



## **NATIONAL FIRE PROTECTION ASSOCIATION**

The leading information and knowledge resource on fire, electrical and related hazards

### **NFPA Technical Committee on Remote Inspections REI-AAA FIRST IN-PERSON DRAFT DEVELOPMENT MEETING**

**Courtyard Seattle Downtown/Lake Union  
925 Westlake Avenue North  
Seattle, Washington 98109**

**Tuesday, August 20, 2019 – Thursday, August 22, 2019**

**8:00 a.m. – Conclusion each day. (Pacific Time)**

**Breakfast: Provided at 7:00am each day**

**Lunch: Provided at 12:00pm each day**

1. **Call to Order.** Call meeting to order by Chair Jim Muir at 8:00 a.m. Pacific on Tuesday, August 20, 2019.
2. **Chairman's Remarks.** Jim Muir.
3. **Staff Liaison Remarks.** Kevin Carr.
4. **Self-Introduction of Committee Members and Guests.** For a current committee roster, *see page 2.*
5. **Presentation of NFPA Standards Development Process.** Kevin Carr. *see page 5.*
6. **Review of REI-AAA Supporting Materials.** Review materials presented via Chair Jim Muir email, *see page 14.*
7. **Discussion of General Concepts.** Formulate list of general topics for consideration in team groups.
8. **Review Draft for Consideration, Chapter 1-4**
9. **Task Group Formation.**
10. **Other Business.**
11. **Next Meeting.** December 10-12, 2019.
12. **Adjournment.**

# Address List

## Remote Inspections

06/12/2019

Kevin Carr

REI-AAA

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**Jim Muir** E 04/03/2019

**Chair** REI-AAA

Clark County Building Safety Division  
1300 Franklin Street, 3rd Floor  
PO Box 9810  
Vancouver, WA 98666

**Phone/Cell:** 360-397-2470 360-607-1466

**Fax:**

**Email :** jim.muir@clark.wa.gov

---

**Nicholas A. Dawe** E 04/03/2019

**Principal** REI-AAA

Cobb County Fire Marshal's Office  
1595 County Services Parkway  
Marietta, GA 30008

**Phone/Cell:** 770-528-8318

**Fax:** 770-528-8320

**Email :** nickdawe@gmail.com

---

**Daniel P. Finnegan** M 04/03/2019

**Principal** REI-AAA

Siemens Industry, Inc.  
Building Technologies Division  
Fire & Security  
2953 Exeter Court  
West Dundee, IL 60118-1724  
**Automatic Fire Alarm Association, Inc.**

**Alternate: Rick Heffernan**

**Phone/Cell:** 630-240-4328

**Fax:** 866-879-5877

**Email :** daniel.finnegan@siemens.com

---

**Robert Kelly** E 04/03/2019

**Principal** REI-AAA

Montgomery County MD  
255 Rockville Pike, Suite 200  
Rockville, MD 20850

**Phone/Cell:** 240-777-6248 301-529-5240

**Fax:** 240-777-6258

**Email :** robert.kelly@montgomerycountymd.gov

---

**Ghaith Nasri Bakir** RT 04/03/2019

**Principal** REI-AAA

UL  
Dubai  
Al Barsha  
Dubai, UAE 00971 Arab Emirates

**UL LLC**

**Phone/Cell:**

**Fax:**

**Email :** gnb2004bs@hotmail.com

---

**Larry Felker** M 04/03/2019

**Principal** REI-AAA

Belimo Aircontrols  
1049 Fortunato  
Sparks, NV 89436

**Alternate: Michael Knipple**

**Phone/Cell:** 775-857-4243

**Fax:**

**Email :** larry.felker@us.belimo.com

---

**Aaron C. Jones** SE 04/03/2019

**Principal** REI-AAA

GHD Inc.  
2809 Boston Street, Suite 7  
Baltimore, MD 21224  
**Phone/Cell:** 443-524-7040 443-974-0080

**Fax:**

**Email :** aaron.jones@ghd.com

---

**Bassem Gamil Khalil** E 04/03/2019

**Principal** REI-AAA

U.A.E Civil Defence G.H.Q  
Villa 83 Street 2  
Abu Dhabi POB 26707  
Alreef Villas Arabian Comm., 26707 United Arab  
Emirates

**Phone/Cell:**

**Fax:**

**Email :** bgamil@yahoo.com

# Address List

## Remote Inspections

06/12/2019

Kevin Carr

REI-AAA

---

**William E. Koffel** SE 04/03/2019

---

**Principal** REI-AAA

Koffel Associates, Inc.  
8815 Centre Park Drive, Suite 200  
Columbia, MD 21045-2107

**Phone/Cell:** 410-540-9008

**Fax:** 410-750-2588

**Email :** wkoffel@koffel.com

---

**John "Jack" L. Lyons** M 04/03/2019

---

**Principal** REI-AAA

National Electrical Manufacturers Association (NEMA)  
12 Ireland Street Extension  
West Chesterfield, MA 01084

