NOTIFIER® by Honeywell

Configuration, Programming and Operation Manual for

Mass Notification Systems

Document LS10063-000NF-E Rev: E
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Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at http://www.systemsensor.com/appguides/. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

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Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49º C/ 32-120º F and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-27º C/60-80º F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Units with a touchscreen display should be cleaned with a dry, clean, lint free/microfiber cloth. If additional cleaning is required, apply a small amount of Isopropyl alcohol to the cloth and wipe clean. Do not use detergents, solvents, or water for cleaning. Do not spray liquid directly onto the display.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Precau-D2-11-2017

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online Help or printed manuals, you can email us.

Please include the following information:

- Product name and version number (if applicable)
- Printed manual or online Help
- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.

Table of Contents

Section 1: Introduction

1.1 Overview

A Notifier system is capable of providing both fire and mass notification protection. Based on risk assessment, installers can configure and program a system so that mass notification (MN) system events will always have either a higher or lower priority than fire events. When MN is programmed as the highest priority:

- Fire events will be suppressed by MN alarm events until the MN alarms are cleared.
- MN events will display ahead of fire events in each event category.

Notifier systems provide this capability beginning with the software releases in Table 1.1.

Product	Software Release Number
NFS2-3030 FACP	20.00
NCA-2 Network Annunciator	20.00
NFS2-640 FACP	20.00
NFS-320/SYS FACP	20.00
NCM Network Communication Module, PCA Version	3.60
NCM Network Communication Module, PCB Version	10.02
HS-NCM Hi-speed Network Control Module	20.3
DVC Digital Voice Command	7.00
ONYXWorks-WS with NOTIFY-IP	3.20
VeriFire® Tools*	7.00
*This manual describes programming with VeriFire Tools version 8.00 and higher. Earlier versions of VeriFire Tools will differ in options and appearance.	

Table 1.1 MN Software First Releases

This manual describes how to use Notifier products to configure, program, and operate a system with mass notification capabilities. It covers assembling the following key components of a mass notification system:

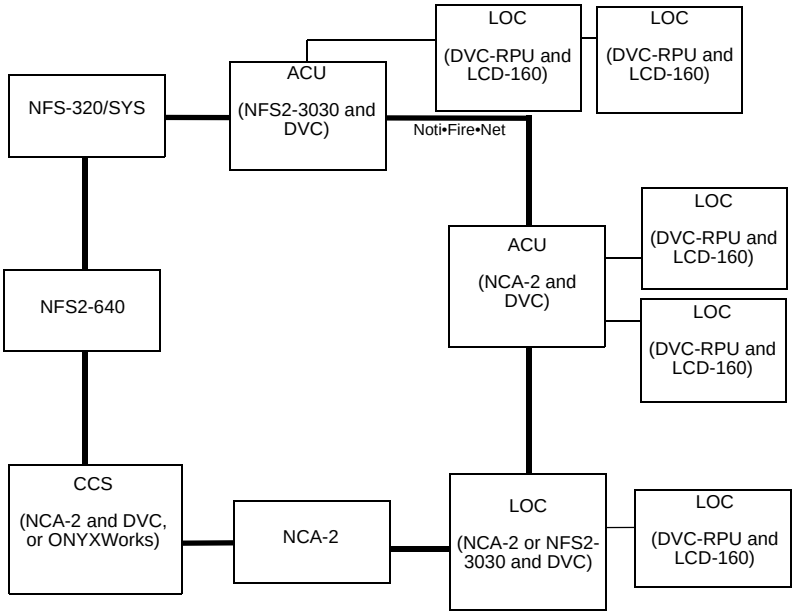
- Autonomous Control Units (ACU)
- Local Operating Consoles (LOC)
- Central Control Stations (CCS)

It also details the programming required to assign mass notification (MN) event priority, and describes the system's operation when MN is part of its function.

The configurations and functions covered in this manual comply with the following standard:

UL 2572 Mass Notification Systems Standard.

Data and Security: Communication Level 1. Stored Data Level: 0. Access Control Level: 1. (Access Control Level: 2 for ONYXWorks Workstation). Physical Security Level: 1.



Notes:
- MN System works on Standard and Hi-speed Noti•Fire•Net
- A total of 15 ONYXWorks workstations may participate in paging on a mass notification system.

Figure 1.1 Block Diagram Example of an MN System

1.2 Mass Notification Features

- MN events can be programmed as higher or lower than fire events, based on risk analysis.
- MN alarms suppress fire alarm events when MN is the highest priority.
- MN alarms are generated locally
  - by an ACU, LOC, or CCS page.
  - by manual activation of a UL-approved switch or button device installed for initiating MN alarms. A Listed UL2017 initiating switch/device is required.
- MN events generate messages over Noti•Fire•Net to MN-mapped nodes.
- Programmable using VeriFire Tools.
- Automatic activation of Special Function Zone ZF20 to signal MN alarm.

1.3 Supplemental Documentation

The table below provides a list of documents referenced in this manual.

Product	Part Number
NFS2-3030 Listing Document	LS10006-051NF-E
NFS2-640 Listing Document	52741LD
NFS-320/SYS Listing Document	52745LD
NCA-2 Installation, Programming and Operations Manual	52482
ONYXWorks Workstation Manual	52342
ONYXWorks NOTIFY-IP Manual	53620
CAP Gateway Listing Document	LS10021-051NF-E
ACS Series Annunciator Control System Manual	15842
LCD-160 Manual	51850
LCD2-80 Listing Document	54089LD
DVC Digital Voice Command Manual	52411
DAA2 and DAX Amplifiers Manual	53265
DS-DB Digital Series Distribution Board and Amplifiers Manual	53622
DVC-RPU Listing Document	50107524-001
AMPS-24 Manual	51907
ACPS-610 Manual	53018
FMM-1 Monitor Module Installation Document	156-1171/156/3056
FMM-101 Mini Monitor Module Installation Document	156-1173
FDM-1 Dual Monitor Module Installation Document	156-1463/156-3531
XP10-M Installation Document	156-1803
SLC Wiring Manual	51253

Table 1.2 Related Documentation Table

1.4 Cautions and Warnings

This manual may contain cautions and warnings to alert the reader as follows:

CAUTION: SUMMARY OF CAUTION INFORMATION

INFORMATION ABOUT PROCEDURES THAT COULD CAUSE PROGRAMMING ERRORS, RUNTIME ERRORS, OR EQUIPMENT DAMAGE.

WARNING: SUMMARY OF WARNING INFORMATION

INDICATES INFORMATION ABOUT PROCEDURES THAT COULD CAUSE IRREVERSIBLE DAMAGE TO THE CONTROL PANEL, IRREVERSIBLE LOSS OF PROGRAMMING DATA, OR PERSONAL INJURY.

Section 2: Configurations

Notifier equipment can be combined to meet the UL 2572 requirements for ACU, LOC, and CCS command centers. This section describes the product combinations that can be used to create these MN features, as well as their MN inputs and outputs.

NOTE: Product combinations must be in the same cabinet, or in cabinets next to each other with connections in conduit.

2.1 Autonomous Control Unit (ACU)

2.1.1 Description

An Autonomous Control Unit (ACU) is the primary local control unit for a mass notification system. It monitors and controls notification appliances for a building or other protected premise. The ACU provides the ability to acknowledge, silence, and reset any events (fire or MN) that are mapped to the ACU. MN events can be acknowledged, silenced or reset only by an active MN command center. Alarm, supervisory and trouble events are acknowledged and reset using the same acknowledge and reset buttons. In the event both an MN and fire event are active, only the highest priority type will change state with a reset. A second reset is required to clear the lower priority events.

The ACU displays MN alarms differently from fire alarms. Fire alarms are indicated by the “Fire Alarm” LED, and will be counted with the Fire Alarm counter. MN alarms are indicated by the “Other” LED on the display, and indicated on an annunciator with a dedicated LED and counted with an OTHER counter. MN supervisory events and fire supervisory events share the Supervisory LED, piezo sounding pattern, and supervisory counter. MN points in trouble and fire points in trouble will share the same trouble LED, piezo sounding pattern and trouble counter in the display.

The DVC (in ACU mode) provides the audio functions of the ACU. It provides three paging levels - Level 1, Level 2 and Level 3 - which may be assigned to MN, fire, or general paging for prioritization based on site-specific requirements. A page at the MN level will create a latching MN alarm condition that requires acknowledgment and reset. Multiple ACU locations can be prioritized in hierarchical levels by adjusting the priority level of the local microphone input. The ACU supports All Call when priority allows. MN pages from an ACU must be ALL CALL pages.

When an ACU gains control of acknowledge, silence and reset functions in an MN system, control is indicated by a lit Controls Active LED at the ACU. All other Controls Active LEDs in the system are extinguished, red lockout icons appear in ONYXWorks Workstation paging zones and on the acknowledge, silence, and reset control buttons; acknowledge, silence and reset functions are blocked until the MN alarm is cleared.

2.1.2 Configurations

The following two equipment combinations will meet the requirements for ACU functionality when combined with MN priority programming.

- An NCA-2 combined with a DVC (in ACU mode) and its local microphone.
- An NFS2-3030 (in network display mode), combined with a DVC (in ACU mode) and its local microphone.

A DVC-KD, ACM-24AT, or AEM-24AT LED point must be programmed as a dedicated visual indicator of an MN alarm for each of these configurations.

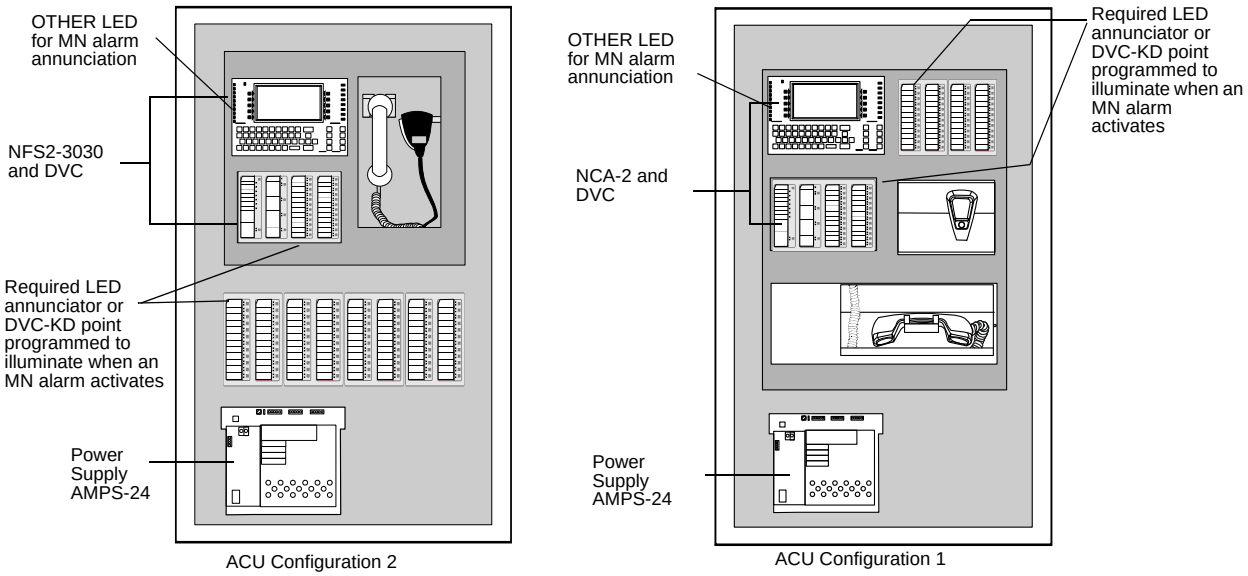


Figure 2.1 ACU Configurations

Refer to page 15 for programming.

2.2 Local Operating Console (LOC)

2.2.1 Description

A Local Operating Console (LOC) is used by authorized personnel to initiate messages and signaling for mass-notification applications. It provides three paging levels - Level 1, Level 2 and Level 3 - which may be assigned to MN, fire, or general paging for prioritization based on site-specific requirements. A page at the MN level will create a latching MN alarm condition that requires acknowledgment and reset. The LOC supports All Call when priority allows. LOC pages must be ALL CALL pages.

MN events can be acknowledged, silenced or reset only by an active MN command center. When an LOC gains control of acknowledge, silence and reset functions in an MN system, control is indicated by a lit Controls Active LED at the LOC. All other Controls Active LEDs in the system are extinguished, red lockout icons appear in ONYXWorks Workstations paging zones and on the acknowledge, silence, and reset control buttons; acknowledge, silence and reset functions are blocked until the MN alarm is cleared.

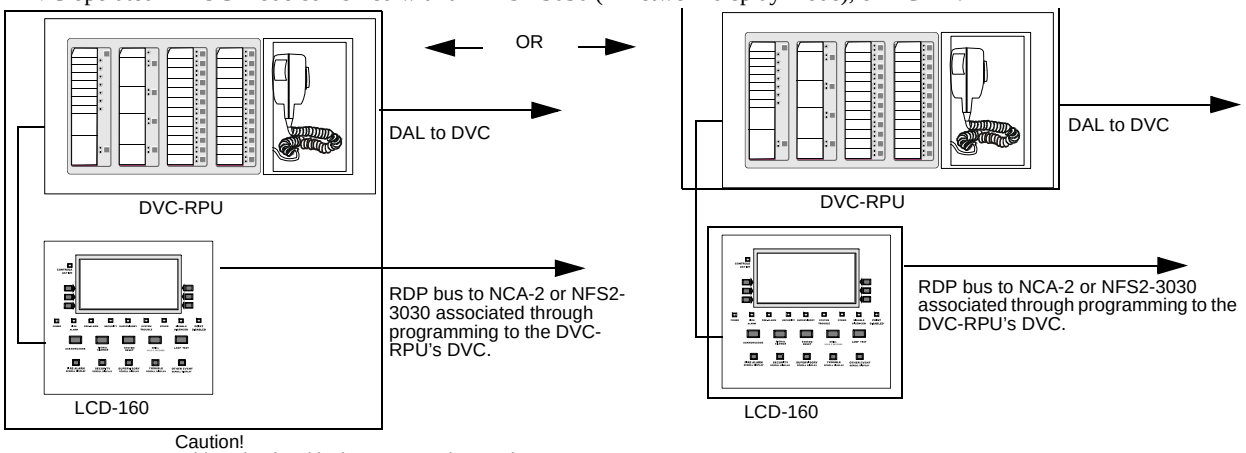
Multiple LOC stations can be used in a single system: control is granted on a first-come, first-served basis.

Each LOC requires a point to be mapped in programming, which should be visible when required at the ACU.

2.2.2 Configurations

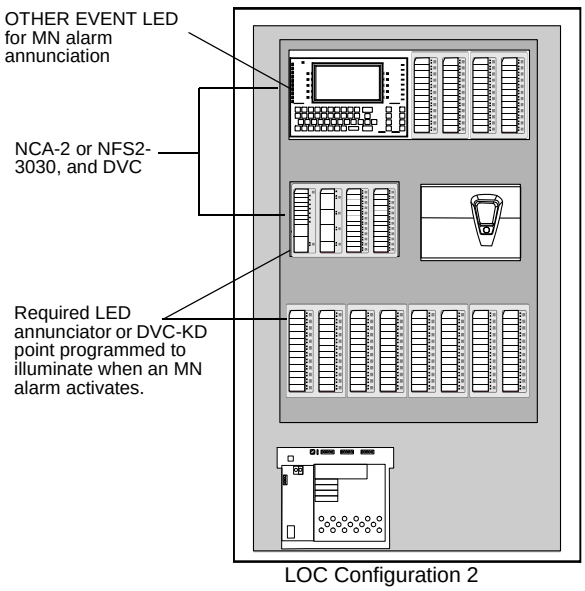
Either of the following two equipment combinations can meet the requirements for LOC functionality in an MN system when combined with MN priority programming:

- A DVC-RPU combined with an LCD-160 that is connected to an NCA-2 or NFS2-3030 (in network display mode).
  - The NCA-2 or NFS2-3030 (in network display mode) must be associated through programming with the DVC-RPU's DVC.
  - The DVC-RPU must have the same address on the DAL (Digital Audio Loop) as the LCD-160 has on its RDP bus. Addressing is critical - refer to page 33 for more information.
- A DVC operated in LOC mode combined with an NFS2-3030 (in network display mode), or NCA-2.



