PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

I. Buildings with a Master Fire Alarm Unit (with or without an evacuation system) includes' the Clean Agent Fire Extinguisher/Preaction Systems releasing service controls.
This is the required configuration for all new installations with multiple actions. Only buildings with existing systems capable of remaining in service and being supplemented may be approved with an additional panel.

ZONES (1)	RELEASE CAFES AGENT (2)	ENERGIZE PREACTION SOLENOID (2)	ANUNUCIATE AT FARU	CAFES BELLS & STROBES (3)	CAFES AMBER STROBES (5)	OFFSITE SUPERVISING STATION	BUILDING HORNS & STORBES (4)	EXTERIOR BELL OR HORN (4)
Wet Sprinkler water flow (4)	NO	NO	BUILDING ALARM	OFF	OFF	ALARM	ON	ON
Wet Sprinkler Valve(s) tamper (4)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	OFF	OFF
Smoke/heat detectors (4)	NO	NO	BUILDING ALARM	OFF	OFF	ALARM	ON	OFF
Manual pull station (4)	NO	NO	BUILDING ALARM	OFF	OFF	ALARM	ON	OFF
HVAC duct detector (4)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	OFF	OFF
CAFES/Preaction spot type (1st alarm)	NO	YES	CAFES/PA SUPERVISORY	ON (6)	OFF	SUPERVISORY	OFF	OFF
CAFES/Preaction spot-type (2nd alarm) or air sampling smoke detector	NO (7)	YES	CAFES/PA SUPERVISORY	ON (8)	OFF	SUPERVISORY	OFF	OFF
At completion of 30 seconds count down	YES	YES	BUILDING ALARM	OFF	ON	ALARM	ON	OFF
Preaction low or high air pressure	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	OFF	OFF
Preaction valve tamper	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	OFF	OFF
Preaction water flow	NO	YES	BUILDING ALARM	OFF	OFF	ALARM	ON	ON
CAFES/ Preaction SD and low pressure	NO	YES	BUILDING ALARM	OFF	OFF	ALARM	ON	OFF
CAFES/Preaction manual pull station (9)	YES	YES	BUILDING ALARM	ON	ON	ALARM	ON	OFF
FARU System trouble	NO	NO	TROUBLE	OFF	OFF	TROUBLE	OFF	OFF

Notes:
(1) Zones shall be annunciated separately and distinctly at the fire alarm control panel (FARU). There shall be one DACT/dialer in the building that will transmit signals from the FARU to the offsite supervising station.

(2) The FARU shall be the releasing control unit for both the clean agent fire extinguishing system (CAFES) and the preaction systems. Separate releasing panels for the CAFES and Preaction shall not be allowed. The FARU shall be CSFM listed as a releasing device. For Double Interlock Systems activation of one smoke detector and low air shall energize the solenoid. Solenoid shall be fail-safe.
(3) CAFES bells/strobes (clear lens) shall be CSFM listed devices. Housing shall be red and labeled with the word "AGENT"
(4) Building horns/strobes shall be connected to the FARU and installed in areas covered by the preaction and CAFES systems. Housing shall be white and labeled with the word "FIRE".
(5) Amber strobes shall be installed at all entrances to the area(s) protected by CAFES.
(6) Bells shall be Temporal.
(7) Begin 30 seconds count down.
(8) Bells shall be steady/continuous.
(9) Every exit from the room or area protected by a CAFES/preaction system shall have a manual pull station. The pull station shall be red and labeled "AGENT".

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

II. Building without an evacuation system having one Control Panel (FARU) for both Sprinkler Monitoring and Preaction Systems

ZONES (1)	**ENERGIZE** (2) **SOLENOID**	**ANUNCIATE AT FARU**	**OFFSITE SUPERVISING STATION**	**INTERIOR HORN**	**EXTERIOR BELL OR HORN**
Wet sprinkler water flow	NO	ALARM	ALARM	ON	ON
Wet sprinkler valve(s) tamper	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
FACP smoke detector	NO	ALARM	ALARM	ON	OFF
Manual pull station	NO	ALARM	ALARM	ON	OFF
HVAC duct detector	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction spot-type or air sampling smoke detector	YES	SUPERVISORY	SUEPRVISORY	OFF	OFF
Preaction low or high air pressure	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow	YES	ALARM	ALARM	ON	ON
Preaction SD and low pressure	YES	ALARM	ALARM	ON	ON
Preaction manual pull station (3)	YES	ALARM	ALARM	ON	OFF
System trouble	NO	TROUBLE	TROUBLE	OFF	OFF

Notes:

(1) Zones shall be annunciated separately and distinctly at the FARU. The FARU shall be a CSFM listed releasing device.
(2) For double interlock systems, activation of one smoke detector and low air shall energize solenoid. Solenoid shall be fail-safe.
(3) Every exit from the room or area protected by a preaction system shall have a manual pull station.

