Enhanced Energy-Efficiency Health & Safety Guidelines for Customer Contact: Residential, Multifamily, Commercial & Industrial Buildings
Objectives

By applying what you learn in this training, you can expect to:

• Understand why and how we are now able to provide guidance for performing Energy Efficiency (EE) work in-premise in residential (1-4 units and multifamily) and commercial & industrial buildings.

• Ensure your compliance and your crew’s compliance with all facets of Enhanced Health & Safety Energy Efficiency Guidelines for Customer Contact: Residential, Multifamily, Commercial, and Industrial Buildings.

• Build productive work relationships through open, two-way communication with your crew members as you learn these new ways of performing EE work safely.
How Did We Get Here?

**Start:** Suspended Field Activities

**Then:** Guidelines developed for onsite work without customer contact

**Now:** New guidelines that allow in-premise work with customer involvement
Agenda

• Introduction

• Key Questions for Owners and Managers…Answered

• Training for all On-Site Personnel
  – Personal Protective Equipment (PPE)
  – Disinfection
  – PPE for Different Situations
  – Monitoring

• Conclusion
Key Questions...Answered
Key Questions

**Why** are we changing certain aspects of our approach to Energy Efficiency work?

**How** are we changing certain aspects of our approach to Energy Efficiency work?

**How** do you manage and monitor these changes in process and procedures?
Key Questions

Why are we changing our approach to EE work?

• Due to the COVID-19 pandemic, we are recommending changes in some work practices to protect the health of workers and customers.

• The virus lives on various surfaces, anywhere from hours to days and is highly contagious.

• The virus infects people of all ages, and severity ranges from no symptoms to fatal lung or heart disease.

• The main route of infection is through the respiratory system, either by inhalation or hand-to-face contact.

• “Social distancing” (keeping at least 6 feet between people), use of protective equipment, (e.g., masks) and frequent use of disinfectants have all been shown to limit the spread of the virus.
How are we changing our approach to EE work? (Part 1)

- All of our changes are based on proper use of personal protective equipment (PPE), disinfectants, and physical distancing between people.

- In our earlier training, we recommended no direct contact with customers and performing interior EE work in spaces that were unoccupied and unconditioned, and also isolated from occupied and conditioned spaces.

- Our increased understanding of the effectiveness of protective procedures now allows us to provide training to work on-premise while customers are present.

- When crews are in-premise in occupied spaces, the recommendations for using PPE, disinfectants, and physical distancing are very similar to what we advised when no customer contact was recommended.

- The protective procedures contained in this training are designed to protect both crews and the customers.
How are we changing our approach to EE work? (Part 2)

• The purpose of every aspect of this training is to minimize the likelihood of transmitting or contracting an infectious disease (i.e., COVID-19).

• The training is highly specific and goes well beyond typical safe work practices. It includes:
  — Proper use of various types of personal protective equipment (PPE)
  — Recommendations of proper equipment for different situations
  — Use of EPA-registered disinfectants shown to kill the COVID-19 virus
  — Personal hygiene to minimize infection risk
  — Physical distancing based on different levels of PPE
Protective Items Needed

All on-site staff will have to be provided with the following:

• Tight-fitting gloves (Nitrile® or synthetic rubber) – single use
• Cut-resistant utility gloves to fit over the tight-fitting gloves - reusable
• Coveralls (Tyvek® or other) – single use
• Masks
  — Cloth masks (washable), dust or surgical masks (single use)
  — N95, N100, or P100 respirator masks – single use
  — Half-face or full-face cartridge respirators – reusable, cartridges changed as needed
• Face shields or safety glasses (ANSI Z87 Compliant)
• EPA-registered disinfectants shown to kill the COVID-19 virus
Key Questions

How will we manage and monitor these changes?

- Workers must take this training before working at any site.
- Quality Assurance (QA) inspectors must take and pass the same training.
- Programs may opt to have QA inspectors assess onsite compliance with COVID-19 safety practices.
- Contractors not following the safety recommendations may be prohibited from conducting further work until their performance is acceptable.
State and Local Orders and Guidelines

- Our guidelines have been developed to minimize health risk to both customers and workers. Compliance with these guidelines is required for crews to work on EE measures.

- Some states, cities, and towns may have recommendations or orders that are different from some of our guidelines.

- If local orders or recommendations require higher level protection, workers must follow those additional or higher local standards.

