

European Code Transmission System Operating Guidelines (TSOG) versus Security and Quality of Supply Standard (SQSS)

Following review of the TSOG with respect to SQSS, relatively few discrepancies have been identified since the TSOG document is fairly generic and relies on the relevant Transmission System Operator to specify limits.

There is a slight difference in voltage ranges for <132kV specified in Annex II table 1. Currently SQSS specifies a tighter window of -6% to +6% for generators (-5% to +5% in SPT area). Since this sits within the window specified in TSOG this is not seen as an issue.

With regard to frequency parameters, some of the parameters specified in Annex III of TSOG are not defined in SQSS as noted in the table below.

NG currently operates to these parameters and they are defined in NG internal documentation.

One issue could be if NG decided to operate outside of the standard operating range (49.8Hz to 50.2Hz), they would have to return to that specified within 15 minutes to comply with TSOG. Since this is a highly unlikely event, this is also not seen as an issue.

Therefore, the assessment is that there are no changes required to SQSS to comply with TSOG.

	SQSS standard	TSOG standard	TSOG ref
Voltage Ranges	-6% - +6% : < 132kV (SPT -5-+5%) -10% - +10% : < 400kV to 132kV -10% - +5% : 400kV SQSS Table 6.5	0.90 pu – 1.10 pu : 110-300kV 0.90 pu – 1.05 pu : 300-400kV	Article 27 and Annex II tables 1 and 2
Standard Frequency Range	This is not in SQSS although we do operate in this range	50Hz +/- 200mHz	Article 127 and Annex III table 1
Max instantaneous freq deviation	Not specified in SQSS	800mHz	Article 127 and Annex III table 1
Max steady state freq deviation	Specified in section 11 of SQSS Terms and Definitions: Unacceptable Frequency Conditions – states statutory limits are 49.5 – 50.5Hz	500mHz	Article 127 and Annex III table 1
Time to recover freq	Also specified in section 11 of SQSS Terms and Definitions: Unacceptable Frequency Conditions	1 min	Article 127 and Annex III table 1
Freq Recovery	Not specified in SQSS	+/- 500mHz	Article 127

range			and Annex III table 1
Time to restore freq	Not specified in SQSS	15 mins	Article 127 and Annex III table 1
Freq restoration range	Not specified in SQSS	+/- 200mHz	Article 127 and Annex III table 1
Alert state trigger time	Not specified in SQSS	10 mins	Article 127 and Annex III table 1
Max number of mins outside standard freq range	Not specified in SQSS	15000 mins	Article 127 and Annex III table 2