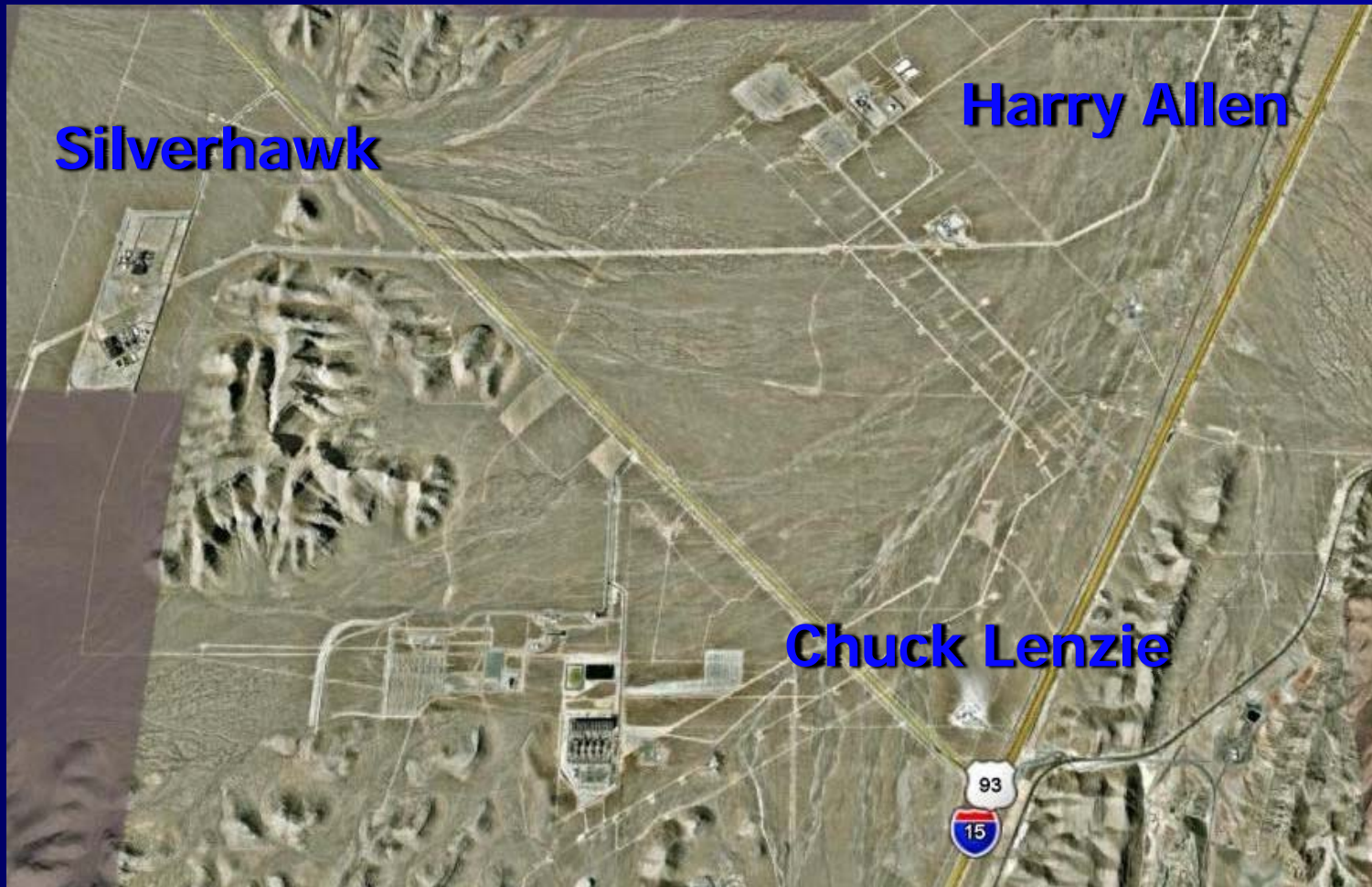


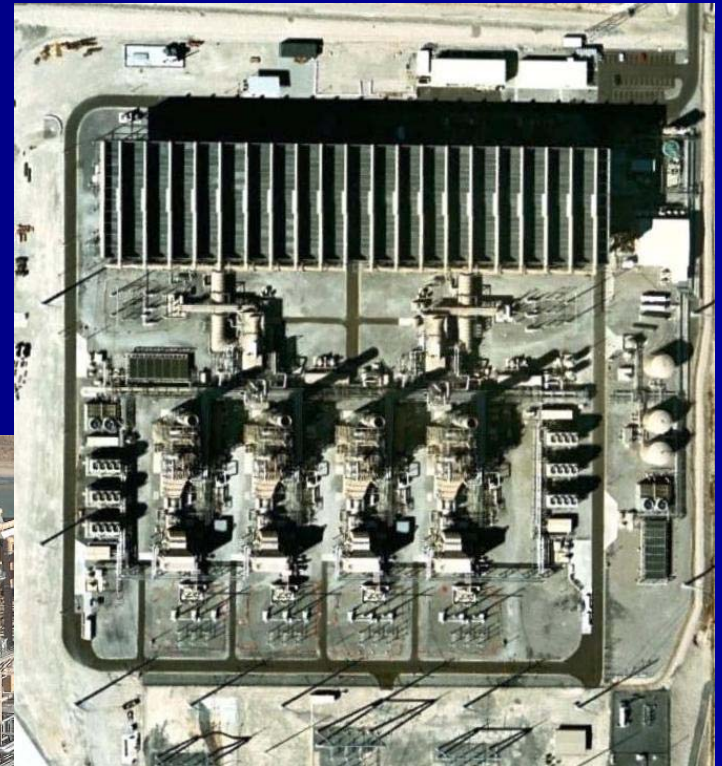


# **Arrow Canyon Complex Air Cooled Condenser