Caution!
Addressing is critical to command operations.
The DVC-RPU address on the digital audio loop must equal the LCD-160 address on the RDP bus.

LOC Configuration 1



LOC Configuration 2

Figure 2.2 LOC Configurations

Refer to Section 3 on page 15 for programming.

2.3 Central Control Station (CCS)

2.3.1 Description

A Central Control Station (CCS) is a system component with emergency communication and control that is used in conjunction with one or more ACUs in a mass notification system. The priority of a CCS will be lower than that of an ACU or LOC in the MN/fire system.

ONYXWorks Workstation

The ONYXWorks workstation (in FCC mode, with the NOTIFY-IP option) displays events and status of the MN and fire systems from any ACU located on Noti•Fire•Net. It provides three paging levels - Level 1, Level 2 and Level 3 - which may be assigned to MN, fire, or general paging for prioritization based on site-specific requirements. A page at the MN level will create a latching MN alarm condition that requires acknowledgment and reset. The workstation supports All Call paging when priority allows. An MN page from a CCS must be an ALL CALL page.

The ONYXWorks workstation has the capability to acknowledge, silence, and reset events (MN and fire) in the system. MN events can be acknowledged, silenced or reset only by an active MN command center. Control of acknowledge, silence and reset functions is indicated for an active ONYXWorks Workstation by the absence of red lockout icons in paging zones and control buttons. All other Controls Active LEDs in the system are extinguished, and red lockout icons appear in paging zones and control buttons of non-active ONYXWorks Workstation; acknowledge, silence and reset functions are blocked until the MN alarm is cleared.

In the event both MN and fire are active in the system, the reset control will reset only the highest priority type event. A second reset is required to reset lower-priority type events. The acknowledge control acknowledges all troubles and supervisories for MN and fire. Fire alarms and MN alarms are acknowledged one-by-one, based on highest priority events.

A total of 15 ONYXWorks workstations may participate in paging on a mass notification system.

NCA-2 with DVC

The NCA-2 displays and annunciates fire and MN events and status for the monitored points in each of the ACUs and LOCs in the system. It also provides acknowledge, silence, and reset capabilities. Alarm, supervisory and trouble events are acknowledged and reset using the same acknowledge and reset buttons. The reset control resets only the highest priority active event type in the system. A second reset is required to reset lower-priority type events. The acknowledge control block acknowledges all troubles and supervisories for MN and fire. Fire alarms and MN alarms are acknowledged one-by-one, based on highest priority events.

The DVC (in CCS mode) provides the audio functions of the CCS. It provides three paging levels - Level 1, Level 2 and Level 3 - which may be assigned to MN, fire, or general paging for prioritization based on site-specific requirements. A page at the MN level will create a latching MN alarm condition that requires acknowledgment and reset. Multiple CCS locations can be prioritized in hierarchical levels by adjusting the priority level of the local microphone input. The CCS supports All Call paging when priority allows. MN pages from a CCS must be All Call pages.

MN events can be acknowledged, silenced or reset only by an active MN command center. When the CCS gains control of acknowledge, silence and reset functions in an MN system, control is indicated by a lit Controls Active LED at the CCS. All other Controls Active LEDs in the system are extinguished, red lockout icons appear in ONYXWorks Workstation paging zones and the acknowledge, silence, and reset control buttons; acknowledge, silence and reset functions are blocked until the MN alarm is cleared.

2.3.2 Configurations

The following two equipment combinations can meet the requirements for CCS functionality in an MN system when combined with MN priority programming:

- An ONYXWorks workstation.
- An NFS2-3030 (in network display mode) or NCA-2 combined with a DVC and its local microphone. For this combination, a DVC-KD, ACM-24AT, or AEM-24AT LED point must be programmed as a dedicated visual indicator of an MN alarm.

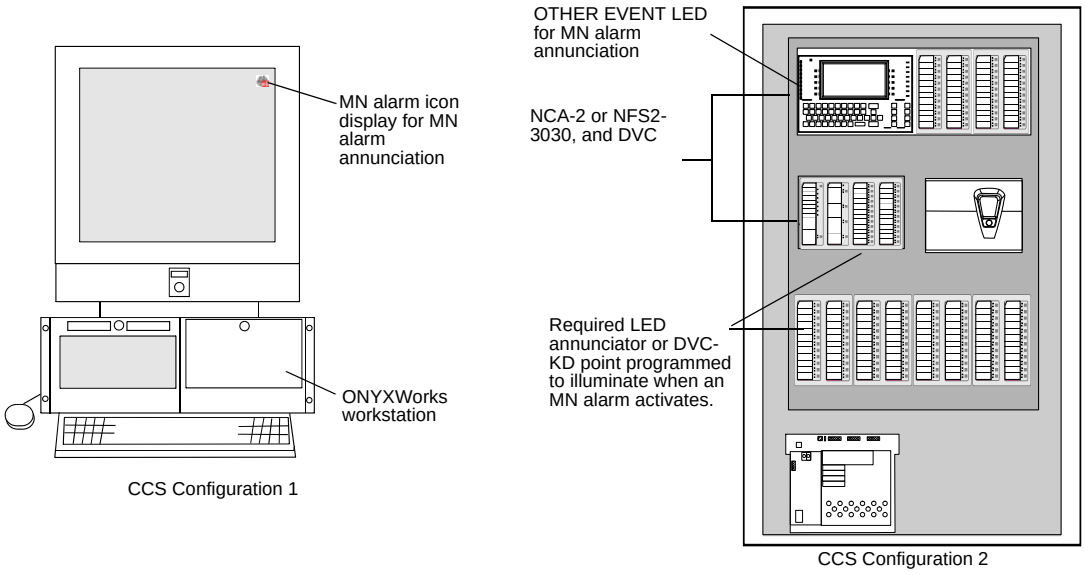


Figure 2.3 CCS Configurations

Refer to Section 3 on page 15 for programming.

2.4 MN Alarm Indicator

One of the following must be programmed as a dedicated MN alarm indicator for the NFS-320/SYS, NFS2-640, NFS2-3030, and NCA-2. The indicator is not required if a panel is acting as a displayless node.

- An ACM-24AT or AEM-24AT LED annunciator point.
- A DVC-KD point.

An ONYXWorks workstation does not require an additional annunciator point, as it has a dedicated icon to indicate when an MN alarm is active. This icon is displayed constantly during an MN alarm.

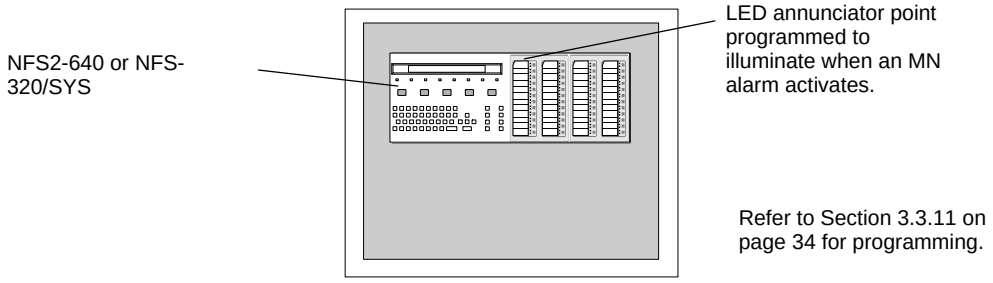


Figure 2.4 NFS2-640 or NFS-320/SYS MN Alarm Annunciation

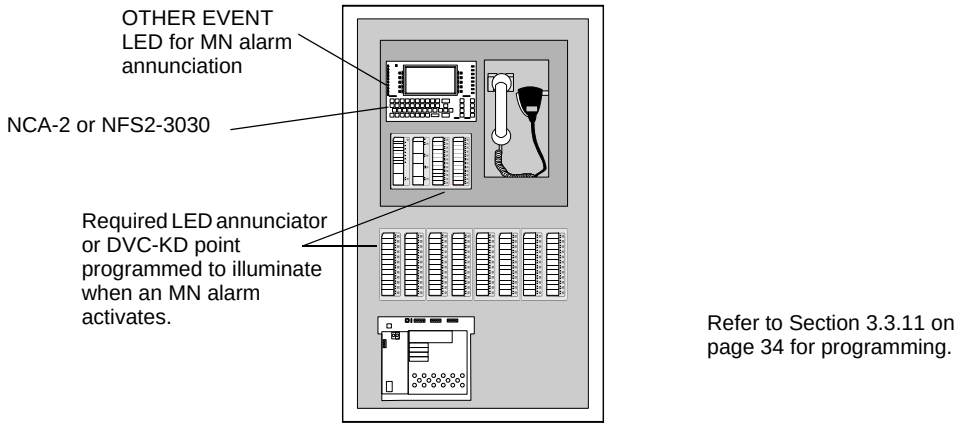


Figure 2.5 NFS2-3030, or NCA-2 MN Alarm Annunciation

2.5 Inputs

2.5.1 Monitor Module and Initiating Device

An FMM-1 Monitor Module, FMM-101 Mini Monitor Module, FDM-1 Dual Monitor Module, or XP10-M Monitor Module can be installed to monitor a UL-approved switch or button device installed for initiating MN alarms. A Listed UL2017 initiating switch/device is required. It will generate an MN alarm, MN supervisory, or MN trouble message when it is programmed with an MN/ECS type code. (Refer to "Type IDs" on page 24).

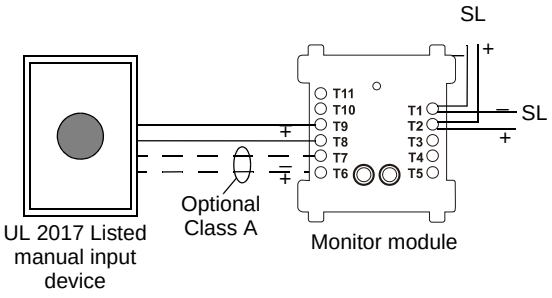


Figure 2.6 Monitor Module and Input Device

2.5.2 Microphone Activations for MN

MN Microphone activations are initiated at ACU, LOC and CCS stations. Programming determines which button is assigned to mass notification.

ACU, LOC, and Non-ONYXWorks CCS Activations

MN ALL CALL paging is activated by pressing one of the top two paging buttons in the second column of DVC-KD buttons, then using the microphone to page. Programming determines which button it is. MN paging will be the top button if MN is programmed as the highest priority in the system. It will be the second paging button down if Fire is programmed as the highest priority in the system. (Fire paging will be the top button.) MN paging activates an MN alarm.

ONYXWorks Activations

MN paging is activated by clicking the audio button for the desired MN paging group. MN paging groups are listed on the right side of the workstation graphic area. The Live Microphone dialog box will open and the Start Paging bar will be available to click and use the microphone to page.

2.5.3 ACS and DVC-KD Activations

Annunciator buttons, and the buttons in the two right columns of a DVC-KD, can be programmed to initiate MN alarms for vectored paging or for playing pre-recorded MN messages. Refer to “Programming” on page 15, and to the DVC manual for more information.

2.6 Outputs

2.6.1 Strobes and Horns

Notification Appliance Circuits (NACs) for driving strobes and horns can be shared between fire and mass notification, or they can be dedicated to a single application. When dedicated, releasing zone operation will not be affected by the state of MN in the system. For fire and MN, only the highest priority active event will cause activations.

Strobe circuits that are associated with MN or an MN/Fire combination must be programmed as non-silenceable.

2.6.2 Speakers

All speakers on a DAL (Digital Audio Loop) will play live and pre-recorded MN messages according to their programming. They can be shared between fire, mass notification, and releasing applications.

2.6.3 CAP Gateway

The CAP Gateway is a primary output for an MN System.

2.7 Supplemental Equipment

The following equipment is listed for UL2572 supplemental use.

- NFN-GW-EM3
- NWS-3
- BACNET-GW-3
- MODBUS-GW

Section 3: Programming

3.1 Overview

When a system is configured for both fire and MN protection, programming determines which events always have the highest priority - MN or fire. If MN is programmed as the highest priority at the fire panels and network annunciators, fire events are suppressed when MN alarms are active. For the DVC, PAM programming for the MN Active Tone will suppress the activation of fire sequences and pages.

Special Function Zones and Type Codes separate MN alarm, supervisory and trouble messages from fire messages, so that each can be correctly prioritized and displayed by the system. Mapping links nodes that will communicate with each other regarding MN events.

This chapter describes the special MN programming (needed in addition to fire programming) for an MN system.

NOTE: Program all panels, DVCs, network annunciators and workstations in a system with the same mass notification priority settings. The established priorities must be consistent throughout a system.

NOTE: All fire panel and display nodes must be programmed with DCC disabled. DVC nodes must be programmed as described in this chapter.

3.2 Programming Steps

This section lists the MN programming steps required, and provides reference to the appropriate programming, detailed in Section 3.3, for each station, panel, or network annunciator. These steps must be followed if the system is set up for MN and fire, or MN only.

Refer also to Section 4.3, “Output Event Suppression”, on page 40. This section presents basic principles for suppression.

3.2.1 ACU

An ACU is comprised of an NFS2-3030 and a DVC, or an NCA-2 and a DVC

ACU Programming Steps		
NFS2-3030*/NCA-2		
	Field	Refer to:
1	Set the mass notification priority.	page 19
2	Set the DCC field.	page 18
3	Set the MN Control Field to ACU.	page 35
4	Map to MN nodes.	page 23, page 23
5	Program with MN type IDs.	page 24
6	Program with MN Special Function Zones.	page 25
* NFS2-3030 must be in network display mode to function as part of an ACU.		
DVC		
1	Set the MN mode, enable paging levels.	page 21
2	Enter associated NFS2-3030/NCA-2 node number.	page 19
3	Program input categories and priorities.	page 21,page 22
4	Create and program an MN Active Tone.	page 25
5	Create and program a Fire Active Tone (when Fire is the highest priority).	page 29

3.2.2 LOC

An LOC is comprised of a DVC in LOC mode, (with an NCA-2 or NFS2-3030 in network display mode) or a DVC-RPU combined with an LCD-160. The LCD-160 must be associated with the NCA-2 or NFS2-3030 (in network display mode) that is being used for the ACU. The DVC-RPU must be associated with the DVC used for the ACU.

LOC Programming Steps		
DVC		
	Field	Refer to:
1	Set the MN mode, enable paging levels.	page 21
2	Enter associated NFS2-3030*/NCA-2 node number.	page 19
3	Program input categories and priorities	page 21, page 22
4	Create and program an MN Active Tone	page 25
5	Create and program a Fire Active Tone (when Fire is the highest priority).	page 29
DVC-RPU		
1	Enable Paging Levels for which All Call functionality is required.	page 33
2	Program the DAL address - critical to LOC operation	page 33
LCD-160		
1	Program RDP address - critical to LOC operation.	page 33
NFS2-3030*/NCA-2		
1	Set the MN Control Field to LOC.	page 35
* NFS2-3030 must be in network display mode to function as part of an LOC.		

3.2.3 CCS

A CCS is comprised of an NFS2-3030 and a DVC, or an NCA-2 and a DVC, or an ONYXWorks Workstation.

