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СИСТЕМЫ УПРАВЛЕНИЯ

Руководство пользователя

на BMS

Burner Management System

Introduction

Control retrofits on existing fossil-fired utility plants or new plants frequently include a Burner Management System. A Burner Management System (BMS) is a safety system that permits the safe start up, operation, and shut down of the multiple-burner furnace section of a boiler.

Honeywell has taken a flexible approach to burner management. Honeywell can provide its own NFPA-certified BMS solution, or, if the customer prefers, Honeywell can team with one of the traditional standalone BMS suppliers to provide an integrated burner management solution. By offering a BMS as an integral part of the Experion PKS™ Process Knowledge System, the need for a separate operator interface is eliminated, and a single source of responsibility is established. Honeywell can also provide the engineering, controller, and 'burnerfront' products and services that, when combined, form a superior BMS solution.

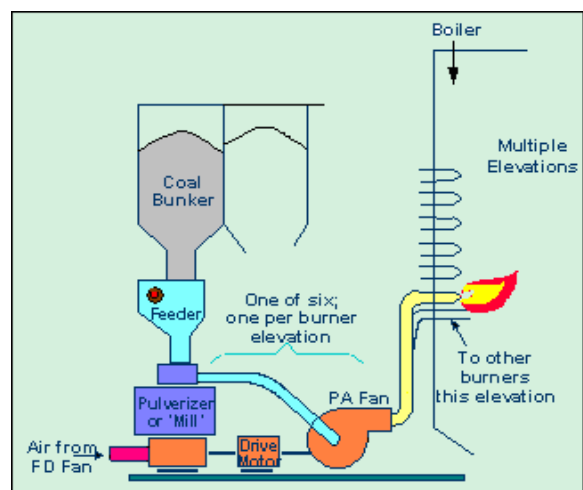
The Experion PKS system includes the proven, secure and reliable Fault-Tolerant Ethernet network. The Fail Safe Controller or C200 Process Controller may be used as the platform to execute the overall BMS sequencing and interlocking control strategy. The particular platform is chosen based on the local codes and standards that must be met. Igniters and flame scanners can be supplied by Honeywell or chosen by the customer with the concurrence of Honeywell. Utilizing the experience and expertise of Honeywell assures a superior BMS application that meets the applicable codes and standards for safety controllers and/or the burner management application. Typical standards met include the National Fire Protection Association (NFPA) 85C, ISA S84.01, TUV, and IEC 1508.

Scope of Application

The function of the BMS is to safely perform the functions of **1)** automatically placing burners and igniters in service, **2)** monitoring flame conditions, and **3)** removing burners and igniters from service. The system controls boiler purge, fuel header(s), and burner field devices allowing sequential control of the start-up and shutdown of any of the burners.

The primary objectives of the BMS are personnel safety and furnace protection. The secondary objective is to aid the plant operating personnel. The BMS is designed to direct the operator through a step-by-step procedure for both start up and shutdown of the boiler.

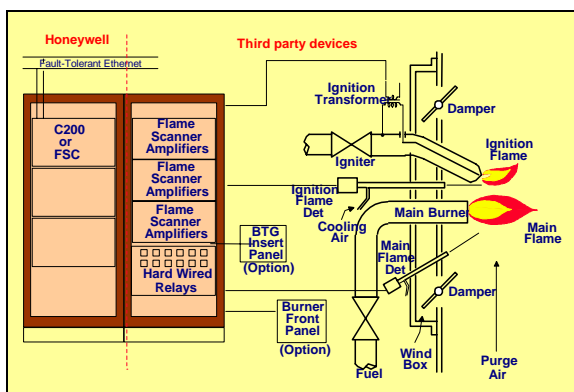
The typical arrangement of mills-to-burners is to have one mill/pulverizer per burner elevation. A burner elevation can typically have up to eight burners. There may be up to eight elevations in larger units. A typical mill/burner arrangement is shown below.



Burner startup is prevented if proper conditions have not been met, unusual conditions are annunciated, and shutdown is initiated if unsafe conditions exist. The BMS continuously monitors supervisory interlocks, fuel valve positions, flame status, and field devices. The control strategy normally utilized is the 'de-energize to trip' method. Smart alarms provide 'fail to open', 'fail to start', fail to close', and 'fail to stop' information.

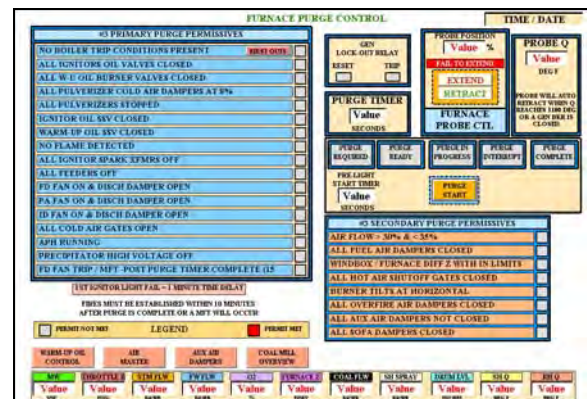
Flame monitoring equipment provides the logic controller with the flame status of burners and/or igniters. Each flame scanner has its own dedicated flame control module that receives the scanner's flame signal and determines whether this signal represents a flame-on or a flame-off condition. This flame status information is used by the control logic along with other interlocks and limit sensing inputs to prevent burner startup or initiate burner shutdown if preprogrammed operating conditions have not been verified. It is of extreme importance that the flame scanners discriminate accurately between flames in multi-burner applications. Burner Management Systems depend on the flame monitors working properly.

The BMS logic resides on the Fail Safe Controller or C200 Process Controller, each of which have peer-to-peer communication with the controllers performing the boiler control. The Experion Station operator interface for the BMS is the same as for the boiler control system. A typical system layout is shown below.

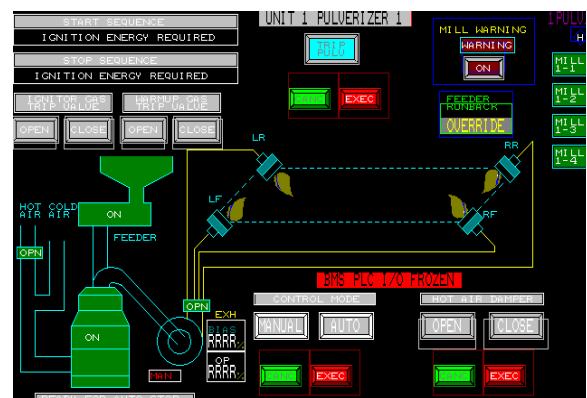


Experion Stations on the Fault-Tolerant Ethernet network provide the operator with a means of initiating control sequences and monitoring the status of field devices and boiler conditions. A Master Fuel Trip is hardwired to allow emergency tripping of the boiler. Graphics are

provided for all phases of the startup, operation, and shutdown of the furnace. A typical purge display and a typical operating display are shown below.



Typical Purge Display



Typical Operating Display

Summary

Honeywell's Burner Management System is a superior solution that allows burner management to be included as an integral part of the plant's overall control strategy. It allows for customer preferences in selecting equipment, provides the security and functionality needed to meet regulatory agency requirements, and becomes a 'friend of the operator' through its ergonomic design.

Getting Started

Burner Management is offered on Honeywell's revolutionary new **Experion PKS™ Process Knowledge System** platform. For more information, contact your local Honeywell representative, or call 1-800-288-7491 in the U.S.A.

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