**Phone/Cell:** 413-695-2869 413-695-2869

**Fax:**

**Email :** jack.lyons@nema.org

---

**Thomas W. McKeon** I 04/03/2019

---

**Principal** REI-AAA

Ursa Group  
18 Kalan Farm Road  
Hampton, NJ 08827-2559

**Phone/Cell:** 201-543-9166 908-310-9278

**Fax:**

**Email :** twm22columbia@gmail.com

---

**Joe Scibetta** M 04/03/2019

---

**Principal** REI-AAA

BuildingReports  
1325 Satellite Boulevard, Suite 1607  
Suwanee, GA 30024-4657

**Phone/Cell:** 770-495-1993 404-545-5880

**Fax:** 770-495-9331

**Email :** jscibetta@buildingreports.com

---

**Terry L. Victor** M 04/03/2019

---

**Principal** REI-AAA

Johnson Controls  
3621 Carrollton Road  
Upperco, MD 21155

**Alternate: Zachary L. Magnone**

**Phone/Cell:** 443-286-4038

**Fax:**

**Email :** terry.victor@jci.com

---

**Jon Laux** E 04/03/2019

---

**Principal** REI-AAA

Twin Falls County  
630 Addison Avenue W, Suite 1100  
Twin Falls, ID 83301

**Phone/Cell:** 208-735-4425 208-749-1591

**Fax:**

**Email :** inspectorlaux@gmail.com

---

**Michael MacDonnell** L 04/03/2019

---

**Principal** REI-AAA

Sprinkler Fitters Local 550 JATC  
195 Libbey Parkway, Suite 1  
Weymouth, MA 02189

**Phone/Cell:** 781-588-6144 781-588-6144

**Fax:**

**Email :** Mike@sprinklerfitters550.org

---

**Derrick Mitchell** IM 04/03/2019

---

**Principal** REI-AAA

LS Systems  
1417 Knecht Avenue  
Arbutus, MD 21227

**Phone/Cell:** 410-552-1777 443-277-9858

**Fax:** 866-461-2798

**Email :** dmitchell@lssmd.com

---

**Paul John Terricciano** M 04/03/2019

---

**Principal** REI-AAA

Honeywell Fire Safety  
12 Clintonville Road  
Northford, CT 06472

**Phone/Cell:** 203-484-6353 203-484-6353

**Fax:**

**Email :** paul.terricciano@honeywell.com

---

**Jerry Wooldridge** E 04/03/2019

---

**Principal** REI-AAA

Reedy Creek Improvement District  
1900 Hotel Plaza Boulevard  
PO Box 10170  
Lake Buena Vista, FL 32830

**Phone/Cell:** 407-828-2034 407-468-5124

**Fax:** 407-828-2416

**Email :** jwooldridge@rcid.org

# Address List

## Remote Inspections

06/12/2019

Kevin Carr

REI-AAA

---

**Rick Heffernan** M 04/03/2019

**Alternate** REI-AAA

SDi

3535 Route 66

Neptune, NJ 07753-6814

**Automatic Fire Alarm Association, Inc.**

**Principal: Daniel P. Finnegan**

**Phone/Cell:** 732-751-9266 732-921-6385

**Fax:** 732-751-9241

**Email :** rick.heffernan@sdifire.com

---

**Michael Knipple** M 04/03/2019

**Alternate** REI-AAA

Belimo Americas

7 Inverary Drive

Watertown, CT 06795

**Principal: Larry Felker**

**Phone/Cell:** 203-749-3170

**Fax:**

**Email :** michael.knipple@us.belimo.com

---

**Zachary L. Magnone** M 04/03/2019

**Alternate** REI-AAA

Johnson Controls

1467 Elmwood Avenue

Cranston, RI 02910

**Principal: Terry L. Victor**

**Phone/Cell:** 401-781-8220 x60456

**Fax:** 401-781-7137

**Email :** zachary.magnone@jci.com

---

**Kevin Carr** 4/1/2019

**Staff Liaison** REI-AAA

National Fire Protections Association

One Batterymarch Park

Quincy, MA 022169

**Phone/Cell:**

**Fax:**

**Email :** kcarr@nfpa.org

REI-AAA  
Draft Development Meeting #1

Courtyard Seattle Downtown/Lake Union  
Seattle, WA

August 20-August 22, 2019



IT'S A BIG WORLD. LET'S PROTECT IT TOGETHER.™

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## NFPA Draft Development Meeting

At this and all NFPA committee meetings, we are concerned with your safety.

If the fire alarm sounds, please egress the building.



## NFPA Draft Development Meeting

### Members:

- Please verify/update your contact information on roster attached to sign-in list.
- Members categorized in any interest category who have been retained to represent the interests of ANOTHER interest category (with respect to issues addressed by the TC) shall declare those interests to the committee and refrain from voting on those issues throughout the process.



## NFPA Draft Development Meeting

### Guests:

- All guests are required to sign in and identify their affiliations.
- Participation is limited to TC members or those individuals who have previously requested time to address the committee.
- Participation by other guests is permitted at the Chair's discretion.



## NFPA Draft Development Meeting

### Members and Guests:

- Use of audio recorders or other means capable of reproducing verbatim transcriptions of this meeting is not permitted.