Control Strategies 2009**

# Arrow Canyon Complex Site



# Chuck Lenzie

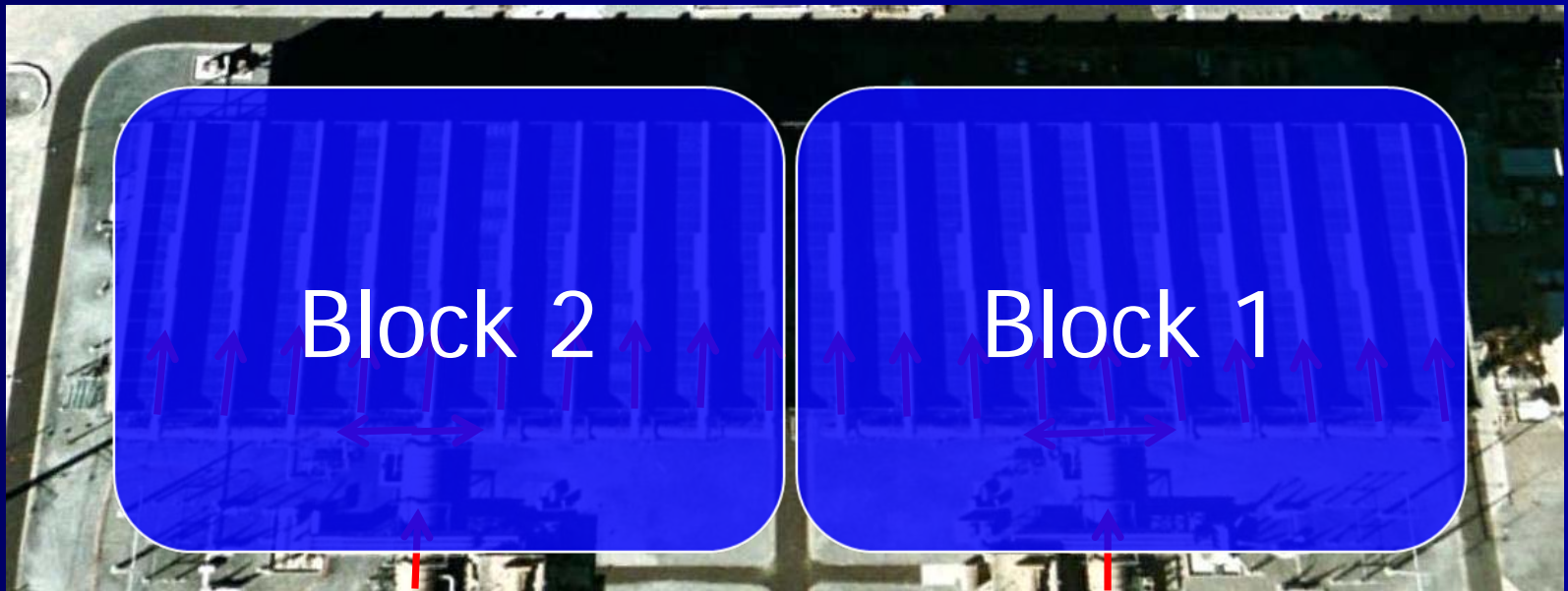


