valence state, hydrous technetium dioxide. The precipitation behavior of Tc was quite similar to that of PGM.

Figure 3 shows the effect of Rh and Pd concentrations on the precipitation of Tc when a Mo-Zr-Rh(or Pd) solution was denitrated at [HCOOH] / [HNO_3] = 2.0. Palladium was found to have stronger effect than Rh which is known to be more effective for the promotion of denitration reaction with formic acid [4] . This might be due to the facts that the standard electrode potential(0.987V) of Pd^{+2} to metallic state is higher than that(0.8V) of Rh^{+3} and Pd is more easily reduced with formic acid. No effect of Ru^{+3} on the precipitation of Tc was found in the present study.

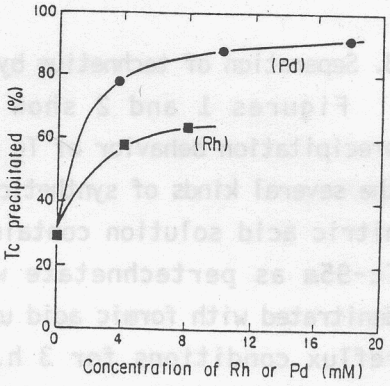

Fig.3 Effect of Rh and Pd on Tc precipitation

Denitration with formic acid might enable the separation of Tc over 95% from HLLW. This application, however, is difficult when the total concentration of Rh and Pd is lower than 0.005 M. Therefore, the adsorption method using active carbon has been also developed as an alternative.

The four group partitioning process including the two kinds of chemical methods for Tc separation as shown in Fig.4 will be demonstrated with real HLLW at the NUCEF (Nuclear Fuel Cycle Safety Engineering Research Facility) in 1998.

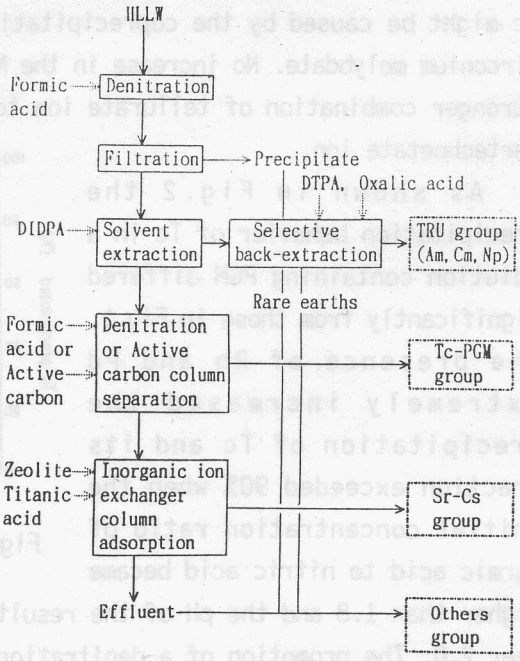

Fig.4 Four group partitioning process

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