CCS Programming Steps		
NFS2-3030*/NCA-2		
	Field	Refer to:
1	Set the mass notification priority.	page 19
2	Set the DCC field.	page 18
3	Set the MN Control Field to CCS.	page 35
4	Map to MN nodes.	page 23, page 23
5	Program with MN type IDs.	page 24
6	Program with MN Special Function Zones.	page 25
* NFS2-3030 must be in network display mode to function as part of a CCS.		
DVC		
1	Set the MN mode, enable paging levels.	page 21
2	Enter associated NFS2-3030/NCA-2 node number.	page 19
3	Program input categories and priorities.	page 21, page 22
4	Create and program an MN Active Tone.	page 25
5	Create and program a Fire Active Tone (when Fire is the highest priority).	page 29
ONYXWorks Workstation		
1	Set the workstation to FCC Mode.	manual
2	Set the DCC field to disabled	manual
3	Configure the Notify-IP feature.	manual

CCS Programming Steps		
4	Create MN audio paging group(s).	manual
5	Set up the workstation priorities for an MN CCS station.	manual

3.2.4 Subsidiary Equipment

The panels and network annunciators in this section may be present on an MN network without being part of an ACU, LOC or CCS. They do not have local control when an MN alarm is active in the system unless fire is the highest priority and there is a fire alarm on the panel or on a mapped node on the NCA-2. They are capable of initiating and annunciating an MN alarm, but can not perform acknowledge, silence, or reset functions while an MN alarm is active in the system.

Subsidiary Equipment Programming Steps		
NFS2-3030*/NCA-2		
1	Set the mass notification priority.	page 19
2	Set the DCC field.	page 18
3	Map to MN nodes.	page 23, page 23
4	Program with MN type IDs.	page 24
5	Set the MN Control Field to Subsidiary.	page 35
6	Program with MN Special Function Zones.	page 25
*NFS2-3030 may be in standard or network display mode.		
NFS2-640/NFS-320/SYS		
1	Set the mass notification priority	page 21
2	Set the DCC field.	page 18
3	Map to MN nodes.	page 24
4	Program with MN type IDs.	page 24
5	Program with MN Special Function Zones.	page 25
DVC		
1	Set the MN Mode.*	page 21
2	Set the Associated Node Number field.	page 21
3	Program input categories and priorities.	page 21, page 22
4	Create and program an MN Active Tone.	page 25
5	Create and program a Fire Active Tone (when Fire is the highest priority).	page 29
*MN paging levels are not installed when the DVC acts as a subsidiary device.		

DVC-RPU

MN Paging Levels are not installed when the DVC-RPU acts as a subsidiary device.

Program the DVC-RPU label. Refer to “DVC-RPU” on page 33.

MN Annunciator Programming

Program an annunciator as a dedicated MN alarm annunciator (See page 34). Set an LCD2-80 to terminal mode (See page 34). Use DVC General Zones Z501 - Z533 to annunciate LOC and ACU paging. Refer to “DVC General Zones” on page 34.

3.3 Programming

3.3.1 DCC Participation

In a system with both MN and Fire, DCC must always be disabled for all NFS-320/SYSs, NFS2-640s, NFS2-3030s, NCA-2s and ONYXWorks Workstation.

NFS2-3030/NCA-2

Panel: In the Panel Settings Menu, set DCC Participation to NO to disable DCC Participation.

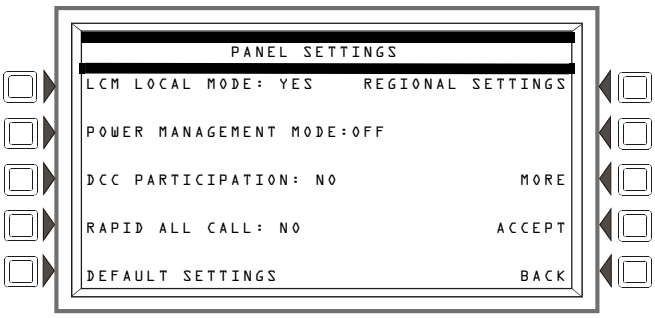


Figure 3.1 Panel Settings Screen (2), NFS2-3030

VeriFire Tools: Leave the Display and Control Center box unchecked in the NFS2-3030 and NCA-2. Do not enable DCC.

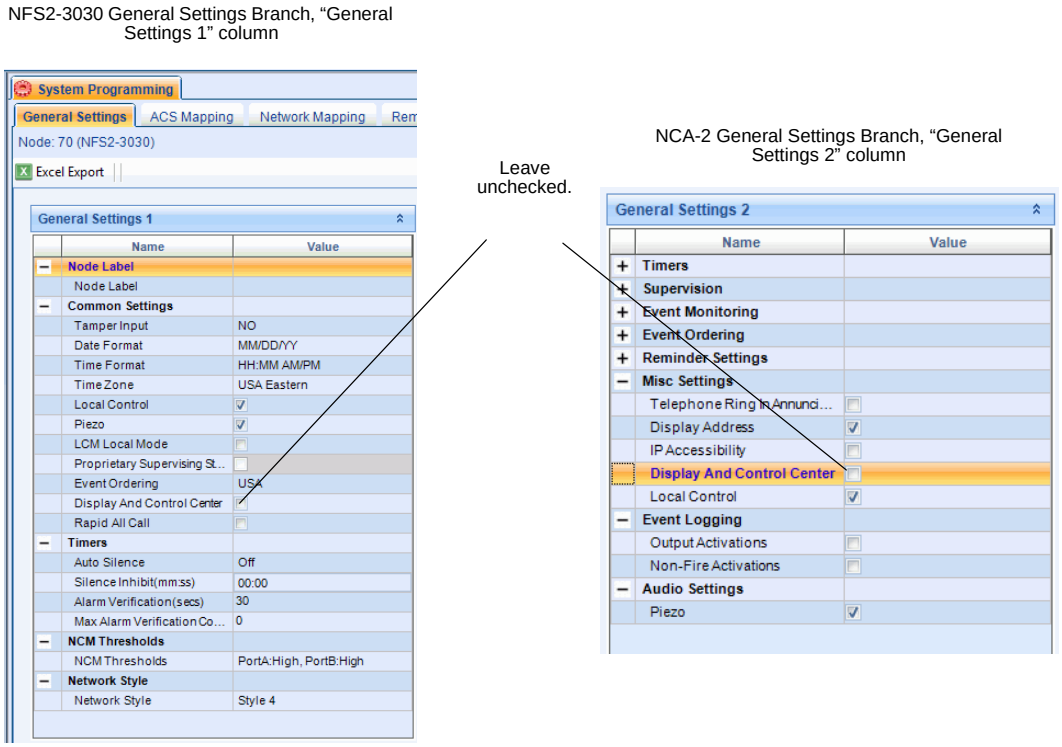


Figure 3.2 VeriFire Tools, NFS2-3030/NCA-2

NFS2-640/NFS-320/SYS

Panel: In the Utility Program Menu, set "DCC-mode" to "N" (no) to disable DCC participation.

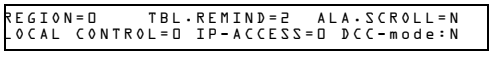


Figure 3.3 Utility Program, NFS2-640/NFS-320/SYS

VeriFire Tools: Leave the Display and Control Center box unchecked in the NFS2-640 and NFS-320/SYS service.

NFS2-640/NFS-320/SYS General Settings Branch, “General Settings 2” column

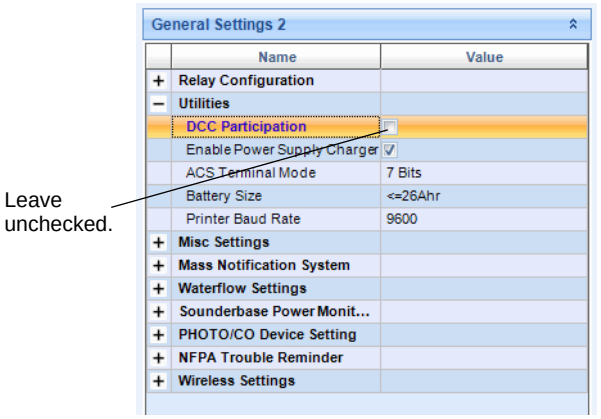


Figure 3.4 VeriFire Tools, NFS2-640/NFS-320/SYS

3.3.2 Mass Notification Control Settings for the DVC

Open the General Settings branch of the DVC System Programming Service in VeriFire Tools.

In the General Settings 3 column, set the MN Mode to LOC, ACU, or CCS. The Associated Node Number becomes available in the Mass Notification Control Settings section.

Enter the node number of the NCA-2 or NFS2-3030 that is associated with the DVC. VeriFire Tools will set this to 0 (zero) if the DVC is acting as a subsidiary device (i.e., it is not part of an ACU, LOC or CCS).

DVC General Settings Branch, “General Settings 2” and “General Settings 3” columns

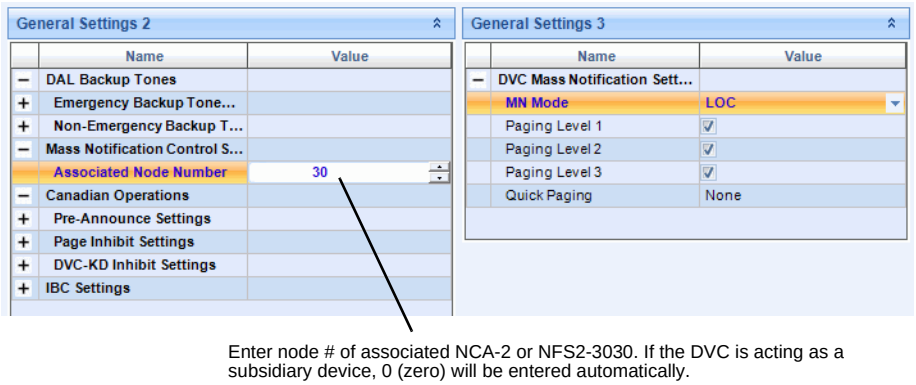


Figure 3.5 DVC MN Mode Setting

3.3.3 Set the Priority

NOTE: Program all panels, DVCs, network annunciators and workstations in a system with the same priority settings. The established priorities must be consistent throughout a system.
DVC will use the priority of the node with which it is associated.

NFS2-3030/NCA-2

This field allows the programmer to define the panel’s relative fire and MN priority. The priority may be set at the panel (See Figure 3.6) or in VeriFire Tools. (See Figure 3.7).

Panel: Navigate through the Panel Settings menu, pressing the “More” softkey until “MN PRIORITY OVER FIRE” appears. Press the softkey next to this selection until the appropriate setting appears, then press “ACCEPT”.

Settings:

- YES: MN is the highest priority.
- NO: Fire is the highest priority.
- MNS NOT USED: The system is for fire protection only. (Default)

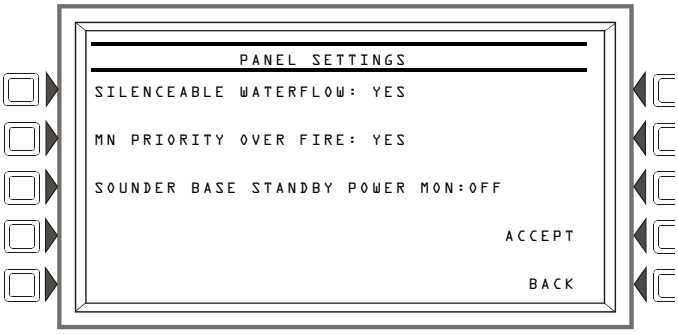


Figure 3.6 Priority Setting - Panel

VeriFire Tools: On the VeriFire Tools General Settings branch for NFS2-3030/NCA-2, select the appropriate setting from the pull-down menu for the “Mass Notification Priority” field.

Settings:

- Mass Notification not used (Default)
- Mass Notification is a higher priority than Fire
- Fire is a higher priority than Mass Notification

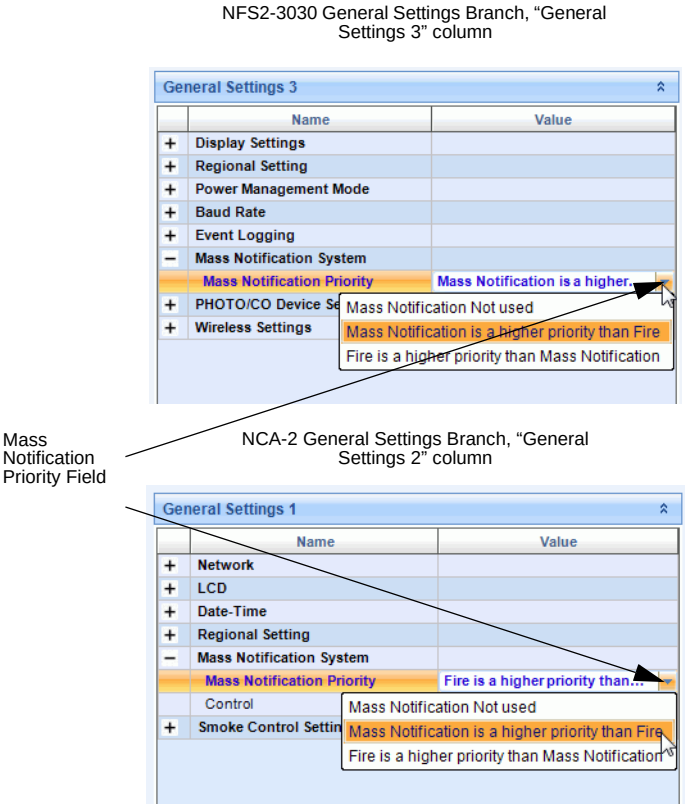


Figure 3.7 Priority Setting - VeriFire Tools, NFS2-3030/NCA-2

NFS2-640/NFS-320/SYS

This field allows the programmer to define the panel's fire and MN priority.

On the VeriFire Tools General Settings branch for NFS2-640 or NFS-320/SYS, select the appropriate setting from the pull-down menu for the "Mass Notification Priority" field.

Settings:

- Mass Notification not used (Default)
- Mass Notification is a higher priority than fire
- Fire is a higher priority than Mass Notification

NFS2-640/NFS-320/SYS General Settings Branch, "General Settings 2" column

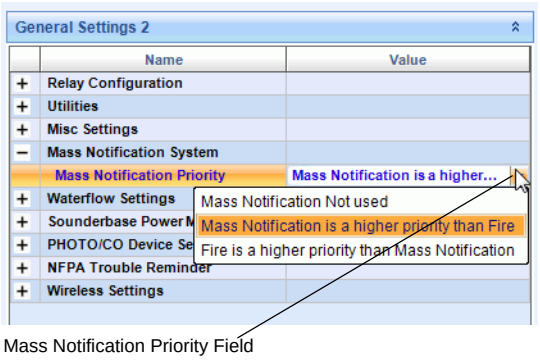


Figure 3.8 Priority Setting - VeriFire Tools, NFS2-640/NFS-320/SYS

DVC

■ Set the Mode and Paging Level

On the VeriFire Tools General Settings branch for DVC, select ACU, LOC, CCS, or Subsidiary from the MN Mode pull-down menu in the DVC MN Mode box.

A DVC that is not an ACU, LOC or CCS on an MN network must be programmed as Subsidiary, and its Associated Node Number must be 0 (zero).

Select the Paging Levels to enable the ALL CALL buttons in the second column of the DVC-KD.

■ Set the Input Category

Following are the Programmable Audio Matrix (PAM) Input Numbers, Default Priorities and Categories that appear for a DVC when ACU, LOC, CCS, or Subsidiary is selected as the DVC MN Mode. The default priorities for the first 12 inputs comply with the priorities specified in UL2572 in that at each level ACU is the highest priority and CCS is the lowest.

