

Comparison of vertical and horizontal steam generators

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Details:

The objectives of this project are to size and rate nuclear steam generators [1] using HTRI Xchanger Suite software (htri.net/htri-xchanger-suite) and make comparative assessments of vertical and horizontal configurations. North American steam generators are typically vertical, but there is current interest in horizontal steam generators to reduce building heights and construction costs that dominate the overall cost of new nuclear power plants [2].

Pre-requisites: Previous courses on heat transfer and fluid mechanics. If you are interested in this project, also consider taking the course MIE1132H "Heat Exchanger Design".

References:

1. Riznic, Jovica R. (editor), Steam generators for nuclear power plants, Duxford, England: Woodhead Publishing, 2017.

https://librarysearch.library.utoronto.ca/permalink/01UTORONTO_INST/14bjeso/alma991106826953906196

2. Eash-Gates, P., Klemun, M. M., Kavlak, G., McNerney, J., Buongiorno, J., & Trancik, J. E. (2020), "Sources of Cost Overrun in Nuclear Power Plant Construction Call for a New Approach to Engineering Design", *Joule*, Vol. 4(11), pp. 2348-2373.

https://librarysearch.library.utoronto.ca/permalink/01UTORONTO_INST/fedca1/cdi_elsevier_sciencedirect/doi/10.1016/j.joule.2020.10.001

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