

A FIRE/EMS/SAFETY CENTER PUBLICATION

# LIVE FIRE BURN TRAINING PROCEDURES

FOR  
MINNESOTA STATE COLLEGES  
AND UNIVERSITIES  
And  
Minnesota Fire Service

Referenced In Minnesota Statutes  
Chapter 88.17 Sub.3(a)

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## M 0.0 INTRODUCTION

### MINIMUM STANDARDS

#### FOR COMPLIANCE WITH MINN STATUTES CHAPTER 88.17

**88.17 Permission to start fires; prosecution for unlawfully starting fires.**

**Subd. 3. Special permits.** The following special permits are required at all times, including when the ground is snow-covered:

(a) **Fire training.** A permit to start a fire for the instruction and training of firefighters, including liquid fuels training, may be given by the commissioner or agent of the commissioner. Except for owners or operators conducting fire training in specialized industrial settings pursuant to applicable federal, state, or local standards, owners or operators conducting open burning for the purpose of instruction and training of firefighters with regard to structures must follow the techniques described in a document entitled: **Structural Burn Training Procedures for the Minnesota Technical College System.**

It is the intent of this document to provide the user with an instrument, which will ensure compliance and a MINIMUM level of safety while performing fire suppression training when using live fire. It must be remembered that this document and the Department of Natural Resources, MN-OSHA Rules are MINIMUM requirements. It is the user's responsibility to maintain this MINIMUM level of safety as specified in this document. It is also the user's responsibility to improve this level of safety whenever possible to ensure the MAXIMUM level of safety for all involved.

### **M 0.1.0 Document Purpose**

This document was assembled for several reasons. The most important reason is to keep from injuring, or even killing firefighters during training sessions conducted by fire departments, and the fire training system in Minnesota. With that in mind, we needed to assemble a guide for Fire/EMS/Safety Center staff and instructors to follow that will assist them in a **standardized, acceptable** method for delivering a safe and educational training session. *This document may be used by others as a guideline in the delivery of structure burn training.*

This document is divided into four (4) sections:

1. Standard Information
2. Fire/EMS/Safety Center Instructor Policies
3. Pre-burn Class Information
4. Reports and Forms

The intent is to:

1. Use this document as a **REFERENCE MANUAL** for conducting structural fire training as safely as possible.
2. Distribute this manual to instructors who are **interested in becoming** burn instructors, so they have a statewide-standardized curriculum.
3. Distribute this manual as an instructor's guide to instructors who are **presently teaching** structural burn training.

**DO NOT print and hand out this entire document every time you have a burn. All you need is the "Forms Section"**

## **M 1.0 NOTES FROM NFPA 1403 TO STAFF AND INSTRUCTORS**

### **M 1.1.0 Scope**

This document deals with the establishment of procedures for training of fire suppression personnel engaged in structural firefighting operations under live fire conditions. It is a basic system that can be adapted to local conditions to serve as a standard mechanism of live fire training. **Not covered in this procedures for live fire-training evolutions are those such as involving ground cover or wild land fires, marine structures or vessels.**

### **M 1.2.0 Purpose**

This document deals with the training of structural firefighters under live fire conditions and focuses on training for aggressive, coordinated interior fire suppression operations with a minimum exposure to risk for the participants. **Live fire training evolutions conducted in accordance with this document shall be managed by means of a documented fire ground system known as the Incident Command System (ICS).** The line of authority shall be made clear to all participants in order that both the expected and unforeseen situations will be managed with the most efficiency and provide for reasonable margins of safety.

### **M 1.3.0 General**

Live fire training in a training center burn building, or in a suitable, acquired building awaiting demolition, is an excellent means of training firefighters. While this type of training provides high levels of realism, it obviously carries with it most of the hazards of interior firefighting at an actual emergency. Live fire training evolutions must be planned with great care and supervised closely by instructional personnel. The information contained in this document is designed to ensure adequate levels of safety while allowing the local organization some flexibility to utilize independent judgment based on local situations and the level of training to be accomplished.

<b>NOTE:</b> Drills conducted to familiarize recruit firefighters with the proper use of self-contained apparatus in a smoke environment should not be conducted under live fire conditions.
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## **M 1.4.0 Definitions**

Unless expressly stated elsewhere, the following terms will, for the purposes of this document, have the meanings indicated below:

### **M 1.4.1 Acquired Building or Acquired Prop**

A structure or piece of equipment acquired by the authority having jurisdiction or Minnesota State Colleges and Universities staff from a property owner for the purpose of conducting live fire training evolutions.

### **M 1.4.2 Authority Having Jurisdiction**

The "authority having jurisdiction" is the Minnesota State Colleges and Universities staff responsible for "approving" equipment, staff, an installation, or a procedure.

If Minnesota State Colleges and Universities is providing instructors, planning or guidance for the training session, the Minnesota State Colleges and Universities is the authority having jurisdiction.

<p><b>NOTE:</b> The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner since jurisdictions and "approval" agencies vary as do their responsibilities. Where public safety is primary, the "authority having jurisdiction" may be a federal, state, local or other regional department or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department, health department, building official, electrical inspector, or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the "authority having jurisdiction." In many circumstances the property owner or his designated agent assumes he role of the "authority having jurisdiction."</p>
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### **M 1.4.3 Burn Instructor**

An individual deemed qualified by the Fire/EMS/Safety Center staff to deliver structural firefighting training, and having the training and experience to supervise students during live fire training evolutions. This person works under the supervision of the Instructor-In-Charge.

### **M 1.4.4 Demonstration**

A practical showing by example of how a principle or method is applied.

#### M 1.4.5 Entry Team

A crew normally made up of one (1) instructor and three (3) students. On occasion exception to this rule will be to allow a fourth student on the entry team.

#### M 1.4.6 Evolution

A set of prescribed actions by one (1) instructor and three (3) students (maximum of 4 individuals) which includes entering the structure, participating in the specialized training, and safely exiting the structure.

#### M 1.4.7 Fire/EMS/Safety Center

Fire/EMS/Safety Center is a branch of the Minnesota State Colleges and Universities Office of The Chancellor and is responsible for program over site of Fire Service, Emergency Medical Services, Campus Safety, Environmental and Industrial Health, and Mine Safety and Health Administration training within Minnesota State Colleges and Universities institutions.

#### M 1.4.8 Statewide Fire Service Coordinator

The Statewide Fire Service Coordinator is an employee of Minnesota State Colleges and Universities, Office of The Chancellor, Fire/EMS/Safety Center.

#### M 1.4.9 Instructor-in-Charge

A Minnesota State Colleges and Universities Staff qualified by the Fire/EMS/Safety Center or the local college administration who shall be in charge of the live fire training activities (Operations Chief under the Incident Commander).

#### M 1.4.10 Instructor-in-Training

An individual in training, aspiring to become a qualified Burn Instructor for Minnesota State Colleges and Universities institution. This person will take instruction from the local college administration or a Statewide Fire Service Coordinator or other qualified instructor trainer. **This person is not to perform in an instructor role.**

#### M 1.4.11 Instructor-to-Student Ratio

The "Instructor-to-Student Ratio" refers only to the process of taking entry teams through the evolution. One (1) qualified burn instructor with the **attack team** of normally three (3) students; one (1) qualified burn instructor with the **backup team** of normally three (3) students. In most cases you will then have one (1) qualified burn instructor with the **last attack team** of normally three (3) students in rehab performing a critique. One (1) qualified burn instructor functioning as **safety**.

**NOTE:** To determine the number of qualified burn instructors needed for the evolution consider the following: 1) the time you have to perform the training drill; 2) the total number of students; 3) the number of entry teams; 4) the ambient temperature. Generally if you have 20 - 25 students and 3 - 4 hours to complete the training, you will need four (4) instructors.

#### **M 1.4.12 Live Fire**

Any unconfined open flame or device, which can propagate fire to the building or other equipment or combustible materials.

#### **M 1.4.13 Minnesota State Colleges and Universities**

Minnesota State Colleges and Universities is an educational system that provides training and education.

#### **M 1.4.14 MN-OSHA**

Minnesota Department of Labor and Industry Occupational Safety And Health Administration

#### **M 1.4.15 MPCA**

Minnesota Pollution Control Agency

#### **M 1.4.16 NFPA**

National Fire Protection Association.

#### **M 1.4.17 Operations Area**

The operations area will be established by the Safety Officer. It is the area where a hazard may exist for personnel without protective clothing. The operations area may change during the training session.

#### **M 1.4.18 Participant**

Any student, instructor, safety officer, visitor or other person who is within the operations area.

#### **M 1.4.19 Participant Accountability System**

A standard accountability system that the local department may have in place or the local college will provide the accountability system if one is not present. All participants will be on the system.

#### **M 1.4.20 Training Center Burn Building**

A structure specifically designed to conduct live fire training evolutions on a repetitive basis. It shall not include a structure which is primarily used for training in the use of breathing apparatus where only smoke conditions are created and the trainee is not subjected to risk or the effects of fire other than the smoke produced.

#### **M 1.4.21 Rapid Intervention Team**

A 4-person team of skilled individuals qualified by the Fire/EMS/Safety Center or local college administration staff to maintain a state of readiness for the purpose of retrieving participants in case of emergency. Appropriate RIT equipment will be positioned outside the operations area for immediate deployment at all live fire-training activities. The team leader will work directly with the safety officer.

#### **M 1.4.22 Rehabilitation Area**

An area outside of the operations area where participants can receive rest and rehabilitation.

#### **M 1.4.23 Safety Officer**

An individual qualified by the Fire/EMS/Safety Center or local college administration staff to maintain a safe working environment at all live fire-training activities. This person shall be a qualified burn instructor. This person will also act as ignition officer.

#### **M 1.4.24 Student**

Any person who is present at the live fire training evolution for the purpose of receiving training.

### **M 1.5.0 References**

The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this standard. The edition indicated for each reference is current as of the date of the NFPA issuance of this document. These references are listed separately to facilitate updating to the latest edition by the user.

#### **M 1.5.1 NFPA Publications (always the most current version)**

National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269.

NFPA 30 Flammable and Combustible Liquids Code

NFPA 1001 Standard for Fire Fighter Professional Qualifications

NFPA 1041 Standard for Fire Service Instructor Professional Qualifications

NFPA 1231 Standard on Water Supplies for Suburban and Rural Fire Fighting

NFPA 1561	Standard for Fire Department Incident Management System
NFPA 1971	Standard on Protective Clothing for Structural Firefighting
NFPA 1972	Standard on Helmets for Structural Firefighting
NFPA 1973	Standard on Gloves for Structural Firefighting
NFPA 1974	Standard for Protective Footwear for Structural Firefighting
NFPA 1975	Standard on Station/Work Uniforms for Fire Fighters
NFPA 1981	Standard on Self-Contained Breathing Apparatus for Fire Fighters
NFPA 1982	Standard on Personal Alert Safety Systems (PASS) for Fire Fighters

**M 1.5.2 Other Publications**

OSHA Fire Brigade Regulations, 29 CFR 1910.156 (e) (2) (ii) and (e) (2) (iii), Protective footwear. U.S. Government Printing Office, Washington, DC

**M 2.0 STUDENT PREREQUISITES**

**M 2.1.0 Minimum Training**

**M 2.1.1** - In order to ensure safe operations during a live fire training exercise, all participating students shall have achieved a minimum level of basic training.

**NOTE:** The actual interior structural or exterior fire attack evolution is normally conducted for one of two purposes. One (1), as the final phase of basic training; or two (2), as an ongoing means of maintaining and improving learned skills. In both instances, the live fire training evolutions are a means whereby the firefighter can collectively display many combinations of earlier learned skills and acquire an appreciation of the necessary safety aspects associated with structural fire fighting.

**M 2.1.2** - Prior to being permitted to participate in live fire training evolutions, the student shall have received training to meet the performance objectives Sections 5-1 through 5-5 of for FIRE FIGHTER I of the NFPA 1001, Standard for FIRE FIGHTER PROFESSIONAL QUALIFICATIONS. Students who are currently enrolled in a Minnesota State Colleges and Universities Basic Firefighter Section A & B Courses or Firefighter I/II course shall be allowed to participate towards the end of the course.

(1) Safety	(6) Fire hose, appliances, and streams
(2) Fire behavior	(7) Overhaul
(3) Portable extinguishers	(8) Water supply
(4) Personal protective equipment	(9) Ventilation
(5) Ladders	(10) Forcible entry

**M 2.1.3** - Students participating in a live fire training evolution, who have received the required minimum basic training from other than the Minnesota State Colleges and

Universities staff, shall not be permitted to participate in any live fire training evolution without presenting prior written evidence of having successfully completed the prescribed minimum training to the levels specified in M 2.1.2 of this document.

**NOTE:** See Enclosed Form Number M 21.26  
The type of written documentation required can vary depending upon the familiarity of the instructor with the level of training received by student participants who are employees of outside agencies. All outside agency student participants should be allowed to participate only as official representatives of an established organization. Prior documentation is required to facilitate planning of the training session.

### **M 2.2.0            *Explorers or Cadets***

**M 2.2.1 -** Explorers or Cadets may not participate in duties inside the operations area at any time, however they may participate in other duties outside the operations area that are deemed appropriate (i.e. filling of SCBA bottles etc.) and have the approval of a separate supervisor designated just for those person's activities.

## **M 3.0 STRUCTURES/PROPS**

### **M 3.1.0        *General***

Strict safety practices shall be applied to all structures and props selected for live fire training evolutions. These practices will vary greatly in the degree of application when comparing burn building structures to acquired structures. By their nature, burn buildings and engineered props have been designed specifically for the purpose of repeated live fire training evolutions and include safeguards, which only become unacceptable hazards through misapplication of use or improper maintenance. Acquired structures and props, on the other hand, were neither designed nor intended for burn applications and through disrepair may lack even the fundamental elements of fire resistance.

**NOTE:** When training facility burn buildings and props are available it is recommended they be used instead of acquired structures and props.

### **M 3.2.0        *Preparation Of Training Center Burn Buildings***

**M 3.2.1 -** All doors, windows and window scuttles, roof scuttles and automatic ventilators, mechanical equipment, lighting, manual or automatic sprinklers and stand-pipes necessary for the live fire training evolutions, shall be checked and operated, where appropriate, prior to any live fire training evolution to ensure correct operation.

M 3.2.2 - Training center burn buildings and props shall be left in a safe condition upon completion of live fire training evolutions. Debris hindering the access or egress of firefighters shall be removed before continuing further operation.

### **M 3.3.0 Procurement Of Acquired Buildings and Props**

M 3.3.1 - Any building or prop, which is considered for a structural or exterior fire training exercise shall be properly prepared for the live fire training evolution. Preparation can range from application for proper permits and permissions to relinquishing the acquired building or prop after the live fire training evolution is completed.

M 3.3.2 - Ownership of the acquired building or prop shall be determined prior to acceptance by the Minnesota State Colleges and Universities staff. Evidence of clear title shall be required for all structures and props acquired for live fire training evolutions.

**NOTE:** The legal counsel representing the authority having jurisdiction prior to acceptance of the structure or prop should review information pertaining to the building or prop ownership.

M 3.3.3 - Written permission shall be secured from the structure or prop owner for the fire department to conduct live fire-training evolutions in the acquired building or prop. A clear indication of the anticipated condition of the acquired building or prop at the completion of the evolution(s) shall be indicated in writing and acknowledged by the structure owner.

**NOTE:** Forms (M 21.02,03, 04, 05) relating to the written permission of the building or prop owner should be reviewed by the legal counsel prior to final acceptance of the structure or prop.

M 3.3.4 - Proof of insurance cancellation, or a signed statement of nonexistence of insurance shall be provided by the owner of the structure prior to acceptance of the acquired building or prop by the Minnesota State Colleges and Universities staff.

**NOTE:** Information (M 21.03) relating to the cancellation of insurance by the building or prop owner should be reviewed by the legal counsel prior to acceptance of the structure or prop.

M 3.3.5 - All appropriate and required permits to conduct live fire training evolutions shall be obtained. The permits specified in Section M 3-3 shall be provided to outside, contract, or other separate training agencies by the authority having jurisdiction upon the request of those agencies.

### **M 3.4.0 Preparation Of Acquired Building or Prop**

**M 3.4.1** - In preparation for live fire training, an inspection of the structure or prop shall be made to determine that the floors, walls, stairs, and other structural or prop components are able to withstand the weight of contents, participants and accumulated water.

**M 3.4.2** - Removal or neutralization of all hazardous storage or conditions, including asbestos, within the structure shall be accomplished by rules or statute. Closed containers and highly combustible material shall be removed. Oil tanks or similar closed vessels which cannot safely be removed shall be vented sufficiently to eliminate an explosion or over-pressure rupture, and any hazardous or combustible atmosphere within the tank or other vessel shall be rendered inert. Hazards potentially dangerous to participants such as floor openings, missing stair treads and rails, or other such hazards shall be repaired or made inaccessible.

**NOTE:** Care must be exercised in the neutralization of hazards posed by closed tanks and vessels. Both the vessel and the contents may pose a hazard, which must be eliminated. Appropriate references or assistance should be consulted based on the specific circumstances encountered. The area within the tank should be filled with dry sand as a preferred means of rendering the internal atmosphere inert. Under no circumstances should water or other liquids be utilized as a means of making a tank or other closed vessel inert.

**M 3.4.3** - In order to ensure participant personal safety from unforeseen environmental hazards, a careful examination of the building or prop shall be conducted to determine that the following items have been addressed, if applicable to the specific evolution:

- A. Floors, railings, stairs and access points shall be made safe prior to each evolution.
- B. Special attention shall be given to potential chimney hazards by removal of the chimney one foot below the roofline and the removal of all pieces of the chimney from the roof surface. This will allow hot gases to escape the attic area and keep chimneypieces from falling on personnel. Hip roof boards may be used in addition to the chimney to provide a vent for attic spaces. If necessary a traditional vent whole may be applied as necessary.
- C. All walls and ceilings shall be intact or patched. If unable to repair or patch, the room will be sealed off.
- D. Debris creating or contributing to unsafe conditions shall be removed. Bricks from the chimney scattered around the building for example.
- E. Low-density combustible fiberboard and unconventional interior finishes such as carpet on walls shall be removed.

**NOTE:** Low-density combustible fiberboard has been implicated as a major factor in a number of fast spreading fires that resulted in fatalities. Unconventional interior finishes include burlap, artificial turf and carpet on the walls. Collapse of overhead structural members may result from the combined effect of 1) the weight of both live and dead overhead loads, and 2) the loss of structural integrity caused by fire. Linoleum is a potential fuel source, particularly after being preheated by repeated fire exposure, and thus may contribute to causing an unanticipated increase in fire.

- F. Furniture and mattress will be removed.
- G. Drop ceilings and framing will be evaluated for possible removal.
- H. Extraordinary weight above the training area shall be removed or the area below rendered inaccessible.
- I. Adequate ventilation opening(s) shall be made in the roof. Caution; do not over ventilate the roof.
- J. Utilities shall be disconnected and power line wires removed from the building.
- K. Consideration shall be given to potential hazards of toxic weeds, insect hives, and vermin and will be removed as needed.
- L. An inspection by a licensed asbestos inspector and all forms of asbestos deemed hazardous to personnel shall be removed by Minnesota Pollution Control Agency (MPCA) and MN-OSHA rules. Copies of the inspectors report shall be viewed prior to training.
- M. Vehicles used as props for live fire training shall have all fluid reservoirs, tanks, shock absorbers, drive shafts, and other gas-filled closed containers removed, vented, or drained prior to any ignition.

M 3.4.3.1 - Roof ventilation openings that are normally closed, but can be opened in the event of an emergency, may be utilized. These may consist of pre-cut panels or hinged covers.

M 3.4.4 - Buildings, which cannot be made safe as required by section M 3.4.0, shall not be utilized for interior live fire training evolutions.

### **M 3.5.0 Exposures**

M 3.5.1 - Adjacent buildings or property that could become involved shall be properly protected or removed.

**M 3.5.2** - Utility services adjacent to the building shall be removed or protected.

**M 3.5.3** - Wood, brush, or surrounding vegetation, which pose a hazard to participants, shall be removed. Combustible materials, other than those intended for the live fire training evolution, shall be removed from the structure or stored in protected area to preclude accidental ignition.

**M 3.5.4** - Property adjacent to the building or prop that could be affected by the smoke from the building, shall be identified and the persons-in-charge informed about the date and time of the live fire training evolution.

**M 3.5.5** - Streets or highways in the vicinity of the building or props shall be surveyed for potential effects from live fire training evolutions. Appropriate safeguards shall be taken to eliminate any possible hazard to motorists. Such safeguards may include street closing, re-routing traffic, and police traffic control.

**M 3.5.6** - Pedestrian traffic in the vicinity of the building or prop shall be kept clear of the "operations area" of the live burn. Fire lines shall be established for this purpose.

**M 3.5.7** - Awareness of weather conditions, wind velocity and wind direction shall be maintained. In all cases, immediately before actual ignition, a final check shall be made for changes in weather conditions.

### ***M 3.6.0 Water Supply/Extinguishing Agent***

**M 3.6.1** - The water supply for any individual live fire training evolutions shall be assessed based on the extent of the evolutions, size of the structure or prop, the contents of the building to be involved, method of attack to be employed, protection of exposures and reserves for potential contingencies.

**M 3.6.2** - The minimum water supply and delivery for the live fire training evolutions shall meet the criteria identified in NFPA 1142, standard on Water Supplies for Suburban and Rural Fire Fighting.

**M 3.6.3** - A minimum reserve of additional water in the amount of 50 percent of the fire flow demand in section M 3.6.2 of this document shall be available to handle exposure protection or unforeseen situations.

**M 3.6.4** - Separate sources shall be utilized for supply of attack lines and back up lines in order to preclude the loss of both water supply sources at the same time.

For flammable metal fires, there shall be a sufficient quantity of the proper extinguishing agent available so that all attack crews have an adequate supply as well as a 150 percent reserve for the use of the backup crews.

**NOTE:** Two separate pumpers should be used to supply the attack and back-up lines. If a public water supply system is used, two pumpers on **two different hydrants** should be used. Two pumpers drafting from the same pond, river and/or folding tanks would also be appropriate if the source contains sufficient usable water. Reliability should be considered when determining what constitutes a separate source. The intent of this section is to prevent the simultaneous loss of both attack lines and back-up lines in the event of a pump or water supply failure.

### ***M 3.7.0 Vehicle Parking/Staging***

**M 3.7.1** - Adequate areas for staging, operating, and parking of fire apparatus that will be used in the live fire training evolution shall be designated.

**M 3.7.2** - An area shall be designated to park fire apparatus and vehicles, which are not a part of the evolution so as not to interfere with the fire-ground operations.

**M 3.7.3** - If required, parking areas for police vehicles or for the news media shall be designated.

**M 3.7.4** - A parking area for an ambulance or emergency medical service vehicle shall be designated. Consideration shall be given to locating this area for prompt response in the event of a personal injury to participants in the evolution.

**M 3.7.5** - Consideration shall be given to the designation and layout of enter/exit in order to assure their availability in the event of an emergency.

### ***M 3.8.0 Drill Site Pre-burn Briefing Session***

**M 3.8.1** - Prior to conducting actual live fire training evolutions in the building or prop, a site pre-burn briefing session shall be conducted for all participants. All evolutions to be conducted shall be discussed and assignments shall be made for all crews participating in the training session.

**M 3.8.2** - A site plan shall be prepared for the structure or props and shall be utilized in the pre-burn briefing sessions. All interior rooms, hallways, exterior openings and access and egress points shall be indicated on the plan. See M 20.08

M 3.8.3 - Prior to conducting any live fire training in the structure, all participants shall walk through the structure, have a knowledge and familiarity with the layout of the building and the emergency evacuation signal in the event emergency evacuation becomes necessary.

### **M 3.9.0 Spectator Safety**

M 3.9.1 - The Safety Officer shall establish an area to be restricted by all spectators outside of the operations area perimeter.

M 3.9.2 - Appropriate control measures such as ropes, signs, or other fire line markings shall be posted to indicate the perimeter of the operations area.

M 3.9.3 - Visitors allowed to observe operations, and allowed within the operations area perimeter, shall be escorted at all times, and shall be equipped with protective clothing in accordance with section M 5.3.0 of this standard.

## **M 4.0 NFPA 1403 FUEL REQUIREMENTS**

### **M 4.1.0 Fuels And Materials**

The known burning characteristics of such fuels that are utilized in live fire training evolutions shall be of a nature to be as controllable as possible. Unidentified materials, such as debris found in or around the structure or prop, materials of undetermined composition, which may burn in unanticipated ways, react violently, or create environmental or health hazards, shall not be used. Materials shall be used in only the amounts necessary to create the desired size fire. **No flammable or combustible liquids of any type shall be used during interior structure training evolutions.**

<p><b>NOTE:</b> Acceptable Class A materials include straw, wooden pallets, hay, pine excelsior and other ordinary combustibles. A reasonable effort should be made to ascertain that straw or hay, if used, has not been treated with pesticides or other harmful chemicals.</p>
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M 4.1.2 - The use of flammable or combustible liquids, as defined in NFPA 30, Flammable and Combustible Liquids Code, shall be prohibited for use in live interior structure fire training evolutions.

*Exception: Limited quantities of combustible liquid with a flash point above 100 °F (38 °C) shall be permitted to be used in a training center burn building that has been specifically engineered to accommodate this fuel.*

All props that use pressure to move fuel to the fire shall be equipped with remote fuel shutoffs. The remote fuel shutoff shall be within site of the prop, and the entire field of

attack for the prop, but shall be outside of the safety perimeter. During the entire time the prop is in use, the remote shutoff shall be continuously attended by safety personnel trained in its operation.

Liquefied petroleum gas props shall be equipped with all safety features as described in NFPA 58, Standard for the Storage and Handling of Liquefied Petroleum Gases, and NFPA 59, Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants. Where the evolution involves the failure of a safety feature, the failed part shall be located downstream from the properly functioning safety feature.

Measures shall be taken where using flammable or combustible liquids to prevent runoff from contaminating the surrounding area. There shall be oil separators for cleaning the runoff water.

**M 4.1.3 - Small amounts of uncontaminated diesel fuel or kerosene may be used for final burn down after the training evolutions are over.** In our experiences, the building is usually hot enough and is dried out enough and there is no need for combustible liquids.

<p><b>NOTE:</b> All safety containers used to store combustibles will be approved or listed by a testing laboratory and labeled in the following manner as to the contents; vertical blue and white stripes approximately 3 to 4 inches in width alternating vertically around the total circumference of the container. This is so they do not get mistaken for normal department safety containers which are general solid red in color and generally have gasoline stored in them. When using a combustible liquid in an area that is or has been heated above the flash point of that combustible liquid, that liquid may react as violently as a flammable liquid.</p>
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### **M 4.2.0     *Fire Growth***

**M 4.2.0 -** The instructor-in-charge shall assess the selected fire room environment for factors that will affect the growth, development, and spread of fire.

**M 4.2.1 -** The instructor-in-charge, as a minimum, shall document fuel loading, including furnishings; wall and floor coverings and ceiling materials; type of construction of the structure, including type of roof and combustible void spaces; and room dimensions.

**M 4.2.3 -** The training exercise shall be immediately stopped if the instructor-in-charge determines through continuing assessments that the combustible nature of the environment represents a potential hazard. The exercise shall continue only when the appropriate actions have been taken to reduce the hazard.

## M 5.0 SAFETY

### **M 5.1.0 Safety Officer**

M 5.1.1 - A Safety Officer shall be appointed for all live fire training evolutions. **The Safety Officer will be a qualified burn instructor.**

M 5.1.2 - The Safety Officer shall have the authority, regardless of rank, to intervene and correct any aspect of the operations when, in his/her judgment, a potential or real danger, accident, or unsafe condition exists.

M 5.1.3 - Responsibilities of the Safety Officer shall include but not be limited to:

- A. Prevention of unsafe acts.
- B. Elimination of unsafe conditions.
- C. Ignition of fires
- D. See that personnel are **drinking plenty of fluids that are high in potassium, such as sport drinks** prior to participating in the training evolutions.

M 5.1.4 - The Safety Officer shall be responsible for the safety of all persons on the scene including students, instructors, visitors, and spectators. The safety officer will supervise the rapid intervention crew (RIC)

M 5.1.5 - The Safety Officer shall not be assigned other duties inconsistent with safety responsibilities.