DVC-KD Level buttons in the second column page as follows:

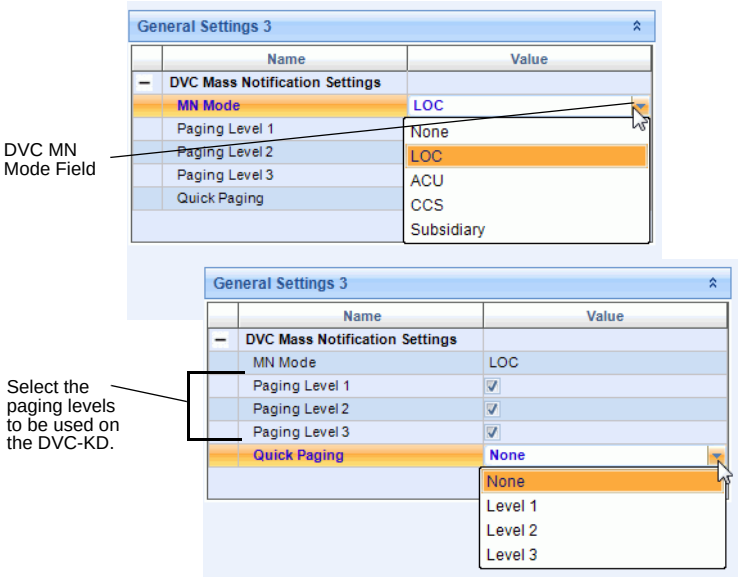


Figure 3.9 Setting DVC MN Mode & Paging Level

- Top button (Level 1) - always pages Inputs 1, 3, or 5, depending on whether the DVC is an ACU, LOC or CCS.
- Second button (Level 2) - always pages Inputs 7, 9, or 11, depending on whether the DVC is an ACU, LOC or CCS.
- Third button (Level 3) - always pages Input 13.

Input Categories are Fire, MN, General, and MN Active Tone:

- When ACU, LOC, CCS, or Subsidiary is selected as a mode, Level 1 inputs default to the MN category, and Level 2 inputs default to the Fire category.
- "MN Active Tone" is a category (it is assigned to a sequence, there is no default), and it must be assigned only to the MN Active Tone message sequence (See pages 25–28).

Input Number	Input Source	Default Priority	Category
1	ACU Local Paging Level 1	1	MN
2	ACU Network Paging Level 1	2	MN
3	LOC Local Paging Level 1	3	MN
4	LOC Network Paging Level 1	4	MN
5	CCS Local Paging Level 1	5	MN
6	CCS Network Paging Level 1	6	MN

Table 3.1 Default Input Priorities, MN Mode Selected

Input Number	Input Source	Default Priority	Category
7	ACU Local Paging Level 2	7	Fire
8	ACU Network Paging Level 2	8	Fire
9	LOC Local Paging Level 2	9	Fire
10	LOC Network Paging Level 2	10	Fire
11	CCS Local Paging Level 2	11	Fire
12	CCS Network Paging Level 2	12	Fire
13	Local General Paging	13	General
14	Network General Paging	14	General

Table 3.1 Default Input Priorities, MN Mode Selected

If an input categorized as MN goes active, ZF20 activates and can suppress fire signals for all nodes in the MN mapping when MN is the highest priority in the system.

Open the DVC Inputs branch. Because the DVC is set to ACU, LOC, CCS or Subsidiary mode, the first 14 Input lines will show MN default input priorities. Assign the MN category to mass notification inputs, the Fire category to fire inputs, the MN Active Tone category to the MN Active Tone input, and the General category to inputs that are neither MN, Fire, or MN Active Tone.

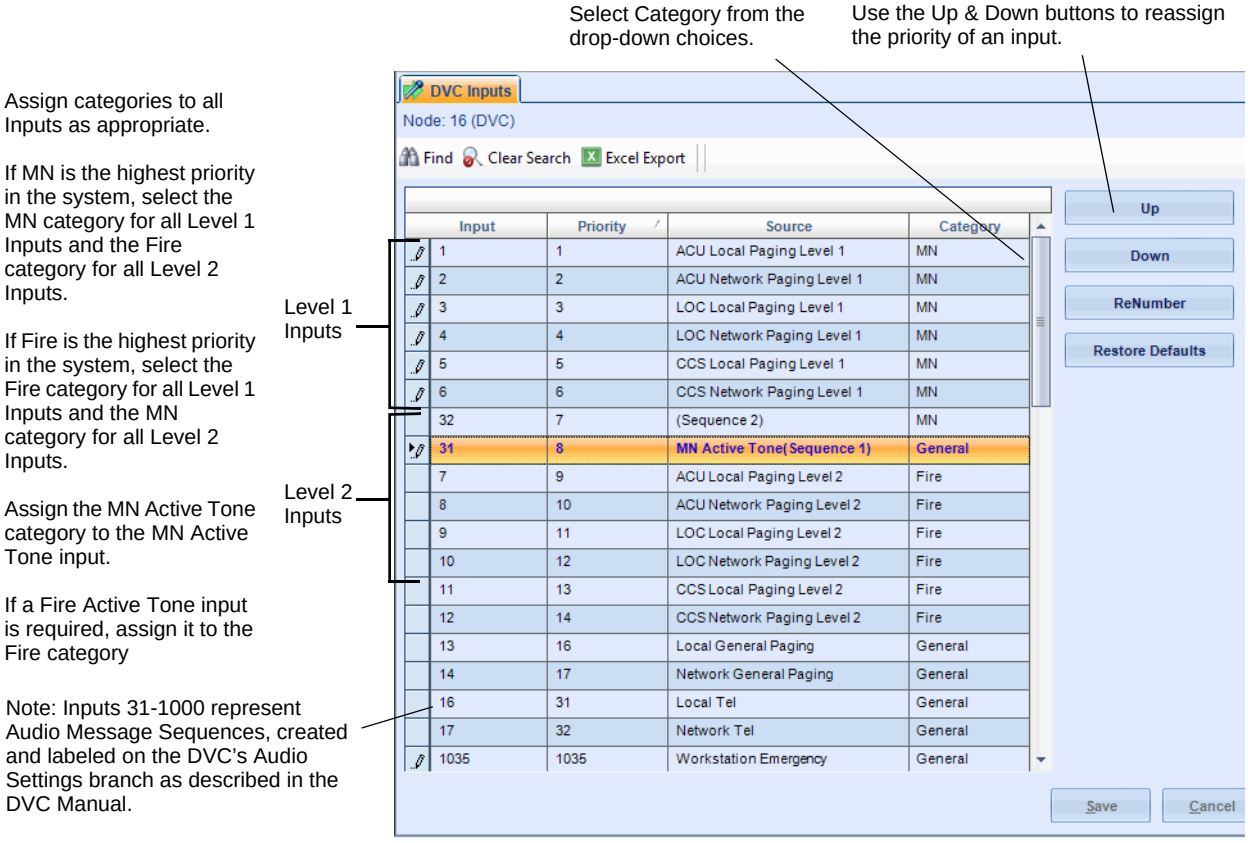


Figure 3.10 DVC Input Priority and Category Settings

■ Set the Input Priority

The priority for input sources can be modified from the default priority. The priority of the inputs should be modified to group inputs of similar categories together. That is, in a system that has prioritized MN events over fire, all inputs associated with MN should be assigned to the "MN" category and re-prioritized to be higher than fire inputs. "Fire" category inputs should be prioritized above "General" category inputs. Figure 3.15 on page 27 illustrates inputs grouped and prioritized by category.

The priority of the input is also used to prioritize network audio. In a system that utilizes multiple DVCs, the default configuration assigns priority to the local microphone input over the microphone input from a network source. To prioritize a network DVC over the local DVC, reassign the priority for the Network Paging rows to a lower number (and therefore a higher priority) than that of the Local Paging rows.

In systems that implement multiple network audio sources, the priority of the network sources will be determined by the priority assigned to the active input on the network source. For example, a DVC that is sending an ACU Local Paging Level 1 of priority 1 to a network DVC will take priority over a DVC that is sending an ACU Local Paging level 2 of priority 7 to the same DVC. In the event of the priority levels being identical for multiple network audio sources, the first source to activate will be granted priority.

ONYXWorks Workstation

1. Set the workstation to FCC Mode.
2. Create MN audio paging group(s).
3. Set up the workstation priorities for an MN CCS station. In Figure 3.10, Inputs are shown in their fixed order, which comply with UL2572. CCS Inputs are:
   - 5 (CCS Local Paging Level 1)
   - 11 (CCS Local Paging Level 2)
   - 13 (Local General Paging)

3.3.4 MN Mapping

MN Mapping determines if a ZF20 MN alarm will suppress fire events at the panel if there is an active MN alarm at another node and MN is the highest priority.

NFS2-3030 in Network Display Mode

MN network mapping may be done at the panel or in VeriFire Tools.

Panel: Navigate to the Panel Program Menu 1 screen. Press the softkey next to NETWORK MAPPING to bring up the screen shown in Figure 3.11. The panel will monitor the nodes mapped here for MN alarm messages in order to suppress fire.

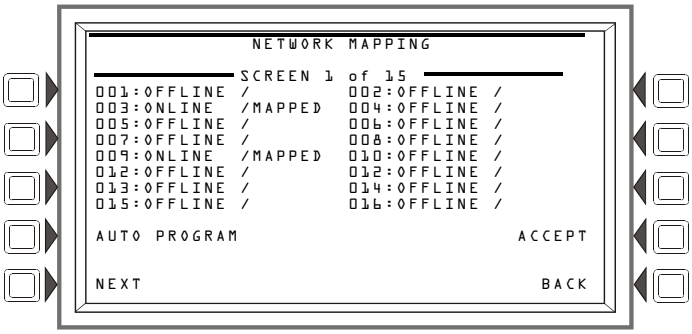
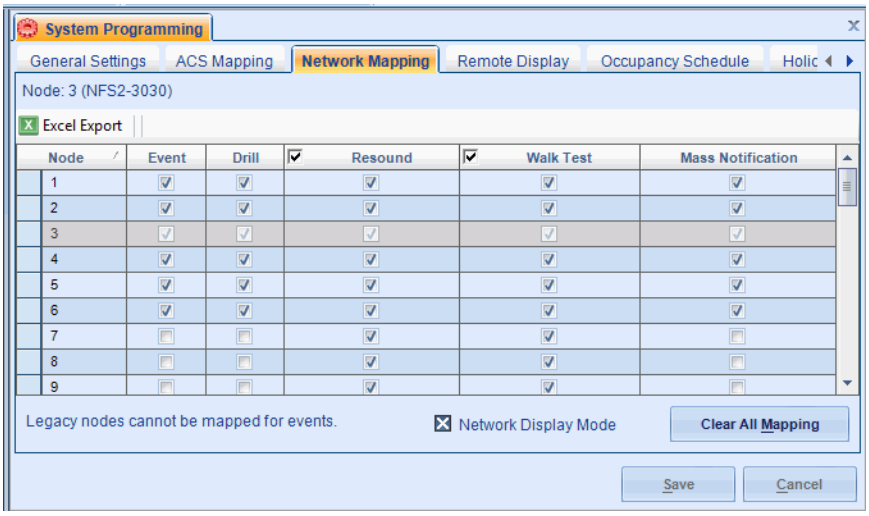


Figure 3.11 Network Mapping Screen, NFS2-3030

VeriFire Tools: In the Network Mapping branch of VeriFire Tools, select the nodes in the Mass Notification column that the panel will monitor for MN alarm messages in order to suppress fire.



Check boxes for the nodes to be monitored for MN events (a maximum of four DVCs and one fire panel). The NFS2-3030 node being programmed is grayed out and unavailable.

Figure 3.12 MN Mapping, NFS2-3030

NCA-2

NCA-2 Network event mapping defines its MN mapping; there is no unique MN mapping for the NCA-2.

NFS2-640, NFS-320/SYS

MN network mapping allows the programmer to select the Noti•Fire•Net nodes from which the NFS2-640 or NFS-320/SYS will accept an MN alarm message to initiate fire suppression.

On the NFS2-640 or NFS-320/SYS Network Mapping branch of VeriFire Tools, check the appropriate boxes in the Mass Notification mapping column.

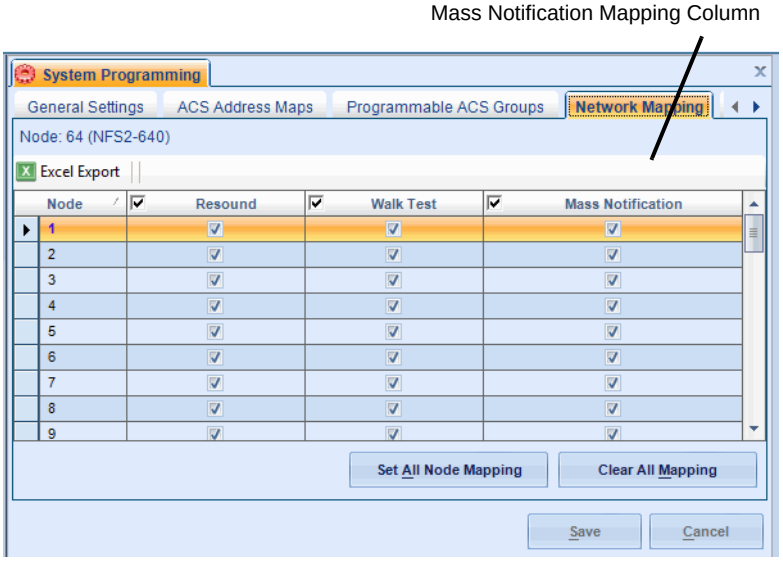


Figure 3.13 MN Mapping, NFS2-640/NFS-320/SYS

DVC

DVC MN mapping consists of:

- Creating a logic equation for the MN Active Tone that will activate if a ZF20 MN alarm comes in from any MN-mapped node. Refer to Section 3.3.7 on page 25 for this programming.
- All Call mapping in VeriFire Tools. MN pages will go out to the nodes in this map. Refer to the programming section of the DVC manual for VeriFire Tools programming.

3.3.5 Type IDs

Program inputs and outputs dedicated to mass notification with MN Type IDs. Outputs with combined functions may use other type IDs.

Table 3.1 lists and describes MN monitor module Type IDs.

Type Code	Point Type	Point Characteristics		
		Latching (Y=yes N=no)	Activates CBE	Device Function
ECS/MN MONITOR	MN Alarm	Y	Y	Mass Notification alarm monitoring device.
ECS/MN SUPT	MN Supervisory	N	Y	Indicates tracking supervisory condition.
ECS/MN SUPL	MN Supervisory	Y	Y	Indicates latching supervisory condition.
ECS/MN TROUBLE MON	Trouble	N	N	Generates a trouble for both short and open circuit conditions.

Table 3.1 MN Monitor Type IDs

Monitor module activations with these Type IDs will generate mass notification events locally and over a network. Trouble conditions at these points will generate an MN trouble.

Table 3.2 lists and describes MN control module and panel bell circuit Type IDs.

Type Code	Point Type	Point Characteristics			
		Silenceable	Switch Inhibit	Walk Test	Device Function
MNS GENERAL	NAC	N	N	N	Mass notification supervised output.
MNS CONTROL	NAC	N	N	N	Mass notification supervised NAC.
MNS STROBE	NAC	N	N	N	Mass notification supervised NAC.
MNS SPEAKER	NAC	N	N	N	Mass notification supervised NAC for speaker circuits.
MNS RELAY	Relay	N	N	N	Mass notification relay output.

Table 3.2 MN Control Type IDs

Activations will generate mass notification events locally and over a network. Trouble conditions at these points will generate MN troubles.

3.3.6 Special Function Zones

The MN Special Function Zones in Table 3.3 below activate when an MN alarm, supervisory, or trouble event occurs.

NOTE: Use ZF20 in the map of an LED annunciator programmed with a “monitor” mode as a dedicated MN alarm indicator.

