I would like to thank the complete editorial team for spending time in reviewing the paper. I have addressed all the comments and the changes/Rebuttal is as follows.

# Reviewer #1

|  |  |
| --- | --- |
| **Comment** | **Changes/Rebuttal** |
| When reading the paper, I get the impression that RANS or URANS turbulence modelling approaches are used on meshes for which we have no information whether they are suitable for such approaches. RANS and URANS are not considered high-fidelity by international experts. Some experts are convinced that only properly performed Direct Numerical Simulations (DNS) should be called high-fidelity. Others also include wall resolved or even wall modelled LES approaches. But Hybrid LES-URANS, RANS, or URANS are never considered high-fidelity. The authors should either convincingly show that the simulations are proper LES or DNS, or they should change the misleading title. In that case, just removing the words ‘High Fidelity’ should be sufficient. For me, this comment is crucial for accepting the manuscript. | High fidelity word is removed from the title of the paper. |
| Even though the paper is readable, the readability might be increased when the use of the English language is revised and improved. The paper treats a number of cases but no computational details are provided. Consider to add for each case a table in which computational details like code, mesh size, mesh convergence study, y+ values, turbulence modelling approach, etc… are provided. | Computational details are added in for all the works and highlighted in red. Mesh independency is not carried out because of computational limitations. |
| Chapter 3: The abbreviation SA is not explained. I guess it means Sub Assembly. In general, too many abbreviations are used. Please try to avoid the use of too many abbreviations. They are nice for the writer, not for the reader. | The abbreviations used in the paper are defined at appropriate places. |
| Chapter 3: poolis > pool is Chapter 3: Figures 3 and 4 shows < Figures 3 and 4 show | Changed. |

# Reviewer #2

|  |  |
| --- | --- |
| **Comment** | **Changes/Rebuttal** |
| In general this paper gives an overview of several important TH tests done to evaluate the safety and reliability of the Indian FBR1&2 reactors. Given the nature of the extended abstract format, limited details of the model and analysis of the results are provided. It will be interesting to eventually get these details in a full paper format. One comment to address before paper should be accepted: Several acronyms are given in the text without being defined i.e. SA, FIV, SG (there may be others, I stopped keeping track.) The following comments would be nice to be addressed in the current extended abstract, but may be reserved for a full publication when there is more room to address them: | The abbreviations used in the paper are defined at appropriate places. |
| It would be useful to include a figure showing the axial layout of the reactor including locations of the IV, baffle, and flow paths. (similar to what is shown in the following reference: Velusamy, K., Chellapandi, P., Chetal, S.C. et al. Overview of pool hydraulic design of Indian prototype fast breeder reactor. Sadhana 35, 97–128 (2010). <https://doi.org/10.1007/s12046-010-0022-0> | Vertical section of FBR1&2 is added. |
| Does baffle width refer to the diameter or radius? | Here, baffle width refers to (Outside radius – Inside Radius) |
| Some of the flow patterns shown in Figs 1 and 2 are not intuitive and could benefit from further explanation. I.e is there an explanation why the high velocity locations are asymmetric (i.e. exist near IHX/Pump 2 but not IHX/Pump 1)? What is causing the circulation near pump 1 and why are flow vectors parallel to the bottom of the domain? Some views from the axial perspective would be very helpful. | Suitable explanation is added in the Section 2 and highlighted in red. |