

## Summary of Changes Table

**Note:** The following summary of changes to the draft Alert are the result of the 61 comments from 58 external stakeholders who submitted comments to NIOSH Docket NIOSH-141. For the sake of brevity, similar comments are consolidated into one general comment with each commenter noted. The complete list of 58 commenters is included at the end of this document. The complete list of 61 comments can be found at <http://www.cdc.gov/niosh/docket/nioshdocket0141.html>

<p>Comments stating that it is acceptable for fire fighters to enter structures to fight small fires were received from:</p> <p>Ken LaSala / Chief Larry Grorud; International Association of Fire Chiefs (IAFC)</p> <p>Michael Bossert; Lexington Fire Department</p> <p>Jay Carnegie; Seattle Fire Department – retired</p>	<p>The original draft version stated... “Unoccupied structures, whether under construction, under renovation, vacant or condemned must be considered expendable in order to decrease this risk to fire fighters.” This was interpreted to mean that fire fighters should never enter an unoccupied structure. A number of reviewers commented that the mission of the U.S. Fire Service is to protect lives and property. A number of reviewers provided examples where entering an unoccupied structure to extinguish a small room and contents fire was a safer strategy to protect fire fighters than to use defensive operations (stay outside without entering the</p>	<p>Comments received from a number of external stakeholders made it clear that the U.S. Fire Service would not support the NIOSH recommendation that fire fighters should not enter unoccupied fire structures.</p> <p>The text within the “Warning” section was revised and edited to read... “Established risk management principles suggest that more caution should be exercised in abandoned, vacant and unoccupied structures and in situations where there is no clear evidence indicating that people are trapped inside a structure and can be saved. When the IC has determined that there are no lives to save, and the property can no longer be preserved through offensive operations, defensive tactics should be initiated in order to decrease the risk to fire fighters.”</p> <p>The document was revised throughout to better stress that on-scene incident commanders need to decide when to send fire fighters inside and when to switch to a defensive mode based upon on-scene size-up and risk management principles. The NIOSH ALERT is not intended to replace on-scene decision making but is intended as a tool to reinforce decision making.</p>	<p>Yes</p>
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<p>Christopher Kassel; Firefighter, Washougal Fire Department</p> <p>Lt. William G. Ross; Columbus Fire Department</p> <p>James H. Bonner; Philadelphia Fire Department</p> <p>Private person; Submitted 02/05/2009</p> <p>Jeff Young; Upper Arlington Fire Division</p> <p>Robert O'Melia; C-O-MM Fire and Rescue</p> <p>Mike Butler South Montgomery County Fire Dept.</p>	<p>structure and increasing the risk that the fire would spread to surrounding structures, resulting in a large conflagration.</p> <p>“After reading this document,...I have concluded that this possible standard will take away the ability of the fire service to perform its primary functions.... The fire service will no longer be able to perform primary searches to truly deem that the structure is unoccupied, nor will we be able to extinguish what might have been a small room and contents fire...”</p>	
<p>Comments stating that the draft document should be revised to better follow NFPA</p>	<p>“...Need to be consistent with NFPA 1500 – Risk a little to save a little, Risk a lot to save a lot...”</p>	<p>The document was substantially edited and revised to address these comments, most notably based upon comments submitted by the International Association of Fire Chiefs. Expanded references to NFPA 1500 as well as the <u>IAFC Rules of Engagement for Firefighter Survival</u></p>
		<p>Yes</p>

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<p>1500 were received from:</p> <p>Richard S. Malek, PE, CIH, CSP; Clifton Park, NY</p> <p>Ken LaSala / Chief Larry Grorud; International Association of Fire Chiefs (IAFC)</p> <p>Jay Carnegie; Seattle Fire Department – retired</p> <p>Ed Hartin, MS, EFO, MIFire, CFO; Gresham Fire &amp; Emergency Services</p> <p>Adam Moore; Ovid, MI</p> <p>Albert Mignone; Ex-Chief Purchase Fire Department, Fire Inspector, Village of Scarsdale</p>	<p>The IAFC would recommend editorial changes to the NIOSH Alert to prevent confusion. The Advisory seems to suggest that the only justification for conducting offensive firefighting operations is to rescue people inside a burning building. This policy would preclude conducting interior offensive firefighting operations in any “unoccupied” building, which we believe is inconsistent with NFPA 1500 and other references cited in our alert. Instead, the IAFC believes that the primary message of the alert should be to encourage fire fighters (especially officers and incident commanders) to apply accepted risk management principles to prevent needlessly risking the lives of fire fighters.</p>	<p>were added to the draft document.</p>
<p>Comments stating that</p>	<p>Quite frankly with rare</p>	<p>As noted above, the scope of the Alert was changed from never entering</p>
		<p>Yes</p>

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<p>fire fighters should not enter unoccupied structures were submitted by:          Jerry Boyd;          Fire Chief (retired)</p> <p>Doug Blangsted;          CALFire</p> <p>Craig Cottrell;          Syracuse Fire Department</p> <p>Todd Holzwarth;          East Grand Fire District #4</p> <p>Kevin Connell;          Columbus Division of Fire</p>	<p>exception I do not support any interior attacks on unoccupied structures... It is time for the fire service to adopt the same approach... (retired fire chief)</p> <p>I would like to state that I am totally in support of the concept of limiting firefighter risk in non occupied structures...</p> <p>Other commenters added caveats such as going inside abandoned structures to make sure homeless persons are not using the structure.</p>	<p>an unoccupied structure to using established and accepted fire service risk management principles to reduce the risk to fire fighters. The comments submitted to the public docket NIOSH-141 made it clear that the U.S. fire service would not accept a NIOSH policy that would prohibit fire fighters from entering an unoccupied structure. NFPA 1500, the IAFC Rules of Engagement for Firefighter Survival and other established fire service policies allow fire fighters to enter unoccupied structures provided the appropriate safety precautions are in effect.</p>
<p>A number of comments were received that rejected the draft Alert outright without offering any comments to improve the content. Comments of this nature were received from:</p>	<p>“My firm conviction is that this document should be filed in the Circular File and NIOSH should stay out of the fire service...”</p> <p>“The recommendation from NIOSH to not enter a structure on fire when all occupants have exited is not an acceptable practice by the fire service...”</p>	<p>As noted above, the scope of the Alert was changed, based upon input from major fire service entities, from limiting interior offensive firefighting operations in unoccupied structures to adopting, following, and training of accepted fire service risk management principles to enhance and protect fire fighter safety and health at structure fires.</p>
		<p>No</p>

