The integrated study of compact stellarator power plants, ARIES-CS, has aimed at exploring and optimizing compact stellarator configurations and defining key R&D areas. Earlier stellarator power plant studies led to devices with large sizes compared to tokamaks. The large size of these stellarators is generally dictated by the constraints imposed by the aspect ratio of the stellarator configuration and the minimum distance required between the plasma and the coils. We have developed several quasi-axisymmetric (QA) configurations with excellent QA and low aspect ratio ($A_{\text{coil}} \leq 6$). We reduced $\alpha$ losses to $\sim 10\%$. Stability to the linear ideal MHD modes was attained in most cases but at the expense of reduced QA (and increased $\alpha$ losses) and increased complexity of the plasma shape. Recent experimental results indicate, however, that linear MHD stability limits may not be applicable to stellarators. We have also developed a highly efficient shield-only region in strategic areas, we were able to reduce the minimum stand-off by $\sim 20\%-30\%$ compared to a uniform radial build. This would allow a comparable relative reduction in machine size. As a whole, ARIES-CS is similar in size with advanced tokamak power plants. The device configuration, assembly, and maintenance procedures appear to impose severe constraints. A port-based maintenance based on the replacement of blanket modules using an articulated boom through a number of designated ports has been developed. The dual coolant concept is chosen as the reference blanket option. This concept utilizes He to cool the ferritic steel structure (including the first wall) and slowly flowing Pb-17Li as a self-cooled breeder in the inner channels. Modular coils are designed to examine the geometric complexity and to understand the constraints imposed by the maximum allowable field, desirable coil-plasma separation, coil-coil spacing, and other coil parameters. A cost-optimization system code has also been developed and is utilized to assess the trade-off among physics and engineering constraints in a self-consistent manner. This paper summarizes the results of the ARIES-CS study.