M 5.1.6 - The safety officer shall be knowledgeable in the operation and location of safety features available within the burn building, such as emergency shutoff switches, gas shutoff valves, and evacuation alarms.

### **M 5.2.0 Other Safety Officer Requirements**

M 5.2.1 - Sufficient back-up lines shall be provided to ensure adequate protection for personnel on training attack lines. One additional 1 ½ inch minimum charged hose line will be placed in the room next to the instructor. This line will be supplied by the backup line engine.

M 5.2.2 - The Instructor-In-Charge of the live fire training evolutions shall determine, prior to each specific evolution, how many training attack lines and back-up lines will be necessary. Each hose line shall be capable of delivering a minimum of 95 G.P.M.

The Instructor-In-Charge shall then:

- A. Assign one (1) instructor to each functional crew, which shall not exceed five (3) students per functional crew,

- B. Assign one (1) instructor to each "back-up line",
- C. Assign sufficient additional personnel (hose tenders) to hose lines to provide mobility,
- D. Assign one (1) additional instructor for each additional functional assignment.

**NOTE:** A minimum flow rate of 95 gallons per minute is required in order to have adequate quantities of water/extinguishing agent available to handle the planned evolution plus a reserve for unanticipated emergencies. The appropriate quantity and exact flow rates that will be needed for fire control and extinguishment should be calculated in advance, and certain factors such as equipment, personal, fire area, and topography should be taken into consideration. Knowledge of the hose line sizes, types of nozzles, what fire stream will be utilized, and the principles of fire attack and deployment will aid in determining the exact flow rates which will be necessary.

**M 5.2.3** - Additional safety personnel, as deemed necessary by the Safety Officer, shall be strategically placed within the structure to react to any unplanned or threatening situation or condition. This team shall not be the designated exterior back line as required by MN-OSHA.

**M 5.2.4** - A method of fire ground communications shall be established to coordinate command, interior divisions/sectors, exterior divisions/sectors, the Safety Officer, and external requests for assistance.

**M 5.2.5** - A building or prop evacuation plan shall be established and an evacuation signal shall be demonstrated to all participants in the live fire training evolution.

**NOTE:** Participants involved in the live fire training evolution should be instructed to report to a pre-determined location for a roll call should evacuation of the building or prop be signaled. Instructors should report immediately to the Instructor-In-Charge any personnel not accounted for. Examples of an evacuation signal which could be used include a whistle, apparatus air horn, or high-low electronic siren or mechanical siren.

**M 5.2.6** - Emergency medical services shall be available on site to handle any injuries. Written reports shall be made on all injuries and on all medical aid rendered.

**M 5.2.7** - One person shall be designated as the "ignition officer" to control the materials being burned and to ignite the training fire in the presence of and under the direct supervision of the Safety Officer. This person shall not be a student and shall wear full protective clothing including self-contained breathing apparatus as required in section M 5.3.0 of this document. A charged hose line shall accompany the ignition officer when igniting fires. The decision to ignite the training fire shall be made by the Instructor-In-Charge in coordination with the Safety Officer.

M 5.2.8 - No person(s) shall be placed inside the building or prop that has live fire burning, to play the role of victim. A thorough search of the structure shall be conducted to ensure that no unauthorized persons, animals or objects are in the structure immediately prior to ignition.

M 5.2.9 - Where concurrent, multiple live fire training evolutions are being conducted in a specifically designed burn building, the identity of the instructor-in-charge of the evolutions shall be clear to all participants. It shall be this instructor's responsibility to coordinate overall burn building fireground activities to ensure proper levels of safety.

### **M 5.3.0      *Protective Clothing And Equipment***

M 5.3.1 - Each participant involved in live fire operations shall be equipped with full protective clothing and self-contained breathing apparatus (SCBA). All participants shall be inspected by the Safety Officer to ensure the protective clothing and SCBA are being properly worn prior to entry into a live fire training evolution.

M 5.3.1.1 - Protective equipment shall meet the requirements of NFPA 1971, Standard on Protective Ensemble For Structure Fire Fighting and MN-OSHA rule.

M 5.3.1.2 - Self-Contained breathing apparatus, (SCBA) shall meet the requirements of NFPA 1981, Standard on Self-Contained Breathing Apparatus for Fire Fighters and MN-OSHA rule.

M 5.3.1.3 - Protective footwear shall meet the requirements of NFPA 1971, MN-OSHA rule and 29 CFR 1910.156 (e) (2) (ii) and (e) (2) (iii), OSHA, Fire Brigades Standards.

M 5.3.1.4 - Where station or work uniforms are worn by any participant, the station or work uniform shall meet the requirements of NFPA 1975, Standard on Station/Work Uniforms for Fire Fighters and MN-OSHA rule.

<p><b>NOTE:</b> Clothing worn under protective clothing can degrade and cause injury to the wearer, even without damaging the protective clothing. All persons should be aware of the dangers of clothing that is made from certain all-synthetic materials melting, sticking to, and burning the wearer, even though protective clothing meeting NFPA and MN-OSHA rules is worn over this clothing. Any clothing worn under protective clothing, such as shirts, pants, underwear, sweatshirts, etc., should meet the requirements of NFPA, Standard on Station/Work Uniform for Firefighters, whenever possible, or at least be selected for the fabrics ability to resist ignition or melting. Fire retardant fabrics and all natural fibers should be given consideration.</p>
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M 5.3.1.7 - Where personal alarm devices are used by any participant, the device shall meet the requirements of NFPA 1982, Standard on Personal Alert Safety System (PASS) for Fire Fighters and MN- OSHA rule.

M 5.3.2 - All students, instructors, safety personnel, and other personnel shall wear all protective clothing and equipment specified in M 5.3.0 whenever these persons are involved in any training evolution or fire suppression operation inside the operations area.

M 5.3.3 - All students, instructors, safety personnel, and other personnel participating in any evolution or fire suppression operation during the live fire training evolution shall breath from the SCBA air supply whenever one or more of the following conditions exist:

- A. Operating in an atmosphere that is oxygen deficient or contaminated by products of combustion, or both.
- B. Operating in an atmosphere that is suspected of being oxygen deficient or contaminated by products of combustion or both.
- C. Operating in any atmosphere that may become oxygen deficient or contaminated, or both.
- D. Operating below ground level or in a confined space as defined by MN-OSHA.

<b>NOTE:</b> No one should be allowed to breath smoke, toxic vapors or fumes, products of combustion, or other contaminated atmospheres, or be exposed to an oxygen deficient atmosphere.
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## **M 5.4.0                      *Accountability***

M 5.4.1 - An Accountability Passport System will be established at each training site. Each participant will be issued 2 personalized nametags. The 1st nametag will be used by the Accountability Officer to identify all those on the training ground; the 2<sup>nd</sup> will identify those in the operations area.

M 5.4.2 - Instructors are responsible to ensure the Accountability Officer is in possession of their tags prior to entry.

M 5.4.3 - In the event that the host fire department does not use an accountability system or uses something other than a passport system, each member entering the operations area will be issued a blank white tag on which they will write their rank, initial of their first name and their complete last name in grease pencil. Upon exiting the operations area each participant will collect their passport, and state to the accountability officer that their crew is present and intact. Their names may now be erased.

*Note:* Firefighters will NOT be taken off the system unless they report only to the Accountability Officer in person and **as a crew**. A firefighter absent from their crew when reporting will be presumed lost in the operations area until proven otherwise.

**M 5.4.4** - The Accountability Officer upon receiving tags from the next in crew will report on a tactical worksheet, the names of those entering, the time they entered, what position they entered on, the level of fire they encountered, the activities they performed and what time they exited.

**M 5.4.5** - This tactical work sheet will go on file in the office of the Burn Coordinator in the event of future reference.

**M 5.4.6** - The person(s) assigned as an Accountability Officer will take direct from the Safety Officer.

### **M 5.5.0**                    ***Rapid Intervention Crew and Rescue Plans***

**M 5.5.1** – A 5-person rapid intervention crew (RIC) as reference in NFPA 1500, of skilled individuals qualified by the Fire/EMS/Safety Center or local college administration staff to maintain a state of readiness for the purpose of retrieving participants in case of emergency. Appropriate RIT equipment will be positioned outside the operations area for immediate deployment at all live fire-training activities. The team leader will work directly with the safety officer.

**M 5.5.2** – In the event that a rescue or assistance needs to be provided to a down or distressed firefighter a MAYDAY message will be issued. If firefighters report problems to their supervisors without issuing a mayday, ANY personnel on the training ground may issue one for them if they feel conditions warrant.

**M 5.5.3** – The on-scene rapid intervention crew will be sent to the area of the incident.

**M 5.5.4** – If an interior crew mayday alarm is initiated, the nearest interior or exterior back-up line will immediately search and assess the situation and conditions. Communicate their findings to the command staff and start rescue or fire control if able.

**M 5.5.5** – If the on-scene resources or not adequate based on the situation, additional resources will be immediately dispatched to the scene.

**M 5.5.6** – In the event that the interior back up line is also in distress and cannot search and assess the next due back up line will perform this function. The next in attack crew will still become the RIT and staged crews will move up and await assignment.

**M 5.5.7** – An accountability or ‘PAR’ check will be conducted by the IC of those in the operations area as early on as possible. Distressed firefighters will be identified by name.

M 5.5.8 – If an exterior crew mayday alarm is initiated, the next in attack lines will assist the RIC. Back up lines will remain in stand by mode for interior crews.

M 5.5.9 – A instructors will be given training on RIC, terminology, and RIC rescue concepts and operations regardless of pervious background.

### **M 5.6.0                    *Medical and Rehabilitation***

M 5.6.1 – Rehab area supervisor will ensures crews are rested, and fluids are replenished before further participation in training exercises.

M 5.6.2 – Training will be postponed until adequate crews are assembled.

M 5.6.3 – Vital signs will be taken of participants who enter the burn building before and after each training evolution.

M 5.6.4 – EMS crew of at least First Responder Level will stage near the rehab area to provide medical care if necessary.

M 5.6.5 – The rehab area shall be of sufficient size to handle the number of participants on the training scene to rest and provide protection from adverse weather.

## **M 6.0 INSTRUCTOR REQUIREMENTS**

### **M 6.1.0            *Instructor Requirements***

All instructors shall be deemed qualified to deliver live fire and structural firefighting training by the Fire/EMS/Safety Center staff and the local college administration.

**NOTE:** Instructors should meet the criteria outlined in NFPA 1041, Fire Service Instructor Professional Qualifications, for Level II Instructor or higher.

M 6.1.2 - The participating student-instructor ratio shall not be greater than three (3) to one (1).

Every effort will be made to assign instructors to meet these ratios:

Level 1 Training Session = normally 3 Students and a minimum of 1 Instructor.

Level 2 Training Session = normally 3 Students and a minimum of 1 Instructor.

Level 3 Training Session = normally 5 Students and a minimum of 2 Instructors.

**NOTE:** It is important that the participating student-to-instructor ratio be monitored so as to not exceed the span of control necessary to provide for the safe and proper supervision of

trainees. In Minnesota the ratio will normally be three (3) students and a minimum of one (1) Instructor.

The INSTRUCTOR-TO- STUDENT RATIO refers only to the process of taking entry teams through the evolution. One (1) qualified burn instructor with the **attack team** of normally three (3) students, one (1) qualified burn instructor with the **backup team** of normally three (3) students. In most cases you will then have one (1) qualified burn instructor with the **last attack team** of normally three (3) students in rehab performing a critique. One (1) qualified burn instructor performing the duties of the **safety officer**.

**NOTE:** To determine the number of qualified burn instructors needed for the evolution consider the following;

1. The time you have to perform the evolutions. If you have all day and your instructors are willing and able to work hard, then you could possibly, with adequate time for rehab, conduct the evolution with less than four instructors.
2. If you are conducting the evolutions with a goal of being completed in approximately four hours and you have 25 - 30 students to enter the structure, then you will most likely need four instructors and possibly more: one instructor inside with an entry team; one instructor on backup; one instructor in rehab critiquing, who when finished will brief the next entry team and ready them; and one instructor on safety.
3. **REMEMBER SAFETY OF ALL IS EXTREMELY IMPORTANT**

M 6.1.3 - Other factors such as extreme temperatures, larger groups, long duration classes, etc. shall be taken into consideration and additional instructors shall be designated as deemed necessary to secure proper levels of safety.

M 6.1.4 - Instructors responsible for conducting live fire-training evolutions with a gas-fueled training system shall be trained properly in the complete operation of the system. The training of instructors shall be performed by an individual authorized by the system manufacturer.

## **M 6.2.0    *Instructor Responsibilities***

M 6.2.1 - The instructor-in-charge shall be responsible for full compliance with this document.

M 6.2.2 - Prior to the ignition of any fire, instructors shall ensure that all protective clothing and equipment be used as specified in M 5.3.0 of this document.

M 6.2.3 - Instructors shall verify that all participants are on the accountability system and accounted for by making a head count both when entering and exiting an actual attack evolution conducted in accordance with this document. Instructors shall closely monitor and supervise all assigned students during the live fire training evolution.

**M 6.2.4** - The instructor-in-charge shall provide for rest and rehabilitation of members operating at the scene, including any necessary medical evaluation and treatment, food and fluid replenishment, and relief from climatic conditions.

## **M 7.0 REPORT FORMS AND RECORDS**

### **M 7.1.0 *Sample Forms And Records***

The following records and reports shall be maintained on all live training evolutions in accordance with the requirements of this standard.

- A. An accounting of the activities conducted.
- B. A listing of instructors present and their assignments.
- C. A listing of all other participants.
- D. Documentation of unusual conditions encountered.
- E. Any injuries incurred and treatment rendered.
- F. Any changes or deterioration in the structure.
- G. Documentation of the condition of the premises and adjacent area at the conclusion of the training exercise.
  
- H. The forms listed in section M 20.0 shows a list of forms, some of which are supplied, that are required to be filled out or acquired as stated in this document..

**M 7.2.0** - For acquired buildings and props, records and permits pertaining to the structure or prop shall be completed. See section M 21.0

**M 7.3.0** - Upon completion of the training session the acquired building or prop shall be formally turned over to the control of the property owner. A standard form shall be executed showing the transfer in authority for the building or prop.

**M 7.4.0** - A post-training critique session, complete with documentation, shall be conducted to evaluate student performance and reinforce the learning experience of all participants.

## M 8.0 MINNESOTA STATE COLLEGES AND UNIVERSITIES INSTRUCTOR POLICY AND PROCEDURES

### M 8.1.0 *Instructor Categories*

#### M 8.1.1 General Comments

There are a number of policies, which must be followed to ensure maximum safety. This type of training has a high hazard potential. It is most important to remember that **WHAT THE STUDENTS SEE YOU DO AS AN INSTRUCTOR, RIGHT OR WRONG, THE STUDENTS WILL REMEMBER.** Therefore, with that in mind, you can see why the Fire/EMS/Safety Center and Minnesota State Colleges and Universities require a high level of competence in Live Burn Instructors. This may mean that the **INSTRUCTOR- IN-TRAINING** may remain in training for some time. The length of time that you are an **INSTRUCTOR-IN-TRAINING** is dependent on a number of general factors:

1. The number of **pre-burn classes** you attend with a Statewide Fire Service Coordinator or a qualified Minnesota State Colleges and Universities burn instructor.
2. The number of **burns** you are able to attend with a Statewide Fire Service Coordinator or a qualified Minnesota State Colleges and Universities burn instructor.
3. How fast you learn the procedures and the curriculum for this type of training.
4. How well you perform your practice teaching at a live burn.

M 8.1.2 - You will receive notice or a contract from the Minnesota State Colleges and Universities institution if you are needed as an instructor at a burn.

M 8.1.3 - If instructors receive information that a structure is available, you must first notify the local college Fire Coordinator so he/she can schedule the training and complete necessary paper work.

M 8.1.4 - Live fire training should be a learning session for the individual involved. It is imperative that this type of training session does not become a bad experience or a test for the student. At a drill such as this, it may be tempting to build a fire, which is too large for the students. Students must be analyzed to determine the type and size of fire to be built for them, so as to match their experience level. Students must be informed as to what they will see and what is expected of them while they are with you.

**M 8.1.5** - It is the policy of Minnesota State Colleges and Universities and the Fire/EMS/Safety Center that the Burn Instructor be as safety conscious as possible. This means you will be held accountable for unsafe acts such as damaged protective equipment, injuries to students, out-of-control situations.

## ***M 8.2.0 Burn Procedures***

### **M 8.2.1 Pre-Burn Class**

The host department or the Minnesota State Colleges and Universities institution shall arrange for a pre-burn class to be held prior to the training burn. The interior structure burn lesson plan is enclosed in this document. Only those instructors qualified as Pre-Burn Instructors in accordance with this document will be allowed to instruct this class. Exterior live fire training classes will use approved Minnesota State Colleges and Universities curriculum.

## ***M 8.3.0 Pre-Burn Class Instructors Qualifications***

### **M 8.3.1 Pre-Burn Class Instructors Qualifications**

The Minnesota State Colleges and Universities institution will schedule a Statewide Fire Service Coordinator for evaluation purposes of personnel who are ready to qualify as Pre-Burn Instructors.

Individual qualifications for personnel, desiring to become a Pre-Burn Instructor for an institution of the Minnesota State Colleges and Universities:

1. Completion of a fire department or Minnesota State Colleges and Universities sponsored or approved course meeting NFPA 1001 training objectives or its equivalent.
2. Completion of an entry-level instructor training course equivalent to NFPA 1041 Instructor II.
3. Have adequate fire suppression crew leader (5 years minimum) experience and knowledge as demonstrated by credentials or resume, which shall be examined by Minnesota State Colleges and Universities staff.
4. Be knowledgeable of the protective clothing meeting the requirements of the National Fire Protection Association (NFPA) and MN-OSHA rule.

5. Team teach with a Statewide Fire Service Coordinator or a qualified burn instructor at a prescribed number of pre-burn class sessions or as determined by the Minnesota State Colleges and Universities staff.
6. Participate and be familiar with the training procedures which are conducted at a live fire burn drill as defined in this manual.
7. Participation requirements for the Pre-Burn Instructor in training are minimums and evaluation and final decision will be by the Minnesota State Colleges and Universities staff. A Pre-Burn Instructor may return to **Instructor-in-Training** status for refresher purposes.

## ***M 8.4.0 Burn Class Instructors Qualifications***

### **M 8.4.1 Burn Instructors Qualifications**

The Minnesota State Colleges and Universities institution will schedule a Statewide Fire Service Coordinator for evaluation purposes of personnel who are ready to qualify as Burn Instructors.

Individual qualifications for personnel, desiring to become a Burn Instructor for the Minnesota State Colleges and Universities:

1. Completion of a fire department or Minnesota State Colleges and Universities sponsored or approved course meeting NFPA 1001 training objectives or its equivalent.
2. Completion of an entry-level instructor training course equivalent to NFPA 1041 Instructor II.
3. Have adequate fire suppression crew leader (5 years minimum) experience and knowledge as demonstrated by credentials or resume, which shall be examined by Minnesota State Colleges and Universities staff.
4. Be equipped with protective clothing meeting the requirements of NFPA and MN-OSHA rule.
5. Team teach with a Statewide Fire Service Coordinator or a qualified burn instructor at a prescribed number of live fire burn drills or as determined by the Minnesota State Colleges and Universities staff.
6. Participate as an Instructor-in-training to a burn instructor at a prescribed number of live fire burn drills or as determined by Minnesota State Colleges and Universities

staff. This will include preparing the structure or prop and area for training. Preparing the ignitable materials under the supervision of the Instructor-In-Charge.

7. Participation requirements for the Burn Instructor are minimums only and evaluation and final decision will be by the Minnesota State Colleges and Universities staff. In most cases this will be made by the Instructor-In-Charge. A burn instructor may return to **Instructor-In-Training** status for refresher purposes.

## ***M 8.5.0 Instructors-In-Charge Qualifications and Responsibility***

### **M 8.5.1 Instructor-In-Charge**

Generally after you have been working as a Burn Instructor for a period of time, you should have gained enough experience to be able to conduct a live burn as the **Instructor-In-Charge**. This means you should be able to look at a potential building site or prop and determine:

1. If the structure or prop is training worthy.
2. What the exposure problems might be.
3. How many students the structure or prop will handle.
4. How much water and equipment is necessary.
5. Compliance with this document.

You will receive notice from your local college administration when you will represent Minnesota State Colleges and Universities as the Instructor-In-Charge.

## ***M 8.6.0 Instructor Evaluation***

**M 8.6.1.1** - Burn Instructors will be evaluated by a Statewide Fire Service Coordinator and local college administration. Evaluations will be based on the attendance and scoring of the annual Burn Instructors Refresher Training Session and knowledge and familiarity of this document. There will be a continuous process conducted in the field at least annually to evaluate the performance displayed during training. This evaluation process will also identify those individuals who will qualify as an Instructor-In-Charge.

**M 8.6.1.2** - Complaints which may arise from a fire department or any Minnesota State Colleges and Universities staff about a Burn Instructor in which one or more of the following occurs will cause an investigation:

1. Any person on the training ground is injured.
2. Melting or other damage to equipment.
3. Improper use of equipment.
4. Training methods not in accordance with Minnesota State Colleges and Universities state policy.
5. Non-constructive criticism of other instructors, trainees or the program during a training session.

**NOTE:** If you are having a problem with procedures or personalities during a training session, talk to the Instructor-in-Charge. The Instructor-In-Charge will handle the situation at that time, and at the end of the training session report the incident to the local college administration. If local college administration does not address your concern, then submit written documentation to the District Coordinator if the situation requires it.

**M 8.6.1.3** - If a Burn Instructor fails to attend and pass the requirements of the annual Burn Instructor Refresher Training Session or is found to be in need of a refresher or retraining based on being inactive for one calendar year or the recommendation of the Minnesota State Colleges and Universities staff, or a substantiated complaint where one or more of the events listed in M 8.6.3 occurs, it will be the responsibility of a Statewide Fire Service Coordinator or local college administration to conduct a retraining session. During this time, the individual will not be allowed to act as a Burn Instructor or conduct a burn training session in conjunction with the Minnesota State Colleges and Universities system under any circumstances. The Minnesota State Colleges and Universities staff will determine when the individual is ready to resume responsibilities for structural burn training based on evaluation of the retraining sessions.

#### **M 8.6.5 Instructor Evaluation Form**

This form is available from Fire/EMS/Safety Center staff or your local college administrator.

## M 9.0 INSTRUCTORS PRE-BURN CLASS GUIDE

### ***Firefighter Materials Needed For This Class:***

- One adjustable pattern fog nozzle capable of delivering a 95 G.P.M. minimum flow and other nozzle suitable for the evolutions.
- One complete set of turn out gear.
- One complete SCBA with PASS device.
- One flash light.

### ***Audio Visual Equipment Needed***

- 110 volt extension cord with outlet adaptor.
- Overhead Projector.
- Overheads of the site plan and floor plans.
- VCR and monitor.
- PowerPoint projector.
- PowerPoint files for pre-burn class.
- or -
- Video tape for pre-burn class.

## ***I. Welcome from The Minnesota State Colleges and Universities System***

### Introductions

- Instructors
- Others

### Facility announcements.

- Registration
- Roster sheets explained
- Facility rules
- Exits
- Bathrooms
- Break times

## **II. Class Outline (Details in section M9.1)**

Motivational statements.  
Class Objectives  
Purpose of Pre-Burn Class.  
Purpose of Structural Burn Training.

### **Before Starting Next Section:**

Have one of the students get their PROTECTIVE CLOTHING items including SCBA. As you lecture, have the student get dressed showing the class the proper way to don the equipment.

### **Protective Clothing**

Boots  
Pants  
Hood  
Coat  
Gloves  
Flashlight  
Other tools

Self-Contained Breathing Apparatus  
30-minute minimum  
Tank valve open all the way  
Face piece check and donning  
Test for Face piece seal  
Test for Exhalation valve leaks  
Harness adjustments and check  
Adjust harness so the weight is carried on your hips.  
PASS Device activation

Regulator  
Emergency by-pass test and procedures  
Main line valve open all the way  
Low air warning signal  
Demonstrate test procedures

Survey class for experience levels and time on the department before moving into Levels of Training.

### **Levels of Training for structures**

Level I - Explain in detail what will take place.  
Level II - Explain in detail what will take place.  
Level III - Explain in detail what will take place.

**Attack Team**

Make Up - Student to Instructor ratio.  
Function during the drill.  
Procedures that they will follow during the drill.

**Back Up Team(s)**

Make Up - Student to Instructor ratio.  
Function during the drill.  
Procedures that they will follow during the drill.

**Methods of Attacking a Fire**

Direct  
Indirect  
Combination

**Hose Line and Nozzle Operations**

Operational difference between automatic nozzles  
Flow setting  
Pattern adjustments  
On/Off operation of the nozzle  
Hose line pressure test - NFPA test (5 Min.)  
Hose line positioning

**Fog Ventilation**

Define Ventilation  
Level I procedures  
Level II procedures  
Level III procedures

**Hose Line Handling**

Attack team  
Back up team  
Hose tender team

**Overhaul**

Evidence preservation  
Drill Procedures

**Safety**

Overall safety concerns during the drill  
Explain the purpose use of the instructor hose line  
Explain rehab and EMS  
Describe the emergency evacuation signal for the drill  
Describe the procedures for calling for a PAR (Personnel Accountability Report)  
during or after the evacuation

### **Critique with your instructor**

Describe the process of the question and answers period while re-hydrating in rehab with the instructor immediately following the exit from the building.

### **III. Building and site information**

- Site plan
- Building floor plans
- Anticipated apparatus positioning
- Emergency medical and rehab area
- Vehicle parking and staging
- Water supply information
- Safety procedures
- Pre-burn briefing session

### **IV. Summary and Closing Remarks**

Remind students to eat a good meal and **drink plenty of fluids that are high in potassium, such as sport drinks** prior to participating in the training session.

Remind them to wear the proper street or station clothing under their turn out gear for the training session.

Remind students of start time and location of training session.

Turn the training session back over to the officer in charge for final comments.

## ***M 9.1 PRE-BURN CLASS CONTENT DETAIL***

### **M 9.1.0 Pre-Burn Class Introduction To Students**

"Firefighter Injured In Training Session"; Firefighter Dies In Training Session"; "Fire Department Burns Wrong House Down In Training Session". These are just some of the many headlines that appear from time to time around the country. These events are tragic and/or embarrassing. Each one of these situations has one thing in common, THEY COULD HAVE BEEN PREVENTED !!!

**M 9.2.0** - Live fire evolutions provide good training and are used by most fire departments. The live fires used by fire departments may vary widely by type and size. They may include flammable liquid fires, and structural fires ranging from small pan fires to large commercial structures such as grain elevators.

**M 9.3.0** - Firefighters will always run the risk of being injured or killed while learning to do their job. National Incident Reports revealed in the year 2001, the following statistics.

Fourteen firefighters died in 2001 during training activities. Nine of the training deaths involved heart attacks that were suffered during training, including 2 deaths during physical fitness training and 2 deaths during return to duty or annual recertification tests.

One firefighter was killed when he fell from an aerial ladder during training; 1 firefighter drowned during dive rescue training; 1 firefighter injured his back during training and died of surgical complications; 1 firefighter was killed in a motorcycle collision as he returned to the fire station after an offsite training session; and 1 firefighter was caught and trapped by fire progress in a structural live-fire training exercise.

<b>NOTE:</b> Insert the most current data from NFPA and USFA.
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## ***M 10.0 PRE-BURN COURSE OBJECTIVE***

**M 10.1.0** - The objective of this class session is to prepare you for the live burn drill. Also we will refresh your memory on basic fire behavior, safety procedures, fire attack, and fire ground operations. We will meet this objective in the following way. You will receive instruction during this pre-burn class that will refresh your memory on basic fire behavior and attack skills. Using your protective clothing you will demonstrate the ability to don your protective clothing properly along with your SCBA. Using a fog nozzle you will demonstrate the proper operation of the nozzle. After a lecture and viewing slides or video tapes, you will have an understanding of what you will do during the live burn drill.