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<p>Mike Butler; South Montgomery Co. Fire Department</p> <p>Eugene J. Bifano; Warren FD (2 separate comments)</p> <p>David Whiting; Columbus Division of Fire</p> <p>Dave Hennosy; Columbus Division of Fire</p> <p>James R. Eblin, Jr.; Columbus Division of Fire</p> <p>Private person; Columbus Division of Fire</p> <p>Russell A. McGinnis; Columbus Division of Fire</p> <p>Russell Barton; Columbus Division of Fire</p> <p>Henry A. Campbell;</p>	<p>“... please rethink you(sic) statement and clarify your position in regard to an “unoccupied” structure.</p>	
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Retired Chief - Mount Vernon Fire Department		
A number of comments were received indicating the need to better define "unoccupied structures." Comments of this nature were received from:  William Carey: Asst. Content Editor / Contributing Editor - Firehouse.com / Officer.com / EMS Responder.com  Mark Bailey; Aurora Volunteer Fire Department  Rick Bennett; Fire Chief - Clovis Fire Department  Hans Almqvist; CREATEC Consulting LLC	The IAFIC, Phoenix Fire Department and others suggested specific definitions for an "unoccupied" structure.	The IAFIC definitions for abandoned (or derelict, vacant, unoccupied, and evacuated) were added to the draft document in a new section titled "Fire Fighting Principles and Building Occupancy."
		Yes

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<p>R.A. Lowery, CFEI Investigator NAFI; Chillicothe Fire Department</p> <p>Michael Bossert; Lexington Fire Department</p> <p>Vince Pellegrin; New Brighton Department of Public Safety</p> <p>Adam Moore; Ovid, MI</p> <p>John J. Salka, Jr.; Battalion Chief FDNY</p> <p>Christopher Kassel; Firefighter, Washougal Fire Department</p> <p>Lt. William G. Ross; Columbus Fire Department</p> <p>Dist. Chief Paul Irving; HRM Fire and</p>			
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<p>Emergency</p> <p>John A. Reardon; Fire Instructor / Consultant</p> <p>Todd Holzwarth; East Grand Fire District #4</p> <p>Johnnie Wood; Columbus Division of Fire</p> <p>James H. Bonner; Philadelphia Fire Department</p> <p>Chad Nicodemus; Columbus Division of Fire</p> <p>Chris Moore; Upper Arlington Fire Division</p> <p>Dave Roggenkamp; Columbus Division of Fire</p> <p>Russell Barton; Columbus Division of Fire</p>			
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<p>J. A. Luna; Rochester, NY</p> <p>Henry A. Campbell; Retired Chief - Mount Vernon Fire Department</p>			
<p>A number of comments were received stressing the need for better training of both fire fighters and fire officers in regard to size-up, fireground tactics, and risk management practices and procedures. Comments of this nature were received from:</p> <p>Mark Bailey; Aurora Volunteer Fire Department</p> <p>Kevin P. Partridge; Massachusetts Department of Fire Services</p>	<p>“... I feel we need to spend more time training on risk analysis and risk vs benefit for command personal(sic) in place of putting a blanket law in place.”</p> <p>“... The way to minimize fire fighter injury and death within interior operations is a basic three-prong approach that has been lost within the fire service: 1) appropriate and realistic training in fire ground activities 2) appropriate and job-specific physical fitness standards and training, and 3) development and enforcement of sound building construction practices.”</p> <p>“...further agrees with your recommendations, particularly the need for: SOPs/SOGs, Risk vs Benefit Training for ICs,</p>	<p>Reference to specific training for incident commanders and fire fighters was added throughout the revised draft Alert.</p>	<p>Yes</p>

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<p>John Zimmerman; Westhampton Fire Department</p> <p>Joseph J. Fannon, Jr.; Safety &amp; Health Specialist, - Veterans Administration</p> <p>Vince Pellegrin; New Brighton Department of Public Safety</p>	<p>Safety Officers and fire fighters.... Every fire fighter be required for fireground duties the hazards and considerations of fighting fires in unoccupied structures.”</p>	
<p>Christopher Kassel; Firefighter, Washougal Fire Department</p> <p>Chad Williamson; Orlando Fire Department</p>		
<p>John A. Reardon; Fire Instructor / Consultant</p> <p>Brooks Morrison; Harrison Township Fire</p> <p>James H. Bonner; Philadelphia Fire</p>		

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<p>Department</p> <p>Chad Nicodemus; Columbus Division of Fire</p> <p>Jeff Young; Upper Arlington Fire Division</p>		
<p>Comments concerning the need to add reference to and recommendations for jurisdictions having authority to identify and mark abandoned and vacant structures were received from:</p> <p>Kevin Partridge Massachusetts Department of Fire Services</p> <p>Ken LaSala / Chief Larry Grorud; International Association of Fire Chiefs (IAFC)</p> <p>Ed Hartin, MS, EFO,</p>	<p>“ ... We recommend the addition of a reference to a standard system of marking dangerous, vacant, abandoned, and derelict buildings, based on a pre-fire assessment of their structural conditions and other risk factors...”</p> <p>“ You should consider including the recommendations from NIOSH-FACE Report 99F-47: ...Recommendation # 10: Fire Departments should identify dangerous vacant buildings by affixing warning placards to entrance doorways or other openings where fire fighters may enter...”</p>	<p>Reference to and recommendations for a vacant / abandoned building marking program were added within a new section entitled “Addressing Unsafe and Abandoned Structures.” An example of marking system adopted by FDNY has been added to the draft Alert to illustrate an effective marking system. Reference was also added to International Association of Arson Investigators / US Fire Administration Abandoned Building Project.</p>
		<p>Yes</p>

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<p>MIFireE, CFO; Gresham Fire &amp; Emergency Services</p> <p>Jeff Young; Upper Arlington Fire Division</p> <p>James LaMacchia; Battalion Chief / Training Officer, Buffalo Fire Department</p> <p>John Walsh; No address or affiliation, 12/23/2008</p>		
<p>Comments were received stressing that the initial fireground size-up and risk assessment needs to be made by the Incident Commander and not by a delegated person such as the Incident Safety Officer. Comments of this nature were received from:</p>	<p>“Situational awareness is a primary responsibility of everyone on the fireground.... This ongoing process cannot be delegated by the Incident Commander (IC) to another person. ... If the Incident Commander has not done a size-up, they are in no position to be in charge of firefighting operations...”</p> <p>“Throughout the document, the</p>	<p>The original draft Alert stated that the initial size-up must be done by the incident commander and/or the incident safety officer. This was changed to make it clear that the Incident Commander is the only individual responsible for the initial size-up and risk assessment.</p> <p>Yes</p>

