The Idaho Power Company (IPC) Atmospheric Science group was created to operate a cloud seeding program in the Snake River basin. Over the years weather support has expanded to other internal IPC groups such as Load Service Operations, Operations Hydrology, Stream Gauging, and Reliability groups. Support to the other IPC groups consists of temperatures and precipitation forecasts for the IPC River Forecast System (IPCRFS) model, wind farm power forecasts, load and solar forecasts, and forensic meteorology.

The IPC cloud seeding program began operations in 2003 in the Payette River basin with 7 ground based cloud seeding generators. The program has grown over the years to include the Boise and Wood River basins in the central mountains with 28 ground generators now in-place. In conjunction with an existing program run by the High Country Resource Conservation and Development council, IPC expanded into the Upper Snake River in 2008 with the program now totaling 25 ground generators. Complementing the ground generators are two aircraft in the central mountains and another aircraft (partially funded by the Idaho Department of Water Resources) operating in eastern Idaho. IPC has set up an extensive observation network to support cloud seeding and research consisting of rawinsonde sites, weather stations, high-resolution rain gauges, and radiometers.

IPC has contracted with the National Center for Atmospheric Research (NCAR) to develop a cloud seeding module (CSM) integrated into the Weather and Research Forecast (WRF) model. The CSM provides operational guidance for ground and air seeding and by using a control and seeded model run, the precipitation enhancement from cloud seeding can be determined. IPC, NCAR, and other universities have submitted the Seeded and Natural Orographic Wintertime clouds—the Idaho Experiment (SNOWIE) proposal to the National Science Foundation for approval and funding. If approved, the SNOWIE field campaign will be conducted in the Payette River basin in 2017. Finally, IPC is conducting trace chemistry studies to determine distribution of silver iodide from cloud seeding operations in order to verify model forecasts.

As a hydroelectric based utility, knowledge of the winter snowpack is critical to IPC operations and the company uses the IPCRFS model to predict flows along the Snake River. The model uses a 7-day forecast of 6 hourly temperature and precipitation obtained from a 1.8 kilometer resolution WRF model run at the University of Arizona.

IPC has taken advantage of WRF model data to develop tools and products for IPC internal customers. These tools include wind farm power forecasts, load and solar forecasts, and weather displays and warnings. We are taking baby steps in development of a WRF-Hydro system for Idaho and model verification using the Deltares Flood Early Warning System.

Pat Holbrook
Idaho Power

Wednesday, February 10, 2016 at 3:15pm
Room 110 INSCC
Refreshments and Meet the Speaker at 3:00pm

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