This report documents the exploratory research and general activities completed by APS related to aircraft ground deicing research in the winter of 2004-05. The activities documented in this report were carried out in addition to the main research projects completed in the winter of 2004-05, which are documented in separate reports. The eleven activities included in this report are described below.

1. Validity of 75/25 Endurance Time Test Protocol: Research was conducted to assess the accuracy of the current protocol for endurance time testing for fluid dilutions. Results were inconclusive and further research was recommended.

2. Removal of Type III Fluid Residues: Research was conducted to investigate the tendency of Type III fluid to dry out relative to Type II and Type IV fluids commonly used in the industry.

3. Field Anti-Icing Fluid Viscosity Estimation: Research was conducted to determine the feasibility of using a simplified device to estimate anti-icing fluid viscosity in field operations.

4. Snow Testing at -14ºC to -25ºC: Testing to obtain fluid specific holdover times in snow at -14ºC to -25ºC was not recommended, as these cells are rarely used, the values are similar, and testing would be expensive. Instead, maintaining the current generic values in these cells was recommended.

5. Video Documentation of Snowfall Intensities: APS undertook a project to document the four snowfall intensity categories – very light snow, light snow, moderate snow and heavy snow – on video.

6. Holdover Time Guidelines Website: APS developed and implemented a website for the official Transport Canada 2005-06 holdover time table guidelines.

7. Test procedures and Presentations: An account of the test procedures and presentations that were produced for the 2004-05 program of activities is included in this report.

Four other activities were carried out: demonstration flight to examine removal of neat Type III fluid from aircraft wings during takeoff; review of negative 3ºC buffer on first step application of deicing fluid on aircraft; development of Aerospace Recommended Practice (ARP) 5945 for testing of Type I fluids; and indoor laboratory snow protocol for endurance time testing.