## NFPA Draft Development Meeting– Key Dates

- Draft Development Meeting #1: **August 20-22, 2019**
- Task Group Work: **August 23, 2019-November 2019**
- Draft Development Meeting #2: **December 10-12, 2019**
- Task Group Work: **December 13, 2019-March 2020**
- Draft Development Meeting #3: **April 14-16, 2020**
- Task Group Work: **April 17, 2020-May 31, 2020**
- Draft issued to Standards Council for review and approval: **June 2020**
- Draft approved and uploaded to Terra (pending SC approval): **Late 2020?**
- Draft starts through normal NFPA Standards Development Process (pending SC approval): **2020/2021**



## NFPA Draft Development Meeting

### General Procedures:

- Follow Robert's Rules of Order.



## NFPA Draft Development Meeting

### Committee Member Actions:

- Member addresses the chair.
- Receives recognition from the chair.





## NFPA Draft Development Meeting

### Committee Chair Actions:

- Calls for discussion.
- Ensures all issues have been heard.



## NFPA Draft Development Meeting

### Committee Actions :

- Review possible draft for consideration (see agenda).
- Suggest topics and revisions
- Formation of Task Groups to report back to the TC at the Second Draft Development Meeting.



## NFPA Draft Development Meeting: Legal

### Antitrust Matters:

- Must comply with state and federal antitrust laws
- Participants are to conduct themselves in strict accordance with these laws
- Read and understand NFPA's Antitrust Policy which can be accessed at [nfpa.org/regs](http://nfpa.org/regs)



## NFPA Draft Development Meeting: Legal

### Antitrust Matters (cont'd):

- Participants must avoid any conduct, conversation or agreement that would constitute an unreasonable restraint of trade
- Conversation topics that are off limits include:
  - Profit, margin, or cost data
  - Prices, rates, or fees
  - Selection, division or allocation of sales territories, markets or customers
  - Refusal to deal with a specific business entity



## NFPA Draft Development Meeting: Legal

### Antitrust Matters (cont'd):

- NFPA's standards development activities are based on openness, honesty, fairness and balance
- Participants must adhere to the *Regulations Governing the Development of NFPA Standards* and the *Guide for the Conduct of Participants in the NFPA Standards Development Process* which can be accessed at [nfpa.org/regs](http://nfpa.org/regs)
- Follow guidance and direction from your employer or other organization you may represent



## NFPA Draft Development Meeting: Legal

### Antitrust Matters (cont'd):

- Manner in which standards development activity is conducted can be important
- The *Guide of Conduct* requires standards development activity to be conducted with openness, honesty and in good faith
- Participants are not entitled to speak on behalf of NFPA
- Participants must take appropriate steps to ensure their statements, whether written or oral and regardless of the setting, are portrayed as personal opinions, not the position of NFPA
- Be sure to ask questions if you have them



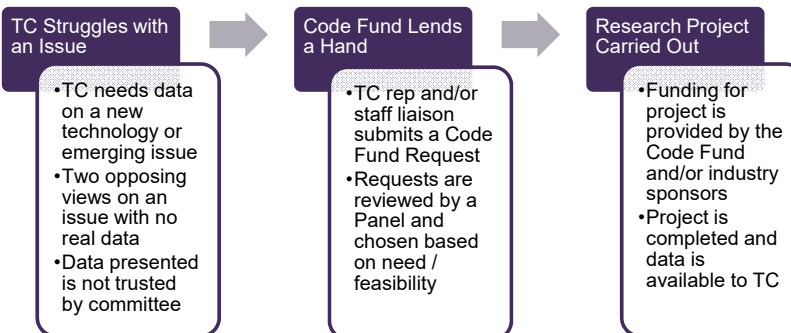
## NFPA Draft Development Meeting: Legal

### Patents:

- Disclosures of essential patent claims should be made by the patent holder
- Patent disclosures should be made early in the process
- Others may also notify NFPA if they believe that a proposed or existing NFPA standard includes an essential patent claim
- NFPA has adopted and follows ANSI's Patent Policy
- It is the obligation of each participant to read and understand NFPA's Patent Policy which can be accessed at [nfpa.org/regs](http://nfpa.org/regs)



## THE FIRE PROTECTION RESEARCH FOUNDATION



[www.nfpa.org/research](http://www.nfpa.org/research)



## Document Information Pages

About	Current and Previous Editions	Next Edition	Technical Committee
<ul style="list-style-type: none"><li>• Document scope</li><li>• Table of contents</li><li>• Articles</li><li>• Research and statistical reports</li><li>• Latest codes and standards news on NFPA Today blog feed</li><li>• Free access</li></ul>	<ul style="list-style-type: none"><li>• Issued TIAs, Fls, Errata</li><li>• Archived revision information such as meeting and ballot information, First Draft Reports (previously ROPs), Second Draft Reports (previously ROCs), and Standards Council and NITMAM information</li></ul>	<ul style="list-style-type: none"><li>• Revision cycle schedule</li><li>• Posting &amp; closing dates</li><li>• Submit public input/comments via electronic submission system.</li><li>• Meeting and ballot information</li><li>• First Draft Report and Second Draft Report</li><li>• NITMAM information</li><li>• Standard Council Decisions</li><li>• Private TC info (red asterisk)</li><li>• Ballot circulations, informational ballots and other committee info</li></ul>	<ul style="list-style-type: none"><li>• Committee name and staff liaison</li><li>• Committee scope and responsibility</li><li>• Committee list with private information</li><li>• Committee documents (codes &amp; standards) in PDF format</li><li>• Committees seeking members</li><li>• Online committee membership application</li></ul>



