Office of the Oklahoma State Fire Marshal

Marijuana Facility Guidance

Based on the 2018 International Fire Code and NFPA 2018 Edition

About the Guidance in this Document

These guidelines provide government agency inspectors and cannabis businesses with the contacts and resources necessary to begin developing an understanding of regulations applied to cannabis operations. Keep in mind that the following guidelines apply to Oklahoma State Licensed Producers, Processors and Retailers who hold valid Marijuana Licenses issued by the Oklahoma Medical Marijuana Authority (OMMA) and the Oklahoma Bureau of Narcotics and Dangerous Drugs. This guidance will be updated as legislation changes and or agency requirements change. These guidelines DO NOT substitute for the state-mandated rules of OAC (Oklahoma Administrative Code) nor any future updates within. The guidelines are intended to provide the resources applicable to all businesses. Additional local ordinances and regulations may apply.

Plan Ahead!

Contact Local government agencies early in your planning phase. Design, build and furnish your facility to meet code requirements. Avoid receiving enforcement actions (Stop Work Orders, Citations, Injunctions, Utility Disconnects, etc.) that can bring your project to a halt, may disqualify or prevent you from opening and receiving OMMA approvals. DO NOT assume that a business license and a building permit is all you need. **DO NOT assume that if you are located in an unincorporated area that a building permit is not required, as the Oklahoma State Fire Marshal oversees all unincorporated areas, cities, towns, and or counties throughout the entire state that do not have an AHJ agreement on file.**

- The requirements listed in this guide are intended to assist the applicant with some of the requirements applicable to the medical marijuana industry and are not considered an all-inclusive listing of Building and/or Fire Code requirements for plan approval or permit issuance.

- This document is not for use in the designing of your facility. Seek the guidance of a licensed Oklahoma design professional should you need assistance in plan and facility design.

- All construction and related work must be performed by contractors licensed by the State of Oklahoma as general and/or specialty contractors for the specific discipline of work to be performed.

- All design and construction shall be consistent with the provisions of the State of Oklahoma and the current editions of the *Oklahoma Building and Fire Codes* as last adopted by the Oklahoma Uniform Building Code Commission (OUBCC), and as amended by the State Fire Marshal and or the local jurisdiction.

The guidelines provided in this version, Version 420.1, were current at publication (September 1, 2022) and are subject to change and update as determined by the State Fire Marshal or AHJ. It is the responsibility of a licensee and business operator to contact each relevant jurisdiction and agency for additional, most recent and correct information and guidance.

Welcome!

This guidance explains rules and regulations to protect the community, worker and environmental safety and health, and introduces the agencies responsible for their enforcement. This booklet offers only guidance. Because the cannabis industry is so new and changing, we are calling this Version 420.1, knowing regulations and guidance will continue to change as we learn together.

Marijuana businesses licensed by the Oklahoma Medical Marijuana Authority (OMMA) may be subject to additional state, regional and local regulations and permits beyond those in this document. It is the responsibility of every owner and or business to check for the most up-to-date requirements, and to know and comply with those regulations so that our communities, environment, and workers remain safe and healthy.

In addition to the requirements of the Oklahoma Medical Marijuana Authority (OMMA), marijuana producers, processors, and retailers applying for or granted licenses may be subject to additional local, state, and regional regulations and permits. These additional regulatory requirements may have separate timelines and costs aside from the OMMA process. They can include, but are not limited to, environmental permitting, land-use regulations (zoning), business licensing, change of use, building, fire, electrical, plumbing, and mechanical codes. Local municipalities may have in place their own ordinances to be adhered to or may have a ban in effect.

It should be noted that regardless of what regulations the local or county authority having jurisdiction (AHJ) may have in place, it is understood that the Office of the State Fire Marshal has the statutory obligation to ensure all jurisdictions accepting the responsibility of being the AHJ adhere to the minimum state-adopted building codes and standards and the ADA. See 74 O.S. §§ 317, 324.4, and 324.11. The Office of the State Fire Marshal retains the authority to review and or audit any projects permitted by a municipality, town, and or county.