- Local rules may change over time. It is the responsibility of the installation contractor to ensure compliance with those changes.
Training for On-Site Work
Objectives

By applying what you learn in this training, you can expect to:

• Understand why and how we are changing our approach to Energy Efficiency (EE) work.

• Understand the best ways to reduce the chances of giving or getting COVID-19 by following the guidelines in this training.

• Keep yourself, your crew, and the customers safe by carefully using and removing Personal Protective Equipment (PPE).

• Learn how to use disinfectants to kill the COVID-19 virus.
Health Concerns

- Contact your healthcare provider to help you decide if a health condition you have now puts you at too much risk to work safely.

- If you feel sick before work in any way, call your supervisor and do not go to work.

- Some states, cities, towns, or companies may have other rules about health screening before you work. Examples are:
  - Your supervisor must ask you questions about your health before you can work.
  - You must have your temperature checked at the job site before you can work.
  - The customer must be called the day before the job to find out if anyone at the site is ill.
Personal Protective Equipment (PPE)
Personal Protective Equipment (PPE)

Depending on your duties at the job site, some or all of the following PPE should be used:

- Close-toed shoes
- Tight-fitting gloves (Nitrile® or synthetic rubber)
- Cut-resistant utility gloves to fit over the tight-fitting gloves
- Coveralls (Tyvek® or other)
- Cloth, dust or surgical-type mask
- N95 or other high efficiency respirator
- Face-shield or safety glasses (ANSI Z87-Compliant)
Personal Protective Equipment

During PPE training, the following words are often used:

Donning = Putting on PPE
Doffing = Taking off PPE
Single-Use Tight-Fitting Gloves

• Reasonably tight-fitting single-use rubber-like gloves (Nitrile®, other synthetics, etc.)

• **Best Practices for Single-Use Gloves**
  – Check for punctures or tears before using
  – Wear underneath work gloves to prevent tears
  – Do not re-wear same gloves after you take them off
  – Immediately replace damaged gloves
  – Doff (remove) gloves safely

• Dispose of used gloves in a special container at the job site
Cut-Resistant Utility Gloves (reusable)

- Cut-Resistant Utility Gloves
  - To be worn over tight-fitting single-use gloves
  - Important to prevent tears in gloves underneath

- Snug-fitting cut-resistant gloves, like electrician's gloves, may be worn without under-gloves to improve dexterity.

- The outside of reusable gloves must be disinfected whenever you take them off and when you are done for the day.
Safely Removing Tight-Fitting Gloves

1. Grasp the outside of one glove at the wrist.
   Do not touch your bare skin.

2. Peel the glove away from your body,
   pulling it inside out.

3. Hold the glove you just removed in
   your gloved hand.

4. Peel off the second glove by putting your fingers
   inside the glove at the top of your wrist.

Safely Removing Tight-Fitting Gloves

5. Turn the second glove inside out while pulling it away from your body, leaving the first glove inside the second.

6. Dispose of the gloves safely. Do not reuse the gloves.

7. Clean your hands immediately after removing gloves.

Changing Gloves

• **Every time you change gloves:**
  – Wash your hands or clean them with hand-sanitizer *before* you put on new gloves.

• **Before you eat or drink:**
  – Remove your gloves carefully.
  – Wash your hands or clean them with hand-sanitizer.
Face Masks

- Cloth Masks
- Dust & Surgical-Type Masks
- N95s and Other High Efficiency Masks
- Fit-testing of Masks
Cloth Masks

- CDC recommends cloth face masks to slow spread
- Anything that covers your nose and mouth, including scarves and bandanas
- Massachusetts guidance: use cloth or other mask when 6-foot physical distancing is not possible
- Fits snugly but comfortably against side of your face
- Held in place with ties or elastic bands
- Best to have more than one layer of fabric
- Allows for breathing without restriction
- Can be laundered without damage
Dust Masks

- Somewhat greater protection than cloth masks
- Filters large dust-like particles
- Look very similar to N95 masks
  - Important to know the difference
  - If you’re not sure, ask your supervisor or employer
N95 Masks

• Designed to filter out very small particles in the air, even viruses.

• These masks work properly only when donned (put on) and fitted correctly.

