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Retrofit study of compressed air systems in NSRRC

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The aims of this work are to measure the energy consumption performance of compressed air systems, determine the weak points, implement the economic assessments and execute energy saving improvements in NSRRC. The compressed air discharge pressure is regulated in 6.0 ± 0.5 kg/cm². The specific energy requirement (SER) of those compressors is 7.74 ~ 20.05 kW/m³/min. Based on the performance results, we have to make a decision to repair or replace the inefficient compressors. Next, we decided three phases implements, stop leaks in phase I, replace compressor with VFD and heat-regeneration desiccant drier in phase II, connect TLS and TPS compressed air pipelines in phase III. Finally, we got great energy saving of 543,754 kWh/yr and 4.3 years pay-back time in capital investment.

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Footnotes

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Yes

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