DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service

Centers for Disease Control
and Prevention
National Institute for Occupational
Safety and Health
1090 Tusculum Avenue
Cincinnati OH 45226-1998

October 26, 2022
HHE 2002-0052

Mr. Charles O'Brien
Roderick Ireland Courthouse
50 State Street
Springfield, Massachusetts 01103

Dear Mr. O'Brien:

On April 1, 2022, the National Institute for Occupational Safety and Health (NIOSH) received a confidential health hazard evaluation (HHE) request from employees of the Roderick Ireland Courthouse. The employees were concerned about mold growth and indoor environmental quality (IEQ) issues in the courthouse located at 50 State Street in Springfield, Massachusetts. They were also concerned that mold exposure in the building was related to allergies, respiratory symptoms, and cancer diagnoses among employees. This letter summarizes our evaluation, findings, and provides recommendations to address these concerns.

Background

The Massachusetts Trial Court owns and operates the Roderick Ireland Courthouse. Approximately 250 state government employees work at the courthouse. Many of them are represented by either the National Association of Government Employees (NAGE) or the Office & Professional Employees International Union (OPEIU). Other entities rent space in the courthouse, bringing the total number of building occupants to approximately 400 individuals.

Constructed in the 1970s, the Roderick Ireland Courthouse consists of four stories and a basement. It houses the Superior Court, Probate and Family Court, Springfield District Court, and the Registry of Deeds. The basement level includes mechanical, utility, and facilities support spaces along with a parking garage. The heating, ventilation, and air-conditioning systems (HVAC) and windows are original to the building.

During our initial discussions, it was reported that concerns about IEQ and mold have existed among employees working in the building for years, with reports of these concerns dating back to 2006. More recently, the occurrence of cancer diagnoses among multiple employees working in the building has heightened those existing concerns regarding workplace health and safety. This prompted employees to request NIOSH's assistance in evaluating these concerns.

Evaluation

During April–July 2022, we spoke by phone and communicated by email with employee requestors, union and labor relations representatives, environmental health and safety staff and

you. The purpose of these conversations was to learn more about the building and health concerns among employees, actions taken by the Massachusetts Trial Court to address employee concerns, and to request additional information needed for this evaluation.

Review of Environmental Assessments and Sampling Results

To evaluate concerns about IEQ and mold exposure, we discussed details about the HVAC system, building and HVAC maintenance procedures, previous assessments of the IEQ, and mold sampling results. We reviewed the following documents provided by Roderick Ireland Courthouse.

- Roderick L. Ireland Courthouse Report prepared by 9 Foundations, Inc. Dated June 30, 2022.
- PCB Air Sampling Report performed by TRC Environmental Corporation. Dated April 21, 2022.
- Indoor Air Quality Assessment performed by Environmental Health & Engineering, Inc. Dated April 15, 2022.
- Investigation of Indoor Mold at the District Courthouse performed by consultant Walt Baenziger. Dated March 3, 2022.
- HVAC Repairs prepared by Habeeb & Associates, Inc. and Architectural Engineers, Inc. Dated February 24, 2022.
- Indoor Air Quality Testing performed by Axiom Partners, Inc. Dated January 31, 2022.
- Indoor Air Quality Testing performed by Axiom Partners, Inc. Dated December 8, 2021.
- Indoor Air Quality Assessment performed by Massachusetts Department of Public Health. Dated February 2019.
- Indoor Air Quality Reassessment performed by Massachusetts Department of Public Health. Dated October 2017.
- Indoor Air Quality Assessment performed by Massachusetts Department of Public Health. Dated March 2013.
- Indoor Air Quality Assessment performed by Massachusetts Department of Public Health. Dated May 2006.