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<p>Jay Carnegie; Seattle Fire Department – retired (2 separate comments)</p> <p>Deputy Chief Francis J. Spinelli; Hartsdale Fire District</p> <p>Patrick Mahoney; Lieutenant - Training &amp; Safety Office, Baytown Fire Department</p>	<p>authors refer to responsibilities as belonging to the incident commander or the incident safety officer. This is incorrect, as size-up and strategic decision making are always the sole province of the Incident Commander....”</p>	
<p>Comments stating that the case studies needed to be edited and revised to better support the scope of the draft ALERT were received from:</p> <p>William Carey: Asst. Content Editor / Contributing Editor - Firehouse.com / Officer.com / EMS Responder.com</p> <p>Mark Bailey</p>	<p>“Again, as in Case 3 and Case 2, there are other factors to consider rather than the state of occupancy. Having a generic “everyone is out” approach to fireground attack and primary search will not have the impact desired. Some religious institutions have adjoining residential occupancies.... Some operate as a shelter for homeless people. Others operate educational centers....”</p>	<p>The 4 case reports were edited and revised so that they better stress and highlight how ineffective size-up and failure to recognize or evaluate risk-management principles contributed to the fatalities.</p> <p>Yes</p>

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<p>Aurora Volunteer Fire Department</p> <p>Michael Bossert Lexington Fire Dept</p> <p>Lt. Patrick Mahoney Baytown Fire Dept</p>			
<p>The Phoenix Fire Department provided a comprehensive review of the entire draft ALERT, based upon their own SOPs and past experiences with FF LODDs and injuries.</p>	<p>In addition to the comments noted above, The Phoenix FD suggested that a bullet should be added to the Tear Out Sheet and the Recommendations section noting that safety is a shared responsibility (shared by fire fighters and fire department management).</p>	<p>The following bullet was added to the Tear-out Sheet and the Recommendations section: "Recognize that maintaining your safety is a shared responsibility. Comply with your department's standard operating procedures (SOPs) / standard operating guidelines (SOGs) and safety rules."</p>	<p>Yes</p>
<p>Richard S. Malek, PE, CIH, CSP; Clifton Park, NY</p>	<p>The fire service would likely embrace recommendations which reduce the risk of fire fighter fatalities in true high-hazard/high-risk fire scenarios while preserving the significant benefits associated with an appropriate interior attack in both occupied and unoccupied structures in lower-hazard/low-risk fire scenarios.</p>	<p>As noted above, the scope of the draft ALERT was changed to better highlight risk management principles. As stated above, the comments received by NIOSH made it clear that the fire service would not support a recommendation that fire fighters avoid entering unoccupied structures. The draft ALERT has been revised to address these comments.</p>	<p>Yes</p>
<p>Comments on the need</p>	<p>"...Fire departments also need to</p>	<p>The following bullet was added to the Recommendations section ...</p>	<p>Yes</p>

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<p>to highlight accountability systems were received from:</p> <p>Joseph J. Fannon, Jr. Veterans Administration / Safety and Health Specialist</p> <p>John Walsh (No organization stated)</p>	<p>provide a quick easy accountability system... Regular training with a PAR system will ensure that all personnel are accounted for ...”</p> <p>“NIOSH should consider including this NIOSH recommendation for the use of a firefighter accountability system in the new ‘Alert.’”</p>	<p>“Conduct personnel accountability reports (PARs) on a regular basis”</p>
<p>Comments stressing that the draft ALERT focuses on fire suppression operations and does not address overhaul and recovery operations were received from:</p> <p>James LaMacchia Buffalo Fire Depart</p> <p>J. A. Luna Rochester, NY</p> <p>John McDermott Morris County Prosecutor’s Office</p>	<p>“A problem seen in unoccupied dwelling fires is Departments performing defensive operations at the height of the fire and then placing fire companies at risk after overhaul operations begin.”</p> <p>“... To this point, I think NIOSH should include warnings regarding overhaul and salvage operations...”</p>	<p>Wording was added to the Tear-out Sheet and the Recommendations section in a number of places to include overhaul and salvage / recovery operations among the focus areas for size-up and risk management evaluations. For example.... “Additional size-ups and risk analysis should be performed whenever changing strategies, including moving to interior overhaul operations”</p> <p>Yes</p>

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<p><b>NOTE: After the draft Alert was edited and revised to address the 61 public comments, the final draft was submitted for a final external review to the International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF). Both provided comments on the final draft.</b></p>			
<p><b>Gordon Routely – International Association of Fire Chiefs (IAFC)</b></p> <p><b>and</b></p> <p><b>Richard Duffy – International Association of Fire Fighters (IAFF)</b></p> <p><b>(both provided “track change” and highlighted comments on an electronic version of the draft document)</b></p>	<p>Suggested edits to the 3<sup>rd</sup> bullet under “Fire departments ...” on the Tear-Out Sheet (page 1). Mr. Routely suggested the bullet should read.... “Develop and implement fire department policies and SOPs/SOGs for emergency response and fire-fighting activities in and around abandoned, vacant or unoccupied structures. A thorough size-up and risk analysis should be performed before conducting operations in any situation where the risks to fire fighter safety are excessive. Offensive (interior attack) operations should only be considered when sufficient resources are on-scene to conduct offensive operations with a reasonable degree of safety, including the ability to perform essential support functions (i.e. <i>water supply</i>, ventilation, lighting, utility control, <i>accountability</i>, <i>rapid intervention teams</i>). Additional size-ups and risk analysis should be performed before changing strategies, including any decision to conduct interior overhaul operations following a defensive fire attack.”</p>	<p>The bullet was revised to include comments from both Gordon Routely (representing the International Association of Fire Chiefs (IAFC)) and Rich Duffy (representing the International Association of Fire Fighters (IAFF)).</p> <p>Mr. Routely’s comments were modified slightly to address both his comments as well as those from Mr. Duffy. The bullet now reads... “Develop and implement fire department policies and SOPs/SOGs for emergency response and fire-fighting activities in and around abandoned, vacant or unoccupied structures. A thorough size-up and risk analysis should be performed before conducting operations in any burning structure. Fire fighting operations should be limited to defensive (exterior) strategy if the structure is judged to be unsafe and in any situation where the risks to fire fighter safety are excessive. Offensive (interior attack) operations should only be considered when sufficient resources are on-scene to conduct offensive operations with a reasonable degree of safety, including the ability to perform essential support functions (i.e. <i>water supply</i>, ventilation, lighting, utility control, <i>accountability</i>, <i>rapid intervention teams</i>). Additional size-ups and risk analysis should be performed before changing strategies, including any decision to conduct interior overhaul operations following a defensive fire attack.”</p>	<p>Yes</p>