**M 10.2.0** - Live fire training conducted in suitable buildings available for demolition provides the realism missing in other types of training. The sights, sounds and sensations the trainee experiences are real. While this level of realism provides excellent training, it obviously carries with it most of the hazards of interior firefighting at an actual emergency. This training session will, therefore, be planned with great care and supervised closely by qualified instructional personnel. Building construction, building condition, exposures, terrain, water supply and a multitude of other variables affect the safety of the participants. The on-site judgment of qualified personnel will be the final factor in determining the safety of any specific situation.

**M 10.3.0** - In order for you to function as a valuable member of your fire department, you must know how to keep yourself from becoming a liability on the fire ground. This type of live burn drill can help to develop the confidence you need to become a well- trained firefighter for your fire department.

## ***M 11.0 PERSONAL PROTECTIVE EQUIPMENT***

### **M 11.1.0 NFPA And MN-OSHA Required Personal Safety Equipment**

Helmet  
Hood  
Coat  
Bunker Pants  
Boots  
Gloves  
Flash Light  
Other

<p><b>NOTE:</b> All personal equipment that STRUCTURE firefighters wear must meet NFPA standards and MN-OSHA rules.</p>
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#### **M 11.1.1 HELMET**

1. The helmet must meet NFPA standards and MN-OSHA rules.
2. The helmet must have a helmet liner.
3. The helmet must fit on your head with your SCBA face piece and hood on. This means that the helmet suspension must be resting on your head. If your helmet is not properly fitted, you may lose it. If you lose your helmet, a brick or other objects may strike your head, producing serious injury. Another possibility is your helmet may get knocked off or driven down on top of your head, forcing your SCBA face piece off, which may cause you to inhale toxic vapors, proving fatal.

4. The chin strap on your helmet must be able to secure your helmet to your head by fastening under your chin.
5. If your helmet does not fit properly when you show up for the live burn you will not be allowed in the training area.

#### **M 11.1.2 Hood**

1. Hoods are to be worn over the top of the SCBA face piece. This means that you put on your hood first and pull it back like the hood on a hooded sweat shirt. Then you put on your SCBA face piece, adjust the straps, check the seals and pull the hood back up over the top of the face piece straps. After this is complete, put your helmet on.

#### **M 11.1.3 Coat**

1. The coat must meet NFPA standards and MN-OSHA rule.
2. The coat must be in good condition. No holes larger than a U.S. dime, tears, broken snaps, etc.
3. When the coat is on, it must be snapped or fasten together correctly. The storm flap in the front of the coat must be overlapped to form a water tight seal as designed. When the coat is on you should not be able to slide your hand in past the outer flap and touch your street clothes.
4. The insulation liner must be in place.
5. The collar latch and fastener must be working.

#### **M 11.1.4 Bunker Pants**

1. The bunker pants must meet NFPA standards and MN-OSHA rule.
2. The bunker pants must be in good condition. No large holes, tears, broken snaps, etc.
3. When the bunker pants are on, it must be snapped or fasten together correctly. The storm flap in the front of the bunker pants must be overlapped to form a water tight seal as designed. When the bunker pants are on you should not be able to slide your hand in past the outer flap and touch your street clothes.
4. The insulation liner must be in place.

#### **M 11.1.5 Boots**

1. Fire boots must meet NFPA standards and MN-OSHA rule.
2. High top fire boots shall be used if you are not wearing bunker pants.
3. Short boots will only be allowed with bunker pants.

#### **M 11.1.6 Gloves**

1. The fire gloves must meet NFPA standards and MN-OSHA rule.
2. The fire gloves must be in good condition. No large holes, tears, etc.

#### **M 11.1.7 Flashlight**

1. Every firefighter who enters a structure **should** have a flashlight.
2. Every team who enters the structure **WILL** have at least one flashlight or lantern.

**NOTE:** The use of a flashlight by firefighters inside a building or prop for the purposes of assisting with overhaul is necessary. It is impossible for you to do a thorough job of overhaul in low light conditions.

#### **M 11.1.8 Other Items**

1. Other items such as spanner belts should be put on **before** your SCBA so as not to interfere with the donning and doffing of your SCBA.

**NOTE:** The use of other items is optional based on your department policies.

#### **M 11.2.0 REQUIRED SCBA**

Cylinder/Air Supply  
Face piece  
Harness  
PASS Device  
Regulator

**All entry people must comply with MN-OSHA facial hair ruling.**

**Refer to policy dated February 14, 1990 which states:** Fire Training Instructors shall not teach respirator use to students with facial hair or other conditions which impair the mask-face seal.

Reference the March 20, 1984 Minnesota OSHA press release.

#### **M 11.2.1 Compressed Air Tank**

1. An SCBA that uses a compressed air cylinder, must supply a minimum of 30 minutes of air supply. It must meet NFPA and MN-OSHA rule.
2. Other types of SCBA must comply with NFPA 1981.
3. Cylinders must have an up-to-date hydrostatic test.
4. Cylinder valves must be turned to the fully-open position.

5. Cylinders should be properly marked as to which department they belong.

#### **M 11.2.2 Face Piece**

1. Install your face piece on your head before you place your hood over your head.
2. Perform your two-step face piece seal check.
  - a. Exhaust port check.
  - b. Facial seal check.

#### **M 11.2.3 Harness**

1. Make sure to extend all straps before attempting to don SCBA.
2. When you are through with the SCBA, place the unit as instructed by your instructor.
3. Make sure you secure loose straps so you will not become tangled while using the SCBA.

**NOTE:** Most inexperienced SCBA users will over-tighten the shoulder straps. This causes problems with the student's ability to expand the lungs to satisfy the body's need for oxygen. We all know what happens when you think your not getting enough air to breath: PANIC. The other problem is when you over tighten the shoulder straps, your back bone and shoulders are strapped in like you're on a back board which limits movement and causes sore muscles and back pain.

Most SCBA are designed to tighten the waist strap enough to carry the weight of the SCBA on your hips. Then you can loosen the shoulder straps enough to breath properly and gain mobility.

#### **M 11.2.4 Regulator**

1. Make sure the student is familiar with emergency procedures.
2. Make sure the main line valves are fully opened while in use.
3. Make sure units that use levers to transfer the unit into positive pressure mode are engaged before entering the hazardous area.

#### **M 11.2.5 PASS Device**

1. Make sure the student is familiar with the operation and emergency procedures.
2. Make sure the device switch is activated and test the device before entry.
3. Make sure that the unit is engaged before entering the hazardous area.

## **M 12.0 LEVELS OF TRAINING**

### **M 12.1.0 Level One Training**

The members of the attack team shall be made up of a maximum of three members. One of which can be an experienced firefighter and two lesser experienced members. This will be the decision of the Instructor-in-Charge as to the experience level required and position on the team.

This level of training will consist of sitting down, watching the start of a fire and its growth. The students will view the first stage incipient fire and its growth to a second stage fire where the flames will start to spread across the ceiling area. The students, one by one, will make an attack on the fire, perform ventilation and overhaul the fire. This will be done within the confines of one room.

This guide is designed for you as a reference of the topics you need to cover with your students at a Level I Structural Burn.

#### **LEVEL I**

Ask the following questions to find the experience level of each student.

- Have any of you been involved with this type of training before?
- (If Yes) Is your department training through the Minnesota State Colleges and Universities?
- How many years have you been on a fire department?
- When was the last time that you participated in a fire training session like this?
- When was the last time you were on the nozzle at a structure fire?

Use this information to determine the size of fire to build and what location in the building that you want for this team.

**REMEMBER** - If you have a student who is doing this for the first time, take extra care to reassure and build confidence.

Tell the students this:

We are going to show you one method of attacking a structure fire. This method is called **INTERIOR FIRE ATTACK**. What we as a team will see and need to know when we start our part of this training is this: as a nozzle operator on your fire department, you have a very important and hazardous job to perform. In order to do that job safely, you need to understand some things about fire behavior.

We are going to take you into this building, sit you down in a room and start a fire. This will give you a chance to see how fire behaves in one room of a structure such as this.

We have a pile of Class A material (straw or hay, etc.) in the corner of the room. We are going to ignite the pile next to the floor. You will have a chance to see a fire start from a two-inch flame and grow into a second-stage fire.

**Remember** in a second-stage fire we will have fire starting to spread across the ceiling area. This fire spread takes a little time, so you will have plenty of time to ask questions. After each of you have had a chance to apply water and control this fire, each of you will perform fog ventilation through the window.

During this time of fog ventilation each of you will overhaul the fire remains with evidence preservation in mind. Are there any questions so far? What I want you to do next is this.

Which of you has been on the fire department the longest? OK \_\_\_\_\_ (name) you are going to be on the nozzle first. Take this nozzle and the team, go over there and let's check our nozzle settings and line pressure. When you operate this nozzle, I want you to open the nozzle all the way (**note difference for automatic nozzles**) and close it all the way when we are applying water to the ceiling area (Indirect Attack).

For a **Level I** burn we are **not** going to use a lot of water to control the fire. We will use most of our water in the fog ventilation of the building. This means you will need to open and close the nozzle quickly if we are going to place the right amount of water into the upper part of the room.

**EXAMPLE:** Typical bedroom fire **total involvement**

A room 12 feet long, 12 feet wide and a 8 foot high ceiling.

$$\frac{L \times W \times H}{100} = GPM$$

$$\frac{12 \times 12 \times 8}{100} = 1152 \text{ cubic feet}$$

$$\frac{1152}{100} = 11.52 \text{ GPM}$$

needed to control the fire **IF** the room was totally involved in fire, floor to ceiling and wall to wall. A fog nozzle operating at 100 psi would then discharge 95 gallons per minute.

This means the nozzle will discharge 1.58 gallons per second.

The nozzle would need to be turned on for 7.29 seconds in order to deliver 11.52 gallons of water into the room to control the fire:

$$\frac{95 \text{ GPM}}{60 \text{ sec}} = 1.58 \text{ gallons per second WHEN THE NOZZLE IS FULL ON!}$$

$$\begin{array}{r} 1.58 \text{ Gallons per second} \\ \times 7.29 \text{ Seconds of nozzle time} \\ \hline 11.5182 \text{ Gallons of water applied} \end{array}$$

\*\*\*\*\*

**EXAMPLE:** Typical bedroom fire, 3 feet of fire across the ceiling.

A room 12 feet long, 12 feet wide and 3 foot of fire in the ceiling

$$\frac{L \times W \times H}{100} = \text{GPM}$$

$$\frac{12 \times 12 \times 3}{100} = 432 \text{ cubic feet}$$

$$\frac{432}{100} = 4.32 \text{ GPM}$$

needed to control, the fire **IF** the room has 3 feet of fire in the ceiling. A fog nozzle operating at 100 psi would then discharge 95 gallons per minute.

This means the nozzle will discharge 1.58 gallons per second.

The nozzle would need to be turned on for 2.739 seconds in order to deliver 4.327 gallons of water into the room to control the fire.

$$\frac{95 \text{ GPM}}{60 \text{ Sec}} = 1.58 \text{ gallons per second WHEN THE NOZZLE IS FULL ON!}$$

$$\begin{array}{r} 1.58 \text{ Gallons per second} \\ \times 2.73 \text{ Seconds of nozzle time} \\ \hline 4.237 \text{ Gallons of water} \end{array}$$

When I give you the order to "HIT IT", I want you to aim your nozzle so you will place your water on the ceiling, above the fire area. This is generally towards the corner of the room. If the fire has covered most of the ceiling area, then aim for the center of the ceiling area.

**Remember**, you will need to open and close the nozzle quickly. This is the only time we will allow a water hammer on the hose line. If you put too much water into the room we will upset the **THERMAL BALANCE**. This will cause the super heated atmosphere at the ceiling level to be forced down to the floor where we are.

**Remember** you can always give the fire another shot of water, but you can't take it back if you give it too much. This is all part of **SIZE UP** and you must **remember** that the bigger the fire, the more water you need which means the nozzle will be on longer.

I will give each of you a chance to attack and control the fire. Once you have the fire under control, I will ask you to go to where the third team member is on the line. I want you to **CRAWL** when changing positions. I do not want you to stand up and walk to the last position. If you stand up, you maybe placing your head into temperatures over 500 °F so crawl!

After each of you have done this to my satisfaction, we will start fog ventilation through a window or door way in the room. Here's what I will ask you to do. First, we will locate a window or door to **VENT**. This means to relieve pressure and heat. During this time period in a building the upper layers of gases may get very hot. It is the utmost importance that you **remember** that you are the most important person on the fire ground and, therefore, your safety is your number one concern.

In most cases, if your Incident Commander on the outside of the building has done his/her job, you should hear glass breaking in the room or rooms that are showing fire. This will do three things: 1) increase oxygen flow, which will increase the fire growth; 2) increase the visibility by allowing smoke to exit the building; and 3) allow heat to exit the building, which will make a safer and cooler work environment for you.

By keeping all this in mind, we **should** be able to go to the window and remove any obstructions that will interfere with ventilation. **Remember** to remove **ALL GLASS** from the window if possible and any other obstructions.

Let me give you a hypothetical situation. Here we are, in this room, and we decide to ventilate by using the hose stream method out the window. If we spray water out through the window without removing the glass pieces, we will blow them out into the street or yard.

Spectators, or even your son or daughter have came down to watch Dad or Mom fight a fire. You just stuck a piece of glass into their face!! Your fire department just became the most incompetent bunch in town.

Public relations, that you have worked so hard on over the last twenty years, just went down the tube. Again, if the Incident Commander is doing his/her job, the public or spectators will not be close enough to get hurt!! This includes our fire fighters who are not directly involved in fire operations - we call these persons "spectators" also.

So if conditions are good enough to allow you to check the window before ventilating, then do so, but if not, do what you have to do to keep yourself safe. In other words stay down on the floor, use your straight stream to break out the window and ventilate from the floor, out the top part of the opening!!

If this is necessary, I will tell you to do it, otherwise we will go to the window and break the glass and check for obstructions. When you are ready to start ventilation, get back as far as you can from the window and yet see the outline of the window before you open your nozzle.

Once everyone is ready, open the nozzle enough on **STRAIGHT STREAM** to cause the water to just pass through the window. This gives the fire fighters on the outside of the building a chance to get out of the way. After a couple of seconds or so, open the nozzle full open (**note difference for automatic nozzles**) and adjust the pattern adjustment towards the fog so as to just fill the window opening.

Try to get all of the water to flow out through the window. This will cause large amounts of air to move through the room and out the window. This will carry smoke and heat out very quickly and cool the room down to a more livable condition.

This process will also bring fresh air to any smoldering fire that you may have. You will more than likely get increased flame activity again. So have your team mates watch for rekindling fires.

**UNDER NO CONDITIONS DURING THIS DRILL WILL YOU MOVE OR WALK BACKWARDS WITH THE NOZZLE TURNED FULL ON OR HAVE THE HOSE LINE ABOVE YOUR SHOULDER WHILE VENTILATING.**

When you try to move with a charged flowing hose line, as soon as you lift up your one foot to take a step, your body will try to pivot on the other foot. This makes your whole body unbalanced. The nozzle reaction pressure in the hose line will try to spin you around in a circle. When this happens you run the risk of losing control of your line and or slipping or failing.

When I tell you to "SHUT DOWN" I want you to adjust the nozzle back to straight stream, and then shut off the nozzle all the way. You will then go to the origin of the fire and start "OVERHAULING THE FIRE".

To do this you will need to remember that your fire is more than likely deep seated. This means that your fire may be at the bottom of the couch cushion or at the bottom of the mattress. If this is the case try to use as little water as possible and yet get the water to the area that needs it.

If you need to move something to extinguish the material under it, put it back in the same place as you found it if at all possible. This will help in the investigation of the fire. This is where you will need a flash light to allow you to see where the smoke is rising from the debris. Adjust the nozzle to straight stream and place the nozzle directly over the rising smoke.

Then turn the nozzle on enough to penetrate to the seat of the fire. This is called the "DIRECT ATTACK" method of fire attack. After each of you have had a chance to go through this ventilation and overhaul procedure we will take a look around the building to check for extension of fire. If finding none we will leave the building remembering to **BACK DOWN ANY STAIRS** that we come across.

I will ask the third team member to call the hose tenders and tell them we are coming out. Once we are out side, get your SCBA off as quickly as possible and report to the critique area for debriefing.

Now that you have an idea what we are going to be doing while we are inside, do you have any questions? If not, lets get our attack line and check it out. **Remember** to always check your line before entering a fire area of the structure.

We always prepare for the worst conditions when we enter a building. This means we set the nozzle pattern to narrow fog pattern so we are prepared to attack overhead fire. The gallon age adjustment is set to 95 G.P.M. so we have adequate volume to handle most residential type fires. Next get a good grip on the line and turn the nozzle on slowly. With the water flowing and the nozzle full open, count to five like this: 1001, 1002, 1003, 1004, 1005. Now we should be relatively assured of a good attack line. No kinks, the pump operator is attentive, and all the air has been removed from the line.

Next I want you to practice opening and closing the nozzle and refresh yourself on which way to turn the nozzle for wide fog and straight stream (**Left for (L)ife, WIDE FOG and Right for w(R)eck, STRAIGHT STREAM**)). When each of you are finished doing this we will enter the structure and we will show you a few more things.

OK, lets spread out so there is about four (4) feet between you and the person in front of you. We don't want to trip the person in front of us. **Remember this** - if we climb stairs, when we come down, we **back down** the stairs. That way, if you slip and fall, you will land on your hands and not on your back! We do not bunch up in a stairway, either.

**NOTE:** At this point make a last minute equipment safety check of your students and yourself. Then make sure all of the students are on the same side of the hoseline and tell the safety officer you are ready to enter the structure. When ordered by the safety officer, take the students to the area for their training.

All of the above information should be covered in the pre-burn class. It should also be covered at the burn site with your team during their time in R & R before you enter the structure. Then cover this information while you are inside with your team. Once you are outside in the critique area, recap the events and the activities that were done by each student.

### **ADDITIONAL INSTRUCTOR INFORMATION FOR YOU TO USE**

#### **Steam Production**

Visualize a nozzle discharging 95 gallons of water fog into an area heated to approximately 212°F, with the water converting into steam. During one (1) minute of operation, 10 cubic feet of water will have vaporize and expand to approximately 17,000 cubic feet of steam. This is enough steam to fill a room approximately 10 feet high, 25 feet wide and 68 feet long. In extremely hot atmospheres, steam will expand to even greater volumes.

#### **VOLUME OCCUPIED BY WATER TURNED INTO STEAM**

TEMPERATURE °F	ONE U.S. GALLON (cu.ft.)
212	225
300	250
400	275
500	300
600	325
700	350
800	400
900	450
1000	500
1200	550

## M 12.2.0 Level Two Training

The members of this team shall be made up of firefighters of Level I ability. They will use skills acquired in Level I to attack a fire which has extended beyond one room.

Their objective will be to stop the forward progress of the fire and to gain control of the fire by reducing the fire to a Stage I or incipient fire.

The students may wish to start their attack from within the structure so as to watch the growth of the fire, or they may start from the outside of the structure and work their way in to the seat of the fire.

In this level of training each student is acting as team member, rather than in an individual learning situation. Each member of the team will be able to act as team leader and make an attack on the fire.

The team leader will be acting under the direction of the instructor, who will be right behind the student, but the student will make all decisions regarding attack methods. The instructor will be there for support and/or any corrections that may be needed.

Once the fire has been brought under control (all overhead fire is gone), the instructor will back the team out and start over with a new team leader. This procedure will continue until all three students have accomplished the objective.

The last team member to attack the fire will perform any ventilation that may be needed to clear the structure for the next team.

This guide is designed for you as a reference of the topics you need to cover with your students at a Level II structural burn.

## LEVEL II

Ask the following questions to find the experience level of each student.

- Have any of you been involved with this type of training before?
- (If Yes) Is your department training through the Minnesota State Colleges and Universities?
- How many years have you been on a fire department?
- When was the last time that you participated in a fire training session like this as a Level I participant?
- When was the last time you were on the nozzle at a structure fire?

Use this information to determine the size of fire to build and what location in the building that you want for this team.

**REMEMBER: If you have a student who is doing this for the first time as a Level II, take extra care to reassure and build confidence.**

Tell the students this:

We are going to show you one method of attacking a structure fire. This method is called **INTERIOR FIRE ATTACK**. What we as a team will see and need to know when we start our part of this training is this:

As a nozzle operator on your fire department, you have a very important and hazardous job to perform. In order to do that job safely you need to understand some things about fire behavior.

We are going to start a fire inside of this building. As a team, you will have the chance to attack a multiple room fire and bring the fire under control. I can either take you into this building and let you watch the fire progress or we can stay out side until it is time to enter; it will be your choice.

This training is different from what you did in Level I. **Remember** in Level I we showed you fire behavior from a small one room situation with short applications of water to control the overhead fire.

Level II fires are larger and require more water. On this drill our number one mission is to get this fire under control. That means we need to knock down the fire in all areas involved. We are not concerned at this point with water damage or rescue.

If we don't bring the fire under control, we will not have a structure left in which to perform a search. We have to stop the forward progress of the fire by placing our attack line between the advancing fire and the rest of the structure.

This Level II training will give you a chance to see how fire behaves in multiple rooms of a structure such as this. We have a pile of Class A material (straw or hay, etc.) in the rooms we going to ignite.

We are going to ignite the pile next to the floor, just like we did at your Level I training. You will see a fire start from a two-inch flame and grow into a second-stage fire.

**Remember** in a second-stage fire we will have fire spreading across the ceiling area. This fire will extend into the areas around it. You will see the fire extend downward from the ceiling and eventually fill the ceiling area, so it has to come through the door way.

At this point the smoke that has been collecting in the ceiling area of the other rooms will start to ignite and spread across the ceiling. This fire in the ceiling area will radiate downward and cause more heating of combustibles in the area.

This all will happen quickly once the temperature inside of the first room that we ignited gets high enough to cause all combustibles to give off enough vapors and ignite. At this point the room will become totally involved. When I say totally involved, I mean fire from wall to wall and fire from floor to ceiling.

During this time while the fire is growing, remember your fire behavior. Hot unburned gases in the form of smoke will be traveling upwards looking for a way out of the structure. This means that the upper floors or areas will be very hot and loaded with unburned fuel.

Once the upper floors or areas fill, the smoke will push its way to the floor restricting visibility and bring hotter temperatures as it goes. As we enter the structure your turnout gear will heat up. This means we need to get in, get the job done and get out. Because of the heat factor, I want you to switch nozzle operators frequently.

A good rule of thumb is each of you will knock down fire in one room, then give the nozzle to the person behind you and let them take the next room. This will give you a chance to cool down a little.

After you, as a team, have had a chance to control this fire, you will perform ventilation through the window ventilation as necessary. We are not going to spend as much time venting as we did in the Level I training.

Are there any questions so far?

What I want you to do next is this. Decide among yourselves who is going to be on the nozzle first. OK \_\_\_\_\_ (name) you are going to be on the nozzle first. Take this nozzle and the team, go over there and let's check our nozzle and line pressure. When you operate this nozzle I

want you to open the nozzle all the way and close it all the way when we are applying water to the ceiling area (Indirect Attack) just like you did in Level I.

For a LEVEL II burn we are going to use a lot more water to control the fire. Our mission is to locate the fire and drive it back where it came from. If the outside ventilation team does their part, we will be able to easily push it out of the building. When you apply water, I want you to apply it to the upper areas of the room.

At no time should you rotate the nozzle in a combination attack method. This will upset the thermal balance and things will really get hot. It may be difficult to see the ceiling area because of the thick dense smoke.

You must **remember** to watch the overhead area with your eyes, use your ears to listen for the fire, and use your face to feel the direction of the source of the fire. **Remember** most of the fire will be traveling towards you. If you see the smoke in the ceiling in front of you start to turn orange in color, you must apply just enough water to the ceiling area to bring the ceiling temperature down below the ignition temperature of the smoke.

At the same time you may have to apply water into other areas. **Remember**, if there is no fire in the ceiling area be careful about putting any water in the ceiling, it may not be hot enough to convert it to steam. You may have 211 °F water dripping down on you.

If there is no fire in the ceiling you should re-adjust your nozzle pattern to straight stream and use direct attack on the fire, NOT FOG.

**EXAMPLE:** Typical bedroom fire total involvement

A room 12 feet long, 12 feet wide and a 8 foot high ceiling.

$$\frac{L \times W \times H}{100} = GPM$$

$$\frac{12 \times 12 \times 8}{100} = 1152 \text{ cubic feet}$$

$$\frac{1152}{100} = 11.52 \text{ GPM}$$

needed to control the fire **IF** the room was totally involved in fire, floor-to-ceiling and wall-to-wall. A fog nozzle operating at 100 psi would then discharge 95 gallons per minute.

This means the nozzle will discharge 1.58 gallons per second.

The nozzle would need to be turned on for 7.29 seconds in order to deliver 11.52 gallons of water into the room to control the fire:

$$\frac{95 \text{ GPM}}{60 \text{ sec}} = 1.58 \text{ gallons per second WHEN THE NOZZLE IS FULL ON!}$$

$$\begin{array}{r} 1.58 \text{ Gallons per second} \\ \times 7.29 \text{ Seconds of nozzle time} \\ \hline 11.5182 \text{ Gallons of water applied} \end{array}$$

\*\*\*\*\*

**EXAMPLE:** Typical bedroom fire total involvement

A room 12 feet long, 12 feet wide and 3 feet of FIRE in the ceiling area

$$\frac{L \times W \times H}{100} = GPM \qquad \frac{12 \times 12 \times 3}{100} = 432 \text{ cubic feet} \qquad \frac{432}{100} = 4.32 \text{ GPM}$$

needed to control, the fire IF the room has 3 feet of fire in the ceiling area. A fog nozzle operating at 100 psi would then discharge 95 gallons per minute.

This means the nozzle will discharge 1.58 gallons per second.

The nozzle would need to be turned on for 2.739 seconds in order to deliver 4.327 gallons of water into the room to control the fire.

Gallons per second **WHEN THE NOZZLE IS FULL ON!**

1.58	Gallons per second	$\frac{95 \text{ GPM}}{60 \text{ Sec}} = 1.58$
x <u>2.73</u>	Seconds of nozzle time	
4.237	Gallons of water	

You will decide when to turn on the nozzle and start your attack. If it looks like you're waiting too long, I will suggest to you that we get going NOW. By this stage in your training, you should know what needs to be done and I will be right beside you to help.

**Remember**, you will need to open the nozzle long enough to darken down the fire. This means that the light from the fire will disappear and it will get dark again. When you shut off the nozzle be careful and ready so the fire does not come right back in your face. This is all part of **SIZE UP** and you must **remember** that the bigger the fire the more water you need. Hopefully each of you will have a chance to attack and control the fire, but conditions at the time will dictate that. Once you have the fire under control, and do some mop up, we will leave the structure. **DO NOT** stand up to move around while we are inside unless I tell you it's okay. If you stand up, you maybe placing your head into temperatures well over 500 °F, so **crawl!**

If we have to ventilate through the window or door way in the room, here's what I want you to do. First we will locate a window or door to **VENT**. This means to relieve the pressure and the heat. During this time period in a building the upper temperatures will be very hot.

It is of the utmost importance that you **remember** that you are the most important person on the fire ground and, therefore, your safety is your number one concern. In most cases, if your Incident Commander on the outside of the building has done his/her job, you should hear glass breaking in the room or rooms that are showing fire.

This will do three things; increase oxygen flow, which will increase the fire growth, increase the visibility by allowing smoke to exit the building, allow heat to exit the building which will make a safer work environment for you. Keeping all this in mind we **SHOULD** be able to go to the window and remove any obstructions that will interfere with ventilation.

**Remember** to remove **ALL GLASS** from the window if possible. Let me give you a hypothetical situation. Here we are in this room and we decide to ventilate by using the hose stream method out the window. If we spray water out through the window without removing the glass pieces, we will blow them out into the street or yard.

Spectators, or even your son or daughter who came down to watch Dad or Mom fight a fire -- you just stuck a piece of glass into their face!! Your fire department just became the most incompetent bunch in town. Your public relations, that you have worked so hard on over the last twenty years, just went down the tube.

Again, if the Incident Commander is doing his/her job, the public or spectators will not be close enough to get hurt!! This includes our fire fighters who are not directly involved in fire operations, we call these "spectators" also.

So if conditions are good enough to allow you to check the window before ventilating, then do so. If not, do what you have to do to keep yourself safe. In other words stay down on the floor,

use your straight stream to break out the window and ventilate from the floor, out the top part of the opening!!