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

III. Building with an evacuation system and has one Control Panel (FARU) for both the Fire Alarm and Preaction systems

ZONES(1)	ENERGIZE(2) SOLENOID	ANUNCIATE AT FARU	OFFSITE SUPERVISING STATION	HORNS OR SPEARKERS & STROBES	EXTERIOR BELL OR HORN
Wet sprinkler water flow	NO	ALARM	ALARM	ON	ON
Wet sprinkler valve(s) tamper	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Smoke and heat detectors	NO	ALARM	ALARM	ON	OFF
Manual pull stations	NO	ALARM	ALARM	ON	OFF
HVAC duct detector	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction spot-type or air sampling smoke detector	YES	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction low or high air pressure	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow	YES	ALARM	ALARM	ON	ON
Preaction SD and low pressure	YES	ALARM	ALARM	ON	ON
Preaction manual pull station (3)	YES	ALARM	ALARM	ON	OFF
System	NO	TROUBLE	TROUBLE	OFF	OFF

Notes:

(1) Zones shall be annunciated separately and distinctly at the FARU. The FARU shall be a CSFM listed releasing device.
(2) For double interlock systems, activation of one smoke detector. Solenoid shall be fail-safe and low air shall energize solenoid.
(3) Every exit from the room or area protected by a preaction system shall have a manual pull station.

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

IV. Building without an evacuation system having separate Control Panels for Sprinkler Monitoring (Dedicated Function [DFCU]) and Preaction (PCU)

ZONES (1)	**ENERGIZE** (2) **SOLENOID**	**ANUNCIATE AT PCU**	**ANUNICATE AT DFCU**	**OFFSITE SUPERVISING STATION**	**INTERIOR HORN** (3)	**EXTERIOR** (3) **BELL OR HORN**
Wet sprinkler water flow (3)	NO	NO	ALARM	ALARM	ON	ON
Wet sprinkler valve(s) tamper (3)	NO	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
FACP smoke detector	NO	NO	ALARM	ALARM	ON	OFF
Manual pull station (3)	NO	NO	ALARM	ALARM	ON	OFF
HVAC duct detector (3)	NO	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction spot-type or air sampling smoke detector (4)	YES	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction low or high air pressure (4)	NO	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper (4)	NO	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow (4)	YES	ALARM	ALARM	ALARM	ON	ON
Preaction SD and low pressure (4)	YES	ALARM	ALARM	ALARM	ON	ON
Preaction manual pull station (4), (5)	YES	ALARM	ALARM	ALARM	ON	OFF
PCP System trouble	NO	TROUBLE	TROUBLE	TROUBLE	OFF	OFF
FACP System trouble	NO	NO	TROUBLE	TROUBLE	OFF	OFF

Notes:

(1) Zones shall be annunciated separately and distinctly at the DFCU. There shall be one DACT/dialer in the building that will transmit signals from the DFCU to the offsite supervising station.
(2) The PCP shall be the solenoid releasing control panel and shall be CSFM listed as a releasing device. For double interlock systems, activation of one smoke detector and low air shall energize the solenoid. Solenoid shall be fail-safe.
(3) Device(s) shall be connected to the DFCU.
(4) Device(s) shall be connected to the PCU.
(5) Every exit from the room or area protected by a preaction system shall have a manual pull station.

