

CHAPTER 4 CONCLUSION

4.1 Conclusion

A simple analysis system for selected radionuclides (Cs-137 and I-131) has been developed and set up. The system composed of inexpensive and less complicated components. Preconcentration of the radionuclides using ion exchangers was investigated, both batch and continuous systems.

Sorption efficiencies of Cs-137 & I-131 have been studied. Effect of NaCl contents has been studied as for effect of some other ions that may exist in water samples. Tap water spiked with Cs-137 or I-131 has been applied. Effects of sample volume, pH, and concentration of some salts containing in the solution sorption efficiency were studied.

Column efficiency of the resin column in continuous system was found to be $60 \pm 20\%$. Radioactivity of an unknown sample was determined by using the procedure developed in comparison for the γ - spectrometric standard procedure. A survey of radioactivities in water samples taken in the way of Chiang Mai Municipality was found to be the background level. It can be concluded that there is no risk of radioactivity in water in Chiang Mai Municipality at the present time.

4.2 Advantages and Limitations

A column and a flow-through cell were developed using locally available and inexpensive materials for a simple procedure to determine Cs-137 in water although it still needs to be improved.

In terms of time limitation and facilities for the work, further studies should be continued.

4.2 Suggestions for Further Studies

For the further study, other effects on sorption efficiency of ion exchanger resin such as flow rate, surface sorption onto the wall of tubing, size and length of tubing used, capacity of ion exchanger resin, etc. may be essential.