If this is necessary I will tell you to do it, otherwise we will go to the window and check for obstructions if we have to start ventilation. As in Level I, get back as far as you can from the window, but at a place where you are able to see the outline of the window, before you open the nozzle.

Once everyone is ready, open the nozzle enough on **STRAIGHT STREAM** to cause the water to just pass through the window. This gives the fire fighters on the outside of the building a chance to get out of the way. After a couple of seconds or so, open the nozzle full open (**note difference for automatic nozzles**) and adjust the pattern adjustment towards the fog so as to just fill the window opening.

Try to get all of the water to flow out through the window. This will cause large amounts of air to move through the room and out the window, which will carry smoke and heat out very quickly and cool the room down to a more livable condition. This process will also bring fresh air to any smoldering fire that you may have. You will more than likely get increased flame activity again. So have your teammates watch for rekindling fires.

**NOTE:**

**UNDER NO CONDITIONS DURING THIS DRILL WILL YOU MOVE OR WALK BACKWARDS WITH THE NOZZLE TURNED FULL ON OR HAVE THE HOSE LINE ABOVE YOUR SHOULDER WHILE VENTILATING.**

When you try to move with a charged flowing hose line, as soon as you lift up your one foot to take a step, your body will pivot on the other foot. This makes your whole body unbalanced. The back pressure in the hose line and the nozzle reaction will try to spin you around in a circle. When this happens you run the risk of losing control of the line and or slipping on the floor.

When I tell you to "SHUT DOWN" I want you to turn the nozzle over to the person behind you and go to the third position on the team. When leaving the building **remember** to **BACK DOWN ANY STAIRS** that we come across. I will ask the third team member to call the hose tenders and tell them we are coming out. Once we are outside, get your SCBA off as quickly as possible and report to the critique area for debriefing.

Now that you have an idea what we are going to be doing while we are inside, do you have any questions? If not, let's get our attack line and check it out. **Remember** to always check your line before entering a fire area of the structure. We always prepare for the worst conditions when we enter a building.

This means we set the nozzle pattern to narrow fog pattern so we are prepared to attack overhead fire. The gallon age adjustment is set to 95 G.P.M. so we have adequate volume to handle most residential-type fires. Next get a good grip on the line and turn the nozzle on

slowly. With the water flowing and the nozzle full open, count to five like this: 1001, 1002, 1003, 1004, 1005. Now we should be relatively assured of a good attack line. No kinks, the pump operator is attentive, and all the air has been removed from the line.

Next, I want you to practice opening and closing the nozzle and refresh yourself on which way to turn the nozzle for wide fog and straight stream ((**Left for (L)ife**, WIDE FOG and **Right for w(R)eck**, STRAIGHT STREAM)). When each of you have finished doing this, we will start our training.

Are there any questions so far?

Have you decided if you want to go inside and watch the fire start or stay outside and wait for it to come to us. OK let's spread out so there are about four (4) feet between you and the person in front of you. We don't want to trip the person in front of us.

**Remember** this if we climb stairs, we back down the stairs when we come down. If you slip and fall, you will land on your hands and not on your back! We do not bunch up in a stair way, either.

<p><b>NOTE:</b> At this point make a last minute equipment safety check of your students and yourself then tell the safety officer you are ready to ignite the fire.</p>
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<p><b><u>INSTRUCTOR NOTE:</u></b></p>
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<p>All of the above information should be covered in the pre-burn class. It should also be covered at the burn site with your team during their time in R &amp; R before you enter the structure. Once you are outside in the critique area, recap the events and the activities that were done inside by each student.</p>
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**ADDITIONAL INSTRUCTOR INFORMATION FOR YOU TO USE**

**Steam Production**

Visualize a nozzle discharging 95 gallons of water fog into an area heated to approximately 212° Fahrenheit with the water converting into steam. During one (1) minute of operation, 10 cubic feet of water will vaporize and expand to approximately 17,000 cubic feet of steam. This is enough steam to fill a room approximately 10 feet high, 25 feet wide and 68 feet long. In extremely hot atmospheres, steam will expand to even greater volumes.

**VOLUME OCCUPIED BY WATER TURNED INTO STEAM**



TEMPERATURE °F	ONE U.S. GALLON (cu.ft.)
212	225
300	250
400	275
500	300
600	325
700	350
800	400
900	450
1000	500
1200	550

### M 12.3.0 Level Three Training

This level of training is designed to simulate as close as possible, a normal response to an involved structure.

The members of this team shall be made up of minimum of five (5) people. An officer, a pump operator, an outside vent person, and two (2) nozzle people. All members must be of Level II experience. This team will have a choice of starting their attack from somewhere on the drill site and reacting as if they were responding to an actual emergency. Each team member will have specific duties to perform. They will be instructed to do so by the OIC (Officer-In-Charge). The duties of the team are as follows:

#### **Officer-In-Charge** (Accompanied by one instructor)

Conduct a size-up of the situation and find a location from which to conduct the operation and coordinate the attack plan. The OIC should locate a position on the outside of the structure where he/she can have visual contact with all team members if radio communications with team members is not available. This individual will make one complete trip around the structure (residential house) to obtain size-up information. He or she will be looking for the location of smoke and it's condition, fire and stage of burning and any potential for rescue. Then report back to the awaiting team with a tactical plan. Once every one understands their assignment the order is given to GO.

#### **Pump Operator**

The pump operator must position the apparatus so as to facilitate the use of tankers, drop tanks, hose lines, and other equipment on the apparatus from a safe area. Also the operator must maintain adequate nozzle pressure for the attack lines and adequate water supply to ensure the safety of the attack team. The pump operator must warn the team in the event of his water supply becoming dangerously low. This individual must be a qualified pump operator on the department. No student operators will be allowed to operate the pump during this drill.

### **The Vent Person**

When given the order from the OIC, this person will vent the structure starting with the room or rooms which have fire showing. This individual will use a pike pole long enough to reach all windows. All windows, screens and all glass must be removed in the room or rooms with fire showing.

The objective of this team member is to relieve the structure of heat and smoke. If at all possible, also change the direction of fire travel from an inward travel to an outward travel. This will allow the nozzle team to accomplish their objective of reaching the seat of the fire safely.

When this is accomplished return to the OIC and wait for orders to vent the rest of the structure as soon as steam production is evident and the attack crew is making progress.

### **The Nozzle Team**

These two individuals, shall wear SCBA and will be responsible to stretch a pre-connected inch-and-a-half (1-1/2") minimum hose line to the attack point which is determined by the OIC. They must select a line that will be long enough to reach wherever they have to go.

Air trapped within the hose line must be bled off through the nozzle prior to entering the structure. The team must adjust the flow G.P.M. discharge and set the fog pattern. When they are ready to enter the structure they will signal the OIC and wait for the OIC to give the team a signal to begin.

These firefighters will use the water that is available in their booster tank and skills acquired in Levels I and II to attack a fire which has extended beyond one room and may involve one or more floors.

Their objective will be to arrive by fire apparatus, set up operations to control and extinguish a structure fire by stopping the forward progress of the fire and gaining control of the fire by extinguishment, and perform any fog ventilation that is needed.

The students will start their attack from outside the structure so as to size up the growth of the fire and work their way in to the seat of the fire. In this level of training each student is acting as a team member, rather than in an individual learning situation.

One member of the team will be selected to act as team leader and lead the attack on the fire. The team leader will be acting under the direction of the instructor, who will be right behind the student, but the student will make all decisions as to attack methods.

The instructor will be there for support and any corrections that may be needed. Team members will rotate to the nozzle position about every 30 seconds throughout the attack to help maintain a cooler body temperature. Once the fire has been brought under control (all over head fire is gone), the instructor will back the team out and start over with a new team.

## **M 13.0 ATTACK TEAM**

Make-up  
Function  
Drill procedures

### **M 13.1.0 Make-Up**

The interior attack team will be made up of a maximum of four (4) people. One (1) instructor and normally three (3) firefighters. The reason for three is to ensure existence of the crew system in the training session. This does not mean that your department must use the crew system of three (3) people on an attack team. **Remember** for maximum safety you should use the crew system.

### **M 13.2.0 Function**

The function of an interior attack team is to:

- (1) Place the nozzle between the fire and any potential victims; or
- (2) Place the nozzle between the fire and the unburned or undamaged portion of the structure; or
- (3) Confine and control the fire; and
- (4) Extinguish the fire.

The function of the attack team for this drill session will be basically the same for each level of training.

### **M 13.3.0 Drill Procedures**

The interior attack team will be assigned an instructor, and a team number or letter by the Instructor-in-Charge. The team instructor, will direct the evolution from beginning to end and stay with the team until the team has been critiqued. While operating on the attack team you will take direction from your instructor as he/she will be responsible for your safety and individual training.

The interior attack team will enter the structure only when a back up team is ready.

The instructor will:

- (1) Double check each team for equipment safety.
- (2) Determine the level of training (I, II, or III).
- (3) Assign a position for you on the team (1, 2, or 3).
- (4) Explain your assignment to you.
- (5) Make sure the instructor line is in the appropriate position.
- (6) Critique you and your team when done.

### **M 14.0 BACK-UP TEAM(s)**

Make-up  
Function  
Drill procedures

#### **M 14.1.0 Make-Up**

The back-up team(s) will be made up of a maximum of four (4) people. One (1) instructor and normally three (3) firefighters. The reason for three is to ensure existence of the crew system in the training session. This does not mean that your department must use the crew system of three (3) people on an attack team. **Remember** for maximum safety you should use the crew system.

This team will be exterior to the building be ready outside of the point of entry by the attack team.

If it is necessary for this team to perform its backup duties inside the structure, then another backup team will need to be placed outside of the structure, essentially replacing the first team.

MN-OSHA requires an outside exterior backup team (two-in-two out rule)

### **M 14.2.0    Function**

The function of the back-up team is to be a rapid intervention rescue crew for the attack team. The interior back-up team will:

- (1) Be completely suited up, ready to enter the structure at a moments notice from their instructor. The only thing they will have to do before entry is to hook up the breathing tube on their SCBA.
- (2) Be alert to indications of trouble from the attack team.
- (3) Be alert to indications of structural problems.

The function of the back-up team for this drill session will be basically the same for each level of training.

### **M 14.3.0    Drill Procedures**

The back-up team(s) will move to a location **outside** the structure as directed by the instructor as soon as the attack team has entered the structure. Adjust the nozzle for proper flow and pattern, then wait for the instructor to call you in if needed.

The back-up team will be assigned an instructor and a team letter or number by the Instructor-in-Charge. The team instructor, will direct the evolution from beginning to end and stay with the team until the attack team has returned to the outside of the structure. While operating on the back-up team you will have an opportunity to review what you will be doing when you are the attack team. Your instructor will be responsible for your safety and your individual training.

The instructor will:

- (1) Double check each team for equipment safety.
- (2) Review the level of training (I, II, or III).
- (3) Assign a position for you on the team (1, 2, or 3).
- (4) Prepare you with the attack team procedures.

## **M 14.4.0**

### **Rapid Intervention Crew and Rescue Plans**

A 5-person rapid intervention crew (RIC) as reference in NFPA 1500, of skilled individuals qualified by the Fire/EMS/Safety Center or local college administration staff to maintain a state of readiness for the purpose of retrieving participants in case of emergency. Appropriate RIT equipment will be positioned outside the operations area for immediate deployment at all live fire-training activities. The team leader will work directly with the safety officer.

In the event that a rescue or assistance needs to be provided to a down or distressed firefighter a MAYDAY message will be issued. If firefighters report problems to their supervisors without issuing a mayday, ANY personnel on the training ground may issue one for them if they feel conditions warrant.

The on-scene rapid intervention crew will be sent to the area of the incident.

If an interior crew mayday alarm is initiated, the nearest interior or exterior back-up line will immediately search and assess the situation and conditions. Communicate their findings to the command staff and start rescue or fire control if able.

If the on-scene resources or not adequate based on the situation, additional resources will be immediately dispatched to the scene.

In the event that the interior back up line is also in distress and cannot search and assess the next due back up line will perform this function. The next in attack crew will still become the RIT and staged crews will move up and await assignment.

An accountability or 'PAR' check will be conducted by the IC of those in the operations area as early on as possible. Distressed firefighters will be identified by name.

If an exterior crew mayday alarm is initiated, the next in attack lines will assist the RIC. Back up lines will remain in stand by mode for interior crews.

All instructors will be given training on RIC, terminology, and RIC rescue concepts and operations regardless of previous background.

## **M 15.0 ATTACK METHODS**

### **M 15.1.0 Direct**

Water is applied in a solid stream or in a fog straight stream form on the combustibles at the seat of the fire. This is the most common and the most traditional method. It is most effective on incipient fires, or fires in the pre-flash over stage. If used correctly this method does not upset the thermal balance in the room.

### M 15.2.0 Indirect Attack

Water is injected in a narrow fog form into the upper area or space within a highly heated and confined location. This causes rapid generation of steam which inerts the area, cools the combustibles below their ignition temperature, and transfers concentrations of excessive heat from the involved area to the outside by way of convection.

### M 15.3.0 Combination

The combination method incorporates both the direct and indirect method of attack. It is done with fog nozzles set in the narrow fog pattern to begin with. The nozzle and the end of its hose line are rotated in a large circle by the person operating the nozzle.

Usually the circle is moved in a **clockwise direction**. The alleged reason for clockwise rotation is that the water in the hose rotates clockwise and tends to drive the heat and smoke away from the firefighter. The nozzle will direct the water into both the upper atmosphere and upon the seat of the fire. As this method is used, you must remember to adjust the nozzle slowly towards the straight stream position to get the water fog into new areas of heat so as to continue steam production. Failure to do this will cause the immediate area to cool down, but will not cause the steam or water to reach deeper into the structure or the area you are working.

The combination method is generally the most effective method of structural fire attack when the structure is well involved. The method can be applied from a door way towards the inside of the building or on the outside through a window, in a defensive mode. This method lends itself to easy application by one person when using lines smaller than 2-1/2". **REMEMBER** - It's not a good idea to do this method if you are inside of the room or area that you need to bring under control. This method upsets the thermal balance and will bring hot ceiling temperatures to the floor area.

It is also important that you **DO NOT** shut the nozzle off until you have backed away from the opening or the fire has been reduced to an incipient stage. You will possibly get a blast of hot gases or flames coming out of the opening you are in. If you must move or reposition to another opening, adjust the nozzle back to the wide fog setting as this will protect you and reduce nozzle reaction pressure. The indirect method will work under ideal circumstances and does have its value in firefighting. However, use of the direct or

combination method in coordination with conventional ventilation techniques is suggested.

The direct method inherently encourages fighting the fire "blind" from outside the fire area or building. If an offensive attack can be made safely or if rescue is a problem, then lines must be taken inside to the seat of the fire, or to a point between the fire and the occupants. If the fire cannot be fought from the inside, after proper ventilation is accomplished, then a defensive attack is better accomplished by using the combination method or heavy streams depending upon the magnitude of the particular fire.

## **M 16.0 HOSE LINE AND NOZZLE OPERATIONS**

G.P.M. Flow Setting  
Fog Pattern Setting  
ON/OFF Timing & Operations

### **M 16.1.0 Flow Setting**

Before entering the structure you must check the nozzle for proper G.P.M. setting (flow in gallons per minute). A nozzle of at least 95 G.P.M. must be used. Anything less than 95 G.P.M. does not afford enough protection for the firefighter in the average residential structure fire. Depending on the size of structure you may be required to use larger flow capacities to ensure adequate safety for the nozzle team.

### **M 16.2.0 Fog Pattern Setting**

Fog nozzles have an adjustment for determining the way the water leaves the nozzle: straight stream, narrow fog, and wide fog. Before entering the structure you must check the nozzle for proper pattern setting. A nozzle pattern of narrow fog is recommended for most interior applications.

#### **RECOMMENDED PATTERN USE FOR TRAINING**

##### **Straight stream**

- = Direct Attack in over-haul. Level 1,2,3
- = Direct Attack in cooling the outside walls and roof before entering the structure. Level 2,3
- = Direct Attack in cooling the burning materials when steam generation is no longer effective. Level 2,3

##### **Narrow Fog**

- = Indirect Attack Interior application to the ceiling area. Level 1,2,3

## Wide Fog

- = Indirect Attack Exterior approach to the entrance for self cooling. Level 2,3
- = Indirect Attack Interior for protection or confinement of the fire. Level 1,2,3

## M 16.3.0 ON/OFF Timing & Operations

Before entering a structure you must remove the air from the hose line. To accomplish this, aim the nozzle in a safe direction so as not to cause injury to others or damage property, then open by pulling back on the bail, allowing the water to flow from the nozzle. When finished push forward on the bail, shutting off the water.

It is important to open the nozzle all the way to ensure that there are no restrictions in the hose line and that the pump operator has the pump set at is at the proper discharge pressure. Allow the nozzle to flow at least five (5) seconds.

A short on/off operation will not always determine if you have an active line that is ready to be used. For this drill you will be expected to count 1001, 1002, 1003, 1004, 1005, before shutting down the nozzle. While the nozzle is flowing check for rocks or other debris in the nozzle pattern.

When you have accomplished this, and are sure you have a good active line that won't go flat or blow air instead of water on the fire, you are then ready to enter the structure.

Once you are inside and you are a member of a Level I evolution, listen for your instructor to tell you when to turn the nozzle on and off. For this level of training you will not need a lot of water applied at one time.

The objective is to control the fire by the indirect attack method. This is done by applying a small amount of water to the upper levels of the room in a short (one or two second) application. All water applied to the ceiling area should turn into steam. If it does not, it will rain down on you at a temperature of 211 ° F.

This will be the only time you will be allowed to turn the nozzle on and off (water hammer) rapidly. This will cool the super-heated atmosphere in the ceiling area, retarding the ignition of the gases collecting in the ceiling area by cooling them down below their ignition temperature. In this way you can control the spread of the fire and keep the super-heated gasses above your head and away from you. It will help to keep you cool and allow for better visibility.

For Level II and III training you will encounter more fire, so you will need longer on time for the nozzle. The simple rule is, more fire equals more water. Watch for the reduction of flames to give you an indication that enough water has been applied. **Remember** you don't want a sauna, so don't upset the thermal balance!

#### **M 16.4.0 Hose Line Pressure Test**

Before any hose lines are to be used, a NFPA hose test shall be conducted. This can be done as soon as the lines are positioned before entering the structure. A five (5) minute, 250 PSI pressure test will be conducted.

#### **M 16.5.0 Hose Line Positioning**

Positioning of hose lines for fire control, back up, instructor line and exposure protection is of great importance. Hose lines will be positioned as per the instructions of the Instructor-in-Charge. The instructor line, which is feed from the back up pumper, is used to reduce the amount of time it takes the backup team to reach the area of the attack team. With this line the instructor can bring the fire under control immediately.

The hose layouts and sizes used are primarily for safety purposes only. It is not the intent to suggest that this is the only way for the local fire departments to position hose lines at a fire.

#### **M 16.5.1 Attack Pumper Lines**

In most training situations a two-and-a-half inch (2-1/2") line from the attack pumper, stretched to the location where the teams will enter and terminating with a 2-1/2" gated wye, is recommended. From the gated wye, attach two (2) inch and a half (1 1/2") lines with fog nozzles. Make sure that these lines will reach all areas of the structure by stretching them in dry to the farthest point and actually check for hose length.

One of these lines will be used for the attack teams. The other will be at the discretion of the Instructor-in-Charge. Most often it will be used as a practice line.

#### **M 16.5.2 Back Up Pumper Lines**

From the back-up pumper, stretched to the location where the teams will enter a two-and-a-half inch (2-2 ") line terminating with a 2-2 " gated wye. From the gated wye attach two (2) inch and a half (1 2 or 1 3/4") lines with fog nozzles. Make sure that these lines will reach all interior areas of the structure to within one foot of the wall on the farthest point. One of these lines will be used for the back-up teams.

#### **M 16.5.3 Instructor Safety Line**

The other will be used as an additional safety line, which is brought in and positioned near the attack team instructor. This line may have an additional instructor or safety officer in position on this line. This will be at the discretion of the Instructor-In-Charge. The purpose of this line is to reduce the amount of time it takes before the backup team to reach or have an effect on protecting the attack team. We have found that this line being immediately accessible to the instructor increases the safety of the team substantially.

#### **M 16.5.4 Quick Knock Down Line**

From the attack pumper, stretch an additional line capable of a 200 G.P.M. mid-range flow. If this is not available then stretch an uncharged two-and-a-half inch (2-1/2") line. This line will have a two-and-a-half inch (2-1/2") fog nozzle attached as a safety precaution. Accepted fire service practices tell us that at least one back up line should be larger than the lines used for attack. This line may be unattended and used if needed.

### ***M 17.0 FOG VENTILATION DRILL PROCEDURES***

#### **M 17.1.0 Ventilation**

VENT = A means of escaping or passing out; an outlet, as from confinement.

VENTILATION = To provide fresh air in place of air which is contaminated.

<b>NOTE:</b> It is recommended that you <b><u>DO NOT</u></b> conduct a class on positive pressure ventilation while your main focus is on fire suppression.
---

The use of positive pressure ventilation equipment and practices will be at the discretion of the Minnesota State Colleges and Universities staff.

The strategy of ventilation may need to occur at anytime in the suppression operation, based upon the situation. The value and importance of ventilation is overlooked many times by fire officers. This is especially true in fire departments that do not have ladder companies. Ventilation is sometimes looked upon as something that is done after the fire is out or done solely for the comfort of the firefighter.

In reality, ventilation is a key firefighting tool which may be vital to rescue operations, confinement, extinguishment, and which could affect exposure protection. In rescue, ventilation can be employed to channel heat, smoke and fire away from potential victims.

In older, multi-story buildings with open stairways, the stairway is a primary path for fire, smoke and heat to travel. It may be vital to ventilate over stair shafts as a part of the rescue operation in this case. In confinement operations, rooftop ventilation is used to help prevent flash over by removing heat. Ventilation also channels the travel of heat and fire.

In extinguishment operations, ventilation will clear the atmosphere and cause the fire to be more visible to the firefighter. It allows the interior of the structure to be more tenable and safer for firefighting operations. Fire attack teams that can properly coordinate ventilation operations with hose line operations will generally have a high level of success in combating fires.

The key point is knowing the **WHEN**, **WHERE** and **HOW** to perform ventilation. Ventilation may be employed as a tactic in a structure that is full of flammable or toxic gases. Ventilation may be employed at a building experiencing a back-draft condition. The building is opened up at the highest point to allow the smoke, heat, and gases to escape, prior to entry at a lower level by the fire department.

A typical order regarding ventilation might be: "Truck 1, perform rooftop ventilation" or "Truck 2 ventilate". The type of order depends on the desired effect, the complexity of the situation, and the level of competency of company of officers on scene.

## **M 17.2.0 Drill Procedures**

### **Level One**

In level one, fog ventilation will be done after all students have had a chance to control the fire. Then the instructor will direct you to go to the window. You (**the student**) will then do the following:

1. Be aware of the higher temperatures near the ceiling.
2. Check to see if all the window glass, screens, curtains and other restrictions have been removed by outside crews. If not remove all obstructions.
3. Take the time if possible to remove any and all pieces of glass from the window frame. If you fail to do this, the small pieces may fly out the window with the water possibly injuring firefighters or civilians. If it is too hot to do this, then your safety comes first and force ventilate with the hose line.
4. Set the fog pattern to straight stream.
5. Tell your partner you are ready to ventilate.

6. Turn the water on just enough to alert the people on the outside and allow them time to get out of the way.
7. Next after a few seconds open the nozzle fully (note the difference in automatic nozzles).
8. Adjust the fog pattern towards the wide setting until the pattern just about fills the opening. It is important to have all water going out the opening.
9. Hold this position until the room clears enough for you to see the outline of the opening or until the fire rekindles. It is important at this point to think about your next actions. Depending on the conditions of the fire you must shut off the nozzle or reduce the nozzle reaction pressure, to either move or attack the fire.

**Remember to SHUT DOWN THE NOZZLE BEFORE MOVING IF IT IS SAFE TO DO SO** or you may lose your footing, which in turn may cause you to lose control of the hose line. If the fire conditions in the room or area are life threatening then you will probably NOT want to shut off the nozzle but retreat using the fog nozzle for protection. The farther you get from the opening the more air you will move, so when the room starts to clear enough to reposition, do so.

10. Repeat steps four (4) through nine (9) as needed. You will be directed by your instructor when to switch with your fellow team members.

### **Level Two**

The nozzle person will make the decision when, where and how to ventilate. The same procedure as in Level I will be used.

### **Level Three**

Ventilation will be done by the vent person before you enter the structure, as you would in a coordinated attack. You will receive the order from your officer when and where to vent. How, the ventilation is to be accomplished will be up to you.

## ***M 18.0 HOSE HANDLING***

Attack Team  
Back-Up Team  
Hose Tenders

### **M 18.1.0 Attack Team**

The interior attack team is made up of a maximum of three students and one instructor. You will receive direction from your instructor as to what side of the hose line to place yourself. Space out approximately an arms length apart as you advance in. Go slowly with safety in mind and be alert for hazards. You must be able to communicate with your hose tenders.

### **M 18.2.0 Back-Up-Team**

The back-up team is made up of three students and one instructor. You maybe responsible for rescuing fellow firefighters inside or assisting in fire control. Take direction from your instructor, but be aware of safety conditions or signals from inside. Use the same entry procedures as the attack team.

### **M 18.3.0 Hose Tenders**

Hose tending needs will be determined by the Safety Officer or the Instructor-in-Charge.

The hose tending team is made up of enough students to assure proper hose tending needs. Your responsibilities are to tend hose for the attack team. Space out on the hose line so as to assure that the hose can be moved by the attack team. Take direction from your instructor, but be aware of safety conditions or signals from inside. Use the same entry procedures as the attack team.

It is important for your team to **remember** NOT TO PULL OR PUSH ON THE HOSE LINE. You are to carry the hose so that it doesn't bind on corners or other objects. If you feel the hose being advanced, carefully assist in the movement of it. When taking the hose out, do not retreat to fast or you will pull the line and nozzle away from the attack team. You may pull them down stairs or may endanger their safety. Do not sit in doorways or openings, remember the ventilation process. Try to keep the hose line in the middle of the openings as this will make easier for the interior attack team to move the hose.

## **M 19.0 OVERHAUL**

### **M 19.1.0 Evidence-Preservation During Overhaul**

The attack team has a responsibility to preserve evidence as to the cause of fire. For this reason do not disturb the pile of debris that was burning. Apply water to the smoldering material where the columns of smoke are rising up and out of a pile or objects. Remember, this may be a deep seated fire at the bottom of the pile or objects. Straight streaming and turning nozzle on enough to force the water where you want it is acceptable. **Do Not** turn the nozzle on full open and drown everything in the area unless

ordered to do so by your instructor. You will each take turns venting and overhauling the fire.

Once you have practiced this procedure, your instructor will tell you to spread out the smoldering material and soak it with water to ensure that the fire is totally out. This means NO SMOKE PRODUCTION.

Remember, you are the eyes and ears of your Fire Ground Officer and Fire Investigator. From the time you arrive on the scene, enter the structure, work on extinguishing the fire, and return outside, you should look and listen for signs of the cause of the fire.

**NOTE:** Instructor MUST extinguish all smoldering fires on Level I burns before exiting the building.

## ***M 20.0 CRITIQUE and REHABILITATION***

### **M 20.1.0 Critique Instructions**

As each team completes their activities of attacking and overhauling the fire, they will then meet at a rehab location predetermined by the instructor for a review of their activities and to get answers to any questions they may have.

Tell your students this:

When you reach the outside, remove your SCBA and other protective equipment, if others are waiting for it, and without delay go to the predetermined location as directed. **DO NOT** stand around telling your fellow firefighters about your experiences.

When your critique is over, report to the Instructor-In-Charge for a new assignment.

### **M 20.2.0 Rehabilitation**

Rehab area supervisor will ensure crews are rested, and fluids are replenished before further participation in training exercises. Training will be postponed until adequate crews are assembled. Vital signs will be taken of participants who enter the burn building before and after each training evolution. EMS crew of at least First Responder Level will stage near the rehab area to provide medical care if necessary. The rehab area shall be of sufficient size to handle the number of participants on the training scene to rest and provide protection from adverse weather.

