

**BC HYDRO**

**T&D SYSTEM OPERATIONS**

**ATTACHMENT 4 OF SYSTEM OPERATING ORDER 7T-13**

**NORTH OF KLY 500 KV SYSTEM OPERATION**

Supersedes SOO 7T-13 Attachment 4 - Peace Gen Shed Tables dated 03 March 2022

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**1.0 General System Information and Requirements**

For the general Peace regional area requirements, there are 3 paths from GMS to Peace regional area which consist of:

- 230 kV series path (consisting of 2L308, 2L309, and 2L312)
- 1L361 and 1L349 series path
- 1L364 path

The operational requirements in this System Operating Order (SOO) are based on the following conditions:

- The 230 kV series path in service, and
- One of the two 138 kV paths may be out of service.

If any of (5L1, 5L2, 5L3, 5L4 and 5L7) AND (any one of the three circuits 2L308, 2L309, and 2L312 OR if both 138 kV paths) are out-of-service, the Operators need to use RTCA to confirm sufficient shedding after a TSA-PM template for OO7T35 is applied. Please consult Operations Planning for further operational instructions or guidance.

**Notes applicable to all tables in Attachment 4:**

1. The GMS/PCN/DKW/QTY/MKL post-contingency gen shed requirements:
  - Post-contingency gen shed requirements will be adjusted based on outages in ILM 500 kV subsystem. See Section 5.3.3 of the main body for detailed adjustments.
  - Are based on two GMS loading resistors being available. See Section 5.3.4 of the main body for guidelines on the required adjustments.
  - Are based on all PSS in-service. See Section 5.3.5 of the main body for required adjustments.
  - Are based on 14.2 kV generator terminal voltages. See Section 5.3.6 of the main body for required adjustments.

TSA-PM has implemented all of the adjustments in the same order as above.

2. See Section 4.1.1 of the main body for general procedure for determining output reduction for line switching.

**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 and implemented in TSA-PM.

**1.1.1 Continuous Ratings**

500 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Continuous Rating (Amp)		Corresponding Continuous MW Rating (MW = 1.732 * Rating in KA * 525 kV * 0.99 pf)	
		Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)	Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)
5L1	5L1_Norm_Rating	2150	2300 (KDY limit)	1935	2070 (KDY limit)
5L1_BypassKDY	5L1_BypassKDY_Norm_Rating	2150	3000 (CT limit)	1935	2701 (CT limit)
5L2	5L2_Norm_Rating	2150	2300 (KDY limit)	1935	2070 (KDY limit)
5L2_BypassKDY	5L2_BypassKDY_Norm_Rating	2150	3000 (CT limit)	1935	2701 (CT limit)
5L3	5L3_Norm_Rating	2200	3000 (CT limit)	1980	2701 (CT limit)
5L4	5L4_Norm_Rating	2658	3000 (CT limit)	2392	2701 (CT limit)
5L7	5L7_Norm_Rating	2300(KDY limit)	2300(KDY limit)	2070 (KDY limit)	2070 (KDY limit)
5L7_BypassKDY	5L7_BypassKDY_Norm_Rating	2500	3000 (CT limit)	2251	2701 (CT limit)
5L11	5L11_Norm_Rating	1950(MLS limit)	1950(MLS limit)	1755(MLS limit)	1755(MLS limit)
5L11_BypassMLS	5L11_BypassMLS_Norm_Rating	2500	3000 (CT limit)	2251	2701 (CT limit)
5L12	5L12_Norm_Rating	1950(MLS limit)	1950(MLS limit)	1755(MLS limit)	1755(MLS limit)
5L12_BypassMLS	5L12_BypassMLS_Norm_Rating	2500	3000 (CT limit)	2251	2701 (CT limit)
5L13	5L13_Norm_Rating	1950(MLS limit)	1950(MLS limit)	1755(MLS limit)	1755(MLS limit)
5L13_BypassMLS	5L13_BypassMLS_Norm_Rating	2500 (CT limit)	2500 (CT limit)	2251 (CT limit)	2251 (CT limit)

230 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Continuous Rating (Amp)		Corresponding Continuous MW Rating (MW = 1.732 * Rating in KA * 235 kV * 0.95 pf)	
		Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)	Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)
2L96	2L96_Norm_Rating	800 (CT limit)	800 (CT limit)	310 (CT limit)	310 (CT limit)

**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)	
		Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)	Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)
5L1	5L1_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L1_BypassKDY	5L1_BypassKDY_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L2	5L2_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L2_BypassKDY	5L2_BypassKDY_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L3	5L3_Over_Rating	2756	3000 (CT limit)	2362	2572 (CT limit)
5L4	5L4_Over_Rating	3000 (CT limit)	3000 (CT limit)	2572 (CT limit)	2572 (CT limit)
5L7	5L7_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L7_BypassKDY	5L7_BypassKDY_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)

5L11	5L11_Over_Rating	2500	2633 (MLS limit)	2143	2257 (MLS limit)
5L11_BypassMLS	5L11_BypassMLS_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L12	5L12_Over_Rating	2500	2633 (MLS limit)	2143	2257 (MLS limit)
5L12_BypassMLS	5L12_BypassMLS_Over_Rating	2500	3000 (CT limit)	2143	2572 (CT limit)
5L13	5L13_Over_Rating	2500 (CT limit)	2500 (CT limit)	2143 (CT limit)	2143 (CT limit)
5L13_BypassMLS	5L13_BypassMLS_Over_Rating	2500 (CT limit)	2500 (CT limit)	2143 (CT limit)	2143 (CT limit)

230 kV Circuit	Variable Name Used in Generation Shedding Tables	Conductor Over-Rating (Amp)		Corresponding MW Over-Rating (MW = 1.732 * Rating in KA * 230 kV * 0.95 pf)	
		Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)	Summer (Based on 30° C ambient)	Winter (Based on 10° C ambient)
2L96	2L96_Over_Rating	800 (CT limit)	800 (CT limit)	303 (CT limit)	303 (CT limit)

**2.0 General Pre-outage Restrictions for Contingencies**

• **GMS**

The following GMS unit output restrictions are applicable to all the tables in Attachment 4:

- ✓ GMS G1, G2, G3, and G4, under system normal configuration, can operate up to 275 MW each. However, if the plant operator(s) observe any associated unit circuit breakers or isolated-phase bus overloaded, then the corresponding generator output shall be reduced until the overload is gone.
- ✓ GMS G5 shall not exceed 275
- ✓ GMS G6, G7, and G8 shall not exceed 310 MW each
- ✓ GMS G9 and G10 shall not exceed 305 MW each.

- Refer to Section 5.5.1, Section 5.5.2, and Attachment 1 of SOO 7T-13 text file for GMS/PCN minimal units on line pre-contingency requirements.

**3.0 Generation Shedding Adjustments and Post Gen-Shed Requirements**

- Refer to Section 5.5.1, Section 5.5.2, and Attachment 1 of SOO 7T-13 text file for GMS/PCN minimal units on line post gen-shed requirements.
- Definition for P1, P2, and P3 used in generation shedding requirements in Tables of this Attachment 4:
  - ✓ **If KMO and/or FKR/VOL/MCY are electrically connected to WSN, then**
    - P1 = 2L103 KIT
    - P2 = 2L102 BQN
  - Otherwise,**
    - No gen shed required at KMO and/or FKR/MCY/VOL
  - ✓ **If 5L3 is out of service, then**
    - P3 = (5L1 + 5L2) GMS,
  - Otherwise,**
    - P3 = (5L1 + 5L2) GMS + 5L7 KDS
- Generation shedding sequence for the Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) is as following:
  - ✓ Gen shed requirements for KMO/FKR/VOL/MCY
  - ✓ Gen shed requirements at MKL/DKW/QTY/PCN
    - for 5L4 MP with 5L3 OOS, or 5L7 OOS
    - for 5L3 MP, and 5L7 MP with 5L4 OOS

Under these two conditions, gen shed adjustments required at MKL/DKW/QTY/GMS/PCN (refer to Section 5.3 of SOO 7T-13) will not be applied until after subtracting gen shed requirement at MKL/DKW/QTY/PCN.

  - ✓ Gen shed requirements for MKL/DKW/QTY
  - ✓ Gen shed requirement at GMS for 5L4 MP
  - ✓ Gen shed requirements at GMS/PCN for 5L1/2/3/7/11/12 MPs
- Refer to Section 5.3.4 for guidelines for additional gen shed requirements for GMS loading resistors OOS.
- Refer to Section 5.3.5 for additional gen shed requirements for PSS OOS.
- Refer to Section 5.3.6 for additional gen shed requirements for reduced GMS generator terminal voltages (< 14.2 kV).
- For any contingency on 500 kV transmission lines between GMS to WSN:
 

If TSA alarms "VIOLATION\_5LXX\_NORM\_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5LXX below its continuous rating within 30 minutes:

  - Reduce GMS or PCN or other generation in Peace area.
- For any contingency on 500 kV transmission lines between WSN to KLY:
 

If TSA alarms "VIOLATION\_5LXX\_NORM\_RATING" post-contingency, the BC Hydro Control Centre staff shall take the following actions to bring the flow on 5LXX below its continuous rating within 30 minutes:

  - Reduce GMS or PCN or other generation in Peace/North Coast area.

**4.0 KMO and FKR/MCY/VOL Generation Shedding Application**

Available gen-shed functions at KMO/FKR/MCY/VOL for GMS-KLY-ING 500 kV contingencies are listed below:

- Three signals from GMS to KIT to trip predetermined levels of KMO generation amount;
- Three signals from GMS to SKA to trip predetermined levels of FKR/MCY/VOL generation amount.

The signals from GMS to KIT for KMO gen-shedding and those from GMS to SKA for FKR/MCY/VOL gen-shedding, are independent of each other. If no gen-shedding required is an option, the possible combinations of gen shed level at KMO/FKR/MCY/VOL could be 16 (4X4). For example, Signal No. 1 to KIT and Signal No. 2 to SKA could be chosen for a specific contingency based on operational planning study results.

Currently, gen-shed at KMO has been set to three levels based on 2L103 flow, and gen-shed at FKR/MCY/VOL has been set to three levels based on 2L102 flow, as shown in the following two tables:

Gen-shed Level	Gen-shed Amount Calculation at <b>KMO</b> (MW)
1	2L103 KIT – 125
2	2L103 KIT – 70
3	2L103 KIT

Gen-shed Level	Gen-shed Amount Calculation at <b>FKR/MCY/VOL</b> (MW)
1	2L102 BQN – 220
2	2L102 BQN – 150
3	2L102 BQN – 80

**Note: TSA-PM calculates the values in the above tables explicitly on each run of the application. However, arming is only applicable when determined by TSA-PM for the requirements of a topology for an applicable table in Section 5 of this Attachment.**

**Note: KMO Generation Shedding will be based on SOO 7T-30 Section 12.1.3 for shedding unit preferences.**



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

**5.1 System Normal Condition**

**Table 5.1.1 – All GMS/PCN - KLY 500 kV Circuits and Series Capacitor Banks In-Service**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements:**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW and $P3 \geq 600$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L2 MP	Same as 5L1 MP in this table
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW and $P3 \geq 1800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L11 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.97 * P2 + 0.10 * P3 \geq 600$ MW or $P1 + 0.57 * P2 + 0.07 * P3 \geq 500$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>10.0 * [(P1 + 0.97 * P2 + 0.1 * P3) - 600 - \text{armed gen-shed amount at KMO} - 0.97 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability], and</li> <li>• <math>14.3 * [(P1 + 0.57 * P2 + 0.07 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.57 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> </ul>
5L12 MP	Same as 5L11 MP in this table	
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating}]$ MW
	5L1_3	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating}]$ MW
	5L1_7	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating}]$ MW
	5L2_3	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating}]$ MW
	5L2_7	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating}]$ MW

	5L11_12	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:  If <math>4.3 * P1 + 1.1 * P2 + P3 \geq 3350</math> MW OR <math>7.9 * P1 + 6.5 * P2 + P3 \geq 4480</math> MW, then  Gen shed at KMO: Level 2 [Transient Stability], and  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of:</p> <ul style="list-style-type: none"> <li>• <math>4.3 * P1 + 1.1 * P2 + P3 - 3350 - 4.3 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>7.9 * P1 + 6.5 * P2 + P3 - 4480 - 7.9 * \text{armed gen-shed amount at KMO} - 6.5 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>1.05 * [(5L11 + 5L12 + 5L13) \text{WSN} - 5L13\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
	5L11_13	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:  If <math>4.3 * P1 + 1.1 * P2 + P3 \geq 3350</math> MW OR <math>7.9 * P1 + 6.5 * P2 + P3 \geq 4480</math> MW, then  Gen shed at KMO: Level 2 [Transient Stability], and  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of:</p> <ul style="list-style-type: none"> <li>• <math>4.3 * P1 + 1.1 * P2 + P3 - 3350 - 4.3 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>7.9 * P1 + 6.5 * P2 + P3 - 4480 - 7.9 * \text{armed gen-shed amount at KMO} - 6.5 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>1.05 * [(5L11 + 5L12 + 5L13) \text{WSN} - 5L12\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
	5L12_13	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:  If <math>4.3 * P1 + 1.1 * P2 + P3 \geq 3350</math> MW OR <math>7.9 * P1 + 6.5 * P2 + P3 \geq 4480</math> MW, then  Gen shed at KMO: Level 2 [Transient Stability], and  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of:</p> <ul style="list-style-type: none"> <li>• <math>4.3 * P1 + 1.1 * P2 + P3 - 3350 - 4.3 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>7.9 * P1 + 6.5 * P2 + P3 - 4480 - 7.9 * \text{armed gen-shed amount at KMO} - 6.5 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>1.05 * [(5L11 + 5L12 + 5L13) \text{WSN} - 5L11\_Over\_Rating]</math> – armed gen-shed amount at KMO/FKR/VOL/MCY</li> </ul>
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

5.2 One of GMS/PCN - KLY 500 kV Circuits Out of Service

Table 5.2.1 – 5L1 O.O.S.

Pre-outage Restrictions

GMS to WSN transfer limit:

- Summer: 5L2 GMS + 5L3 PCN < 3650 MW
- Winter: No generation restriction

WSN to KLY transfer limit: No generation restriction

Generation Shedding Requirements

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating})$
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating})$
	5L4	Gen shed at MKL/DKW/QTY first, then at GMS: $1.02 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 1800 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability] Gen shed at MKL/DKW/QTY first, then at GMS: $1.03 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L11 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.98 * P2 + 0.10 * P3 \geq 600 \text{ MW}$ or $P1 + 0.85 * P2 + 0.09 * P3 \geq 500 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>10.0 * [(P1 + 0.98 * P2 + 0.10 * P3) - 600 - \text{armed gen-shed amount at KMO} - 0.98 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>11.1 * [(P1 + 0.85 * P2 + 0.09 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.85 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> </ul>
5L12 MP	Same as 5L11 MP in this table	
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating})$
	5L1_7	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.04 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating})</math></li> </ul>
	5L2_3	Islanding – Refer to Attachment 5 of 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of 7T-13
	5L2_4	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at GMS/MKL/DKW/QTY: <ul style="list-style-type: none"> <li>• Shed down DKW/MKL/QTY;</li> <li>• Shed GMS down to: <ul style="list-style-type: none"> <li>➢ 540 MW, if Peace Region 3 paths are in service</li> <li>➢ 480 MW, if 1L364 OOS</li> <li>➢ 440 MW, if 1L361/1L349 OOS</li> </ul> </li> <li>• Keep minimum 3 GMS units online post shedding.</li> </ul>
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $3.7 * P1 + 1.1 * P2 + P3 \geq 3070 \text{ MW}$ OR $P1 + 1.5 * P2 \geq 420 \text{ MW}$ Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>3.7 * P1 + 1.1 * P2 + P3 - 3070 - 3.7 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.08 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 5L13 \text{ Over Rating}] - \text{armed gen-shed amount at KMO/FKR/VOL/MCY}</math></li> </ul>

