 2L112 \text{ NLY} + 0.042 * 5L40 \text{ CBN} - 0.12 * GS1$ $Z = 2L293 \text{ SEL} + 0.036 * 5L40 \text{ CBN} - 0.11 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.02 * (A1 + 24.2 * 0.061 * (Y - B))$, or • $1.02 * (A1 + 24.2 * 0.072 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A1$, if $(Z - C) \leq 40$ • $(A2 + 25.4 * 0.041 * (Y - B))$, or • $(A2 + 25.4 * 0.048 * (Z - C))$, if $(Z - C) > 40$, or • $A2$, if $(Z - C) \leq 40$ • $(A3 + 11.2 * 0.072 * (Y - B))$, or • $(A3 + 11.2 * 0.085 * (Z - C))$, if $(Z - C) > 40$, or • $A3$, if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 If 2L53 I/S and 2L90 OOS $A4 = 21.6 * (0.047 * 5L40 \text{ CBN} + 2L51 \text{ COK} - 2L51 \text{ Over_Rating})$ $A5 = 36.9 * (0.046 * 5L40 \text{ CBN} + 2L3 \text{ WLT} - 2L3 \text{ Over_Rating})$ $A6 = 11.4 * (0.30 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over_Rating})$ $GS2 = \max(0, A4, A5, A6)$ $Y = 2L112 \text{ NLY} + 0.042 * 5L40 \text{ CBN} - 0.12 * GS2$ $Z = 2L293 \text{ SEL} + 0.036 * 5L40 \text{ CBN} - 0.11 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A4 + 21.6 * 0.066 * (Y - B))$, or • $1.01 * (A4 + 21.6 * 0.077 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A4$, if $(Z - C) \leq 40$ • $1.01 * (A5 + 36.9 * 0.032 * (Y - B))$, or • $1.01 * (A5 + 36.9 * 0.038 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A5$, if $(Z - C) \leq 40$ • $(A6 + 11.4 * 0.072 * (Y - B))$, or • $(A6 + 11.4 * 0.085 * (Z - C))$, if $(Z - C) > 40$, or • $A6$, if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2

Generation Shedding Requirements Continued on Next Page for Table 2.6 – 5L83 AND 5L44 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.6 – 5L83 AND 5L44 O.O.S.

Table 2.6 – 5L83 AND 5L44 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L40 (Continued)	<p>If 2L53 OOS and 2L90 I/S, $A7 = 26.9 * (0.041 * 5L40\ CBN + 2L51\ COK - 2L51_Over_Rating)$ $A8 = 26.7 * (0.046 * 5L40\ CBN + 2L3\ WLT - 2L3_Over_Rating)$ $A9 = 11.1 * (0.30 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$</p> <p>$GS3 = \max\{0, A7, A8, A9\}$ $Y = 2L112\ NLY + 0.042 * 5L40\ CBN - 0.12 * GS3$ $Z = 2L293\ SEL + 0.036 * 5L40\ CBN - 0.11 * GS3$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A7 + 26.9 * 0.058 * (Y - B))$, or • $1.01 * (A7 + 26.9 * 0.068 * (Z - C))$, if $(Z - C) > 40$ or • $1.01 * A7$, if $(Z - C) \leq 40$, or • $1.01 * (A8 + 26.7 * 0.039 * (Y - B))$, or • $1.01 * (A8 + 26.7 * 0.046 * (Z - C))$, if $(Z - C) > 40$ or • $1.01 * A8$, if $(Z - C) \leq 40$ • $(A9 + 11.1 * 0.074 * (Y - B))$, or • $(A9 + 11.1 * 0.087 * (Z - C))$, if $(Z - C) > 40$ or • $A9$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>If 2L53 and 2L90 OOS, $A10 = 23.6 * (0.043 * 5L40\ CBN + 2L51\ COK - 2L51_Over_Rating)$ $A11 = 39.4 * (0.044 * 5L40\ CBN + 2L3\ WLT - 2L3_Over_Rating)$ $A12 = 11.4 * (0.30 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$</p> <p>$GS4 = \max(0, A10, A11, A12)$ $Y = 2L112\ NLY + 0.042 * 5L40\ CBN - 0.12 * GS4$ $Z = 2L293\ SEL + 0.036 * 5L40\ CBN - 0.11 * GS4$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A10 + 23.6 * 0.061 * (Y - B))$, or • $1.01 * (A10 + 23.6 * 0.072 * (Z - C))$, if $(Z - C) > 40$ or • $1.01 * A10$, if $(Z - C) \leq 40$, or • $1.01 * (A11 + 39.4 * 0.03 * (Y - B))$, or • $1.01 * (A11 + 39.4 * 0.036 * (Z - C))$, if $(Z - C) > 40$ or • $1.01 * A11$, if $(Z - C) \leq 40$ • $(A12 + 11.4 * 0.073 * (Y - B))$, or • $(A12 + 11.4 * 0.087 * (Z - C))$, if $(Z - C) > 40$ or • $A12$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS4</p> <p>Where: B = 350 from April 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from April 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L41	<p>If 2L53 and 2L90 I/S, $A1 = 21.2 * (0.074 * 5L41\ KLY + 2L51\ COK - 2L51_Over_Rating)$ $A2 = 13.5 * (0.11 * 5L41\ KLY + 2L64\ SPG - 2L64_Over_Rating)$ $A3 = 16.8 * (0.087 * 5L41\ KLY + 2L53\ MUR - 2L53_Over_Rating)$</p> <p>$GS1 = \max(0, A1, A2, A3)$ $Y = 2L112\ NLY + 0.052 * 5L41\ KLY - 0.13 * GS1$ $Z = 2L293\ SEL + 0.044 * 5L41\ KLY - 0.11 * GS1$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.02 * (A1 + 21.2 * 0.064 * (Y - B))$, or • $1.02 * (A1 + 21.2 * 0.076 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A1$, if $(Z - C) \leq 40$ • $1.02 * (A2 + 13.5 * 0.095 * (Y - B))$, or • $1.02 * (A2 + 13.5 * 0.11 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A2$, if $(Z - C) \leq 40$ • $1.02 * (A3 + 16.8 * 0.076 * (Y - B))$, or • $1.02 * (A3 + 16.8 * 0.089 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A3$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1</p>

Generation Shedding Requirements Continued on Next Page for Table 2.6 – 5L83 AND 5L44 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.6 – 5L83 AND 5L44 O.O.S.