## Questions?

- [www.nfpa.org](http://www.nfpa.org)
- [www.nfpa.org/Codes-and-Standards/Standards-development-process/How-the-process-works](http://www.nfpa.org/Codes-and-Standards/Standards-development-process/How-the-process-works)





# Conducting Remote Video Inspections

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AUGUST 2018



**NATIONAL FIRE  
PROTECTION ASSOCIATION**  
The leading information and knowledge resource  
on fire, electrical and related hazards

This work was developed by the Building Code Development Committee of the NFPA. The Committee is not a balanced body for ANS purposes nor is this work developed in accordance with the Regulations Governing the Development of NFPA Standards. Rather it is some information on the identified subject matter developed by the Committee. This material does not represent the position of NFPA or any of its Technical Committees on this subject matter which is represented solely by the NFPA documents in their entirety. For free access to the complete and most current version of these and all NFPA documents, please go to [nfpa.org/standards](http://nfpa.org/standards). The NFPA makes no warranty or guaranty of the completeness of the information in this material. In using this information, you should rely on your independent judgment and, when appropriate, consult a competent professional and your local authority having jurisdiction.

## ABSTRACT

Remote video inspections (RVIs) offer both the authority having jurisdiction (AHJ) and the permit holder the use of technology to increase the efficiency of the inspection process. This has the potential to benefit both, but it comes with some limitations and risks.

The limitations will likely dictate when an RVI will be used. The risks, which have a direct impact on the efficiency gained, will be assumed. With proper attention and communication, both parties will complete the inspection successfully.

It is important for jurisdictions that allow the use of RVIs to develop rules, policies, and procedures to guide the permit holder and the public. Transparency in procedures will go a long way in the success of these inspection programs.

These considerations in conducting RVIs have been developed by the Building Code Development Committee (BCDC) of the National Fire Protection Association (NFPA) to assist authorities having jurisdiction in the use and conduct of RVIs.

The BCDC is not a Technical Committee within the NFPA standards development process and, therefore, it is not "balanced" in accordance with the Regulations Governing the Development of NFPA Standards. Rather, the BCDC is charged, among other things, with identifying existing needs and emerging issues within the construction code and enforcement community and providing recommendations to NFPA on how it might provide leadership on needs and emerging issues affecting the construction codes enforcement community through position papers such as this one.

The content, opinions, and conclusions in this report are solely those of the authors and do not necessarily represent the views of the NFPA or any of its Technical Committees. NFPA makes no guarantee or warranty for the accuracy or completeness of any information published herein and disclaims liability for personal injury, property and other damages of any nature whatsoever from the use of or reliance on this information. In using this information, you should rely on your independent judgment and, when appropriate, consult a competent professional and your local AHJ.

## AUTHORS

Development of *Conducting Remote Video Inspections* took place as an activity of the BCDC. Members of the BCDC identified the need for the report and worked collaboratively with peers to develop a draft through a task group. The task group then forwarded the draft to the entire committee for further refinement and acceptance. This paper was accepted by a majority of the committee vote in December 2016.

## Building Code Development Committee

(\* denotes Task Group member)

### **Jim Muir, Chair\***

Chief Building Official  
Building Safety Division  
Clark County, Washington

### **Matt Bailey**

Building Official  
Construction Services  
City of Lowell, Arkansas

### **Rick Breezee**

Building Official  
Metropolitan Airports Commission  
Minneapolis, Minnesota

### **Sal DiCristina, Co-Chair**

Construction Code Official  
Rutgers University  
New Brunswick, New Jersey

### **Mark Joiner**

Administrator  
Louisiana Uniform Construction Code Council  
Baton Rouge, Louisiana

### **Robert Kelly\***

Manager  
Department of Permitting Services  
Montgomery County, Maryland

### **Medard Kopczynski, CBO**

City Manager  
City of Keene, New Hampshire

### **Jon Laux**

Senior Inspector/Plans Examiner  
Building Department  
Twin Falls, Idaho

### **Jim Sayers\***

Commercial Plans Examiner  
Clackamas County Building Codes Division  
Oregon City, Oregon

### **Steve Stokes**

Chief Building Official  
Amador County Building Department  
Jackson, California

### **Brian Wert**

President  
Brian Wert Inspection Agency  
Hudson, Wisconsin

### **Jerry Wooldridge\***

Manager, Building and Safety  
Reedy Creek Improvement District  
Lake Buena Vista, Florida

### **NFPA Staff Liaison:**

#### **Raymond B. Bizal, P.E.**

Senior Regional Director  
National Fire Protection Association  
Huntington Beach, California



## INTRODUCTION

Technologies today offer tools that may be used to increase the efficiency of inspection programs. Interest in RVIs by AHJs for construction inspection compliance has prompted this evaluation. While building inspection programs were the primary consideration during the development of these guidelines, RVIs could also apply to fire prevention, property maintenance, and other types of inspections.