Building permits and inspections by building and fire code officials are required for all legal commercial marijuana operations regardless of whether the facility is a new building project or a remodel to an existing building. As long as marijuana facilities are designed, constructed, and operated according to applicable codes and standards, the risk of harm to people inside the facility and the surrounding areas is greatly mitigated. But the various systems in a facility do warrant consideration of any potential hazards, and proper installation and operating procedures must be carefully followed. An improperly designed, constructed and operated facility can also cause damage to the property or the product and or cause death or serious bodily injuries.

Note: This document is for informational purposes only. It is intended to help inspectors and marijuana producers, processors and retailers be aware of local, state and/or regional requirements they may need to meet. For more technical information, contact local, state, and regional regulatory authorities. For convenience, some are listed in the agency resource section.

IMPORTANT: It is the responsibility of a business to obtain all permits and approvals and research all state and or local ordinances for adherence prior to occupying and starting a business activity.

Table of Contents

Scope

Information contained within the Marijuana Facility Guidance document is provided to assist members of the Fire Marshals Association of Oklahoma (FMAO), AHJs, and the marijuana industry with applicable code requirements and best practices as the code relates to cultivation, extraction processes, and the businesses related to medical marijuana. This document was developed by members of the Oklahoma State Fire Marshal's Office who reviewed the applicable requirements in the 2018 International Fire Code (IFC) and NFPA, as well as other applicable codes and standards that apply to the marijuana industry.

Because every process and building differs, and every jurisdiction operates differently, this document is not intended to identify or discuss every code and standard requirement. Applicants are required to follow all State of Oklahoma minimum codes and or standards that have been adopted within the appropriate governmental jurisdiction otherwise known as the Authority Having Jurisdiction (AHJ).

This information is for the guidance of the reader and is not intended to be used as an exclusive or adopted "enforcement" document.

In this document, the terms, marijuana facility and marijuana, applies to medical marijuana (cannabis) and each jurisdiction should consult licensing laws specific to these facilities.

Purpose

The purpose of this guidance document is to provide a reasonable level of life safety and property protection from the hazards associated within the medical marijuana industries.

Applicability

This guideline applies to the process of growing (cultivating) marijuana, extracting THC and oils from marijuana, and the processing of medical marijuana. The guide can also be applied to the hemp industry as the cultivation and oil extraction process of this plant material is the same or similar as marijuana.
It should be noted that any indoor plant cultivation, extraction, and or processing should consider the code references cited in this document. Although marijuana is unique in its recent popularity, legalization debate, and high demand for the product, the commercial growing of any indoor plants, of any variety, in high volume would be required to follow the code references and considerations outlined in this document.

Administration and Definitions

These definitions are for the items discussed within this document. Local variations in terms or definitions may be different. Locally defined terms should be used as applicable.

