2.4.6 Plant Fire Alarm System

Design Description

1.0 System Description

The plant fire alarm system (PFAS) is a non-safety related alarm signaling system which provides control and monitoring of plant fire protection, suppression and detection system parameters.

The PFAS provides the following non-safety related functions:

- Provides a fire alarm management interface to the operators.
- Controls and monitors plant fire suppression and detection systems.
- Provides the main control room (MCR) operators with information displays and supports automatic and manual control of fire protection equipment.

2.0 I&C Design Features, Displays, and Controls

2.1 Displays listed in Table 2.4.6-1—Plant Fire Alarm System Displays and Alarms – Main Control Room and Remote Shutdown Station are indicated on the PICS operator workstations in the MCR and the RSS.

2.2 The location of the PFAS equipment is consistent with the post-fire safe shutdown analysis.

3.0 Electrical Power Design Features

3.1 The PFAS is provided with both an electrically supervised primary and secondary power source that will transfer automatically to the secondary power source upon loss of the primary source.

3.2 A trouble signal indication is provided on the PICS operator workstations in the MCR upon a loss of either power source to a local fire control panel (LFCP) or workstation.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.4.6-2 lists the PFAS ITAAC.

Table 2.4.6-1—PFAS Displays and Alarms – MCR and RSS

Display	Associated Alarms
PFAS graphics display with specific alarm information. Turbine Building alarm signals also displayed at PFAS.	Common PFAS Fire Alarm signal at PICS. Common PFSA Supervisory Alarm signal at PICS. Common PFAS System Trouble signal at PICS.

Table 2.4.6-2—Plant Fire Alarm System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	Displays listed in Table 2.4.6-1 are indicated on the PICS operator workstations in the MCR and the RSS.	a. Tests will be performed to verify that the displays listed in Table 2.4.6-1 are indicated on the PICS operator workstations in the MCR. b. Tests will be performed to verify that the displays listed in Table 2.4.6-1 are indicated on the PICS operator workstations in the RSS.	a. Displays listed in Table 2.4.6-1 are indicated on the PICS operator workstations in the MCR. b. Displays listed in Table 2.4.6-1 are indicated on the PICS operator workstations in the RSS.
2.2	The location of the PFAS equipment is consistent with the post-fire safe shutdown analysis.	a. A post-fire safe shutdown analysis will be performed to determine the location of the PFAS equipment. b. An inspection will be performed to verify that the location of the as-built PFAS equipment is consistent with the post-fire safe shutdown analysis.	a. A post-fire safe shutdown analysis determines the location of the PFAS equipment. b. The PFAS equipment is located consistent with the post-fire safe shutdown analysis.
3.1	The PFAS is provided with both an electrically supervised primary and secondary power source that will transfer automatically to the secondary source upon loss of the primary source.	A test will be performed to verify the transfer of power of the PFAS from the primary source of power to the secondary source.	The PFAS is provided with an electrically supervised primary and secondary power source that will transfer automatically to the secondary source upon loss of the primary source.
3.2	A trouble signal indication is provided on the PICS operator workstations in the MCR upon a loss of either power source to a LFCP or workstation.	A test will be performed to verify the existence of a trouble signal indication on the PICS operator workstations in the MCR when either the primary or secondary power source is lost at any LFCP or workstation.	A trouble signal indication is indicated on the PICS operator workstations in the MCR upon a loss of either power source to a LFCP or workstation.

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