RVI programs can benefit the jurisdictions that are using them with savings in travel time, use of vehicles, and other aspects of inspections. The programs can benefit the permit holder and those representing the permit owner with more timely inspections and thereby allow faster resolutions to problems and more flexibility to the construction schedule, increasing the effectiveness and efficiency of inspection programs.

An RVI can be considered a physical inspection, for all intents and purposes, and as such scheduling, coordinating, documenting, and processing can mirror the regular inspection process. The more that the RVI mirrors a traditional inspection, the more it will be accepted.

Due to the benefits to both the inspection agency and the permit holder, it is anticipated that RVIs will occur more frequently and become customary for certain types of inspections. With that in mind, these guidelines offer thought for anyone beginning to take advantage of RVI programs.

## ADMINISTRATIVE ISSUES

The jurisdiction likely has the same authority to conduct video inspections that it has for in-person inspections. For jurisdictions conducting RVIs, a policy should be in place outlining the rules for these inspections, which may include scheduling RVIs and the types of inspections that are allowed.

Flexibility should be shown in choosing to perform RVIs on a case-by-case basis. Scheduling certainly is discretionary, but it should not be discriminatory. Allowing one permit applicant over another for a similar type of inspection is likely inappropriate.

Permit, plan review, and inspection software should be reviewed to ensure that video inspection requests can be accommodated, and RVIs should be similar to traditional means of inspection.

The accepted format of an RVI should be established and can include, for example, applications such as Skype and FaceTime. Remote inspections should be conducted live to allow the AHJ to direct the inspection. Live inspections also allow for discussions on construction methods and compliance issues. Prerecorded inspections do not allow the inspector to direct the inspection, which could hinder confirmation of compliance.

If the RVI involves the use of Unmanned Aerial Vehicles (UAVs), such as drones, the UAV operator must understand and comply with all the regulations that apply to operating such a vehicle.

At times inspectors may take and keep photos for the record. It is up to the jurisdiction to decide how much information must be maintained in an inspection record; however, each state and jurisdiction has rules defining a public record and the method and time frame for retention of its contents.

There are a number of video streaming services currently available. The most common are Skype and FaceTime, but any web-based meeting service can be used. Also, permit management software might have specialized features. Voice communication can be via video software applications or by telephone.

## REQUESTS FOR REMOTE VIDEO INSPECTIONS

Video inspection could be requested by permit holder or by their designee. Decisions by the AHJ on whether to allow an RVI should be based on policies established by the jurisdiction. Not all types of inspections may be appropriate for RVI, so it should be understood that the AHJ will determine on a case-by-case basis whether an RVI will be allowed. Thus, the AHJ has the authority to approve the use of an RVI and determines whether it is appropriate or not.

Conversely, the AHJ may also suggest the use of an RVI. The permit holder has the ability to opt for an on-site inspection.

As with any inspection request, the permit holder must contact the jurisdiction for an inspection appointment. The jurisdiction may make available a list of predetermined types of inspections that are allowed or not allowed for RVI. A list of inspections not allowed will likely curb the number of RVI requests that would not be approved.

Scheduled inspections can be efficient for both parties but may not be necessary. An inspector could allow requests for RVI during their day, specifically on work that had been inspected previously and for which corrections are easily evaluated by video.

## INSPECTION FEES

There does not appear to be any reason to change traditional inspection fees. Most jurisdictions have fee structures that incorporate plan reviews, external agency's fees, and most include the inspection cost in the permit fee. AHJs may want to establish special fees for video inspections as they determine necessary.

Although there may be efficiencies by reduced transportation and travel time, the jurisdiction is still providing the inspection service. This includes providing the certifications, training, expertise, and professional development needed for the inspectors in addition to a review of the video and any storage requirements for the video. The jurisdiction may also have staff on location to operate the cameras for a certified inspector who is off location.

RVIs also require the same support as on-site inspections for scheduling, maintaining records of completion of the inspection, maintenance of local code requirements, and other administrative services that accompany such inspections.

If the jurisdiction's inspection fees are based on the cost of providing services, then it is the responsibility of the jurisdiction to evaluate the budget impact of providing RVI services. Fee schedules could be adjusted accordingly.

## REMOTE VIDEO INSPECTION PROCESS

The camera must be operated by the permit holder or jurisdictional staff on location at the direction of the inspector. The inspector must have the ability to communicate directly with the camera or UAV operator to perform a thorough inspection. This will help ensure that all aspects of the work are observed to the satisfaction of the inspector.

The response needed by the remote inspector might include verification of the dimensions of the work being inspected. This can be done easily by the camera operator or another person on-site with a tape measure or known dimensional object.