Special Function Code	Name	Description
ZF20	MN Alarm Zone	Activates for local events and network ZF20 activations when an MN alarm is present in the system. It suppresses fire protection when MN is prioritized as higher than fire (see “Output Event Suppression” on page 40). It is sent out to the network, and each networked panel will check the ZF20’s source against its table of mapped MN nodes. If the source has a match in the table, fire protection will be suppressed in the panel that made the match. Logic equations will be activated.
ZF21	MN Supervisory Zone	Activates for local events when there is an MN supervisory in the system.
ZF22	MN Trouble Zone	Activates for local events when an MN trouble occurs.

Table 3.3 MN Special Function Zones

The MN Special Function Zones are available as indicated in Table 3.4.

	ZF20	ZF21	ZF22
NFS2-3030	✓	✓	✓
NCA-2			
NFS2-640/NFS-320/SYS	✓	✓	✓
DVC	✓		
ONYXWorks Workstation	✓		

Table 3.4 MN Special Function Zone Availability

3.3.7 MN Active Tone

When MN has the highest priority in a network and the DVC is operating in Mass Notification mode, it must be programmed in VeriFire Tools to generate an “MN Active Tone”. This programming is required for two reasons:

- It generates an audible reminder every 30 seconds that MN has control of the system and that fire signals may be suppressed if MN is the highest priority.

- It suppresses fire sequences and pages that come below it in priority, until an MN reset clears the “MN Active Tone”.

NOTE: Fire or OTHER sequences and pages will not be suppressed for MN alarms without the MN Active Tone, properly prioritized in the PAM.

Summary of Procedures

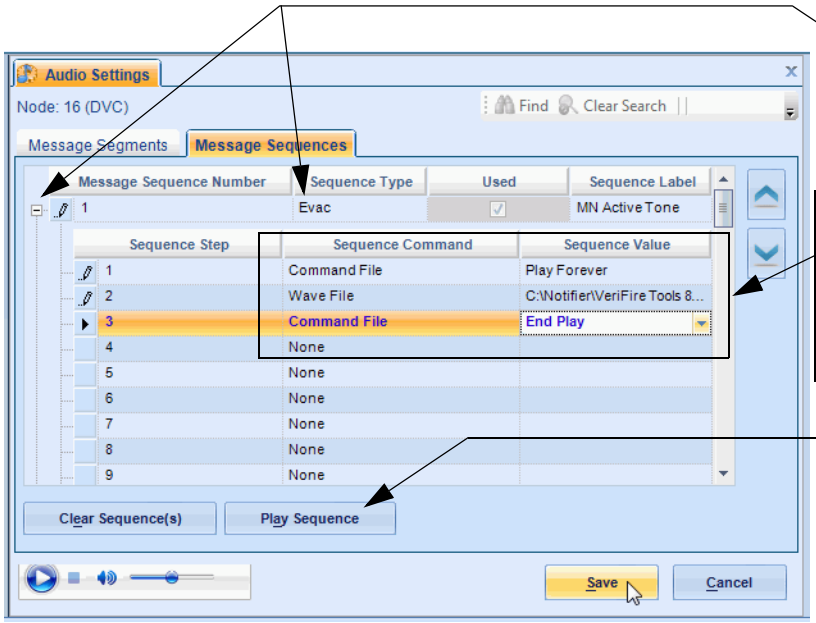
Following are the steps involved in creating and programming an MN Active Tone.

1. Build the MN Active Tone Audio Sequence. (See below.)
2. Assign Message Priorities. (See page 27.)
3. Create MN Logic Zones. (See page 28.)
4. Add MN Active Tone Logic to PAM Programming. (See page 28.)

Detailed Procedures

■ Build the MN Active Tone Audio Sequence

Open the Audio Settings branch of VeriFire Tools DVC programming, and build the MN Active Tone audio sequence on the Message Sequences tab.



1. Select and expand a sequence in the Message Sequences Number column. This example uses Sequence 1. Assign the sequence an Evac message type.
2. Type “MN Active Tone” in the Label field.
3. Select Command File for “Play Forever” for Sequence Step 1.
4. Select Wave File for “Active Tone” for Sequence Step 2.
5. Select Command File for “End Play” for Sequence Step 3.
6. Press Play Sequence to listen to and review the sequence as a test. The Play Forever command will play 200 times as a test, will play forever in a non-test situation. Use the audio-player buttons to pause and restart playback.
7. Press Save.

Figure 3.14 Creating an MN Active Tone Sequence

■ Assign Message Priorities

Open the DVC Inputs branch of VeriFire Tools DVC programming, scroll down to the MN Active Tone Sequence. Assign the MN Active Tone Category to the MN Active Tone sequence, and give it the priority just below the MN Category inputs. When MN is the highest priority in the system, the MN Active Tone input will be the priority just above the Fire category of pages. When Fire is the highest priority in the system, the MN Active Tone input will be at the priority just above the General category of pages and sequences.

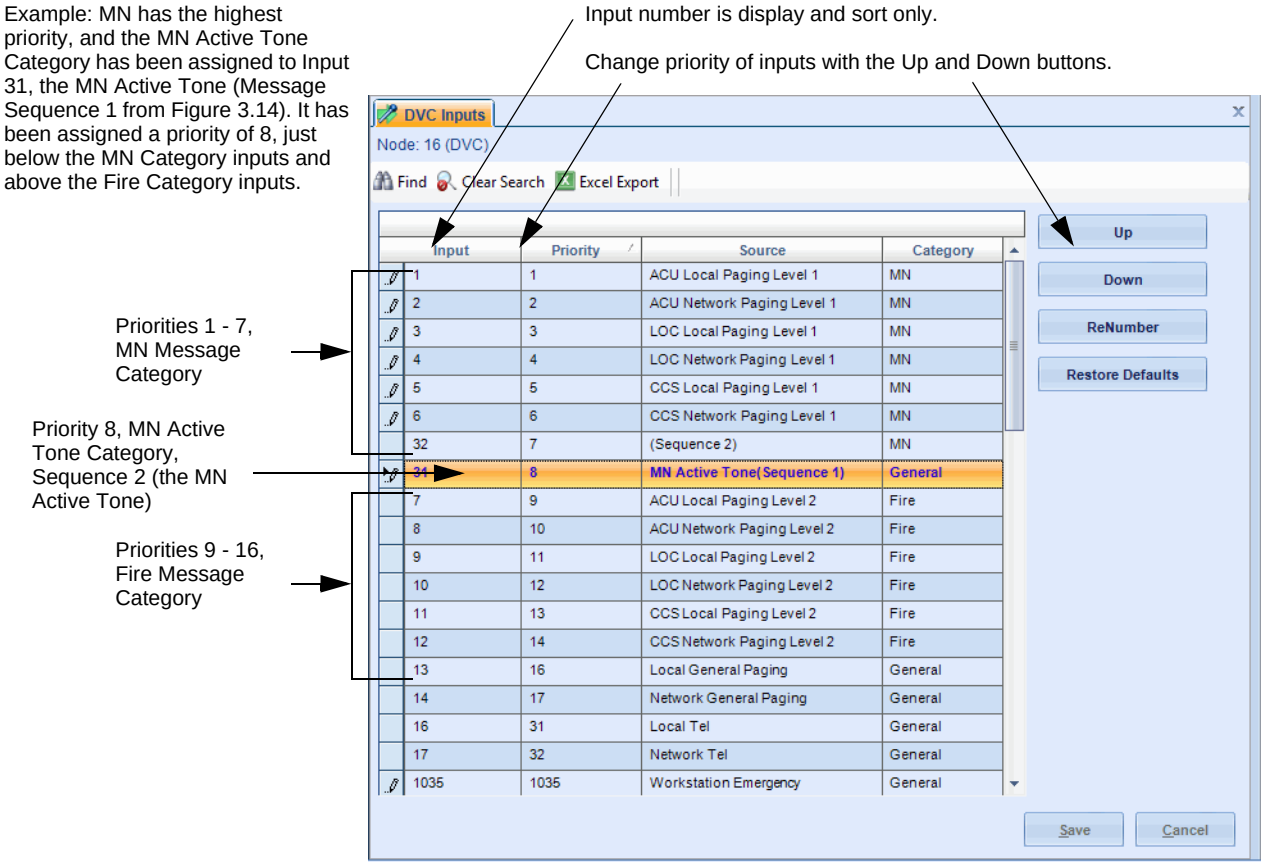
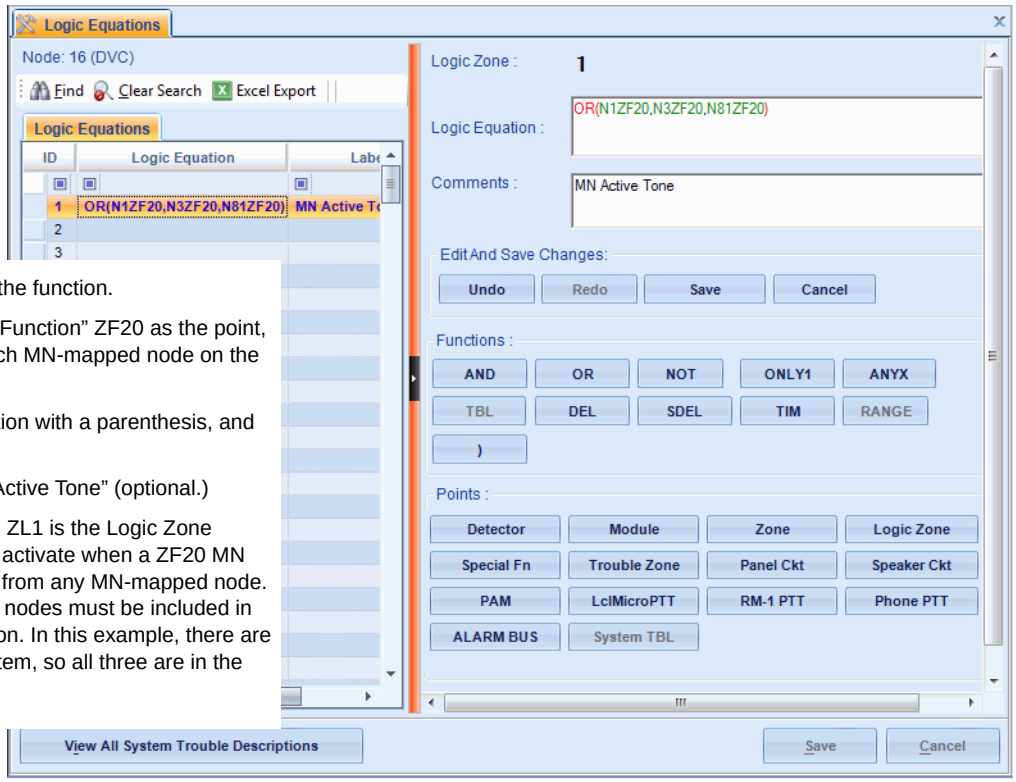


Figure 3.15 Assign Priority to the MN Active Tone Sequence

■ Create MN Logic Zones

Create a logic zone that will activate if a ZF20 MN alarm comes in from any MN-mapped node.

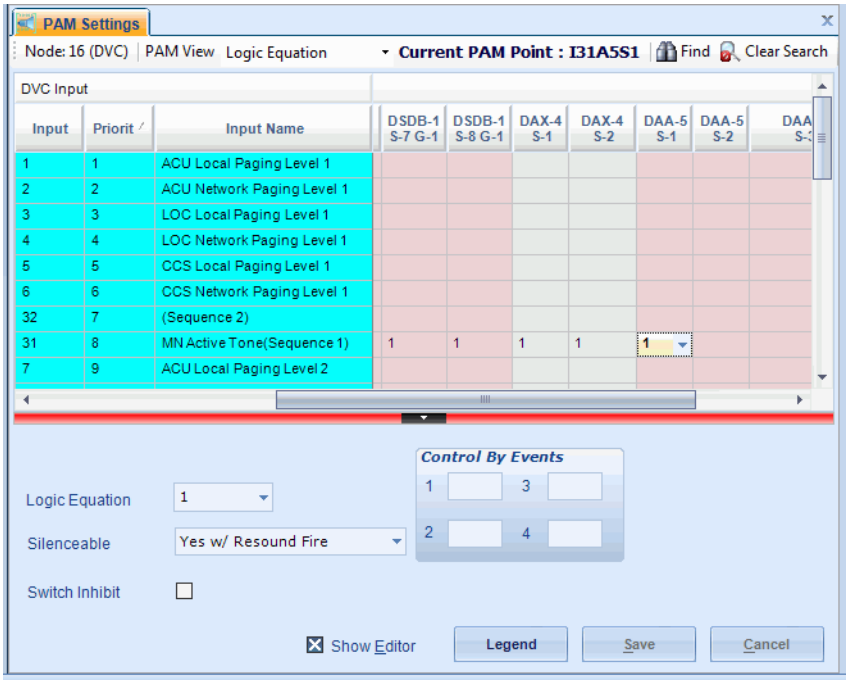


1. Select “OR” as the function.
2. Select “Special Function” ZF20 as the point, and link it to each MN-mapped node on the system.
3. Close the equation with a parenthesis, and save changes.
4. Add label “MN Active Tone” (optional.)
5. In this example, ZL1 is the Logic Zone programmed to activate when a ZF20 MN alarm comes in from any MN-mapped node. All MN-mapped nodes must be included in the logic equation. In this example, there are three in the system, so all three are in the equation.

Figure 3.16 Create a Logic Sequence for the MN Active Tone

■ Add MN Active Tone Logic to PAM Programming

On the PAM Settings branch, add the Logic Zone created in Figure 3.16 above to the entire MN Active Tone Input row (Input 31, Sequence 1 in this example).



Add the MN Active Tone logic equation to the entire Input row for the MN Active Tone Sequence.
In this example, Logic Zone 1 is being added to all the cells in Input row 31.

Figure 3.17 Map the MN Active Tone Sequence to a Logic Zone

3.3.8 Fire Active Tone

When Fire is the highest priority in a system, a DVC must be programmed in VeriFire Tools to generate a “Fire Active Tone”. This programming is required for two reasons:

- It generates an audible reminder every 30 seconds that Fire has control of the system and that MN signals may be suppressed.
- It suppresses MN sequences and pages that come below it in priority, until a fire reset clears the “Fire Active Tone”.

NOTE: MN or OTHER sequences and pages will not be suppressed for fire alarms without the Fire Active Tone, properly prioritized in the PAM.

Summary of Procedures

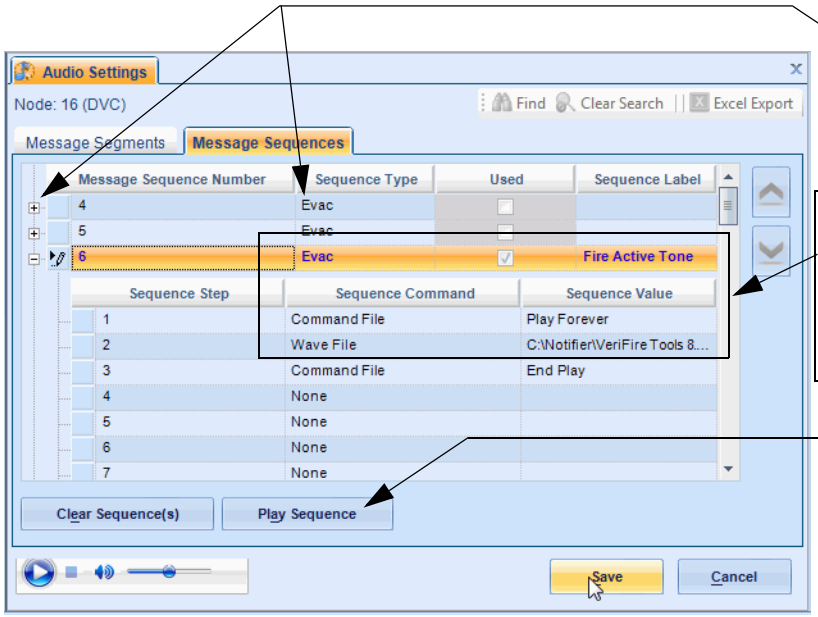
Following are the steps involved in creating and programming an MN Active Tone.