Evaluation of Cancer Concerns

To evaluate concerns about an unusual pattern of cancer, we collect information about employees known to be diagnosed with cancer and information about exposures that may be present in the workplace environment. If the pattern of cancer appears to be unusual or an exposure of concern is identified, additional steps are taken to identify all cases of the cancer of concern, conduct a statistical assessment, and evaluate the association between exposure and the cancer of concern. If the pattern of cancer does not appear unusual and a workplace exposure is not identified, we end the evaluation. This approach follows the principles outlined in the Centers for Disease Control and Prevention (CDC) guidelines for investigating cancer concerns in a community [CDC 2013].

Results and Discussion

In our review of the documents provided, we identified several issues that may be contributing to excess moisture and the potential for indoor mold growth in the Roderick Ireland Courthouse. The core issues identified include:

- HVAC systems that are original to the building and in poor operating condition
- Insufficient dehumidification provided by the air handling system
- Condensation from uninsulated copper piping is affecting the fiberglass insulation surrounding the adjacent fan coil units
- Leaking windows that are original to the building
- Visibly water-damaged ceiling tiles that indicate past and/or current water intrusion
- Water intrusion through the roof

We do not typically recommend air sampling for mold, chemicals, or dust to evaluate IEQ problems. Our reason is that sampling results are difficult to interpret because of (a) the absence of occupational exposure limits, (b) the common and widespread presence of low-levels of mold, chemicals, and/or dust and (c) uncertainty about the relationship between low levels of such agents and specific health effects. NIOSH investigators have found that sampling results rarely alter recommendations in most situations where IEQ concerns have been raised. Thus, no mold sampling is needed to justify remediation efforts.

NIOSH receives many requests to evaluate IEQ concerns in the workplace. We review these requests to identify the most appropriate response. After speaking with the requestors, union representative, and management and reviewing environmental assessment and sampling reports, we believe the best next course of action is to provide information and recommendations that may be helpful to address the concerns described in this request.

Mold

Mold is a fungal growth that forms and spreads on various kinds of damp or decaying organic matter. There are many different mold species that come in many different colors. Molds are sometimes referred to as mildew. They are found both indoors and outdoors in all climates, during all seasons of the year. Outdoors, molds survive by using plants and decaying organic matter such as fallen leaves as a source of nutrition. Indoors, molds need moisture to grow as well as a carbon source from building materials or building contents.

Building materials can become damp either through internal sources (e.g., leaking pipes) or external sources (e.g., rainwater). Dampness typically becomes a greater problem when the materials are wet for an extended period of time. This provides the necessary moisture for the growth of bacteria and fungi. Moderate temperatures and available nutrient sources make most office buildings ideal for mold growth. Therefore, promptly addressing any potential sources of excess moisture in a building is key to the prevention of indoor mold growth. Molds reproduce by releasing tiny spores that float through the air until landing in other locations. When they settle on wet or moist surfaces, the spores can form new mold colonies. [NIOSH 2013]. Because mold is found both indoors and outdoors, the presence of mold spores in an indoor air sample does not necessarily indicate indoor mold growth. If the species and amount of mold spores in an indoor air sample differ from those found outdoors, that may indicate that mold growth is

occurring in the indoor environment [ACGIH 1999]. As there are no occupational exposure limits for mold in air, it is challenging to evaluate the safety of a building with respect to mold exposure through air sampling alone.

Exposure to indoor mold growth can cause health symptoms, such as sore throat, skin irritation, and respiratory symptoms. Healthy individuals are usually not vulnerable to infections from airborne mold exposure. However, people with weakened immune systems (e.g., those with diabetes, on chronic systemic steroid therapy, with cancer or acquired immune deficiency syndrome, among others) may be more vulnerable to infections by molds.

Remediation of mold contamination may improve IEQ conditions even though a specific cause-effect relationship is not determined. To decrease the presence of mold indoors, steps must be taken to mitigate sources of moisture or water damage, remove visible mold growth, and ensure building ventilation, temperature, and humidity levels are controlled. No mold sampling is needed to justify remediation.