The person who performed the work being inspected should be available to answer questions about the work.

State and local requirements should be followed the same way they are for in-person inspections. The only difference with an RVI is that the inspector is viewing and conducting the inspection remotely. Inspectors must be qualified based on state or local requirements to conduct different types of remote inspections.

An RVI can be considered a physical inspection, and as such, scheduling, coordinating, documenting, and processing can mirror the regular inspection process, or it can be modified from the standard as preferred. The more that the RVI mirrors a traditional inspection, the more likely it will be accepted.

## **TYPES OF RVIs**

The types of inspections that would be appropriate or inappropriate for an RVI must be considered by the AHJ on a case-by-case basis. However, experienced inspectors may be able to generally determine them in advance.

For example, framing and plumbing rough-in inspections would not be appropriate for RVIs because of the complexity and extensive amount of inspection likely needed. But many reinspections may be appropriate to address the items corrected. Water heater installations would usually be appropriate for an RVI.

Jurisdictions may find it useful to develop lists for types of inspections that generally are or are not appropriate for RVIs.

## **VERIFICATION OF INSPECTION LOCATION**

Many job sites are similar, particularly in residential subdivisions where multiple homes are under construction. This makes it important to ensure that the RVI is taking place at the correct location.

One way to verify the location is to begin the RVI on the exterior of the building, for example, starting at the nearest intersection and moving down the street to the correct lot. It can be verified by the inspector using the site plan and subdivision plan. If the location is the third lot from the corner, then the inspector can follow as the permit holder walks down the street, stopping in front of the correct lot. From there, the video continues into the building to the location of the required inspection.

If the building is identifiable by an address, showing the address marking may be sufficient, but that is up to the inspector to decide.

Geolocation from a mapping tool could be used for site verification as long as the verification is conducted on a live video stream.

In addition to verifying the proper lot or building, it is also important to verify the proper location of the inspection within the building or property. For example, if a certain type of hardware is used in multiple locations within a building and only one location is needing inspection, the location of the RVI is important and should be verified. This can be done by starting the inspection at an identifiable location within the building and following it to the proper location.

It is easy to see that properly identifying the location is the responsibility of both the permit holder and the remote inspector. Correction notices that speak to specific locations are as important as

the permit holder showing clearly the location in the video. Inspectors can also use lumber crayons to mark locations in a manner that they will recognize their “mark” during an RVI.

## **PLANS AND SPECIFICATIONS**

Prior to the scheduled inspection time, it is necessary, in many cases, for both the permit holder and the inspector to have the approved plans and associated documents available for access during the inspection. Questions may arise during the inspection that require referring to the approved documents, just as during traditional inspections.

An important step in the inspection process is when an inspector opens up the plans upon arrival at the job site to verify dimension, spacing, number of items, etc. During an RVI, this step can be even more important due to the partial disconnect by performing the inspection remotely.

## **LIMITATIONS**

As with any inspection, the remote inspector maintains the right to request that conditions for the inspection be reasonable. In the case of an RVI, if the Internet connection, lighting, picture quality, access, or other conditions are not conducive to a reliable inspection, it may be rescheduled or changed to a site inspection. The RVI may be called off due to the quality of the work and too many corrections identified.

## **INSPECTION SIGN-OFF**

The sign-off process does not usually have an on-site component; the process may be only electronically available or a jurisdiction could offer to issue other documentation in the form of email, fax, mail, or delivery to the site at the next inspection. Documentation would follow the usual process and detail of an on-site inspection.

## **MAINTAINING RECORDS**

A recording of the RVI may not be required. Jurisdictions must decide whether to maintain a copy of the video used in the RVI based on local laws and regulations including open record laws and other considerations.

There is no precedence to maintaining the recording of the video file. As with a traditional inspection, there may be no reason to photograph the approved work because the inspection record of completion should suffice. But there may be cases when the AHJ wants to maintain photos or videos.

Inspection verification is an endorsement from the inspector that an inspection has been completed satisfactorily. If an inspection item is not satisfactory, then further action will be identified and transmitted to the permit holder for correction.

## **USE OF UNMANNED AERIAL VEHICLES (UAVS)**

The use of UAVs has advantages for any challenging inspection sites due to size, terrain, height, etc. The same considerations apply to an RVI conducted with a camera mounted on a UAV as with a handheld camera.

Other local, state, and federal rules may apply. For the operation of UAV, Federal Aviation Administration rules must be followed. Such rules may dictate who can operate the vehicle, how high the vehicle may fly, and how close to buildings the vehicle is allowed to approach.

For more information, see “SMART Fire Fighting: The Use of Unmanned Aircraft Systems in the Fire Service,” development of which was sponsored by the NFPA Responder Forum in 2015.

## **CONCLUSION**

RVI offers both jurisdictions and permit holders the opportunity to use technology to increase the efficiency of the inspection process, which has the potential to benefit both — but it comes with some limitations and risks.

The limitations will likely dictate when an RVI will be performed. The risks, which have a direct impact on the efficiency gained, will be assumed. Even if an RVI is called off for any reason, it may be worth the risk. With proper attention and communication, both parties may complete the inspection successfully.