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	<p>sufficient resources are on-scene to conduct offensive operations with a reasonable degree of safety, including the ability to perform essential support functions (i.e. ventilation, lighting, utility control). Additional size-ups and risk analysis should be performed before changing strategies including any decision to conduct interior overhaul operations following a defensive fire attack.”</p> <p>Mr. Duffy suggested the bullet should read ... “Develop and implement fire department policies and SOPs/SOGs for emergency response and fire-fighting activities in and around abandoned, vacant or unoccupied structures. No offensive interior operations should be made in any structure, including abandoned, vacant or unoccupied structures without a thorough size-up and adequate staffing, resources and support capability (i.e. water, ventilation, lighting, utility control, accountability, rapid intervention team). A defensive strategy</p>	
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	<p>should be employed in unsafe structures when on-scene staffing, resources and support capability are insufficient for a safe offensive response.....”</p>	
<p><b>Gordon Routely – IAFC</b> <b>and</b> <b>Richard Duffy - IAFF</b></p>	<p>Mr. Routely suggested editing the 6<sup>th</sup> bullet under “Fire departments ...” on the Tear-Out Sheet (page 2) to read... “Enter preplan information into the dispatch computer so that when a fire is reported at a preplanned location, the critical information is provided to all responding units.”</p> <p>Mr. Duffy suggested editing the same bullet to read... “The fire department’s dispatch operation must be provided and maintain up-to-date preplan information so that when a fire is reported at preplanned locations, the dispatcher can provide responding crews with critical information.”</p>	<p>The bullet was revised using the suggestions from Mr. Routely. His comments address the concerns of both Mr. Duffy and Mr. Routely. The bullet was revised to now read... “Enter preplan information into the dispatch computer so that when a fire is reported at a preplanned location, the critical information is provided to all responding units.”</p>
<p><b>Gordon Routely – IAFC</b> <b>and</b></p>	<p>Both suggested edits to the 8<sup>th</sup> bullet under “Fire Departments should ...”</p>	<p>The bullet was edited and now reads... “Train fire fighters and officers to recognize the marking system and incorporate the information into their size-up considerations. Additionally, local authorities should ensure programs are in place that provide for the demolition and removal of</p>

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<p><b>Richard Duffy - IAFF</b></p>	<p>Mr. Routely's comment was to capitalize the first word ... "Train".</p> <p>Mr. Duffy's comment was to delete the words ... "having jurisdiction" from the second sentence.</p>	<p>structures deemed unsafe by code enforcement."</p>	
<p><b>Gordon Routely - IAFC</b> <b>and</b> <b>Richard Duffy - IAFF</b></p>	<p>Mr. Routely suggested deleting the 9<sup>th</sup> bullet concerning educating the public on having a designated meeting place in the event of an emergency stating the bullet is out of context with the rest of the document.</p> <p>Mr. Duffy suggested moving this same bullet so it is the last bullet under "Fire Departments should...."</p>	<p>This bullet was originally inserted to address comments to the Public Docket. It was decided to move the bullet and retain the original wording since it represents valuable public safety information that is useful and applicable to assessing if a burning structure is occupied, an important component of assessing risk management.</p>	<p>Yes</p>
<p><b>Gordon Routely - IAFC</b> <b>and</b> <b>Richard Duffy - IAFF</b></p>	<p>Both suggested additional text be added to the wording of the 10<sup>th</sup> bullet under "Fire departments ..." on the Tear-Out Sheet (page 2).</p> <p>Mr. Routely suggested adding an additional sentence to read... "A 360 degree size-up should be performed as quickly as possible."</p>	<p>The bullet was reworded to read ... "Make sure that the incident commander conducts an initial size-up of critical fireground factors before beginning fire-fighting efforts and continuously reviews and re-evaluates these factors during all fireground operations. A 360 degree size-up should be conducted in all abandoned, vacant, or unoccupied structures."</p>	<p>Yes</p>

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	<p>Mr. Duffy suggested editing the last sentence to read... "A 360 degree size-up must be conducted in all abandoned, vacant, or unoccupied structures."</p>	
<p><b>Gordon Routely – IAFC</b> <b>and</b> <b>Richard Duffy – IAFF</b></p>	<p>Both suggested edits to the last bullet on page 2 of the Tear Out Sheet.</p> <p>Mr. Routely suggested rewording the bullet to read... "Use effective and universal evacuation signals when command personnel determine that all fire fighters should be evacuated from a burning building."</p> <p>Mr. Duffy suggested wording changes to highlight the need for an effective evacuation signal during the initiation of defensive firefighting operations as well as at other times throughout an incident.</p>	<p>The bullet was reworded to read... "Use effective and universal evacuation signals when command personnel determine that all fire fighters should be evacuated from a burning building, as well as during the initiation of defensive operations and during overhaul and salvage operations."</p>
<p><b>Gordon Routely – IAFC</b> <b>and</b></p>	<p>Both Mr. Duffy and Mr. Routely both suggested editorial changes to the first paragraph on the "Warning" page of the Alert.</p>	<p>The paragraph was reworded to read... "The National Institute for Occupational Safety and Health (NIOSH) requests assistance in preventing deaths and injuries of U.S. fire fighters working in or around burning structures. The mission of the U.S. fire service is to save lives</p>

Summary of Changes based upon comments submitted to NIOSH Docket NIOSH-141, draft NIOSH Alert: *Preventing Deaths and Injuries of Fire Fighters When Fighting Fires in Unoccupied Structures*, and subsequent stakeholder reviews by representatives of the International Association of Fire Chiefs (IAFC) and International Association of Fire Fighters (IAFF) of the revisions based on public comments.

<p><b>Richard Duffy – IAFF</b></p>	<p>Mr. Routely suggested revisions to stress the use of Risk Management.</p> <p>Mr. Duffy suggested revisions to stress that the Incident Commander must determine when operations should switch from offensive to defensive tactics. Mr. Duffy also commented that just because a structure is found to be “unoccupied” does not mean that the structure fire cannot safely be contained with offensive interior tactics. Mr. Duffy stressed that fire fighters jobs are to save lives <b>AND</b> property.</p>	<p>and property. While it is recognized that fire fighting is an inherently hazardous occupation, established fire service risk management principles are based on the philosophy that greater risks will be assumed when there are lives to be saved, and the level of acceptable risk to fire fighters is much lower when only property is at stake. Interior (inside a structure) offensive fire-fighting operations can increase the risk of traumatic injury and death to fire fighters from structural collapse, burns, and asphyxiation. Established risk management principles suggest that more caution should be exercised in abandoned, vacant and unoccupied structures and in situations where there is no clear evidence indicating that people are trapped inside a structure and can be saved. When the IC has determined that there are no lives to save, and the property can no longer be preserved through offensive operations, defensive tactics should be initiated in order to decrease the risk to fire fighters.”</p>
<p><b>Gordon Routely – IAFC</b> <b>and</b> <b>Richard Duffy – IAFF</b></p>	<p>Both Mr. Duffy and Mr. Routely provided a number of minor editorial comments on the text of this draft Alert. These comments are too numerous to list each one separately.</p>	<p>Each comment was considered and where appropriate, the suggested change was made or the suggestion prompted the authors to make an alternate edit to the draft text.</p> <p>Changes made to the bullets on the Tear-out Sheet were also made to the corresponding bullets in the “Recommendations” section.</p>
<p><b>Gordon Routely – IAFC</b></p>	<p>Mr. Routely suggested deleting the word “Develop” from the beginning of the 7<sup>th</sup> bullet under “Fire Departments should...” on the tear out sheet.</p>	<p>This bullet deals with marking abandoned and vacant buildings that may pose a threat to fire fighters. A number of municipalities and local jurisdictions have developed and implemented marking systems. Most fire departments would not have to “develop” their own system, rather, they could easily adopt existing systems. The word “Develop” was dropped.</p>