# Control Issues

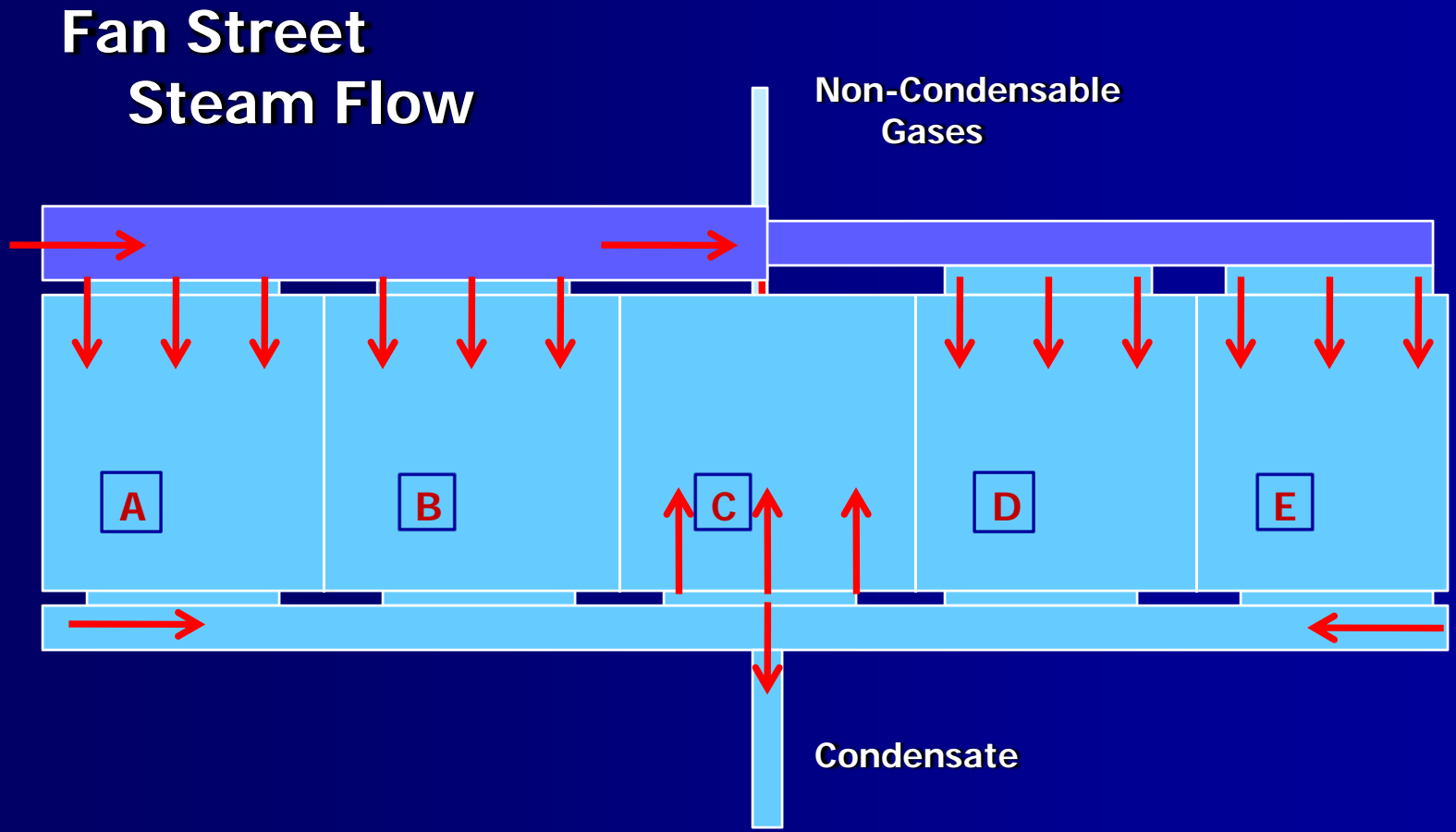
- Start-Up Operations
- Fan Sequencing Normal Operations
- Fan Sequencing High Winds

