Abstract

There are many important parameters to be monitored during any Power plant normal &
emergency operations. Furnace pressure is one such very important parameter, which needs
continuous control, protection & monitoring against any furnace explosion and implosion. The
National Fire Protection Association (NFPA) codes, such as NFPA 85: Boiler and Combustion
Systems Hazards Code are dedicated to fire and furnace explosion and implosion protection.
The NFPA also requires some additional logic for the furnace pressure control loop to ensure
adequate operating safety margins. There should be high and low furnace pressure logic to
block the ID fan from increasing or decreasing speed, as is appropriate. A high furnace
pressure signal the fan should be blocked from decreasing speed and on a low furnace
pressure signal it should be blocked from increasing speed. A main fuel trip (MFT) there should
be MFT kicker logic. An MFT occurs when the burner management system detects a dangerous
condition and shuts down the boiler by securing the fuel per NFPA and boiler manufacturer
requirements. This paper describe the Furnace explosion, Implosions, Furnace pressure set
points, cause and remedies in Coal Based Utility Boiler keeping NFPA-8502 standard into
consideration[2,5].

Reference
[2] M/s NTPC Tanda Project (4x110 MW) site visit and Retrofit project execution in year 2008-09
[5] ALSTOM Power Inc. (Formerly known as Combustion Engineering USA), reference documents and learning from various projects.

Index Terms

Electrical  
Power Plant Instrumentation

Key words

MFT-Master Fuel Trip