• Your employer will help you with getting fitted if you need to wear an N95 mask.
Other High Efficiency Masks

- **P100 Mask**
  - Oil resistant, protects against 99.97% of particles when worn properly

- **N100 Mask**
  - Not oil resistant, protects against 99.97% of particles when worn properly

- **Half-face and Full-face respirators**
  - Can use different cartridges for different hazards
  - Oil resistant
Fit -Testing

• Annual fit-testing is **required** for all high-efficiency masks (e.g., N95, N100, P100, cartridge respirators).

• Medical clearance by a health professional is **required** before fit-testing.

• Training will be provided for donning, doffing, care, use, cleaning, and checking the seals on these masks.
How to Don a Face Mask (Paper, Cloth, Dust, N95)

1. Clean
   - Clean your hands with soap and water or hand sanitizer

2. Inspect
   - Inspect for tears.

3. Determine
   - Determine which side of the mask is the top.

4. Confirm
   - Confirm which side of the mask is the front.
How to Don a Face Mask

5. Mold or pinch the stiff edge to the shape of your nose if the mask allows this.

6. If using a face mask with ties: Knot the ties on the back of your neck and near the top of your head.

7. Pull the bottom of the mask over your mouth and chin.
Coveralls

- Protects skin and clothing from direct contact with surfaces, objects, dust, or materials
- Often disposable
- Reusable coveralls should be laundered after every use
Doffing Coveralls

Work from the top down:

1. Put on fresh gloves. (Remember to clean your hands with hand sanitizer!)
2. If your coveralls have a hood, grab back of hood and pull it slowly off your head.
3. Pull down zipper gently and step out. Don’t touch inside of coveralls or your body.
4. Pick up and discard coveralls in the used PPE bin or barrel or store them in a bag for laundering (if reusable).
5. Remove your gloves and clean your hands with hand sanitizer.
6. If you haven’t removed your mask, safety glasses, or face shield, carefully remove these now. Dispose in the used PPE bin or barrel or store for disinfection.
7. Clean your hands with hand sanitizer.
Doffing Coveralls
Safety Glasses/Safety Goggles

- **Safety Glasses**: Rated for impact (ANSI Z87) from projectiles
  - Also provide limited protection from splashes

- **Safety Goggles**: Provide increased protection from potential splashes (protect sides of eyes)
Face Shields

- **Face Shields**: Provide protection from splashes, sprays, splatter for your eyes, nose, and mouth.
  - Disposable: Flexible and typically not rated for impact
  - Reusable: More rigid and thicker. Sometimes rated for impact (ANSI Z87)
### Personal Protective Equipment Levels (Level 3 is highest protection)

<table>
<thead>
<tr>
<th>Recommended PPE</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Pants</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Close-toed Shoes</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cloth Mask or Dust Mask</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tight-fitting Gloves (see below for exception)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Cut-Proof Utility Gloves over Tight-Fitting Gloves</strong></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NOTE: Snug-fitting cut-proof gloves, like electrician's gloves, may be worn without under-gloves to improve dexterity.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyvek® or other Coveralls</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>N95 Mask or Equivalent or Greater Protection</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Face Shield or Safety Glasses</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
The state and federal recommendations of 6 feet between workers may be reduced when wearing PPE only if necessary.

<table>
<thead>
<tr>
<th>PPE Level (Level 3 is highest protection)</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Physical Distance between workers if wearing the same PPE. (Worker wearing lowest level PPE determines minimum physical distance.)</td>
<td>6 feet</td>
<td>4 feet</td>
<td>2 feet</td>
</tr>
</tbody>
</table>

These are estimated distances based on protection provided by PPE. Workers should try to maintain a 6-foot physical distance, if you can, when wearing any level of PPE. The CDC, Mass., and other states recommend keeping the 6-foot distance whenever possible.
In-Premise EE Audits and Upgrades

• In our previous training sessions, we recommended:
  — no direct contact with customers
  — only performing interior EE work in unoccupied and unconditioned spaces that were isolated from living spaces

• We now know that correct use of PPE and disinfectants greatly increases safety. This means on-site workers can:
  — communicate directly with customers about EE upgrades
  — perform interior EE audits and upgrades safely in occupied and living spaces
  — allow customers to be present in the same or nearby spaces.

• When on-site workers are in living or other occupied spaces, the recommendations for PPE, disinfectants, and distancing are similar to what was presented when no customer contact was advised.

