NOTIFIER SYSTEM - SEQUENCE OF OPERATIONS**

INITIATING \ INDICATING	AUDIO & VISUAL INDICATION AT FIRE ALARM CONTROL PANEL	NOTIFY FIRE DEPARTMENT (ALARM)	NOTIFY FIRE DEPARTMENT (TROUBLE)	SHUT DOWN AIR HANDLING UNITS	OPEN SITE GATES	ACTIVATE HEF AIR INTAKE AND RELIEF VENTS/DAMPERS (ONLY FOR SPECIFIED ZONE)	RELEASE ROLL UP DOORS (ONLY FOR SPEC. ZONE)	ACTIVATE BELL AND WHITE STROBE OUT BLDG. ALARM & YARD AREA	ACTIVATE BELL AND WHITE STROBE (BLDG.HW14)	INITIATE AFFF DISCHARGE (BLDG.HW14)	ACTIVATE RED STROBE INSIDE HEF AREA	INITIATE TIME DELAY HEF DISCHARGE	ACTIVATE BELL AND WHITE STROBE (BLDG.85)
MANUAL STATION (BLDG.85)	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES
FOAM RELEASE MANUAL STATION	YES	YES	NO	NO	YES	YES	YES	NO	NO	NO	YES	NO	YES
HEAT DETECTOR SPECIFIED HEF AREA	YES	YES	NO	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES
PHOTOELECTRIC SMOKE DETECTOR	YES	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES
DUCT SMOKE DETECTOR	YES	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES
FLOW SWITCH (BLDG.85)	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES
SPRINKLER TAMPER SWITCH	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
FOAM RELEASE MANUAL STATION (BLDG.HW14)	YES	YES	NO	NO	YES	NO	NO	YES	YES	YES	NO	NO	NO
HEAT DETECTOR (BLDG.HW14)	YES	YES	NO	NO	YES	NO	NO	YES	YES	YES	NO	NO	NO
GLOVE BOX HEAT DETECTOR	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES
MANUAL STATION OUT BLDG ALARM & YARD	YES	YES	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO
HEAT DETECTOR NON-HEF AREA	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO
HEF CONCENTRATION LEVEL	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
AC POWER FAILURE	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SYSTEM FAULT	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

** FROM DWG 4N85E038

FIRE ALARM SYSTEM SYS 3 FUNCTION CHART

SYSTEM EVENT \ RESPONSE	ANNUNCIATE AT FACU	FIRE SIGNAL TO RECEIVER	TROUBLE SIGNAL TO LBNL RECEIVER	SUPERVISORY SIGNAL TO LBNL RECEIVER	OPERATE 85 AREA NOTIFICATION DEVICES
85 FIRE CALL BOX	●	●			●
85 HD/HEF	●	●			●
85 SMOKE DETECTORS	●	●			●
85 1ST & 2ND FLR DUCT SMOKE DETECTORS	●	●			●
85 FIRE SPRINKLER WATERFLOW SWITCH	●	●			●
85 FIRE SPRINKLER VALVE SUPERVISORY SWITCHES	●			●	
85-114 GLOVE BOX HEAT DETECTOR	●	●			●
85-119 DRY CHEMICAL RELEASE	●	●			●
85A HEAT DETECTORS	●	●			●
85A FIRE SPRINKLER WATERFLOW SWITCHES	●	●			●
85A FIRE SPRINKLER VALVE SUPERVISORY SWITCHES	●			●	
UPPER & LOWER YARD FIRE CALL BOXES	●	●			●
LOW FOAM LEVEL	●		●		
HEF TANK OVERFILL	●		●		
NOTIFIER PANEL POWER FAILURE	●		●		
B85D THRU J HEAT DETECTORS	●	●			●
B85D THRU J FIRE SPRINKLER WATERFLOW SWITCH	●	●			●
B85D THRU J FIRE SPRINKLER VALVE SUPERVISORY SWITCH	●			●	
B85J DRY CHEMICAL RELEASE	●	●			●
B13J HIGH WATER LEVEL	●		●		
B13J LOW WATER LEVEL	●		●		
AC POWER FAILURE	●		●		
SYSTEM FAULT	●		●		

BATTERY CALCULATIONS
SYS 3 PANEL: FAP-001-85

ITEM	DESCRIPTION	QTY	STANDBY CURRENT PER ITEM (AMPS)	TOTAL STANDBY CURRENT PER ITEM	ALARM CURRENT PER ITEM (AMPS)	TOTAL ALARM CURRENT PER ITEM
CP-35	FACP w/2ZN'S + AUD	1	0.1750	0.1750	0.5010	0.5010
PS-35	POWER SUPPLY	1	0.0000	0.0000	0.0000	0.0000
BC-35	BATTERY CHARGER	1	0.0450	0.0450	0.0300	0.0300
AA-30U	CLASS B BELL MODULE	–	0.0065	0.0000	0.0400	0.0000
AE-30U	CLASS B BELL MODULE	–	0.0065	0.0000	0.0400	0.0000
PM-32	MATRIX MODULE	1	0.0000	0.0000	0.0000	0.0000
RM-30U	RELEASE MODULE	–	0.0050	0.0000	1.5000	0.0000
SM-30	SWITCH MODULE	–	0.0000	0.0000	0.0450	0.0000
SR-32	6 RELAY MODULE	–	0.0000	0.0000	0.0450	0.0000
SR-35	8 RELAY MODULE	1	0.0000	0.0000	0.0210	0.0210
TC-30U	BATTERY TRANSFER	–	0.0300	0.0000	0.0150	0.0000
ZN-34US	SUPERVISORY MODULE	2	0.0100	0.0200	0.1100	0.2200
ZU-35	ZONE MODULE	–	0.0090	0.0000	0.1100	0.0000
ZU-35DS	ZONE MODULE/SD's	–	0.0090	0.0000	0.1100	0.0000
SMOKE	SMOKE DETECTOR	–	0.0001	0.0000	0.0010	0.0000
MOI	TRANSMITTER	1	0.1200	0.1200	0.1750	0.1750
MID	INPUT BOARD	4	0.0020	0.0080	0.0000	0.0000
PS-5A	POWER SUPPLY	1	0.0380	0.0380	0.0000	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT						0.0000
		TOTAL SYSTEM CURRENT	STANDBY	0.4060	ALARM	0.9470

MIN. BATTERY CAPACITY = {(TOT. STANDBY CURRENT X STANDBY TIME) + (TOT. ALARM CURRENT X ALARM TIME)} X 1.25

MIN. BATTERY CAPACITY = {(0.406 A X 24 HR) + (0.947 A X 0.083 HR)} X 1.25

MIN. BATTERY CAPACITY = {9.744 AHr + 0.0.0786 AHr} X 1.25 = 12.2783 AHr

PROFESSIONAL SEAL (IF REVISION, APPLIES ONLY TO REVISED WORK)	ISSUE (PROGRESS, ESTIMATE, BID, CONSTRUCTION, CONFORMED, REVISION, RECORD)	REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS
	AS BUILT — 08/20/13	_	LDD	LDD	MCD	08/20/13	AS BUILT

BLDG 85, 85A FIRE ALARM FUNCTION CHART & CALCULATIONS SYS 3 & NOTIFIER SYSTEM

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

DRAWN BY LDD	DATE 08/20/2013	
CHECKED BY LDD	08/20/2013	
APPROVED BY MCD	08/20/2013	
SCALE AS NOTED		
DRAWING NO. 4B85E081_		SHEET 1 OF 2
PROJECT NO. 000000		