Table 2.6 – 5L83 AND 5L44 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L41 (Continued)	<p>If 2L53 I/S and 2L90 OOS, $A4 = 17.7 * (0.086 * 5L41 \text{ KLY} + 2L51 \text{ COK} - 2L51_Over_Rating)$ $A5 = 14.1 * (0.11 * 5L41 \text{ KLY} + 2L64 \text{ SPG} - 2L64_Over_Rating)$ $A6 = 17.4 * (0.085 * 5L41 \text{ KLY} + 2L53 \text{ MUR} - 2L53_Over_Rating)$</p> <p>$GS2 = \max(0, A4, A5, A6)$ $Y = 2L112 \text{ NLY} + 0.055 * 5L41 \text{ KLY} - 0.13 * GS2$ $Z = 2L293 \text{ SEL} + 0.047 * 5L41 \text{ KLY} - 0.12 * GS2$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.02 * (A4 + 17.7 * 0.072 * (Y - B))$, or • $1.02 * (A4 + 17.7 * 0.085 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A4$, if $(Z - C) \leq 40$ • $1.02 * (A5 + 14.1 * 0.092 * (Y - B))$, or • $1.02 * (A5 + 14.1 * 0.11 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A5$, if $(Z - C) \leq 40$ • $1.02 * (A6 + 17.4 * 0.074 * (Y - B))$, or • $1.02 * (A6 + 17.4 * 0.088 * (Z - C))$, if $(Z - C) > 40$, or • $1.02 * A6$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2</p> <p>If 2L53 OOS and 2L90 I/S, $A7 = 22.6 * (0.068 * 5L41 \text{ KLY} + 2L51 \text{ COK} - 2L51_Over_Rating)$ $A8 = 8.35 * (0.17 * 5L41 \text{ KLY} + 2L20 \text{ CSQ} - 2L20_Over_Rating)$</p> <p>$GS3 = \max(0, A7, A8)$ $Y = 2L112 \text{ NLY} + 0.051 * 5L41 \text{ KLY} - 0.13 * GS3$ $Z = 2L293 \text{ SEL} + 0.044 * 5L41 \text{ KLY} - 0.11 * GS3$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A7 + 22.6 * 0.061 * (Y - B))$, or • $1.01 * (A7 + 22.6 * 0.072 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A7$, if $(Z - C) \leq 40$ • $1.01 * (A8 + 8.35 * 0.15 * (Y - B))$, or • $1.01 * (A8 + 8.35 * 0.18 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A8$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>If 2L53 and 2L90 OOS, $A9 = 18.6 * (0.08 * 5L41 \text{ KLY} + 2L51 \text{ COK} - 2L51_Over_Rating)$ $A10 = 8.7 * (0.17 * 5L41 \text{ KLY} + 2L20 \text{ CSQ} - 2L20_Over_Rating)$</p> <p>$GS4 = \max(90, A9, A10)$ $Y = 2L112 \text{ NLY} + 0.054 * 5L41 \text{ KLY} - 0.13 * GS4$ $Z = 2L293 \text{ SEL} + 0.046 * 5L41 \text{ KLY} - 0.12 * GS4$</p> <p>If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A9 + 18.6 * 0.069 * (Y - B))$, or • $1.01 * (A9 + 18.6 * 0.081 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A9$, if $(Z - C) \leq 40$ • $1.01 * (A10 + 8.7 * 0.15 * (Y - B))$, or • $1.01 * (A10 + 8.7 * 0.18 * (Z - C))$, if $(Z - C) > 40$, or • $1.01 * A10$, if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS4</p> <p>Where: B = 350 from April 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from April 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.7 – 5L83 AND 5L81 O.O.S.

Pre-outage Restrictions

Limit: 5L41 KLY < 5L41_Normal_Rating MW

If TSA alarms "VIOLATION_5L41_NORM_RATING", the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L41 KLY below their rating within 30 minutes:

- Reduce GMS or PCN or other generation north of KLY, or
- Reduce SI generation or import from Alberta.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 14.10 * (0.29 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$ $A1 = 3.18 * (0.36 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS1 = \max(0, A1, D)$ If 2L90 I/S and $(2L90\ KLY + 0.013 * 5L40\ CBN - 0.042 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.037 * 5L40\ CBN - 0.11 * GS1$ $Z = 2L293\ SEL + 0.032 * 5L40\ CBN - 0.11 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A1 + 3.18 * 0.30 * (Y - B)$, or • $A1 + 3.18 * 0.35 * (Z - C)$ if $(Z - C) > 40$, or • A1 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.04 * (0.35 * (0.013 * 5L40\ CBN + 2L90\ KLY) + 0.36 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS2 = \max(0, A2, D)$ If 2L90 I/S and $(2L90\ KLY + 0.013 * 5L40\ CBN - 0.042 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.037 * 5L40\ CBN + 0.039 * (2L90\ KLY + 0.013 * 5L40\ CBN) - 0.11 * GS2$ $Z = 2L293\ SEL + 0.032 * 5L40\ CBN + 0.033 * (2L90\ KLY + 0.013 * 5L40\ CBN) - 0.11 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A2 + 3.04 * 0.3 * (Y - B)$, or • $A2 + 3.04 * 0.35 * (Z - C)$ if $(Z - C) > 40$, or • A2 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.05 * (0.36 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS3 = \max(0, A3, D)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.038 * 5L40\ CBN - 0.12 * GS3$ $Z = 2L293\ SEL + 0.032 * 5L40\ CBN - 0.11 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A3 + 3.05 * 0.30 * (Y - B)$, or • $A3 + 3.05 * 0.36 * (Z - C)$ if $(Z - C) > 40$, or • A3 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L41	<p> $A1 = 2.69 * (0.5 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 2.25 * (0.64 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $A3 = 4.60 * (0.35 * 5L41\ KLY + 5L82\ NIC - 5L82_Over_Rating)$ $GS1 = \max(0, A1, A2, A3)$ If 2L90 I/S and $(2L90\ KLY + 0.084 * 5L41\ KLY - 0.063 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.052 * 5L41\ KLY - 0.12 * GS1$ $Z = 2L293\ SEL + 0.044 * 5L41\ KLY - 0.11 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A1 + 2.69 * 0.34 * (Y - B))$, or • $1.01 * (A1 + 2.69 * 0.40 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A1$ if $(Z - C) \leq 40$, or • $1.03 * (A2 + 2.25 * 0.66 * (Y - B))$, or • $1.03 * (A2 + 2.25 * 0.78 * (Z - C))$ if $(Z - C) > 40$, or • $1.03 * A2$ if $(Z - C) \leq 40$, or • $1.04 * (A3 + 4.6 * 0.57 * (Y - B))$, or • $1.04 * (A3 + 4.6 * 0.67 * (Z - C))$ if $(Z - C) > 40$, or • $1.04 * A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A4 = 2.48 * (0.54 * (0.084 * 5L41\ KLY + 2L90\ KLY) + 0.50 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A5 = 2.17 * (0.32 * (0.084 * 5L41\ KLY + 2L90\ KLY) + 0.65 * 5L41\ KLY + 5L44\ MDN - 5L44_Over_Rating)$ $A6 = 4.15 * (0.39 * (0.084 * 5L41\ KLY + 2L90\ KLY) + 0.35 * 5L41\ KLY + 5L82\ NIC - 5L82_Over_Rating)$ $GS2 = \max(0, A4, A5, A6)$ If 2L90 I/S and $(2L90\ KLY + 0.084 * 5L41\ KLY - 0.063 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.051 * 5L41\ KLY + 0.056 * (2L90\ KLY + 0.084 * 5L41\ KLY) - 0.12 * GS2$ $Z = 2L293\ SEL + 0.043 * 5L41\ KLY + 0.049 * (2L90\ KLY + 0.084 * 5L41\ KLY) - 0.11 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A4 + 2.48 * 0.38 * (Y - B))$, or • $1.01 * (A4 + 2.48 * 0.45 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A4$ if $(Z - C) \leq 40$, or • $1.04 * (A5 + 2.17 * 0.65 * (Y - B))$, or • $1.04 * (A5 + 2.17 * 0.77 * (Z - C))$ if $(Z - C) > 40$, or • $1.04 * A5$ if $(Z - C) \leq 40$, or • $1.04 * (A6 + 4.15 * 0.59 * (Y - B))$, or • $1.04 * (A6 + 4.15 * 0.70 * (Z - C))$ if $(Z - C) > 40$, or • $1.04 * A6$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p>