Building Ventilation and IEQ

Poor ventilation in buildings is a common problem and is frequently due to lack of proper attention to the building's HVAC system. HVAC systems include all the equipment used to ventilate, heat, and cool the building; to move the air around the building (ductwork); and to filter and clean the air. These systems can have a significant impact on how pollutants are distributed in and removed from spaces. They can even act as sources of pollutants in some cases, such as when ventilation air filters become contaminated with dirt and/or moisture, when microbial growth results from stagnant water in drain pans, or from uncontrolled moisture inside of air ducts.

Ventilation System Design

The air delivery capacity requirements of an HVAC system are based in part on the projected number of people and the size of the occupied space. Proper distribution of ventilation air throughout all occupied spaces is essential. When areas in a building are used differently than their original purpose, the HVAC system may require modification to accommodate these changes. For example, if a storage area is converted into space occupied by people, the HVAC system may require alteration to deliver enough conditioned air to the space.

Outdoor Air Supply

Adequate supply of outdoor air, typically delivered through the HVAC system, is necessary in any office environment to dilute pollutants that are released by equipment, building materials, furnishings, products, and people. Carbon dioxide (CO_2) is a normal constituent of exhaled breath; thus, CO_2 will also increase during building occupancy. CO_2 levels are routinely collected in air quality studies because they can indicate whether a sufficient quantity of outdoor air is being introduced to an occupied space for acceptable odor control. The American National Standards Institute (ANSI) and the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) have developed consensus standards and guidelines for HVAC systems. ASHRAE notes in an informative appendix to *ANSI/ASHRAE Standard 62.1-*

2016: Ventilation for Acceptable Indoor Air Quality that indoor CO_2 concentrations no greater than 700 parts per million (ppm) above outdoor CO_2 concentrations will satisfy a substantial majority (about 80%) of occupants [ANSI/ASHRAE 2016]. This would typically correspond to indoor concentrations below 1200 ppm since outdoor CO_2 concentrations usually range from 375 to 500 ppm. However, CO_2 is not an effective indicator of ventilation adequacy if the ventilated area is not occupied at its usual occupant density at the time the CO_2 is measured. Elevated CO_2 concentrations suggest that other indoor contaminants may also be increased. If CO_2 concentrations are elevated, the amount of outdoor air introduced into the ventilated space may need to be increased.

In some cases, building owners/managers or occupants will open doors or windows to increase the amount of outdoor air coming into their building. However, relying on open doors may cause problems. For example, the air coming into the building through the doors may not reach all the office areas in the building. The incoming air is unfiltered and may contain outdoor air pollutants, such as pollen and dust, as well as create an entry point for pests, insects, and bees. Additionally, open doors may affect the ability of the HVAC system to adequately control temperatures and humidity. ASHRAE guidelines provide specific details on ventilation for acceptable IEQ. A ventilation system expert can help meet ASHRAE ventilation guidelines in the building. ANSI/ASHRAE 62.1-2016 recommends outdoor air supply rates that take into account people-related sources as well as building-related sources. For office spaces, conference rooms, and reception areas, five cubic feet per minute of outdoor air per person (cfm/person) is recommended for people-related sources, and an additional 0.06 cfm for every square foot (cfm/ft^2) of occupied space is recommended to account for building-related sources. To find rates for other indoor spaces, refer to Table 6.2.2.1 which is found in ANSI/ASHRAE 62.1-2016 [ANSI/ASHRAE 2016].

Outdoor Air Quality

When present, outdoor air pollutants such as carbon monoxide, pollen, and dust may affect indoor conditions when outside air is taken into the building's ventilation system. Properly installed and maintained filters can trap many of the particles in outdoor supply air. Controlling gaseous or chemical pollutants may require more specialized filtration equipment and sometimes relocation of the outdoor air intakes. Section 4 of ANSI/ASHRAE Standard 62.1 specifies that any outdoor air brought into occupied spaces must be compliant with the U.S. Environmental Protection Agency's (EPA) National Ambient Air Quality Standards (NAAQS). The standard further stipulates that a local outdoor air quality assessment should be conducted at a building and the immediate surroundings during periods the building is expected to be occupied to identify and locate contaminants of concern. If any outdoor contaminants exceed the NAAQS limits, the outdoor air must be appropriately treated prior to introduction of that air to the occupied spaces.