	5L11_13	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:                  If <math>3.7 * P1 + 1.1 * P2 + P3 \geq 3070</math> MW OR <math>P1 + 1.5 * P2 \geq 420</math> MW                  Gen shed at KMO: Level 2 [Transient Stability]                  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of:</p> <ul style="list-style-type: none"> <li>• <math>3.7 * P1 + 1.1 * P2 + P3 - 3070 - 3.7 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.08 * [(5L11 + 5L12 + 5L13) \text{WSN} - 5L12\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
	5L12_13	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:                  If <math>3.7 * P1 + 1.1 * P2 + P3 \geq 3070</math> MW OR <math>P1 + 1.5 * P2 \geq 420</math> MW                  Gen shed at KMO: Level 2 [Transient Stability]                  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of:</p> <ul style="list-style-type: none"> <li>• <math>3.7 * P1 + 1.1 * P2 + P3 - 3070 - 3.7 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.08 * [(5L11 + 5L12 + 5L13) \text{WSN} - 5L11\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
Series Capacitor Bypass	KDY 5CX2	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.54 * (0.32 * 5L2 \text{GMS} + 5L3 \text{PCN} - 5L3 \text{Over\_Rating})$
	KDY 5CX3	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.54 * (0.32 * 5L3 \text{PCN} + 5L2 \text{GMS} - 5L2 \text{Over\_Rating})$
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.2.2 – 5L2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating})$
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating})$
	5L4	Gen shed at MKL/DKW/QTY first, then at GMS: $1.02 * (5L1 \text{ GMS} + 5L4 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirements	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 1800 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS: $1.03 * (5L1 \text{ GMS} + 5L4 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L11 MP	Same as Table 5.2.1 - 5L1 OOS
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L3 \text{ PCN} + 5L1 \text{ GMS} - 5L3 \text{ Over Rating})$
	5L1_3	Islanding – Refer to Attachment 5 of 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of 7T-13
	5L1_4	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at GMS/MKL/DKW/QTY: <ul style="list-style-type: none"> <li>• Shed down DKW/MKL/QTY;</li> <li>• Shed GMS down to: <ul style="list-style-type: none"> <li>➢ 540 MW, if Peace Region 3 paths are in service</li> <li>➢ 480 MW, if 1L364 OOS</li> <li>➢ 440 MW, if 1L361/1L349 OOS</li> </ul> </li> <li>• Keep minimum 3 GMS units online post shedding.</li> </ul>
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating})$
	5L2_7	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.04 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating})</math></li> </ul>
	5L11_12	Same as Table 5.2.1 - 5L1 OOS
	5L11_13	Same as Table 5.2.1 - 5L1 OOS
	5L12_13	Same as Table 5.2.1 - 5L1 OOS
Series Capacitor Bypass	KDY 5CX1	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.54 * (0.32 * 5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	KDY 5CX3	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.54 * (0.32 * 5L3 \text{ PCN} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.2.3 – 5L3 or 5L7 or (5L3 AND 5L7) O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: (5L1 + 5L2) GMS < 3870 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating})$
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L1 \text{ Over Rating})$
	5L4	Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $\text{GS} = 5L4 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}$ [Transient Stability]  Keep at least two PCN units online post shedding.
	5L11	No generation shedding required
	5L12	No generation shedding required
	Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP
5L2 MP		This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
5L4 MP		Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $\text{GS} = 5L4 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}$ [Transient Stability]  Keep at least two PCN units online post shedding.
5L11 MP		Same as Table 5.2.1 - 5L1 OOS
5L12 MP		Same as 5L11 MP in this table
Multi-phase Contingency		5L13 MP 5L61 MP
Double Contingency (SLG on different phases of two lines)	5L1_2	Islanding – Refer to Attachment 5 of 7T-13
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.03 * [5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L2 \text{ Over Rating}]$
	5L1_7	Same as 5L1_3 in this table
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.03 * [5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating}]$
	5L2_7	Same as 5L2_3 in this table
	5L11_12	Same as Table 5.2.1 - 5L1 OOS
	5L11_13	Same as Table 5.2.1 - 5L1 OOS
	5L12_13	Same as Table 5.2.1 - 5L1 OOS
	Series Capacitor Bypass	KDY 5CX1
KDY 5CX2		Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.53 * (0.32 * 5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
MLS 5CX1		No generation shedding required
MLS 5CX2		No generation shedding required
MLS 5CX3		No generation shedding required

**Table 5.2.4 – 5L4 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Refer to SOO 7T-13 text file - Section 5.5 and Attachment 1 for GMS/PCN pre-outage min units online requirements**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at QTY/MKL/DKW first, then GMS: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating})$
	5L2	Gen shed at QTY/MKL/DKW first, then GMS: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L1 \text{ Over Rating})$
	5L3	Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $\text{GS} = 5L3 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}$ [Transient Stability]  Keep at least two PCN units online post shedding.
	5L7	Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $\text{GS} = 5L7 \text{ KDS} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}$ [Transient Stability]  Keep at least two PCN units online post shedding.
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 600 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS: $1.03 * (5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L2 \text{ Over Rating}) \text{ MW}$

	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW and $P3 \geq 600$ MW, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS: $1.03 * (5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$ MW	
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW and $P3 \geq 600$ MW, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L3 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW [Transient Stability]  Keep at least two PCN units online post-shedding.	
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300$ MW and $P3 \geq 600$ MW, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L7 \text{ KDS} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW [Transient Stability]  Keep at least two PCN units online post-shedding.	
	5L11 MP	Same as 5L11 MP in Table 5.1.1 – System normal	
	5L12 MP	Same as 5L11 MP in this table	
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table	
	5L61 MP	No generation shedding required	
Double Contingency (SLG on different phases of two lines)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at GMS/MKL/DKW/QTY: <ul style="list-style-type: none"> <li>• Shed down DKW/MKL/QTY:</li> <li>• Shed GMS down to: <ul style="list-style-type: none"> <li>➤ 540 MW, if Peace Region 3 paths are in service</li> <li>➤ 480 MW, if 1L364 OOS</li> <li>➤ 440 MW, if 1L361/1L349 OOS</li> </ul> </li> <li>• Keep minimum 3 GMS units online post shedding.</li> </ul>	
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L3 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW  Keep at least two PCN units online post shedding. Gen shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L2 \text{ Over Rating}]$ MW	
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L7 \text{ KDS} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW  Keep at least two PCN units online post shedding. Gen shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L2 \text{ Over Rating}]$ MW	
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L3 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW  Keep at least two PCN units online post shedding. Gen shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L1 \text{ Over Rating}]$ MW	
	5L2_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L7 \text{ KDS} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400$ MW  Keep at least two PCN units online post shedding. Gen shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L1 \text{ Over Rating}]$ MW	
		5L11_12	Same as Table 5.1.1 - System Normal
		5L11_13	Same as Table 5.1.1 - System Normal
	5L12_13	Same as Table 5.1.1 - System Normal	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required	
	KDY 5CX2	No generation shedding required	
	KDY 5CX3	No generation shedding required	
	MLS 5CX1	No generation shedding required	
	MLS 5CX2	No generation shedding required	
	MLS 5CX3	No generation shedding required	

**Table 5.2.5 – 5L11 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 3500 MW**
- **Winter: (5L12 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS	
SLG or No Fault Opening	5L1	No generation shedding required	
	5L2	No generation shedding required	
	5L3	No generation shedding required	
	5L7	No generation shedding required	
	5L4	No generation shedding required	
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3504$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3753$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3504 - 1.08 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3753 - 1.68 * \text{armed gen-shed amount at KMO} - 1.95 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L12 + 5L13) \text{ WSN} - 5L13\_Over\_Rating]</math> – armed GS amount at KMO/FKR/VOL/MCY</li> </ul>	
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.42 * P2 \geq 260$ MW, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]	
	5L2 MP	Same as 5L1 MP in this table	
	5L3 MP	Same as 5L1 MP in this table	
	5L7 MP	Same as 5L1 MP in this table	
	5L4 MP	Same as 5L4 MP in Table 5.1.1-System normal	
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12	
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table	
	5L61 MP	No generation shedding required	
Double Contingency (SLG on different phases of two lines)	5L1_2	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 400$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2000]$ [Voltage Stability]	
	5L1_3	Same as above 5L1_2 in this table	
	5L1_7	If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 400$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2000]$ [Voltage Stability]	
	5L2_3	Same as above 5L1_2 in this table	
	5L2_7	Same as above 5L1_7 in this table	
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW, then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L12 + 5L13) \text{ WSN} - 5L13\_Over\_Rating]</math> – armed gen shed at KMO/FKR/VOL/MCY</li> </ul>	
	5L11_13	Gen-shed requirements at KMO/FKR/VOL/MCY:  If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW, then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L12 + 5L13) \text{ WSN} - 5L12\_Over\_Rating]</math> – armed gen shed at KMO/FKR/VOL/MCY</li> </ul>	
	5L12_13	Refer to Attachment 5 of SOO 7T-13	
	Series Capacitor Bypass	KDY 5CX1	No generation shedding required
		KDY 5CX2	No generation shedding required
KDY 5CX3		No generation shedding required	
MLS 5CX2		Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.71 * (0.32 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$	
MLS 5CX3		Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.71 * (0.32 * 5L13 \text{ WSN} + 5L12 \text{ WSN} - 5L12 \text{ Over Rating})$	



**Table 5.2.6 – 5L12 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 3500 MW**
- **Winter: (5L11 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3504$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3753$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3504 - 1.08 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3753 - 1.68 * \text{armed gen-shed amount at KMO} - 1.95 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L13) \text{ WSN} - 5L13 \text{ Over\_Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as 5L1 MP in Table 5.2.5 – 5L11 OOS
	5L2 MP	Same as 5L1 MP in this Table
	5L3 MP	Same as Table 5.2.5 – 5L11 OOS
	5L7 MP	Same as Table 5.2.5 – 5L11 OOS
	5L4 MP	Same as 5L4 MP in Table 5.1.1 - System normal
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Same as Table 5.2.5 – 5L11 OOS
	5L1_3	Same as Table 5.2.5 – 5L11 OOS
	5L1_7	Same as Table 5.2.5 – 5L11 OOS
	5L2_3	Same as Table 5.2.5 – 5L11 OOS
	5L2_7	Same as Table 5.2.5 – 5L11 OOS
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L13) \text{ WSN} - 5L11 \text{ Over\_Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L11_13	Refer to Attachment 5 of 7T-13
	5L12_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L13) \text{ WSN} - 5L11 \text{ Over\_Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.71 * (0.32 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$
	MLS 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.71 * (0.32 * 5L13 \text{ WSN} + 5L11 \text{ WSN} - 5L11 \text{ Over Rating})$

**Table 5.2.7 – 5L13 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 3500 MW**
- **Winter: (5L11 + 5L12) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3504$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3753$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3504 - 1.08 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3753 - 1.68 * \text{armed gen-shed amount at KMO} - 1.95 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L12) \text{ WSN} - 5L12 \text{ Over Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3504$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3753$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3504 - 1.08 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3753 - 1.68 * \text{armed gen-shed amount at KMO} - 1.95 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L12) \text{ WSN} - 5L11 \text{ Over Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as 5L1 MP in Table 5.2.5 – 5L11 OOS
	5L2 MP	Same as 5L1 MP in this Table
	5L3 MP	Same as Table 5.2.5 – 5L11 OOS
	5L7 MP	Same as Table 5.2.5 – 5L11 OOS
	5L4 MP	Same as 5L4 MP in Table 5.1.1-System normal
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Same as Table 5.2.5 – 5L11 OOS
	5L1_3	Same as Table 5.2.5 – 5L11 OOS
	5L1_7	Same as Table 5.2.5 – 5L11 OOS
	5L2_3	Same as Table 5.2.5 – 5L11 OOS
	5L2_7	Same as Table 5.2.5 – 5L11 OOS
	5L11_12	Refer to Attachment 5 of 7T-13
	5L11_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500] - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L12) \text{ WSN} - 5L12 \text{ Over Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
5L12_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.90 * P2 + 0.12 * P3 \geq 500$ MW then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>8.33 * [(P1 + 0.90 * P2 + 0.12 * P3) - 500] - \text{armed gen-shed amount at KMO} - 0.90 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L12) \text{ WSN} - 5L11 \text{ Over Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.71 * (0.32 * 5L11 \text{ WSN} + 5L12 \text{ WSN} - 5L12 \text{ Over Rating})$
	MLS 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.71 * (0.32 * 5L12 \text{ WSN} + 5L11 \text{ WSN} - 5L11 \text{ Over Rating})$

5.3 **One of GMS/PCN - KLY 500 kV Series Capacitor Banks Out of Service**

**Table 5.3.1 – KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L3	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L3 \text{ PCN} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L7	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L7 \text{ KDS} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.1.1 - System Normal
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ and $P3 \geq 500 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.54 * (5L3 \text{ PCN} + 0.65 * 5L2 \text{ GMS} - 5L3 \text{ Over Rating})$
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L2 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L2 \text{ Over Rating})$
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L2 \text{ GMS} + 0.65 * 5L7 \text{ KDS} - 5L2 \text{ Over Rating})$
	5L4 MP	Same as Table 5.1.1 - System Normal
	5L11 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.98 * P2 + 0.10 * P3 \geq 600 \text{ MW}$ or $P1 + 0.67 * P2 + 0.08 * P3 \geq 500 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>10.0 * [(P1 + 0.98 * P2 + 0.10 * P3) - 600 - \text{armed gen-shed amount at KMO} - 0.98 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability], and</li> <li><math>12.5 * [(P1 + 0.67 * P2 + 0.08 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.67 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> </ul>
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Same as Table 5.1.1 - System Normal
	5L1_3	Same as Table 5.1.1 - System Normal
	5L1_7	Same as Table 5.1.1 - System Normal
	5L2_3	If $P1 + 0.56 * P2 \geq 280 \text{ MW}$ AND $P3 > 700 \text{ MW}$ , then Gen shed at KMO: Level 3 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1450]$ [Voltage Stability]
	5L2_7	If $P1 + 0.56 * P2 \geq 280 \text{ MW}$ AND $P3 > 700 \text{ MW}$ , then Gen shed at KMO: Level 3 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 1450]$ [Voltage Stability]
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $4.1 * P1 + 1.4 * P2 + P3 \geq 3260 \text{ MW}$ OR $7.5 * P1 + 6.4 * P2 + P3 \geq 4660 \text{ MW}$ , then Gen shed at KMO: Level 2 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li><math>4.1 * P1 + 1.4 * P2 + P3 - 3260 - 4.1 * \text{armed gen-shed amount at KMO} - 1.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li><math>7.5 * P1 + 6.4 * P2 + P3 - 4660 - 7.5 * \text{armed gen-shed amount at KMO} - 6.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li><math>1.05 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 5L13 \text{ Over Rating}] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L11_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $4.1 * P1 + 1.4 * P2 + P3 \geq 3260 \text{ MW}$ OR $7.5 * P1 + 6.4 * P2 + P3 \geq 4660 \text{ MW}$ , then Gen shed at KMO: Level 2 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li><math>4.1 * P1 + 1.4 * P2 + P3 - 3260 - 4.1 * \text{armed gen-shed amount at KMO} - 1.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li><math>7.5 * P1 + 6.4 * P2 + P3 - 4660 - 7.5 * \text{armed gen-shed amount at KMO} - 6.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> </ul>