• Please see the following tables.
Recommended PPE Levels for On-Site Work

Residential Tasks (1-4 units)
Recommended PPE Levels for Residential Tasks (1-4 units)  
-- Observation and Communication --

NOTE: Customers may be present for any of these tasks, but workers should advise customers to wear cloth or dust masks, to remain in the area only as long as necessary, and to maintain a distance of at least 6 feet from workers.

<table>
<thead>
<tr>
<th>Task</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual pre-screening (single worker performing a walkthrough, not entering residence)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual pre-screening (single worker performing a walkthrough and entering a residence)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Speaking directly with customer indoors or accompanying customer on an indoor audit</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>In-process inspection (PPE compliance monitoring only, outdoors only)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-process inspection (PPE compliance monitoring only, indoors)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Task</td>
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<td>Level 3</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Performing measure upgrades indoors (or combustion safety testing of a heating system)</strong></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NOTE: Any trades must wear the same Level 3 PPE as the assigned crew if they go into the occupied or living space.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Visual monitoring indoors for possible issues during EE work outdoors or in adjacent areas (e.g., blow-by or wall blow-out)</strong></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Installations outdoors by a single worker without entering residence.</strong></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOTE: Cut-resistant gloves should be worn with or without under-gloves for physical protection.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Installations outdoors by multiple workers without entering residence. (Level depends on distance between workers.)</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NOTE: Cut-resistant gloves should be worn with or without under-gloves for physical protection if wearing Level 1.</td>
<td>(6 feet)</td>
<td>(4 feet)</td>
<td>(2 feet)</td>
</tr>
</tbody>
</table>
Recommended PPE Levels for On-Site Work

Commercial & Industrial and Multifamily Tasks
## Recommended PPE Levels for C & I and MF Tasks

-- Observation and Communication --

**NOTE:** Customers may be present for any of these tasks, but workers should advise customers to wear cloth or dust masks, to remain in the area only as long as necessary, and to maintain a distance of at least 6 feet from workers.

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</tr>
</thead>
<tbody>
<tr>
<td>Visual pre-screening (single worker performing a walkthrough, not entering building)</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Visual pre-screening (single worker performing a walkthrough and entering a building)</td>
<td></td>
<td>X</td>
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<td>Speaking directly with customer indoors or accompanying customer on an indoor audit</td>
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<td>In-process inspection (PPE compliance monitoring only, outdoors only)</td>
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</tr>
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<td>In-process inspection (PPE compliance monitoring, indoors)</td>
<td></td>
<td></td>
<td>X</td>
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</table>
## Recommended PPE Levels for C & I and MF Tasks
--- Installations and Upgrades ---

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<tbody>
<tr>
<td>Performing measure upgrades indoors (or combustion safety testing of a heating system)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Visual monitoring indoors for issues from EE work outdoors or in adjacent areas (e.g., electrical issues)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Delivery and removal of materials to and from the site (unoccupied areas in a building).</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Installations outdoors by a single worker without entering building. NOTE: Cut-resistant gloves should be worn with or without under-gloves for physical protection.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installations outdoors by multiple workers without entering building. (Level depends on distance between workers.) NOTE: Cut-resistant gloves should be worn with or without under-gloves for physical protection</td>
<td>X (6 feet)</td>
<td>X (4 feet)</td>
<td>X (2 feet)</td>
</tr>
</tbody>
</table>

**NOTE:** Customers may be present for any of these tasks, but workers should advise customers to wear cloth or dust masks, to remain in the area only as long as necessary, and to maintain a distance of at least 6 feet from workers.
PPE Disposal

• When you are done with your PPE and have doffed (removed) it carefully, put it in a bin or barrel that is labeled for used PPE.

• If you did not put your PPE in the bin or barrel while you were doffing it, put on fresh gloves to pick it up and dispose of it.

• Remove your gloves carefully, following the instructions given earlier.

• The bin or barrel will be carried off-site by a member of the work crew for disposal.
Disinfection
Disinfectants

- Not all disinfectants will kill the COVID-19 virus.
- EPA has a list of registered disinfectants shown to be effective.
  - Over 400 different products listed
- Only products from this list are to be used on site.
  
  Link:  https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2#filter_col1

- **NOTE:** Hand sanitizers that are at least 60% alcohol will kill the virus when used for at least 20 seconds.
Disinfectants – Proper Use

**Hard (Non-porous) Surfaces** (e.g., walls, floors, equipment)
- If surface is visibly dirty, attempt to clean off with a rag, or soap and water.
- Apply disinfectant (spray or wipe).
- Allow for the disinfectant to sit on the surface for as long as the instructions recommend (usually 1 to 5 minutes).
- Dispose of used gloves, wash hands or use hand sanitizer.