Generation Shedding Requirements Continued on Next Page for Table 2.7 – 5L83 AND 5L81 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.7 – 5L83 AND 5L81 O.O.S.

Table 2.7 – 5L83 AND 5L81 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L41 (Continued)	<p> $A7 = 2.48 * (0.55 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $A8 = 2.16 * (0.67 * 5L41 \text{ KLY} + 5L44 \text{ MDN} - 5L44_Over_Rating)$ $A9 = 4.14 * (0.39 * 5L41 \text{ KLY} + 5L82 \text{ NIC} - 5L82_Over_Rating)$ $GS3 = \max(0, A7, A8, A9)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.057 * 5L41 \text{ KLY} - 0.12 * GS3$ $Z = 2L293 \text{ SEL} + 0.048 * 5L41 \text{ KLY} - 0.11 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A7 + 2.48 * 0.38 * (Y - B))$, or • $1.01 * (A7 + 2.48 * 0.45 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A7$ if $(Z - C) \leq 40$, or • $1.03 * (A8 + 2.16 * 0.67 * (Y - B))$, or • $1.03 * (A8 + 2.16 * 0.79 * (Z - C))$ if $(Z - C) > 40$, or • $1.03 * A8$ if $(Z - C) \leq 40$, or • $1.04 * (A9 + 4.14 * 0.59 * (Y - B))$, or • $1.04 * (A9 + 4.14 * 0.70 * (Z - C))$ if $(Z - C) > 40$, or • $1.04 * A9$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st </p>
5L42	<p> $A1 = 3.73 * (5L41 \text{ KLY} + 0.46 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $A2 = 4.6 * (5L82 \text{ NIC} + 0.42 * 5L42 \text{ KLY} - 5L82_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY} - 0.07 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.05 * 5L42 \text{ KLY} - 0.15 * GS1$ $Z = 2L293 \text{ SEL} + 0.043 * 5L42 \text{ KLY} - 0.13 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.06 * (A1 + 3.73 * 0.27 * (Y - B))$, or • $1.3 * (A2 + 4.6 * 0.61 * (Y - B))$, or • $1.06 * (A1 + 3.73 * 0.33 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A1$ if $(Z - C) \leq 40$, or • $1.3 * (A2 + 4.6 * 0.74 * (Z - C))$ if $(Z - C) > 40$, or • $1.3 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 $A3 = 3.6 * (5L41 \text{ KLY} + 0.46 * 5L42 \text{ KLY} + 0.53 * (2L90 \text{ NLY} + 0.08 * 5L42 \text{ KLY}) - 5L41_Over_Rating)$ $A4 = 4.1 * (5L82 \text{ NIC} + 0.42 * 5L42 \text{ KLY} + 0.4 * (2L90 \text{ NLY} + 0.08 * 5L42 \text{ KLY}) - 5L82_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If $2L90 \text{ I/S}$ and $2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY} - 0.07 * GS1 \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.05 * 5L42 \text{ KLY} + 0.07 * (2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY}) - 0.15 * GS2$ $Z = 2L293 \text{ SEL} + 0.043 * 5L42 \text{ KLY} + 0.06 * (2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY}) - 0.13 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.22 * (A3 + 3.6 * 0.29 * (Y - B))$, or • $1.12 * (A4 + 4.1 * 0.71 * (Y - B))$, or • $1.22 * (A3 + 3.6 * 0.36 * (Z - C))$ if $(Z - C) > 40$, or • $1.22 * A3$ if $(Z - C) \leq 40$, or • $1.12 * (A4 + 4.1 * 0.87 * (Z - C))$ if $(Z - C) > 40$, or • $1.12 * A4$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 $A5 = 3.6 * (5L41 \text{ KLY} + 0.5 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $A6 = 4.1 * (5L82 \text{ NIC} + 0.45 * 5L42 \text{ KLY} - 5L82_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.06 * 5L42 \text{ KLY} - 0.15 * GS3$ $Z = 2L293 \text{ SEL} + 0.05 * 5L42 \text{ KLY} - 0.13 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.22 * (A5 + 3.6 * 0.29 * (Y - B))$, or • $1.12 * (A6 + 4.1 * 0.71 * (Y - B))$, or • $1.22 * (A5 + 3.6 * 0.36 * (Z - C))$ if $(Z - C) > 40$, or • $1.22 * A5$ if $(Z - C) \leq 40$, or • $1.12 * (A6 + 4.1 * 0.87 * (Z - C))$ if $(Z - C) > 40$, or • $1.12 * A6$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 Where: B = 350 from Apr 1st to Oct 31st, or B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st, or C = 430 from Nov 1st to Mar 31st </p>
5L45	No generation shedding required.
5L87	No generation shedding required.

