The abstract needs some modifications (e.g. your second sentence) to be more accurate and clearer  (e.g. when you say “..imposed on solid breeders by tritium release concerns.” Is not adequate because there are other factors bedside tritium release) . But I can help you do this.

 What other factors does he want me to mention? Keeping the temperature low near the container for structural integrity? In terms of the pebbles, you and I have talked about this in the past a lot and everything comes back to tritium release, so I don’t know what he’ll want me to add here. He says he can help me do this but I don’t know when he intends to find time so I guess I’ll have to anticipate what he wants beforehand.

In reading an abstract one needs to find out quickly “what are the achievements”. You list several good things, but it is not clear what exactly you are producing. For example, you talk much about models, which is good, but it is not clear if you have new models that others can use in the future, or that you only show how to apply previously developed models. You need some clarity and specifity.

 This is true, I should have mentioned this better. There are past DEM models I am building upon but they have never been used to study thermal conditions like what we’ve done. And there hasn’t been validation like what I’ve done for measuring k\_eff in packed beds. So I will be clear what I’ve added to the models and how they’ll be available for future use.

You also need to be more quantitative. You do have some numbers but you need to state briefly their significance. For example, when you say “…… and wide-spread pebble damage (5% crushed pebbles in the ensemble), maximum bed temperatures increased by approximately 14% (under a nuclear heating rate of 8 MW/m3)”  You need to say whether 14% is too much change that can threaten the viability of many designs.

I don’t know what to do for this either. I try to keep my results generalized because I’m never studying any particular design and we just look at generic volumes in the highest heating zone. In fact, in the past (during prospectus) when I’ve been specific about what kind of pebble bed I’m studying (saying that the purge has a specific flow rate, etc.) he has yelled at me that none of those numbers are exact and they vary between designs. So the answer is that a 14% increase is only bad if the design hasn’t been planned with a design margin to allow for it.

You also need to indicate at what wall loading you would have nuclear heating rate of 8 MW/m3. This is probably for ITER-type TBM with wall load of ~ 1 MW/m2. You can make a better case by saying that the wall load in Power Reactors is ~ 4-5 MW./m2 and the heating rate will be 4-5 times larger, and hence the temperature increase would be much larger -  too high to have feasible blanket design

 I guess I need your advice on how I should treat this statement when I actually edit the abstract. Maybe only say that my models are considering wall loads up to 1 MW/m2 but the results can be scaled up to 4~5 MW/m2 and that pebble bed geometries will have to cope with the higher power (?).

In summary, you have many excellent points , but overall you need more careful statements of the scientific phenomena and effects,

Is this just something he wants to say or are there specific things I’m not discussing in a scientific nature? Other than the sentence about temperature window based on tritium release, he didn’t say anything else was scientifically inaccurate…

you need more Quantification, and you need more clarity on what is the ouput from the thesis

I will make sure to do this for the next version.

 Next Steps:

 You cannot contact the Committee members now. This can happen after you give me a draft copy of your thesis ,and I read it, we discuss it, then I conclude you are done and ready for the Oral thesis defense.  I hope what you will give me is  reviewed by Alice (and you may get others like Chunbo and Feng-Chen to read and give you their comments).

I absolutely must finish this by the end of the quarter. Everything but the very last chapter summarizing the thesis is written (and I think completely written). I will start sending it around to people for help if you think it will make the thesis better…

If I don’t contact the committee members soon, I have no idea what will happen with their schedules so they might not even have time to sit on the oral defense during the quarter.

There’s simply no way I can go into the summer without graduating so I have to go into overdrive to finish this on top of our other reports. THIS IS MY SIXTH YEAR ALREADY!!