Maintenance of HVAC Equipment

Diligent maintenance of HVAC equipment is essential for the adequate delivery and quality of building air. All well-run buildings have preventive maintenance programs that help ensure the proper functioning of HVAC systems.

HVAC Duct Cleaning

We do not recommend duct cleaning unless it is found to be contaminated with mold or other irritant particles affecting the employees' health. Improper duct cleaning can release large amounts of dust and other contaminants into the work area. Fiberglass ductwork that has mold growth must be replaced; it cannot be cleaned. If metal duct cleaning is deemed necessary, it should only be performed by contractors who are members in good standing of the National Air Duct Cleaners Association. The National Institutes of Health (NIH) fact sheet on HVAC Duct Cleaning can be found at DOHS Fact Sheet on Duct Cleaning.

Temperature and Relative Humidity

Temperature and relative humidity measurements are often collected as part of an IEQ evaluation because these parameters affect the perception of comfort in an indoor environment. The perception of thermal comfort is related to one's metabolic heat production, the transfer of heat to the environment, physiological adjustments, and body temperature. Heat transfer from the body to the environment is influenced by factors such as temperature, humidity, air movement, personal activities, and clothing. The *ANSI/ASHRAE Standard 55-2017: Thermal Environmental Conditions for Human Occupancy* specifies the combinations of indoor environmental and personal factors that produce acceptable thermal conditions to a majority of occupants within a space [ANSI/ASHRAE 2017]. Assuming slow air movement (less than 40 feet per minute) and 50% indoor relative humidity, the operative temperatures recommended by ASHRAE range from 68.5°F to 75°F in the winter, and from 75°F to 80.5°F in the summer. The difference in temperature ranges between the seasons is largely due to clothing selection. ASHRAE Standard 62.1 also recommends that indoor relative humidity be maintained at or below 65% for occupied spaces served by mechanical systems with dehumidification capability [ANSI/ASHRAE 2016]. For other mechanical system types or where spaces are not served by mechanical systems, Standard 62.1 has no humidity limitations. The EPA recommends maintaining indoor relative humidity between 30% and 50% to reduce mold growth [EPA 2017].

Occupied and Non-occupied Settings

Buildings with simple HVAC systems often operate the ventilation system during occupied hours and then turn them off completely at night or other periods when the building is unoccupied. While turning the system off may save energy, depending on outdoor conditions, it often increases demand on the HVAC system when it is turned back on. Essentially, the equipment has to operate longer and harder to reach desired indoor temperature and humidity set-points. It can also create issues with condensation if temperatures indoors become warm during the "off" periods. This is particularly true in areas with warmer climates. More sophisticated HVAC systems with programmable thermostats or building automation systems allow for the ventilation equipment to be "set back" during unoccupied periods. This method still allows the indoor temperature and humidity to drift further from the occupied set-points, but eventually the HVAC system will come on to prevent fluctuations as extreme as they might otherwise be with the equipment powered off. This "set back" method still provides significant energy savings, but it does not require the system to work as long or as hard to bring the indoor conditions back to set-points in preparation for building occupancy. Whether the system runs continuously, is powered off during unoccupied periods, or is "set back" when empty, the indoor temperature and humidity conditions should always meet recommendations found in ANSI/ASHRAE 55-2017 and ANSI/ASHRAE 62.1-2016 any time the building is occupied.