- THCA - Tetrahydrocannabinolic acid.
- THC - Tetrahydrocannabinol.
- Water-Based Medical Marijuana Concentrate - A Medical Marijuana Concentrate that was produced by extracting cannabinoids from Medical Marijuana through the use of only water, ice or dry ice.
- Solvent-Based Medical Marijuana Concentrate - A Medical Marijuana Concentrate that was produced by extracting cannabinoids from Medical Marijuana through the use of a solvent to include but not limited to flammable solvents; flammable combustible liquids; ethanol, isopropanol, butane, propane, CO2 Solvent; dry ice.
- Retail Marijuana Store - An entity licensed to purchase Retail Marijuana from a Retail Marijuana Cultivation Facility and to purchase Retail Marijuana Product from a Retail Marijuana Products Manufacturing Facility and to sell Retail Marijuana and Retail Marijuana Product to consumers.
- Marijuana Products Manufacturing Facility - An entity licensed to purchase Retail Marijuana; manufacture, prepare, and package Retail Marijuana Product; and sell Retail Marijuana and Retail Marijuana Product to other Retail Marijuana Products Manufacturing Facilities and to Retail Marijuana Stores, but not to consumers.
- Marijuana Establishment - A Retail Marijuana Store, a Retail Marijuana Cultivation Facility, Retail Marijuana Products Manufacturing Facility, or a Retail Marijuana Testing Facility.
- Marijuana Cultivation Facility - An entity licensed to cultivate, prepare, and package Retail Marijuana and sell Retail Marijuana Retail Marijuana Establishments, but not to consumers.
- Marijuana Concentrate - A specific subset of Retail Marijuana that was produced by extracting cannabinoids from Retail Marijuana. Categories of Retail Marijuana Concentrate include Water-Based Retail Marijuana Concentrate, Food-Based Retail Marijuana Concentrate and Solvent-Based Retail Marijuana Concentrate.
- Retail Marijuana - All parts of the plant of the genus cannabis whether growing or not, the seeds thereof, the resin extracted from any part of the plant, and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or its resin, including marijuana concentrate that is cultivated, manufactured, distributed, or sold by a licensed Retail Marijuana Establishment. "Retail Marijuana" does not include industrial hemp, nor does it include fiber produced from stalks, oil, or cake made from the seeds of the plant, sterilized seed of the plant which is incapable of germination, or the weight of any other ingredient combined with marijuana to prepare topical or oral administrations, food, drink, or other product.
- Public Way - A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which as a clear width and height of not less than 10 feet.
- Professional Engineer - An individual who is licensed by the Oklahoma State Board of Engineers, as a professional engineer with competence in the specific discipline(s) of engineering.
- Pesticide - Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest or any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant; except that the

term "pesticide" shall not include any article that is a "new animal drug" as designated by the United States Food and Drug Administration."

- Original Equipment Manufacturer (OEM) - The original manufacturer of equipment or devices.

- Cannabis, Medical Marijuana (MMJ) Marijuana, Marihuana (MJ) - Marijuana that is grown and sold pursuant to the codes and laws of the State of Oklahoma and includes seeds and immature plants.
    - The plant species Cannabis sativa L. typically refers to the dried leaves, flowers, stems, and seeds of that plant. Cannabis sativa L. has two main subspecies, Cannabis sativa and Cannabis indica. Hybrids of these main subspecies produce what are often referred to as “strains” of marijuana.
    - All parts of the plant, genus cannabis, whether growing or not, the seeds thereof, the resin extracted from any part of the plant, and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or its resin, including marijuana concentrate fall within the definition. The definition does not include industrial hemp, nor does it include fiber produced from the stalks, oil, or cake made from the seeds of the plant, sterilized seed of the plant which is incapable of germination, or the weight of any other ingredient combined with marijuana to prepare topical or oral administrations, food, drink, or other product.

- Licensed Premises - The properties specified in an application for a license pursuant to the state and local jurisdictions of the Medical Code that are owned or in possession of the Licensee and within which the Licensee is authorized to cultivate, manufacture, distribute, sell, or test Medical Marijuana in accordance with the provisions of the Oklahoma Medical Marijuana Code and these rules.

- Hexane - Used to extract edible oils from seeds and vegetables, as a special-use solvent, and as a cleaning agent. Hexane is a colorless volatile liquid that is insoluble in water and highly flammable. The odor threshold for hexane is 130 parts per million (ppm), with a faint peculiar odor reported. The vapor pressure for hexane is 150 mm Hg at 25 °C.

- Flammable Solvent - A liquid that has a flash point below 100 degrees Fahrenheit.

- HHO: Hexane Hash Oil - Made by passing hexane liquid through an extractor filled with cannabis plant matter.

- PHO: Propane Hash Oil - Made by passing propane gas (liquefied petroleum gas [LPG]) through an extractor filled with cannabis plant matter.

- Hash Oil - A concentrate from marijuana that involves extracting Tetrahydrocannabinol (THC) and other cannabinoids from the plant material using a light hydrocarbon or other process. The final product is typically a pliable waxy substance similar to caramel and honey. Also known as, Honey Oil, Weed Oil, Dabs, Concentrate, Ear wax, Amber Glass, Moon Rocks, Shatter and 710.A firm liquid made by dissolving cannabis plant matter and/or hash in a solvent “like alcohol, liquefied petroleum gas (LPG), acetone and others. “A dark green or black tar-like material made by solvent extraction of either cannabis resin or herbal cannabis. May exceed 60% THC. Hash oil is a resinous matrix of cannabinoids obtained from the cannabis plant by solvent extraction. The solvent is removed after the extraction. Made by passing butane gas through a tube or “extractor” filled with cannabis plant matter.