# Configuration

## Steam Flow

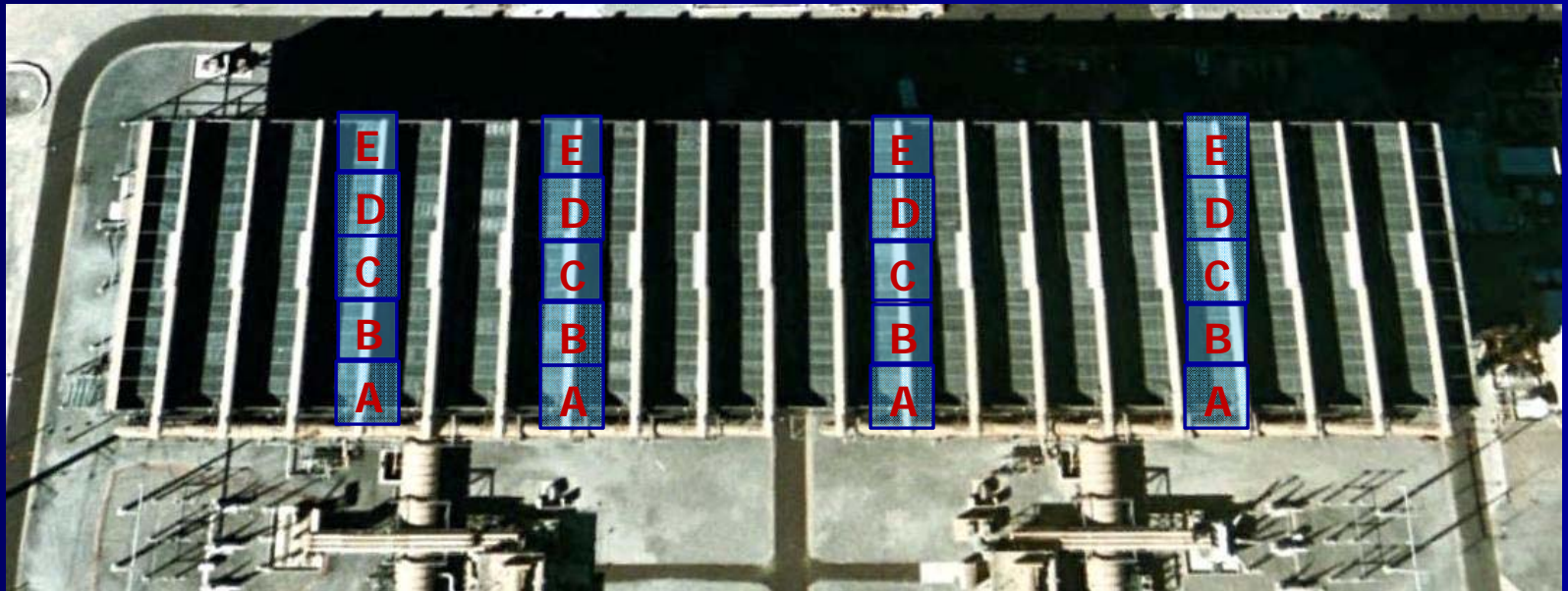


# Configuration



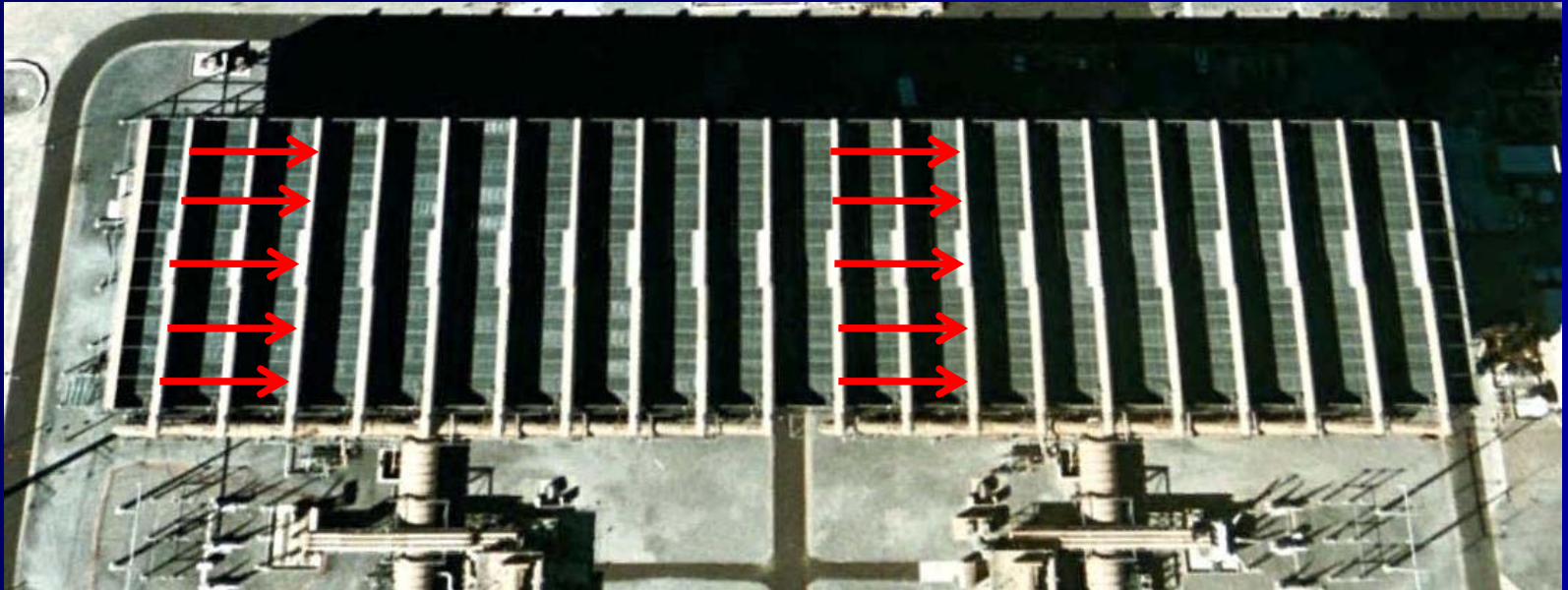
# Configuration – Fan Streets

## Fan Cell Address



# Configuration – Fan Sequence

First, the Center, C Row, Slow then Fast, Then B, D, A & E Slow, then Fast





