

Fig. 3 Containment Temp. in each re-evaporation rate

4.3. Sensitivity Analysis

From previous section 4.2, the dose of 10% re-evaporation is maximum value. In this reason, the sensitivity analysis is always carried out in the condition of 10% re-evaporation rate.

The unfiltered air flow range is from 10 cfm to 160cfm by each increase of 10 cfm.

The filtered air flow rate and the MCR recirculation flow rate are fixed value as shown on the Table 2.

MCR safety is strongly dependent on the unfiltered air flow rate because the unfiltered value directly impacts the MCR in-leakage experiment test. Because of that, the key parameter is selected as the unfiltered air flow rate.

Fig 4 and Fig 5 show the results of MCR sensitivity analysis about thyroid dose and whole body dose.

From sensitivity results, MCR in-leakage test margin to protect the operator against fission products release is more than 150cfm.

Finally, in the case of MSLB inside containment, every case of unfiltered flow rate is not beyond dose limit.

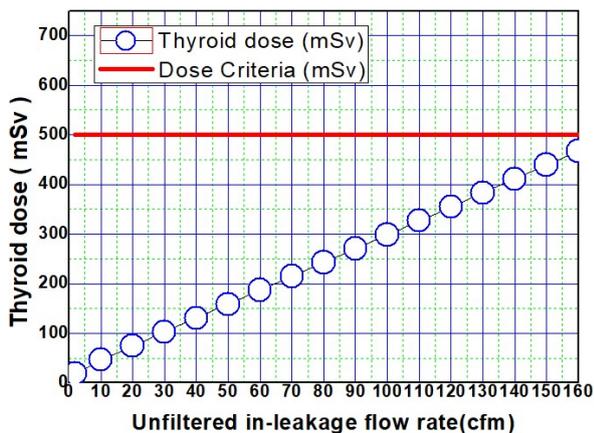


Fig. 4 Thyroid dose in unfiltered air flow rate

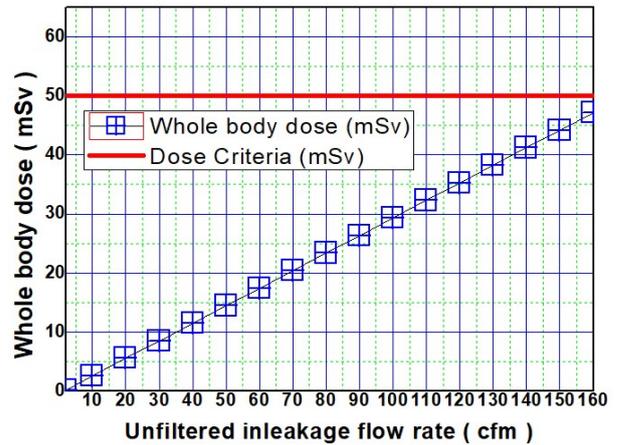


Fig. 5 Whole body dose in unfiltered air flow rate

5. CONCLUSIONS

MCR safety check for the unfiltered air flow rate of in-leakage test and dose estimation is carried out by basic case analysis and sensitivity analysis.

Onsite atmospheric dispersion factor is calculated using ARCON 96 code.

From this work, some conclusions are derived as below:

- The base case analysis results are 1.1mSv at whole body and 20.1mSv at thyroid in 10 cfm of FSAR base assumption.
- The increase of dose results in the condition of the re-evaporation 10% and containment temperature is very small about 0.08 mSv.
- From sensitivity analysis results, every case is not beyond the dose limit in MSLB inside containment.
- Onsite maximum atmospheric dispersion factor is 1.17×10^{-3} sec/m³ during 8 hours.
- The meteorological data for onsite dispersion factor is prepared using 200,000 data sets for 4 years.

From some conclusions, we know that every sensitivity case is meet the dose limit of 50 mSv at whole body and 500 mSv at thyroid.

Through this conclusion, MCR safety of MSLB inside containment is good in every sensitivity case.

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