

Maintenance experience of 315kW Electrical Motor of Helium screw compressor in 1.3kW Helium Refrigerator/Liquefier Plant

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1.3 kW helium refrigerator/liquefier (HRL) system is installed and in operational at Cryogenic division of IPR since 2003. Steady State Super-conducting Tokomak consists of superconducting magnets which are cooled by cryogenic HRL plant. Three numbers of 315 kW asynchronous induction motors are used to drive helium screw compressors of HRL plant, therefore it is very essential to maintain the electrical motors in working condition for continuous longer tokomak experiment operation. This paper describes electrical aspect of operation, maintenance and troubleshooting experiences of electrical motors that include motor overhauling, motor winding insulation testing, no load and full load testing, online temperature monitoring and motor cooling arrangements as well as vibrations measurement of compressor, motor and the skid.

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