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Designing the Control System for Air Conditioning and Dehumidifier to Optimize the Performance of Gamma Spectrometer at RN42 Station

The Radionuclide Monitoring Station RN42 is owned by Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) and managed by Malaysian Nuclear Agency. Radionuclide Monitoring Station RN42 Station is a place to detect radioactive particle in the atmosphere located in Cameron Highland Pahang, Malaysia which is 240km far away from Malaysian Nuclear Agency office. The station is operated continuously 24 hours everyday with minimum downtime. The mean annual temperature in Cameron Highlands is 18℃ and means annual relative humidity is 87.0%. The target specification for operating temperature in RN42 station is below 22℃ and relative humidity is 40% to ensure the gamma spectrometer inside the station can be operated at optimum condition and safely. The objective of this study is to design the control system for air conditioner and dehumidifier to ensure the gamma spectrometer inside RN42 station can be operated at optimum condition. This study is important to ensure the gamma spectrometer working at the best performance without major problem so that the station's operator can operate the station smoothly and the data can transfer to International Data Centre (IDC) on time.

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