Marrying Holtec's SMR-300 Nuclear Plant with its HI-THERM Hybrid Concentrated Solar Power Plant (HCSP) for Increased Power Generation and Operational Resiliency

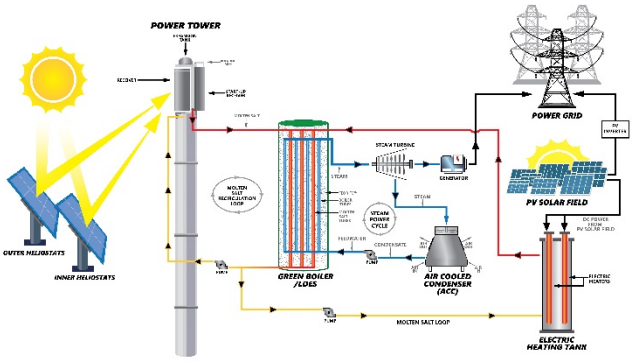
Holtec International offers clients the option of co-locating the SMR-300™ small modular reactor with HI-THERM HCSP, our hybrid concentrated solar power plant. HI-THERM HCSP will occupy the land immediately outside the nuclear plant's Protected Area. This union of solar and nuclear is possible due to the negligible radiation emission profile of SMR-300™ in the wake of a postulated hypothetical nuclear accident. This alleviates the need for a "controlled area" or an "exclusion zone" outside the plant's Protected Area.

As a result, the land around the nuclear plant can be productively deployed to collect solar energy using Holtec's HI-THERM HCSP, which incorporates a Long Duration Thermal Energy Storage Device called Holtec Green Boiler. A HI-THERM HCSP can capture as much as 700 MW per day plus another 60 Mwe (DC power) per 140 acres of available land in warm climates and store it in the Green Boiler for on-demand use.

The Green Boiler, sized to store thermal energy produced by the solar plant at a temperature exceeding 1,200 degrees Fahrenheit, can produce superheated steam where needed. This superheated steam can be used for many functions presently rendered by fossil fueled equipment in the nuclear plant such as the "auxiliary boiler," and to eliminate historically unreliable equipment such as the Moisture Separator Reheater (MSR) from the nuclear plant's power cycle. The nuclear plant's thermal efficiency is increased as an added bonus.

The Walk-Away Safe SMR-300: Pressurized Water Nuclear Plant

With the charged Green Boiler on stand-by, the SMR-300™ is "black start" capable, meaning it will not need any offsite power for start-up. If a sufficient amount of land is available, the solar plant can be equipped with its own turbogenerator to produce electricity.



HI-THERM Hybrid Concentrated Solar Power Plant (HCSP)

"Nuclear and Solar are perfect together because their roles are synergistic. Together they define a clean energy ecosystem that provides the most effective template for distributed clean energy generation that will shape the contour of production of carbon-free power in this century," said Holtec International CEO Dr. Kris Singh, the inventor (with his colleagues) of the technologies that underlie conjugated nuclear/solar power generation.

For more information, please contact: Patrick O'Brien, Director of Government Affairs and Communications

Phone: (508) 494-4254 | Email: p.obrien@holtec.com