		<ul style="list-style-type: none"> <li>• <math>1.05 * [(5L11 + 5L12 + 5L13) WSN - 5L12\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
	5L12_13	<p>Gen-shed requirements at KMO/FKR/VOL/MCY:                  If <math>4.1 * P1 + 1.4 * P2 + P3 \geq 3260</math> MW OR <math>7.5 * P1 + 6.4 * P2 + P3 \geq 4660</math> MW, then                  Gen shed at KMO: Level 2 [Transient Stability], and                  Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]</p> <p>Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of:</p> <ul style="list-style-type: none"> <li>• <math>4.1 * P1 + 1.4 * P2 + P3 - 3260 - 4.1 * \text{armed gen-shed amount at KMO} - 1.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>7.5 * P1 + 6.4 * P2 + P3 - 4660 - 7.5 * \text{armed gen-shed amount at KMO} - 6.4 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability], and</li> <li>• <math>1.05 * [(5L11 + 5L12 + 5L13) WSN - 5L11\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
Series Capacitor Bypass	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.3.2 – KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L2	No generation shedding required
	5L3	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L3 \text{ PCN} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L7	Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.53 * (0.64 * 5L7 \text{ KDS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ and $P3 \geq 500 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN : $1.54 * (5L3 \text{ PCN} + 0.65 * 5L1 \text{ GMS} - 5L3 \text{ Over Rating})$
	5L2 MP	Same as Table 5.1.1 - System Normal
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L1 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L1 \text{ Over Rating})$
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240 \text{ MW}$ , then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L1 \text{ GMS} + 0.65 * 5L7 \text{ KDS} - 5L1 \text{ Over Rating})$
	5L4 MP	Same as Table 5.1.1 - System Normal
	5L11 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	Same as Table 5.1.1 - System Normal
	5L1_3	If $P1 + 0.56 * P2 \geq 280 \text{ MW}$ AND $P3 > 700 \text{ MW}$ , then Gen shed at KMO: Level 3 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1450]$ [Voltage Stability]
	5L1_7	If $P1 + 0.56 * P2 \geq 280 \text{ MW}$ AND $P3 > 700 \text{ MW}$ , then Gen shed at KMO: Level 3 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 1450]$ [Voltage Stability]
	5L2_3	Same as Table 5.1.1 - System Normal
	5L2_7	Same as Table 5.1.1 - System Normal
	5L11_12	Same as Table 5.3.1 - KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.1 - KDY 5CX1 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.3.1 - KDY 5CX1 OOS
	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.3.3 – KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at QTY/MKL/DKW first, then GMS/PCN: 1.48 * (0.68 * 5L1 GMS + 5L2 GMS – 5L2 Over Rating)
	5L2	Gen shed at QTY/MKL/DKW first, then GMS/PCN: 1.48 * (0.68 * 5L2 GMS + 5L1 GMS – 5L1 Over Rating)
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + 0.67 * P2 >= 240 MW and P3 >= 500 MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: 1.54 * (5L2 GMS + 0.65 * 5L1 GMS – 5L2 Over Rating)
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + 0.67 * P2 >= 240 MW and P3 >= 500 MW, then Gen shed at KMO: Level 1 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN : 1.54 * (5L1 GMS + 0.65 * 5L2 GMS – 5L1 Over Rating)
	5L3 MP	Same as Table 5.1.1 - System Normal
	5L7 MP	Same as Table 5.1.1 - System Normal
	5L4 MP	Same as Table 5.1.1 - System Normal
	5L11 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	If P1 + 0.56 * P2 >= 280 MW AND P3 > 700 MW, then Gen shed at KMO: Level 3 [Transient Stability], and Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: 1.04 * [(5L1 + 5L2) GMS + 5L3 PCN – 1450] [Voltage Stability]
	5L1 3	Same as Table 5.1.1 - System Normal
	5L1 7	Same as Table 5.1.1 - System Normal
	5L2 3	Same as Table 5.1.1 - System Normal
	5L2 7	Same as Table 5.1.1 - System Normal
	5L11 12	Same as Table 5.3.1 - KDY 5CX1 OOS
	5L11 13	Same as Table 5.3.1 - KDY 5CX1 OOS
Series Capacitor Bypass	5L12 13	Same as Table 5.3.1 - KDY 5CX1 OOS
	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.3.4 – MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	Gen-shed requirements at KMO: If $1.59 * P1 + 1.72 * P2 + P3 \geq 4616$ , then Gen-shed at KMO: Level 1 [Transient Stability]  Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.72 * (0.63 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$ – armed genshed amount at KMO
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.42 * P2 \geq 260 \text{ MW}$ and $P3 \geq 500 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]
	5L2 MP	Same as 5L1 MP in this Table
	5L3 MP	Same as Table 5.2.5 – 5L11 OOS
	5L7 MP	Same as Table 5.2.5 – 5L11 OOS
	5L4 MP	Same as 5L4 MP in Table 5.1.1 - System normal
	5L11 MP	Same as 5L11 MP in table 5.1.1- System normal
	5L12 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500 \text{ MW}$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.73 * [(5L13 + 0.64 * 5L12) \text{ WSN} - 5L13 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
Multi-phase Contingency	5L13 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500 \text{ MW}$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.73 * [(5L12 + 0.64 * 5L13) \text{ WSN} - 5L12 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1_2	If $P1 + 0.63 * P2 \geq 350 \text{ MW}$ AND $P3 > 600 \text{ MW}$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2350]</math> [Voltage Stability]</li> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating}]</math></li> </ul>
	5L1_3	If $P1 + 0.63 * P2 \geq 350 \text{ MW}$ AND $P3 > 600 \text{ MW}$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2350]</math> [Voltage Stability]</li> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating}]</math></li> </ul>
	5L1_7	If $P1 + 0.63 * P2 \geq 350 \text{ MW}$ AND $P3 > 600 \text{ MW}$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2350]</math> [Voltage Stability]</li> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating}]</math></li> </ul>
	5L2_3	If $P1 + 0.63 * P2 \geq 350 \text{ MW}$ AND $P3 > 600 \text{ MW}$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2350]</math> [Voltage Stability]</li> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating}]</math></li> </ul>
	5L2_7	If $P1 + 0.63 * P2 \geq 350 \text{ MW}$ AND $P3 > 600 \text{ MW}$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2350]</math> [Voltage Stability]</li> <li><math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating}]</math></li> </ul>
	5L11_12	Same as Table 5.1.1 - System Normal
	5L11_13	Same as Table 5.1.1 - System Normal
5L12_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $2.9 * P1 + 1.06 * P2 + P3 \geq 2000 \text{ MW}$ OR $5.2 * P1 + 4.6 * P2 + P3 \geq 3000 \text{ MW}$ Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li><math>2.9 * P1 + 1.06 * P2 + P3 - 2000 - 2.9 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed}</math></li> </ul>	

		amount at FKR/VOL/MCY][Transient Stability] <ul style="list-style-type: none"> <li>• <math>5.2 * P1 + 4.6 * P2 + P3 - 3000 - 5.2 * \text{armed gen-shed amount at KMO} - 4.6 * \text{armed gen-shed amount at FKR/VOL/MCY}</math>][Transient Stability]</li> <li>• <math>7.74 * [2L96 \text{ WSN} + 0.13 * (5L12 + 5L13) \text{ WSN} - 2L96\_Over\_Rating]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required



**Table 5.3.5 – MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen-shed requirements at KMO: If $1.59 * P1 + 1.72 * P2 + P3 \geq 4616$ , then Gen-shed at KMO: Level 1 [Transient Stability]  Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.72 * (0.63 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$ – armed genshed amount at KMO
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as 5L1 MP in Table 5.3.4 – MLS 5CX1 OOS
	5L2 MP	Same as 5L1 MP in this Table
	5L3 MP	Same as 5L3 MP in Table 5.3.4 – MLS 5CX1 OOS Table
	5L7 MP	Same as 5L7 MP in Table 5.3.4 – MLS 5CX1 OOS Table
	5L4 MP	Same as 5L4 MP in Table 5.1.1 - System normal.
	5L11 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500$ MW then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500]</math> – armed gen-shed amount at KMO – <math>0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>1.73 * [(5L13 + 0.64 * 5L11) \text{ WSN} - 5L13 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
5L12 MP	Same as 5L12 MP in table 5.1.1- System normal	
Multi-phase Contingency	5L13 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500$ MW then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500]</math> – armed gen-shed amount at KMO – <math>0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>1.73 * [(5L11 + 0.64 * 5L13) \text{ WSN} - 5L11 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1 2	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L1 3	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L1 7	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L2 3	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L2 7	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L11 12	Same as Table 5.1.1 - System Normal
	5L11_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $2.9 * P1 + 1.06 * P2 + P3 \geq 2000$ MW OR $5.2 * P1 + 4.6 * P2 + P3 \geq 3000$ MW Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li><math>2.9 * P1 + 1.06 * P2 + P3 - 2000</math> – <math>2.9 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>5.2 * P1 + 4.6 * P2 + P3 - 3000</math> – <math>5.2 * \text{armed gen-shed amount at KMO} - 4.6 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>7.74 * [2L96 \text{ WSN} + 0.13 * (5L11 + 5L13) \text{ WSN} - 2L96 \text{ Over Rating}]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
5L12 13	Same as Table 5.1.1 - System Normal	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.3.6 – MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen-shed requirements at KMO: If $1.59 * P1 + 1.72 * P2 + P3 \geq 4616$ , then Gen-shed at KMO: Level 1 [Transient Stability]  Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.72 * (0.63 * 5L11 \text{ WSN} + 5L12 \text{ WSN} - 5L12 \text{ Over Rating})$ – armed genshed amount at KMO
	5L12	Gen-shed requirements at KMO: If $1.59 * P1 + 1.72 * P2 + P3 \geq 4616$ , then Gen-shed at KMO: Level 1 [Transient Stability]  Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.72 * (0.63 * 5L12 \text{ WSN} + 5L11 \text{ WSN} - 5L11 \text{ Over Rating})$ – armed genshed amount at KMO
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as 5L1 MP in Table 5.3.4 – MLS 5CX1 OOS
	5L2 MP	Same as 5L1 MP in this Table
	5L3 MP	Same as 5L3 MP MP in Table 5.3.4 – MLS 5CX1 OOS
	5L7 MP	Same as 5L7 MP MP in Table 5.3.4 – MLS 5CX1 OOS
	5L4 MP	Same as 5L4 MP in Table 5.1.1 - System normal
	5L11 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500 \text{ MW}$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.73 * [(5L12 + 0.64 * 5L11) \text{ WSN} - 5L12 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
	5L12 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 + 0.09 * P3 \geq 500 \text{ MW}$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>11.1 * [(P1 + 0.71 * P2 + 0.09 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.71 * \text{armed gen-shed amount at FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.73 * [(5L11 + 0.64 * 5L12) \text{ WSN} - 5L11 \text{ Over Rating}]</math> - armed genshed at KMO/FKR /VOL/MCY</li> </ul>
Multi-phase Contingency	5L13 MP	Same as 5L13 MP in table 5.1.1 - System normal.
	5L61 MP	No generation shedding required
Double Contingency (SLG on different phases of two lines)	5L1 2	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L1 3	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L1 7	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L2 3	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L2 7	Same as Table 5.3.4 - MLS 5CX1 OOS
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $2.9 * P1 + 1.06 * P2 + P3 \geq 2000 \text{ MW}$ OR $5.2 * P1 + 4.6 * P2 + P3 \geq 3000 \text{ MW}$ Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li><math>2.9 * P1 + 1.06 * P2 + P3 - 2000 - 2.9 * \text{armed gen-shed amount at KMO} - 1.06 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>5.2 * P1 + 4.6 * P2 + P3 - 3000 - 5.2 * \text{armed gen-shed amount at KMO} - 4.6 * \text{armed gen-shed amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li><math>7.74 * [2L96 \text{ WSN} + 0.13 * (5L11 + 5L12) \text{ WSN} - 2L96 \text{ Over Rating}]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY</li> </ul>
	5L11 13	Same as Table 5.1.1 - System Normal
5L12 13	Same as Table 5.1.1 - System Normal	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

5.4 **Two of GMS/PCN - KLY 500 kV Circuits Out of Service (Not on the Same Section of GMS/PCN to WSN or WSN to KLY)**

**Table 5.4.1 – 5L1 AND 5L4 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L2 GMS < 1935 MW
- Winter: 5L2 GMS < 2100 MW

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2  Gen shed at GMS/MKL/DKW/QTY: <ul style="list-style-type: none"> <li>• Shed down DKW/MKL/QTY;</li> <li>• Shed GMS down to: <ul style="list-style-type: none"> <li>➢ 540 MW, if Peace Region 3 paths in service,</li> <li>➢ 480 MW, if 1L364 OOS</li> <li>➢ 440 MW, if 1L361/1L349 OOS</li> </ul> </li> </ul> Keep minimum 3 GMS units online post shedding.
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3  Same as Table 5.2.4 – 5L4 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7  Same as Table 5.2.4 – 5L4 OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L11 MP	No generation shedding required
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 – 5L4 OOS
	5L1_3	Same as Table 5.2.4 – 5L4 OOS
	5L1_7	Same as Table 5.2.4 – 5L4 OOS
	5L2_3	Islanding – Refer to Attachment 5.1 (a) 5L1 or (5L1 AND 5L4) OOS of 7T-13
	5L2_7	Islanding – Refer to Attachment 5.1 (a) 5L1 or (5L1 AND 5L4) OOS of 7T-13
	5L11_12	Same as Table 5.2.1 – 5L1 OOS
	5L11_13	Same as Table 5.2.1 – 5L1 OOS
5L12_13	Same as Table 5.2.1 – 5L1 OOS	
Series Capacitor Bypass	KDY 5CX2	Gen shed at MKL/DKW/QTY first, then GMS: 1.01 * (5L2 GMS – 1600) [Voltage Stability]
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.4.2 – 5L1 AND 5L11 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer:  $5L2 \text{ GMS} + 5L3 \text{ PCN} < 3650 \text{ MW}$
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer:  $(5L12 + 5L13) \text{ WSN} < 3500 \text{ MW}$
- Winter:  $(5L12 + 5L13) \text{ WSN} < 3500 \text{ MW}$

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 2000)$ [Voltage Stability]
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as 5L2 contingency in this table
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 $1.03 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 2000)$ [Voltage Stability]
	5L4	Gen shed at QTY/MKL/DKW first, then GMS: $1.01 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at FKR/VOL/MCY/KMO: If $P1 + P2 + 0.93 * P3 < 3003$ , no gen shedding is required. If $P1 + P2 + 0.93 * P3 \geq 3003$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.08 * (P1 + P2 + 0.93 * P3 - 3003 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L12 + 5L13) \text{ WSN} - 5L13 \text{ Over Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 – 5L1 OOS
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 2000)$ [Voltage Stability]
	5L1_3	Same as 5L1_2 contingency in this table.
	5L1_7	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.63 * P3 < 1929$ , no gen-shedding is required; If $P1 + P2 + 0.63 * P3 \geq 1929$ , Gen shed at KMO: Level 1 or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.59 * (P1 + P2 + 0.63 * P3 - 1929 - \text{armed gen shed at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 2000)</math> [Voltage Stability]</li> </ul>
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 – 5L1 OOS
	5L11_12	Same as Table 5.2.5 – 5L11 OOS
	5L11_13	Same as Table 5.2.5 – 5L11 OOS
	5L12_13	Refer to Attachment 5 of 7T-13
Series Capacitor Bypass	KDY 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.46 * (0.32 * 5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 3287)</math> [Voltage Stability]</li> </ul>
	KDY 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.46 * (0.32 * 5L3 \text{ PCN} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 3287)</math> [Voltage Stability]</li> </ul>
	MLS 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.69 * (0.33 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})</math></li> <li>• <math>1.18 * ((5L12 + 5L13) \text{ WSN} - (-0.08 * \text{BCH Load} + 3600))</math> [Voltage Stability]</li> </ul>
	MLS 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.69 * (0.33 * 5L13 \text{ WSN} + 5L12 \text{ WSN} - 5L12 \text{ Over Rating})</math></li> <li>• <math>1.18 * ((5L12 + 5L13) \text{ WSN} - (-0.08 * \text{BCH Load} + 3600))</math> [Voltage Stability]</li> </ul>

**Table 5.4.3 – 5L1 AND 5L12 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer:  $5L2\ GMS + 5L3\ PCN < 3650\ MW$
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer:  $(5L11 + 5L13)\ WSN < 3500\ MW$
- Winter:  $(5L11 + 5L13)\ WSN < 3500\ MW$

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L4	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen-shed requirements at FKR/VOL/MCY/KMO: If $P1 + P2 + 0.93 * P3 < 3003$ , no gen shedding is required. If $P1 + P2 + 0.93 * P3 \geq 3003$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.08 * (P1 + P2 + 0.93 * P3 - 3003 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L13)\ WSN - 5L13\ \text{Over Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 – 5L1 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L1_3	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L1_7	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 – 5L1 OOS
	5L11_12	Same as Table 5.2.6 – 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX2	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	KDY 5CX3	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	MLS 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.69 * (0.33 * 5L11\ WSN + 5L13\ WSN - 5L13\ \text{Over Rating})</math></li> <li>• <math>1.18 * ((5L11 + 5L13)\ WSN - (-0.08 * BCH\ Load + 3600))</math> [Voltage Stability]</li> </ul>
	MLS 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.69 * (0.33 * 5L13\ WSN + 5L11\ WSN - 5L11\ \text{Over Rating})</math></li> <li>• <math>1.18 * ((5L11 + 5L13)\ WSN - (-0.08 * BCH\ Load + 3600))</math> [Voltage Stability]</li> </ul>

**Table 5.4.4 – 5L1 AND 5L13 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer:  $5L2 \text{ GMS} + 5L3 \text{ PCN} < 3650 \text{ MW}$
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer:  $(5L11 + 5L12) \text{ WSN} < 3500 \text{ MW}$
- Winter:  $(5L11 + 5L12) \text{ WSN} < 3500 \text{ MW}$

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.4.2 - 5L1 AND 5L11 OOS.
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.4.2 - 5L1 AND 5L11 OOS.
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.4.2 - 5L1 AND 5L11 OOS.
	5L4	Same as Table 5.4.2 - 5L1 AND 5L11 OOS.
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Gen shed requirements at FKR/VOL/MCY/KMO: If $P1 + P2 + 0.93 * P3 < 3003$ , no gen shedding is required. If $P1 + P2 + 0.93 * P3 \geq 3003$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: • $1.08 * (P1 + P2 + 0.93 * P3 - 3003)$ – armed GS amount at KMO/FKR/VOL/MCY) • $1.05 * ((5L11 + 5L12) \text{ WSN} - 5L12 \text{ Over Rating})$ – armed GS amount at KMO/FKR/VOL/MCY
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Gen shed requirements at FKR/VOL/MCY/KMO: If $P1 + P2 + 0.93 * P3 < 3003$ , no gen shedding is required. If $P1 + P2 + 0.93 * P3 \geq 3003$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: • $1.08 * (P1 + P2 + 0.93 * P3 - 3003)$ – armed GS amount at KMO/FKR/VOL/MCY) • $1.05 * ((5L11 + 5L12) \text{ WSN} - 5L11 \text{ Over Rating})$ – armed GS amount at KMO/FKR/VOL/MCY
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 - 5L1 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L1_3	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L1_7	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 – 5L1 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 – 5L13 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.2.7 – 5L13 OOS
	KDY 5CX2	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	KDY 5CX3	Same as Table 5.4.2 - 5L1 AND 5L11 OOS
	MLS 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.69 * (0.33 * 5L11 \text{ WSN} + 5L12 \text{ WSN} - 5L12 \text{ Over Rating})$ • $1.18 * ((5L11 + 5L12) \text{ WSN} - (-0.08 * \text{BCH Load} + 3600))$ [Voltage Stability]
	MLS 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.69 * (0.33 * 5L12 \text{ WSN} + 5L11 \text{ WSN} - 5L11 \text{ Over Rating})$ • $1.18 * ((5L11 + 5L12) \text{ WSN} - (-0.08 * \text{BCH Load} + 3600))$ [Voltage Stability]