- Butane Hash Oil (BHO) - Made by passing butane gas through a tube or “extractor” filled with cannabis plant matter.

- Flammable Gas Extraction System - A professional grade, closed-loop extraction system capable of recovering the solvent for the production of a Solvent-Based Medical Marijuana Concentrate.

- Architect - A person who is licensed by the Oklahoma State Board of Architects to practice architecture.

- Greenhouse - A structure or thermally isolated area of a building that maintains a specialized sunlit environment used for and essential to the cultivation, protection or maintenance of plants, free from electrical/mechanical equipment.

Occupancy Classification

The Use and Occupancy Classification of Marijuana Business Functions may be found in Chapter 3 of the International Building Code (IBC), and International Fire Code (IFC). Typical occupancies are summarized as follows:

1) Medical / Recreational Marijuana Center, Store, or "Dispensary" – M Occupancy; B Occupancy if there is patient care and similar

2) Marijuana Plant Cultivation Locations or "Grow Facilities" – F-1 Occupancy [Retail Marijuana Cultivation Facility]

3) Marijuana Oil Extraction Operations – F-1 Occupancy*[1]

4) Marijuana-Infused Product Kitchens/Bakeries – F-1 Occupancy

International Building Code lists "Hemp products" and "Tobacco" as examples of uses to be classified as F-1 Occupancies, which very closely matches the functions occurring in items 2, 3, and 4 listed above.

Note:

- Liquefied petroleum gas (LPG) is not specifically listed in Chapter 50, Table 5003.1.1 (1) for a maximum allowable quantity (MAQ). However, it can be considered as a flammable gas (liquefied). Therefore, if the MAQ for flammable gas (liquefied) is exceeded, the occupancy would be considered H-2. LPG is specifically regulated in Chapter 61 of the IFC and NFPA 58.

  (1) An "H" occupancy classification may apply to an infused product manufacturer using solvent based extraction systems where flammable liquids and/or flammable gases, such as, butane and propane are used. The facility's chemical inventory and Maximum Allowable Quantities per Control Area (MAQs) Tables, found in the IBC and IFC should be consulted to determine whether an "H" occupancy may be applicable.
- Carbon dioxide is also a common solvent used in the extraction process and certain enrichment processes and is classified as an asphyxiant gas. Asphyxiant gases are not regulated in the MAQ per Control Area tables.
- ****Any extraction process that utilizes solvents (flammable gases and or liquids) and compressed gases (CO2) will always be required to be in an AHJ approved C1D1 room and or building. Post-processing will almost always be required to be in an AHJ approved C1D2 environment and or a UL 1805 approved fume hood.****

Alternative Methods or Materials [Research Report and Tests, Approved Materials and Equipment, Technical Assistance]

Fire code officials have the authority to require an owner to provide a technical opinion report from a registered design professional or qualified specialist, laboratory or fire safety specialty organization that demonstrates that the equipment, devices, systems, products, technologies, materials and uses attending the design, operation or use of a building or premise comply with all applicable local and state building

codes, fire codes, electrical codes and other laws. Typically, an authority having jurisdiction (AHJ) accepts listed or tested equipment; however, most, if not all of the developing equipment, is not listed and has not been tested. Therefore, this technical opinion or report becomes critical to ensure safe operating compliance based on at least some reasonable criteria.

If a nationally recognized testing laboratory (NRTL) listing of a submitted or proposed appliance(s)/equipment is not available, a third party technical report provided by a professional designer may be an acceptable alternative. The AHJ may obtain a detailed report examining and evaluating a given piece of extraction equipment, device or appliance for compliance with the building code, fire code, recognized standard or best practices. This report should be prepared by an approved 3rd party agency. Common examples include but not limited to solvent extraction devices which use flammable gases, liquefied petroleum gases, and high-pressure carbon dioxide systems.