It is important for jurisdictions that allow the use of RVIs to develop rules, policies, and procedures to provide expectations to the permit holders. The transparency in procedures for the AHJ will go a long way in the success of these inspection programs.



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Author(s): Jim Muir. Published on May 1, 2017.

## Verified via Video

**How a building inspection department short on time, resources, and manpower utilized remote video inspection to meet customer demand.**

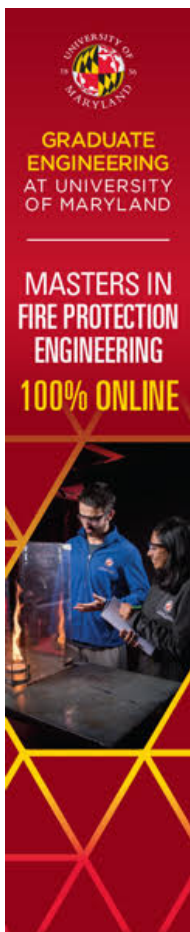
BY JIM MUIR

Lucille Ball once said, "If you want something done, ask a busy person to do it." I would suggest a corollary: "If you're having a hard time getting it done, look for a more creative way to do it."

As the country emerged from the recession several years back, those of us responsible for building safety in Clark County, Washington—located just across the Columbia River from Portland, Oregon—felt the same pressures as many jurisdictions. We experienced a spike in

### NFPA Conference Session

[NFPA Conference & Expo](#), Boston, June 4-7, 2017

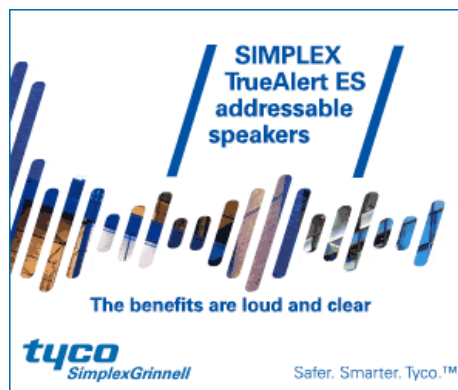


projects that we had to meet with a reduced staff size. The job market for trained code professionals was highly competitive, and as we worked to attract qualified people to join us, building industry and public officials were putting out the call for departments like ours to help contribute to the recovery.

As chief building official in the county's Community Development department, the question I faced was how we were going to get all this work done while trying to hire and train new staff and providing a decent level of service to the community. The simple answer was to do more, but there was only so much we could be expected to accomplish, even with a great staff as a foundation.

One thing we had going for us was experience with technology. In 2003, inspectors began using an interactive voice response (IVR) inspection system, which allowed them to use their mobile phones to choose menus and make selections to access permits and inspection results. In 2006, we outfitted laptops and printers into all of the inspectors' vehicles and worked with our IVR vendor to create a mobile version of our permitting system. Inspectors were equipped with iPhones by 2010, and electronic versions of the code were included on everyone's mobile devices. This familiarity with technology afforded the staff a better relationship with change and a bit more comfort with possibilities to come.

With the large geographic size of our jurisdiction and the heavy inspection workload, most reinspections for corrections could not be conducted on the same day as the original inspection and had to be scheduled for the next inspection day. That meant builders had to wait, homeowners doing their own projects could lose another day away from work, and the building safety staff had another inspection on its route, regardless of the complexity of the correction. This also presented a challenge for customers scheduling subcontractors in an ever-busier building market. Smaller geographic jurisdictions with a lighter workload might be able to get back to the job the same day and complete an inspection or reinspection and allow the work to continue, but we did not have that ability. This is the way things had to be in order to provide our services, unless we could figure out a better solution.



Then it occurred to me that we had iPhones and iPads equipped with Apple's video chat feature, Facetime, which we had used to communicate with each other and view job challenges that we wanted to discuss. If this worked for our needs, why couldn't we use it for some of our inspection interactions with customers? For customers who didn't have Apple devices, why

## Remote Video Inspections: Guidelines for Effective Use

Tuesday, June 6, 9:30–10:30 a.m.

Jim Muir, Clark County (Washington)  
Building Safety; Ray Bizal, NFPA

couldn't we just load Skype, the video conferencing application, onto our devices so we communicate in this fashion with anyone?

### Managing the process

There was a bit of resistance from the staff when the idea was first floated to use video chat as part of our inspection process. It was rare for us to accept photos for any inspection compliance, since the pictures were taken only from the perspective—and perhaps bias—of the photographer, and initially that skepticism extended to video inspections as well. There was a crucial difference, though: with video inspections, it was the inspectors who could direct what they needed to see—we still managed the process.

As we discussed the idea, we decided to limit video inspections to reinspections, typically with only a few correction items, and inspections for “noncomplex” work, especially tasks that homeowners might undertake themselves, such as footings for deck posts, small steps and rails, and insulation. The contractor or homeowner would contact our office staff or an inspector to discuss the work and whether it was suitable for a video inspection. If the inspector agreed, a time is arranged to connect via Skype or Facetime. In 2013, we launched what we called the “Sherlock” video inspections.

