

## 1. Change Summary

In September 2023, WECC informed its members that WECC staff would no longer be conducting the geomagnetic disturbance (GMD) vulnerability assessments. This transfers the TPL-007 compliance obligation to the WECC members. WECC members may use the WECC base cases for their GMD assessments, however, the current language in the DPM does not state the required data for GMD assessments. The Data Preparation Manual (DPM) states the following regarding geomagnetic induced current (GIC) data:

Data specific to geomagnetic induced current (GIC) data must be populated for all operating cases for facilities that include power transformer(s) with a high side, wye-grounded winding with terminal voltage greater than 200 kV, fixed shunts that are wye-grounded connected and have terminal voltage greater than 200 kV, and/or controlled shunts that are wye-grounded connected and have terminal voltage greater than 200 kV. Planning Coordinators should provide appropriate GIC related data for BES facilities greater than 100 kV. While GIC data cannot be added in the current software program in use at WECC, data should be submitted through the previous means in the external data sheet.

WECC members have requested further specification of the GIC data required. As such, in addition to the above language, WECC is proposing to specify the GIC data that must be modeled in the WECC base cases in Tables 1 (AC and DC Buses), 3 (Generation), 5 (Transformers), and 6 (Fixed-Shunt Reactive Elements) of the DPM.

The purpose of this DPM Change Request is to help WECC members maintain compliance with TPL-007 by ensuring consistency and specificity regarding the GIC data provided in the base cases by WECC members.

# 2. Schedule

Incorporate language into DPM: For inclusion in 2026 DPM.

Adherence to revised DPM language: Same as the 2026 DPM.

# 3. Detailed Description

## Benefits

Adding clarity to the DPM language regarding GIC data may reduce data quality issues, promoting consistency in provided metrics, and assisting members in their compliance with TPL-007 for their GMD vulnerability assessments.

#### Cost

Data Submitters who are missing any of the items listed below need to gather the data to the best of their ability and model it in the cases.

## Alternatives

Maintain the current language in DPM. The assumption here is that WECC members are familiar with required GIC data needs in the WECC base cases.

#### 4. Proposed Edits

Field	Description	Requirements	Measure
Grounding Resistance	Grounding resistance in	BX. Resistance used for	
	Substation	modeling a Bus shall	
		conform to the	
		modeling practices as	
		deemed appropriate by	
		the Data Submitter.	
Substation Number	Common Substation number	BX. Substation number	
		that is used to link all	
		the buses to the same	
		Substation.	

#### Table 1 Data Requirements—AC and DC Buses:

## Table 3 Data Requirements—AC Transmission Lines:

Field	Description	Requirements	Measure
DC Resistance	Branch Section per unit DC	XX. Resistance used for	
	resistance	modeling an AC	
		Transmission Line shall	
		conform to the modeling	
		practices as deemed	
		appropriate by the Data	
		Submitter.	



#### DPM Change Request—GIC Data

# Table 5 Data Requirements—Transformers:

Field	Description	Requirements	Measure
Core Type	Core Type		
	• 1 Phase		
	• 3 Phase—Shell Generic		
	• 3 Phase – 3 Legged		
	• 3 Phase – 5 Legged		
	• 3 Phase – 7 Legged		
	• 3 Phase—Core Generic		
	Unknown		
FROM Bus Winding	Winding configuration		
Configuration	Unknown		
	• Wye		
	• Gwye		
	• Delta		
TO Bus Winding	Winding configuration		
Configuration	Unknown		
	• Wye		
	• Gwye		
	• Delta		
TERT Bus Winding	Winding configuration		
Configuration	Unknown		
	• Wye		
	• Gwye		
	• Delta		
Autotransformer	Autotransformer		
(Yes/No)	• 1 or "Yes"		
	• 0 or "No"		
Loss Factor (K-factor)			
FROM Bus Coil	Transformer per unit coil		
Resistance	resistance connected to the		
	FROM bus		
TO Bus Coil	Transformer per unit coil		
Resistance	resistance connected to the TO		
	bus		
TERT Bus Coil	Transformer per unit coil		
Resistance	resistance connected to the		
	TERT bus		
FROM Blocking	Blocking Device type		
Device	Inactive		
	Active		



#### DPM Change Request—GIC Data

Field	Description	Requirements	Measure
FROM Blocking	Blocking Device Type		
Device Type	Reactive		
	Capacitive		
FROM Blocking	Blocking Device resistance in		
Device Resistance	ohms		
TO Blocking Device	Blocking Device type		
	Inactive		
	Active		
TO Blocking Device	Blocking Device Type		
Туре	Reactive		
	Capacitive		
TO Blocking Device	Blocking Device resistance in		
Resistance	ohms		
TERT Blocking Device	Blocking Device type		
	Inactive		
	Active		
TERT Blocking Device	Blocking Device Type		
Туре	Reactive		
	Capacitive		
TERT Blocking Device	Blocking Device resistance		
resistance	in ohms		

# Table 6 Data Requirements—Fixed-Shunt Reactive Elements:

Field	Description	Requirements	Measure
Line or Bus Shunt	Shunt Types		
	• Line		
	• Bus		
Device Location	Location Types		
	• From		
	• To		
Winding Connection	Connection Type		
Туре	Unknown		
	• Wye		
	• Gwye		
	• Delta		
DC Resistance of Shunt	DC Resistance of Shunt in		
	Ohms/phase		
Grounding Resistance	Grounding Resistance in		
	Ohms if ground connection of		
	shunt differs from the		



#### DPM Change Request—GIC Data

Field	Description	Requirements	Measure
	substation ground to remote earth		

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