Generation Shedding Requirements Continued on Next Page for Table 2.7 – 5L83 AND 5L81 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.7 – 5L83 AND 5L81 O.O.S.

Table 2.7 – 5L83 AND 5L81 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
By Pass CHP 5CX1	<p> $A1 = 3.65 * (0.19 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.031 * 5L41 \text{ KLY} - 0.046 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.02 * 5L41 \text{ KLY} - 0.1 * GS1$ $Z = 2L293 \text{ SEL} + 0.017 * 5L41 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $A1 + 3.65 * 0.26 * (Y - B)$, or • $A1 + 3.65 * 0.31 * (Z - C)$ if $(Z - C) > 40$, or • $A1$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS1$ </p> <p> $A2 = 3.37 * (0.41 * (0.031 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.19 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.031 * 5L41 \text{ KLY} - 0.046 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.02 * 5L41 \text{ KLY} + 0.047 * (2L90 \text{ KLY} + 0.031 * 5L41 \text{ KLY}) - 0.11 * GS2$ $Z = 2L293 \text{ SEL} + 0.017 * 5L41 \text{ KLY} + 0.033 * (2L90 \text{ KLY} + 0.031 * 5L41 \text{ KLY}) - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $A2 + 3.37 * 0.26 * (Y - B)$, or • $A2 + 3.37 * 0.31 * (Z - C)$ if $(Z - C) > 40$, or • $A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS2$ </p> <p> $A3 = 3.37 * (0.2 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If $2L90 \text{ OOS}$, $Y = 2L112 \text{ NLY} + 0.021 * 5L41 \text{ KLY} - 0.11 * GS3$ $Z = 2L293 \text{ SEL} + 0.018 * 5L41 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $A3 + 3.37 * 0.28 * (Y - B)$, or • $A3 + 3.37 * 0.33 * (Z - C)$ if $(Z - C) > 40$, or • $A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS3$ </p> <p> Where: $B = 350$ from Apr 1st to Oct 31st $B = 370$ from Nov 1st to Mar 31st $C = 350$ from Apr 1st to Oct 31st $C = 430$ from Nov 1st to Mar 31st </p>
By Pass CRK 5CX1	No generation shedding required.

Table 2.8 – 5L83 AND 5L82 O.O.S.

Pre-outage Restrictions

Limit: 5L42 KLY < 5L42 Normal rating MW

If TSA alarms "VIOLATION_5L42_NORM_RATING", the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5L42 KLY below their rating within 30 minutes:

- Reduce GMS or PCN or other generation north of KLY, or
- Reduce SI generation or import from Alberta.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 14 * (0.28 * 5L40\ CBN + 2L79\ CBN - 2L79_Over_Rating)$ $A1 = 3.2 * (0.35 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS1 = \max(0, A1, D)$ If 2L90 I/S and $(2L90\ KLY + 0.012 * 5L40\ CBN - 0.041 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.033 * 5L40\ CBN - 0.11 * GS1$ $Z = 2L293\ SEL + 0.028 * 5L40\ CBN - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A1 + 3.2 * 0.29 * (Y - B)$, or • $A1 + 3.2 * 0.35 * (Z - C)$ if $(Z - C) > 40$, or • A1 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.02 * (0.37 * (0.012 * 5L40\ CBN + 2L90\ KLY) + 0.35 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS2 = \max(0, A2, D)$ If 2L90 I/S and $(2L90\ KLY + 0.012 * 5L40\ CBN - 0.041 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.033 * 5L40\ CBN + 0.033 * (2L90\ KLY + 0.012 * 5L40\ CBN) - 0.11 * GS2$ $Z = 2L293\ SEL + 0.028 * 5L40\ CBN + 0.033 * (2L90\ KLY + 0.012 * 5L40\ CBN) - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A2 + 3.02 * 0.30 * (Y - B)$, or • $A2 + 3.02 * 0.36 * (Z - C)$ if $(Z - C) > 40$, or • A2 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.047 * (0.36 * 5L40\ CBN + 5L42\ KLY - 5L42_Over_Rating)$ $GS3 = \max(0, A3, D)$ If 2L90 OOS, $Y = 2L112\ NLY + 0.032 * 5L40\ CBN - 0.11 * GS3$ $Z = 2L293\ SEL + 0.027 * 5L40\ CBN - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A3 + 3.047 * 0.31 * (Y - B)$, or • $A3 + 3.047 * 0.37 * (Z - C)$ if $(Z - C) > 40$, or • A3 if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L41	<p> $A1 = 2.70 * (0.50 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A2 = 4.21 * (0.37 * 5L41\ KLY + 5L81\ NIC - 5L81_Over_Rating)$ $GS1 = \max(0, A1, A2)$ </p> <p> If 2L90 I/S and $(2L90\ KLY + 0.08 * 5L41\ KLY - 0.06 * GS1) < 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.045 * 5L41\ KLY - 0.11 * GS1$ $Z = 2L293\ SEL + 0.038 * 5L41\ KLY - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A1 + 2.7 * 0.34 * (Y - B))$, or • $1.01 * (A1 + 2.7 * 0.41 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A1$ if $(Z - C) \leq 40$, or • $1.03 * (A2 + 4.21 * 0.56 * (Y - B))$, or • $1.03 * (A2 + 4.21 * 0.66 * (Z - C))$ if $(Z - C) > 40$, or • $1.03 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A3 = 2.65 * (0.55 * (0.08 * 5L41\ KLY + 2L90\ KLY) + 0.5 * 5L41\ KLY + 5L42\ KLY - 5L42_Over_Rating)$ $A4 = 4.07 * (0.39 * (0.08 * 5L41\ KLY + 2L90\ KLY) + 0.38 * 5L41\ KLY + 5L81\ NIC - 5L81_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If 2L90 I/S and $(2L90\ KLY + 0.08 * 5L41\ KLY - 0.06 * A) \geq 2L90_Over_Rating$, $Y = 2L112\ NLY + 0.045 * 5L41\ KLY + 0.053 * (2L90\ KLY + 0.08 * 5L41\ KLY) - 0.114 * GS2$ $Z = 2L293\ SEL + 0.038 * 5L41\ KLY + 0.046 * (2L90\ KLY + 0.08 * 5L41\ KLY) - 0.106 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.02 * (A3 + 2.65 * 0.38 * (Y - B))$, or • $1.02 * (A3 + 2.65 * 0.45 * (Z - C))$ if $(Z - C) > 40$, or • $1.02 * A3$ if $(Z - C) \leq 40$, or • $1.02 * (A4 + 4.07 * 0.63 * (Y - B))$, or • $1.02 * (A4 + 4.07 * 0.741 * (Z - C))$ if $(Z - C) > 40$, or • $1.02 * A4$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p>

Generation Shedding Requirements Continued on Next Page for Table 2.8 – 5L83 AND 5L82 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.8 – 5L83 AND 5L82 O.O.S.