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Watch a video of a remote video inspection taking place in Clark County, Washington.

#### The “Sherlock” Video Inspections



The more video inspections we've conducted, the more comfortable inspectors and customers have become with them. There have been a few requests where the work was far too detailed to review using video; one request, for a framing inspection of an entire home, would probably have taken three times longer to do using video than it did by simply going out and doing it live. Inspectors assumed we would have folks trying to game the system somehow, such as by showing us work at another location or by trying to avoid showing us everything, but overall we've found that customers have been great to work with—they realize the process can save them valuable time. One customer was tech-adverse and was still using a flip phone, but once he saw our video inspection program in action, he went out and got a smartphone so he could take advantage of the time savings.

I will be sharing all of this and more at the upcoming [NFPA conference](#), where the Building Code Development Committee, of which I'm a member, will present a white paper and a panel discussion on video chat inspections.

In March, I sent out an informal survey on video inspections through discussion boards for building officials in Washington and Oregon; I was curious if other jurisdictions were doing anything similar or if they had suggestions for improving the process. Many of the inspectors who responded to the survey had the same misgivings that were voiced in my department: video inspections could be gamed like photos and weren't necessarily reliable. The inspectors' comments indicated that some felt they were giving up too much management of the process,



and that a video inspection wasn't a true inspection. At the same time, the survey asked building officials if they would consider using video chat inspections in jurisdictions that needed such a tool, and almost all of the more than 40 respondents said they would consider them. A couple mentioned that they were even looking at apps or services currently available that are specifically designed for video inspections. I hope more jurisdictions will consider these creative and useful tools.

An important element of the Sherlock program was clearly defining the parameters for when it could be used. We wanted the inspections to improve customer service while also being efficient and practical. In the survey, this was another area where building officials questioned the quality of inspections conducted with the help of video. To that point, the tool needs to fit the job; it would not be efficient or effective to do most inspections this way, but it could work for many of the inspections that were frustrating our customers. What I would stress to skeptical building officials is that the inspector manages the video inspection and makes the decision on when it's appropriate to use. We have used video inspection for some components of almost every classification of inspection. Missing framing clips, inappropriate plumbing fittings, insufficient nailing, problems with duct supports, and insulation installation requiring corrections are just a few of the many types of problems we've surveyed with the help of video inspections.

At the same time we initiated Sherlock, we also launched a program called TikTok, which allows homeowners to schedule inspection appointments to limit the time they need to wait for an inspector. Like Sherlock, the customer calls the office or the inspector to set up an appointment that works for them and for the inspector. The two programs are not related, but both address customer service by providing other options to the standard service. One result of these efforts is that our stakeholders, including county leadership, sees our efforts related to video inspections as positives, both from a service and an innovation perspective. I can't think of a of us who couldn't benefit from improving the perspective of our stakeholders.

### **Innovation, progress, and zombies**

We continue to pursue ways to build on our service and innovation. In March, we conducted our first drone inspections, for a roofing inspection and a site inspection. We realized that we are limited by the roof height or terrain in these types of inspections, and it occurred to me that if companies like Amazon can deliver a package with a drone then we ought to be able to do an inspection. One of our inspectors knew that a local contractor had recently gotten into drones as a hobby, and he was eager to meet our entire inspection team in the field and pilot the drone while we took turns viewing the screen. The images captured by the drone's cameras were amazingly clear. We are going to send a couple of inspectors to get their "pilot's" certification and then decide on which equipment to purchase. We think we will be able to conduct much more thorough inspections of certain kinds of projects using a drone, and we may even find other inspections that could be better done with a drone.

We've also launched efforts that complement our video inspections. We realized homeowners often didn't know much about the systems and functionality of their homes, including many aspects related to safety, so we created a homeowner's manual covering topics from emergency services to how to change a furnace filter. We leave a copy of the manual at every new home or addition project at final inspection. Additionally, for the last several years we've provided code books and standards to any contractor who needs one, free of charge. Other jurisdictions have asked why we don't just make contractors buy their own copies, but this way I can diffuse the

usual excuses around not being aware of the code; I can go back to a contractor and say, "It's in the code book we gave you." We also purchase and give homeowners who are doing projects a code guide that includes common code requirements and illustrations. We have had more than one homeowner tell us it not only helped them with a project, but it reduced the stress associated with being unfamiliar with the code and wondering if an inspector would make them tear out work because it didn't meet code requirements.

As a routinely used tool, the Sherlock program continues to be a valuable asset for us, and we continue to remind customers of its availability and efficiencies. Construction is booming and we continue to hire, which can present its own challenges. To appeal to young people considering careers as code professionals, we created a six-page comic book that features zombies pursuing other career paths. We give prospective candidates rubber stress-relief zombies with our logo on them just to make sure they remember us.

I hope Lucille Ball would be proud of us: busy people being creative, trying to get stuff done.

JIM MUIR is the top building official in Clark County, Washington. Top Photograph: Adrienne Albrecht

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