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

V. Buildings with an evacuation system and has separate Control Panels for Fire Alarm (FACU) and Preaction (PCU).

ZONES(1)	**ENERGIZE**(2) **SOLENOID**	**AUNUNCIATE AT PCU**	**ANUNCIATE AT FACU**	**OFFSITE SUPERVISING STATION**	**HORNS OR SPEAKERS & STROBES**(3)	**EXTERIOR**(3) **BELL OR HORN**
Wet sprinkler water flow (3)	NO	NO	ALARM	ALARM	ON	ON
Wet sprinkler valve(s) tamper (3)	NO	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Bldg. Smoke and heat detectors (3)	NO	NO	ALARM	ALARM	ON	OFF
Bldg. Manual pull stations (3)	NO	NO	ALARM	ALARM	ON	OFF
Bldg. HVAC duct detector (3)	NO	NO	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction spot-type or air sampling smoke detector or (4)	YES	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction low or high air pressure (4)	NO	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper (4)	NO	SUPERVISORY	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow (4)	YES	ALARM	ALARM	ALARM	ON	ON
Preaction SD and low pressure (4)	YES	ALARM	ALARM	ALARM	ON	ON
Preaction manual pull station (4), (5)	YES	ALARM	ALARM	ALARM	ON	OFF
PCP System trouble	NO	TROUBLE	TROUBLE	TROUBLE	OFF	OFF
FACP System trouble	NO	NO	TROUBLE	TROUBLE	OFF	OFF

Notes:

(1) Zones shall be annunciated separately and distinctly at the FACU. There shall be one DACT/dialer in the building that will transmit signals from the FACU to the offsite supervising station.
(2) The PCP shall be the solenoid releasing control panel and shall be CSFM listed as a releasing device. For double interlock systems, activation of one smoke detector and low air shall energize solenoid. Solenoid shall be fail-safe.
(3) Device(s) shall be connected to the FACU.
(4) Device(s) shall be connected to the PCU.
(5) Every exit from the room or area protected by a preaction system shall have a manual pull station.

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

VI. Building with a Sprinkler Monitoring, Clean Agent Fire Extinguishing, and Preaction Systems where the sprinkler monitoring system has its own control panel while the clean agent fire extinguishing and preaction systems share another control panel. Building has no evacuation system.

ZONES (1)	RELEASE CAFES AGENT (2)	ENERGIZE PREACTION SOLENOID (2)	ANUNUCIATE AT FARU	CAFES BELLS & STROBES (3)(5)	CAFES AMBER STROBES (5)(6)	ANUNUCIATE AT DFCU	OFFSITE SUPERVISING STATION	INTERIOR HORN (4)	EXTERIOR BELL OR HORN (4)
Wet Sprinkler water flow (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	ON
Wet Sprinkler Valve(s) tamper (4)	NO	NO	NO	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
FACP Smoke detector (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	OFF
Manual pull station (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	OFF
HVAC duct detector (4)	NO	NO	NO	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
CAFES/Preaction spot type (1st alarm) (5)	NO	YES	ALARM	ON (7)	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
CAFES/Preaction spot-type (2nd alarm) or air sampling smoke detector (5)	NO (8)	YES	ALARM	ON (9)	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
At completion of 30 seconds count down	YES	YES	ALARM	ON	ON	ALARM	ALARM	ON	OFF
Preaction low or high air pressure (5)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper (5)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow (5)	NO	YES	ALARM	OFF	OFF	ALARM	ALARM	ON	ON
CAFES/ Preaction SD and low pressure (5)	NO	YES	ALARM	OFF	OFF	ALARM	ALARM	ON	OFF
CAFES/Preaction manual pull station (5), (10)	YES	YES	ALARM	ON	ON	ALARM	ALARM	ON	OFF
FARU System trouble	NO	NO	TROUBLE	OFF	OFF	TROUBLE	TROUBLE	OFF	OFF
DFCU System trouble	NO	NO	NO	OFF	OFF	TROUBLE	TROUBLE	OFF	OFF

Notes:

(1) Zones shall be annunciated separately and distinctly at the sprinkler monitoring control panel (DFCU). There shall be one DACT/dialer in the building that will transmit signals from the DFCU to the offsite supervising station.