**Table 5.4.5 – 5L2 AND 5L4 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS < 1935 MW
- Winter: 5L1 GMS < 2100 MW

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2  Gen shed at GMS/MKL/DKW/QTY: <ul style="list-style-type: none"> <li>• Shed down DKW/MKL/QTY:</li> <li>• Shed GMS down to: <ul style="list-style-type: none"> <li>➢ 540 MW, if Peace Region 3 paths in service,</li> <li>➢ 480 MW, if 1L364 OOS</li> <li>➢ 440 MW, if 1L361/1L349 OOS</li> </ul> </li> </ul> Keep minimum 3 GMS units online post shedding
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3  Same as Table 5.2.4 – 5L4 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7  Same as Table 5.2.4 – 5L4 OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L11 MP	No generation shedding required
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 – 5L4 OOS
	5L1_3	Islanding – Refer to Attachment 5.1 (b) 5L2 or (5L2 AND 5L4) OOS of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5.1 (b) 5L2 or (5L2 AND 5L4) OOS of SOO 7T-13
	5L2_3	Same as Table 5.2.4 – 5L4 OOS
	5L2_7	Same as Table 5.2.4 – 5L4 OOS
	5L11_12	Same as Table 5.2.2 – 5L2 OOS
	5L11_13	Same as Table 5.2.2 – 5L2 OOS
5L12_13	Same as Table 5.2.2 – 5L2 OOS	
Series Capacitor Bypass	KDY 5CX1	Gen shed at MKL/DKW/QTY first, then GMS: 1.01 * (5L1 GMS – 1600) [Voltage Stability]
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.4.6 – 5L2 AND 5L11 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer:  $5L1\ GMS + 5L3\ PCN < 3650\ MW$
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer:  $(5L12 + 5L13)\ WSN < 3500\ MW$
- Winter:  $(5L12 + 5L13)\ WSN < 3500\ MW$

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * (5L1\ GMS + 5L3\ PCN - 2000)$ [Voltage Stability]
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as 5L1 SLG contingency in this table
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 $1.03 * (5L1\ GMS + 5L7\ KDS - 2000)$ [Voltage Stability]
	5L4	Gen shed at QTY/MKL/DKW first, then GMS: $1.01 * (5L1\ GMS + 5L4\ GMS - 5L1\ Over\ Rating)$
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.4.2 – 5L1 AND 5L11 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 – 5L2 OOS
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: $1.03 * [5L1\ GMS + 5L3\ PCN - 2000]$ [Voltage Stability]
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 – 5L2 OOS
	5L2_3	Same as 5L1_2 contingency in this table
	5L2_7	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.63 * P3 < 1929$ , no gen-shedding is required; If $P1 + P2 + 0.63 * P3 \geq 1929$ then Gen shed at KMO: Level 1, or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: • $1.59 * (P1 + P2 + 0.63 * P3 - 1929 - \text{armed gen shed at KMO/FKR/VOL/MCY})$ [Transient Stability] • $1.03 * (5L1\ GMS + 5L3\ PCN - 2000)$ [Voltage Stability]
	5L11_12	Same as Table 5.2.5 – 5L11 OOS
	5L11_13	Same as Table 5.2.5 – 5L11 OOS
	5L12_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.46 * (0.32 * 5L1\ GMS + 5L3\ PCN - 5L3\ Over\ Rating)$ • $1.01 * (5L1\ GMS + 5L3\ PCN - 3287)$ [Voltage Stability]
	KDY 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.46 * (0.32 * 5L3\ PCN + 5L1\ GMS - 5L1\ Over\ Rating)$ • $1.01 * (5L1\ GMS + 5L3\ PCN - 3287)$ [Voltage Stability]
	MLS 5CX2	Same as Table 5.4.2 – 5L1 AND 5L11 OOS
	MLS 5CX3	Same as Table 5.4.2 – 5L1 AND 5L11 OOS



**Table 5.4.7 – 5L2 AND 5L12 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L3 PCN < 3650 MW
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer: (5L11 + 5L13) WSN < 3500 MW
- Winter: (5L11 + 5L13) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L4	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.4.3 - 5L1 AND 5L12 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 – 5L2 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 – 5L2 OOS
	5L2_3	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L2_7	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L11_12	Same as Table 5.2.6 - 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	KDY 5CX3	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	MLS 5CX1	Same as Table 5.4.3 - 5L1 AND 5L12 OOS
	MLS 5CX3	Same as Table 5.4.3 - 5L1 AND 5L12 OOS

**Table 5.4.8 – 5L2 AND 5L13 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L3 PCN < 3650 MW
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer: (5L11 + 5L12) WSN < 3500 MW
- Winter: (5L11 + 5L12) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L4	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L11	Same as Table 5.4.4 - 5L1 AND 5L13 OOS
	5L12	Same as Table 5.4.4 - 5L1 AND 5L13 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 – 5L2 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 – 5L2 OOS
	5L2_3	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L2_7	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 - 5L13 OOS
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	KDY 5CX3	Same as Table 5.4.6 - 5L2 AND 5L11 OOS
	MLS 5CX1	Same as Table 5.4.4 - 5L1 AND 5L13 OOS
	MLS 5CX2	Same as Table 5.4.4 - 5L1 AND 5L13 OOS

**Table 5.4.9 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L4 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Gen shed at QTY/MKL/DKW first, then GMS: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating})$
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Gen shed at QTY/MKL/DKW first, then GMS: $1.03 * ((5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating})$
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L11 MP	No generation shedding required
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5.1 (c) 5L3 or 5L7 or (5L3 AND 5L7) or ((5L3 or 5L7 or (5L3 AND 5L7)) AND 5L4) OOS of 7T-13
	5L1_3	Gen-shed at MKL/DKW/QTY first and then GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating}]$
	5L1_7	Gen-shed at MKL/DKW/QTY first and then GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} - 5L2 \text{ Over Rating}]$
	5L2_3	Gen-shed at MKL/DKW/QTY first and then GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} - 5L1 \text{ Over Rating}]$
	5L2_7	Gen-shed at MKL/DKW/QTY first and then GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} - 5L1 \text{ Over Rating}]$
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.71 * P3 < 2100 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.71 * P3 \geq 2100 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS, the greater of: <ul style="list-style-type: none"> <li><math>1.4 * [(P1 + P2 + 0.71 * P3) - 2100 - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.08 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 5L13 \text{ Over Rating}] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L11_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.71 * P3 < 2100 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.71 * P3 \geq 2100 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS, the greater of: <ul style="list-style-type: none"> <li><math>1.4 * [(P1 + P2 + 0.71 * P3) - 2100 - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.08 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 5L12 \text{ Over Rating}] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> </ul>
5L12_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.71 * P3 < 2100 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.71 * P3 \geq 2100 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS, the greater of: <ul style="list-style-type: none"> <li><math>1.4 * [(P1 + P2 + 0.71 * P3) - 2100 - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li><math>1.08 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 5L11 \text{ Over Rating}] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> </ul>	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.4.10 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: (5L1 + 5L2) GMS < 3800 MW
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer: (5L12 + 5L13) WSN < 3500 MW
- Winter: (5L12 + 5L13) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Gen shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} - 2000)$ [Voltage Stability]
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as 5L1 SLG contingency in this table
	5L4	Same as Table 5.2.3. – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.4.2. – 5L1 AND 5L11 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3. – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding - Refer to Attachment 5 of SOO 7T-13
	5L1_3	Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} - 2000)$ [Voltage Stability]
	5L1_7	Same as 5L1_3 in this table.
	5L2_3	Same as 5L1_3 in this table.
	5L2_7	Same as 5L1_3 in this table
	5L11_12	Same as Table 5.2.5 – 5L11 OOS
	5L11_13	Same as Table 5.2.5 – 5L11 OOS
Series Capacitor Bypass	KDY 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.44 * (0.34 * 5L1 \text{ GMS} + 5L2 \text{ GMS} - 5L2_{\text{Over Rating}})$ • $1.01 * ((5L1 + 5L2) \text{ GMS} - 3287)$ [Voltage Stability]
	KDY 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: • $1.44 * (0.34 * 5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1_{\text{Over Rating}})$ • $1.01 * ((5L1 + 5L2) \text{ GMS} - 3287)$ [Voltage Stability]
	MLS 5CX2	Same as Table 5.4.2 – 5L1 AND 5L11 OOS
	MLS 5CX3	Same as Table 5.4.2 – 5L1 AND 5L11 OOS

**Table 5.4.11 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L12 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: (5L1 + 5L2) GMS < 3800 MW
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer: (5L11 + 5L13) WSN < 3500 MW
- Winter: (5L11 + 5L13) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	5L4	Same as Table 5.2.3. – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.4.3 - 5L1 AND 5L12 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3. – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L1_7	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L2_3	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L2_7	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L11_12	Same as Table 5.2.6 – 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.4.10 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	KDY 5CX2	Same as Table 5.4.10 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	MLS 5CX1	Same as Table 5.4.3 – 5L1 AND 5L12 OOS
	MLS 5CX3	Same as Table 5.4.3 – 5L1 AND 5L12 OOS

**Table 5.4.12 – (5L3 or 5L7 or (5L3 & 5L7)) AND 5L13 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: (5L1 + 5L2) GMS < 3800 MW
- Winter: No generation restriction

**WSN to KLY transfer limit:**

- Summer: (5L11 + 5L12) WSN < 3500 MW
- Winter: (5L11 + 5L12) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) AND 5L11 OOS
	5L4	Same as Table 5.2.3 – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Same as Table 5.4.4 – 5L1 AND 5L13 OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Same as Table 5.4.2 – 5L1 AND 5L11 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 – 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L1_7	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L2_3	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L2_7	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 – 5L13 OOS
5L12_13	Same as Table 5.2.7 – 5L13 OOS	
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	KDY 5CX2	Same as Table 5.4.10 - (5L3 or 5L7 or (5L3 & 5L7)) and 5L11 OOS
	MLS 5CX1	Same as Table 5.4.4 – 5L1 AND 5L13 OOS
	MLS 5CX2	Same as Table 5.4.4 – 5L1 AND 5L13 OOS

**Table 5.4.13 – 5L4 AND 5L11 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- Summer: (5L12 + 5L13) WSN < 3500 MW
- Winter: (5L12 + 5L13) WSN < 3500 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 – 5L4 OOS
	5L2	Same as Table 5.2.4 – 5L4 OOS
	5L3	Same as Table 5.2.4 – 5L4 OOS
	5L7	Same as Table 5.2.4 – 5L4 OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.2.5 – 5L11 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 – 5L4 OOS
	5L2 MP	Same as Table 5.2.4 – 5L4 OOS
	5L3 MP	Same as Table 5.2.4 – 5L4 OOS
	5L7 MP	Same as Table 5.2.4 – 5L4 OOS
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12.
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 – 5L4 OOS
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L3 PCN - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW  Keep at least two PCN units online post shedding.  Gen-shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2000]$ [Voltage Stability]
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390$ MW AND $P3 > 800$ MW, then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L7 KDS - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW

		Keep at least two PCN units online post shedding. Gen-shed at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2000]$ [Voltage Stability]
	5L2 3	Same as 5L1 3 contingency in this table
	5L2 7	Same as 5L1 7 contingency in this table
	5L11 12	Same as Table 5.2.5 – 5L11 OOS
	5L11 13	Same as Table 5.2.5 – 5L11 OOS
	5L12 13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	Same as Table 5.2.5 – 5L11 OOS
	MLS 5CX3	Same as Table 5.2.5 – 5L11 OOS

**Table 5.4.14 – 5L4 AND 5L12 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 3500 MW**
- **Winter: (5L11 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 – 5L4 OOS.
	5L2	Same as Table 5.2.4 – 5L4 OOS.
	5L3	Same as Table 5.2.4 – 5L4 OOS
	5L7	Same as Table 5.2.4 – 5L4 OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.2.6 – 5L12 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 – 5L4 OOS
	5L2 MP	Same as Table 5.2.4 – 5L4 OOS
	5L3 MP	Same as Table 5.2.4 – 5L4 OOS
	5L7 MP	Same as Table 5.2.4 – 5L4 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 – 5L4 OOS
	5L1_3	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L1_7	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L2_3	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L2_7	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L11_12	Same as Table 5.2.6 – 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
	5L12_13	Same as Table 5.2.6 – 5L12 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	Same as Table 5.2.6 – 5L12 OOS
	MLS 5CX3	Same as Table 5.2.6 – 5L12 OOS

**Table 5.4.15 – 5L4 AND 5L13 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 3500 MW**
- **Winter: (5L11 + 5L12) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 – 5L4 OOS.
	5L2	Same as Table 5.2.4 – 5L4 OOS.
	5L3	Same as Table 5.2.4 – 5L4 OOS
	5L7	Same as Table 5.2.4 – 5L4 OOS
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Same as Table 5.2.7 – 5L13 OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Same as Table 5.2.7 – 5L13 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 – 5L4 OOS
	5L2 MP	Same as Table 5.2.4 – 5L4 OOS
	5L3 MP	Same as Table 5.2.4 – 5L4 OOS
	5L7 MP	Same as Table 5.2.4 – 5L4 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 – 5L4 OOS
	5L1_3	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L1_7	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L2_3	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L2_7	Same as Table 5.4.13 - 5L4 AND 5L11 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 – 5L13 OOS
	5L12_13	Same as Table 5.2.7 – 5L13 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	Same as Table 5.2.7 – 5L13 OOS
	MLS 5CX2	Same as Table 5.2.7 – 5L13 OOS

5.5 **One of the 500 kV Circuits and One of the Series Capacitor Banks between GMS/PCN – KLY Out of Service**

**Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

GMS to WSN transfer limit:

- Summer: 5L2 GMS + 5L3 PCN < 2985 MW
- Winter: 5L2 GMS + 5L3 PCN < 3300 MW

WSN to KLY transfer limit: No generation restriction

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.1 - 5L1 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L4	Gen shed at DKW/QTY/MKL first, then GMS: $1.01 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - (-0.19 * 2L103 \text{ KIT} + 1607))$ [Voltage Stability]
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Gen-shed at MKL/DKW/QTY first; and then GMS: $1.03 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - 1500)$ [Voltage Stability]
	5L11 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.85 * P2 + 0.11 * P3 \geq 500 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN: • $9.1 * [(P1 + 0.85 * P2 + 0.11 * P3) - 500 - \text{armed gen-shed amount at KMO} - 0.85 * \text{armed gen-shed amount at FKR/VOL/MCY}]$ [Transient Stability]
5L12 MP	Same as 5L11 MP in this table	
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.1 - 5L1 OOS
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then at GMS/PCN: $1.04 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 1450)$ [Voltage Stability]
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then at GMS/PCN: $1.04 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 1450)$ [Voltage Stability]
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 - 5L1 OOS
	5L11_12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $3.2 * P1 + 1.1 * P2 + P3 \geq 2800 \text{ MW}$ OR $P1 + 1.5 * P2 \geq 420 \text{ MW}$ Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: • $3.2 * P1 + 1.1 * P2 + P3 - 2800 - 3.2 * \text{armed gen-shed amount at KMO} - 1.1 * \text{armed gen-shed amount at FKR/VOL/MCY}$ [Transient Stability] • $1.05 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 1950] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}$ [Voltage Stability]
	5L11_13	Same as above 5L11_12 in this table
5L12_13	Same as above 5L11_12 in this table	
Series Capacitor Bypass	KDY 5CX3	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.32 * 2L103 \text{ KIT} + 2788))$ [Voltage Stability]
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.2 – 5L1 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L2 GMS + 5L3 PCN < 2900 MW**
- **Winter: 5L2 GMS + 5L3 PCN < 3150 MW**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.2.1 - 5L1 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.2.1 - 5L1 OOS
	5L4	Same as Table 5.2.1 - 5L1 OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Gen-shed at MKL/DKW/QTY first; and then GMS: $1.03 * (5L2 \text{ GMS} + 5L4 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L11 MP	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 1450)$ [Voltage Stability]
	5L1_3	Same as Table 5.2.1 - 5L1 OOS
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then at GMS/PCN: $1.03 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating})$
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 - 5L1 OOS
	5L11_12	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	5L11_13	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	5L12_13	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	Series Capacitor Bypass	KDY 5CX2
MLS 5CX1		No generation shedding required
MLS 5CX2		No generation shedding required
MLS 5CX3		No generation shedding required



**Table 5.5.3 – 5L1 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L2 GMS + 5L3 PCN < 3650 MW
- Winter: No generation restriction

