Hello Fredric,

Sorry for any confusion. I will be happy to call you to discuss the details. But a brief explanation here may help:

In the CFZ model, the main objective is to analyze the performance of 54 chillers on the roof when the wind is blowing from Northwest towards the building. There is no work inside the building. The building itself should be considered only as a solid mass and no air transfer from inside to outside. Only the outdoor equipment is being analyzed.

Why we are running the CFD? There is concern that when the chillers are turned on and rejecting heat to the atmosphere (taking ambient air from 2 sides and discharging hot air from the top slots), then hot air recirculates down into the air intake sides of chillers and negatively affect the performance of the chillers. So we want to show this in CFD and prove that there are too many chillers on the roof and the building owner should reduce the number of chillers and consider alternative arrangements and systems.

Thera are also 33 generators behind the building that are NOT turned on in this CFZ file. But they will be turned on when we run the next scenario. The generators are there and will be turned on as soon as utility power electricity to the building is cut off and they need to run the generators to keep the power to the building and the chillers un-interrupted. The generators also take ambient from the end air intake and discharge hot air and hot diesel flue gas from the top. So, obviously, when generators are running, would add more heat to the wind air stream and negatively affect the chillers performance even more.

I agree, the northwest wind is modeled in an unconventional way. Instead of on velocity and one pressure BC we are using 2 and 2. But we have used it before as an easy way to keep the geometries in 90-degree angles. But we have rotated the air mass in the some of the previous simulation. if it helps.