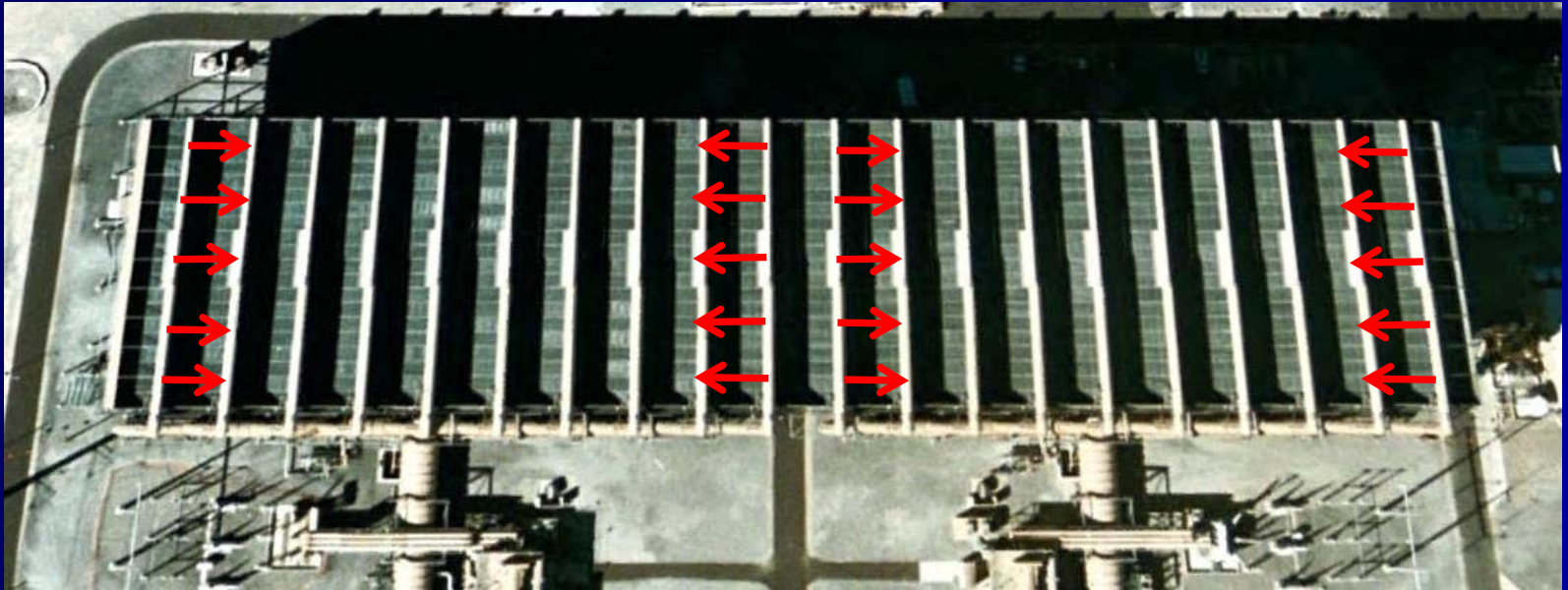
# Control Issues – Start-Up

- Currently S/U only Available in Manual Mode
  - During S/U Operators sometime forget to put in manual.
- Too Many Fans
  - Causes Vacuum Problems.
- Exploring Automating the Start-up