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.1 - 5L1 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.2.1 - 5L1 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.2.1 - 5L1 OOS
	5L4	Same as Table 5.2.1 - 5L1 OOS
	5L11	No generation shedding required
	5L12	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no gen shed is required. If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685)</math> – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.85 * (0.63 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13\_Over\_Rating)</math> – armed GS amount at KMO/FKR/VOL/MCY</li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A]</math> – armed GS amount at KMO/FKR/VOL/MCY, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 - 5L1 OOS
	5L11 MP	No generation shedding required
	5L12 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen-shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * [(P1 + P2 + 0.45 * P3) - 1699]</math> – the armed gen-shedding amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.80 * [5L13 \text{ WSN} + 0.62 * 5L12 \text{ WSN} - 5L13 \text{ Over Rating}]</math> - armed gensed at KMO/FKR/VOL/MCY</li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}]</math> – armed gensed at KMO/FKR/VOL/MCY, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>
Multi-phase Contingency	5L13 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen-shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * [(P1 + P2 + 0.45 * P3) - 1699]</math> – armed gen-shedding amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.80 * [5L12 \text{ WSN} + 0.62 * 5L13 \text{ WSN} - 5L12 \text{ Over Rating}]</math> - armed gensed at KMO/FKR/VOL/MCY</li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}]</math> – armed gensed at KMO/FKR/VOL/MCY, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 2350)</math> [Voltage Stability]</li> <li>• <math>1.03 * [5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating}]</math></li> </ul>
	5L1_3	Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.03 * (5L2 \text{ GMS} + 5L3 \text{ PCN} - 2350)</math> [Voltage Stability]</li> <li>• <math>1.03 * [5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating}]</math></li> </ul>
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.63 * P3 < 1929$ , no gen-shedding is required; If $P1 + P2 + 0.63 * P3 \geq 1929$ , Gen shed at KMO: Level 1 or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.59 * (P1 + P2 + 0.63 * P3 - 1929)</math> – armed gen shed at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.03 * (5L2 \text{ GMS} + 5L7 \text{ KDS} - 2350)</math> [Voltage Stability]</li> <li>• <math>1.03 * [5L2 \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating}]</math></li> </ul>
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 - 5L1 OOS
	5L11_12	Same as Table 5.2.1 - 5L1 OOS
	5L11_13	Same as Table 5.2.1 - 5L1 OOS
	5L12_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.58 * P3 < 970 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.58 * P3 \geq 970 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.72 * [(P1 + P2 + 0.58 * P3) - 970]</math> – armed gen-shed amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>8 * [2L96 \text{ WSN} + 0.13 * (5L12 + 5L13) \text{ WSN} - 2L96\_Over\_Rating]</math> – armed gen-shedding amount</li> </ul>

		at KMO/FKR/VOL/MCY • $1.09 * [(5L11 + 5L12 + 5L13 + 2L96) WSN - 1600]$ – armed gen-shed amount at KMO/FKR/VOL/MCY [Voltage Stability]
Series Capacitor Bypass	KDY 5CX2	Same as Table 5.2.1 - 5L1 OOS
	KDY 5CX3	Same as Table 5.2.1 - 5L1 OOS
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.4 – 5L1 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L2 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.1 - 5L1 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.2.1 - 5L1 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.2.1 - 5L1 OOS
	5L4	Same as Table 5.2.1 - 5L1 OOS
	5L11	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no GS is required. If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.85 * (0.63 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * ((5L11 + 5L12 + 5L13) \text{ WSN} - A) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 - 5L1 OOS.
	5L11 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen-shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * ((P1 + P2 + 0.45 * P3) - 1699 - \text{the armed gen-shedding amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.80 * [5L13 \text{ WSN} + 0.62 * 5L11 \text{ WSN} - 5L13\_Over\_Rating] - \text{armed gensed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}] - \text{armed gensed at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>
5L12 MP	No generation shedding required	
Multi-phase Contingency	5L13 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen-shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * ((P1 + P2 + 0.45 * P3) - 1699 - \text{the armed gen-shedding amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.80 * [5L11 \text{ WSN} + 0.62 * 5L13 \text{ WSN} - 5L11 \text{ Over Rating}] - \text{armed gensed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}] - \text{armed gensed at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L1_3	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L1_7	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 - 5L1 OOS
	5L11_12	Same as Table 5.2.1 - 5L1 OOS
	5L11_13	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.58 * P3 < 970 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.58 * P3 \geq 970 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.72 * ((P1 + P2 + 0.58 * P3) - 970 - \text{armed gen-shed amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>8 * [2L96 \text{ WSN} + 0.13 * (5L11 + 5L13) \text{ WSN} - 2L96\_Over\_Rating] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.09 * [(5L11 + 5L12 + 5L13 + 2L96) \text{ WSN} - 1600] - \text{armed gen-shed amount at KMO/FKR/VOL/MCY}</math> [Voltage Stability]</li> </ul>
	5L12_13	Same as Table 5.2.1 - 5L1 OOS
	Series Capacitor Bypass	KDY 5CX2
KDY 5CX3		Same as Table 5.2.1 - 5L1 OOS
MLS 5CX1		No generation shedding required
MLS 5CX3		No generation shedding required

**Table 5.5.5 – 5L1 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L2 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.1 - 5L1 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 Same as Table 5.2.1 - 5L1 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_7 Same as Table 5.2.1 - 5L1 OOS
	5L4	Same as Table 5.2.1 - 5L1 OOS
	5L11	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no GS is required. If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.85 * (0.63 * 5L11 \text{ WSN} + 5L12 \text{ WSN} - 5L12\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A] - \text{armed GS amount at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>
5L12	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no GS is required. If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.85 * (0.63 * 5L12 \text{ WSN} + 5L11 \text{ WSN} - 5L11\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A] - \text{armed GS amount at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>	
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L2 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L1_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L1_7
	5L4 MP	Same as Table 5.2.1 - 5L1 OOS
	5L11 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * [(P1 + P2 + 0.45 * P3) - 1699 - \text{armed gen shedding amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.80 * [5L12 \text{ WSN} + 0.62 * 5L11 - 5L12\_Over\_Rating] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>
5L12 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.45 * P3 < 1699$ , no gen-shedding is required; If $P1 + P2 + 0.45 * P3 \geq 1699$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.22 * [(P1 + P2 + 0.45 * P3) - 1699 - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>1.80 * [5L11 \text{ WSN} + 0.62 * 5L12 \text{ WSN} - 5L11\_Over\_Rating] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * [(5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW}] - \text{armed genshed at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH LOAD} + 3619</math> [Voltage Stability]</li> </ul>	
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L1_3	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L1_7	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L2_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L2_4	Same as Table 5.2.1 - 5L1 OOS
	5L11_12	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.58 * P3 < 970 \text{ MW}$ , no gen-shedding is required; If $P1 + P2 + 0.58 * P3 \geq 970 \text{ MW}$ Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.72 * [(P1 + P2 + 0.58 * P3) - 970 - \text{armed gen-shed amount at KMO/FKR/VOL/MCY}]</math> [Transient Stability]</li> <li>• <math>8 * [2L96 \text{ WSN} + 0.13 * (5L11 + 5L12) \text{ WSN} - 2L96\_Over\_Rating] - \text{armed gen-shedding amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.09 * [(5L11 + 5L12 + 5L13 + 2L96) \text{ WSN} - 1600] - \text{armed gen-shed amount at KMO/FKR/VOL/MCY}</math> [Voltage Stability]</li> </ul>
	5L11_13	Same as Table 5.2.1 - 5L1 OOS
5L12_13	Same as Table 5.2.1 - 5L1 OOS	

CONTINGENCY		SHEDDING REQUIREMENTS
Series Capacitor Bypass	KDY 5CX2	Same as Table 5.2.1 - 5L1 OOS
	KDY 5CX3	Same as Table 5.2.1 - 5L1 OOS
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.6 – 5L2 AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 2985 MW**
- **Winter: 5L1 GMS + 5L3 PCN < 3300 MW**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.2 - 5L2 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L4	Gen shed at DKW/QTY/MKL first, then GMS: $1.01 * (5L1 \text{ GMS} + 5L4 \text{ GMS} - (-0.19 * 2L103 \text{ KIT} + 1607))$ [Voltage Stability]
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Gen-shed at MKL/DKW/QTY first; and then GMS: $1.03 * [5L1 \text{ GMS} + 5L4 \text{ GMS} - 1500]$ [Voltage Stability]
	5L11 MP	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	5L12 MP	Same as 5L11 MP in this table
Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 - 5L2 OOS
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 1450)$ [Voltage Stability]
	5L2_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 1450)$ [Voltage Stability]
	5L11_12	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
	5L11_13	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
	5L12_13	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
	Series Capacitor Bypass	KDY 5CX3
MLS 5CX1		No generation shedding required
MLS 5CX2		No generation shedding required
MLS 5CX3		No generation shedding required

**Table 5.5.7 – 5L2 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 2900 MW**
- **Winter: 5L1 GMS + 5L3 PCN < 3150 MW**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - (-0.55 * 2L103 \text{ KIT} + 1636))$ [Voltage Stability]
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.2.2 - 5L2 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.2.2 - 5L2 OOS
	5L4	Same as Table 5.2.2 - 5L2 OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 – 5L2 OOS
	5L11 MP	Same as Table 5.5.1 - 5L1 and KDY2 OOS
	5L12 MP	Same as 5L11 MP in this Table

Multi-phase Contingency	5L13 MP	Same as 5L11 MP in this Table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 1450)$ [Voltage Stability]
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 - 5L2 OOS
	5L2_3	Same as Table 5.2.2 – 5L2 OOS
	5L2_7	Same as Table 5.2.2 – 5L2 OOS
	5L11_12	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
	5L11_13	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
	5L12_13	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 OOS
Series Capacitor Bypass	KDY 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - (-0.32 * 2L103 \text{ KIT} + 2788))$ [Voltage Stability]
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.8 – 5L2 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.2 - 5L2 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.2.2 - 5L2 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.2.2 - 5L2 OOS
	5L4	Same as Table 5.2.2 - 5L2 OOS
	5L11	No generation shedding required
	5L12	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 - 5L2 OOS
	5L11 MP	No generation shedding required
	5L12 MP	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen-shed at MKL/DKW/QTY first, then at GMS/PCN: $1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 - 5L2 OOS
	5L2_3	Gen-shed at MKL/DKW/QTY first, then at GMS/PCN, the greater of : <ul style="list-style-type: none"> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 2350)</math> [Voltage Stability]</li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating})</math></li> </ul>
	5L2_7	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.63 * P3 < 1929$ , no gen-shedding is required; If $P1 + P2 + 0.63 * P3 \geq 1929$ , Gen shed at KMO: Level 1 or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.59 * (P1 + P2 + 0.63 * P3 - 1929 - \text{armed gen shed at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 2350)</math> [Voltage Stability]</li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating})</math></li> </ul>
	5L11_12	Same as Table 5.2.2 - 5L2 OOS
	5L11_13	Same as Table 5.2.2 - 5L2 OOS
5L12_13	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS	
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.2.2 - 5L2 OOS
	KDY 5CX3	Same as Table 5.2.2 - 5L2 OOS
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required



**Table 5.5.9 – 5L2 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.2 - 5L2 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.2.2 - 5L2 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.2.2 - 5L2 OOS
	5L4	Same as Table 5.2.2 - 5L2 OOS
	5L11	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 - 5L2 OOS
	5L11 MP	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.8 - 5L2 AND MLS 5CX1 OOS
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 - 5L2 OOS
	5L2_3	Same as Table 5.5.8 – 5L2 AND MLS 5CX1 O.O.S.
	5L2_7	Same as Table 5.5.8 – 5L2 AND MLS 5CX1 O.O.S.
	5L11_12	Same as Table 5.2.2 - 5L2 OOS
	5L11_13	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.2.2 - 5L2 OOS
	KDY 5CX3	Same as Table 5.2.2 - 5L2 OOS
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.10 – 5L2 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L3 PCN < 3650 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_2 Same as Table 5.2.2 - 5L2 OOS
	5L3	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 Same as Table 5.2.2 - 5L2 OOS
	5L7	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_7 Same as Table 5.2.2 - 5L2 OOS
	5L4	Same as Table 5.2.2 - 5L2 OOS
	5L11	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
	5L12	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_2
	5L3 MP	This MP contingency will be covered by double contingency of 5L2_3
	5L7 MP	This MP contingency will be covered by double contingency of 5L2_7
	5L4 MP	Same as Table 5.2.2 - 5L2 OOS
	5L11 MP	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
	5L12 MP	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.8 - 5L2 AND MLS 5CX1 OOS
	5L1_3	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_7	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_4	Same as Table 5.2.2 - 5L2 OOS
	5L2_3	Same as Table 5.5.8 – 5L2 AND MLS 5CX1 O.O.S.
	5L2_7	Same as Table 5.5.8 – 5L2 AND MLS 5CX1 O.O.S.
	5L11_12	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
	5L11_13	Same as Table 5.2.2 - 5L2 OOS
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.2.2 - 5L2 OOS
	KDY 5CX3	Same as Table 5.2.2 - 5L2 OOS
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.11 – (5L3 or 5L7 or (5L3 & 5L7)) AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L2 GMS < 2900 MW
- Winter: 5L1 GMS + 5L2 GMS < 3150 MW

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.03 * ((5L1 + 5L2) GMS - (-0.55 * 2L103 KIT + 1636))$ [Voltage Stability]
	5L4	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
Multi-phase Contingency	5L11 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S.S
	5L12 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S.S
Double Contingency (SLG on both lines with different phases)	5L13 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S.S
	5L61 MP	No generation shedding required
	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L1_7	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.04 * ((5L1 + 5L2) GMS - 1450)$ [Voltage Stability]
	5L2_7	Same as 5L2_3 in this table.
	5L11_12	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
	5L11_13	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
	5L12_13	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
Series Capacitor Bypass	KDY 5CX2	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * ((5L1 + 5L2) GMS - (-0.32 * 2L103 KIT + 2788))$ [Voltage Stability]
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.12 – (5L3 or 5L7 or (5L3 & 5L7)) AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L2 GMS < 2900 MW
- Winter: 5L1 GMS + 5L2 GMS < 3150 MW

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.03 * ((5L1 + 5L2) GMS - (-0.55 * 2L103 KIT + 1636))$ [Voltage Stability]
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L4	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
Multi-phase Contingency	5L11 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S
	5L12 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S
Double Contingency (SLG on both lines with different phases)	5L13 MP	Same as Table 5.5.1 – 5L1 AND KDY 5CX2 O.O.S
	5L61 MP	No generation shedding required
	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * ((5L1 + 5L2) GMS - 1450)$ [Voltage Stability]
	5L1_7	Same as 5L1_3 in this table.
	5L2_3	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L2_7	Same as 5L2_3 in this table
	5L11_12	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
	5L11_13	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
	5L12_13	Same as Table 5.5.1 - 5L1 AND KDY 5CX2 OOS
Series Capacitor Bypass	KDY 5CX1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * ((5L1 + 5L2) GMS - (-0.32 * 2L103 KIT + 2788))$ [Voltage Stability]
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.13 – (5L3 or 5L7 or (5L3 & 5L7)) AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L2 GMS < 3870 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L4	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11	No generation shedding required
	5L12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no gen-shedding is required If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.74 * (0.61 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * (5L11 + 5L12 + 5L13) \text{ WSN} - A \text{ MW} - \text{armed GS amount at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11 MP	No generation shedding required
	5L12 MP	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} - 2350)</math> [Voltage Stability];</li> <li>• <math>1.03 * [5L1 \text{ GMS} + 5L2 \text{ GMS} - 5L2\_Over\_Rating]</math></li> </ul>
	5L1_7	Same as 5L1_3 in this table.
	5L2_3	Gen-shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} - 2350)</math> [Voltage Stability];</li> <li>• <math>1.03 * [5L1 \text{ GMS} + 5L2 \text{ GMS} - 5L1\_Over\_Rating]</math></li> </ul>
	5L2_7	Same as 5L2_3 in this table.
	5L11_12	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11_13	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L12_13	Same as Table 5.5.3 - 5L1 AND MLS 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	KDY 5CX2	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.14 – (5L3 or 5L7 or (5L3 & 5L7)) AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L2 GMS < 3870 MW
- Winter: No generation restriction