**Soft (Porous) Surfaces** (e.g., rugs, drapes, clothes)
- Remove visible contamination.
- Apply disinfectant, wipe or launder if possible.
- Dispose of used gloves, wash hands or use hand sanitizer.
- Utility gloves should be sprayed with disinfectant.
Disinfectants – Proper Use

- Your workspace must be disinfected before you begin work, including surfaces where you put your tools and materials.

- All materials you remove from the workspace must be disinfected before they are taken out.

- All tools, equipment, and materials you remove from the workspace must be disinfected.

- When the job is complete, all surfaces you worked on must be disinfected, including where you put your tools and materials.

- Utility gloves should be sprayed with disinfectant every time you remove them and when you are done for the day.

- Remember, every time you change any gloves or take them off for the day, you must wash your hands or use hand-sanitizer.
Disinfectants – Proper Use

Electronics
(cell phones, tablets, touch screens, remote controls, and keyboards)

– Consider use of wipeable covers for electronics

– If no manufacturer’s guidance is available, use alcohol-based wipes or sprays containing at least 70% alcohol on touch screens

– Dry surfaces thoroughly
Monitoring
Monitoring

• Your Program Administrator may assign Quality Assurance (QA) inspectors to perform site audits.

• Contractors are expected to show compliance with these recommendations in order to be allowed to do more work.

• During these audits, coaching may be provided on:
  – Wearing proper PPE for the job
  – Donning and doffing PPE correctly
  – Using disinfectants correctly
  – Proper disposal of PPE
What are the requirements for a satisfactory audit?

- Contractors must show compliance with these recommendations in initial jobs to be allowed to do more work.

1. QA INSPECTORS WILL MAKE UNSCHEDULED AND UNANNOUNCED VISITS TO JOBS TO CHECK COMPLIANCE
2. HEALTH & SAFETY SPECIALISTS WILL EVALUATE THE ONSITE INSPECTION RESULTS
3. SPECIALISTS WILL REPORT TO PROGRAM ADMINISTRATORS ON CONTRACTOR COMPLIANCE
4. SPECIALISTS WILL IMMEDIATELY REPORT POOR OR DANGEROUS PERFORMANCE TO PROGRAM ADMINISTRATORS
Conclusion
Objectives

From this training, you now can expect to:

• Understand why and how we are changing our approach to Energy Efficiency (EE) work.

• Understand the best ways to reduce the chances of giving or getting COVID-19 by following the guidelines in this training.

• Keep yourself, your crew, and the customers safe by carefully using and removing Personal Protective Equipment (PPE).

• Learn how to use disinfectants to kill the COVID-19 virus.
We are all learning together how to work during this unexpected pandemic!

- We realize our PPE recommendations and work procedures are very strict. Our first priorities are protection of you and customers—we don’t want **anyone** to become ill.

- They are strict because guidance from medical and scientific agencies often changes day-to-day. No one is completely sure about the ways this virus gets transmitted.

- When we receive clear information from authorities, we may be able to **reduce our PPE standards**. For now, our goal is to keep you healthy using the **best PPE and procedures**.

- During the last weeks, many excellent questions and suggestions have come from you and your co-workers. You know the EE business, and your comments are very valuable.

- Your questions helped improve our Guidelines greatly and we hope you keep sending them. Answers will be added to the Frequenty Asked Questions (FAQs) on the website.

- **Thank you** to all of you who took the time to send good questions and suggestions!
New Information – Some Changes

Since the last training, some of our Guidelines have changed, based on your comments and questions:

• Coveralls – lighter weight (like cotton) instead of Tyvek® are OK.

• Street clothes may be worn instead of coveralls, but only when combined with certain disinfecting strategies (see Work Clothing Advisory).

• If other full-body protection is worn (e.g., fire-resistant suit) coveralls are not necessary.

• Work gloves can be removed temporarily for fine work, if you’re wearing Nitrile® or other rubber gloves.

• Outdoor work surfaces don't have to be disinfected.

• Blower door testing is now allowed. See the Health & Safety Guidelines.

• KN95 masks: Some imported masks now authorized by FDA - 6/9 update.
THANK YOU!