1. Build the Fire Active Tone Audio Sequence. (See below.)
2. Assign Message Priorities. (See page 30.)
3. Create Fire Logic Zones. (See page 31.)
4. Add Fire Logic Zones to PAM Programming. (See page 31.)

Detailed Procedures

■ Build the Fire Active Tone Audio Sequence

Open the Audio Settings branch of VeriFire Tools DVC programming, and build the Fire Active Tone audio sequence on the Message Sequences tab.



1. Select and expand a sequence in the Message Sequences Number column. This example uses Sequence 6 Assign the sequence an Evac message type.
2. Type “Fire Active Tone” in the Label field.
3. Select Command File for “Play Forever” for Sequence Step 1.
4. Select Wave File for “Active Tone” for Sequence Step 2.
5. Select Command File for “End Play” for Sequence Step 3.
6. Press Play Sequence to listen to and review the sequence as a test. The Play Forever command will play 200 times as a test, will play forever in a non-test situation. Use the audio-player buttons to pause and restart playback.
7. Press Save.

Figure 3.18 Creating a Fire Active Tone Sequence

■ Assign Message Priorities

Open the DVC Inputs branch of VeriFire Tools DVC programming, scroll down to the Fire Active Tone Sequence. Assign the Fire Category to the Fire Active Tone sequence, and give it the priority just below the Fire Category inputs. When MN is the highest priority in the system, the MN Active Tone input will be the priority just above the Fire category of pages. When Fire is the highest priority in the system, the MN Active Tone input will be at the priority just above the General category of pages and sequences.

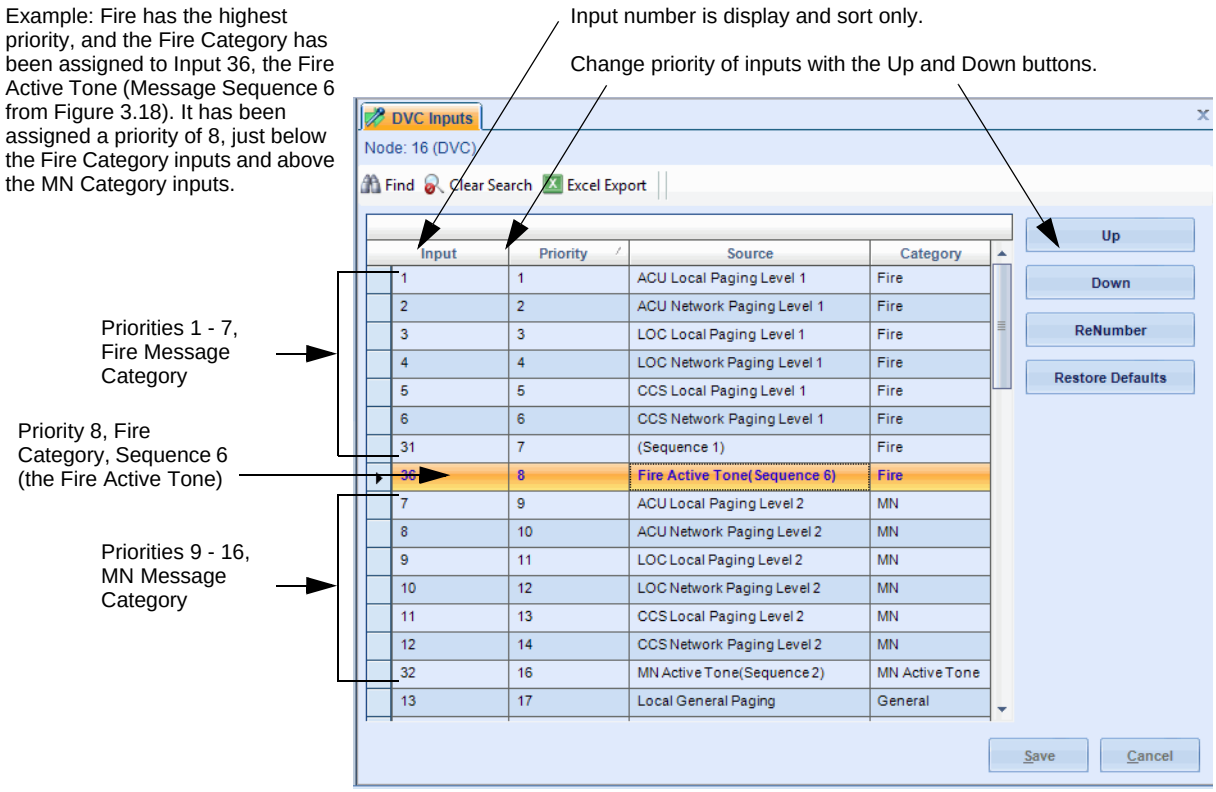
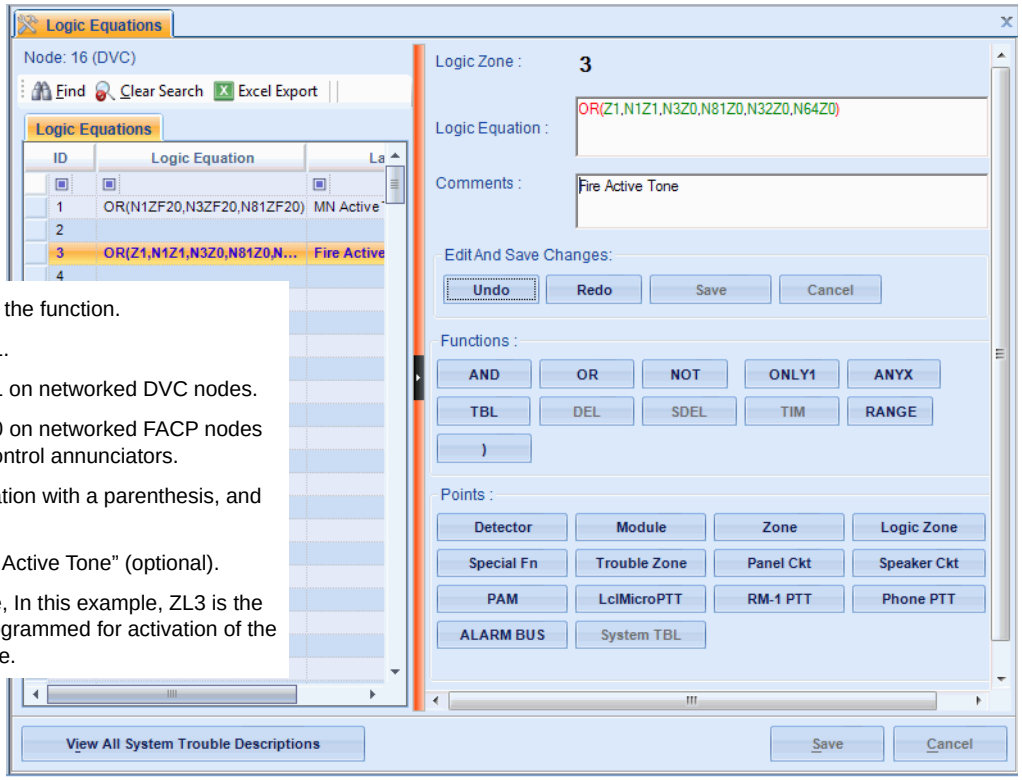


Figure 3.19 Assign Priority to the Fire Active Tone Sequence

■ Create Fire Logic Zones

The logic equation for the Fire Active Tone sequence must reference all DVC, panel, and NCA-2 nodes on the network. Write an OR logic equation that includes the local DVC's general zone, the general zones on the other networked DVCs, and the general alarm zones on the networked fire panels. The example in Figure 3.20 assumes a network with two DVCs, three fire alarm control panels, and one network control annunciator.



1. Select "OR" as the function.
2. Select Zone Z1.
3. Select Zone Z1 on networked DVC nodes.
4. Select Zone Z0 on networked FACP nodes and network control annunciators.
5. Close the equation with a parenthesis, and save changes.
6. Add label "Fire Active Tone" (optional).
7. In this example, In this example, ZL3 is the Logic Zone programmed for activation of the Fire Active Tone.

Figure 3.20 Create a Logic Equation to Activate Fire Active Tone

■ Add Fire Logic Zones to PAM Programming

On the PAM Settings branch:

1. Map a common general zone (for example, Z1) to all the PAM points designated as the Fire category. Select PAM View "All CBEs" for quick data-entry.

2. Add the Logic Zone created in Figure 3.21 to all PAM Points in the row for Fire Active Tone. Select PAM View “Logic Equations” for quick data-entry.

Add the common general zone to all PAM points designated as “Fire”.

This example uses General Zone Z1 created in Figure 3.21.

Add the Fire Active Tone logic equation to all PAM points in the row for the Fire Active Tone input.

This example uses Logic Zone ZL3 created in Figure 3.21.

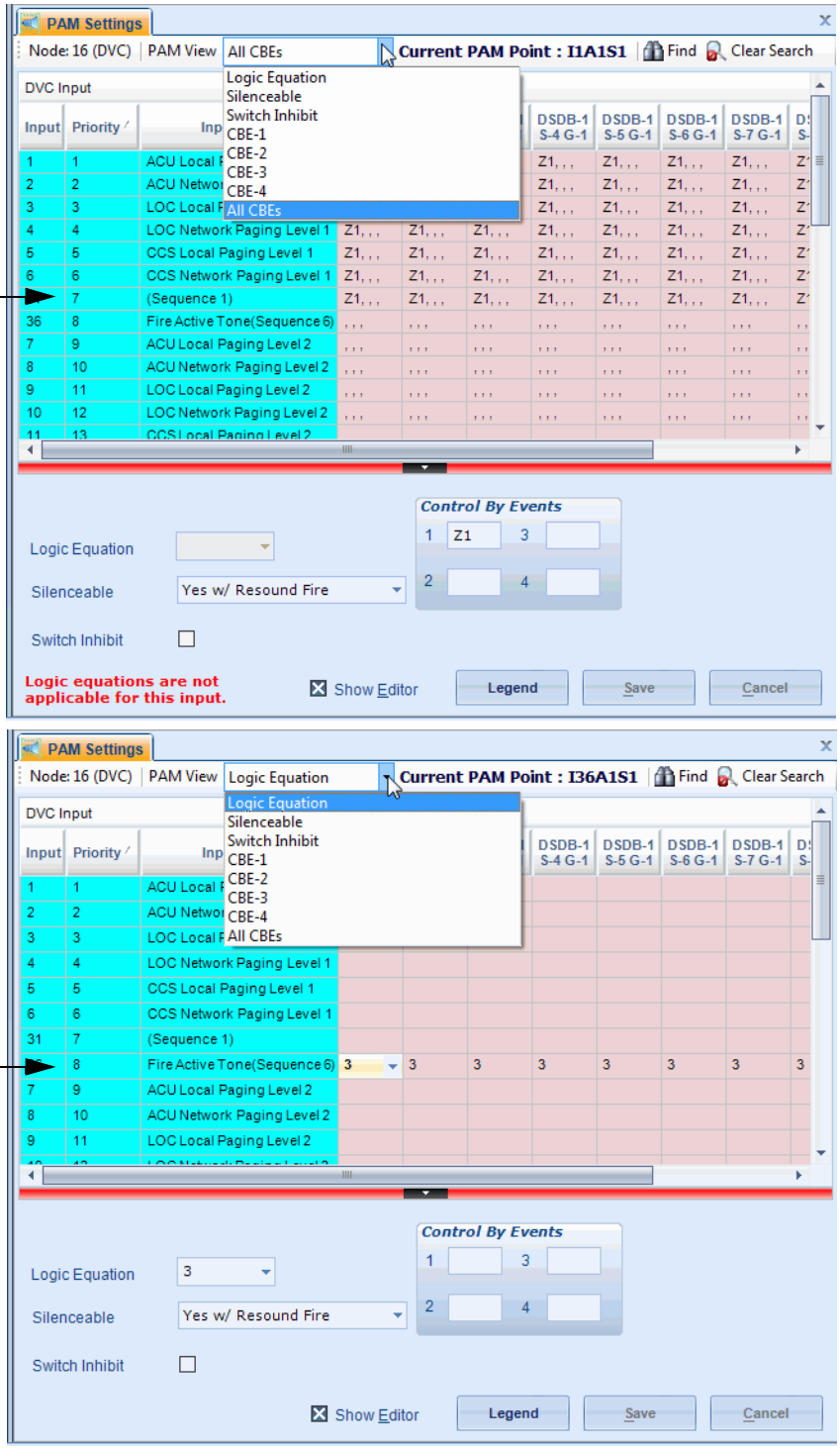


Figure 3.21 Map the Fire Active Tone Sequence to a Logic Zone

3.3.9 DVC-RPU

On the DAL Mapping branch, install a DVC-RPU by selecting Device Type RPU-PCC at the appropriate address. Click on the address's row and edit the device-specific information where it displays at the bottom of the screen.

1. Addressing: The DVC-RPU's DAL address on its node must be set to be the same as the RDP bus address for the LCD-160 on its node. See 3.3.10, "LCD-160" section, below.
2. On the device's General Settings tab, select the Paging Levels to enable the ALL CALL buttons in the second column of the DVC-KD.
3. **RPU Label**. Type a free-form label description to identify it as source of an MN page, which generates an MN alarm condition.

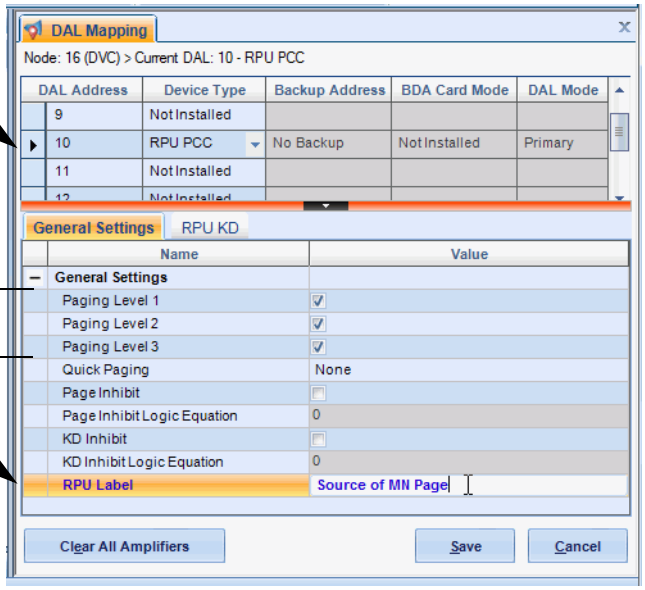


Figure 3.22 DVC-RPU Paging Levels and Labeling

3.3.10 LCD-160

To act as an LOC, the DVC-RPU requires an LCD-160 that is wired to the DVC's NCA-2, or NFS2-3030 (in network display mode). The LCD-160's Remote Display (RDP) bus address must be the same address as the DVC-RPU's Digital Audio Loop (DAL) address.

In this example, the LCD-160 is at Node 3 Address 10 (Figure 3.23), and the DVC-RPU is at Node 16 DAL Address 10 (Figure 3.22).