(2) The FARU shall be the releasing control unit for both the clean agent fire extinguisher system (CAFES) and the preaction system. Separate releasing panels for the CAFES and Preaction shall not be allowed. The FARU shall be CSFM listed as a releasing device. For Double Interlock Systems, activation of one smoke and low air shall energize the solenoid. Solenoid shall be fail-safe.
(3) CAFES bells/strobes (clear lens) shall be CSFM listed devices. Housing shall be red and labeled with the word "AGENT"
(4) These Appliance(s) and/or Device(s) shall be connected to the DFCU.
(5) These Appliance(s) and/or Device(s) shall be connected to the FARU.
(6) Amber strobes shall be installed at all entrances to the area(s) protected by CAFES.
(7) Bells shall be Temporal.
(8) Begin 30 seconds count down.
(9) Bells shall be steady/continuous.
(10) Every exit from the room or area protected by CAFES/preaction system shall have a manual pull station. The pull stations shall be red and labeled "AGENT".

PREACTION SYSTEMS SEQUENCE OF OPERATIONS MATRIX CHART EXAMPLES
BY CONFIGUATION – FOR SAN JOSE FIRE DEPARTMENT

VII. Building with a Fire Alarm (evacuation system), Clean Agent Fire Extinguisher and Preaction Systems where the fire alarm system has its own control panel while the clean agent fire extinguishing and preaction systems share another control panel.

ZONES (1)	RELEASE CAFES AGENT (2)	ENERGIZE PREACTION SOLENOID (2)	ANUNUCIATE AT FARU	CAFES BELLS & STROBES (3)(5)	CAFES AMBER STROBES (5)(6)	ANUNUCIATE AT FACU	OFFSITE SUPERVISING STATION	BUILDING HORNS & STORBES (4)	EXTERIOR BELL OR HORN (4)
Wet Sprinkler water flow (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	ON
Wet Sprinkler Valve(s) tamper (4)	NO	NO	NO	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
Smoke/heat detectors (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	OFF
Manual pull station (4)	NO	NO	NO	OFF	OFF	ALARM	ALARM	ON	OFF
HVAC duct detector (4)	NO	NO	NO	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
CAFES/Preaction spot type (1st alarm) (5)	NO	YES	ALARM	ON (7)	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
CAFES/Preaction spot-type (2nd alarm) or air sampling smoke detector (5)	NO (8)	YES	ALARM	ON (9)	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
At completion of 30 seconds count down	YES	YES	ALARM	OFF	ON	ALARM	ALARM	ON	OFF
Preaction low or high air pressure (5)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction valve tamper (5)	NO	NO	SUPERVISORY	OFF	OFF	SUPERVISORY	SUPERVISORY	OFF	OFF
Preaction water flow (5)	NO	YES	ALARM	OFF	OFF	ALARM	ALARM	ON	ON
CAFES/ Preaction SD and low pressure (5)	NO	YES	ALARM	OFF	OFF	ALARM	ALARM	ON	OFF
CAFES/Preaction manual pull station (5), (10)	YES	YES	ALARM	ON	ON	ALARM	ALARM	ON	OFF
FARU System trouble	NO	NO	TROUBLE	OFF	OFF	TROUBLE	TROUBLE	OFF	OFF
FACU System trouble	NO	NO	NO	OFF	OFF	TROUBLE	TROUBLE	OFF	OFF

Notes:

(10) Zones shall be annunciated separately and distinctly at the fire alarm control panel (FACU). There shall be one DACT/dialer in the building that will transmit signals from the FACU to the offsite supervising station.

(11) The FARU shall be the releasing control unit for both the clean agent fire extinguishing system (CAFES) and the preaction systems. Separate releasing panels for the CAFES and Preaction shall not be allowed. The FARU shall be CSFM listed as a releasing device. For Double Interlock Systems activation of one smoke detector and low air shall energize the solenoid. Solenoid shall be fail-safe.

(12) CAFES bells/strobes (clear lens) shall be CSFM listed devices. Housing shall be red and labeled with the word "AGENT"

(13) Building horns/strobes shall be connected to the FACU and installed in areas covered by the preaction and CAFES systems. Housing shall be white and labeled with the word "FIRE".

(14) These Appliance(s) and/or Device(s) shall be connected to the FARU.

(15) Amber strobes shall be installed at all entrances to the area(s) protected by CAFES.

(16) Bells shall be Temporal.

(17) Begin 30 seconds count down.

(18) Bells shall be steady/continuous.

(19) Every exit from the room or area protected by a CAFES/preaction system shall have a manual pull station. The pull station shall be red and labeled "AGENT".