Table 2.8 – 5L83 AND 5L82 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L41 (Continued)	<p> $A5 = 2.61 * (0.54 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $A6 = 4.015 * (0.41 * 5L41 \text{ KLY} + 5L81 \text{ NIC} - 5L81_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.049 * 5L41 \text{ KLY} - 0.11 * GS3$ $Z = 2L293 \text{ SEL} + 0.041 * 5L41 \text{ KLY} - 0.11 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A5 + 2.61 * 0.38 * (Y - B))$, or • $1.01 * (A5 + 2.61 * 0.45 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A5$ if $(Z - C) \leq 40$, or • $A6 + 4.015 * 0.63 * (Y - B)$, or • $A6 + 4.015 * 0.75 * (Z - C)$ if $(Z - C) > 40$, or • $A6$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L42	<p> $A1 = 3.84 * (5L41 \text{ KLY} + 0.48 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $A2 = 4.6 * (5L81 \text{ NIC} + 0.37 * 5L42 \text{ KLY} - 5L81_Over_Rating)$ $GS1 = \max(0, A1, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.09 * 5L42 \text{ KLY} - 0.06 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.06 * 5L42 \text{ KLY} - 0.14 * GS1$ $Z = 2L293 \text{ SEL} + 0.05 * 5L42 \text{ KLY} - 0.13 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.1 * (A1 + 3.8 * 0.3 * (Y - B))$, or • $1.12 * (A2 + 4.6 * 0.63 * (Y - B))$, or • $1.1 * (A1 + 3.8 * 0.36 * (Z - C))$ if $(Z - C) > 40$, or • $1.1 * A1$ if $(Z - C) \leq 40$, or • $1.12 * (A2 + 4.6 * 0.74 * (Z - C))$ if $(Z - C) > 40$, or • $1.12 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A3 = 3.4 * (5L41 \text{ KLY} + 0.48 * 5L42 \text{ KLY} + 0.55 * (2L90 \text{ NLY} + 0.085 * 5L42 \text{ KLY}) - 5L41_Over_Rating)$ $A4 = 4.4 * (5L81 \text{ NIC} + 0.37 * 5L42 \text{ KLY} + 0.43 * (2L90 \text{ NLY} + 0.085 * 5L42 \text{ KLY}) - 5L81_Over_Rating)$ $GS2 = \max(0, A3, A4)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.09 * 5L42 \text{ KLY} - 0.06 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.06 * 5L42 \text{ KLY} + 0.03 * (2L90 \text{ KLY} + 0.09 * 5L42 \text{ KLY}) - 0.14 * GS2$ $Z = 2L293 \text{ SEL} + 0.05 * 5L42 \text{ KLY} + 0.02 * (2L90 \text{ KLY} + 0.09 * 5L42 \text{ KLY}) - 0.13 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.13 * (A3 + 3.4 * 0.32 * (Y - B))$, or • $1.12 * (A4 + 4.4 * 0.63 * (Y - B))$, or • $1.13 * (A3 + 3.4 * 0.38 * (Z - C))$ if $(Z - C) > 40$, or • $1.13 * A3$ if $(Z - C) \leq 40$, or • $1.12 * (A4 + 4.4 * 0.74 * (Z - C))$ if $(Z - C) > 40$, or • $1.12 * A4$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p> <p> $A5 = 3.4 * (5L41 \text{ KLY} + 0.53 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $A6 = 4.4 * (5L81 \text{ NIC} + 0.41 * 5L42 \text{ KLY} - 5L81_Over_Rating)$ $GS3 = \max(0, A5, A6)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.072 * 5L42 \text{ KLY} - 0.14 * GS3$ $Z = 2L293 \text{ SEL} + 0.06 * 5L42 \text{ KLY} - 0.13 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.13 * (A5 + 3.4 * 0.32 * (Y - B))$, or • $1.12 * (A6 + 4.4 * 0.63 * (Y - B))$, or • $1.13 * (A5 + 3.4 * 0.38 * (Z - C))$ if $(Z - C) > 40$, or • $1.13 * A5$ if $(Z - C) \leq 40$, or • $1.12 * (A6 + 4.4 * 0.74 * (Z - C))$ if $(Z - C) > 40$, or • $1.12 * A6$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st, or B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st, or C = 430 from Nov 1st to Mar 31st</p>
5L45	No generation shedding required.
5L87	No generation shedding required.

Generation Shedding Requirements Continued on Next Page for Table 2.8 – 5L83 AND 5L82 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.8 – 5L83 AND 5L82 O.O.S.

Table 2.8 – 5L83 AND 5L82 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
By Pass CHP 5CX1	<p>$A1 = 3.53 * (0.19 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.03 * 5L41 \text{ KLY} - 0.048 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.018 * 5L41 \text{ KLY} - 0.11 * GS1$ $Z = 2L293 \text{ SEL} + 0.015 * 5L41 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A1 + 3.53 * 0.28 * (Y - B)$, or • $A1 + 3.53 * 0.33 * (Z - C)$ if $(Z - C) > 40$, or • $A1$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.3 * (0.43 * (0.03 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.19 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.03 * 5L41 \text{ KLY} - 0.048 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.018 * 5L41 \text{ KLY} + 0.046 * (2L90 \text{ KLY} + 0.03 * 5L41 \text{ KLY}) - 0.11 * GS2$ $Z = 2L293 \text{ SEL} + 0.015 * 5L41 \text{ KLY} + 0.037 * (2L90 \text{ KLY} + 0.03 * 5L41 \text{ KLY}) - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A2 + 3.3 * 0.28 * (Y - B)$, or • $A2 + 3.3 * 0.33 * (Z - C)$ if $(Z - C) > 40$, or • $A2$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.3 * (0.20 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.019 * 5L41 \text{ KLY} - 0.11 * GS3$ $Z = 2L293 \text{ SEL} + 0.016 * 5L41 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $A3 + 3.3 * 0.29 * (Y - B)$, or • $A3 + 3.3 * 0.35 * (Z - C)$ if $(Z - C) > 40$, or • $A3$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
By Pass CRK 5CX1	No generation shedding required.