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<p><b>Gordon Routely – IAFC</b></p>	<p>Mr. Routely suggested rewording the first sentence of the 1<sup>st</sup> bullet under “Incident Commanders (IC) and Incident Safety Officers (ISO)...” to read... “The IC should conduct an initial size-up of each incident weighing critical fireground factors such as occupancy status; occupant survivability and rescue potential; vacant building markings or indicators; size, construction and use of the building; age and condition of the building; and the location, size, and extent of the fire in the building) against the department’s risk management profile to determine the initial incident strategy (offensive or defensive). The IC should develop an incident action plan before beginning firefighting efforts, and continually review and reevaluate the factors and the risk management plan throughout the operation.”</p>	<p>Mr. Routely’s suggested edits were considered and modified slightly to condense wording. The revised bullet now reads... “The IC should conduct an initial size-up of each incident weighing critical fireground factors (such as occupancy status; occupant survivability and rescue potential; vacant building markings or indicators; size, construction and use of the building; age and condition of the building; and the location, size, and extent of the fire in the building) against the department’s risk management profile to determine the initial incident strategy (offensive or defensive). The IC should develop an incident action plan before beginning firefighting efforts, and continually review and reevaluate the factors and the risk management plan throughout the operation.”</p>
<p><b>Gordon Routely – IAFC</b></p>	<p>Mr. Routely suggested rewording the first sentence of the 2<sup>nd</sup> bullet under “Incident Commanders (IC) and Incident Safety Officers (ISO)...” to include reference to risk management criteria.</p>	<p>The sentence was reworded to read... “The IC should use appropriate risk management criteria to decide whether an offensive or defensive strategy should be employed to attack a fire.”</p>
<p><b>Gordon Routely – IAFC</b></p>	<p>Mr. Routely suggested inserting the words... “where there were indications that” to the 1<sup>st</sup> sentence of the 2<sup>nd</sup> paragraph on the “Warning” page.</p>	<p>The suggested words were added. The sentence was revised and now reads... “This Alert describes four incidents that resulted in the deaths of five fire fighters and injuries to ten others during operations in and around structures with considerable fire involvement <i>where there were indications that the buildings were unoccupied.</i>”</p>

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<b>Gordon Routely – IAFC</b>	Mr. Routely suggested edits to the text of both footnotes to the text of the “Background” section to help clarify the differences between the NFPA definition of “vacant” and the NIOSH definition of “unoccupied”.	Mr. Routely’s comments were considered and the footnotes were revised. The footnotes now read... “*The NFPA report <i>Vacant Building Fires</i> utilized data collected by the U.S. Fire Administration National Fire Incident Reporting System (NFIRS). NFIRS defines a vacant building as any building that is unoccupied and without a tenant. NFIRS does not distinguish between abandoned and vacant buildings. For additional information see: <a href="http://www.usfa.dhs.gov/fireservice/nfirs/about.shtm">http://www.usfa.dhs.gov/fireservice/nfirs/about.shtm</a> .  *For the purpose of this document, unoccupied is defined as any structure in which nobody was present at the time of the incident, including structures that were abandoned and/or vacant, structures in which residents were not present, and businesses that were closed.”	Yes
<b>Gordon Routely – IAFC</b>	Mr. Routely suggested inserting the words ... “painted reflective yellow so that it glows in the dark” to the 8 <sup>th</sup> sentence of the 1 <sup>st</sup> paragraph in the section “Addressing Unsafe and Abandoned Structures.” This sentence describes the warning placard to be displayed outside abandoned and vacant buildings.	The sentence was edited with slightly modified text added. The sentence now reads ... “A warning placard may be a 12-inch-square piece of metal <i>painted reflective yellow so that it reflects light in the dark</i> and indicates to fire fighters that hazards exist inside the building.”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested inserting the words... “and type” to the 3 <sup>rd</sup> bullet under “Incident Commanders (IC) and Incident Safety Officers (ISO)...” on page 2 of the Tear-out Sheet.	The bullet text was edited and now reads... “The IC should consider the number of fire fighters, the amount, <i>and type</i> of apparatus and equipment available and the stage of the fire when determining the type of fire attack.”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy objected to the use of the word “aggressive” in conjunction with offensive fire	The word “aggressive” was deleted throughout the document.	Yes

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	fighting operations, stating that whenever he hears the term “aggressive” he immediately looks for unsafe operations.	
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested adding the word “typically” to the definition of “Abandoned” under the “Fire Fighting Principles and Building Occupancy” section.	The definition of “Abandoned” was revised to read... “Abandoned (or derelict) refers to a structure that is not being used for any purpose and is not being maintained or preserved for some future use or occupancy. In many cases the building could be classified as a public nuisance awaiting demolition. A building in this condition <i>typically</i> has no value or negligible value.
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested changing the word “does” to “may” in the last sentence of the definition of “Vacant” in the “Fire Fighting Principles and Building Occupancy” section.	The last sentence of the definition of “Vacant” was edited to read... “A vacant structure has inherent property value, even though it <i>may</i> not contain valuable contents or human occupants.”
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested edits to the 2 <sup>nd</sup> paragraph of the section “Fire Fighting Principles and Building Occupancy” to include examples of an offensive strategy and why it is justified to clarify the point of the paragraph which is to say that putting out a small fire is often safer for fire fighters than allowing a fire to escalate into a major event and possibly spread to other structures.	The paragraph was edited and now read... “...Accepted fire service risk management principles recognize that an offensive strategy (such as a fast attack on a room and contents fire) is often justified (for example to stop the spread of the fire in a structure or to protect adjacent structures) and may be employed after conducting a thorough risk management assessment in an attempt to save property where there are no human occupants to be saved [Grorud 2009].