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L4	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no GS is required. If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.11 * (P1 + P2 + 0.9 * P3 - 3685 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.74 * (0.61 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>1.03 * (5L11 + 5L12 + 5L13) \text{ WSN} - A - \text{armed GS amount at KMO/FKR/VOL/MCY}</math>, where <math>A = -0.075 * \text{BCH Load} + 3578</math> [Voltage Stability]</li> </ul>
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11 MP	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L1_7	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L2_3	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L2_7	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L11_12	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L11_13	Same as Table 5.5.4 - 5L1 AND MLS 5CX2 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	KDY 5CX1	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	KDY 5CX2	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.15 – (5L3 or 5L7 or (5L3 & 5L7)) AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L2 GMS < 3870 MW**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L1_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L2	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L2_3 or 5L1_7 Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	5L4	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no gen-shedding is required If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: • $1.11 * (P1 + P2 + 0.9 * P3 - 3685)$ – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability] • $1.74 * (0.61 * 5L11 WSN + 5L12 WSN - 5L12\_Over\_Rating)$ – armed GS amount at KMO/FKR/VOL/MCY • $1.03 * ((5L11 + 5L12 + 5L13) WSN - A)$ – armed GS amount at KMO/FKR/VOL/MCY, where $A = -0.075 * BCH Load + 3578$ [Voltage Stability]
5L12	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.9 * P3 < 3685$ , no gen-shedding is required If $P1 + P2 + 0.9 * P3 \geq 3685$ , then Gen shed at KMO: Level 1 [Transient Stability], or Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: • $1.11 * (P1 + P2 + 0.69 * P3 - 3685)$ – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability] • $1.74 * (0.61 * 5L12 WSN + 5L11 WSN - 5L11\_Over\_Rating)$ – armed GS amount at KMO/FKR/VOL/MCY • $1.03 * ((5L11 + 5L12 + 5L13) WSN - A)$ – armed GS amount at KMO/FKR/VOL/MCY, where $A = -0.075 * BCH Load + 3578$ [Voltage Stability]	
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	This MP contingency will be covered by double contingency of 5L1_3 or 5L1_7
	5L2 MP	This MP contingency will be covered by double contingency of 5L2_3 or 5L2_7
	5L4 MP	Same as Table 5.2.3 - 5L3 OR 5L7 OR (5L3 AND 5L7) OOS
	5L11 MP	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
	5L12 MP	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L1_7	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L2_3	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L2_7	Same as Table 5.5.13 - (5L3 or 5L7 or (5L3 & 5L7)) and MLS 5CX1 OOS
	5L11_12	Same as Table 5.5.5 - 5L1 AND MLS 5CX3 OOS
	5L11_13	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	KDY 5CX1	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	KDY 5CX2	Same as Table 5.2.3 - 5L3 or 5L7 or (5L3 AND 5L7) OOS
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.16 – 5L4 AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: 5L1 GMS + 5L2 GMS < 2900 MW**
- **Winter: 5L1 GMS + 5L2 GMS < 3150 MW**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS	
SLG or No Fault Opening	5L1	Same as Table 5.2.4 - 5L4 OOS	
	5L2	Gen shed at DKW/QTY/MKL first, then GMS: 1.01 * ((5L1 + 5L2) GMS - (- 0.10 * 2L103 KIT + 1434)) [Voltage Stability]	
	5L3	Same as Table 5.2.4 - 5L4 OOS	
	5L7	Same as Table 5.2.4 - 5L4 OOS	
	5L11	No generation shedding required	
	5L12	No generation shedding required	
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.67 * P2 \geq 240$ MW Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at DKW/QTY/MKL first, then GMS: 1.02 * ((5L1 + 5L2) GMS - 1460) [Voltage Stability]	
	5L3 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L7 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L11 MP	Same as Table 5.3.1 – KDY 5CX1 OOS	
	5L12 MP	Same as Table 5.3.1 – KDY 5CX1 OOS	
Multi-phase Contingency	5L13 MP	Same as Table 5.3.1 – KDY 5CX1 OOS	
	5L61 MP	No generation shedding required	
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 - 5L4 OOS	
	5L1_3	Same as Table 5.2.4 - 5L4 OOS	
	5L1_7	Same as Table 5.2.4 - 5L4 OOS	
	5L2_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.56 * P2 \geq 280$ MW AND $P3 > 700$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L3 PCN - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW  Keep at least two PCN units online post shedding.  Gen shed at GMS: 1.04 * [(5L1 + 5L2) GMS + 5L3 PCN – Armed GS MW at DKW/MKL/QTY/PCN – 1450] [Voltage Stability]	
	5L2_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.56 * P2 \geq 280$ MW AND $P3 > 700$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L7 KDS - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW  Keep at least two PCN units online post shedding.  Gen shed at GMS: 1.04 * [(5L1 + 5L2) GMS + 5L7 KDS – Armed GS MW at DKW/MKL/QTY/PCN – 1450] [Voltage Stability]	
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS	
	5L11_13	Same as Table 5.3.1 – KDY 5CX1 OOS	
	5L12_13	Same as Table 5.3.1 – KDY 5CX1 OOS	
	Series Capacitor Bypass	KDY 5CX2	No generation shedding required
		KDY 5CX3	No generation shedding required
MLS 5CX1		No generation shedding required	
MLS 5CX2		No generation shedding required	
MLS 5CX3		No generation shedding required	

**Table 5.5.17 – 5L4 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: 5L1 GMS + 5L2 GMS < 2900 MW
- Winter: 5L1 GMS + 5L2 GMS < 3150 MW

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS	
SLG or No Fault Opening	5L1	Gen shed at DKW/QTY/MKL first, then GMS: 1.01 * ((5L1 + 5L2) GMS - (- 0.10 * 2L103 KIT + 1434)) [Voltage Stability]	
	5L2	Same as Table 5.2.4 - 5L4 OOS	
	5L3	Same as Table 5.2.4 - 5L4 OOS	
	5L7	Same as Table 5.2.4 - 5L4 OOS	
	5L11	No generation shedding required	
	5L12	No generation shedding required	
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + 0.67 * P2 >= 240 MW Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at DKW/QTY/MKL first, then GMS: 1.02 * ((5L1 + 5L2) GMS - 1460) [Voltage Stability]	
	5L2 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L3 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L7 MP	Same as Table 5.2.4 - 5L4 OOS	
	5L11 MP	Same as Table 5.3.2 – KDY 5CX2 OOS	
	5L12 MP	Same as Table 5.3.2 – KDY 5CX2 OOS	
Multi-phase Contingency	5L13 MP	Same as Table 5.3.2 – KDY 5CX2 OOS	
	5L61 MP	No generation shedding required	
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 - 5L4 OOS	
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + 0.56 * P2 >= 280 MW AND P3 > 700 MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L3 PCN - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW  Keep at least two PCN units online post shedding.  Gen shed at GMS: 1.04 * [(5L1 + 5L2) GMS + 5L3 PCN – Armed GS MW at DKW/MKL/QTY/PCN – 1450] MW [Transient Stability]	
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + 0.56 * P2 >= 280 MW AND P3 > 700 MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ GS = 5L7 KDS - (2L308 GMS + 1L361 GMS + 1L364 GMS) – 400 MW  Keep at least two PCN units online post shedding.  Gen shed at GMS: 1.04 * [(5L1 + 5L2) GMS + 5L7 KDS – Armed GS MW at DKW/MKL/QTY/PCN – 1450] MW [Transient Stability]	
	5L2_3	Same as Table 5.2.4 - 5L4 OOS	
	5L2_7	Same as Table 5.2.4 - 5L4 OOS	
	5L11_12	Same as Table 5.3.2 – KDY 5CX2 OOS	
	5L11_13	Same as Table 5.3.2 – KDY 5CX2 OOS	
	5L12_13	Same as Table 5.3.2 – KDY 5CX2 OOS	
	Series Capacitor Bypass	KDY 5CX1	No generation shedding required
		KDY 5CX3	No generation shedding required
MLS 5CX1		No generation shedding required	
MLS 5CX2		No generation shedding required	
MLS 5CX3		No generation shedding required	

**Table 5.5.18 – 5L4 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- Summer: No generation restriction
- Winter: No generation restriction

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 - 5L4 OOS
	5L2	Same as Table 5.2.4 - 5L4 OOS
	5L3	Same as Table 5.2.4 - 5L4 OOS
	5L7	Same as Table 5.2.4 - 5L4 OOS
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed	5L1 MP	Same as Table 5.2.4 - 5L4 OOS
	5L2 MP	Same as Table 5.2.4 - 5L4 OOS
	5L3 MP	Same as Table 5.2.4 - 5L4 OOS
	5L7 MP	Same as Table 5.2.4 - 5L4 OOS
	5L11 MP	Same as Table 5.3.3 – KDY 5CX3 OOS

requirement	5L12 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Islanding – Refer to Attachment 5 of SOO 7T-13
	5L1_3	Same as Table 5.2.4 - 5L4 OOS
	5L1_7	Same as Table 5.2.4 - 5L4 OOS
	5L2_3	Same as Table 5.2.4 - 5L4 OOS
	5L2_7	Same as Table 5.2.4 - 5L4 OOS
	5L11_12	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L11_13	Same as Table 5.3.3 – KDY 5CX3 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.3.3 – KDY 5CX3 OOS
	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.19 – 5L4 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: No generation restriction**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 - 5L4 OOS
	5L2	Same as Table 5.2.4 - 5L4 OOS
	5L3	Same as Table 5.2.4 - 5L4 OOS
	5L7	Same as Table 5.2.4 - 5L4 OOS
	5L11	No generation shedding required
	5L12	Same as Table 5.3.4 – MLS 5CX1 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 - 5L4 OOS
	5L2 MP	Same as Table 5.2.4 - 5L4 OOS
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.24 * P3 < 1296$ , no gen-shedding is required; If $P1 + P2 + 0.24 * P3 \geq 1296$ , then Gen shed at KMO: Level 1, and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L3 PCN - (2L308 GMS + 1L361 GMS + 1L364 GMS) - 400 MW$  Keep at least two PCN units online post shedding.  Gen-shed at GMS: $4.17 * [(P1 + P2 + 0.24 * P3) - 1296 - \text{the armed gen-shedding amount at KMO/FKR/VOL/MCY/DKW/MKL/QTY/PCN}]$ [Transient Stability]
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.24 * P3 < 1296$ , no gen shedding is required; If $P1 + P2 + 0.24 * P3 \geq 1296$ , then Gen shed at KMO: Level 1, and Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L7 KDS - (2L308 GMS + 1L361 GMS + 1L364 GMS) - 400 MW$  Keep at least two PCN units online post shedding.  Gen shed at GMS: $4.17 * [(P1 + P2 + 0.24 * P3) - 1296 - \text{the armed gen shedding amount at KMO/FKR/VOL/MCY/DKW/MKL/QTY/PCN}]$ [Transient Stability]
	5L11 MP	No generation shedding required
5L12 MP	Same as Table 5.3.4 – MLS 5CX1 OOS	
Multi-phase Contingency	5L13 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.4 - 5L4 OOS
	5L1_3	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390 MW$ AND $P3 > 800 MW$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L3 PCN - (2L308 GMS + 1L361 GMS + 1L364 GMS) - 400 MW$  Keep at least two PCN units online post-shedding.  Gen shed at GMS, the greater of: • $1.03 * [(5L1 + 5L2) GMS + 5L3 PCN - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2350]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) GMS + 5L3 PCN - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L2\_Over\_Rating]$
	5L1_7	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.63 * P2 \geq 390 MW$ AND $P3 > 800 MW$ , then, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at DKW/MKL/QTY first, then PCN second: ➤ $GS = 5L7 KDS - (2L308 GMS + 1L361 GMS + 1L364 GMS) - 400 MW$



		<p>Keep at least two PCN units online post-shedding.</p> <p>Gen-shed at GMS, the greater of:</p> <ul style="list-style-type: none"> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2350]</math> [Voltage Stability]</li> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L2 \text{ Over Rating}]</math></li> </ul>
	5L2_3	<p>Gen shed requirements at KMO/FKR/VOL/MCY:                  If <math>P1 + 0.63 * P2 \geq 390 \text{ MW}</math> AND <math>P3 &gt; 800 \text{ MW}</math>, then,                  Gen shed at KMO: Level 1 [Transient Stability]                  Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]</p> <p>Gen shed at DKW/MKL/QTY first, then PCN second:                  ➤ <math>\text{GS} = 5L3 \text{ PCN} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}</math></p> <p>Keep at least two PCN units online post-shedding.</p> <p>Gen shed at GMS, the greater of:</p> <ul style="list-style-type: none"> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2350]</math> [Voltage Stability]</li> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L1 \text{ Over Rating}]</math></li> </ul>
	5L2_7	<p>Gen shed requirements at KMO/FKR/VOL/MCY:                  If <math>P1 + 0.63 * P2 \geq 390 \text{ MW}</math> AND <math>P3 &gt; 800 \text{ MW}</math>, then,                  Gen shed at KMO: Level 1 [Transient Stability]                  Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]</p> <p>Gen shed at DKW/MKL/QTY first, then PCN second:                  ➤ <math>\text{GS} = 5L7 \text{ KDS} - (2L308 \text{ GMS} + 1L361 \text{ GMS} + 1L364 \text{ GMS}) - 400 \text{ MW}</math></p> <p>Keep at least two PCN units online post shedding.</p> <p>Gen shed at GMS, the greater of:</p> <ul style="list-style-type: none"> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 2350]</math> [Voltage Stability]</li> <li>• <math>1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - \text{Armed GS MW at DKW/MKL/QTY/PCN} - 5L1 \text{ Over Rating}]</math></li> </ul>
	5L11_12	Same as Table 5.1.1 – System Normal
	5L11_13	Same as Table 5.1.1 – System Normal
	5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.20 – 5L4 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: No generation restriction**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 - 5L4 OOS
	5L2	Same as Table 5.2.4 - 5L4 OOS
	5L3	Same as Table 5.2.4 - 5L4 OOS
	5L7	Same as Table 5.2.4 - 5L4 OOS
	5L11	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 - 5L4 OOS
	5L2 MP	Same as Table 5.2.4 - 5L4 OOS
	5L3 MP	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 MP	No generation shedding required
Multi-phase Contingency	5L13 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.2.4 - 5L4 OOS
	5L1 3	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L1 7	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L2 3	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L2 7	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L11 12	Same as Table 5.1.1 - System Normal
	5L11 13	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 13	Same as Table 5.1.1 - System Normal
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.21 – 5L4 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit:**

- **Summer: No generation restriction**
- **Winter: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.2.4 - 5L4 OOS
	5L2	Same as Table 5.2.4 - 5L4 OOS
	5L3	Same as Table 5.2.4 - 5L4 OOS
	5L7	Same as Table 5.2.4 - 5L4 OOS
	5L11	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12	Same as Table 5.3.6 – MLS 5CX3 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.4 - 5L4 OOS
	5L2 MP	Same as Table 5.2.4 - 5L4 OOS
	5L3 MP	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	No generation shedding required
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.2.4 - 5L4 OOS
	5L1 3	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L1 7	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L2 3	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L2 7	Same as Table 5.5.19 - 5L4 AND MLS 5CX1 OOS
	5L11 12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11 13	Same as Table 5.1.1 - System Normal
	5L12 13	Same as Table 5.1.1 - System Normal
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.22 – 5L11 AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 3500 MW**
- **Winter: (5L12 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over\_Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L3	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L3 \text{ PCN} + 5L2 \text{ GMS} - 5L2 \text{ Over\_Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L7	Gen shed at DKW/QTY/MKL first, then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L7 \text{ KDS} + 5L2 \text{ GMS} - 5L2 \text{ Over\_Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L7 \text{ KDS} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L4	No generation shedding required
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen-shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3354$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3604$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3354 - 1.08 * \text{armed GS amount at KMO} - 1.06 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3604 - 1.68 * \text{armed GS amount at KMO} - 1.95 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L12 + 5L13) \text{ WSN} - 5L13 \text{ Over\_Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.2.5 - 5L11 OOS
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.54 * [5L3 \text{ PCN} + 0.65 * 5L2 \text{ GMS} - 5L3 \text{ Over\_Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN; the greater of: <ul style="list-style-type: none"> <li>• <math>1.54 * [5L2 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L2 \text{ Over\_Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN; the greater of: <ul style="list-style-type: none"> <li>• <math>1.54 * [5L2 \text{ GMS} + 0.65 * 5L7 \text{ KDS} - 5L2 \text{ Over\_Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L7 \text{ KDS} - 3000)</math> [Voltage Stability]</li> </ul>
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 280$ MW and $P3 \geq 1400$ MW, Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Same as Table 5.2.5 - 5L11 OOS
	5L1_7	Same as Table 5.2.5 - 5L11 OOS
	5L2_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * ((5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1200)$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280$ MW AND $P3 > 100$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L2_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * ((5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 1200)$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280$ MW AND $P3 > 100$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L11_12	Same as Table 5.2.5 - 5L11 OOS
	5L11_13	Same as Table 5.2.5 - 5L11 OOS
Series Capacitor Bypass	5L12_13	Refer to Attachment 5 of SOO 7T-13
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
MLS 5CX3	No generation shedding required	