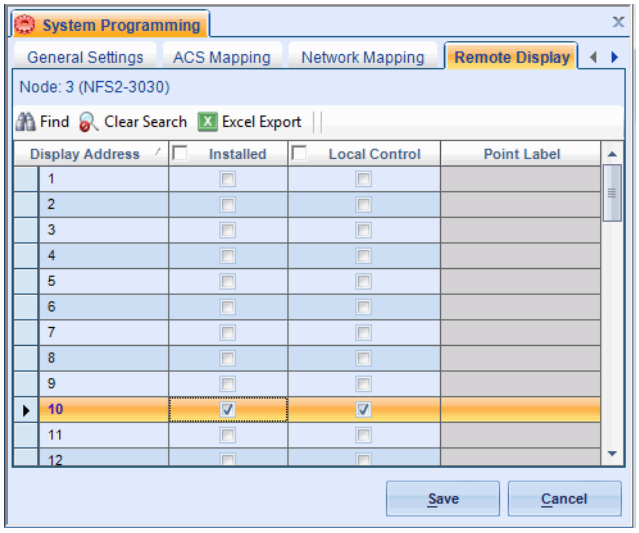


Figure 3.23 LCD-160 Address

CAUTION: THE DVC-RPU ADDRESS MUST EQUAL THE LCD-160 ADDRESS ON THE RDP BUS

ADDRESSING IS CRITICAL TO COMMAND OPERATIONS. THE DVC-RPU ADDRESS ON THE DIGITAL AUDIO LOOP MUST EQUAL THE LCD-160 ADDRESS ON THE RDP BUS.

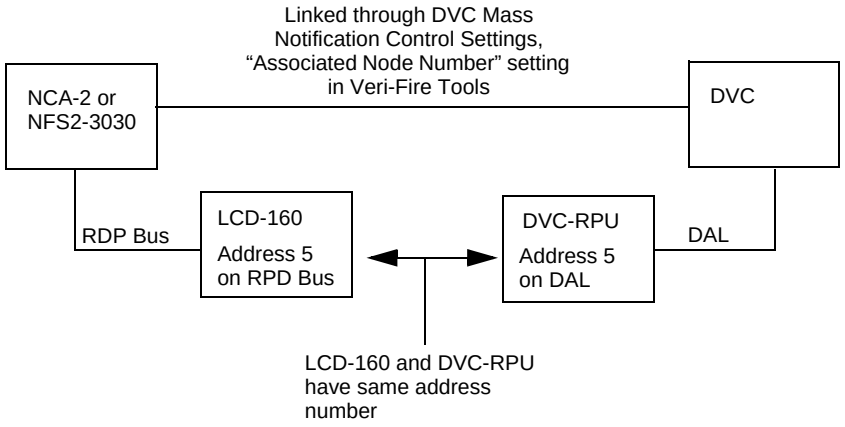


Figure 3.24 Block Diagram Illustrating Address Link

3.3.11 MN Annunciator Programming

Dedicated MN Alarm Annunciator

An ACM-24AT, AEM-24AT, or DVC-KD LED annunciator, programmed as a dedicated MN alarm annunciator, is required for each NFS2-640, NFS-320/SYS, NFS2-3030 and NCA-2 on an MN network.

■ NFS2-3030 and NCA-2

A dedicated annunciator may be programmed to light when a ZF20 MN Special Function Zone activates, indicating an MN alarm.

- Programming special function zone ZF20 in an LED annunciator map will cause the annunciator to light when a local MN alarm is activated.
- To annunciate an MN alarm for a specific network node, map an annunciator point to that specific network node and ZF20 (e.g. N3ZF20).

■ NFS2-640 and NFS-320/SYS

A dedicated annunciator must be programmed to light when a ZF20 MN Special Function Zone activates, indicating an MN alarm. Use custom annunciator mapping in VeriFire Tools to map ZF20 to an LED annunciator.

- Select a custom annunciator group user map.
- Program the desired annunciator point with ZF20.

■ DVC-KD

A DVC-KD user-defined point may be programmed to light when an MN alarm activates. In VeriFire Tools DVC-KD programming, select “Monitor” as the Function. Map to light when a local MN alarm event (mapping = ZF20) or an MN alarm event from network nodes (Mapping = a logic equation that includes ZF20 on desired network nodes).

LCD2-80

When an LCD2-80 is connected to an NCA-2, NFS2-3030, NFS2-640, or NFS-320/SYS, it must be set to Terminal Mode. The panel it is connected to must be subsidiary.

NOTE: The LCD2-80, as well as the LCD-160, may not be used as a primary display for mass notification events.

NOTE: A dedicated alarm annunciator is not required if a panel is a displayless node.

3.3.12 DVC General Zones

General Zones 501-533 activate whenever microphone paging is active from a DVC, RPU or ONYXWorks Workstation. Zones 501-532 activate with paging from DVC-RPU addresses 1-32, and zone 533 activates with paging from the DVC or ONYXWorks Workstation. These zones may be monitored anywhere in the system to annunciate active paging from a location. They must be used in logic equations to achieve further granularity of the type of page being performed.

3.3.13 MN Control Label

This field provides values of Subsidiary, ACU, LOC and CCS. Select the MN function provided by the NFS2-3030 or NCA-2. This field can be set at the panel or in VeriFire Tools.

Subsidiary: Make this selection when the NFS2-3030 or NCA-2 is present on the network, but not acting as an ACU, LOC or CCS.

ACU, LOC or CCS: Make the appropriate entry. The NFS2-3030 or NCA-2 entry should match the DVC's MN status.

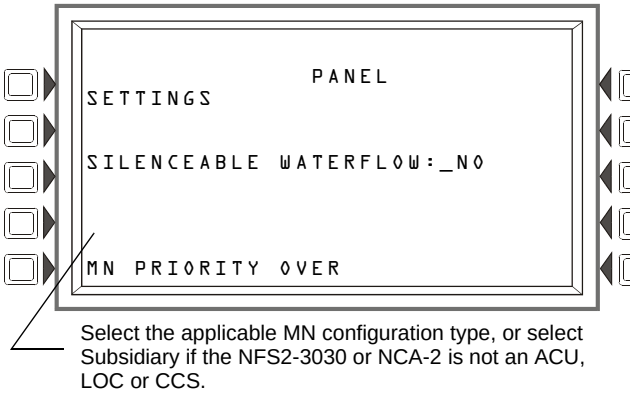


Figure 3.25 MN Control, Panel

NFS2-3030 General Settings Branch, "General Settings 1" column

NCA-2 General Settings Branch, "General Settings 2" column

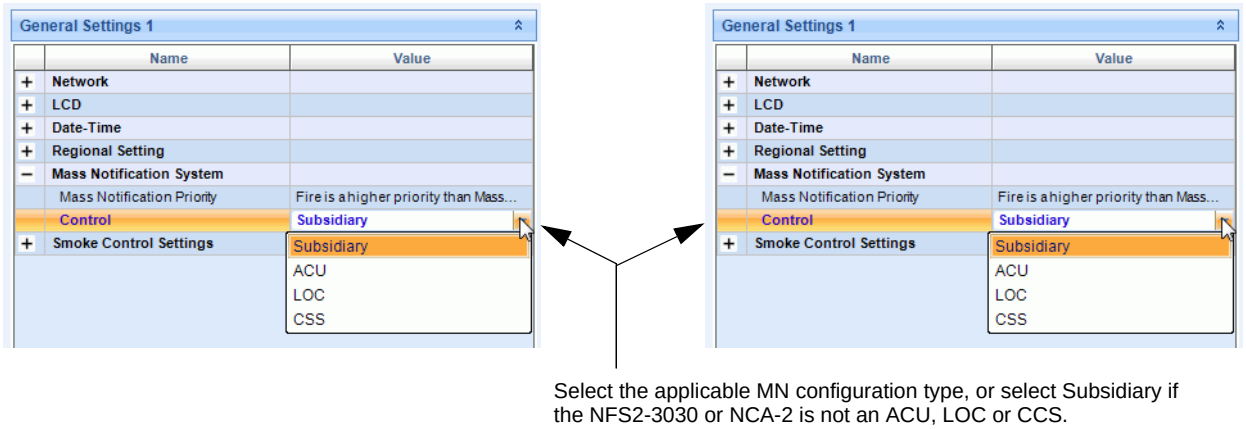


Figure 3.26 MN Control, VeriFire Tools, NFS2-3030/NCA-2

Section 4: Operation

4.1 Mass Notification Events

Special zones ZF20 (MN alarm), ZF21 (MN supervisory), and ZF22 (MN trouble) are used to signal mass notification events locally and over Noti•Fire•Net. If MN has the highest priority in the system, a ZF20 (MN alarm) will suppress fire locally and for every node in the initiating node's MN map.

4.1.1 MN Alarm

Activating an MN Alarm

An MN alarm can be activated by any of the following events:

1. Paging at the MN level.
2. Activation of an MN Alarm Type Code on an ONYX panel.
3. Pressing an annunciator or DVC-KD control point programmed to activate an MN alarm message.

NFS2-3030, NCA-2 MN Activations

■ Local Activation

When an MN alarm activates locally, it:

- Produces a steady audible tone if the piezo is enabled.
- Flashes the "OTHER" LED for NFS2-3030/NCA-2.
- Does not activate the alarm relays.
- Displays MN ALARM in the upper left corner of the display of NFS2-3030, NCA-2, and LCD-160, as well as other information specific to the alarm. Displays as MN ALM on LCD2-80/LCD-80 in terminal mode.
- Activates Special Function Zone ZF20 (MN alarm zone).
- Suppresses fire alarms if MN has the highest priority (refer to "Output Event Suppression" on page 40)
- Activates "General Pending" type code at the NFS2-3030.
- Does not activate "General Alarm" or "Alarm Pending" type codes.
- Is acknowledged individually.
- Scrolls using "Other Event/Scroll Display" key.
- Any device programmed for "Resound by Fire" will not resound.
- Increments the OTHER counter in the event counts display.
- Sends an MN alarm message to the history buffer and installed printer and annunciators.
- Appears as "MNA" in the Multiple Events list screen, grouped under "MN Alarm".
- Latches the control panel in alarm. The control panel will not return to normal operation until the alarm condition is corrected and the control panel is reset. Resets require two presses of the reset button if both MN and Fire events are present in the system. The first press will reset the MN events, the second will reset the rest.
- Initiates any Control-By-Event (CBE) actions. If the node goes off-line, active logic equations with ZF20 in them will stay active until MN reset.
- Sends an MN alarm message (ZF20) out to the network.

■ Network Activation

When an MN alarm is sent out to the network from the initiating node, each node on Noti•Fire•Net will check its MN map to determine if it should react to the MN alarm. If a node has been programmed with the initiating node in its MN map, it will accept the MN alarm from Noti•Fire•Net and react according to its programming.

- Logic equations with Special Function Zone ZF20 (MN alarm zone) in them will be evaluated.
- Fire alarms are suppressed if MN has the highest priority (Refer to "Output Event Suppression" on page 40).
- If the system is "ALL SYSTEMS NORMAL", NETWORK MN ACTIVE will display.

NFS2-640, NFS-320/SYS MN Activation

■ Local Activation

When an MN alarm activates locally, it:

- Produces a steady audible tone if the piezo is enabled.
- Illuminates the ACS LED dedicated to MN alarms (required for the NFS2-640 and NFS-320/SYS). No LED on the panel lights for an MN alarm.
- Does not activate the alarm relays.
- Displays ALARM:ECS/MN MON in the upper left corner of the display, as well as other information specific to the alarm. Displays MN ALM on LCD2-80/LCD-80 in terminal mode.
- Activates Special Function Zone ZF20 (MN alarm zone).
- Suppresses fire alarms if MN has the highest priority (refer to "Output Event Suppression" on page 40).
- Does not activate "General Alarm" or "Alarm Pending" type codes.
- Is block acknowledged in scrolling mode, acknowledged one-by-one in non-scrolling mode.

- Any device programmed for “Resound by Fire” will not resound.
- Sends an MN alarm message to the history buffer and installed printer and annunciators.
- Latches the control panel in alarm. The control panel will not return to normal operation until the alarm condition is corrected and the control panel is reset. Resets require two presses of the reset button if both MN and Fire events are present in the system. The first press will reset the MN events, the second will reset the rest.
- Initiates any Control-By-Event (CBE) actions. If the node goes off-line, active logic equations with ZF20 in them will stay active until MN reset.
- Sends an MN alarm message (ZF20) out to the network.

■ Network Activation

- Logic equations with Special Function Zone ZF20 (MN alarm zone) in them will be evaluated.
- Fire alarms are suppressed if MN has the highest priority (Refer to “Output Event Suppression” on page 40).
- If the system is “ALL SYSTEMS NORMAL”, MN ALARM will display.

DVC

■ Local Activation

When an MN alarm message or page activates on the DVC or DVC-RPU the alarm is sent out to the network.

■ Network Activation

- Logic equations with ZF20 in them will be evaluated.

4.1.2 MN Supervisory

MN Supervisory Activation

An MN supervisory message can be activated by an MN Supervisory Type Code on an ONYX panel.

NOTE: MN supervisories are block acknowledged.

NFS2-3030, NCA-2 MN Activations

■ Local Activation

When an MN supervisory activates locally, it:

- Produces a warbling audible tone if the piezo is enabled.
- Activates the panel’s supervisory relay.
- Flashes the SUPERVISORY yellow LED.
- Activates Special Function Zone ZF21 (MN supervisory zone).
- Does not suppress Fire or any other activations.
- Increments the supervisory counter on the Events Code screen.
- Is acknowledged with a block acknowledgement.
- Uses the “Supervisory Scroll” key for scrolling.
- Activates “General Pending” type code at the NFS2-3030.
- Activates “General Supervisory” type code at the NFS2-3030.
- Any device programmed for “Resound by Supervisory” will not resound.
- Displays MN SUPERVISORY in the upper left corner of the display, as well as other information specific to the supervisory message, for the NFS2-3030, NCA-2, LCD-160. Displays MN SUP on the LCD2-80.
- Is a latching or tracking event based on Type ID (see Table 3.2 on page 25). The control panel will not return to normal operation until the supervisory condition is corrected and the control panel is reset. Resets require two presses of the reset button if both MN and Fire events are present in the system. The first press will reset the MN events, the second will reset the rest.
- Sends an MN Supervisory message to the history buffer and installed printer and annunciators.
- Appears as “MNS” in the Multiple Events list screen, grouped under “SUPERVISORY”.
- Sends an MN supervisory message (ZF21) out to the network.
- Resets require two presses of the reset button if both MN and fire evetns are present in the system. The first press will reset the MN events, the second will reset the rest.

■ Network Activation

- Logic Zones with ZF21 (MN supervisory zone) will be evaluated.

NFS2-640, NFS-320/SYS MN Activation

■ Local Activation

When an MN supervisory activates locally, it:

- Produces a warbling audible tone if the piezo is enabled.
- Activates the panel’s supervisory relay.

- Flashes the SUPERVISORY yellow LED.
- Activates Special Function Zone ZF21 (MN supervisory zone).
- Does not suppress Fire or any other activations.
- Does not activate “General Supervisory” type ID.
- Any device programmed for “Resound by Supervisory” will not resound.
- Displays ACTIVE:ECS/MN SUPT or ACTIVE:ECS-MN SUPL in the display, as well as other information specific to the supervisory message.
- Sends an MN Supervisory message to the history buffer and installed printer and annunciators.
- Sends an MN supervisory message (ZF21) out to the network.

■ Network Activation

- Logic Zones with ZF21 (MN supervisory zone) will be evaluated.

4.1.3 MN Trouble

MN Trouble Activation

NOTE: MN troubles are block acknowledged.

NFS2-3030, NCA-2 MN Activations

■ Local Activation

When an MN trouble activates locally, it:

- Produces a pulsed audible tone if the piezo is enabled.
- Activates the panel’s trouble relay.
- Flashes the TROUBLE yellow LED.
- Activates Special Function Zone ZF22 (MN trouble zone).
- Does not suppress Fire or any other activations.
- Is acknowledged with a block acknowledgement.
- Uses the TROUBLE/SCROLL DISPLAY key for scrolling.
- Increments the trouble counter on the Events Code screen.
- Activates “General Pending” type code at the NFS2-3030
- Activates “General Trouble” and “Trouble Pending” type codes at the NFS2-3030.
- Any device programmed for “Resound by Trouble” will not resound.
- Displays MN TROUBLE in the upper left corner of the display, as well as other information specific to the supervisory message.
- Sends an MN trouble message to the history buffer and installed printer and annunciators.
- Appears as “MNT” in the Multiple Events list screen, grouped under “TROUBLE”.
- Sends an MN trouble message (ZF22) out to the network.

