

Audio frequency injection control equipment product approval form

Endeavour Energy use only:

Product approval officer:..... Date received:.....

Application ID no:..... Approval no:.....

Manufacturer/supplier:

Contact person and details:

Supplier's signature: Date:

Note to applicant: This form is to be submitted with the corresponding product approval application form.

It shall be the responsibility of the person/organisation requesting the approval for a particular type of product to be used in Endeavour Energy's Network, to have this Product approval and audit form completed and returned to Endeavour Energy for examination. This form shall be completed to contain actual values and page numbers as found on the products type test reports. The information provided may be used for future audit purposes.

ITEM DESCRIPTION	UNIT	TENDERER'S REPLY		
		11kV	22kV	33kV
1. General				
Quality assurance to ISO9001, 9002 or 9003	ISO			
Warranty period from delivery	years			
Warranty period from installation	years			
Notice required for:	initial delivery	weeks		
	subsequent delivery	weeks		
Change in network kVA before a change in coupling unit tuning is necessary	kVA			
Value of spillover voltage on 132kV, 66kV and 33kV transmission network	V			
Value of spillover voltage on 11kV and 22kV distribution network	V			
Filters provided to limit the amount of noise propagated back into the low voltage supply (yes/no)				
Precautions taken to prevent signal interference with:	telephone circuits			
	radio, recording and TV			
Maximum RI at 0.15 - 0.3MHz for 5 metres	dB μ V			
Maximum RI at 0.3 - 3MHz for 5 metres	dB μ V			
Maximum RI at 3 - 30MHz for 5 metres	dB μ V			
Maximum RI at 30 - 1000MHz for 5 metres	dB μ V			

ITEM DESCRIPTION		UNIT	TENDERER'S REPLY		
			11kV	22kV	33kV
Corona extinction voltage		kV			
2. Coupling equipment					
Maximum current output of cell		A			
Rated lightning impulse		kV peak			
1 min power frequency dry / wet withstand voltage		kV - RMS			
Proposed duty cycle		%			
Location suitability		indoor or outdoor			
Suitable for mounting in outdoor cubicle (yes/no)					
Altitude limit		m			
Size of enclosure required to house coupling equipment <= 50MVA substation	overall height	mm			
	overall width	mm			
	overall depth	mm			
Size of enclosure required to house coupling equipment >= 70MVA substation	overall height	mm			
	overall width	mm			
	overall depth	mm			
3. Coupling capacitors					
Manufacturer's name					
Manufacturer's address					
Country of manufacture					
Manufacturer's reference code / make / type					
Complies with which Standard		AS/IEC			
Dielectric					
Residual voltage 5 min after de-energisation		V			
Internal fusing (yes/no)					
Rated capacitor unit voltage		V			
Rated capacitor unit current		A			
Rated capacitance of capacitor unit per phase @20°C.		uF			
Tolerance on guaranteed capacitance + - (%)		%			
Designed voltage stress level and electrolyte		kV/mm			
Temperature class of capacitor					
Arrangement (units per phase)					
Discharge device fitted (yes/no)					
Overall height		mm			
Overall width		mm			
Overall depth		mm			
Container material					
Bushing type					
Bushing BIL		kV			
Bushing length		mm			
Bushing creepage distance		mm			
4. Tuning coils					
Manufacturer's name					
Manufacturer's address					
Country of manufacture					
Manufacturer's reference code / make / type					

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		11kV	22kV	33kV
Complies with which Standard	AS/IEC			
Rated voltage				
Rated current				
Losses at rated current @ 55°C				
Rated inductance	mH			
Cooling medium is unforced (yes/no)				
Iron core (yes/no)				
Oil free (yes/no)				
Tapping				
Temperature rise class				
Expected temperature rise for 10 min continuous operation per hour	°C			
Connection				
Mounting details				
Overall height	mm			
Overall width	mm			
Overall depth	mm			
5. Signal current ammeters				
Manufacturer's name				
Manufacturer's address				
Country of manufacture				
Manufacturer's reference code / make / type				
Range				
Mounting details				
Overall height	mm			
Overall width	mm			
Overall depth	mm			
6. Isolation transformer				
Manufacturer's name				
Manufacturer's address				
Country of manufacture				
Manufacturer's reference code / make / type				
Complies with which Standard	AS/IEC			
Primary voltage	V			
Secondary voltage	V			
Rated current	A			
Rated power frequency	Hz			
Tapping				
Connection				
Mounting details				
Overall height	mm			
Overall width	mm			
Overall depth	mm			
7. Static frequency unit (signal generator)				
Manufacturer's name				
Manufacturer's address				
Country of manufacture				
Manufacturer's reference code / make / type				
Nominal output voltage	V			
Nominal output power	kVA			

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			11kV	22kV	33kV
Maximum current output		A			
Programmable frequency range (yes/no)					
Signal frequency range and steps					
Number of signal outputs	Single transformer and 50MVA substation				
	70MVA substation				
	90MVA substation				
	120MVA substation				
Output isolators provided (yes/no)					
Short circuiting contactor provided (yes/no)					
Short circuit protection provided (yes/no)					
Suitable for mounting in outdoor cubicle (yes/no)					
Mounting details					
Overall height		mm			
Overall width		mm			
Overall depth		mm			
8. Environmental Effects					
Max noise level @ 1m during normal operation		dB			
Max noise level @ 1m including AF injection at 1050 Hz		dB			
Max noise level @ 1m including AF injection at 750 Hz		dB			
Max noise level @ 1m including AF injection at 400 Hz		dB			
Max noise level @ 1m including AF injection at 283 Hz		dB			
9. Maintenance and life expectancy					
Details of routine maintenance and testing of the equipment in accordance with section 5.7.3 of ETS 0018 submitted (yes/no)					
Life expectancy		Years			
10. Spare parts					
List of recommended spare parts, special tools and appliances provided (yes/no)					
11. Type tests reports in accordance with section 5.12.3 of ETS 0018 submitted (yes/no)					
Capacitor unit					
Thermal stability					
Capacitor losses (Tan δ)					
AC voltage between terminals and container					
Lightning impulse between terminals and container					
Short circuit discharge					
Coupling Transformer					
Impulse voltage withstand					
Tuning coils					
Temperature-rise					
Measurement of loss and quality factor					
Measurement of inductance					
Lightning impulse					