PSGSG/20-21/005	**Product Specifications For MECHANICAL ENDURANCE TEST**	Drawing No.	15027200100
		Date	09.12.2020
		Product	**GSM 420**

1.0 **Application:** Gas Insulated Substations Modules

2.0 **Rating of GIS:** 420 kV

3.0 **Test Object/s:**

420 kV Gas Insulated Circuit Breaker -1 Sample

4.0 **Operating Mechanism:** Spring Hydro Mechanism

5.0 **Test Requirement:** Mechanical Endurance Test Class M1 to be carried out on 420 kV Gas Insulated Circuit Breaker Module as per IEC 62271-100 and all other related standards.

6.0 Contact resistance has to be measured periodically during the test as per standard.

7.0 Required Mechanical Endurance Test on 420 kV Gas Circuit Breaker Module shall be carried out at our site/lab.

8.0 Necessary test reports shall be submitted in English.

9.0 Test Lab Shall provide a preliminary report within one day after the test shift.

10.0 **General:**

In case of doubts in specifications the supplier shall contact BHEL for clarifications

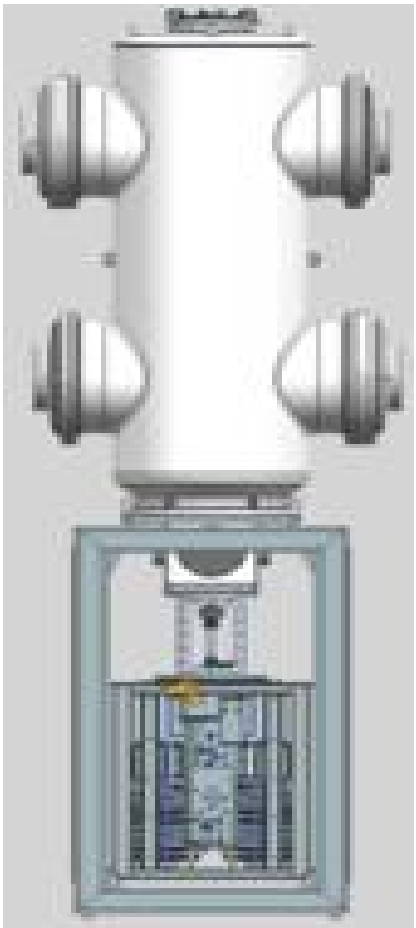

Fig.420 kV Gas Insulated Circuit Breaker with Spring Hydro Mechanism

11.0

General Information of Circuit Breaker		
Client	M/s. Bharat Heavy Electricals limited, Bhopal.	
Manufacturer	M/s. Bharat Heavy Electricals limited, Bhopal.	
Standard	IEC 62271-100/ 110	
Type of report	Test Report	
Client representative(s)	To be informed later	
Description of the apparatus	One pole SF6 Gas-Insulated Metal-Enclosed Circuit Breaker	
Ratings assigned by the manufacturer		
Designation / Type	GSM 420	
Serial number	To be informed later	
Rated voltage	420	kV
Nominal current	4000	A
Number of poles	1	
Frequency	50	Hz
Operating sequence	O-0.3 sec-CO-3 min-CO	
Short-time withstand current	63	kA
Peak withstand current	157.5	kAp
Duration of short-circuit	3	s
Short-circuit making current	157.5	kAp
Short-circuit breaking current	63	kA
Time constant	45	ms
First pole to clear factor	1.3	
Pressure for interruption SF6 at 20°C	8.5	bar (absolute)
Pressure for insulation SF6 at 20°C	6.5	bar(abs)
Pressure for operation	8.5	bar(abs)
Supply voltage of closing and opening devices	220	Vd.c
Class	E2/M2/C2	
Minimum pressure for interruption at 20°C	8.5	bar (absolute)
Maximum pressure for interruption at 20°C	9	bar (absolute)
Mechanism for closing	Stored energy closing (springs, charged by motor)	
Mechanism for opening	Stored energy closing (springs, charged by motor)	
Type of mechanism	Spring-Hydro	
Supply voltage closing coil	220	V d.c.
Supply voltage opening coil	220	V d.c.
Supply voltage motor	230	V a.c.
Rated operating pressure	36.0	MPa
Minimum pressure for 'O' operation	31.0	MPa