Any "approval" for equipment or a 3rd party agency as discussed above comes from the AHJ or, in this case, the fire code official. The fire code official "approves" various devices, processes or people. Additional justification may be required in order to substantiate an approval; justification will be detailed by the jurisdiction. Design code analysis, process hazard analysis or consequence analysis reports should be compiled for the proposed facility/process. This may be a narrative evaluation of the existing occupancy and its proposed use, including change of occupancy evaluation, related to, in this situation, marijuana concentrate extraction. The report should cite all applicable building and fire codes/standards and identify compliance and/or noncompliance facility issues with corrections or recommendations listed for final inspection. These documents are useful as design and inspection tools.

Operational Permits

As with any specific hazard operation, the fire code official may require facilities to obtain operational permits. Common permits in marijuana cultivation and infused products manufacturing facilities include: Carbon Dioxide Systems used in beverage dispensing applications (amended for cultivation use and extraction), Compressed Gases, Combustible Fibers, Flammable and Combustible Liquids, Fumigation and Insecticidal Fogging, Hazardous Materials, High Piled Storage (high rack system cultivation), and Liquefied Petroleum (LP) Gas.

Section 105 of the IFC should be consulted for the described permit conditions and may also consider amendments to the code to suit the local AHJ's requirements. Further discussion on hazardous materials is found in the Hazardous Materials section of this document.

Construction Permits

As with any specific installation or system, the building or fire code official may require facilities obtain construction permits. Common permits in marijuana cultivation facilities and infused products manufacturing facilities include: Building Construction, Electrical, Mechanical, Compressed Gases, Flammable and Combustible Liquids, Hazardous Materials, LP Gas, Automatic Fire Extinguishing/Suppression systems, Fire Alarm and Detections systems, and related equipment.

Section 105 of the IFC should be consulted for described permit conditions. The fire code official may consider amendments to the code to suit the local requirements.

General Safety Provisions

Hazard Communication

When storing or using any type of hazardous materials, IFC Section 407 should be followed and the appropriate paperwork made accessible to the fire code official. Additionally, IFC Sections: 5001.3 - 5001.6.3 should be consulted.

Section 407 of the IFC gives responders the information of the hazardous chemicals that is on the property.

- Safety Data Sheets (SDS) shall be on property and made easily accessible to all persons.
- Containers and/or packages related to hazardous materials shall be properly labeled and warning signage shall be properly displayed and easily visible. All persons shall be trained on what to do in the event of an emergency involving hazardous material on the property.
- When required by the fire code official, a permit and authorized paperwork should be submitted to the AHJ.
- If shutting down or relocating, a facility closure plan may need to be submitted to the fire code official for the hazardous materials as well.

Building and Equipment Design Features

Fire Protection

Plant cultivation operations in commercial buildings are typically classified as F-1 occupancy. There are several common triggers for plant cultivation operations that require the installation of a fire sprinkler system. Section 903.2.4 of the IFC specifically addresses F-1 sprinkler requirements with the most common trigger being a fire area exceeding 12,000 square feet. Another common trigger is the desire for these businesses to have a sealed limited access building that leads to the creation of a story without openings (Section 903). An additional consideration would be building construction type, allowable area (size of building), height and/or above grade area limitations. Per Section 903.2.5 of the IFC, Marijuana facilities that fall under a Group H occupancy classification require further consideration for a fire sprinkler system.

Interior Finishes

It is common in marijuana grow facilities to use a Visqueen® or Mylar® type plastic/polyethylene or polyester sheeting to cover walls and ceilings. Any use of plastic to enclose rooms or cover walls and/or ceilings must be installed in accordance with building and fire code requirements. Interior finishes must comply with flame spread ratings in accordance with Table 803.3 of the IFC.

(Note: Hanging plastic from ceilings or suspended overhead structures to create wall dividers is typically NOT compliant with code provisions for a wall partition or interior finish.)

