Dear Sir,

Sub: - Response to the reviewer comments on the manuscript titled “Over three decades of radiological protection experience at Fast Breeder Test Reactor (FBTR)”. –reg

Reference: Paper assessment ref #509

Reviewer #1

|  |  |  |
| --- | --- | --- |
| S. No. | Comments | Response |
| 1 | In page 2, provide more information of experiments with UO2 SA which resulted in increase in particulate activity in RCB | *Agreed. The following sentences are included under section 2.0 as suggested.*  A special U-Ni alloy based SA was irradiated in the core at different positions for checking the response of delayed neutron detection system of east and west loops. Perforations were made on SS clad of the pins for the release of delayed neutron precursors such as 87Br and 137I to the coolant. During the operation of the reactor with the special SA, the particulate air activity increased in RCB indicated a maximum value of 6322 Bq/m3 [6]. The special SA was discharged after the experiments. |
| 2 | Regarding estimation of the burn up of the failed fuel SA. In page 4 it is mentioned ratio of 85Kr to 88Kr or 85Kr to 87Kr is used whereas in page 5 it is mentioned that ratio of specific activity of 87Kr to 85Kr and 88Kr to 85Kr is used. Which is correct? | *Agreed. The last but one sentence under section 7.2 has been modified. The modified sentence is* “From the 88Kr/85Kr or 87Kr/85Kr ratios, it was inferred that the failed fuel pin attained a high burn-up (>100 GWd/t)”. |

Reviewer #2

|  |  |  |
| --- | --- | --- |
| S. No. | Comments | Response |
| 1 | Page No.2 Line No.6 Sentence can be modified as ''The detectors were located in the duct away from the entry position to B cell and provided with lead shielding around the detector to obtain better signal to noise ratio. | *Agreed. Section 2.0, second paragraph, Sentence No. 4 ( Line No. 6) is modified as suggested* |
| 2 | '' 3. HEALTH PHYSICS ACTIVITIES – WORK PLACE MONITORING Last sentence can be revised as ''During reactor operation, in controlled areas like top of the pile, personnel entry is permitted with personnel protective equipment.'' | *Agreed. Section 3.0, the last sentence is modified as suggested.* |

Reviewer #3

|  |  |  |
| --- | --- | --- |
| S. No. | Comments | Response |
| 1 | High range gamma monitor is calibrated and installed such that it can roughly estimate the peak reactor power reached in case of Design based accidents. | *Agreed. Section 2.0. The sentence in third paragraph is corrected.* |
| 2 | The gamma monitor in discharge flask prevents removal of under cooled fuel sub assemblies. | *Agreed. Section 2.0. The sentence in third paragraph is corrected.* |

The manuscript has been revised and uploaded.

With regards

R.Sarangapani