# Configuration

## Proposed New Fan Starting Sequence:

First, the Center, C Row, Slow then Fast, Then B, D, A & E Slow, then Fast



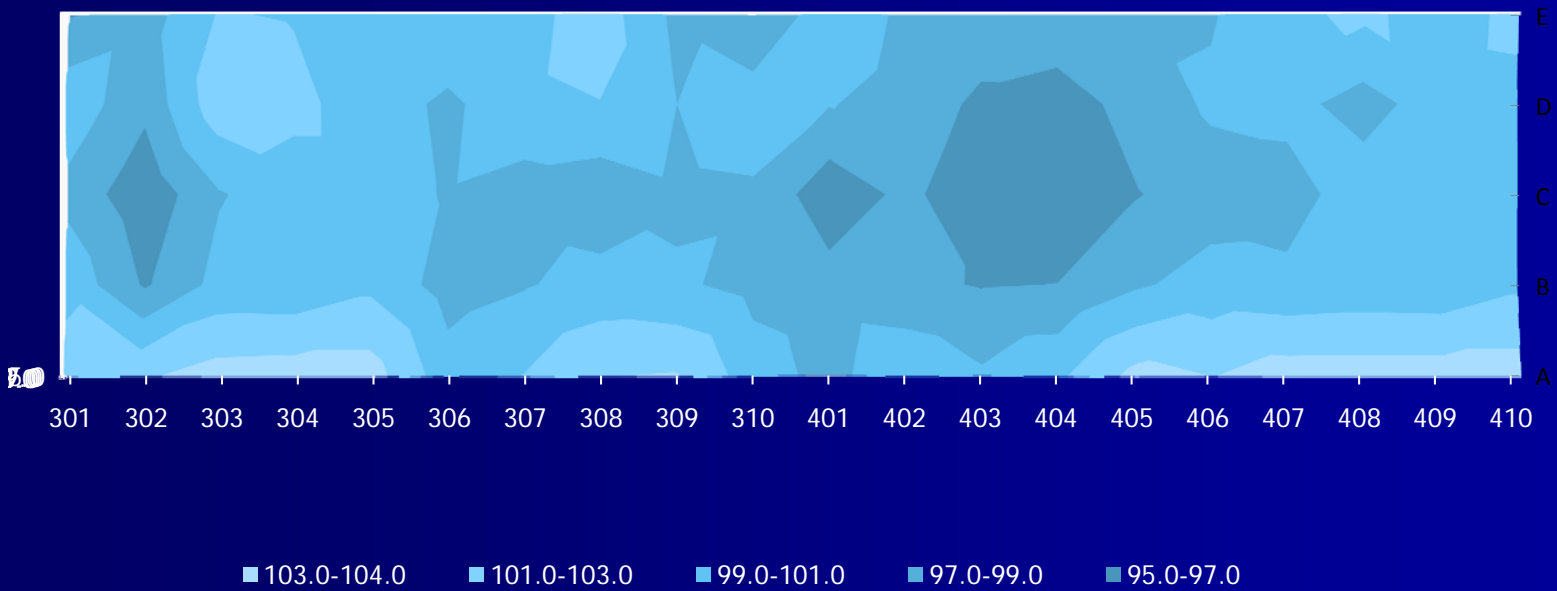
# Control Issues – Wind

- Currently Only One Sequence.
  - Off Summer Peak, not fans run.
  - Windward Edge Fans have diminished efficiency.
- Consider Changing Sequence Based on Wind.
  - Explore Staging On Windward Fans Last.



Arrow Canyon Complex

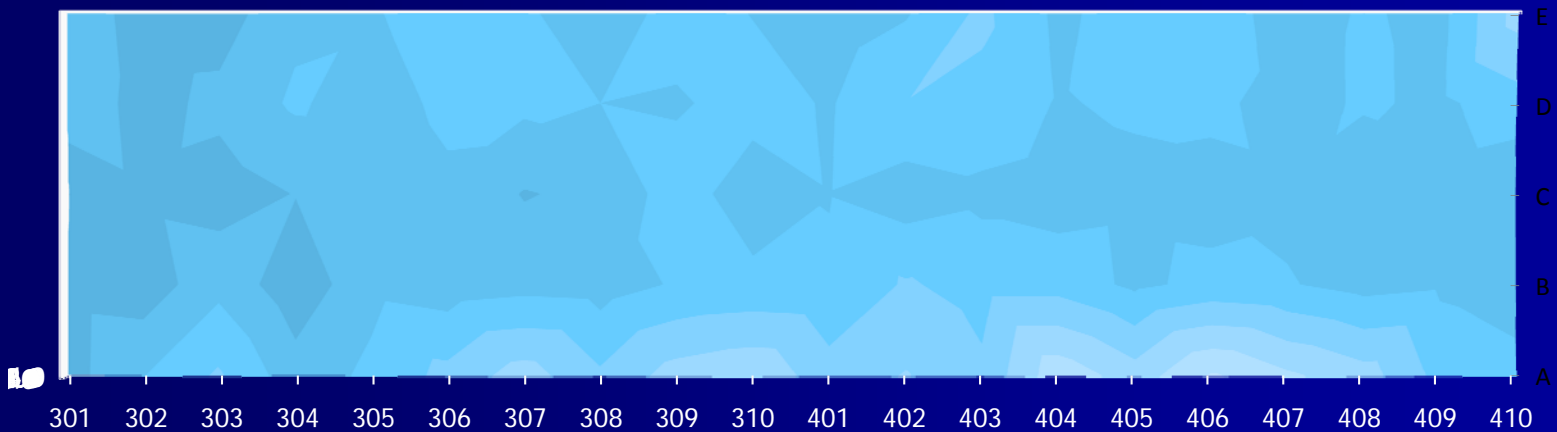
# Temperature Plot – Wind from SW @ ~15MPH, OSA Temp 94°F, All Fans in Fast





Arrow Canyon Complex

# Temperature Plot – Wind from NE @ ~15MPH, OSA Temp 102°F, All Fans in Fast



- 122.0-124.0
- 120.0-122.0
- 118.0-120.0
- 116.0-118.0
- 114.0-116.0
- 112.0-114.0
- 110.0-112.0
- 108.0-110.0
- 106.0-108.0
- 104.0-106.0

# Control Issues – Wind

- Initial Temperature Survey Found Little Cell Temperature to Wind Correlation.
- Not sure if this issue worth pursuing at Chuck Lenzie.



# Questions

Arrow  
Canyon  
Complex