Table 2.9 – 5L83 AND 5L87 And (5L71 or 5L72) O.O.S.

Pre-outage Restrictions
None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p>$B = 7.5 * (0.34 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79_Over_Rating)$</p> <p>$A1 = 1.7 * (0.57 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1, B)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.037 * 5L40 \text{ CBN} - 0.077 * GS1) < 2L90_Over_Rating$, Shed at GMS/PCN: GS1</p> <p>$A2 = 1.6 * (0.58 * (0.037 * 5L40 \text{ CBN} + 2L90 \text{ KLY}) + 0.57 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2, B)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.037 * 5L40 \text{ CBN} - 0.077 * GS1) \geq 2L90_Over_Rating$, Shed at GMS/PCN: GS2</p> <p>$A3 = 1.6 * (0.59 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3, B)$ If 2L90 OOS, Shed at GMS/PCN: GS3</p>
5L41	<p>$A = 1.36 * (0.86 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$</p> <p>$GS1 = \max(0, A)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.13 * 5L41 \text{ KLY} - 0.12 * GS1) < 2L90_Over_Rating$, Shed at GMS/PCN: GS1</p> <p>$GS2 = \max(0, 1.18 * (0.98 * (0.13 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.86 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.13 * 5L41 \text{ KLY} - 0.12 * GS1) \geq 2L90_Over_Rating$, Shed at GMS/PCN: GS2</p> <p>$GS3 = \max(0, 1.18 * (0.98 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating))$ If 2L90 OOS, Shed at GMS/PCN: GS3</p> <p>Additional gen shed requirement for transient stability purpose: If One of (5L1, 5L2, 5L3, 5L4, 5L7) AND One of (5L11, 5L12, 5L13) OOS, then Shed GMS/PCN/BMW/DKW/MCM down to 3100 MW</p>

Generation Shedding Requirements Continued on Next Page for Table 2.9 – 5L83 AND 5L87 And (5L71 or 5L72) O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.9 – 5L83 AND 5L87 And (5L71 or 5L72) O.O.S.

Table 2.9 – 5L83 AND 5L87 And (5L71 or 5L72) O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	$A = 1.6 * (5L41 \text{ KLY} + 0.85 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ GS1 = max (0, A) If 2L90 I/S and $(2L90 \text{ KLY} + 0.15 * 5L42 \text{ KLY} - 0.14 * GS1) < 2L90_Over_Rating$, then Shed at GMS/PCN: GS1 GS2 = max (0, $1.3 * (5L41 \text{ KLY} + 5L42 \text{ KLY} + 2L90 \text{ KLY} - 5L41_Over_Rating)$) If 2L90 I/S and $(2L90 \text{ KLY} + 0.15 * 5L42 \text{ KLY} - 0.14 * GS1) \geq 2L90_Over_Rating$, then Shed at GMS/PCN: GS2 GS3 = max (0, $1.3 * (5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L41_Over_Rating)$) If 2L90 OOS, then Shed at GMS/PCN: GS3
5L45	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.10 – 5L83 AND CHP 5CX1 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L41	No generation shedding required.
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.11 – 5L83 AND CRK 5CX1 O.O.S.

Pre-outage Restrictions

- 5L41 contingency:
 If $2L90 \text{ I/S}$ and $2L90 \text{ KLY} + 0.083 * 5L41 \text{ KLY} < 2L90_Over_Rating$, limit: $2L1 \text{ PEM} + 0.015 * 5L41 \text{ KLY} < 2L1_Over_rating \text{ MW}$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L41CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.
- 5L40 contingency:
 If $2L90 \text{ I/S}$, Limit: $2L1 \text{ PEM} + 0.023 * 5L40 \text{ CBN} < 2L1_Over_rating \text{ MW}$
 If TSA alarms "VIOLATION_2L1 PEM OVER RATING_5L40CTG", the BC Hydro Control Centre staff should reduce generation at BR or increase generation output at CMS or ASL.

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $15.4 * (0.28 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over Rating})$
5L41	No generation shedding required.
5L42	No generation shedding required.
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.