**Table 5.5.23 – 5L11 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 3500 MW**
- **Winter: (5L12 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L2	No generation shedding required
	5L3	Gen shed at DKW/QTY/MKL first, then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L3 \text{ PCN} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L7	Gen shed at DKW/QTY/MKL first, then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L7 \text{ KDS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L7 \text{ KDS} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L4	No generation shedding required
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of : <ul style="list-style-type: none"> <li>• <math>1.54 * [5L3 \text{ PCN} + 0.65 * 5L1 \text{ GMS} - 5L3 \text{ Over Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L2 MP	Same as Table 5.2.5 - 5L11 OOS
	5L3 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN; the greater of: <ul style="list-style-type: none"> <li>• <math>1.54 * [5L1 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L1 \text{ Over Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN; the greater of: <ul style="list-style-type: none"> <li>• <math>1.54 * [5L1 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L1 \text{ Over Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L7 \text{ KDS} - 3000)</math> [Voltage Stability]</li> </ul>
	5L4 MP	Same as Table 5.5.22 – 5L11 AND KDY 5CX1
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1200]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280 \text{ MW}$ AND $P3 > 100 \text{ MW}$ , then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L1_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 1200]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280 \text{ MW}$ AND $P3 > 100 \text{ MW}$ , then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L2_3	Same as Table 5.2.5 - 5L11 OOS
	5L2_7	Same as Table 5.2.5 - 5L11 OOS
	5L11_12	Same as Table 5.2.5 - 5L11 OOS
	5L11_13	Same as Table 5.2.5 - 5L11 OOS
	5L12_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.24 – 5L11 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 3500 MW**
- **Winter: (5L12 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at DKW/QTY/MKL first, then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L1 \text{ GMS} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L2	Gen shed at DKW/QTY/MKL first, then GMS/PCN: <ul style="list-style-type: none"> <li>• <math>1.53 * (0.64 * 5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})</math></li> <li>• <math>1.01 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - (-0.19 * 2L103 \text{ KIT} + 2983))</math> [Voltage Stability]</li> </ul>
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11 12 Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of : <ul style="list-style-type: none"> <li>• <math>1.54 * [5L2 \text{ GMS} + 0.65 * 5L1 \text{ GMS} - 5L2 \text{ Over Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of : <ul style="list-style-type: none"> <li>• <math>1.54 * [5L1 \text{ GMS} + 0.65 * 5L2 \text{ GMS} - 5L1 \text{ Over Rating}]</math></li> <li>• <math>1.03 * (5L1 \text{ GMS} + 5L2 \text{ GMS} + 5L3 \text{ PCN} - 3000)</math> [Voltage Stability]</li> </ul>
	5L3 MP	Same as Table 5.2.5 - 5L11 OOS
	5L7 MP	Same as Table 5.2.5 - 5L11 OOS
	5L4 MP	Same as Table 5.5.22 – 5L11 AND KDY 5CX1 OOS
	5L12 MP	This MP contingency will be covered by double contingency of 5L11 12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11 13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1200]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280 \text{ MW}$ AND $P3 > 100 \text{ MW}$ , then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L1 3	Same as Table 5.2.5 - 5L11 OOS
	5L1 7	Same as Table 5.2.5 - 5L11 OOS
	5L2 3	Same as Table 5.2.5 - 5L11 OOS
	5L2 7	Same as Table 5.2.5 - 5L11 OOS
	5L11 12	Same as Table 5.2.5 - 5L11 OOS
	5L11 13	Same as Table 5.2.5 - 5L11 OOS
5L12 13	Refer to Attachment 5 of SOO 7T-13	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.25 – 5L11 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 2600 MW**
- **Winter: (5L12 + 5L13) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * [(5L12 + 5L13) WSN - 5L13 \text{ Over Rating}]$
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * [(5L1 + 5L2) GMS + 5L3 PCN - 1880] \text{ [Voltage Stability]}$
	5L1_3	Same as above 5L1_2 contingency
	5L1_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.01 * [(5L1 + 5L2) GMS + 5L7 KDS - 1880] \text{ [Voltage Stability]}$
	5L2_3	Same as above 5L1_2 contingency
	5L2_7	Same as above 5L1_7 contingency
	5L11_12	Same as Table 5.2.5 – 5L11 OOS
	5L11_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen-shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1[Transient Stability] Gen shed at FKR/VOL/MCY: Level 3[Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.96 * (P1 + P2 + 0.51 * P3 - 1083 - \text{armed gen shed at KMO/FKR/VOL/MCY}) \text{ [Transient Stability]}</math></li> <li>• <math>1.03 * [(5L13 + 5L12) WSN - 5L12 \text{ BypassMLS Over Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>7.14 * (2L96 WSN + 0.14 * 5L13 WSN - 2L96 \text{ Over Rating}) - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L12_13	Refer to Attachment 5 of SOO 7T-13
	Series Capacitor Bypass	KDY 5CX1
KDY 5CX2		No generation shedding required
KDY 5CX3		No generation shedding required
MLS 5CX3		No generation shedding required

**Table 5.5.26 – 5L11 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L12 + 5L13) WSN < 2600 MW**
- **Winter: (5L12 + 5L13) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.86 * P3 < 1941$ , no GS is required. If $P1 + P2 + 0.86 * P3 \geq 1941$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.16 * (P1 + P2 + 0.86 * P3 - 1941)</math> – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.05 * [(5L12 + 5L13) WSN - 5L13\_BypassMLS\_Over\_Rating]</math> – armed GS amount at KMO/FKR/VOL/MCY</li> <li>• <math>7.26 * (0.13 * 5L12 WSN + 2L96 WSN - 2L96\_Over\_Rating)</math> – armed GS amount at KMO/FKR/VOL/MCY</li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L12 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L11_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L11_12	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed t at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.96 * (P1 + P2 + 0.51 * P3 - 1083)</math> – armed gen shed at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.03 * [(5L13 + 5L12) WSN - 5L13\_BypassMLS\_Over\_Rating]</math> – armed gen shed at KMO/FKR/VOL/MCY</li> <li>• <math>7.14 * [2L96 WSN + 0.14 * 5L12 WSN - 2L96\_Over\_Rating]</math> – armed gen shed at KMO/FKR/VOL/MCY</li> </ul>
	5L11_13	Same as Table 5.2.5 – 5L11 OOS
	5L12_13	Refer to Attachment 5 of SOO 7T-13
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.27 – 5L12 AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 3500 MW**
- **Winter: (5L11 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L3	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L7	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3354$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3604$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3354 - 1.08 * \text{armed GS amount at KMO} - 1.06 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3604 - 1.68 * \text{armed GS amount at KMO} - 1.95 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L13) \text{ WSN} - 5L13 \text{ Over Rating}] - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L2 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L3 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L7 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L4 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Same as Table 5.2.5 - 5L11 OOS
	5L1_7	Same as Table 5.2.5 - 5L11 OOS
	5L2_3	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L2_7	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L11_12	Same as Table 5.2.6 - 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
	5L12_13	Same as Table 5.2.6 - 5L12 OOS
Series Capacitor Bypass	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.28 – 5L12 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 3500 MW**
- **Winter: (5L11 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2	No generation shedding required
	5L3	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L7	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.5.27 - 5L12 and KDY 5CX1 OOS.
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L3 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L7 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L4 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L1_7	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2_3	Same as Table 5.2.5 - 5L11 OOS
	5L2_7	Same as Table 5.2.5 - 5L11 OOS
	5L11_12	Same as Table 5.2.6 - 5L12 OOS
	5L11_13	Refer to Attachment 5 of SOO 7T-13
	5L12_13	Same as Table 5.2.6 - 5L12 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required



**Table 5.5.29 – 5L12 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 3500 MW**
- **Winter: (5L11 + 5L13) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L2	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Same as Table 5.5.27 - 5L12 and KDY 5CX1 OOS
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L2 MP	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L3 MP	Same as Table 5.2.5 - 5L11 OOS
	5L7 MP	Same as Table 5.2.5 - 5L11 OOS
	5L4 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11 12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12 13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L1 3	Same as Table 5.2.5 - 5L11 OOS
	5L1 7	Same as Table 5.2.5 - 5L11 OOS
	5L2 3	Same as Table 5.2.5 - 5L11 OOS
	5L2 7	Same as Table 5.2.5 - 5L11 OOS
	5L11 12	Same as Table 5.2.6 - 5L12 OOS
	5L11 13	Refer to Attachment 5 of SOO 7T-13
	5L12 13	Same as Table 5.2.6 - 5L12 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.30 – 5L12 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 2600 MW**
- **Winter: (5L11 + 5L13) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * [(5L11 + 5L13) WSN - 5L13\_Over\_Rating]$
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L11 MP	This MP contingency will be covered by double contingency of 5L11 12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12 13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1 3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1 7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2 3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2 7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L11 12	Same as Table 5.2.6 - 5L12 OOS
	5L11 13	Refer to Attachment 5 of SOO 7T-13
	5L12_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen-shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: • $1.96 * (P1 + P2 + 0.51 * P3 - 1083 - \text{armed gen shed at KMO/FKR/VOL/MCY})$ [Transient Stability] • $1.03 * [(5L11 + 5L13) WSN - 5L11 \text{ BypassMLS Over Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}$ • $7.14 * [2L96 WSN + 0.14 * 5L13 WSN - 2L96\_Over\_Rating]$ – armed gen shed at KMO/FKR/VOL/MCY
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.5.31 – 5L12 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L13) WSN < 2600 MW**
- **Winter: (5L11 + 5L13) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_12 Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.86 * P3 < 1941$ , no GS is required. If $P1 + P2 + 0.86 * P3 \geq 1941$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.16 * (P1 + P2 + 0.86 * P3 - 1941)</math> – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L13) WSN - 5L13\_BypassMLS\_Over\_Rating)</math> – armed GS amount at KMO/FKR/VOL/MCY</li> <li>• <math>7.26 * (0.13 * 5L11 WSN + 2L96 WSN - 2L96\_Over\_Rating)</math> – armed GS amount at KMO/FKR/VOL/MCY</li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_12
Multi-phase Contingency	5L13 MP	Same as double contingency of 5L12_13 in this table
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L11_12	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen-shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.96 * (P1 + P2 + 0.51 * P3 - 1083)</math> – armed gen shed at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.03 * ((5L11 + 5L13) WSN - 5L13\_BypassMLS\_Over\_Rating)</math> – armed gen shed at KMO/FKR/VOL/MCY</li> <li>• <math>7.14 * [2L96 WSN + 0.14 * 5L11 WSN - 2L96\_Over\_Rating]</math> – armed gen shed at KMO/FKR/VOL/MCY</li> </ul>
	5L11_13	Refer to Attachment 5 of SOO 7T-13
	5L12_13	Same as Table 5.2.6 - 5L12 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.32 – 5L13 AND KDY 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 3500 MW**
- **Winter: (5L11 + 5L12) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY	SHEDDING REQUIREMENTS	
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L3	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L7	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3354$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3604$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen-shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3354 - 1.08 * \text{armed GS amount at KMO} - 1.06 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3604 - 1.68 * \text{armed GS amount at KMO} - 1.95 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L12) \text{ WSN} - 5L12 \text{ Over Rating}] - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $1.08 * P1 + 1.06 * P2 + P3 \geq 3354$ OR $1.68 * P1 + 1.95 * P2 + P3 \geq 3604$ , then Gen shed at KMO: Level 2 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.08 * P1 + 1.06 * P2 + P3 - 3354 - 1.08 * \text{armed GS amount at KMO} - 1.06 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.68 * P1 + 1.95 * P2 + P3 - 3604 - 1.68 * \text{armed GS amount at KMO} - 1.95 * \text{armed GS amount at FKR/VOL/MCY}</math> [Transient Stability]</li> <li>• <math>1.05 * [(5L11 + 5L12) \text{ WSN} - 5L11 \text{ Over Rating}] - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L2 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L3 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L7 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L4 MP	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Same as Table 5.2.5 - 5L11 OOS
	5L1_7	Same as Table 5.2.5 - 5L11 OOS
	5L2_3	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L2_7	Same as Table 5.5.22 - 5L11 and KDY 5CX1 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 - 5L13 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.2.7 - 5L13 OOS
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.33 – 5L13 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 3500 MW**
- **Winter: (5L11 + 5L12) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2	No generation shedding required
	5L3	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L7	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Same as Table 5.5.32 - 5L13 and KDY 5CX1 OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Same as Table 5.5.32 - 5L13 and KDY 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L3 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L7 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L4 MP	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.2.5 - 5L11 OOS
	5L1_3	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L1_7	Same as Table 5.5.23 - 5L11 and KDY 5CX2 OOS
	5L2_3	Same as Table 5.2.5 - 5L11 OOS
	5L2_7	Same as Table 5.2.5 - 5L11 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 - 5L13 OOS
	5L12_13	Same as Table 5.2.7 - 5L13 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.34 – 5L13 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 3500 MW**
- **Winter: (5L11 + 5L12) WSN < 3500 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L2	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Same as Table 5.5.32 - 5L13 and KDY 5CX1 OOS
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Same as Table 5.5.32 - 5L13 and KDY 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L2 MP	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L3 MP	Same as Table 5.2.5 - 5L11 OOS
	5L7 MP	Same as Table 5.2.5 - 5L11 OOS
	5L4 MP	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.24 - 5L11 and KDY 5CX3 OOS
	5L1_3	Same as Table 5.2.5 - 5L11 OOS
	5L1_7	Same as Table 5.2.5 - 5L11 OOS
	5L2_3	Same as Table 5.2.5 - 5L11 OOS
	5L2_7	Same as Table 5.2.5 - 5L11 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 - 5L13 OOS
	5L12_13	Same as Table 5.2.7 - 5L13 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.35 – 5L13 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 2600 MW**
- **Winter: (5L11 + 5L12) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * ((5L11 + 5L12) WSN - 5L12 \text{ Over Rating})$
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.86 * P3 < 1941$ , no GS is required. If $P1 + P2 + 0.86 * P3 \geq 1941$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.16 * (P1 + P2 + 0.86 * P3 - 1941 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L12) WSN - 5L11 \text{ BypassMLS\_Over\_Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>7.26 * (0.13 * 5L12 WSN + 2L96 WSN - 2L96 \text{ Over Rating}) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Same as Table 5.2.7 – 5L13 OOS
	5L12_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen-shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.96 * (P1 + P2 + 0.51 * P3 - 1083 - \text{armed gen shed at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.03 * ((5L11 + 5L12) WSN - 5L11 \text{ BypassMLS\_Over\_Rating}) - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>7.14 * [2L96 WSN + 0.14 * 5L12 WSN - 2L96 \text{ Over Rating}] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.5.36 – 5L13 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12) WSN < 2600 MW**
- **Winter: (5L11 + 5L12) WSN < 2600 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L11_13 Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.86 * P3 < 1941$ , no GS is required. If $P1 + P2 + 0.86 * P3 \geq 1941$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.16 * (P1 + P2 + 0.86 * P3 - 1941 - \text{armed GS amount at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.05 * ((5L11 + 5L12) \text{ WSN} - 5L12\_BypassMLS\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> <li>• <math>7.26 * (0.13 * 5L11 \text{ WSN} + 2L96 \text{ WSN} - 2L96\_Over\_Rating) - \text{armed GS amount at KMO/FKR/VOL/MCY}</math></li> </ul>
	5L12	Gen shed arming for this requirement shall be sub-set of gen shed arming for 5L12_13 Gen shed at DKW/QTY/MKL first, then GMS/PCN: $1.01 * ((5L11 + 5L12) \text{ WSN} - 5L11\_Over\_Rating)$
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L11 MP	This MP contingency will be covered by double contingency of 5L11_13
	5L12 MP	This MP contingency will be covered by double contingency of 5L12_13
Multi-phase Contingency	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L1_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_3	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L2_7	Same as Table 5.5.25 - 5L11 AND MLS 5CX2 OOS
	5L11_12	Refer to Attachment 5 of SOO 7T-13
	5L11_13	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.51 * P3 < 1083$ , no gen-shedding is required; If $P1 + P2 + 0.51 * P3 \geq 1083$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>1.96 * (P1 + P2 + 0.51 * P3 - 1083 - \text{armed gen shed at KMO/FKR/VOL/MCY})</math> [Transient Stability]</li> <li>• <math>1.03 * ((5L11 + 5L12) \text{ WSN} - 5L12\_BypassMLS\_Over\_Rating) - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> <li>• <math>7.14 * [2L96 \text{ WSN} + 0.14 * 5L12 \text{ WSN} - 2L96\_Over\_Rating] - \text{armed gen shed at KMO/FKR/VOL/MCY}</math></li> </ul>
5L12_13	Same as Table 5.2.7 – 5L13 OOS	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required

5.6 **Two of GMS/PCN - KLY 500 kV Series Capacitor Banks Out of Service**

**Table 5.6.1 – KDY 5CX1 AND KDY 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L1 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L2	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L2 \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating})$
	5L3	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - (-0.28 * 2L103 \text{ KIT} + 2828)]$ [Voltage Stability]
	5L7	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - (-0.28 * 2L103 \text{ KIT} + 2828)]$ [Voltage Stability]
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L3 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2800 \text{ MW}]$ [Voltage Stability]
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2800 \text{ MW}]$ [Voltage Stability]
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 1800 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first, then at GMS: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 3500 \text{ MW}]$ [Voltage Stability]
	5L11 MP	Same as Table 5.2.1 - 5L1 OOS
	5L12 MP	Same as Table 5.2.1 - 5L1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.2.1 - 5L1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.1.1 – System Normal
	5L1 3	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L1 7	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2 3	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L2 7	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11 12	Same as Table 5.2.1 - 5L1 OOS
	5L11 13	Same as Table 5.2.1 - 5L1 OOS
Series Capacitor Bypass	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.2 – KDY 5CX1 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L1 \text{ GMS} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L2	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - (-0.28 * 2L103 \text{ KIT} + 2828)]$ [Voltage Stability]
	5L3	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L3 \text{ PCN} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L7	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L7 \text{ KDS} + 5L2 \text{ GMS} - 5L2 \text{ Over Rating})$
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.3.3 – KDY 5CX3 O.O.S
	5L2 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen-shed at MKL/DKW/QTY first, and then GMS/PCN: $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2800 \text{ MW}]$ [Voltage Stability]
	5L3 MP	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L7 MP	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 1800 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L11 MP	Same as Table 5.2.1 - 5L1 OOS
	5L12 MP	Same as Table 5.2.1 - 5L1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.2.1 - 5L1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.3.3 – KDY 5CX3 O.O.S
	5L1 3	Same as Table 5.1.1 – System Normal
	5L1 7	Same as Table 5.1.1 – System Normal
	5L2 3	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L2 7	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L11 12	Same as Table 5.2.1 - 5L1 OOS
	5L11 13	Same as Table 5.2.1 - 5L1 OOS
Series Capacitor Bypass	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required



**Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**

GMS to WSN transfer limit: No generation restriction

WSN to KLY transfer limit: No generation restriction

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L3	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L7	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	Gen shed requirements at KMO/FKR/VOL/MCY: If $1.41 * P1 + 1.65 * P2 + P3 \Rightarrow 4324$ , then Gen shed at KMO: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.41 * P1 + 1.65 * P2 + P3 - 4324 - 1.41 * \text{armed GS amount at KMO}</math> [Transient Stability]</li> <li><math>1.81 * (0.63 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over\_Rating}) - \text{armed GS amount at KMO}</math></li> </ul>
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: <ul style="list-style-type: none"> <li><math>1.54 * (5L2 \text{ GMS} + 0.65 * 5L3 \text{ PCN} - 5L2 \text{ Over\_Rating})</math></li> </ul>
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L2 \text{ GMS} + 0.65 * 5L7 \text{ KDS} - 5L2 \text{ Over\_Rating})$
	5L4 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.60 * P2 \geq 300 \text{ MW}$ and $P3 \geq 1800 \text{ MW}$ , Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]
	5L11 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1350]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280 \text{ MW}$ AND $P3 > 400 \text{ MW}$ , then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L2_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 1350]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280 \text{ MW}$ AND $P3 > 400 \text{ MW}$ , then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.4 – KDY 5CX1 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L3	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L7	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L4	No generation shedding required
	5L11	Gen shed requirements at KMO/FKR/VOL/MCY: If $1.41 * P1 + 1.65 * P2 + P3 \Rightarrow 4324$ , then Gen shed at KMO: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li>• <math>1.41 * P1 + 1.65 * P2 + P3 - 4324 - 1.41 * \text{armed GS amount at KMO}</math> [Transient Stability]</li> <li>• <math>1.81 * (0.63 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating}) - \text{armed GS amount at KMO}</math></li> </ul>
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1
	5L2 MP	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L3 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1
	5L11 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1 3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1 7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2 3	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
	5L2 7	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
	5L11 12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11 13	Same as Table 5.3.5 – MLS 5CX2 OOS
Series Capacitor Bypass	5L12 13	Same as Table 5.3.1 – KDY 5CX1 OOS
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.5 – KDY 5CX1 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L3	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L7	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L4	No generation shedding required
	5L11	Gen shed requirements at KMO/FKR/VOL/MCY: If $1.41 * P1 + 1.65 * P2 + P3 \Rightarrow 4324$ , then Gen shed at KMO: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.41 * P1 + 1.65 * P2 + P3 - 4324 - 1.41 * \text{armed GS amount at KMO}</math> [Transient Stability]</li> <li><math>1.81 * (0.63 * 5L11 \text{ WSN} + 5L12 \text{ WSN} - 5L12\_Over\_Rating)</math> – armed GS amount at KMO</li> </ul>
	5L12	Gen shed requirements at KMO/FKR/VOL/MCY: If $1.41 * P1 + 1.65 * P2 + P3 \Rightarrow 4324$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at MKL/DKW/QTY first; and then GMS/PCN, the greater of: <ul style="list-style-type: none"> <li><math>1.41 * P1 + 1.65 * P2 + P3 - 4324 - 1.41 * \text{armed GS amount at KMO}</math> [Transient Stability]</li> <li><math>1.81 * (0.63 * 5L12 \text{ WSN} + 5L11 \text{ WSN} - 5L11\_Over\_Rating)</math> – armed GS amount at KMO</li> </ul>
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L2 MP	Same as Table 5.3.1 – KDY 5CX1 O.O.S
	5L3 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_3	Same as Table 5.6.3 KDY 5CX1 AND MLS 5CX1 OOS
	5L2_7	Same as Table 5.6.3 KDY 5CX1 AND MLS 5CX1 OOS
	5L11_12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11_13	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12_13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.6.6 – KDY 5CX2 AND KDY 5CX3 O.O.S.**

**Pre-outage Restrictions**  
 GMS to WSN transfer limit: No generation restriction  
 WSN to KLY transfer limit: No generation restriction

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - (-0.28 * 2L103 \text{ KIT} + 2828))$ [Voltage Stability]
	5L2	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L2 \text{ GMS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L3	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L3 \text{ PCN} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L7	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.50 * (0.65 * 5L7 \text{ KDS} + 5L1 \text{ GMS} - 5L1 \text{ Over Rating})$
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200 \text{ MW}$ Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.03 * ((5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2800 \text{ MW})$ [Voltage Stability]
	5L2 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L3 MP	Same as Table 5.3.2 – KDY 5CX2 O.O.S
	5L7 MP	Same as Table 5.3.2 – KDY 5CX2 O.O.S
	5L4 MP	Same as Table 5.6.2 – KDY 5CX1 AND KDY 5CX3 OOS
	5L11 MP	Same as Table 5.2.1 - 5L1 OOS
	5L12 MP	Same as Table 5.2.1 - 5L1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.2.1 - 5L1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L1 3	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L1 7	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2 3	Same as Table 5.1.1 - System Normal
	5L2 7	Same as Table 5.1.1 - System Normal
	5L11 12	Same as Table 5.2.1 - 5L1 OOS
	5L11 13	Same as Table 5.2.1 - 5L1 OOS
Series Capacitor Bypass	5L12 13	Same as Table 5.2.1 - 5L1 OOS
	KDY 5CX1	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.7 – KDY 5CX2 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2	No generation shedding required
	5L3	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L7	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed requirement at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * [5L3 PCN + 0.65 * 5L1 GMS - 5L3\_Over\_Rating]$
	5L2 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L3 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L1 GMS + 0.65 * 5L3 PCN - 5L1\_Over\_Rating)$
	5L7 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN: $1.54 * (5L1 GMS + 0.65 * 5L7 KDS - 5L1\_Over\_Rating)$
	5L4 MP	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L12 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) GMS + 5L3 PCN - 1350]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280$ MW AND $P3 > 400$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L1_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) GMS + 5L7 KDS - 1350]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280$ MW AND $P3 > 400$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L2_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS
	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.8 – KDY 5CX2 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2	No generation shedding required
	5L3	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L7	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L4	No generation shedding required
	5L11	Same as Table 5.6.4 - KDY 5CX1 AND MLS 5CX2 OOS
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L3 MP	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_3	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L1_7	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L2_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12_13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.9 – KDY 5CX2 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2	No generation shedding required
	5L3	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L7	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L4	No generation shedding required
	5L11	Same as Table 5.6.5 - KDY 5CX1 AND MLS 5CX3 OOS
	5L12	Same as Table 5.6.5 - KDY 5CX1 AND MLS 5CX3 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L2 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L3 MP	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.2 – KDY 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1 3	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L1 7	Same as Table 5.6.7 - KDY 5CX2 AND MLS 5CX1 OOS
	5L2 3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2 7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11 12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11 13	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12 13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L2	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	No generation shedding required
	5L12	Same as Table 5.6.3 – KDY 5CX1 AND MLS 5CX1 OOS
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN : • $1.54 * [5L2 \text{ GMS} + 0.65 * 5L1 \text{ GMS} - 5L2\_Over\_Rating]$
	5L2 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + 0.71 * P2 \geq 200$ MW Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN : • $1.54 * [5L1 \text{ GMS} + 0.65 * 5L2 \text{ GMS} - 5L1\_Over\_Rating]$
	5L3 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L7 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L12 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed at MKL/DKW/QTY first and then GMS/PCN: $1.04 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 1350]$ [Voltage Stability]  If $P1 + 0.63 * P2 \geq 280$ MW AND $P3 > 400$ MW, then, Gen shed at KMO: Level 3 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 3 [Transient Stability]
	5L1_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX2	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.11 – KDY 5CX3 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**  
**GMS to WSN transfer limit: No generation restriction**  
**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L2	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Same as Table 5.6.4 – KDY 5CX1 AND MLS 5CX2 OOS
	5L12	No generation shedding required
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L2 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L3 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L1_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2_7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11_12	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L11_13	Same as Table 5.3.5 – MLS 5CX2 OOS
5L12_13	Same as Table 5.3.1 – KDY 5CX1 OOS	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX3	No generation shedding required



**Table 5.6.12 – KDY 5CX3 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit: No generation restriction**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L2	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Same as Table 5.6.5 – KDY 5CX1 AND MLS 5CX3 O.O.S
	5L12	Same as Table 5.6.5 – KDY 5CX1 AND MLS 5CX3 O.O.S
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L2 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L3 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L7 MP	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L4 MP	Same as Table 5.6.3 - KDY 5CX1 AND MLS 5CX1 OOS
	5L11 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.3 – KDY 5CX3 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.6.10 – KDY 5CX3 AND MLS 5CX1 OOS
	5L1 3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L1 7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2 3	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L2 7	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L11 12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11 13	Same as Table 5.3.1 – KDY 5CX1 OOS
	5L12 13	Same as Table 5.3.1 – KDY 5CX1 OOS
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	MLS 5CX1	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 O.O.S.**

**Pre-outage Restrictions**

**GMS to WSN transfer limit: No generation restriction**

**WSN to KLY transfer limit:**

- **Summer: (5L11 + 5L12 + 5L13) WSN < 3475 MW**
- **Winter: (5L11 + 5L12 + 5L13) WSN < 3475 MW**

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.76 * (0.63 * 5L11 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$
	5L12	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.76 * (0.63 * 5L12 \text{ WSN} + 5L13 \text{ WSN} - 5L13 \text{ Over Rating})$
Combined Multi- phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	Same as Table 5.2.5 – 5L11 OOS
	5L7 MP	Same as Table 5.2.5 – 5L11 OOS
	5L4 MP	No generation shedding required
	5L11 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L12 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
Multi-phase Contingency	5L13 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.48 * P3 < 1528$ , no gen-shedding is required; If $P1 + P2 + 0.48 * P3 \geq 1528$ then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 2 [Transient Stability]  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: • $2.08 * (P1 + P2 + 0.48 * P3 - 1528 - \text{armed gen shed at KMO/FKR/VOL/MCY})$ [Transient Stability] • $13.0 * (2L96 \text{ WSN} + 0.08 * 5L13 \text{ WSN} - 2L96 \text{ Over Rating})$ - armed gen shed at KMO/FKR/VOL/MCY • $1.02 * [(5L11 + 5L12 + 5L13) \text{ WSN} - 2700]$ - armed gen shed at KMO/FKR/VOL/MCY [Voltage stability]
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2200]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L3 \text{ Over Rating}]$
	5L1_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2200]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L2 \text{ Over Rating}]$
	5L1_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2200]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L2 \text{ Over Rating}]$
	5L2_3	Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 2200]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L3 \text{ PCN} - 5L1 \text{ Over Rating}]$
	5L2_7	Gen shed at MKL/DKW/QTY first and then GMS/PCN, the greater of: • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 2200]$ [Voltage Stability] • $1.03 * [(5L1 + 5L2) \text{ GMS} + 5L7 \text{ KDS} - 5L1 \text{ Over Rating}]$
	5L11_12	Same as Table 5.1.1 - System Normal
	5L11_13	Same as Table 5.3.5 – MLS 5CX2 OOS
5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS	
Series Capacitor Bypass	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX3	No generation shedding required

**Table 5.6.14 – MLS 5CX1 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

GMS to WSN transfer limit: No generation restriction

WSN to KLY transfer limit:

- Summer: (5L11 + 5L12 + 5L13) WSN < 3475 MW
- Winter: (5L11 + 5L12 + 5L13) WSN < 3475 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed at QTY/MKL/DKW first, then GMS/PCN: 1.76 * (0.63 * 5L11 WSN + 5L12 WSN – 5L12 Over Rating)
	5L12	Gen shed requirements at KMO/FKR/VOL/MCY: If P1 + P2 + 0.88 * P3 < 3092, no GS is required. If P1 + P2 + 0.88 * P3 >= 3092, then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN; the greatest of: <ul style="list-style-type: none"> <li>• 1.14 * (P1 + P2 + 0.69 * P3 – 3092 – armed GS amount at KMO/FKR/VOL/MCY) [Transient Stability]</li> <li>• 1.03 * ((5L11 + 5L12 + 5L13) WSN – 2750) – armed GS amount at KMO/FKR/VOL/MCY [Voltage Stability]</li> <li>• 11.0 * (2L96 WSN + 0.08 * 5L12 WSN – 2L96 Over Rating) - armed gen shed at KMO/FKR/VOL/MCY</li> </ul>
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	Same as Table 5.2.5 – 5L11 OOS
	5L7 MP	Same as Table 5.2.5 – 5L11 OOS
	5L4 MP	No generation shedding required
	5L11 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L12 MP	Gen-shed requirements at KMO/FKR/VOL/MCY: If P1 + P2 + 0.48 * P3 < 1528, no gen-shedding is required; If P1 + P2 + 0.48 * P3 >= 1528 then Gen shed at KMO: Level 1 Gen shed at FKR/VOL/MCY: Level 2  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• 2.08 * (P1 + P2 + 0.48 * P3 – 1528 – armed gen shed at KMO/FKR/VOL/MCY) [Transient Stability]</li> <li>• 13.0 * (2L96 WSN + 0.08 * 5L12 WSN – 2L96 Over Rating) - armed gen shed at KMO/FKR/VOL/MCY</li> <li>• 1.02 * [(5L11 + 5L12 + 5L13) WSN - 2700] - armed gen shed at KMO/FKR/VOL/MCY [Voltage stability]</li> </ul>
Multi-phase Contingency	5L13 MP	Same as Table 5.3.4 – MLS 5CX1 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1_2	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L1_3	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L1_7	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L2_3	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L2_7	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L11_12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11_13	Same as Table 5.1.1 - System Normal
Series Capacitor Bypass	5L12_13	Same as Table 5.3.4 – MLS 5CX1 OOS
	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX2	No generation shedding required

**Table 5.6.15 – MLS 5CX2 AND MLS 5CX3 O.O.S.**

**Pre-outage Restrictions**

GMS to WSN transfer limit: No generation restriction

WSN to KLY transfer limit:

- Summer: (5L11 + 5L12 + 5L13) WSN < 3475 MW
- Winter: (5L11 + 5L12 + 5L13) WSN < 3475 MW

**Generation Shedding Requirements**

CONTINGENCY		SHEDDING REQUIREMENTS
SLG or No Fault Opening	5L1	No generation shedding required
	5L2	No generation shedding required
	5L3	No generation shedding required
	5L7	No generation shedding required
	5L4	No generation shedding required
	5L11	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.88 * P3 < 3092$ , no GS is required. If $P1 + P2 + 0.88 * P3 \geq 3092$ , then Gen shed at KMO: Level 1 [Transient Stability] Gen shed at FKR/VOL/MCY: Level 1 [Transient Stability]  Gen shed at MKL/DKW/QTY first; and then GMS/PCN; the greatest of: <ul style="list-style-type: none"> <li>• <math>1.14 * (P1 + P2 + 0.88 * P3 - 3092)</math> – armed GS amount at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>1.03 * (((5L11 + 5L12 + 5L13) WSN - 2750))</math> – armed GS amount at KMO/FKR/VOL/MCY [Voltage Stability]</li> <li>• <math>11.0 * (2L96 WSN + 0.08 * 5L11 WSN - 2L96\_Over\_Rating)</math> - armed gen shed at KMO/FKR/VOL/MCY</li> </ul>
	5L12	Gen shed at QTY/MKL/DKW first, then GMS/PCN: $1.76 * (0.63 * 5L12 WSN + 5L11 WSN - 5L11\_Over\_Rating)$
Combined Multi-phase Contingency (5L1/2/3/4/7/11/12) Arm the <b>greatest</b> gen shed requirement	5L1 MP	No generation shedding required
	5L2 MP	No generation shedding required
	5L3 MP	No generation shedding required
	5L7 MP	No generation shedding required
	5L4 MP	No generation shedding required
	5L11 MP	Gen shed requirements at KMO/FKR/VOL/MCY: If $P1 + P2 + 0.48 * P3 < 1528$ , no gen-shedding is required; If $P1 + P2 + 0.48 * P3 \geq 1528$ then Gen shed at KMO: Level 1 Gen shed at FKR/VOL/MCY: Level 2  Gen shed at MKL/DKW/QTY first, and then GMS/PCN, the greatest of: <ul style="list-style-type: none"> <li>• <math>2.08 * (P1 + P2 + 0.48 * P3 - 1528)</math> – armed gen shed at KMO/FKR/VOL/MCY [Transient Stability]</li> <li>• <math>13.0 * (2L96 WSN + 0.08 * 5L11 WSN - 2L96\_Over\_Rating)</math> - armed gen shed at KMO/FKR/VOL/MCY</li> <li>• <math>1.02 * [(5L11 + 5L12 + 5L13) WSN - 2700]</math> - armed gen shed at KMO/FKR/VOL/MCY [Voltage Stability]</li> </ul>
	5L12 MP	Same as Table 5.3.6 – MLS 5CX3 OOS
Multi-phase Contingency	5L13 MP	Same as Table 5.3.5 – MLS 5CX2 OOS
	5L61 MP	No generation shedding required
Double Contingency (SLG on both lines with different phases)	5L1 2	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L1 3	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L1 7	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L2 3	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L2 7	Same as Table 5.6.13 – MLS 5CX1 AND MLS 5CX2 OOS
	5L11 12	Same as Table 5.3.6 – MLS 5CX3 OOS
	5L11 13	Same as Table 5.3.5 – MLS 5CX2 OOS
Series Capacitor Bypass	5L12 13	Same as Table 5.1.1 - System Normal
	KDY 5CX1	No generation shedding required
	KDY 5CX2	No generation shedding required
	KDY 5CX3	No generation shedding required
	MLS 5CX1	No generation shedding required