How to apply pump & valve to keep pressure within range

Water · https://mes100.com/docs/lw-apply-pump-valve-keep-pressure-within-range/

Here is an algorithm to make sure that the residue pressure is kept within range, by applying pump and valve. This is a brute force algorithm and don’t take into consideration of economical design. Users are welcome to try their own solution, shaped with their own design experience.

1. Starting from the fixed head (reservoir), find the nearest node that fails in pressure.

2. Check to see if the pressure is higher or lower than the range

- If higher, then use valve to reduce it. The valve is applied at the end of a pipe. You can use Pressure Reducing Valve, that allows you to specify the maximum pressure you want. Make sure that this value is less than the upstream, or else the valve will be closed and the valve will fail to serve your purpose
- If lower, use pump to pump up the residue pressure until it is within range. Like valve, the pump is applied at the end of the pipe.
- Run Analysis, make sure that residue pressure check passes for this node.

3. One node at a time, move on to the next node that is the next furthest from the fixed head and apply the above procedure (2). Do this until all the node passes in residue pressure check.

One can try this **example**, and see how far you can get with it. The answer can be found **here**.

Related



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I’m the Benevolent Dictator for Life for MiTS Software cum Editor of this website. Read more here.

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