

Fluidization

2006

TO: Engineering Development Branch

FROM: Engineering Division

SUBJECT: Fluidization

The company needs to evaluate heat transfer in a fluid bed but has not equipment with which to do so. Your assignment is to construct a small-scale fluid bed that is able to simulate the essential characteristics of a commercial facility. Appropriate instrumentation and data acquisition/process control tools are also required. As a minimum, the following characteristics should be monitored:

1. Gas flowrate through the bed
2. Bed pressure drop
3. Bed temperature distribution
4. Heat flux to a cylinder placed in the bed and in air without fluidization particles
5. Minimum fluidization velocity
6. Heat exchange rate between air and particles

Your group is asked to design and construct the system and verify its usefulness.