Original: June 10, 1987  
Revised: February 7, 1991  
Revised: March 1, 1992  
Revised: June 1, 1997  
Revised: June 3, 2000  
Revised: August 8, 2003

FORMS SECTION

# LIVE FIRE TRAINING MANUAL

## Forms Section



Minnesota State Colleges & Universities

Last Revised; 08-08-2003

## M 21.0 LIVE FIRE BURN FORMS CHECK LIST, RECORDS AND FORMS

\*\*\* NOTE \*\*\* ALL ITEMS MARKED BY A A\*@ MUST BE PRESENT ON SITE DURING THE TIME THAT THE TRAINING SESSION IS TAKING PLACE

**IF THE FORMS ARE NOT FULLY EXECUTED THE DRILL WILL BE CANCELED**

COMPLETED		PERSON	
YES	NO	RESPONSIBLE	
M 21.01	_____	Command Structure/ Duties and Assignments	Burn Coord*
M 21.02	_____	Owners Release To Burn Form	Burn Coord*
M 21.03	_____	Proof of Clear Title (NO FORM SUPPLIED)	Burn Coord*
M 21.04	_____	Acknowledgment of Demolition By Burning	Burn Coord*
M 21.05	_____	Acknowledgment of Building Use Agreement	Burn Coord*
M 21.06	_____	Press Releases	Burn Coord*
M 21.07	_____	Site Inspection Check List & Equipment Check List	Burn Coord*
M 21.08	_____	Site Plan for Mapping	Burn Coord*
M 21.09	_____	Pre-Fire Plan Fire Flow	Burn Coord*
M 21.11	_____	Training Pre-burn Check List	Instr-In-Chg*
M 21.12	_____	Instructional Staff Assignments	Instr-In-Chg*
M 21.13	_____	Instructor Trainee & Staff Evaluation	Instr-In-Chg*
M 21.14	_____	Safety Officer Team Assignment Form	Instr-In-Chg*
M 21.15	_____	Structure Burn Evolution Team Accountability Guide	Instr-In-Chg*
M 21.16	_____	First Report of Injury Form	Instr-In-Chg*
M 21.17	_____	First Report of Un-Safe Act Form	Instr-In-Chg*
M 21.18	_____	Summary of Activities Conducted at Drill - Keep on File	Instr-In-Chg*
M 21.19	_____	Transfer of Authority of the Property	Instr-In-Chg*
M 21.20	_____	Gas Utilities Notice	Fire Chief
M 21.21	_____	Electrical Utilities Notice	Fire Chief
M 21.22	_____	Water Department Notice	Fire Chief
M 21.23	_____	Local/Regional Law Enforcement Notice	Fire Chief
M 21.24	_____	Notice to Adjacent Property Owners	Fire Chief
M 21.25	_____	Liability Insurance Coverage Obtained	Fire Chief
M 21.26	_____	Participant Training Verification Form	Fire Chief *
M 21.27	_____	D.N.R. Burning Permit Application Form	Fire Chief *
M 21.28	_____	D.N.R. Burning Permit	Fire Chief *
M 21.29	_____	D.N.R. Burning Permit Area Forestry Offices	Fire Chief
M 21.30	_____	D.N.R. Division of Waters Permit Instructions	Fire Chief
M 21.31	_____	D.N.R. Division of Waters Permit Application Form	Fire Chief
M 21.32	_____	D.N.R. Division of Waters Area Map	Fire Chief
M 21.33	_____	D.N.R. Division of Waters Phone Numbers	Fire Chief
M 21.35	_____	Minn Pollution Control Agency Asbestos Inspections	Owner
M 21.36	_____	MPCA Asbestos Inspection Form	Owner
M 21.37	_____	IRS 8282 Donee Information Form and Instructions	Owner
M 21.38	_____	IRS 8283 Instructions	Owner
M 21.39	_____	IRS 8283 Noncash Charitable Contributions	Owner
M 21.40	_____	IRS 8283 Noncash Charitable Contributions Instructions	Owner

## **M 21.01 COMMAND STRUCTURE, INSTRUCTOR DUTIES AND ASSIGNMENT**

### **STATEWIDE FIRE SERVICE COORDINATOR:**

1. Assist and advise Burn Coordinator in the operations of the training opportunity.
2. Assist and advise the Safety Officer.
3. Assist and advise the Instructional Staff.
4. Assist and advise the local or host fire department administration.

#### **TAKES DIRECTION FROM:**

State Director Of Fire/EMS/Safety Training, Minnesota State Colleges and Universities

### **BURN COORDINATOR:**

1. Assist in completion of all forms and records of this document.
2. Confirm the completion of all forms and records of this document prior to training
3. Provide the marketing and logistics of the training opportunity.

#### **TAKES DIRECTION FROM:**

Local College Administration or Statewide Fire Service Coordinator

### **INSTRUCTOR-IN-CHARGE:**

1. Confirm the completion, presence of all forms and records prior to training
2. Plan and coordinate all training activities.
3. Monitor activities to ensure safe practices
4. Inspect building prior to each fire evolution
5. Assign instructors duties
6. Brief instructional staff on their responsibilities
7. Assign coordinating personnel as needed
8. Ensure that this document is followed by all in the training area

#### **TAKES DIRECTION FROM:**

Local College Administration or Statewide Fire Service Coordinator  
Burn Coordinator

### **SAFETY OFFICER:**

1. Prevents all unsafe acts
2. Eliminates all unsafe conditions
3. Intervene and terminate, if needed, any unsafe acts or conditions
4. Supervise additional safety officer personnel as needed
5. Coordinate the ignition of materials with the Instructor-In-Charge and Burn Instructors
6. Ensure that all safety requirements pertaining to the participants are met
7. Ensure an accurate accounting at all times of all participants

#### **TAKES DIRECTION FROM:**

Local College Administration or Statewide Fire Service Coordinator  
Instructor-In-Charge

### **BURN INSTRUCTOR:**

1. Monitor and supervise assigned students (no more than 5 at a time)
2. Account for assigned students before and after evolution
3. Familiarize students with building layout
4. Familiarize students with location of critique area and safe zone
5. Eliminate all unsafe conditions
6. Report all possible unsafe conditions to Safety Officer
7. Inspect students protective clothing and equipment
8. Inform Safety Officer when ready for ignition of materials
9. Instruct students on tactical and assign objectives
10. Critique students after each team evolution

#### **TAKES DIRECTION FROM:**

Local College Administration or Statewide Fire Service Coordinator  
Safety Officer  
Instructor-in-charge

### **INSTRUCTOR TRAINEES:**

1. Monitor for the purposes of learning, and assist the instructor you are assigned.
2. Prepare fire sets under the direction of the Instructor-In- Charge or the Regional State Fire Training Coordinator or a Fire Service Specialist
3. Eliminate all unsafe conditions
4. Report all possible unsafe conditions to your assigned Burn Instructor or Safety Officer
5. Inspect students protective clothing for safety.
6. Monitor, for the purposes of learning, during the critique of students after each team evolution

#### **TAKES DIRECTION FROM;**

Local College Administration or Statewide Fire Service Coordinator  
Safety Officer  
Burn Instructor

### **STUDENT PARTICIPANTS:**

1. Acquire prerequisite training
2. Provide documentation on prerequisite training if from outside local participating departments
3. Report all possible unsafe conditions to Safety Officer
4. Familiarize yourself with structure and building layout
5. Wear fully-approved protective clothing
6. Wear approved self contained breathing apparatus
7. Obey all instructions from your instructor and safety rules of the training area

#### **TAKES DIRECTION FROM:**

Local College Administration or Statewide Fire Service Coordinator  
Burn Instructor  
Safety Officer

**M 21.02 OWNER'S RELEASE TO BURN STRUCTURE FORM**

Having agreed with the building official, \_\_\_\_\_,

City or County of \_\_\_\_\_, that a structure owned by

\_\_\_\_\_ owner/agent and located at:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Road.: \_\_\_\_\_

is under condemnation or unfit for human habitation and is beyond rehabilitation. I further agree that the structure should be used by the fire service for training as they see fit. In order that demolition may be accomplished, I give my consent to the City/Township of \_\_\_\_\_ to use or demolish the said structure by burning or other means.

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Owner / Agent) (DATED)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Owner / Agent)(DATED)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Witness) (DATED)

M 21.03 PROOF OF CLEAR TITLE

**REMEMBER TO GET  
PROOF OF CLEAR TITLE AND INSURANCE  
CANCELLATION DOCUMENTS  
FROM OWNER OR AGENT**

**THIS MAY BE DOCUMENTATION FROM  
COUNTY RECORDER OR TAX OFFICE**

**M 21.04 ACKNOWLEDGMENT OF DEMOLITION BY BURNING & POST BURN PROPERTY CONDITION**

AGREEMENT:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, an agreement is made between;

\_\_\_\_\_ (insert name of your Fire Department), hereinafter called "city"; and

\_\_\_\_\_ (insert the name of the Minnesota State Colleges and Universities institution if supervising the activity), hereinafter called "Local College";

\_\_\_\_\_ (insert the name(s) or owner(s) of the building/property to be destroyed) hereinafter called "Owner".

WITNESS:

\_\_\_\_\_  
\_\_\_\_\_

WHEREAS, the City/Township desires to further the training of its firefighters by conducting fire training exercises involving the controlled burning of a structure.

WHEREAS, the Owner acknowledges benefits received in the possible savings of money in raising costs of the structure and further, the enhancement of fire protection services.

WHEREAS, the Owner has requested the destruction by fire of the structure located at

\_\_\_\_\_  
\_\_\_\_\_

(include street address, municipality, county and state; or legal description of the property obtained from county clerk or assessor).

A visual description of the structure(s) to be burned is as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

WHEREAS, the building to be destroyed by fire as identified in the above paragraph will be referred to herein as "the structure"; now therefore:



**M 21.05 ACKNOWLEDGMENT OF BUILDING USE AGREEMENT & POST-BURN/USE PROPERTY CONDITION**

AGREEMENT:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, an agreement is made between;

\_\_\_\_\_ (insert name of your Fire Department),  
hereinafter called "City/Township"; and

\_\_\_\_\_ (insert the name of the Minnesota State  
Colleges and Universities institution if supervising the activity), hereinafter called "Local College";

\_\_\_\_\_ (insert the name(s) or owner(s) of the  
building/property to be destroyed) hereinafter called "Owner".

WITNESS:

\_\_\_\_\_  
\_\_\_\_\_

WHEREAS, the City/Township desires to further the training of its firefighters by conducting fire training exercises involving the controlled burning within a structure or other fire training activities.

WHEREAS, the Owner acknowledges benefits received in the possible donation of the structure and further, the enhancement of fire protection services.

WHEREAS, the Owner has requested the use/destruction of the structure located at

\_\_\_\_\_  
\_\_\_\_\_

(include street address, municipality, county and state; or legal description of the property obtained from county clerk or assessor).

A visual description of the structure(s) to be use/destruction is as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

WHEREAS, the building to be used/destroyed as identified in the above paragraph will be referred to herein as "the structure"; now therefore:

(M 21.05 continued on next page)



**M 21.06 SUGGESTED PRESS RELEASE**

**STRUCTURAL BURN FACT SHEET**

Today's "structural burn" exercise is being conducted by instructors from the \_\_\_\_\_ Minnesota State Colleges and Universities institution, in cooperation with the Minnesota State Colleges and Universities. The purpose of this training session is to give the firefighters an opportunity to deal with a "live fire" situation. More importantly, it allows firefighters to actually observe how a fire spreads in a structure and how it reacts within its environment. A team consisting of three firefighters and a qualified instructor will enter the structure. The instructor will proceed to build a fire based upon the experience level of the firefighters. It will be up to each team to bring the fire under control. As a precautionary measure, a back-up or safety team, also consisting of three firefighters and instructor, will be in close proximity to the structure. Following the training session, the firefighting team will leave the structure and participate in a "question and answer" session with the instructor.

**WHEN A STRUCTURE BURNS**

The "structural burn" clearly demonstrates the importance of fire safety in the home. During the course of the fire, interior temperatures will range from an average of 200 degrees to 1800 degrees. The average person, dressed in street clothes, can only withstand about 130 degrees. Deadly gases, which are produced in just a matter of minutes, can be so toxic that they can kill a person in only one or two breaths. For these reasons, it is very important to prevent fires and practice your escape plans. If a fire occurs, it is very important that you leave the structure immediately!! Seconds count!! Always have two ways of getting out of the house or building you are in. Have an escape plan. And, above all, make sure that your smoke detectors are installed and working. These simple steps could save you and your families life.

**STRUCTURAL BURN INSTRUCTIONAL STAFF**

\_\_\_\_\_  
District Coordinator or Statewide Fire Service  
Coordinator Trainer Fire/EMS/Safety Center  
\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

\_\_\_\_\_  
Minnesota State Colleges and Universities Institution Burn Instructor  
\_\_\_\_\_  
- \_\_\_\_\_ Fire Department

(M 21.06 continued next page)

**BURN INSTRUCTOR TRAINEES**

The \_\_\_\_\_ College of the Minnesota State Colleges and Universities system, in cooperation with the Fire/EMS/Safety Center, is continually working on the training and development of instructors for the fire service. The following persons are being trained to become qualified "Burn Instructors".

\_\_\_\_\_ Fire Department  
Instructor-in-Training

**IF YOU HAVE A QUESTION**

If you have any questions about the "Structural Burn", please feel free to ask the instructor

\_\_\_\_\_ assigned to the press. Additional information is also available from:

Don Beckering, State Director of Fire/EMS/Safety Training  
Minnesota State Colleges and Universities  
Fire/EMS/Safety Center  
1450 Energy Park Drive  
St. Paul, Minnesota 55108  
800-311-3143  
612-649-5454 Voice  
612-649-5409 Fax

Local Fire Chief: \_\_\_\_\_

Phone: 1- \_\_\_\_\_

# M 21.07 SITE INSPECTION PLANNING & EQUIPMENT CHECK LIST

Inspected On \_\_\_\_\_, 20\_\_ By: \_\_\_\_\_

The location of this training session is:  
 County: \_\_\_\_\_ Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_ Nearest Cross Rd: \_\_\_\_\_

COMPLETED		ITEM
YES	NO	
01.	_____	All permits, forms and notifications distributed
02.	_____	Site plan drawing, including all exposures
03.	_____	Building plan, including overall dimensions
04.	_____	Floor plan detailing rooms, hallways and exterior openings
05.	_____	Proposed location of command post
06.	_____	Proposed position of all apparatus
07.	_____	Proposed position of all hose lines, including backup lines
08.	_____	Proposed location of emergency escape routes
09.	_____	Proposed location of emergency evacuation assembly area
10.	_____	Proposed location of entrance and exit routes for emergency vehicles
11.	_____	Inspect available water supply determined as per M 3.6.0
12.	_____	Required fire flow determined as per M 3.6.0
13.	_____	Required reserve flow determined (50 % of required flow) per M 3.6.0
14.	_____	Apparatus pumping ability that exceeds the required fire flow.
15.	_____	Separate water supply established for attack and back-up lines
16.	_____	Obtain projected and periodic weather reports
17.	_____	Proposed parking areas designated and marked for all vehicles
18.	_____	Operations area established and perimeter marked.
19.	_____	Communications frequencies established, equipment obtained.

## BUILDING INSPECTION

20.	_____	Building inspected for structural integrity
21.	_____	All utilities located and identified
22.	_____	Identify highly combustible interior wall and ceiling materials removed
23.	_____	Identify all holes and walls patched or covered in rooms to be used
24.	_____	Identify materials of exceptional weight, remove or seal off the area
25.	_____	Windows checked and opened or closed as needed
26.	_____	Doors checked and opened or closed as needed
27.	_____	Building components checked; roof scuttles, sprinkler system, stand pipes, etc
28.	_____	Identify chimneys and adequate ventilation holes for each separate enclosed roof area to be removed and pre-cut the day/night of the drill.
29.	_____	Identify stairways that need to be made safe with railings.
30.	_____	Identify fuel tanks and water heaters to be removed or adequately ventilated
31.	_____	Identify all containers of unknown or hazardous contents must be removed
32.	_____	Identify unnecessary inside and outside debris removed, extraordinary exterior and interior hazards remedied

- 33. \_\_\_\_\_ Porches and outside steps made safe
- 34. \_\_\_\_\_ Identify cisterns, wells, cesspools, and other ground openings fenced, marked or filled
- 35. \_\_\_\_\_ Identify toxic weeds, hives, vermin, brush, surrounding vegetation to be removed
- 36. \_\_\_\_\_ Identify exposures propane tanks, trees, buildings, utilities to be removed protected
- 37. \_\_\_\_\_ Adequate roof ventilation holes cut for each roof section or area.

**APPARATUS NEEDED FOR TYPICAL RESIDENTIAL HOUSE**

- 38. \_\_\_\_\_ 2 class A (750 gpm) or larger capable of meeting the required fire flow with 4.5" or larger hard suction tube. One engine for attack lines and one for backup lines.
- 39. \_\_\_\_\_ water tenders capable of meeting the supply needs if hydrants are not used.
- 40. \_\_\_\_\_ 2 2000 gallon portable drop tanks if water tenders are used.
- 41. \_\_\_\_\_ 1 water source capable of supplying the required fire flow if not using hydrants.
- 42. \_\_\_\_\_ 2 hydrants capable of supplying the required fire flow if tenders are not used.
- 43. \_\_\_\_\_ 1 EMS unit for possible firefighter emergencies.
- 44. \_\_\_\_\_ 1 SCBA air supply unit to refill SCBA.
- 45. \_\_\_\_\_ 4 1.5" or 1.75" nozzles.
- 46. \_\_\_\_\_ 2 gated wyes - 1.5 x 1.5 x 2.5
- 47. \_\_\_\_\_ 600 hundred feet of 1.5" hose. Attack, exposure, instructor and backup lines
- 48. \_\_\_\_\_ 400 hundred feet of 2.5" hose.

**BURNABLE CLASS A FUELS & BUILDING SUPPLIES FOR 30 STUDENTS**

- 49. \_\_\_\_\_ 30 bales of **DRY** oats straw or hay or 12 bales (4 ft sq.) of **DRY** cardboard.
- 50. \_\_\_\_\_ 12 dry wood pallets.
- 51. \_\_\_\_\_ 2 pitch forks.
- 52. \_\_\_\_\_ 1 hammer and supply of 16 penny nails and spikes.
- 53. \_\_\_\_\_ 10 extra glass storm windows, not necessary to fit tight on windows.
- 54. \_\_\_\_\_ 8 4 x 8 sheets of press board 3/4" thick.
- 55. \_\_\_\_\_ 1 propane torch for igniting fuels.

**IMPORTANT!! - The straw or cardboard must be dry and kept dry or the training burn will take forever to complete.**

**PERSONNEL & REHAB SUPPLIES**

- 60. \_\_\_\_\_ 1 source of fresh drinking water and cups.
- 61. \_\_\_\_\_ 1 waste container for cups.
- 62. \_\_\_\_\_ 1 meal for each person at the drill (no cheese sandwiches).
- 63. \_\_\_\_\_ 1 flash light for each student as they enter the structure.
- 64. \_\_\_\_\_ 4 qualified interior structural or prop burn instructors.

**M 21.08 LIVE BURN SITE PLAN**

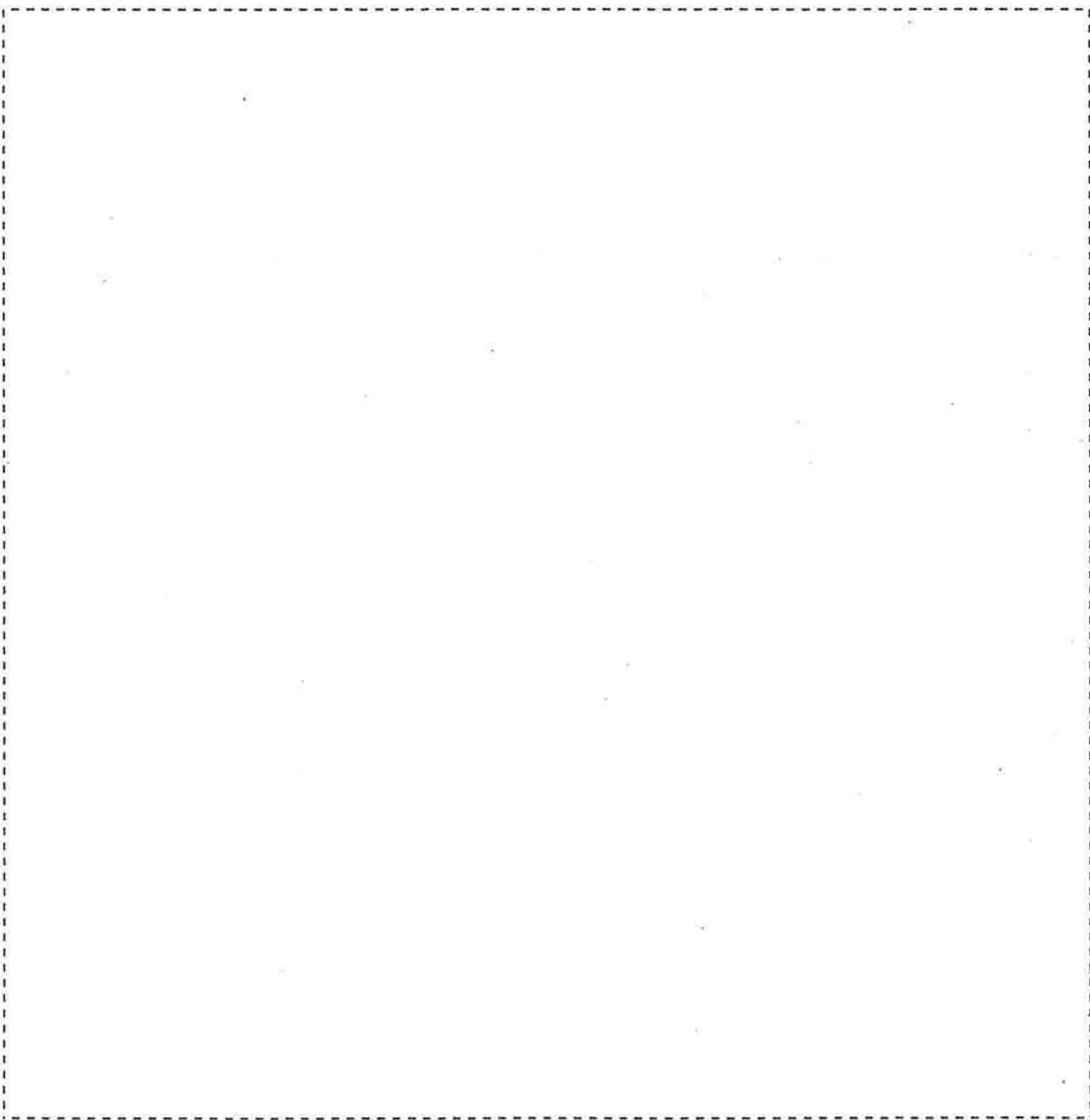
Site Location: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Instructor-in-charge: \_\_\_\_\_

Safety Officer: \_\_\_\_\_

Draw a diagram of burn site; including: burn building, water supply, apparatus placement, back-up supply, command post, stage area, student parking, emergency escape routes, evacuation assembly area, wind direction, exposures, building floor plans, fire set(s) locations.

Completed By: \_\_\_\_\_  
\_\_\_\_\_





## M 21.09 QUICK ACCESS PRE-FIRE PLAN - DETERMINING WATER SUPPLY

Occupancy Hazard Classification Number (OHCN) 3 - Severe Hazard Occupancies where quantities and combustibility of contents is very high. Fires can be expected to develop very rapidly and have high rates of heat release.

**Examples:**

Aircraft hangers	Chemical plants
Distilleries	Explosive manufacturing/storage
Feed mills	Grain elevators
Lumber yards	Oil refineries
Plastics manufacturing/storage	Saw mills
Straw or hay in bales	

Occupancy Hazard Classification Number (OHCN) 4 - High Hazard Occupancies where quantities and combustibility of contents is high. Fires can be expected to develop rapidly and have high rates of heat release.

**Examples:**

Auditoriums	Barns and stables	Department store
Feed stores	Furniture warehouse	General storage warehouse
Mercantile	Paint warehouse	Paper warehouse
Repair garages	Theaters	

Occupancy Hazard Classification Number (OHCN) 5 - Moderate Hazard Occupancies where quantities and combustibility of contents is moderate and stock piles do not exceed 12 feet, in height. Fires can be expected to develop quickly and have moderate rates of heat release.

**Examples:**

Dairy barns	Laundries
Machine shops	Metal shops
Restaurants	Unoccupied buildings

Occupancy Hazard Classification Number (OHCN) 6 - Low Hazard Occupancies where quantities and combustibility of contents is low and stock piles do not exceed 8ft. in height. Fires can be expected to develop moderately and have moderate rates of heat release.

**Examples:**

Bakery	Barber shops	Cement plants
Churches	Doctors' offices	Gasoline service station
Municipal buildings	Post offices	Post offices
Telephone exchanges		

Occupancy Hazard Classification Number (OHCN) 7 - Light Hazard Occupancies where quantities and combustibility of contents is low. Fires can be expected to develop at a low rate and have low rates of heat release.

**Examples:**

Apartments	Dwellings	Fire Stations
Motels / Hotels	Schools	Police Stations
Hospitals	Nursing homes	Data offices

### CONSTRUCTION CLASSIFICATION NUMBERS(CCN)

- Type I (Fire Resistive) CCN 0.50

Constructed of non-combustible materials(reinforced concrete, brick, stone, etc. and having any metal members properly "fire proofed")with major structure members designed to withstand collapse and to prevent fire spread.

- Type II and IV (Noncombustible and Heavy Timber) CCN 0.75

All structural members (including walls, floors and roofs) of non-combustible materials and NOT qualifying for fire resistive construction.

- Type III (Ordinary) CCN 1.0

A structure having exterior walls of masonry or other non-combustible material, in which the other structural members are wholly or partly wood or other combustible material.

- Type V (Wood Frame) CCN 1.50

A structure in which the structural members are wholly or partly wood or other combustible material and the structure does not qualify as ordinary construction.

Total Cubic Feet of Structure

Minimum Water Supply = ----- X Construction Classification Number X Exposure

Occupancy Hazard Classification

Exposure = any structure within 50 ft. and over 100 sq. ft. multiply by 1.5

## M 21.11 DRILL SESSION INSTRUCTOR-IN-CHARGE/SAFETY OFFICER CHECK LIST

### I. SETUP PROCEDURES

- 01. All forms and permits are present and signed. SEE M 21.00
- 02. Notify 911 dispatch office.
- 03. Pre-burn attack diagrams and plans made and discussed with all staff.
- 04. Set up command post.
- 05. Establish communications frequency. (153.830 Interior)
- 06. Required fire flow tested.
  - a. Attack \_\_\_\_\_ GPM
  - b. Backup \_\_\_\_\_ GPM
  - c. Exposure \_\_\_\_\_ GPM
  - d. Reserve \_\_\_\_\_ GPM
- 07. Mark and barricade the operations area (hot zone).
- 08. Position pumping apparatus.
- 09. Establish separate water sources for attack and back-up lines.
- 10. Position hose lines including back-up(s) and interior instructor line.
- 11. Chimneys removed and adequate ventilation holes pre-cut for each separate enclosed roof area
- 12. Eliminate unnecessary and unidentified debris inside and outside of the building.
- 13. Eliminate hazards presented by toxic weeds, trees, hives and vermin.
- 14. Prepare fire "sets" of class A materials. **NOTE**; combustible liquids for final burn down in approved blue and white vertically striped safety containers for final burn purposes only.
  - a. Class A materials only.
  - b. NO FLAMMABLE LIQUIDS
  - c. No contaminated materials.
  - d. No tires.
- 15. Assign instructors and teams.
- 16. Assign additional safety officers as needed.
- 17. Establish emergency evacuation signal and demonstrate to all.
- 18. Establish emergency escape routes from building and demonstrate to all.
- 19. Establish emergency evacuation assembly area and demonstrate to all.
- 20. Conduct pre-burn briefing.
- 21. Have students familiarize themselves with building layout, escape procedures and routes.
- 22. Proceed with the drill.

