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Utility design of the 3 GeV electron storage ring for Siam Photon Source II

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The Siam Photon Source II project in Thailand is a fourth-generation synchrotron light source. The lattice of the 3 GeV electron storage ring is designed with 14 Double Triple Bend Achromat (DTBA) cells and a total circumference of 327.6 meters. The utility systems are essential for maintaining the stability and reliability of the electron beam. The design incorporates key components such as the electrical and grounding systems, the deionized cooling water system (DIW), the air conditioning system (AC), and the compressed air system. These systems support critical subsystems, including magnets and power supplies, RF cavities and power supplies, vacuum chambers, and insertion devices. This paper focuses on ensuring special considerations for the stability of the electrical power and grounding systems and the temperature control of the DIW and AC systems. The power and cooling loads have been estimated based on the requirements of each subsystem of the accelerator. Preliminary layouts of the main utility equipment and piping systems have also been developed.

Footnotes

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