■ Network Activation

- NETWORK MN ACTIVE will display if all systems are normal.
- Logic Zones with ZF22 (MN trouble zone) will be evaluated.

NFS2-640, NFS-320/SYS MN Activation

■ Local Activation

When an MN trouble activates locally, it:

- Produces a pulsed audible tone if the piezo is enabled.
- Activates the panel’s trouble relay.
- Flashes the TROUBLE yellow LED.
- Activates Special Function Zone ZF22 (MN trouble zone).
- Does not suppress Fire or any other activations.
- Does not activate “General Supervisory” type ID.
- Any device programmed for “Resound by Trouble” will not resound.
- Activates “General Trouble” or “Trouble Pending” type code.
- Sends an MN Trouble message to the history buffer and installed printer and annunciators.
- Sends an MN trouble message (ZF22) out to the network.

■ Network Activation

- Logic Zones with ZF22 (MN trouble zone) will be evaluated.

4.2 Performing a System Reset

If both fire and MN events are present in the system, two button presses are required to reset the system. The first button press resets the highest priority events, the second press resets the lowest priority events. When the first button press resets the highest priority events, the lower priority events will resound, if necessary.

For example, when MN has the highest priority in a system, resetting a panel after an MN event has concluded requires two button presses if there are fire events in the system. The first button press clears the MN alarms and supervisories, the second will reset the other system events.

The NCA-2, NFS2-3030 and LCD-160 display the following text at the reset softkey, to indicate the type of reset being performed.

- **FIRE SYSTEM RESET** - indicates the reset is for fire events.
- **MN SYSTEM RESET** - indicates the reset is for mass notification events.

ONYXWorks Workstation displays different buttons for the different reset types.

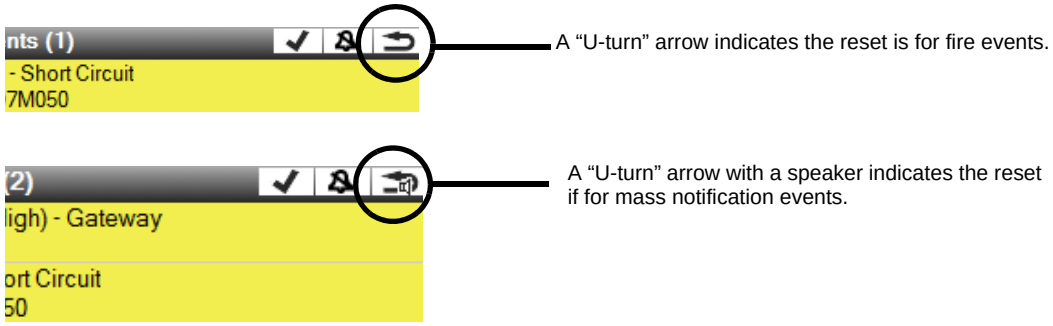


Figure 4.1 ONYXWorks Workstation Resets

An MN system reset is sent out over Noti•Fire•Net and picked up by participating MN nodes and the MN event will automatically clear from their local systems.

MN and Fire Events Present in System

MN is the highest priority: When both MN and fire events are present in the system, and MN events have the highest priority, press the panel’s reset button to:

- Reset MN alarms and supervisories only (ZF20 and ZF21 activations, refer to “Special Function Zones” on page 25), clearing them from the display and counters.
- Display an MN system reset message on the panel display, as well as on an LCD-160 if one is present.
- Turn off the “Other” LED if no active “other” events are in the system (NFS2-3030, NCA-2 only).
- Output processing:
  - Turn back ON suppressed outputs (silenceable fire outputs, strobes).
  - Clear general zones mapped to the MN events being cleared.
  - Run logic equations.
  - Re-evaluate outputs.
- Add an MN system reset entry to printer and history to indicate the MN events were reset.
- Send reset message for MN alarms and supervisories out to Noti•Fire•Net.

All network nodes will go through a 10 second decouple time.

Pressing Reset a second time will reset remaining system events.

Fire is the highest priority: When fire is the highest priority, press the panel’s reset button to:

- Reset all events except MN events.

Pressing Reset a second time will reset MN events, and send a reset message for MN alarms and supervisories out to Noti•Fire•Net.

MN Events Only Present in System

When MN events have the highest priority and no other types of events are present in the system, pressing the panel’s Reset button once will:

- Reset MN alarms and supervisories only (ZF20 and ZF21 activations), clearing them from the display and counters.
- Display an MN network reset on the panel display, as well as on an LCD-160 if one is present.
- Turn off the “Other” LED if no active “other” events are in the system (NFS2-3030, NCA-2 only).
- Output processing:
  - Clear general zones mapped to the MN events being cleared.
  - Run logic equations.
  - Re-evaluate outputs.
- Add an MN system reset entry to printer and history to indicate the MN events were reset.
- Send reset message for MN alarms and supervisories out to Noti•Fire•Net.

All network nodes will go through a 10 second decouple time. An MN reset may require up to 60 seconds of decouple time depending on the complexity of logic equation evaluations.

Fire Events Only Present in System

When MN events have the highest priority and only fire events are present in the system, pressing the panel's Reset button will reset the system.

4.3 Output Event Suppression

Event suppression results from automatic panel suppression as well as programming. Following is a list of factors to keep in mind during system setup to achieve the desired event suppression.

■ General Considerations for MN and Fire:

- General zones and logic zones are not suppressed by an MN or Fire event. Output device and zone map programming determine whether an output will be suppressed, not the state of the zone.
- A general zone tracks the type of event (i.e. MN or Fire) that initiates its activation, and its outputs will be suppressed or resounded automatically by panel programming. Suppression of outputs activated by general zones is dependent upon the event type that initiated its activation.
- Each general zone must be dedicated to a single event type. If a general zone is used for MN, that zone can not also be used for fire, security, etc..
- An output device, such as a horn or strobe, can be mapped to multiple zones. The zones can be general zones, special function zones, logic zones, or releasing zones. These zones do not need to be the same event type: for example, a general zone used for MN and a general zone used for Fire can be mapped to the same strobe.
- A logic zone does not automatically track the type of event that initiates its activation. Logic zones must be written to ensure suppression. See examples below.

■ MN is the Highest Priority

Zones:

- It is crucial that logic zones be written conditionally to ensure suppression. The following examples illustrate two ways to achieve suppression using logic equations.

  Example 1:

  Output suppression using Logic Zone Programming and Special Function Zone ZF20

  Logic equation ZL1 = AND(OR(Z10,Z11,Z12),NOT(ZF20)), mapped to an output that is used for fire and suppressed during MN.

  Z10, Z11, and Z12 are dedicated fire zones.

  ZF20 is the MN alarm zone.

  If Z10, Z11, or Z12 is active, and ZF20 is not, ZL1 will go active.

  If any MN alarm occurs, ZL1 will go inactive, and any outputs mapped to it may be suppressed.

  Example 2:

  Output suppression using Logic Zone Programming and MN-dedicated General Zones

  Logic equation ZL2 = AND(OR(Z10,Z11,Z12),NOT(Z2)), mapped to an output that is used for fire and suppressed during MN.

  Z10, Z11, and Z12 are dedicated fire zones.

  Z2 is an MN alarm zone.

  If Z10, Z11, or Z12 is active, and Z2 is not, ZL2 will go active.

  If Z10, Z11, or Z12, and Z2 are active, ZL2 will go inactive, and any outputs mapped to it may be suppressed.

Outputs:

- All outputs used for MN must be programmed as non-silenceable. This includes those outputs that are shared between MN and other events, such as Fire.
- Dedicated Fire outputs can be programmed as silenceable or non-silenceable.
- All silenceable outputs will be suppressed at the start of an MN event.*
- All devices programmed with strobe Type IDs, as well as all intelligent sounder bases, will be suppressed regardless of silenceable programming at the start of an MN event.*
  *Zone map programming will then be re-evaluated, and if a device contains ZF20, or any general zone dedicated to MN that is active, in its zone map, it will be re-activated.
- An output programmed with a releasing Type ID, or programmed with an active releasing zone in its zone map, will not be suppressed.

Audio:

- Fire sequences playing on a DAL (digital audio loop) will be silenced, and the DVC will sound the MN Active Tone while fire is suppressed.
- Fire sequences on a DVC will not sound, and the DVC will sound the MN Active Tone while fire is suppressed.

Drill and custom drill operation is blocked while fire activations are suppressed. This prevents activation of fire outputs while a Mass Notification is in progress.

When an MN alarm is cleared, suppressed outputs will reactivate, even if they were silenced prior to being suppressed

■ Fire is the Highest Priority

Zones:

- It is crucial that logic zones be written conditionally to ensure suppression.
  Example 1:
  Output suppression using Logic Zone Programming and Special Function Zone ZF20
  Logic equation ZL1 = AND(ZF20,NOT(OR(Z1,Z2,Z3))), mapped to an output that is used for both fire and MN.
  Z1, Z2, and Z3 are dedicated fire zones.
  ZF20 is the MN alarm zone.
  IIf ZF20 is active, an Z1, Z2, or Z3 are not, ZL1 will go active.
  If Z1, Z2, or Z3 subsequently goes active, ZL1 will go inactive, and any outputs mapped to it may be suppressed.

  Example 2:
  Output suppression using Logic Zone Programming and Fire-dedicated General Zones.
  Logic equation ZL2 = AND(Z11,NOT(OR(Z1,Z2,Z3))).
  Z1, Z2, and Z3 are dedicated fire zones.
  Z11 is an MN alarm zone.
  If Z11 is active, and Z1, Z2, or Z3 are not, ZL2 will go active.
  If Z1, Z2, or Z3 subsequently go active, ZL2 will go inactive, and any outputs mapped to it may be suppressed.
- Special Function Zone ZF20 (MN alarm) must not be mapped to Fire outputs, as outputs mapped to ZF20 will not be suppressed.

WARNING: IF FIRE IS THE HIGHEST PRIORITY, DO NOT USE ZF20 FOR MASS NOTIFICATION
DO NOT USE ZF20 TO TURN ON MASS NOTIFICATION-DEDICATED OUTPUTS WHEN FIRE IS THE HIGHEST PRIORITY.

Outputs:

- All outputs used for MN must be programmed as non-silenceable. This includes those outputs that are shared between MN and other events, such as Fire.
- Dedicated Fire outputs can be programmed as silenceable or non-silenceable.
- Outputs mapped to Special Function Zone ZF20 will not be suppressed. See Warning above.

Audio:

- MN sequences playing on a DVC will be silenced, and the DVC will sound the Fire Active Tone while MN is suppressed.
- MN sequences on a DVC will not sound, and the DVC will sound the Fire Active Tone while MN is suppressed.

4.4 Mass Notification Control Operation

For all panels and network annunciators except ONYXWorks Workstation, the “Controls Active” LED indicates if control functions are enabled. Figure 4.2 shows the ONYXWorks Workstation control indications. If the controls active LED is off, or the ONYXWorks Workstation control lockout icon is present, Acknowledge, Signal Silence, System Reset or Drill can not be performed. When the control functions are blocked, the NCA-2, NFS2-3030 and LCD-160 display “Local Control Disabled” when an Acknowledge, Signal Silence, System Reset or Drill is attempted.

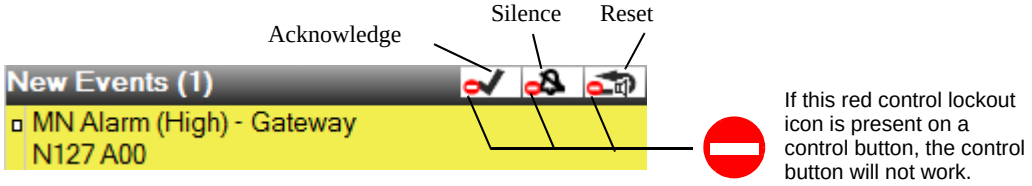


Figure 4.2 ONYXWorks Workstation Local Control Lockout Indication

Control will be given to an NFS2-3030 (in network display mode), NCA-2, LCD-160, or ONYXWorks Workstation only during an MN page from that control unit. When no MN page is in progress, local control is active at each panel that does not have it disabled.

On panels that are not part of an ACU, LOC or CCS (subsidiaries), local control will be removed when a local MN alarm is active unless fire is the highest priority and an active fire alarm is present on the panel or a mapped node on the NCA-2. A local MN alarm is one that has initiated at the local panel, or one that has activated on a remote node that is MN mapped to the local panel. An LCD-160 will follow the NFS2-3030 it is wired to, removing control when the panel does.

An MN page at a DVC will:

- Give control to its assigned NCA-2 or NFS2-3030, which will maintain its Controls Active LED on and maintain control functions as unblocked.
- Turn off Control Active LEDs and block control functions at all other panels and annunciators.

An MN page at a DVC-RPU will:

- Give control to its assigned LCD-160, which will maintain its Controls Active LED on and maintain control functions as unblocked.
- Turn off Control Active LEDs and block control functions at all other panels and annunciators.

An MN alarm that is not activated by an MN page:

- NCA-2's and NFS2-3030's (in network display mode) will remain in control: their Controls Active LEDs will remain on and their control functions will remain unblocked.
- NFS2-3030s not in network display mode, NFS2-640's, and NFS-320/SYS's will extinguish their Controls Active LEDs and their control functions will be blocked.

4.5 Paging

When a system has MN capabilities, the second column on a DVC or DVC-RPU keypad has three functional buttons representing three priority levels of paging. If MN is the highest priority in the system, pressing the highest button will create an MN page locally and to all MN mapped nodes, initiating an MN alarm and suppressing fire activations. If Fire is the highest priority, pressing the highest button in column two will create a Fire page to all mapped nodes. Pressing the Level 3 (GENERAL PAGE) button will create a general ALL CALL page that will not suppress any fire activations.

Buttons in the two right columns of the keypad can also create an MN alarm if programmed to do so.

ACU's take priority over LOC's, and LOC's take priority over CCS's.

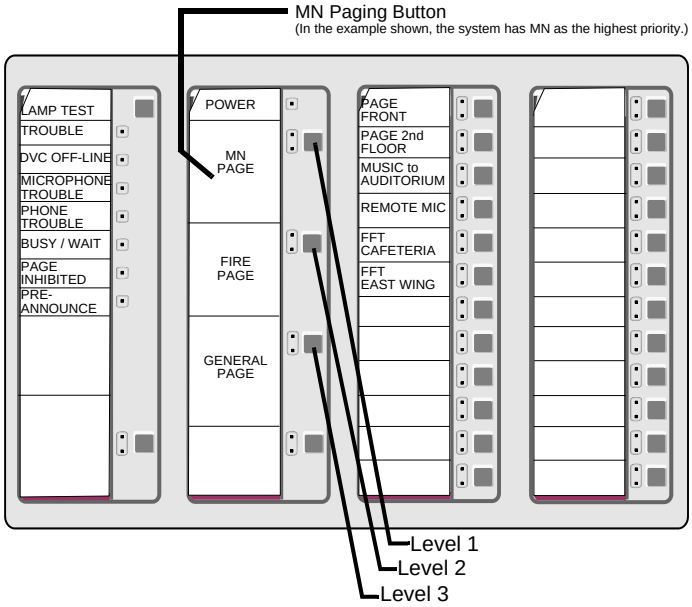


Figure 4.3 DVC-KD Keypad

4.6 Drill Operation

Drill operation is blocked while fire activations are suppressed. So if MN is the highest priority in the system, an MN Alarm on the local panel or on a network panel that is MN Mapped, drill operation, including custom drill operation, will be blocked. This is to prevent the user from activating fire outputs while a mass notification is in progress.

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