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<b>Richard Duffy – IAFF</b>	Mr. Duffy commented that the section “Addressing Unsafe and Abandoned Structures” uses the term “vacant” throughout the section rather than the term “abandoned”. Mr. Duffy stated the need to be consistent with terminology.	The term “vacant” was replaced with “abandoned.” This section was originally drafted in reference to the FDNY Vacant Building Warning Placard.	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested several text additions and changes to the first paragraph under “Addressing Unsafe and Abandoned Structures”	Mr. Duffy’s suggestions were considered and the paragraph was revised to read... “ <i>Abandoned</i> buildings can and do pose numerous hazards to fire fighters’ health and safety. Hazards should be identified and warning placards affixed to entrance doorways or other openings to warn fire fighters of the potential dangers. <i>Such hazards</i> can be structural as the result of building deterioration or damage from previous fires. Guttled interiors also increase the amount of exposed flammable materials and contain open pathways for rapid flame spread. Structural hazards can occur when building owners or salvage workers remove components of the building such as <i>supporting walls</i> , doors, railings, windows, electric wiring, utility pipes, etc. Abandoned materials such as wood, paper and flammable or hazardous substances as well as collapse hazards constitute additional dangers fire fighters may encounter. Collapse hazards can be chimney tops, parapet walls, slate and tile roof shingles, metal and wood fire escapes, <i>HVAC or other mechanical equipment, solar electrical collectors and cells</i> , advertising signs, and entrance canopies. A warning placard may be a 12-inch-square piece of metal painted reflective yellow so that it <i>reflects light</i> in the dark and indicates to fire fighters that hazards exist inside the building.”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested several text additions and changes to the second paragraph under	Mr. Duffy’s comments were considered and the paragraph was revised to read... “Fire departments should work with <i>federal, state, and local</i> authorities to develop and implement a strategy to identify, mark, secure	Yes

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	<p>“Addressing Unsafe and Abandoned Structures”</p>	<p>and where possible demolish unsafe structures within their jurisdictions. The IAAI / USFA Abandoned Building Project, conducted by the International Association of Arson Investigators and the US Fire Administration [IAAI / USFA 2006] is one example of a program that can be utilized to aid fire fighter safety and health by identifying, marking and removing unsafe structures. The Abandoned Building Project Toolbox can be found at the website <a href="http://www.interfire.org/features/AbandonedBuildingProjectToolBox.asp">http://www.interfire.org/features/AbandonedBuildingProjectToolBox.asp</a>. The toolbox contains the Abandoned Building Project report <i>Managing Vacant and Abandoned Properties in Your Community</i> and other reference materials. This report includes recommendations on how fire departments can work with <i>governmental</i> authorities to reduce the public safety hazard created by unsafe and abandoned buildings. A number of locations across the country have developed laws and regulations that address the public safety hazards created by vacant and abandoned buildings. <i>Examples are the Commonwealth of Massachusetts, Abandoned or Dangerous Building Regulations 780 CMR and 527 CMR [Commonwealth of Massachusetts 2008] and the City of Cincinnati Vacated Building Maintenance License [Cincinnati Municipal Code 1101-77].</i>”</p>
<p><b>Richard Duffy – IAFF</b></p>	<p>Mr. Duffy suggested adding the additional bullet “Adjacent exposures (structures)” to the bullet list of factors in the 1<sup>st</sup> paragraph under the “Determining Safer Tactics for Fire Fighting” section.</p>	<p>This bullet was added to the bullet list of factors to consider when making a risk evaluation. It is now the 7<sup>th</sup> factor in the list.</p> <p>Yes</p>
<p><b>Richard Duffy – IAFF</b></p>	<p>Mr. Duffy recommended the addition of the following</p>	<p>Mr. Duffy’s suggestion was considered and slightly modified text was added to the draft Alert. Mr. Duffy used the words “shall” and “must” in</p> <p>Yes</p>

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	<p>paragraph to the section “Determining Safer Tactics for Fire Fighting” – “Offensive operations shall not commence or be performed unless they can be safely performed by the personnel available at the scene and within the fire department’s established safety procedures and SOPs. Incident command must be established by the deployed supervisory chief officer outside of the hazard area for the overall coordination and direction of the interior operation. A safety officer must be present to assist the IC and to ensure that the health and safety system is established prior to the interior attack. Interior operations require the establishment of an uninterrupted water supply to provide an effective water flow for at least one attack and one backup line. For interior operations, adequate ventilation (either horizontal or vertical) is required to minimize the risk of thermal insult to interior forces as well as to improve interior tenability, survivability and visibility [Phoenix Fire Department 2009]. And for the safety of all personnel on the scene, interior operations should not commence or continue to be performed without personnel accountability in place or without the availability of an on-scene Rapid Intervention Team. The above tasks are key components of an offensive strategy in any building whether occupied or not.”</p>	<p>his comments. These were changed to “should” since NIOSH is not a regulatory agency. Minor typos were corrected. The new paragraph reads... “Offensive operations should not commence or be performed unless they can be safely performed by the personnel available at the scene and within the fire department’s established safety procedures and SOPs. Incident command should be established by the deployed supervisory chief officer outside of the hazard area for the overall coordination and direction of the interior operation. A safety officer should be present to assist the IC and to ensure that the health and safety system is established prior to the interior attack. Interior operations require the establishment of an uninterrupted water supply to provide an effective water flow for at least one attack line and one backup line. For interior operations, adequate ventilation (either horizontal or vertical) is required to minimize the risk of thermal insult to interior forces as well as to improve interior tenability, survivability and visibility [Phoenix Fire Department 2009]. And for the safety of all personnel on the scene, interior operations should not commence or continue to be performed without personnel accountability in place or without the availability of an on-scene Rapid Intervention Team. The above tasks are key components of an offensive strategy in any building whether occupied or not.”</p>
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	for the safety of all personnel on the scene, interior operations shall not commence or continued to be performed without personnel accountability in place or without the availability of an on-scene Rapid Intervention Team. The above tasks are key component of an offensive strategy in any building whether occupied or not.”		
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested a number of minor editorial changes to the “National Fire Protection Association (NFPA)” section and also suggested adding reference to NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. Mr. Duffy also suggested adding reference to NFPA 5000 Building Construction and Safety Code.	Reference was added to NFPA 1710, NFPA 5000 and also to NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. Minor editorial changes were made to this section where appropriate.	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested a number of editorial changes to the International Code Council (ICC) section including the	This section was reworded to address Mr. Duffy’s comments and now reads... “The ICC is a standard development organization that develops and publishes consensus building safety and fire prevention codes. The ICC was established in 1994 as a nonprofit organization dedicated to	Yes