Allergy and Respiratory Symptom Concerns

Allergic responses are the most common type of health problem associated with exposure to molds. Symptoms may include sneezing; itching of the nose, eyes, mouth, or throat; nasal stuffiness and runny nose; and red, itchy eyes. Repeated or single exposure to mold or mold spores may cause previously nonsensitized individuals to become sensitized. Molds can trigger asthma symptoms (shortness of breath, wheezing, cough) in persons who are allergic to mold. The types and severity of symptoms related to exposure to mold in the indoor environment depend in part on the extent of the mold present, the extent of the individual's exposure, and the susceptibility of the individual (for example, whether they have preexisting allergies or asthma).

Many of the reported symptoms in this HHE request, such as allergy and respiratory symptoms, have been reported frequently during IEQ investigations of buildings in nonindustrial settings such as office buildings and schools. Typically, employees suspect a workplace cause because their symptoms appear to be worse while at work and better when away from work. In our experience, some of these symptoms may be related to poor IEQ, such as problems with building air flow and temperature as well as the presence of low levels of chemicals from office furnishings, office machines, cleaning products, personal hygiene products, and structural components of the building [Mendell et al. 2011]. However, the same symptoms are commonly experienced by people outside of the workplace. Additionally, some symptoms that began coincidentally with IEQ concerns can be explained by medical conditions that are not related to work, such as respiratory infections and allergies. For these reasons, the causes of the reported symptoms cannot be specifically attributed to workplace exposures.

An analysis of the published scientific literature showed that nonspecific symptoms such as headache, fatigue, and mucous membrane irritation increase as ventilation rates decrease [Fisk et al. 2009]. Studies in office buildings and schools have found decreased illness absence with increased ventilation rates [Mendell et al. 2011; Milton et al. 2000; Shendell et al. 2004]. Thus, improving HVAC operation and maintenance and increasing ventilation rates can help prevent occurrence of some of the reported symptoms, even though the specific cause is unknown. We believe similar benefits would occur in the courthouse building if ventilation improves.

Cancer Concerns

Understanding cancer and its occurrence in the general population

Cancer is a group of different diseases that have the same feature, the uncontrolled growth and spread of abnormal cells [CDC 2013; NCI 2020a]. As a group of diseases, cancer is very common and has a major impact on society and on the individuals and families it affects [NCI 2020b]. Approximately 40% of men and women will be diagnosed with cancer at some point during their lifetimes [ACS 2020]. The most common cancers diagnosed during 2020 (excluding non-melanoma skin cancer) were breast cancer, lung and bronchus cancer, prostate cancer, colon and rectum cancer, melanoma of the skin, bladder cancer, non-Hodgkin lymphoma, kidney and renal pelvis cancer, endometrial cancer, leukemia, pancreatic cancer, thyroid cancer, and liver cancer [NCI 2020b].

Most cancers are caused by a combination of multiple factors and each different type of cancer has its own set of contributing causes. Some of these factors include personal characteristics (e.g., age, sex, family history of cancer); personal habits (e.g., diet, smoking, alcohol consumption); underlying medical conditions; and exposure to cancer-causing agents in the environment, including the work environment. These factors may act together or in sequence to cause cancer. Although some risk factors for certain types of cancer are known, the causes of many types of cancer remain unknown. In many cases, people with no known risk factors develop cancer.

What is a cancer cluster and how do we determine if cancer could be related to a common exposure?
NIOSH receives many requests to evaluate workplaces regarding concerns of cancer. These concerns are understandable, as it can be alarming when employees in the same workplace report developing cancer. However, this does not necessarily mean that the cancer was caused by a workplace exposure.

Cancer often appears to occur in clusters. Scientists define a cancer cluster as a greater than expected number of cancer cases that occur within a group of people in a specific geographic area over a defined period of time [CDC 2013]. A cluster can also occur when groups of individuals who are not expected to develop a particular cancer become ill (for example, lung cancer in young, nonsmokers).