Exits and Exit Signage, Egress

Security measures are often extreme in marijuana facilities. The desire for security in no way overrides the minimum requirements for exiting and egress. Common issues associated with exits and egresses are as follows:

- Number of exits shall be in accordance with Table 1006.2.1 and Table 1006.3.2(2) and Section 1017.2 of the IFC.
- Means of egress cannot be concealed in any way.
- Exit doors and their function cannot be eliminated without prior approval.
- Exterior doors that have been rendered non-functional and that retain a functional door appearance are required to have a sign affixed to the exterior of the door with the words THIS DOOR BLOCKED; reference Section 504.2 of the IFC.
- Where 2 or more exits are required, egress doors are required to swing in the direction of egress travel.
- Where more than one exit is required, illuminated exit signs are to be provided that must be readily visible from any direction of egress travel.
- Intermediary exit signs may also be required per Section 1013 of the IFC.
- Means of egress illumination may be required per Section 1008 of the IFC.
- H occupancies require specific considerations for exiting.

Locks and Key Box

Where security and life safety objectives conflict, alternative measures may be required or permitted by the AHJ.

SECURITY GATES – Due to the increased security measures typically required, and the potential hazards associated with marijuana facilities, the AHJ is authorized to require that any security gate be installed across a fire apparatus road first be approved before installation.

KEY BOXES – Due to the increased security measures required, and the potential hazards associated with marijuana facilities, the AHJ is authorized to require the installation of a key box in an approved location, which will permit timely access to the facility in the event of an emergency.

LOCKS – Due to the increased security measures required, and the potential hazards associated with marijuana facilities, the AHJ is authorized to require the installation of "approved" locks on any and all gates or similar barriers, which will permit timely access to all areas of the facility's property in the event of an emergency. If the facility has electronic access controls, the AHJ may require an access code or electronic access card be provided.

BOLTS, BARS, LOCKS & LATCHES – Egress doors are required to open easily when exiting without the need for a key, without using extra effort and/or without having special knowledge in order to operate the installed hardware. Door handles, pulls, latches, locks and other operating devices should be free of tight grasping, tight pinching or twisting of the wrist to operate.

- *Slide bolts, security bars, dead bolts, thumb latches and similar hardware items are prohibited from being installed on emergency egress doors.*

The AHJ may permit an exception to this where a set of double-doors is installed and still meets all other requirements set forth in the fire and building codes.

ALTERNATIVE LOCKING DEVICES - Delayed egress locks and electromagnetic locks are permitted for use in other occupancy types, and must be approved for use by the AHJ.

Aisles

Clear aisles are necessary to facilitate rapid evacuation of occupants and provide emergency egress in the event of an emergency. When considering product, equipment and fixture placement within a space, keep in mind that persons working in the area should be able to quickly stand and walk to an emergency exit door without having to twist or contort their body in order to avoid protruding objects from either side or above. Aisles require a clear width ranging from 28" to 44" or greater, depending on the occupancy load of a space. The AHJ may need to make a determination in this area with respect to the required widths based on obstruction and required responder egress.

Control Areas

Reserved

Cultivation/Grow

Reserved

Ventilation

Marijuana facilities must implement and maintain appropriate ventilation and filtration systems to satisfy unwholesome or noxious odor nuisance standards that may be in place within the local jurisdiction. Generally, the AHJ may require that the odor of marijuana must not be perceptible at the exterior of the building, at the licensed premises or at any adjoining use of the property.

The AHJ may or may not mandate particular equipment specifications with regard to filtration; however, all marijuana establishments are strongly encouraged to adopt best management practices with regard to implementing state-of-the-art technologies in mitigating marijuana odor, such as air scrubbers and charcoal filtration systems.

Marijuana product manufacturing facilities and testing facilities must implement appropriate exhaust ventilation systems to mitigate noxious gasses and other fumes used or created as part of any production process. Exhaust ventilation equipment is required to be appropriate for the hazard involved and must comply with local fire and mechanical codes.

Portable Fire Extinguishers

Approved portable fire extinguishers are required to give the occupants the means to suppress a fire during its initial or incipient stage. A readily available portable fire extinguisher can contribute to the protection of the occupants.