### II. POST BURN & FIRE CRITIQUE

- 1. All persons accounted for and remaining fires overhauled, as needed.
- 2. Building inspected for stability and hazards if not going to perform total burn down.
- 3. Overall training critique conducted.
- 4. Records and reports prepared, as required:
  - a. Accounting of activities conducted.
  - b. Documentation of unusual conditions or events.
  - c. If injuries occurred prepare reports and notify supervisor and Fire/EMS/Safety Center.
  - d. Changes or deterioration of training center burn building (permanent structure).
  - e. Student training records recorded at \_\_\_\_\_ Minnesota State  
Colleges and Universities institution.
  - f. Certificates of completion and transcripts sent.

(M 21.11 continued on next page)



**M 21.12 INSTRUCTIONAL STAFF ASSIGNMENTS**

Date: \_\_\_ / \_\_\_ / \_\_\_ Drill Location: \_\_\_\_\_

Fire Department: \_\_\_\_\_

Burn Coordinator \_\_\_\_\_

Regional State Fire Training Coordinator or Fire Service Specialist: \_\_\_\_\_

Instructor-in-Charge \_\_\_\_\_

Safety Officer \_\_\_\_\_

Safety Officer Assistant \_\_\_\_\_

Safety Officer Assistant \_\_\_\_\_

Safety Officer Assistant \_\_\_\_\_

Senior Instructor \_\_\_\_\_

		<b>SKILL LEVEL</b>		
1	Burn Instructor _____	1	2	3
2	Burn Instructor _____	1	2	3
3	Burn Instructor _____	1	2	3
4	Burn Instructor _____	1	2	3
5	Burn Instructor _____	1	2	3
6	Burn Instructor _____	1	2	3
7	Burn Instructor _____	1	2	3
8	Burn Instructor _____	1	2	3
9	Burn Instructor _____	1	2	3
10	Burn Instructor _____	1	2	3

**M 21.13 INSTRUCTOR TRAINEE & STAFF EVALUATION**

Instructor Trainer/Evaluator \_\_\_\_\_ DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

		<b>SKILL LEVEL</b>		
		1	2	3
1	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
2	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
3	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
4	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
5	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
6	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
7	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
8	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
9	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			
10	Instructor/Instructor-In-Training _____			
	Evaluator: _____ Approved for			

# M 21.14 SAFETY OFFICER ENTRY TEAM ASSIGNMENT FORM

DATE: \_\_\_/\_\_\_/19\_\_\_ LOCATION: \_\_\_\_\_

WIND DIRECTION: \_\_\_\_\_ WIND SPEED: \_\_\_\_\_ WEATHER: \_\_\_\_\_ TEMP: \_\_\_\_\_

SAFETY OFFICER: \_\_\_\_\_

INSTRUCTOR-IN-CHARGE: \_\_\_\_\_

TEAM A \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_ TEAM D \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

TEAM B \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_ TEAM E \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

TEAM C \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_ TEAM F \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_/\_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

M 21.14 SAFETY OFFICER ENTRY TEAM ASSIGNMENT FORM

TEAM G \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

TEAM J \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

TEAM H \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

TEAM K \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

TEAM I \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

TEAM L \_\_\_ LEVEL 1 2 3 TIME IN/OUT: \_\_\_ / \_\_\_

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

INSTR. _____	AIR PRES. _____
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

**M 21.15 STRUCTURAL BURN EVOLUTION TEAM ACCOUNTABILITY GUIDE**

CREW    START    END    FIRE ATTACK    REHAB BREAK CRITIQUE    HOSE TENDER    ATTACK BACKUP    VENT. PRACTICE    NOZZLE PRACTICE

1			A	B	C	D	E	F	G
2			B	C	D	E	F	G	H
3			C	D	E	F	G	H	I
4			D	E	F	G	H	I	J
5			E	F	G	H	I	J	K
6			F	G	H	I	J	K	L
7			G	H	I	J	K	L	M
8			H	I	J	K	L	M	N
9			I	J	K	L	M	N	O
10			J	K	L	M	N	O	P
11			K	L	M	N	O	P	Q
12			L	M	N	O	P	Q	R
13			M	N	O	P	Q	R	S
14			N	O	P	Q	R	S	T
15			O	P	Q	R	S	T	U
16			P	Q	R	S	T	U	V
17			Q	R	S	T	U	V	W
18			R	S	T	U	V	W	X
19			S	T	U	V	W	X	Y
20			T	U	V	W	X	Y	Z
21			U	V	W	X	Y	Z	A
22			V	W	X	Y	Z	A	B
23			W	X	Y	Z	A	B	C
24			X	Y	Z	A	B	C	D
25			Y	Z	A	B	C	D	E

**M 21.16 FIRST REPORT OF INJURY**

CLASS: \_\_\_\_\_

INSTRUCTOR: \_\_\_\_\_

NAME OF STUDENT: \_\_\_\_\_

DEPARTMENT: \_\_\_\_\_

STUDENT'S AGE: \_\_\_\_\_ DATE OF INJURY: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ TIME: \_\_\_\_\_ : \_\_\_\_\_ AM PM

LOST TIME FROM CLASS      Yes      No

**DETAILS OF ACCIDENT**

(This information is for use in preventing similar accidents. Please answer all questions.)

1. What task was the student performing?

\_\_\_\_\_  
\_\_\_\_\_

2. How was the student injured?

\_\_\_\_\_  
\_\_\_\_\_

3. What did the student do unsafely?

\_\_\_\_\_  
\_\_\_\_\_

4. What equipment was defective or failed?

\_\_\_\_\_  
\_\_\_\_\_

5. What steps should be taken to prevent similar injuries?

\_\_\_\_\_  
\_\_\_\_\_

6. Was accident reported immediately? Yes No      If No, Explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

7. Did the student require medical attention as a result of this injury?      Yes      No  
If yes, give name and address of transportation unit, medic, doctor and/or hospital.

\_\_\_\_\_  
\_\_\_\_\_

**M 21.17 FIRST REPORT OF UN-SAFE ACT**

CLASS: \_\_\_\_\_

INSTRUCTOR: \_\_\_\_\_

NAME OF STUDENT: \_\_\_\_\_

DEPARTMENT: \_\_\_\_\_

STUDENT'S AGE: \_\_\_\_\_ DATE OF ACTIVITY: \_\_\_\_ - \_\_\_\_ - \_\_\_\_ TIME: \_\_\_\_ - \_\_\_\_ AM PM

LOST TIME FROM CLASS      Yes      No

**DETAILS OF INCIDENT**

(This information is for use in preventing similar accidents. Please answer all questions.)

1. What task was the student performing?

\_\_\_\_\_  
\_\_\_\_\_

2. How was the student being supervised?

\_\_\_\_\_  
\_\_\_\_\_

3. What did the student or instructor do unsafely?

\_\_\_\_\_  
\_\_\_\_\_

4. What equipment was being used?

\_\_\_\_\_  
\_\_\_\_\_

5. What steps should be taken to prevent similar unsafe acts?

\_\_\_\_\_  
\_\_\_\_\_

6. Was the unsafe act brought to the attention of the instructor immediately?    Yes    No

If No, Explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

7. Would this incident have resulted in an injury?    Yes    No

If yes, give details: \_\_\_\_\_

\_\_\_\_\_

**M 21.18 SUMMARY OF ACTIVITIES CONDUCTED AT DRILL - KEEP ON FILE**

**Accounting of Activities Conducted:**

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**Unusual Conditions Encountered:**

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**Changes or Deterioration in the Structure.**

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**Any Injuries or Treatment Rendered.**

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Completed By: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**M 21.19      TRANSFER OF AUTHORITY OF THE PROPERTY BACK TO THE OWNER**

***Owners Copy***

On \_\_\_\_\_, 20\_\_ at \_\_:\_\_\_ m, hours the \_\_\_\_\_ Fire Department has turned the property back over to the owner or the owners agent. The training session has been completed and the property will become the responsibility of the owner or agent representing the owner. The location of this property is:

County: \_\_\_\_\_  
Township: \_\_\_\_\_  
Fire Number: \_\_\_\_\_  
Nearest Cross Rd.: \_\_\_\_\_

It will be your responsibility to watch for any unsafe fire conditions that may require the return of the fire department to the property. If this happens, please notify the Fire Chief immediately by the 9-1-1 telephone system.

It will be your responsibility to secure people and pets from coming in contact with the remains and the hole in the ground or any unsafe conditions that may harm them in any way.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief  
\_\_\_\_\_ Fire Department  
\_\_\_\_\_ Phone \_\_\_\_\_ Fax  
\_\_\_\_ / \_\_\_\_ / \_\_\_\_ DATE

---

***Fire Departments Copy***

On \_\_\_\_\_, 20\_\_ at \_\_:\_\_\_ m, hours the \_\_\_\_\_ Fire Department has turned the property back over to the owner or the owners agent. The training session has been completed and the property will become the responsibility of the owner or agent representing the owner. The location of this property is:

County: \_\_\_\_\_  
Township: \_\_\_\_\_  
Fire Number: \_\_\_\_\_  
Nearest Cross Rd.: \_\_\_\_\_

It will be your responsibility to watch for any unsafe fire conditions that may require the return of the fire department to the property. If this happens, please notify the Fire Chief immediately by the 9-1-1 telephone system.

It will be your responsibility to secure people and pets from coming in contact with the remains and the hole in the ground or any unsafe conditions that may harm them in any way.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief  
\_\_\_\_\_ Fire Department  
\_\_\_\_\_ Phone \_\_\_\_\_ Fax  
\_\_\_\_ / \_\_\_\_ / \_\_\_\_ DATE

**M 21.20    GAS UTILITIES DEPARTMENT NOTICE**

On \_\_\_\_\_, 20\_\_ the \_\_\_\_\_ Fire Department will be conducting a live burn training session which will include demolition of a building by burning. The location of this training session is:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Rd.: \_\_\_\_\_

We are asking that you disconnect the utility service to the building by the above date. If you are unable to accomplish this, please notify the Fire Chief immediately.

We are notifying you so your department can determine if there is a need for the possible removal or re-routing of any of your lines. Also you may need to remove meters and other equipment that belong to you.

This notice will eliminate the receiving of complaints of service interruption during or after the training session.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief

\_\_\_\_\_ Fire Department

\_\_\_\_\_ Phone

\_\_\_\_\_ Fax    \_\_\_\_/\_\_\_\_/\_\_\_\_ DATE

**M 21.21 ELECTRIC UTILITIES DEPARTMENT NOTICE**

On \_\_\_\_\_, 20\_\_ the \_\_\_\_\_ Fire Department will be conducting a live burn training session which will include demolition of a building by burning. The location of this training session is:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Rd.: \_\_\_\_\_

We are asking that you disconnect the utility service to the building by the above date. If you are unable to accomplish this, please notify the Fire Chief immediately.

We are notifying you so your department can determine if there is a need for the possible removal or re-routing of any of your lines. Also you may need to remove meters and other equipment that belong to you.

This notice will eliminate the receiving of complaints of service interruption during or after the training session.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief

\_\_\_\_\_ Fire Department

\_\_\_\_\_ Phone

\_\_\_\_\_ Fax \_\_\_\_\_ / \_\_\_\_ / \_\_\_\_ DATE

**M 21.22 WATER DEPARTMENT NOTICE**

On \_\_\_\_\_, 20\_\_ the \_\_\_\_\_ Fire Department will be conducting a live burn training session which will include demolition of a building by burning. The location of this training session is:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Rd.: \_\_\_\_\_

Will you please bring this to the attention of your personnel as we will be using water from the following hydrants:

1. \_\_\_\_\_ 2. \_\_\_\_\_

3. \_\_\_\_\_ 4. \_\_\_\_\_

We are notifying you so your department can prepare for this usage so as not to receive complaints of rusty water or low water pressure during or after the training session.

You may also want to determine if you have any meters or other equipment that needs to be removed or protected.

If freezing is possible please have your personal winterize the hydrant(s) which were used.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief

\_\_\_\_\_ Fire Department

\_\_\_\_\_ Phone

\_\_\_\_\_ Fax

\_\_\_/\_\_\_/\_\_\_ DATE

**M 21.23 LOCAL/REGIONAL LAW ENFORCEMENT NOTICE**

On \_\_\_\_\_, 20\_\_ the \_\_\_\_\_ Fire Department will be conducting a live burn training session which will include demolition of a building by burning. The location of this training session is:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Rd.: \_\_\_\_\_

Will you please bring this to the attention of your dispatcher and patrol units. We may need traffic control if the location warrants it.

We would also like to be notified of any reported fires in the area which we are operating from. You may receive reports of a fire by pedestrians. Do not activate the alarm until you call us by radio or telephone first to confirm the location of the reported fire.

Thank you for your continued cooperation.

\_\_\_\_\_ Fire Chief

\_\_\_\_\_ Fire Department

\_\_\_\_\_ Phone

\_\_\_\_\_ Fax

\_\_\_\_/\_\_\_\_/\_\_\_\_ DATE

**M 21.24 NOTICE TO ADJACENT PROPERTY OWNERS**

**A MINIMUM OF THREE DAYS ADVANCE NOTICE AND OR AS SOON AS POSSIBLE**

In order to serve you better, your Fire Department will be conducting a training session on \_\_\_\_\_, 20\_\_ . The \_\_\_\_\_ Fire Department will be conducting a live burn training session which will include either total demolition or partial demolition of a building by burning. The location of this training session is:

County: \_\_\_\_\_

Township: \_\_\_\_\_

Fire Number: \_\_\_\_\_

Nearest Cross Rd.: \_\_\_\_\_

We are informing you of this training session so you will not be surprised when you see your Fire Department in your area on this date.

This will be a great opportunity for you to see your Fire Department at work practicing techniques and skills to better protect you and your property.

We would like to remind you to take appropriate action to protect your car, laundry if outside, and other items that may come in contact with smoke or other particles. We would also like to remind you to keep your windows closed if you smell smoke in your area.

If you are not going to be at your residence or property at the time of the training session, please remember to make arrangements to have your windows closed and notify the Fire Department of a phone number where you can be reached.

Thank you for your continued support and cooperation.

\_\_\_\_\_ Fire Chief

\_\_\_\_\_ Fire Department

\_\_\_\_\_ Phone

\_\_\_\_\_ Fax \_\_\_\_\_ / \_\_\_\_ / \_\_\_\_ DATE

**M 21.25 LIABILITY INSURANCE COVERAGE OBTAINED**

Most political subdivisions and their fire departments have liability insurance which covers any acts or omissions that may take place during a structural burn.

Fire department members are covered under the Worker=s Compensation plan obtained by the political subdivision to whom the fire department belongs.

The Minnesota State Colleges and Universities, and the Fire/EMS/Safety Center is self insured through the Risk Management Fund. The state's liabilities are stated under Minnesota Statute 3.732 which prescribes the settlement of claims and Minnesota Statute 3.736 Tort Claims which prescribes the limits, exclusions and procedures.

Questions which arise as to insurance coverage for state institutions should be directed to Risk Management Division, 50 Sherburne Ave., Room 309, St. Paul, MN 55155 Voice: 651-215-1759.

If this training is not being conducted through a state education institution such as the Minnesota State Colleges and Universities institution, remember to obtain liability insurance to cover the unexpected problems that may come up. This should include exposure and medical, plus any thing else you might be concerned about.

CITY/TOWNSHIP LIABILITY INSURANCE OBTAIN                      Yes \_\_\_\_\_                      No \_\_\_\_\_

DOCUMENTATION ENCLOSED    Yes \_\_\_\_\_    No \_\_\_\_\_

\_\_\_\_\_ Fire Chief  
\_\_\_\_\_ Fire Department

\_\_\_\_/\_\_\_\_/\_\_\_\_  
DATE

**M 21.26 PARTICIPANT TRAINING VERIFICATION FORM**

I, \_\_\_\_\_, Chief of the \_\_\_\_\_ Fire Department, do here by authorize the following individuals to participate in this training session. These individuals have meet the requirements of M 2.1.2. pre-training requirements:

**M 2.1.2 -** Prior to being permitted to participate in live fire training evolutions, the student shall have received training to meet the performance objectives Sections 5-1 through 5-5 of for FIRE FIGHTER I of the NFPA 1001, Standard for FIRE FIGHTER PROFESSIONAL QUALIFICATIONS. Students who are currently enrolled in a Minnesota State Colleges and Universities Recruit or Firefighter I/II course shall be allowed to participate towards the end of the course.

- |                                   |  |
|-----------------------------------|--|
| (1) Safety                        | (6) Fire hose, appliances, and streams |
| (2) Fire behavior                 | (7) Overhaul                           |
| (3) Portable extinguishers        | (8) Water supply                       |
| (4) Personal protective equipment | (9) Ventilation                        |
| (5) Ladders                       | (10) Forcible entry                    |

The following list of firefighters have completed the required training. (Please print)

1 _____	15 _____
2 _____	16 _____
3 _____	17 _____
4 _____	18 _____
5 _____	19 _____
6 _____	20 _____
7 _____	21 _____
8 _____	22 _____
9 _____	23 _____
10 _____	24 _____
11 _____	25 _____
12 _____	26 _____
13 _____	27 _____
14 _____	28 _____

Fire Chief: \_\_\_\_\_, verify that the students listed are physically fit and have meet the education requirements stated above.

DATE \_\_\_\_/\_\_\_\_/\_\_\_\_

M 21.27 MINNESOTA DEPARTMENT OF NATURAL RESOURCES

NA-00XXX-01

**FIRE TRAINING BURN APPLICATION**

*Fire Chief or Training Officer: complete this application and submit to local forestry office a minimum of 14 days prior to the actual burn training. All training should have a burn plan or be conducted according to guidelines in the Structural Burn Training Manual of the Minnesota Technical College System.*

Fire Department/Other Agency		Address	
Applicant's Name	Title	Work Telephone Number	Home Telephone Number

**TYPE OF FIRE TRAINING TO BE CONDUCTED:**

Location of burn training:

Street Address	City	Zip
----------------	------	-----

If a structure is to be burned indicate: (check)

Commercial Structure\*     
  Private Structure     
 Approximate Size \_\_\_\_ FT by \_\_\_\_ FT

Asbestos Inspector:	-Inspector's License No.:
Address:	Telephone Number:

**IF FLAMMABLE LIQUID OR GAS:**

Liquid fuel - type:	Amount:	Compressed gas or other type:	Amount:
---------------------	---------	-------------------------------	---------

Name of technical college assisting with training:	Training Officer Name:	Telephone Number:
--	------------------------	-------------------

**PRE BURN REQUIREMENTS - initial boxes to verify you have read and will comply with the following:**

- Written consent of burn site owner must be secured before training is conducted.
- If structure, utilities must be disconnected before training is conducted.
- Local emergency dispatcher(s) must be notified prior to burn.

**POST BURN REQUIREMENTS - all debris remaining after burn requiring disposal must be disposed of in a manner that meets all solid waste ordinance requirements.**

- NOTE:**
- ▶ Attached is your burn training permit. The permit must be signed prior to the training exercise.
  - ▶ Both the Burn Permit and Application must be on site at the time of the burn training exercise.

*I attest, by my signature, that I have read and will comply with the above requirements, MN Statutes 88, any attachment to this application and permit, and that I am the authorized training officer for the above fire department/agency.*

Applicant's Signature	Date
-----------------------	------

- Application Approved:
- Application Denied:

By:	Date:
-----	-------



## M 21.29 MINN DNR AREA FORESTRY OFFICES

<http://www.dnr.state.mn.us/contact/locator.html>

### REGION 1

BEMIDJI AREA:	2220 Bemidji Ave. Bemidji, MN 56601	218-755-2890 - Office 218-755-2049 - Fax
BAGLEY AREA:	HWY 92 N RR 1 Box 22 Bagley, MN 56621-9801	218-694-2146 - Office 218-694-2945 - Fax
BLACKDUCK AREA:	1 ST W & Summit Ave. Box L Blackduck, MN 56630-0340	218-835-6684 - Office 218-835-4474 - Fax
WARROAD AREA:	1101 E Lake ST. P.O. Box 43 Warroad, MN 56763-2407	218-386-1304 - Office 218-386-1314 - Fax
WANNASKA AREA:	HWY 89 S Rrt Box 34A Wannaska, MN 56761	218-425-7793 - Office 218-425-7797 - Fax
BAUDETTE AREA:	HWY 11 & 2nd Ave. RT 1 Box 1001 Baudette, MN 56623-9702	218-634-2172 - Office 218-634-2563 - Fax
PARK RAPIDS AREA:	Box 113 607 W 1st St. Park Rapids, MN 56470-1311	218-732-3309 - Office 218-732-5391 - Fax
ALEXANDRIA AREA:	2605 AGA Drive Unit 6 Alexandria, MN 56308	320-762-7812 - Office 320-762-5689 - Fax
DETROIT LAKES AREA:	P.O. Box 823 Detroit Lakes, MN 56502-0823	218-847-1596 - Office 218-847-1588 - Fax

### REGION 2

DEER RIVER AREA:	Box 157 Deer River, MN 56636	218-246-8343 - Office 218-246-2327 - Fax
EFFIE AREA:	Box 95 Effie, MN 56639	218-743-3694 - Office 218-743-1942 - Fax
HIBBING AREA:	1208 E Howard St. Hibbing, MN 55746	218-262-6760 - Office 218-262-6792 - Fax
ORR AREA:	P.O. Box 306 Orr, MN 55771	218-757-3274 - Office 218-757-3276 - Fax
TOWER AREA:	P.O. Box 432 609 N 2nd St. Tower, MN 55790	218-753-4500 - Office 218-753-4517 - Fax
CLOQUET AREA:	1604 S HWY 33 Cloquet, MN 55720	218-879-0880 - Office 218-879-0894 - Fax
TWO HARBORS AREA:	4805 Rice Lake Rd. Duluth, MN 55803-1293	218-723-4669 - Office 218-725-7765 - Fax
GRAND MARRAIS AREA:	Box 156 Grand Marrais, MN 55604	218-387-1075 - Office 218-387-1042 - Fax
LITTLE FORK AREA:	21 3rd Ave Box 1 Littlefork, MN 56653	218-278-6651 - Office 218-278-6211 - Fax

M 21.29 continued next page

**M 21.29 MINN DNR AREA FORESTRY OFFICES**

**REGION 3**

<b>BRAINERD AREA:</b>	1601 Minnesota Drive Brainerd, MN 56401	218-828-2565 - Office 218-828-2431 - Fax
<b>LITTLE FALLS AREA:</b>	<i>Rt. 4 Little Falls, MN 56345</i>	<i>218-632-6674 - Office 218-632-3344 - Fax</i>
<b>BACKUS AREA:</b>	Box 6 Backus, MN 56435	218-947-3232 - Office 218-947-3525 - Fax
<b>PEQUOT LAKES AREA:</b>	<i>Box 27 Pequot Lakes, MN 56472</i>	<i>218-568-4566 - Office 218-568-4921 - Fax</i>
<b>HILL CITY AREA:</b>	P.O. Box 9 Hill City, MN 55748	218-697-2476 - Office 218-697-8112 - Fax
<b>AITKIN AREA:</b>	<i>P.O. Box 138 (Rt. 4 Box 44) Aitkin, MN 56431-0138</i>	<i>218-927-4040 - Office 218-927-4121 - Fax</i>
<b>MOOSE LAKE AREA:</b>	Rte. 2 701 S Kenwood Moose Lake, MN 55767	218-485-5400 - Office 612-485-5406 - Fax
<b>HINCKLEY AREA:</b>	<i>Rt 2 Box 386 B Hinckley, MN 55037</i>	<i>612-384-6146 - Office No Fax</i>
<b>CAMBRIDGE AREA:</b>	800 Oak Savanna Lane SW Cambridge, MN 55008	612-689-7100 - Office 612-689-7120 - Fax
<b>ST. CLOUD AREA:</b>	<i>4140 Thielman Ln Site 203 St. Cloud, MN 55301</i>	<i>320-255-4276 - Office 320-255-3999 - Fax</i>

**REGION 5**

<b>LEWISTON AREA:</b>	Box 279 Lewiston, MN 55952	507-523-2183 - Office 507-523-2951 - Fax
<b>CALEDONIA AREA:</b>	<i>603 N Sprague St. Caledonia, MN 55921</i>	<i>507-724-5261 - Office 507-724-5448 - Fax</i>
<b>PRESTON AREA:</b>	Box B 900 Washington St NW Preston, MN 55965	507-765-2740 - Office No Fax
<b>LAKE CITY AREA:</b>	<i>1801 S Oak Lake City, MN 55041</i>	<i>612-345-3216 - Office 612-345-3975 - Fax</i>
<b>ROCHESTER AREA:</b>	2300 Silver Creek Rd. NE Rochester, MN 55906	507-285-7428 - Office 507-285-7144 - Fax
<b>MANKATO AREA:</b>	<i>410 Jackson Str. Suite 180 Mankato, MN 56001</i>	<i>507-389-6713 - Office 507-389-6713 - Fax</i>
<b>NEW ULM AREA:</b>	Box 756 Hwy 15 South New Ulm, MN 56073	507-359-6057 - Office 507-359-6018 - Fax
<b>WILLMAR AREA:</b>	<i>1025 SW 19th Ave Willmar, MN 56201</i>	<i>320-231-5164 - Office 320-231-5164 - Fax</i>
<b>FARIBAULT AREA:</b>	1400 Cannon Circle Faribault, MN 55021	507-332-3247 - Office 507-332-3247 - Fax

**M 21.29 MINN DNR AREA FORESTRY OFFICES**

**REGION 6**

**NORTH METRO AREA:** 1200 Warner Road  
St. Paul, MN 55106

651-772-7925 - Office

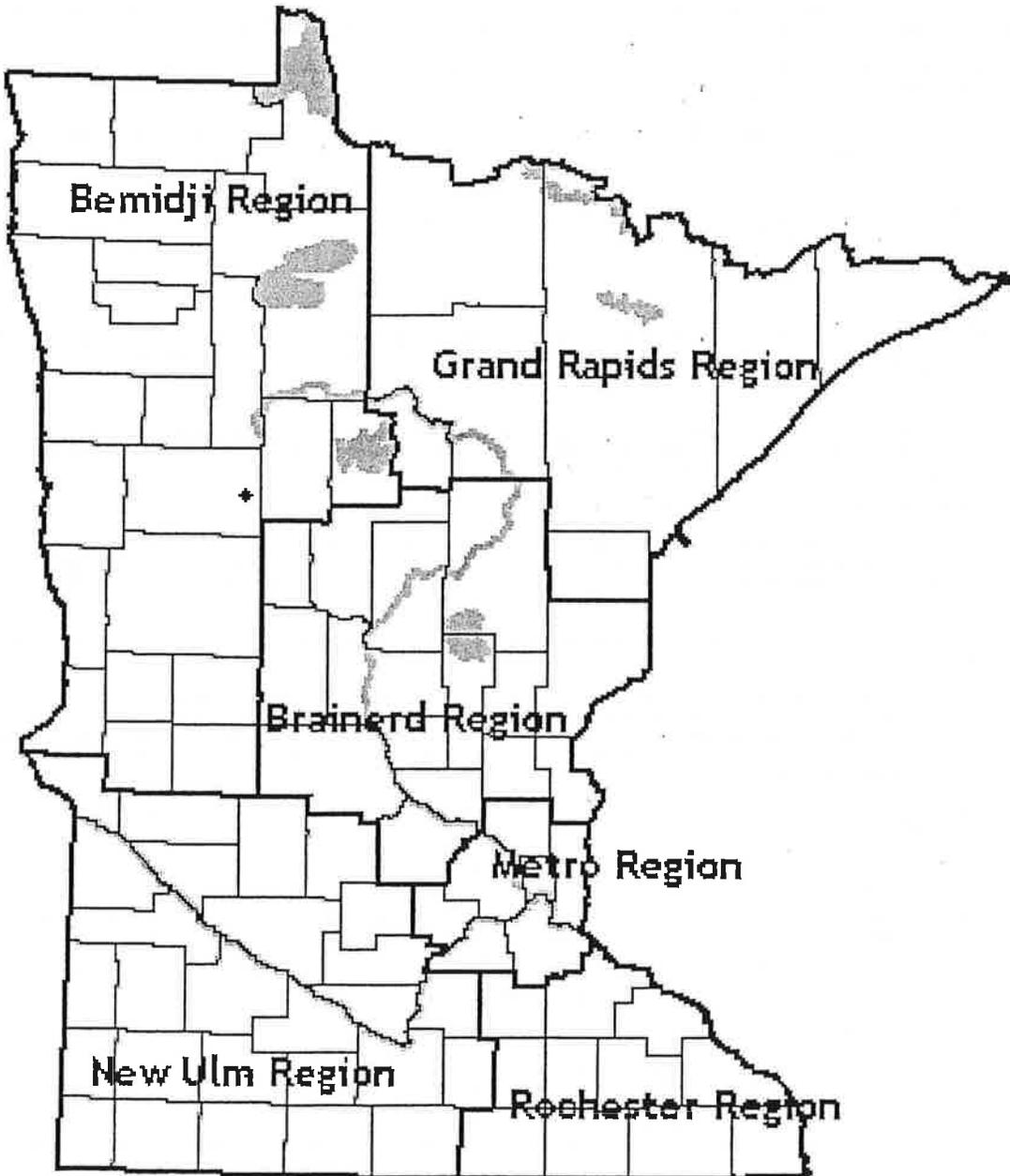
651-772-7599 - Fax

**EAST METRO AREA:** 1200 Warner Road  
St. Paul, MN 55106

651-772-7925 - Office

651-772-7599 - Fax

<http://www.dnr.state.mn.us/contact/locator.html>



M 21.30 MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
WATER USES AGE PERMIT - 10,000 GALLONS AND OVER



NA-02623-03  
(rev. 11/93)

Permit Application for Appropriation of Waters of the State  
NON-IRRIGATION

**WARNING: ALL INFORMATION AND SUPPORTING DOCUMENTS SUBMITTED AS PART OF THIS APPLICATION BECOME PUBLIC INFORMATION.** Omission of any data requested will delay the processing of your application and may result in its denial.