In many workplaces, the number of cancer cases is relatively small, which makes detecting a possible common cause difficult. Many factors need to be considered when we assess whether cases of cancer among employees could be related to workplace exposure(s), including:

- Potential for exposure to cancer-causing agents
- Types of cancer reported
- Number of cancer cases
- Timing of the diagnosis in relation to the exposure

Cancer clusters potentially related to a workplace exposure usually need to consist of the same type of cancer, because this makes it more likely that a common causal pathway from exposure to disease exists. When several cases of the same type of cancer occur and that cancer is either uncommon in the general population or uncommon in the group of people developing it (for example, breast cancer in men), it is more likely that a workplace exposure may be involved.

Does the occurrence of cancer among Roderick Ireland Courthouse employees appear unusual?
No. The requestors described multiple types of cancer among employees including lung, colon, and liver cancer. These different types of cancer are common in the general population and may be found in people at any workplace. The variety of types of cancer described by the requestors are considered different types of disease and do not develop through the same causal pathway. When cases of cancer in a suspected cluster consist of multiple types of cancer without one type predominating, they are unlikely to have developed because of a common exposure. The different types of cancer reported do not, at this time, suggest a need for further evaluation.

Was exposure to a specific chemical substance or physical agent known or suspected of causing cancer occurring at the Roderick Ireland Courthouse?
No. In our review of past sampling results and IEQ assessments performed at the courthouse, we found no evidence that employees are being exposed to a specific chemical or physical agent at levels known or suspected of causing cancer. The relationship between some chemical and physical agents and certain cancers has been well established. For other agents and cancers, the evidence is not definitive, but a suspicion exists. When a known or suspected cancer-causing agent is present and the types of cancer occurring have been linked with that agent in other settings, we are more likely to suspect a connection between the workplace exposure and cancer.

Employees noted concerns about poor IEQ, specifically exposure to mold in the courthouse. Although it is important to note that we are only able to assess the current status of the building and our observations may not be representative of conditions in the distant past, we did not find evidence of a specific exposure that would increase the risk of a certain type of cancer. Poor IEQ can be associated with elevated rates of general respiratory symptoms (e.g., nasal congestion) and headaches, but there is no evidence to support an association between poor IEQ indicators, including mold growth, and cancer risk.

Recommendations

Based on our evaluation, we recommend the actions listed below to create a healthier workplace. We encourage management to coordinate with employees when developing an action plan to address these recommendations. Employees directly involved in the work can best set priorities and assess the feasibility of our recommendations for the specific situation at Roderick Ireland Courthouse.

1. Building maintenance personnel should regularly inspect the building for water damage. Any identified sources of excess moisture or water intrusion in the building should be addressed promptly.

2. Visible signs of water damage should be cleaned or replaced, such as stained ceiling tiles, drywall, or carpet. Visible mold can be cleaned using the following guidance available from the EPA: Mold Remediation in Schools and Commercial Buildings.

3. We do not recommend additional air sampling for mold, VOCs, or other potential indoor contaminants to address IEQ complaints. These results are unlikely to alter recommendations, such as improving the HVAC systems in the building. In addition, no standardized evaluation criteria exist to assist in the interpretation of the data.

4. Ensure that temperature, relative humidity, and carbon dioxide levels are kept within applicable ANSI/ASHRAE thermal comfort guidelines throughout the facility [ANSI/ASHRAE 2016 and 2017].
    a. The recommended thermal comfort guidelines for summer are approximately 75°F–81°F, assuming a clothing insulation value of 0.5–1.0 (i.e., short-sleeve shirts/blouses, lighter weight clothing).

b. The recommended thermal comfort guidelines for winter are approximately 68°F–77°F, assuming a clothing insulation value of 1.0–1.3 (i.e., long-sleeve shirts/blouses, heavier weight clothing).
c. The recommended comfort guideline for relative humidity is less than 65%.
d. In general, carbon dioxide levels indoors should be approximately 1100–1150 parts per million or less, which is equivalent to 700 parts per million above typical outdoor levels.

