Idaho Power Company’s Cloud Seeding Program

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Seeding Mechanisms

- Burn Head
- Ignition Coil
- Satellite Communication
- Solar Panel
- Nitrogen
- Work Platform

Remote Cloud Seeding Generator

- Temperature Probe
- Valve Box
- Tower
- Computer Box
- Solution Tanks
- Batteries
- Propane

Modified Aircraft
King Air C90F
Idaho Power’s History with Cloud Seeding

- **1993** - Began investigating cloud seeding (shareholder question)
- **2003** - Payette project operational (7 generators, aircraft, assessment)
- **2008** - Collaborated with HC RC&D and E Idaho Counties to enhance their program (motivated by ESPA CAMP) – 5 year pilot effort
- **2010** - Started working with WW RC&D to evaluate cloud seeding opportunities in western Wyoming (primarily above Palisades)
- **2011** - Started working with NCAR to develop WRF model to guide and evaluate CS operations and projects
- **2013** – At the request of Big Wood Canal Company contracted to target Wood River basin (using Payette aircraft only)
- **2014** - Expansion (44 generators, 2 aircraft)
  - Boise and Wood Basin’s – remote generators and aircraft seeding
  - Continued expansion in Salt and Wyoming Ranges
  - IWRB funding a grant for equipment associated with expansion
- **2015** - Expansion (53 generators, 3 aircraft)
  - Additional remote generators in Central Mountains and Upper Snake (Total of 53)
  - Third aircraft based in Pocatello for upper Snake (1 year pilot project with State)
  - Additional meteorological equipment
Current Program
Payette, Boise, Wood & Upper Snake

- **Payette**
  - 17 Remote Gen’s
  - Aircraft
  - Radiometer
  - Weather Balloon
  - Weather Tower
  - 8 hi-res precip gauges

- **Boise and Wood**
  - 11 Remote Gen’s
  - Aircraft
  - Radiometer
  - Weather Balloon
  - 2 hi-res precip gauges

- **Upper Snake**
  - Aircraft
  - 25 Remote Gen’s
  - 25 Manual Gen’s
  - 2 Radiometers
  - 2 Weather Balloons
  - Weather Tower
  - 2 hi-res precip gauge
2016 Aircraft Operations to Date
2016 Ground Generator Operations to Date

Ground Generator Hours by Basin

- Payette
- Boise
- Wood
- Henrys Fork
- Willow
- Palisades
- Snake Head Waters
- Salt
- Grays-Hoback
- Green

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Potential Future Program
Payette, Boise, Wood & Upper Snake

- **Payette**
  - 17 Remote Gens
  - Aircraft
  - Radiometer
  - Weather Balloon
  - Weather Tower
  - 7 hi-res precip gauges

- **Boise and Wood**
  - 20 - 26 Remote Gens
  - Aircraft
  - Radiometer
  - Weather Balloon
  - 4 hi-res precip gauges

- **Upper Snake**
  - 30 - 40 Remote Gens
  - 25 Manual Gens
  - Aircraft
  - 2 Radiometers
  - 2 Weather Balloons
  - Weather Tower
  - 2 to 5 hi-res precip gauges
Benefits at Build-out

Payette – 271 KAF
Boise – 215 KAF
Wood – 118 KAF
Upper Snake – 456 KAF
Abv Palisades – 284 KAF
Remainder – 172 KAF
Questions?