**WHO APPLIES:** Any individual, agency, corporation or entity appropriating in excess of 10,000 gallons/day and/or 1 million gallons/year must obtain a Water Appropriation Permit from the Department of Natural Resources as prescribed by Minnesota Statutes, Chapter 103G and Minnesota Rules 6115.0600-6115.0810.

**PROCEEDING WITHOUT A PERMIT:** Any appropriation in excess of the above stated amounts without a permit constitutes a misdemeanor.

**Note:** Other federal, state or local permits or approvals may also be required which are the responsibility of the applicant to obtain.

**APPLICATION INSTRUCTIONS**

Each number below corresponds to the appropriate section on the application form. Read ALL instructions carefully before filling out the application. Please type or print clearly.

**APPLICANT**

1-6. Fill in as directed.

**PROJECT INFORMATION**

7. **PURPOSE:** Mark the box that best describes your project and provide a written explanation of what the water will be used for. Attach a letter of explanation if there is not enough space on the application to completely describe the purpose of the project and how the water is used.

**NOTE:** Temporary appropriations are one-time projects that do not continue from year to year. Temporary permits are issued for appropriations with durations of up to 12 months. Time extensions may be requested, but the total length of time the permit remains in force cannot exceed two years.

**8. SOURCE OF WATER:** Mark only one box.

**NOTE:** Submit one application for each source of water or system. For example, several wells in the same aquifer manifolded into one system constitute one source; however, a stream and a gravel pit are two sources of water and would require separate applications. (Contact a Division of Waters Office if you are unsure whether your project would require one or more applications).

a. **WELL** - Submit 1) a copy of the official Water Well Record, 2) test hole logs and 3) pumping test data, all of which are available from the driller.

**NOTE:** Applications for dewatering projects can be submitted before the wells are constructed. Information on the estimated diameter, depth and location of all dewatering wells must be submitted with the application. Water Well Records must be submitted upon completion of well construction. When Water Well Records are not required by Minnesota Rules relating to wells and borings, then a summary of the actual depth, diameter, static water level and location of each well must be submitted.

b. **MANIFOLD WELLS** - Indicate the number of wells to be manifolded into one system. Submit the SAME information requested in 8.a. for EACH well to be used.

**NOTE:** If your well(s) is located in an aquifer for which hydrologic data are limited or unavailable, you may be required to submit data regarding area wells.

c. **STREAM, DITCH, OR RIVER** - Identify it and submit a contingency plan describing the alternatives you would utilize if the appropriation is restricted because of low water conditions. If no alternative water supply is available, you must submit a written statement agreeing to withstand the results of no appropriation.

**NOTE:** Only temporary appropriations from designated trout streams may be approved.

d. **WETLAND, LAKE OR IMPOUNDMENT** - Identify it and submit the following:

1) A contingency plan (see 8.c.).

2) For basins less than 500 acres in size you must:

a) Notify all riparian landowners and submit a list of those landowners.

b) Obtain a signed statement from as many of those riparian landowners as possible which states their support of the proposed appropriation.

c) Provide an accounting of the number of signatures of riparian owners you are unable to obtain.

**M 21.30 MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
WATER USES AGE PERMIT - 10,000 GALLONS AND OVER**

- e. OTHER - Gravel pits, farm ponds, dug pits, etc. Submit information on:
- 1) Physical dimensions (length - width - depth)
  - 2) Depth to water from land surface.

**NOTE:** Any proposed alteration of the beds or banks of the above mentioned water basins or streams may require a protected (public) waters permit from this Department. This may also include the construction of a pit in a wetland area. Contact a Division of Waters Office for details.

**9. POINT(S) OF TAKING/PUMPING SITE(S):** Indicate the location of your well(s) or pumping site by completing a - e. Indicate this location to the nearest 10 acre tract by completing a. (ex. NW 1/4 of NE 1/4 of SE 1/4). If you plan to install multiple wells or pumping sites, attach a letter of explanation including the legal description of each well/pump site, its pumping rate and method of measurement.

**10. MEANS OF TAKING AND RATE:** If you mark "d", specify the method to be used and the rate of taking (in gallons per minute or cubic feet per second). If multiple wells or pump sites are to be used, attach a letter of explanation (see #9).

**11. METHOD OF MEASUREMENT:** Fill in as appropriate.

**NOTE:** Flow meters are required by Minnesota Statutes 103G.281, Subdivision 2, for measuring the quantity of water appropriated within the degree of accuracy required by rule (10%). The DNR can approve other methods of measurement. Timing devices, including hour meters and electric meters, are approved devices if there is a constant rate of appropriation. To obtain approval for other methods of measurement, applicants must submit a written request with the application that includes a detailed description of the proposed method.

**NOTE:** All permit holders are required to measure and keep monthly and yearly records of the quantity of water used or appropriated.

**12. MEANS OF CONVEYANCE:** Fill in as appropriate.

**13. LEGAL DESCRIPTION:** Describe the property that will be affected by your project (ex. - T101N, R14W, Section 5, NW 1/4 and N 1/2 SW 1/4). If property other than what you own will be affected, you must attach a copy of the land agreement which includes a) the legal description of the property; b) the termination date of the agreement; and c) the signatures of all parties.

**14. MONTHS OF APPROPRIATION:** Fill in as appropriate.

**15. SCHEDULE OF APPROPRIATION:** Mark only one box to indicate your schedule. For temporary projects, the appropriate "year(s)" should be included with the beginning/ending dates.

**16. TOTAL ANNUAL USE:** (in million gallons per year).

**NOTE:** Appropriation in excess of 2 million gallons/day or 30 million gallons/month requires the preparation of an Environmental Assessment Worksheet. Appropriations that exceed these limits may also require legislative approval (See Minnesota Statutes 103G.265, Subdivision 3, for exemptions).

**17. - 19.** Complete if applicable. In Question 17 indicate the quantity of water to be discharged.

**20. ADDITIONAL REQUIREMENTS:** Submit the following as part of your application.

All applications must include a:

- a. Map or Air Photo showing the project site.
- b. \$75.00 filing fee for each permit application (check payable to the "DEPARTMENT OF NATURAL RESOURCES". CASH CANNOT BE ACCEPTED. An additional fee may be required depending upon the scope of your project.
- c. Describe alternative sources of water and methods, including conservation practices that were considered and why the proposed alternative was selected.
- d. Additional documents, letters or statements required.

**MAILING:** Submit the following to the appropriate DNR Regional Office (See map on back page for addresses):

- 1) application (keep a copy for your records).
- 2) supporting documents.
- 3) filing fee

Make sure that you furnish all information that is requested. Forms that are incorrectly filled out or lack requested information will cause a delay in your application.

**LOCAL REVIEW:** Minnesota Statutes allow local units of government 30 days to review your project and submit comments to the DNR. A copy of your application will be submitted by the DNR to:

- 1) local soil & water conservation district
- 2) watershed district
- 3) city

**ADDITIONAL DATA:** You may be required to submit additional information regarding your project. You will be notified if this information is required.

### QUESTIONS

If you have any questions on the procedure for completing the application, please contact the DNR Regional Office serving you. The address and telephone number of each DNR office can be found on the bottom of the ADDENDUM page.

M 21.31 MINNESOTA DEPARTMENT OF NATURAL RESOURCES



Permit Application for Appropriation of Waters of the State  
NON-IRRIGATION

NA-02623-03  
(rev.11/93)

OFFICE USE ONLY	P.A. No. _____
	Date(s) Served _____
	<input type="checkbox"/> SWCD _____
	<input type="checkbox"/> WSD _____
	<input type="checkbox"/> CITY _____

**NOTICE OF WARNING:** All information on this form is considered to be public information in accordance with the Minnesota Data Privacy Act (M.S. 15.1611 to 15.1698).

▶ SEE INSTRUCTIONS... TYPE OR PRINT CLEARLY.

1. Applicant Name		2. Authorized Agent (if applicable)		3. Home Phone No. ( )	
4. Mailing Address		5. City, State, Zip Code		4. Work Phone No. ( )	
7. PURPOSE (Explain what the water will be used for) <input type="checkbox"/> Public Water Supply <input type="checkbox"/> Commercial/Industrial <input type="checkbox"/> Water Level Maintenance <input type="checkbox"/> Pollution Containment <input type="checkbox"/> Temporary _____ <input type="checkbox"/> Other _____					
8. Source of Water ("X" one and complete) a. <input type="checkbox"/> One well b. <input type="checkbox"/> _____ manifolded wells c. <input type="checkbox"/> Stream, ditch or river (name) _____ d. <input type="checkbox"/> Wetland, lake or impoundment (name) _____ e. <input type="checkbox"/> Other _____			Additional Information MUST be supplied for each source. Refer to Instructions (8 & 9) for requirements.		9. Point of Taking/Pumping Site a. _____ 1/4 of _____ 1/4 of _____ 1/4 b. Section No. _____ c. Township No. _____ d. Range No. _____ e. County _____
10. Means of Taking and Rate a. <input type="checkbox"/> _____ stationary pump(s) at _____ gpm ea. (no.) b. <input type="checkbox"/> _____ portable pump(s) at _____ gpm ea. (no.) c. <input type="checkbox"/> Gravity Flow at _____ gpm/cts d. <input type="checkbox"/> Other _____ gpm/cts (circle one)		11. Method of Measurement a. <input type="checkbox"/> Flow Meter b. <input type="checkbox"/> Timing Device c. <input type="checkbox"/> Electric Power Consumption d. <input type="checkbox"/> Other _____	12. Means of Distribution a. <input type="checkbox"/> pipe _____ diam. _____ length b. <input type="checkbox"/> tank _____ gal. capacity c. <input type="checkbox"/> channel _____ length d. <input type="checkbox"/> other _____		13. Legal Description—Land Owned/Rented* Township No. _____ Range No. _____ Sect. _____ Fractional Sect. Gov't. Lots _____
14. Months of Appropriation <input type="checkbox"/> JAN <input type="checkbox"/> JUL <input type="checkbox"/> FEB <input type="checkbox"/> AUG <input type="checkbox"/> MAR <input type="checkbox"/> SEP <input type="checkbox"/> APR <input type="checkbox"/> OCT <input type="checkbox"/> MAY <input type="checkbox"/> NOV <input type="checkbox"/> JUN <input type="checkbox"/> DEC		15. Schedule of Appropriation ("X" one and complete) a. <input type="checkbox"/> Continuous _____ hrs./day _____ days/mo. _____ mo./yr. b. <input type="checkbox"/> Seasonal Beginning date _____ c. <input type="checkbox"/> Temporary End date _____		16. Total Annual Use (MGY) _____	
17. Discharge To and Quantity a. <input type="checkbox"/> Stream, Ditch or River _____ (name) _____ ( ) MGY b. <input type="checkbox"/> Wetland, Lake or Impoundment _____ (name) _____ ( ) MGY c. <input type="checkbox"/> Sewer System _____ ( ) MGY d. <input type="checkbox"/> Other _____ ( ) MGY		*Rental Agreement MUST Be Submitted			
18. Discharge Point a. _____ 1/4 of _____ 1/4 of _____ 1/4 b. Section No. _____ c. Township No. _____ d. Range No. _____ e. County _____		19. Means of Discharge and Rate a. <input type="checkbox"/> _____ stationary pump(s) at _____ gpm ea. (no.) b. <input type="checkbox"/> _____ portable pump(s) at _____ gpm ea. (no.) c. <input type="checkbox"/> Gravity Flow at _____ gpm/cts d. <input type="checkbox"/> Other _____ gpm/cts (circle one)		20. Additional Requirements: a. <input type="checkbox"/> Map or Air Photo which shows: 1) Point of Taking or Pumping Site 2) Test Hole Location 3) Boundaries of Property Controlled and Area of Use 4) Discharge Point b. <input type="checkbox"/> FILING FEE payable to: "DEPARTMENT OF NATURAL RESOURCES" c. <input type="checkbox"/> Statement of Justification/Alternative Sources d. <input type="checkbox"/> Additional Documents Required	

▶ I hereby make application pursuant to Minnesota Statutes Chapter 103G.261 and all supporting rules for a permit to appropriate water in accordance with all supporting maps, plans, and other information submitted with this application. The information submitted and statements made concerning this application are true and correct to the best of my knowledge.

21. Signature of Owner or Authorized Agent	22. Date
--	----------

▶ IMPORTANT: Submit this application and all supporting data to the DNR Regional Office serving you (see back for addresses).  
APPLICANT: KEEP A COPY FOR YOUR RECORDS.

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Printed on Recycled Paper

# M 21.31 MINNESOTA DEPARTMENT OF NATURAL RESOURCES

## ADDENDUM

### NOTICE TO APPLICANTS FOR DNR PERMITS TO APPROPRIATE AND USE SURFACE AND GROUND WATERS OF THE STATE

The Department of Natural Resources (DNR) and the Pollution Control Agency (PCA) are working together to avoid duplication in state agency review of proposed activities affecting water resources of the state. This form was prepared by the DNR and the PCA to minimize your work in contacting state agencies for project approval.

Please complete this form by placing an "X" in the appropriate box or boxes. If your project or proposed activity does not involve any of the actions listed on this form, place an "X" in the box after item 6.

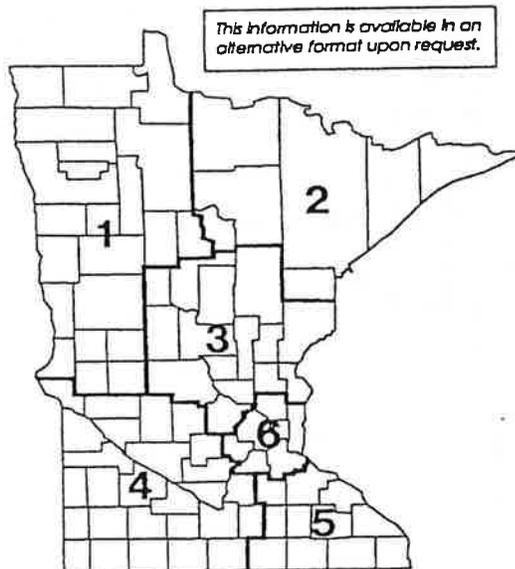
If your proposed project or activity will involve any of the actions listed for boxes 3 through 5, a copy of your DNR permit application will be forwarded to the PCA for their review. If a separate PCA permit or approval is required, you will be notified by the PCA.

In addition, please be advised that projects which will involve drainage, excavation, fill or impoundment of wetlands or waters of the United States, even those wetlands outside of the jurisdiction of the DNR, may require an individual permit from the U.S. Army Corps of Engineers. Persons proposing such projects should contact the Regulatory Functions Branch, Department of the Army, Corps of Engineers, St. Paul District, 180 Kellogg Blvd. E., Room 1421, St. Paul, MN 55101-1479 (telephone: (612) 220-0375) for further information. For more information on the following actions, please call the PCA at (612) 297-1832.

Place an "X" in the applicable box(es).

1. Purpose of the project \_\_\_\_\_
2. Following its use, the appropriated water will be discharged directly, retained for later discharge, or collected and returned via a drainage system to surface waters of the state. ( )  
 If the return flow is currently regulated under an NPDES discharge permit issued by the PCA, then enter permit number: \_\_\_\_\_  
 If not, attach a map or drawing with sufficient detail to show location(s) of return flow discharge(s) and receiving waters.
3. The project will result in diversion of surface water from one waterbody to another or ground water from one aquifer to another aquifer. ( )
4. The project will involve ground water pumpout for remedial action at a site with contaminated ground water. ( )
5. The project will involve water appropriation for mining operations. ( )
6. The project or activity will not involve any of the above. ( )

Applicant Name (type or print)
Applicant Signature
Applicant Address



For additional information and assistance, contact the appropriate Regional Office or the Division of Waters in St. Paul.

**Region 1** 2115 Birchmont Beach Road N.E.  
 Bemidji, MN 56601  
 (218) 755-3973

**Region 2** 1201 East Highway 2  
 Grand Rapids, MN 55744  
 (218) 327-4418

**Region 3** 1601 Minnesota Drive  
 Brainerd, MN 56401  
 (218) 828-2605

**Region 4** Box 758, Highway 15 South  
 New Ulm, MN 56073  
 (507) 359-6053

**Region 5** P.O. Box 6247  
 Rochester, MN 55903  
 (507) 285-7430

**Region 6** 1200 Warner Road  
 St. Paul, MN 55106  
 (612) 772-7910

**Central Office** 500 Lafayette Road  
 St. Paul, MN 55155-4032  
 (612) 296-4800

M 21.32 MINNESOTA DEPARTMENT OF NATURAL RESOURCES

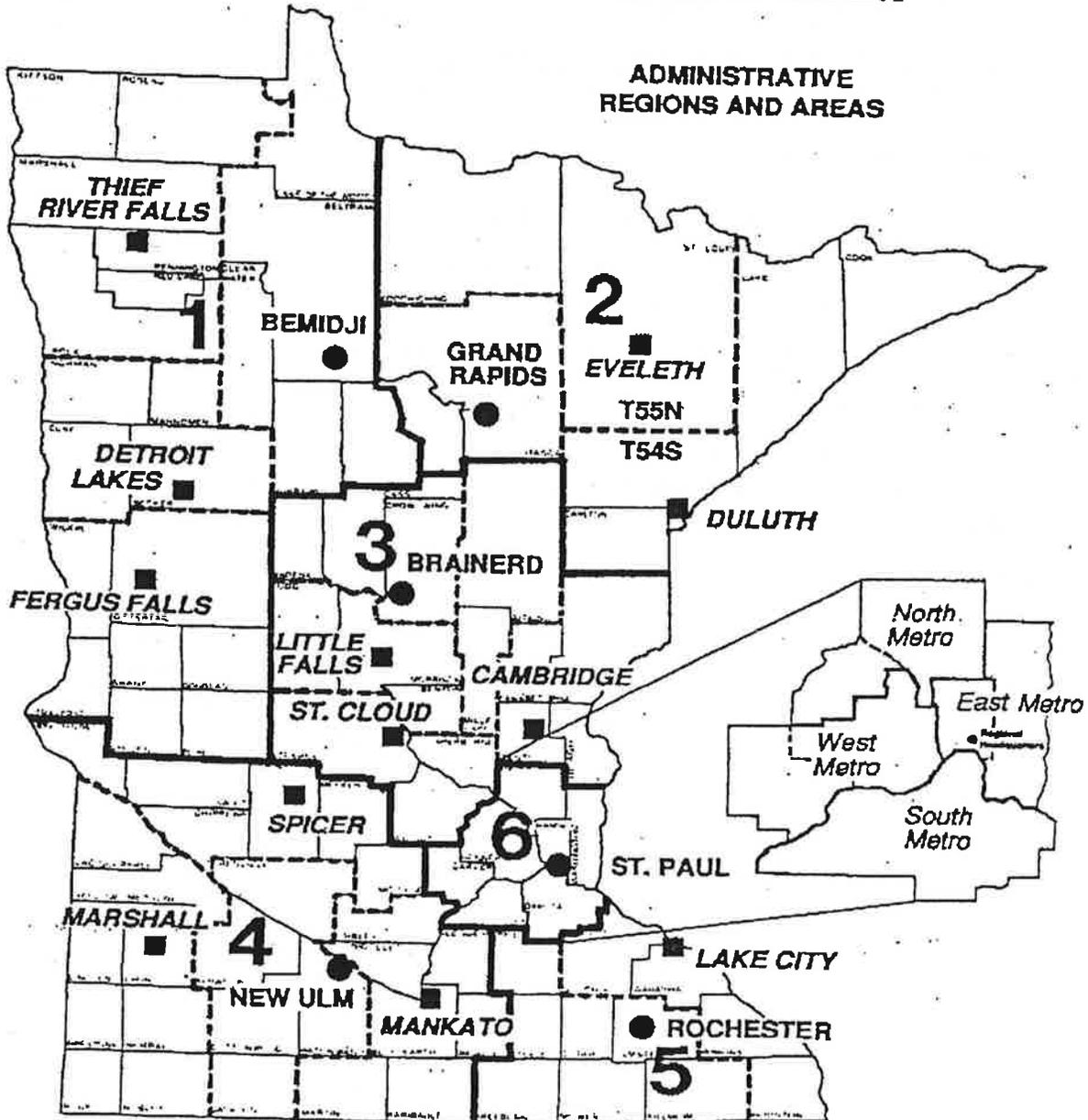
REGIONAL OFFICES

Region 1 Bemidji - 218-755-3973  
Region 2 Grand Rapids - 218-327-4416  
Region 3 Brainerd - 218-828-2605

Region 4 New Ulm - 507-354-2196  
Region 5 Rochester - 507-285-7430  
Region 6 St. Paul - 612-296-7523

DIVISION OF WATERS

ADMINISTRATIVE  
REGIONS AND AREAS



- REGIONAL OFFICE
- REGIONAL BOUNDARY
- AREA OFFICE
- AREA BOUNDARY

REVISED 1/1994

## M 21.35 ASBESTOS INSPECTION AND ABATEMENT



Minnesota Pollution Control Agency

### DEMOLITION BY BURNING GUIDANCE DOCUMENT

The asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) requires all asbestos containing materials (ACM) to be removed from a building prior to demolition by burning. The NESHAP applies to a fire department's burning of residential buildings for training purposes and requires that all buildings be thoroughly inspected for asbestos prior to demolition.

Asbestos containing materials are classified as either Category I non-friable, Category II non-friable, or friable. Category I materials include, but are not limited to, such items as floor tile, linoleum flooring, gaskets, and asphalt roofing materials. Category II materials include, but are not limited to, transite (slate) siding and cementitious roofing shingles.

Category I and Category II materials may be removed by un-licensed personnel as long as the materials are removed in a non-friable manner. Non-friable removal consists of removal in manner which would not cause the material to be crushed, crumbled or reduced to a powder. For example, if a house was covered with transite (slate) siding, it would be considered safe for the home owner to remove the siding as long as it is generally removed in whole pieces with as little breakage as possible and maintained in whole pieces until disposed of.

When friable ACM such as, pipe insulation, ceiling texture, or ceiling tile are present in a building, they need to be removed by a licensed asbestos abatement contractor. A list of licensed asbestos abatement contractors in the State of Minnesota can be obtained from the Minnesota Pollution Control Agency (MPCA) by calling the number below.

Prior to demolition of a building by intentional burning, it is necessary for the fire department to notify the MPCA Air Quality Division by completely filling out a Notice of Intent to Demolish (see attached). The notifications must be postmarked or delivered at least 10 working days prior to the demolition. Failure to notify the MPCA in a timely manner may result in an enforcement action. Completion of the Department of Natural Resources (DNR) burning permit application form does not satisfy the MPCA notification requirement.

*ASBESTOS COORDINATOR-AIR QUALITY DIVISION  
MN POLLUTION CONTROL AGENCY  
520 LAFAYETTE ROAD NORTH  
ST. PAUL, MN 55155-4194*

*FOR QUESTIONS CALL;  
1-612-296-7300  
1-800-657-3864*

# ASBESTOS INSPECTION FORM



## Minnesota Pollution Control Agency Notification of Intent to Perform a Demolition

Type of Notification  Original  Amended  Project Cancellation

**Demolition Contractor:**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Phone Number(s): \_\_\_\_\_

**Building Owner:**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Contact person: \_\_\_\_\_  
Phone Number(s): \_\_\_\_\_

**Building Information:**

Building Name: \_\_\_\_\_  
Address/Location: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
County: \_\_\_\_\_  
Phone Number: \_\_\_\_\_  
Prior Use of Bldg.: \_\_\_\_\_  
Present Use of Bldg.: \_\_\_\_\_  
Age of Bldg. (years): \_\_\_\_\_ Size of Bldg. (sq.ft.) \_\_\_\_\_  
Number of Floors Including Basement Level(s): \_\_\_\_\_

Dates when demolition or intentional burning  
will Begin \_\_\_\_\_ & End \_\_\_\_\_

Notification must be postmarked or received ten (10) working days before  
demolition begins. \*See item #5 for emergency demolitions. Both Beginning and  
Ending dates should be amended in writing as necessary to reflect current project  
dates.

If there is > 260 linear feet or > 160 Square feet of friable Asbestos - Containing Material (ACM) in the building to be demolished, it must be  
removed by a licensed asbestos contractor prior to demolition.

Is nonfriable ACM present in the structure to be demolished?  
If YES complete items 1-9. If NO complete items 3-9.

YES  NO

1. If ACM will be left in place for the demolition indicate the amount of Category I and/or Category II nonfriable ACM left in place.

Categ. I

\_\_\_\_\_ Linear Feet  
\_\_\_\_\_ Square Feet  
\_\_\_\_\_ Cubic Feet

Categ. II

\_\_\_\_\_ Linear Feet  
\_\_\_\_\_ Square Feet  
\_\_\_\_\_ Cubic Feet

**Category I nonfriable ACM** means asbestos-containing  
packings, gaskets, resilient floor covering, and asphalt roofing  
products containing more than one percent asbestos.

**\*Category I nonfriable ACM is not allowed to remain in  
place for demolition if it is in poor condition.**

**Category II nonfriable ACM** means any material, excluding  
Category I nonfriable ACM, containing more than one  
percent asbestos that, when dry, cannot be crumbled,  
pulverized, or reduced to a powder by hand pressure.

**\*Category II nonfriable ACM is not allowed to remain in  
place for demolition if it has a high probability of  
becoming crumbled, pulverized, or reduced to a powder  
during demolition. (ex transits, cement, sate roofing)**

Description & Location of ACM remaining in place (including floor # and room #):  
\_\_\_\_\_  
\_\_\_\_\_

Name and/or individual that conducted the building inspection and the procedure used to determine the presence  
of ACM (including analytic method):  
\_\_\_\_\_

\*Prior to demolition all buildings must be inspected by an U.S. Environmental Protection Agency (EPA) accredited inspector.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Description of planned demolition and the specific method(s) that will be used: \_\_\_\_\_

\_\_\_\_\_

5. If the demolition was ordered by a government agency, please identify the agency and attach a copy of the order:

Name: \_\_\_\_\_ Title: \_\_\_\_\_ Authority: \_\_\_\_\_

Date of Order (M/D/Y): \_\_\_\_\_ Date Ordered to Begin (M/D/Y): \_\_\_\_\_

\*Notification for an emergency demolition must be submitted as early as possible before demolition begins, but not later than the following working day. A demolition is considered an emergency ONLY when the facility has been deemed structurally unsound and in danger of imminent collapse. If the structurally unsound building is known to contain any regulated ACM or is suspected to contain any regulated ACM, special procedures MUST be followed. If you are unaware of the special procedures, instructions/regulations can be obtained by contacting the MPCA at the address or phone number listed below.