Each occupancy type is considered unique in design, intended use of spaces, and types of materials within each space. Portable fire extinguishers are classified according to the types of fire (A, B, C & D) for which they are intended to extinguish. Class A and B extinguishers are also rated according to performance capability, which is represented by a number.

The size, classification, total number, and distribution of portable fire extinguishers required for occupancy type will be determined by the AHJ based on fire code requirements. The installation requirements for portable fire extinguishers vary according to size, weight and type of specific hazard. The AHJ will ensure that all portable fire extinguishers are located where they are readily visible and accessible at all times.

Proper maintenance of the installed portable fire extinguishers is the responsibility of the occupant or property owner. Fire extinguishers shall be installed and maintained in accordance with NFPA 10.

Electrical: Wiring, Extension Cords, Appliance, Lighting, Extraction Equipment, and Kitchens

Electrical systems are a common cause of ignition for fires. When firefighters are working to extinguish a fire in a building, they need to be able to turn the electricity off so they can operate more safely. For these reasons, there are several considerations that must be taken by marijuana facilities in order to ensure that electrical systems are installed and maintained safely.

General electrical requirements for all facilities follow Section 605 of the IFC:

1. Doors into electrical control panel rooms are required to be marked with a sign stating ELECTRICAL ROOM. The means for turning off electrical power to each electrical service and each individual electrical circuit must be clearly and legibly marked.

2. Electrical panels and electrical disconnect switches must be accessible at all times. A clearance of 30 inches wide (wider for panels and equipment that exceeds 30 inches in width), 36 inches deep, and 78 inches high is required to be maintained free from storage.

3. Electrical systems must be maintained in good repair without exposed wiring, open junction boxes, or damaged equipment that could present an electrical shock or fire hazard.

4. Power strips with built-in overcurrent protection ("circuit breakers") are allowed, provided they are plugged directly into a permanent electrical receptacle. Power strips may not be plugged into additional power strips (daisy chaining). A power strip's cord may not be run through walls, above ceilings, or under doors or floor coverings. If power strips show evidence of physical damage, they must be replaced.

5. Extension cords may only be used to provide temporary power to portable electric appliances. Extension cords may not be used as a substitute for permanent wiring, and may not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings. Multi-outlet extension cords that do not have built-in overcurrent protection ("circuit breakers") are not allowed. If extension cords show evidence of physical damage, they must be replaced immediately.

Special Requirements for Cultivation and Extraction

The amount of electricity needed for a cultivation operation can easily exceed that of other types of businesses. If the cultivation business/facility moves into an existing building, there is a strong likelihood that the electrical panel and the wiring inside the building will require upgrading in order to accommodate the required power needed to cultivate plants utilizing grow lamps and ventilation equipment. It is not uncommon to have the electrical utility provider upgrade the amount of electricity feeding the building from the transformer outside.

Flammable gases and liquids often used for marijuana oil extraction have the potential to create an explosive environment for which the electrical system can be an ignition source. Rooms or areas where

extraction equipment utilizes these materials are subject to special wiring and equipment requirements to minimize this risk. These requirements keep the electrical system isolated from the remainder of the space in a way that typical electrical systems do not.

Premise Identification

Most cultivation and extraction operations try to remain discrete. This is often part of their overall security method and not wanting to draw a lot of attention to what they are doing. It is not unusual for the businesses to remove all markings from the building. All buildings are required to be provided with address identification. This address must be visible from the street or road fronting the property and contrasting with the background of the building. Signage that identifies the name of the business is not regulated by fire code, but may be regulated by local city or county government.

Security

While it is understood that security is very important to marijuana facilities, this security cannot create risks to employees, the general public, and emergency responders. Not only do occupants need to be able to exit the facility in an emergency, but firefighters must be able gain access. There are several factors that must be considered when balancing security with fire code compliance:

1. Egress doors are required to be readily openable from the egress side without the use of a key or special knowledge or effort, and cannot have hardware that requires tight grasping, tight pinching, or twisting of the wrist to operate. This means that double-cylinder deadbolts that allow the door to be locked with a key from either side are generally prohibited. Also prohibited are many styles of doorknobs and deadbolts that are often marketed for residential use. Door bars, surface bolts, and other security devices which require more knowledge or effort than the typical operation of a door latch are prohibited (Section 1010).