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	<p>addition of reference to the International Building Code, the International Residential Code, and the International Fire Code.</p>	<p>developing a single set of comprehensive and coordinated model construction codes. The ICC was founded by the joint efforts of the Building Officials and Code Administrators (BOCA) International, the International Conference of Building Officials (ICBO), and the Southern Building Code Congress International (SBCCI). The ICC provides for one consistent set of building and construction requirements throughout the United States. The ICC maintains the International Building Code or IBC. The International Building Code addresses design and installation of building systems with requirements that focus on performance. The IBC is updated every 3 years. The following ICC standards address building construction:</p> <p><i>International Building Code</i> covers all buildings except detached one and two family dwellings and townhouses not more than 3 stories in height.</p> <p><i>International Residential Code</i> establishes minimum regulations for one- and two-family dwellings and townhouses up to three stories.</p> <p><i>International Fire Code</i> includes regulations governing the safeguarding of life and property from all types of fire and explosions hazards.”</p>	
<p><b>Richard Duffy – IAFF</b></p>	<p>Mr. Duffy suggested the sub-bullet under the 3<sup>rd</sup> bullet of the “Recommendations” section should be deleted. This bullet currently reads... When operating in an unoccupied building, NO RISK is worth your life of injury. Risk nothing for what is already lost; extend limited risk in a calculated way to protect savable property; and extend very calculated risk to</p>	<p>This bullet text, comes directly from NFPA 1500 and the IAFC Rules of Engagement for Structural Fire Fighting. This bullet summarizes the central theme of this ALERT – that fire fighters must constantly balance risk versus gain in all aspects of structural fire fighting. The authors feel this bullet should remain as written.</p>	<p>No</p>

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	protect savable lives [NFPA 2007; IAFC 2009].		
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested several revisions and additions to the 1 <sup>st</sup> paragraph in the “Recommendations” section.	Mr. Duffy’s comments were considered and the paragraph was edited to read... “NIOSH recommends that fire fighters, fire departments, incident commanders, and incident safety officers take the following actions to minimize the risk of fire fighter injury and death when performing firefighting operations in abandoned <i>or</i> vacant structures and structures that are known <i>or</i> suspected to be unoccupied <i>or</i> evacuated.”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested a number of edits to the 1 <sup>st</sup> sub-bullet under the 3 <sup>rd</sup> bullet following “Fire departments should do the following”	This sub-bullet was edited and revised and now reads... “No offensive interior attacks should be made in any structure without a thorough size-up and adequate support capability (i.e. water supply, ventilation, lighting, utility control, accountability, rapid intervention team). A defensive strategy should be employed in unsafe structures and at any structure fire when on-scene staffing, resources and support capability are insufficient for a safe offensive response [Phoenix 2009]. Additional size-ups and risk analysis should be performed whenever changing strategies including moving to interior overhaul operations.”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested a number of edits to the 6 <sup>th</sup> bullet under the heading “Fire Departments Should do the Following”.	The bullet was revised to read... “Maintain up-to-date preplan information and enter it into the dispatcher’s computer so that when a fire is reported at preplanned locations, the dispatcher can provide responding crews with critical information [Dunn 1992; NIOSH 1999].”	Yes
<b>Richard Duffy – IAFF</b>	Mr. Duffy suggested deleting the 2 <sup>nd</sup> sub-bullet under the 5 <sup>th</sup> bullet under “Incident Commanders and Incident Safety Officers should do the Following.”	This comment was considered but the sub-bullet text is commonly accepted fire service practice and is applicable in many structure fires. A note was added to clarify that in certain cases, establishing the collapse zone 1½ times the height of the structure is not practical. The note reads... “Note: this is not always practical in urban areas with high-rise structures but the collapse zone should be considered.”	Yes

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<p><b>Robert Halton – Editor-in-Chief, Fire Engineering Magazine and Fireengineering.com</b></p>	<p>Mr. Halton commented... “A small suggestion if I might as you add the verbiage regarding an appropriate assessment of conditions by the initial arriving “tactical assessment officer” as I refer to the first arriving officer in my upcoming book “Fireground Mental Agility” prior to making an interior or exterior decision, could you also indicate that interior operations are not by default “aggressive”. I would suggest to the group that the vast majority of interior firefighting is “pro-active” in nature. This language would help to highlight the key elements we need to assess when confronted with any structure namely risk versus gain.”</p>	<p>Mr. Halton’s comment about the use of the term “aggressive” in regard to offensive interior operations is similar in nature to comments from Rich Duffy, IAFF. The term “aggressive” was removed from the draft document.</p>	<p>Yes</p>
<p><b>Robert Halton – Editor-in-Chief, Fire Engineering Magazine and</b></p>	<p>Mr. Halton also commented... “One other consideration for pro-active interior operations on un-occupied structures has to do with exposures simply if the fire load potentially itself could result in an uncontrollable conflagration if defensive lines</p>	<p>These comments also mirror similar comments from Rich Duffy, IAFF, about the need for the incident commander to consider exposure buildings in the fireground size-up. It may be better to go inside an unoccupied building to stop a small fire than to risk having defensive operations contribute to a fire spreading to exposure buildings and resulting in a larger conflagration. Discussion of exposure building considerations was added to the recommendations section.</p>	<p>Yes</p>

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	<p>cannot reach the seat of the fire or enough resources are not available to man exposure lines, then conducting standardized well managed pro-active interior operations in a relatively safe fashion should by be considered in fires in un-occupied structures. Here again judgment by the “tactical assessment officer” should weigh the dangers posed by going in or evacuating exposures and risking a larger fire. The key objection I found to the current language was the all or nothing sound of it currently we can’t hijack the responsibility and judgment of the responders on scene.”</p>		Yes
			Yes
			Yes

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**The following is a list of the 61 comments submitted to NIOSH Public Docket: NIOSH-141, January 5 through March 9, 2009.**

1) William Carey  
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5) Rick Bennett  
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6) Hans Almqvist  
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7) Jerry Boyd

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- Fire Chief (retired)  
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- 9) John Zimmerman  
Westhampton Fire Department  
Westhampton, MA 01027
- 10) Mike Butler  
South Montgomery County Fire Department  
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Spring, TX 77386
- 11) Ken LaSala / Chief Larry Grorud  
International Association of Fire Chiefs  
4025 Fair Ridge Drive  
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- 12) Joseph J. Fannon, Jr.  
Safety & Health Specialist  
Veterans Administration  
Perry Point Medical Center  
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Perry Point, MD 21902
- 13) Jay Carnegie  
Seattle Fire Department – retired  
2505 Melekhin Bend

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Cedar Park, TX 78613

14) Ed Hartin, MS, EFO, MIFireE, CFO  
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15) No Name  
No Address

16) R.A. Lowery, CFEI Investigator NAFI  
Chillicothe Fire Department  
54 East Water Street  
Chillicothe, OH 45601

17) Michael Bossert  
Lexington Fire Department  
3057 Arrowhead Drive  
Lexington, KY 40503

18) Vince Pellegrin  
New Brighton Department of Public Safety  
785 Old Highway 8  
New Brighton, MN 55112

19) Jay Carnegie (Same as # 13)

20) Deputy Chief Francis J. Spinelli  
Hartsdale Fire District  
300 West Hartsdale Avenue  
Hartsdale, NY 10530

21) John J. Salka, Jr.