Table 2.12 – 5L83 AND AMC 5CX1 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	Shed at GMS/PCN: $GS = 16.3 * (0.28 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79 \text{ Over Rating})$
5L41	<p> $A1 = 3.1 * (0.45 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.075 * 5L41 \text{ KLY} - 0.056 * GS1) < 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.040 * 5L41 \text{ KLY} - 0.1 * GS1$ $Z = 2L293 \text{ SEL} + 0.034 * 5L41 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.01 * (A1 + 3.1 * 0.25 * (Y - B))$, or • $1.01 * (A1 + 3.1 * 0.30 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A1$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A2 = 2.8 * (0.49 * (0.073 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.45 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.075 * 5L41 \text{ KLY} - 0.056 * GS1) \geq 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.038 * 5L41 \text{ KLY} + 0.041 * 2L90 \text{ KLY} - 0.1 * GS2$ $Z = 2L293 \text{ SEL} + 0.033 * 5L41 \text{ KLY} + 0.033 * 2L90 \text{ KLY} - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.01 * (A2 + 2.8 * 0.28 * (Y - B))$, or • $1.01 * (A2 + 2.8 * 0.34 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p> <p> $A3 = 2.82 * (0.48 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42 \text{ Over Rating})$ $GS3 = \max(0, A3)$ If $2L90 \text{ OOS}$, $Y = 2L112 \text{ NLY} + 0.043 * 5L41 \text{ KLY} - 0.1 * GS3$ $Z = 2L293 \text{ SEL} + 0.036 * 5L41 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.01 * (A3 + 2.82 * 0.27 * (Y - B))$, or • $1.01 * (A3 + 2.82 * 0.32 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st </p>
5L42	<p> $A1 = 3.63 * (5L41 \text{ KLY} + 0.41 * 5L42 \text{ KLY} - 5L41 \text{ Over Rating})$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY} - 0.06 * GS1) < 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.04 * 5L42 \text{ KLY} - 0.13 * GS1$ $Z = 2L293 \text{ SEL} + 0.03 * 5L42 \text{ KLY} - 0.11 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.06 * (A1 + 3.63 * 0.22 * (Y - B))$, or • $1.06 * (A1 + 3.63 * 0.27 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A1$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1 </p> <p> $A2 = 3.43 * (5L41 \text{ KLY} + 0.41 * 5L42 \text{ KLY} + 0.46 * (2L90 \text{ NLY} + 0.07 * 5L42 \text{ KLY}) - 5L41 \text{ Over Rating})$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY} - 0.06 * GS1) \geq 2L90 \text{ Over Rating}$, $Y = 2L112 \text{ NLY} + 0.04 * 5L42 \text{ KLY} + 0.06 * (2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY}) - 0.13 * GS2$ $Z = 2L293 \text{ SEL} + 0.03 * 5L42 \text{ KLY} + 0.05 * (2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY}) - 0.11 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.06 * (A2 + 3.43 * 0.25 * (Y - B))$, or • $1.06 * (A2 + 3.43 * 0.3 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2 </p> <p> $A3 = 3.43 * (5L41 \text{ KLY} + 0.44 * 5L42 \text{ KLY} - 5L41 \text{ Over Rating})$ $GS3 = \max(0, A3)$ If $2L90 \text{ OOS}$, $Y = 2L112 \text{ NLY} + 0.05 * 5L42 \text{ KLY} - 0.13 * GS3$ $Z = 2L293 \text{ SEL} + 0.04 * 5L42 \text{ KLY} - 0.11 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of: <ul style="list-style-type: none"> • $1.06 * (A3 + 3.43 * 0.25 * (Y - B))$, or • $1.06 * (A3 + 3.43 * 0.3 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3 </p> <p>Where: B = 350 from Apr 1st to Oct 31st, or B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st, or C = 430 from Nov 1st to Mar 31st </p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.13 – 5L83 AND AMC 5CX2 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	<p> $D = 16.3 * (0.28 * 5L40 \text{ CBN} + 2L79 \text{ CBN} - 2L79_Over_Rating)$ $A1 = 3.53 * (0.32 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1, D)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.009 * 5L40 \text{ CBN} - 0.038 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.035 * 5L40 \text{ CBN} - 0.1 * GS1$ $Z = 2L293 \text{ SEL} + 0.028 * 5L40 \text{ CBN} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A1 + 3.53 * 0.24 * (Y - B)$, or • $A1 + 3.53 * 0.29 * (Z - C)$ if $(Z - C) > 40$, or • $A1$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS1$ </p> <p> $A2 = 3.39 * (0.33 * (0.009 * 5L40 \text{ CBN} + 2L90 \text{ KLY}) + 0.32 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2, D)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.009 * 5L40 \text{ CBN} - 0.038 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.033 * 5L40 \text{ CBN} + 0.03 * 2L90 \text{ KLY} - 0.1 * GS2$ $Z = 2L293 \text{ SEL} + 0.027 * 5L40 \text{ CBN} + 0.03 * 2L90 \text{ KLY} - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A2 + 3.39 * 0.24 * (Y - B)$, or • $A2 + 3.39 * 0.29 * (Z - C)$ if $(Z - C) > 40$, or • $A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS2$ </p> <p> $A3 = 3.39 * (0.32 * 5L40 \text{ CBN} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3, D)$ If $2L90 \text{ OOS}$, $Y = 2L112 \text{ NLY} + 0.035 * 5L40 \text{ CBN} - 0.1 * GS3$ $Z = 2L293 \text{ SEL} + 0.029 * 5L40 \text{ CBN} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • D, or • $A3 + 3.39 * 0.24 * (Y - B)$, or • $A3 + 3.39 * 0.29 * (Z - C)$ if $(Z - C) > 40$, or • $A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS3$ </p> <p>Where: $B = 350$ from Apr 1st to Oct 31st $B = 370$ from Nov 1st to Mar 31st $C = 350$ from Apr 1st to Oct 31st $C = 430$ from Nov 1st to Mar 31st</p>
5L41	<p> $A1 = 3.04 * (0.45 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.074 * 5L41 \text{ KLY} - 0.056 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.038 * 5L41 \text{ KLY} - 0.1 * GS1$ $Z = 2L293 \text{ SEL} + 0.033 * 5L41 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A1 + 3.04 * 0.27 * (Y - B))$, or • $1.01 * (A1 + 3.04 * 0.32 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A1$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS1$ </p> <p> $A2 = 2.81 * (0.49 * (0.072 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.45 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.074 * 5L41 \text{ KLY} - 0.056 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.037 * 5L41 \text{ KLY} + 0.041 * 2L90 \text{ KLY} - 0.1 * GS2$ $Z = 2L293 \text{ SEL} + 0.032 * 5L41 \text{ KLY} + 0.033 * 2L90 \text{ KLY} - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of <ul style="list-style-type: none"> • $1.01 * (A2 + 2.81 * 0.28 * (Y - B))$, or • $1.01 * (A2 + 2.81 * 0.33 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A2$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS2$ </p> <p> $A3 = 2.81 * (0.48 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If $2L90 \text{ OOS}$, $Y = 2L112 \text{ NLY} + 0.042 * 5L41 \text{ KLY} - 0.1 * GS3$ $Z = 2L293 \text{ SEL} + 0.036 * 5L41 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of : <ul style="list-style-type: none"> • $1.01 * (A3 + 2.81 * 0.29 * (Y - B))$, or • $1.01 * (A3 + 2.81 * 0.34 * (Z - C))$ if $(Z - C) > 40$ or • $1.01 * A3$ if $(Z - C) \leq 40$ If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: $GS3$ </p> <p>Where: $B = 350$ from Apr 1st to Oct 31st $B = 370$ from Nov 1st to Mar 31st $C = 350$ from Apr 1st to Oct 31st $C = 430$ from Nov 1st to Mar 31st</p>

Generation Shedding Requirements Continued on Next Page for Table 2.13 – 5L83 AND AMC 5CX2 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.13 – 5L83 AND AMC 5CX2 O.O.S.