6. Description of procedure to be followed in the event that unexpected RACM is found or Cat. II non-friable ACM becomes crumbled, pulverized or reduced to powder: \_\_\_\_\_

\_\_\_\_\_

**7. Waste Transporter Information:**

Transported Name: \_\_\_\_\_  
Transporter Contact: \_\_\_\_\_  
Transporter Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

**8. Waste Disposal Information:**

Landfill Name: \_\_\_\_\_  
Owner/Operator: \_\_\_\_\_  
Address/Location: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

9. I certify that the above information is correct and I am bonafide representative of the demolition contractor or building owner and have authority to enter into agreements for my employer.

Signature of Contractor/Owner \_\_\_\_\_ Date: \_\_\_\_\_

Send to:	Asbestos Coordinator-Air Quality Division MN Pollution Control Agency 520 Lafayette Road North St. Paul, MN 55155-4194	For questions call:	1-651-296-7300 1-800-657-3864 1-651-297-7709 - Fax
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**PCB Removal Information** Polychlorinated biphenyls (PCBs) must be removed from the building prior to demolition. PCBs may be found in light ballasts, small capacitors found in old appliances, and transformer oils. For questions call the MPCA Hazardous Waste (HW) business assistance unit at 1-800-657-3724.

PCB remover name/address/phone/number: \_\_\_\_\_  
PCB remover name/address/phone/number: \_\_\_\_\_

**Mercury Removal Information** Mercury containing material must be removed from the building prior to demolition. Mercury containing material may include fluorescent, metal halide, high pressure sodium, neon, mercury vapor lamps, mercury switches, thermostats, probes, manometers, and gages. For questions call the MPCA Hazardous Waste (HW) business assistance unit at 1-800-657-3724.

Mercury remover name/address/phone/number: \_\_\_\_\_  
Mercury remover name/address/phone/number: \_\_\_\_\_

**Refrigerants/CFCs/HCFCs Recovery Information** A certified technician must recover refrigerants from refrigeration equipment and systems in the building prior to demolition. For questions call the MPCA Hazardous Waste (HW) business assistance unit at 1-800-657-3724.

Refrigerants remover name/address/phone/number: \_\_\_\_\_  
Refrigerants remover name/address/phone/number: \_\_\_\_\_



**General Instructions**

(Section references are to the Internal Revenue Code.)

**Paperwork Reduction Act Notice**

We ask for the information on this form to carry out the Internal Revenue laws of the United States. You are required to give us the information. We need it to ensure that you are complying with these laws and to allow us to figure and collect the right amount of tax.

The time needed to complete this form will vary depending on individual circumstances. The estimated average time is:

- Recordkeeping . . . . . 3 hr., 7 min.
- Learning about the law or the form . . . . . 30 min.
- Preparing and sending the form to the IRS . . . . . 34 min.

If you have comments concerning the accuracy of these time estimates or suggestions for making this form more simple, we would be happy to hear from you. You can write to both the Internal Revenue Service, Washington, DC 20224, Attention: IRS Reports Clearance Officer, T:FP; and the Office of Management and Budget, Paperwork Reduction Project (1545-0908), Washington, DC 20503. DO NOT send this form to either of these offices. Instead, see Where To File on this page.

**Purpose of Form**

Donee organizations use Form 8282 to report information to the IRS about dispositions of certain charitable deduction property made within 2 years after the donor contributed the property.

**Definitions**

**Note:** For purposes of Form 8282 and these instructions, the term "donee" includes all donees, unless specific reference is made to "original" or "successor" donees.

**Original Donee.**—The first donee to or for which the donor gave the property. The original donee is required to sign an appraisal summary presented by the donor for charitable deduction property.

**Appraisal Summary.**—Section B of Form 8283, Noncash Charitable Contributions.

**Successor Donee.**—Any donee of property other than the original donee.

**Charitable Deduction Property.**—Property (other than money or certain publicly traded securities) for which the original donee signed, or was presented with for signature, an appraisal summary on Form 8283.

Generally, only items or groups of similar items for which the donor claimed a deduction of more than \$5,000 are

included on an appraisal summary. There is an exception if a donor gives similar items to more than one donee organization and the total deducted for these similar items exceeds \$5,000. For example, if a donor deducts \$2,000 for books given to a donee organization and \$4,000 for books to another donee organization, the donor must present a separate appraisal summary to each organization. For more information, see the Instructions for Form 8283.

**Who Must File**

Form 8282 must be filed by original and successor donee organizations who sell, exchange, consume, or otherwise dispose of (with or without consideration) charitable deduction property within 2 years after the date the original donee received the property.

**Exceptions.**—There are two situations where Form 8282 does not have to be filed.

1. **Items valued at \$500 or less.**—You do not have to file Form 8282 if, at the time the original donee signed the appraisal summary, the donor had signed a statement on Form 8283 that the appraised value of the specific item was not more than \$500. If Form 8283 contains more than one similar item, this exception applies only to those items that are clearly identified as having a value of \$500 or less. However, for purposes of the donor's determination of whether the appraised value of the item exceeds \$500, all shares of nonpublicly traded stock, or items that form a set, are considered one item. For example, a collection of books written by the same author, components of a stereo system, or six place settings of a pattern of silverware are considered one item.

2. **Items consumed or distributed for charitable purpose.**—You do not have to file Form 8282 if an item is consumed or distributed without consideration. The consumption or distribution must be in furtherance of your purpose or function as a tax-exempt organization. For example, no reporting is required for medical supplies consumed or distributed by a tax-exempt relief organization in aiding disaster victims.

**When To File**

If you dispose of charitable deduction property within 2 years of the date the original donee received it and you do not meet exception 1 or 2 above, you must file Form 8282 within 125 days after the date of disposition.

**Exception.**—If you did not file because you had no reason to believe the substantiation requirements applied to the donor, but you later become aware that they did apply, file Form 8282 within 60 days after the date you become aware you are liable. For example, this exception

would apply where an appraisal summary is furnished to a successor donee after the date that donee disposes of the charitable deduction property.

**Missing Information**

If Form 8282 is filed by the due date, you must enter your organization's name, address, and EIN and complete at least Part III, column (a). You do not have to complete the remaining items if the information is not available. For example, you may not have the information necessary to complete all entries if the donor's appraisal summary is not available to you.

**Where To File**

Send Form 8282 to the Internal Revenue Service Center, Cincinnati, OH 45944.

**Penalty**

You may be subject to a penalty if you fail to file this form by the due date, fail to include all of the information required to be shown on this form, or fail to include correct information on this form (see Missing Information above). The penalty is generally \$50. For more details, see section 6721.

**Other Requirements**

**Information You Must Give a Successor Donee.**—If the property is transferred to another charitable organization within the 2-year period discussed earlier, you must give your successor donee the following information:

1. The name, address, and EIN of your organization,
2. A copy of the appraisal summary (the Form 8283 that you received from the donor or a preceding donee), and
3. A copy of this Form 8282, within 15 days after you file it.

You must furnish items 1 and 2 within 15 days after the latest of:

- The date you transferred the property,
- The date the original donee signed the appraisal summary, or
- If you are also a successor donee, the date you received a copy of the appraisal summary from the preceding donee.

**Note:** The successor donee organization to whom you transferred this property is required to give you their organization's name, address, and EIN within 15 days after the later of:

- The date you transferred the property, or
- The date they received a copy of the appraisal summary.

**Information You Must Give the Donor.**—You must give a copy of your Form 8282 to the donor of the property.

**Appraisal Summary.**—You must keep a copy of the appraisal summary in your records.

M 21.39 IRS 8283 NON-CASH CHARITABLE CONTRIBUTIONS

Form **8283**  
(Rev. November 1992)  
Department of the Treasury  
Internal Revenue Service

**Noncash Charitable Contributions**

▶ Attach to your tax return if the total deduction claimed for all property contributed exceeds \$500.  
▶ See separate instructions.

OMB No. 1545-0008  
Expires 11-30-95

Attachment  
Sequence No. 55

Name(s) shown on your income tax return

Identifying number

Note: Figure the amount of your contribution deduction before completing this form. See your tax return instructions.

Section A—Include in this section only items (or groups of similar items) for which you claimed a deduction of \$5,000 or less per item or group, and certain publicly traded securities (see instructions).

**Part I** Information on Donated Property—If you need more space, attach a statement.

1	(a) Name and address of the donee organization	(b) Description of donated property
A		
B		
C		
D		
E		

Note: If the amount you claimed as a deduction for an item is \$500 or less, you do not have to complete columns (d), (e), and (f).

	(c) Date of the contribution	(d) Date acquired by donor (mo., yr.)	(e) How acquired by donor	(f) Donor's cost or adjusted basis	(g) Fair market value	(h) Method used to determine the fair market value
A						
B						
C						
D						
E						

**Part II** Other Information—If you gave less than an entire interest in property listed in Part I, complete lines 2a–2e. If restrictions were attached to a contribution listed in Part I, complete lines 3a–3c.

- 2 If less than the entire interest in the property is contributed during the year, complete the following:
- a Enter letter from Part I that identifies the property \_\_\_\_\_. If Part II applies to more than one property, attach a separate statement.
  - b Total amount claimed as a deduction for the property listed in Part I: (1) For this tax year \_\_\_\_\_  
(2) For any prior tax years \_\_\_\_\_
  - c Name and address of each organization to which any such contribution was made in a prior year (complete only if different than the donee organization above).  
Name of charitable organization (donee) \_\_\_\_\_  
Address (number, street, and room or suite no.) \_\_\_\_\_  
City or town, state, and ZIP code \_\_\_\_\_
  - d For tangible property, enter the place where the property is located or kept \_\_\_\_\_
  - e Name of any person, other than the donee organization, having actual possession of the property \_\_\_\_\_
- 3 If conditions were attached to any contribution listed in Part I, answer the following questions and attach the required statement (see instructions):
- a Is there a restriction, either temporary or permanent, on the donee's right to use or dispose of the donated property? \_\_\_\_\_
  - b Did you give to anyone (other than the donee organization or another organization participating with the donee organization in cooperative fundraising) the right to the income from the donated property or to the possession of the property, including the right to vote donated securities, to acquire the property by purchase or otherwise, or to designate the person having such income, possession, or right to acquire? \_\_\_\_\_
  - c Is there a restriction limiting the donated property for a particular use? \_\_\_\_\_

	Yes	No
a		
b		
c		

For Paperwork Reduction Act Notice, see separate instructions.

Cat. No. 52299J

Form **8283** (Rev. 11-92)



Department of the Treasury  
Internal Revenue Service

# Instructions for Form 8283

(Revised November 1992)

## Noncash Charitable Contributions

(Section references are to the Internal Revenue Code unless otherwise noted.)

### General Instructions

#### Paperwork Reduction Act Notice

We ask for the information on this form to carry out the Internal Revenue laws of the United States. You are required to give us the information. We need it to ensure that you are complying with these laws and to allow us to figure and collect the right amount of tax.

The time needed to complete and file this form will vary depending on individual circumstances. The estimated average time is:

Recordkeeping . . . . .	20 min.
Learning about the law or the form . . . . .	26 min.
Preparing the form . . . . .	35 min.
Copying, assembling, and sending the form to the IRS . . . . .	35 min.

If you have comments concerning the accuracy of these time estimates or suggestions for making this form more simple, we would be happy to hear from you. You can write to both the IRS and the Office of Management and Budget at the addresses listed in the instructions of the tax return with which this form is filed.

#### Purpose of Form

Use Form 8283 to report certain required information about noncash charitable contributions. Do not report on Form 8283 out-of-pocket expenses for volunteer work or amounts you gave by check or credit card. Treat these items as cash contributions.

#### Additional Information

Do not use this form to figure your charitable contribution deduction. For details on how to figure the amount of the deduction, see your tax return instructions. You may also want to get Pub. 526, Charitable Contributions (for individuals), and Pub. 561, Determining the Value of Donated Property. If you contributed depreciable property, get Pub. 544, Sales and Other Dispositions of Assets.

### Who Must File

You must file Form 8283 if the amount of your deduction for all noncash gifts is more than \$500. For this purpose, "amount of your deduction" means your deduction before applying any income limitations that could result in a carryover. The carryover rules are explained in Pub. 526.

If you must file Form 8283, you may need to complete Section A, Section B, or both, depending on the type of property donated and the amount claimed as a deduction. See **Which Sections To Complete** on this page.

Form 8283 is filed only by individuals, partnerships, S corporations, closely held corporations, personal service corporations, and other C corporations.

**Note:** C corporations, other than personal service corporations and closely held corporations, must file Form 8283 only if the amount claimed as a deduction is over \$5,000.

**Reductions to Fair Market Value (FMV).**—Make any required reductions to FMV before you determine if you must file Form 8283. Attach a computation to your tax return showing the reduction. The amount of the reduction (if any) depends on whether the property is ordinary income property or capital gain property. See the FMV discussion below.

### When To File

File Form 8283 with your tax return for the tax year you contribute the property and first claim a deduction.

### Fair Market Value (FMV)

Although the amount of your deduction determines if you have to file Form 8283, you also need to have information about the value of your contribution to complete the form.

FMV is the price a willing buyer would pay a willing seller when neither has to buy or sell, and both are aware of the sale conditions.

You may not always be able to deduct the FMV of your contribution. Depending on the type of property donated, you may have to reduce the FMV to get to the deductible amount, as explained next.

**Ordinary income property** is property that would result in ordinary income or short-term capital gain if it were sold on the date it was contributed. Examples of ordinary income property are inventory, works of art created by the donor, and capital assets held for 1 year or less. The deduction for a gift of ordinary income property is limited to the FMV minus the amount that would be ordinary income or short-term capital gain if the property were sold at its FMV.

**Capital gain property** is property that would result in long-term capital gain if it were sold at its FMV on the date it was contributed. It includes certain real property and depreciable property used in your trade or business, and generally held for more than 1 year. You usually may deduct gifts of capital gain property at their FMV. However, you must reduce the FMV by the amount of the appreciation if:

- The capital gain property is contributed to certain private nonoperating foundations,
- You choose the 50% limit instead of the special 30% limit, or
- The contributed property is tangible personal property that is put to an unrelated use by the charity.

**Caution:** If you contributed capital gain property, you may owe the alternative minimum tax. For details, get Form 6251, Alternative Minimum Tax—Individuals, and its instructions.

**Qualified Conservation Contribution.**—If your donation qualifies as a "qualified conservation contribution" under section 170(h), attach a statement that shows the claimed FMV of the underlying property before and after the gift and the conservation purpose furthered by the gift.

### Which Sections To Complete

#### Section A

Include in Section A only items (or groups of similar items as defined on page 2) for which you claimed a deduction of \$5,000 or less per item (or group of similar items). Also, include the following publicly traded securities even if the deduction exceeds \$5,000:

1. Securities listed on an exchange in which quotations are published daily,

2. Securities regularly traded in national or regional over-the-counter markets for which published quotations are available, or

3. Securities that are shares of a mutual fund for which quotations are published on a daily basis in a newspaper of general circulation throughout the United States.

#### Section B

Include in Section B only items (or groups of similar items) for which you claimed a deduction of more than \$5,000 (except for certain publicly traded securities reportable in Section A).

With certain exceptions, items reported in Section B will require information based on a written appraisal by a qualified appraiser.

#### Similar Items of Property

Similar items of property are items of the same generic category or type, such as stamp collections, coin collections, lithographs, paintings, books, nonpublicly traded stock, land, or buildings.

**Example.** You claimed a deduction of \$400 for clothing, \$7,000 for publicly traded securities (quotations published daily), and \$6,000 for a collection of 15 books (\$400 for each book). Report the clothing and the securities in Section A and the books (a group of similar items) in Section B.

#### Special Rule for Contributions of Inventory and Scientific Equipment by Certain C Corporations

A special rule applies for deductions taken by certain C corporations under section 170(e)(3) or (4) for contributions of inventory or scientific equipment. To determine if you must file Form 8283, or which section to complete, take into account only the amount claimed as a deduction in excess of the amount you would have deducted as cost of goods sold (COGS) had you sold the property instead. This rule is **only** for purposes of Form 8283. It does not change the amount or method of computing your contribution deduction.

If you do not have to file Form 8283 because of this rule, you must attach a statement to your tax return (similar to the one in the example below). Also, attach a statement if you must complete Section A instead of Section B because of this rule.

**Example.** You donated clothing for your inventory for the care of the needy. The clothing cost you \$5,000 and your claimed charitable deduction is \$8,000. Complete Section A instead of Section B since the excess of the deduction over what would have been your COGS deduction is \$3,000 (\$8,000 - \$5,000). Attach a statement to Form 8283 similar to the following:

**Page 2**

#### Form 8283—Inventory

\$8,000	Contribution deduction
- \$5,000	COGS (if sold, not donated)
= \$3,000	For Form 8283 filing purposes

## Specific Instructions

### Identifying Number

Individuals must enter their social security number. All other filers should enter their employer identification number.

### Partnerships and S Corporations

A partnership or S corporation that claims a deduction for noncash gifts of over \$500 must file Form 8283 with Form 1065 or 1120S. If the total deduction of any item or group of similar items exceeds \$5,000, the partnership or S corporation must complete Section B of Form 8283 even if the amount allocated to each partner or shareholder does not exceed \$5,000.

The partnership or S corporation must give a completed copy of Form 8283 to each partner or shareholder who receives an allocation of the contribution deduction shown in Section B of the partnership's or S corporation's Form 8283.

### Partners and Shareholders

The partnership or S corporation will provide information about your share of the contribution on your Schedule K-1 (Form 1065 or Form 1120S).

In some cases, the partnership or S corporation must give you a copy of its Form 8283. In these cases, attach a copy of the Form 8283 you received to your tax return. Deduct the amount shown on your Schedule K-1, not the amount shown on the Form 8283.

If the partnership or S corporation is not required to give you a copy of its Form 8283, combine the amount of noncash contributions shown on your Schedule K-1 with your noncash contributions to see if you must file Form 8283. If you need to file Form 8283, you do not have to complete all the information requested in Section A for your share of the partnership's or S corporation's contributions. Do not complete line 1, columns (a)-(f) and (h). Instead, write "From Schedule K-1 (Form 1065 or Form 1120S)" across columns (c)-(f). Enter your share of the contribution on line 1, column (g).

## Section A

### Part I, Information on Donated Property

#### Line 1

**Column (b).**—Describe the property in sufficient detail. The greater the value,

the more detail that is needed. For example, a car should be described in more detail than pots and pans.

For securities, include the following:

- Name of the issuer,
- Kind of security,
- If it is a share of a mutual fund, and
- If it is regularly traded on a stock exchange or in an over-the-counter market.

**Note:** If the amount you claimed as a deduction for the item is \$500 or less, columns (d), (e), and (f) do not have to be completed.

**Column (d).**—Enter the approximate date you acquired the property. If it was created, produced, or manufactured by or for you, enter the date it was substantially completed.

**Column (e).**—State how you acquired the property (i.e., by purchase, gift, inheritance, or exchange).

**Column (f).**—Do not complete this column for publicly traded securities or property held 12 months or more. Keep records on cost or other basis.

**Note:** If you have reasonable cause for not providing the acquisition date in column (d), or the cost basis when required in column (f), attach an explanation.

**Column (g).**—Enter the FMV of the property on the date you donated it. If you were required to reduce the FMV of your deduction or you gave a qualified conservation contribution, you must attach a statement. FMV, reductions to FMV, and the type of statement you may have to attach are explained on page 1.

**Column (h).**—Enter the method(s) used to determine the FMV of your donation. FMV of used household goods and clothing is usually much lower than when new. For this reason, standard formulas or methods to value this kind of property are generally not appropriate.

A good measure of value might be the price that buyers of these used items actually pay in consignment or thrift shops.

Examples of entries to make include "Appraisal," "Thrift shop value" (for clothing or household goods), "Catalog" (for stamp or coin collections), or "Comparable sales" (for real estate and other kinds of assets). See Pub. 561.

## Part II, Other Information

If Part II applies to more than one property, attach a separate statement. Give the required information for each property separately. Identify which property listed in Part I the information relates to.

### Lines 2a-2e

Complete lines 2a-2e only if you contributed less than the entire interest in the donated property during the tax year. Enter on line 2b the amount

## M 21.40 IRS 8283 NON-CASH CHARITABLE CONTRIBUTIONS INSTRUCTIONS

claimed as a deduction for this tax year and in any earlier tax years for gifts of a partial interest in the same property. If the organization that received the prior interest in the property is the same as the one listed on line 1, column (a), do not complete line 2c.

### Lines 3a-3c

Complete lines 3a-3c only if you attached restrictions to the right to the income, use, or disposition of the donated property. Attach a statement explaining:

- The terms of any agreement or understanding regarding the restriction, and
- Whether the property is designated for a particular use.

An example of a "restricted use" is furniture that you gave only to be used in the reading room of an organization's library.

## Section B

### Part I, Information on Donated Property

You must have a written appraisal from a qualified appraiser that supports the information in Part I. However, see the **Exception** below.

Use Part I to summarize your appraisal(s). Generally, you do not need to attach the appraisals but you should keep them for your records. But see **Art Valued at \$20,000 or More** below.

**Exception.** You do not need a written appraisal if the property is:

1. Nonpublicly traded stock of \$10,000 or less,
2. Securities for which market quotations are readily available (see Regulations section 1.170A-13(c)(7)(xi)),
3. Donated by a C corporation (other than a closely held corporation or personal service corporation), or
4. Inventory and other property donated by a closely held corporation or a personal service corporation that are "qualified contributions" for the care of the ill, the needy, or infants, within the meaning of section 170(e)(3)(A).

Although a written appraisal is not required for the types of property listed above, you must provide certain information in Part I of Section B (see Regulations section 1.170A-13(c)(4)(iv)) and have the donee organization complete Part IV.

**Art Valued at \$20,000 or More.**—If your total deduction for art is \$20,000 or more, you must attach a complete copy of the signed appraisal. For individual objects valued at \$20,000 or more, a photograph of a size and quality fully showing the object, preferably an 8 x 10 inch color photograph or a color transparency no smaller than 4 x 5 inches, must be provided upon request.

### Appraisal Requirements

The appraisal must be made not earlier than 60 days before the date you contribute the property. You must receive it before the due date (including extensions) of the return on which you first claim a deduction for the property. For a deduction first claimed on an amended return, the appraisal must be received before the date the amended return was filed.

A separate qualified appraisal and a separate Form 8283 are required for each item of property except for an item which is part of a group of similar items. Only one appraisal is required for a group of similar items contributed in the same tax year, if it includes all the required information for each item.

The appraiser may select any items whose aggregate value is appraised at \$100 or less for which a group description rather than a specific description of each item will suffice.

If you gave similar items to more than one donee for which you claimed a total deduction of more than \$5,000, you must attach a separate form for each donee.

**Example.** You claimed a deduction of \$2,000 for books given to College A, \$2,500 for books given to College B, and \$900 for books given to a public library. You must attach a separate Form 8283 for each donee.

See Regulations section 1.170A-13(c)(3)(i)-(ii) for the definition of a "qualified appraisal" and information to be included in the appraisal.

### Line 5

**Note:** You must complete at least column (a) of line 5 (also column (b) if applicable) before submitting Form 8283 to the donee. You may then complete the remaining columns.

**Column (a).**—Describe the property in enough detail so that a person not familiar with it could tell that the property appraised is the property that was contributed.

**Column (c).**—Include the FMV from the appraisal. If one was not required, include the FMV you determine to be correct.

**Columns (d)-(f).**—If you have reasonable cause for not providing the information asked for in any of these columns, attach an explanation so that your deduction won't be automatically disallowed.

**Column (g).**—A bargain sale is a transfer of property that is in part a sale or exchange and in part a contribution. Enter the amount received ("consideration") for bargain sales.

**Column (h).**—Complete column (h) only if you were not required to get an appraisal, as explained earlier.

**Column (i).**—Complete column (i) only if you donated securities for which market quotations are considered to be readily available because the issue satisfies the five requirements described in Regulations section 1.170A-13(c)(7)(xi)(B).

### Part II, Taxpayer (Donor) Statement

If you (the donor) complete Part II, the donee is relieved of filing Form 8282 for items valued at \$500 or less. See the **Note** in the Part IV instructions on page 4 for more information on the filing of Form 8282 by the donee.

Complete Part II only for items included in Part I that have an appraised value of \$500 or less per item. Be sure to clearly identify these items in Part II. This is necessary because the donee may not know the value of the donated property, since you are not required to show it in Part I on the donee's copy of Form 8283.

The amount of information you give in Part II depends on the description of the donated property you enter in Part I. If you separately show a single item as "Property A" in Part I and that item is appraised at \$500 or less, then the entry "Property A" in Part II is enough. However, if "Property A" consists of several items and the total appraised value is over \$500, list in Part II any item(s) you gave that is valued at \$500 or less.

All shares of nonpublicly traded stock or items in a set are considered one item. For example, a book collection by the same author, components of a stereo system, or six place settings of a pattern of silverware are one item for the \$500 test.

**Example.** You donated books valued at \$6,000. The appraisal states that one of the items, a collection of books by author "X," is worth \$400. On the Form 8283 that you are required to give the donee, you decide not to show the appraised value of all of the books. But you also don't want the donee to have to file Form 8282 if the collection of books is sold. If your description of Property A on line 5 includes all the books, then specify in Part II the "collection of books by X included in Property A." But if your Property A description is "collection of books by X," the only required entry in Part II is "Property A."

In the above example you may have chosen instead to give a completed copy of Form 8283 to the donee. The donee would then be aware of the value. If you include all the books as Property A on line 5, and thus enter \$6,000 in column (c), you may still want to describe the specific collection in Part II so the donee can sell it without filing Form 8282.

**Part III, Certification of Appraiser**

If you had to get an appraisal, the appraiser **MUST** complete Part III to be considered qualified. See Regulations section 1.170A-13(c)(5) for a definition of a qualified appraiser.

Persons who cannot be qualified appraisers are listed in the Certification of Appraiser (Part III) of Form 8283. Usually, a party to the transaction will not qualify to sign the certification. But a person who sold, exchanged, or gave the property to the donor may sign the certification if the property is donated within 2 months of the date the donor acquired it and the property's appraised value does not exceed its acquisition price.

An appraiser may not be considered qualified if the donor had knowledge of facts that would cause a reasonable person to expect the appraiser to falsely overstate the value of the property. An example of this is an agreement between you and the appraiser about the property value when you know that the agreed amount exceeds the actual FMV.

Usually, appraisal fees cannot be based on a percentage of the appraised value unless the fees were paid to

certain not-for-profit associations. See Regulations section 1.170A-13(c)(6)(ii).

**Part IV, Donee Acknowledgment**

Part IV must be completed by the donee organization that received the property described in Part I of Section B. Before submitting page 2 of Form 8283 to the donee for acknowledgment, complete at least your name, identifying number, and description of the donated property (line 5, column (a)). If tangible property is donated, also describe its physical condition (line 5, column (b)) at the time of the gift. Complete the Taxpayer (Donor) Statement in Part II, if applicable, before submitting the form to the donee. See the instructions for Part II.

The person acknowledging the gift must be an official authorized to sign the tax returns of the organization, or a person specifically designated to sign Form 8283. After completing Part IV, the organization must return Form 8283 to you, the donor. A copy of Section B of this form must be provided to the donee organization. You may then complete any remaining information required in Part I. Also, Part III may be completed at this time by the qualified appraiser.

In rare and unusual circumstances, it may be impossible to get the donee's signature on the appraisal summary. The deduction will not be disallowed for that reason if you attach a detailed explanation why it was impossible.

**Note:** *If the donee (or a successor donee) organization disposes of the property within 2 years after the date the original donee received it, the organization must file Form 8282, Donee Information Return, with the IRS and send a copy to the donor. An exception applies to items having a value of \$500 or less if the donor identified the items and signed the statement in Part II (Section B) of Form 8283. See the instructions for Part II.*

**Failure To File Form 8283, Section B**

If you donated property that is required to be reported in Section B of Form 8283 and you fail to attach the form to your return, the deduction will be disallowed unless your failure was due to a good faith omission. If the IRS asks you to submit the form, you have 90 days to send a completed Section B of Form 8283 before your deduction is disallowed.