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Battalion Chief  
FDNY

22) Mike Wheeler  
Captain

Part Forest Fire Department  
156 Indianwood Boulevard  
Park Forest, IL 60466

23) John McDermott

Morris County Prosecutor's Office  
P.O. Box 900  
Morristown, NJ 07963

24) Christopher Kassel  
Firefighter

Washougal Fire Department

25) Lt. William G. Ross

Columbus Fire Department  
Columbus, OH

26) District Chief Paul Irving

HRM Fire and Emergency  
P.O. Box 1749

Halifax, Nova Scotia  
B3J 3A5 CANADA

27) Eugene J. Bifano

Warren FD  
Warren VT

28) Eugene J. Bifano (Same as # 27)

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Summary of Changes based upon comments submitted to NIOSH Docket NIOSH-141, draft NIOSH Alert: *Preventing Deaths and Injuries of Fire Fighters When Fighting Fires in Unoccupied Structures*, and subsequent stakeholder reviews by representatives of the International Association of Fire Chiefs (IAFC) and International Association of Fire Fighters (IAFF) of the revisions based on public comments.

- 29) Adam Moore  
Ovid, MI 48866
- 30) Doug Blangsted  
CALFire  
415 Ida Way  
Etna, CA 96027
- 31) Chad Williamson  
Orlando Fire Department
- 32) John A. Reardon  
Fire Instructor / Consultant  
2830 Pinto Drive  
Commerce Township, MI 48382
- 33) Walter Malo  
Safety Program Manager  
Bureau of Fire Standards and Training  
Florida State Fire College  
11655 NW Gainesville Road  
Ocala, FL 34482-1486
- 34) Craig Cottrell  
Syracuse Fire Department  
1869 South 3000 West  
Syracuse, UT 84075
- 35) Todd Holzwarth  
East Grand Fire District #4  
Box 2967  
Winter Park, CO 80482-2967

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- 36) Patrick Mahoney  
Lieutenant  
Training & Safety Office  
Baytown Fire Department  
Baytown, TX
- 37) Alex Sundberg  
Columbus Division of Fire  
Columbus, OH
- 38) David Whiting  
Columbus Division of Fire  
Columbus, OH
- 39) Brooks Morrison  
Harrison Township Fire  
Circleville, OH
- 40) Johnnie Wood  
Columbus Division of Fire  
Columbus, OH
- 41) James H. Bonner  
Philadelphia Fire Department  
Philadelphia, PA
- 42) Chad Nicodemus  
Columbus Division of Fire  
Columbus, OH
- 43) No Name  
No Address

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- 44) Dave Hennosy  
Columbus Division of Fire  
Columbus, OH
- 45) James R. Eblin, Jr.  
Columbus Division of Fire  
Columbus, OH
- 46) Chris Moore  
Upper Arlington Fire Division  
Westerville, OH
- 47) Dave Roggenkamp  
Columbus Division of Fire  
Columbus, OH
- 48) No Name  
Columbus Division of Fire  
Columbus, OH
- 49) Kevin Connell  
Columbus Division of Fire  
Columbus, OH
- 50) Jeff Young  
Upper Arlington Fire Division  
Upper Arlington, OH
- 51) Russell A. McGinnis  
Columbus Division of Fire  
Columbus, OH

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- 52) Russell Barton  
Columbus Division of Fire  
Columbus, OH
- 53) J. A. Luna  
Rochester, NY
- 54) James LaMacchia  
Battalion Chief / Training Officer  
Buffalo Fire Department  
Buffalo, NY
- 55) Henry A. Campbell  
Retired Chief Mount Vernon Fire Department  
Rhinebeck Fire Department (Active Fire Fighter)  
Rhinebeck, NY 12572
- 56) Albert Mignone  
Ex-Chief Purchase Fire Department  
Fire Inspector, Village of Scarsdale
- 57) Robert O'Melia  
C-O-MM Fire and Rescue  
Centerville, MA 02632
- 58) John Walsh  
No Address
- 59) John Walsh (Same as # 58)
- 60) John Walsh (Same as # 58 and # 59)

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In addition, NIOSH received email comments on a draft version that was reviewed by the Board of Directors (BOD) of the International Association of Fire Chiefs (IAFC), Safety, Health and Survival Section (SH&S). These SH&S Section Board of Directors included:

Deputy Chief William Goldfeder  
Loveland-Symes Fire Department  
Loveland, OH

Gordon Routely  
Retired Chief and Fire Consultant

Christopher J. Naum, SFPE  
Chief of Training, Command Institute, Washington, DC USA  
Second Vice President, International Society of Fire Service Instructors  
Member Board of Directors, IAFC Safety, Health & Survival Section

John Sullivan  
District Chief  
Worcester Fire Department  
Worcester, MA

Steve Austin  
Cumberland Valley Volunteer Fire Fighters Association  
Emergency Responder Training Institute

Matthew Tobia  
Battalion Chief  
Montgomery County Fire and Rescue

Chief I. David Daniels  
Renton Fire Protection District  
Renton, WA

David Fischler

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Retired Chief  
Long Island, NY

Gary Morris  
Retired Chief  
Seattle Fire Department  
Phoenix Fire Department

Robert Dube  
Louise County Fire Department  
Louise, VA

Keith Padgett  
Fulton County Fire and Rescue  
Atlanta, GA

Scott Goodwin  
Administrative Chief

Scott D. Kerwood, Ph.D., MIFireE, CFO, EFO, CFPS  
Fire Chief  
Orange County Emergency Services District #1  
Vidor, TX 77662

Randall. G. Talifarro  
Fire Chief  
City of East Lansing  
East Lansing, MI

Ed Nied  
Deputy Chief  
Tucson Fire Department  
Tucson, AZ

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Additionally, comments were received from:

Chief Bobby Halton  
Editor in Chief, Fire Engineering Magazine  
Education Director, FDIC

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