Table 2.13 – 5L83 AND AMC 5CX2 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L42	<p>$A1 = 3.53 * (5L41 \text{ KLY} + 0.43 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY} - 0.06 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.04 * 5L42 \text{ KLY} - 0.11 * GS1$ $Z = 2L293 \text{ SEL} + 0.03 * 5L42 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of:</p> <ul style="list-style-type: none"> • $1.03 * (A1 + 3.53 * 0.25 * (Y - B))$, or • $1.03 * (A1 + 3.53 * 0.3 * (Z - C))$ if $(Z - C) > 40$, or • $1.03 * A1$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.5 * (5L41 \text{ KLY} + 0.43 * 5L42 \text{ KLY} + 0.47 * (2L90 \text{ NLY} + 0.071 * 5L42 \text{ KLY}) - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.07 * 5L42 \text{ KLY} - 0.06 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.04 * 5L42 \text{ KLY} + 0.05 * (2L90 \text{ KLY} + 0.071 * 5L42 \text{ KLY}) - 0.11 * GS2$ $Z = 2L293 \text{ SEL} + 0.03 * 5L42 \text{ KLY} + 0.04 * (2L90 \text{ KLY} + 0.071 * 5L42 \text{ KLY}) - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of:</p> <ul style="list-style-type: none"> • $1.06 * (A2 + 3.5 * 0.25 * (Y - B))$, or • $1.06 * (A2 + 3.5 * 0.3 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A2$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.5 * (5L41 \text{ KLY} + 0.47 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.054 * 5L42 \text{ KLY} - 0.11 * GS3$ $Z = 2L293 \text{ SEL} + 0.05 * 5L42 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of:</p> <ul style="list-style-type: none"> • $1.06 * (A3 + 3.5 * 0.25 * (Y - B))$, or • $1.06 * (A3 + 3.5 * 0.3 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A3$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>Where: B = 350 from Apr 1st to Oct 31st, or B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st, or C = 430 from Nov 1st to Mar 31st</p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.

Table 2.14 – 5L83 AND GUI 5CX1 O.O.S.

Pre-outage Restrictions
 None

Generation Shedding Requirements

CONTINGENCY	SHEDDING REQUIREMENTS
5L40	No generation shedding required.
5L41	<p>$A1 = 2.69 * (0.50 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS1 = \max(0, A1)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.079 * 5L41 \text{ KLY} - 0.065 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L41 \text{ KLY} - 0.088 * GS1$ $Z = 2L293 \text{ SEL} + 0.022 * 5L41 \text{ KLY} - 0.084 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A1 + 2.69 * 0.17 * (Y - B))$, or • $1.01 * (A1 + 2.69 * 0.20 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A1$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1</p> <p>$A2 = 2.46 * (0.52 * (0.079 * 5L41 \text{ KLY} + 2L90 \text{ KLY}) + 0.5 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS2 = \max(0, A2)$ If $2L90 \text{ I/S}$ and $(2L90 \text{ KLY} + 0.079 * 5L41 \text{ KLY} - 0.065 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.026 * 5L41 \text{ KLY} + 0.027 * 2L90 \text{ KLY} - 0.092 * GS2$ $Z = 2L293 \text{ SEL} + 0.022 * 5L41 \text{ KLY} + 0.027 * 2L90 \text{ KLY} - 0.086 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greater of</p> <ul style="list-style-type: none"> • $1.01 * (A2 + 2.46 * 0.19 * (Y - B))$, or • $1.01 * (A2 + 2.46 * 0.23 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A2$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2</p>

Generation Shedding Requirements Continued on Next Page for Table 2.14 – 5L83 AND GUI 5CX1 O.O.S.

Generation Shedding Requirements Continued from Last Page for Table 2.14 – 5L83 AND GUI 5CX1 O.O.S.

Table 2.14 – 5L83 AND GUI 5CX1 O.O.S.

CONTINGENCY	SHEDDING REQUIREMENTS
5L41 (Continued)	<p>$A3 = 2.44 * (0.54 * 5L41 \text{ KLY} + 5L42 \text{ KLY} - 5L42_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.029 * 5L41 \text{ KLY} - 0.092 * GS3$ $Z = 2L293 \text{ SEL} + 0.024 * 5L41 \text{ KLY} - 0.086 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of</p> <ul style="list-style-type: none"> • $1.01 * (A3 + 2.44 * 0.18 * (Y - B))$, or • $1.01 * (A3 + 2.44 * 0.21 * (Z - C))$ if $(Z - C) > 40$, or • $1.01 * A3$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>Where: B = 350 from Apr 1st to Oct 31st B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st C = 430 from Nov 1st to Mar 31st</p>
5L42	<p>$A1 = 3.1 * (5L41 \text{ KLY} + 0.47 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $GS1 = \max(0, A1)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY} - 0.07 * GS1) < 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.03 * 5L42 \text{ KLY} - 0.11 * GS1$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} - 0.1 * GS1$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of:</p> <ul style="list-style-type: none"> • $1.03 * (A1 + 3.1 * 0.15 * (Y - B))$, or • $1.03 * (A1 + 3.1 * 0.18 * (Z - C))$ if $(Z - C) > 40$, or • $1.03 * A1$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS1</p> <p>$A2 = 3.0 * (5L41 \text{ KLY} + 0.47 * 5L42 \text{ KLY} + 0.5 * (2L90 \text{ NLY} + 0.08 * 5L42 \text{ KLY}) - 5L41_Over_Rating)$ $GS2 = \max(0, A2)$ If 2L90 I/S and $(2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY} - 0.07 * GS1) \geq 2L90_Over_Rating$, $Y = 2L112 \text{ NLY} + 0.03 * 5L42 \text{ KLY} + 0.045 * (2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY}) - 0.11 * GS2$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} + 0.04 * (2L90 \text{ KLY} + 0.08 * 5L42 \text{ KLY}) - 0.1 * GS2$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greater of:</p> <ul style="list-style-type: none"> • $1.06 * (A2 + 3.0 * 0.15 * (Y - B))$, or • $1.06 * (A2 + 3.0 * 0.18 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A2$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS2</p> <p>$A3 = 3.0 * (5L41 \text{ KLY} + 0.51 * 5L42 \text{ KLY} - 5L41_Over_Rating)$ $GS3 = \max(0, A3)$ If 2L90 OOS, $Y = 2L112 \text{ NLY} + 0.03 * 5L42 \text{ KLY} - 0.11 * GS3$ $Z = 2L293 \text{ SEL} + 0.023 * 5L42 \text{ KLY} - 0.1 * GS3$ If $Y > 400$ or $Z > 400$, shed at GMS/PCN the greatest of:</p> <ul style="list-style-type: none"> • $1.06 * (A3 + 3.0 * 0.15 * (Y - B))$, or • $1.06 * (A3 + 3.0 * 0.18 * (Z - C))$ if $(Z - C) > 40$, or • $1.06 * A3$ if $(Z - C) \leq 40$ <p>If $Y \leq 400$ and $Z \leq 400$, shed at GMS/PCN: GS3</p> <p>Where: B = 350 from Apr 1st to Oct 31st, or B = 370 from Nov 1st to Mar 31st C = 350 from Apr 1st to Oct 31st, or C = 430 from Nov 1st to Mar 31st</p>
5L45	No generation shedding required.
5L87	No generation shedding required.
By Pass CHP 5CX1	No generation shedding required.
By Pass CRK 5CX1	No generation shedding required.