5. Continue to improve your IEQ management program. If you would like more information on IEQ, including the documents "Building Air Quality–A Guide for Building Owners and Facility Managers" and "Building Air Quality Action Plan" see the NIOSH Topic Page on Indoor Environmental Quality. The basic elements of a good IEQ plan include the following:

    a. Properly operating and maintaining the ventilation equipment.
    b. Overseeing the activities of occupants and contractors that affect IEQ (e.g., housekeeping, pest control, maintenance).
    c. Ensuring effective and timely communication with building occupants regarding IEQ.
    d. Educating employees about their responsibilities in relation to IEQ.
    e. Proactively identifying and managing projects and renovations that may affect IEQ.

6. Encourage employees to seek assessment and treatment from a qualified health professional if they are experiencing work-related symptoms. Occupational medicine physicians can be found through a variety of sources, including the Association of Occupational and Environmental Clinics (http://www.aoec.org/) and the American College of Occupational and Environmental Medicine (http://www.acoem.org/). It may be useful to provide the physician with a copy of this report.

7. Encourage employees to learn more about known cancer risk factors, measures to reduce risk for preventable cancers, and availability of cancer screening programs for certain types of cancer. Even though cancers among employees are not likely due to their work, employees may still have concerns about their own risk for cancer.
    - The American Cancer Society has information about cancer risk factors (What Causes Cancer? | American Cancer Society), as well as additional information that may help address some employee concerns regarding cancer clusters (Cancer Clusters).

8. Consider providing employees with assistance in modifying personal risk factors for cancer. Options include tobacco cessation programs [NIOSH 2015], nutritional counselling, and exercise programs. Information about the NIOSH Total Worker Health Program can be found here: https://www.cdc.gov/niosh/twh/.

9. Implement a formal (preferably anonymous) system for reporting building concerns to the facilities maintenance manager or a building administrator. This system can be paper or electronic and should include a feedback mechanism to let staff know when and how the problem is fixed.

10. Improve communication between managers and employees regarding responses to employee health and safety concerns. A supervisor or manager who is sensitive to the employees' concerns should communicate directly with those who report health and safety concerns. Points to consider include:
    a. Actively listening to employees' concerns in a nonjudgmental manner. Employees should feel that their concerns are taken seriously.
    b. Regularly informing employees of exactly what steps are being taken to assess the problem, what has been determined, and what remains to be determined. A combination of written reports and face-to-face meetings are valuable.
    c. Routinely share information with employees rather than waiting until a cause of the problem is discovered; this will reduce the chance of distorted rumors.

11. Institute a fragrance-free workplace policy if not already in place. Ensure the policy addresses perfumes and other scented personal care products, air fresheners, and potpourri. The American Lung Association provides a sample policy at American Lung Association Sample Fragrance-free Policy.

This letter serves as a final report and concludes this health hazard evaluation. NIOSH recommends that employers post a copy of this letter for 30 days at or near work areas of affected employees. We are sending a copy of this letter to the Occupational Safety and Health Administration Region I Office.

Thank you for your cooperation with this evaluation. If you have questions, please contact Emily McDonald (okm3@cdc.gov) or Douglas Wiegand (hzo7@cdc.gov).

Sincerely yours,

Emily S. Mcdonald -S
Digitally signed by Emily S. Mcdonald -S
Date: 2022.10.26 14:50:05 -04'00'

Emily McDonald, MD, MPH
Medical Officer

Douglas Wiegand -S
Digitally signed by Douglas Wiegand -S
Date: 2022.10.26 15:13:40 -04'00'

Douglas Wiegand, PhD
Behavioral Scientist

Christine M. Uebel -S
Digitally signed by Christine M. Uebel -S
Date: 2022.10.27 14:06:41 -04'00'

Christine Niemeier-Walsh, PhD
Industrial Hygienist

Hazard Evaluations and Technical Assistance Branch
Division of Field Studies and Engineering

cc: Confidential employee requestors
OPEIU Local 6 Representative, George Noel
Occupational Safety and Health Administration Region I Office

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