2. The unlatching of an egress door cannot require more than one operation. This means that adding several locking devices to a door for increased security is prohibited. For example: the installation of a deadbolt to a door that has an existing locking door latch is prohibited. Again, if it takes any more effort than the typical operation of a door latch, the device is most likely not permitted on an egress door (Section 1010).

3. The installation of security features designed to disable, injure, maim or kill intruders is prohibited.

Appliances: Extractor, Still, Vacuum Oven, Kitchen, CO2 Generator, Sulfur Evaporator

When required by code, standards or by the AHJ, a code analysis regarding compliance with the IFC in the use of all processing phases can be required to be provided by a third party, Oklahoma Licensed Professional Engineer. The code analysis should cite all applicable building code, fire code/standards and identify compliance and/or non-compliance. Operational processes involving compressed gases should be

documented in the analysis including annual LPG use and storage amounts; annual CO2 enrichment system process and storage amounts – including natural gas generators and for any system containing more than 100 lbs. of CO2; annual compressed gas use and storage (required for 6,000 cu/ft. or more of an inert – 1 lb. of CO2 = 8.74 cu/ft.).

The AHJ should provide a list of requirements prior to the construction of a medical infused products (MIP) facility or processing room using the above listed appliances in the extraction, cultivation or processing of marijuana. Areas of interests include atmospheric monitoring, ventilation, posted proper emergency procedures, loading and offloading of compressed gases, storage of compressed gases and proper placarding on the building.

The AHJ is to confirm the recommendations made by the third party peer review that the room or space of use is in compliance with their recommendations before issuing a certificate of occupancy. Once the Oklahoma Licensed Professional Engineer and the AHJ have both signed off on the proper setup of the room and all state regulations, such as proper licensing, has been completed the owner will then be granted permission to use the space as designed. Any alterations to the room of appliance will require a second review following the same requirements listed above.

Fire Department Access

Buildings/facilities must have at least one all-weather road that is wide enough and strong enough to support the size and weight of fire department apparatus. Roads must extend close enough to buildings to allow for firefighting operations. Roads may have special requirements for “fire lane” signage to disallow parking. A means for turning fire department apparatus around may be required for roads that contain dead ends or no outlet. Gates or barricades that obstruct roads must be approved by the fire department.

All required exterior doors must remain operable for emergency access by firefighters. Eliminating the function of any exterior doors requires prior approval that cannot be granted in every circumstance, and where allowed, the door must be marked with a sign stating THIS DOOR BLOCKED.

Certain equipment rooms contained within a building may require identifying signage to aid firefighters.

1. Rooms containing fire protection equipment (fire alarm panels, fire sprinkler valves, etc.).

2. Rooms containing controls for air-conditioning equipment.

3. Rooms containing utility equipment for gas or electrical service.

4. Rooms containing hazardous materials.

Special Occupancies and Operations

Combustible Fibers

Within most cultivation operations combustible fibers will rarely be a consideration but should also not be forgotten. The Hemp industry may have a processing operation that combustible fibers may need to be mitigated.

Fumigation and Insecticidal Fogging

In marijuana facilities, fumigation and insecticidal fogging may be used to kill insects, rodents, other vermin, plant parasites, weed seeds, and fungi that adversely affect growth. Some fumigants are flammable under certain circumstances, and all fumigants are poisonous or toxic. Definitions of "fumigation" and "insecticidal fogging" should be looked at closely to determine if these processes are being utilized. To protect the public and firefighters, there are several requirements that must be followed when performing these operations:

1. Permits may be required by the AHJ.

2. Fire departments may require notification, at least 48 hours in advance, of performing these operations, including specific information about the location within the building, the products being used, and contact information for those conducting the operation. In these instances, the products being used must be approved by the fire department.

3. Written notice must be given to building occupants with enough notice to allow evacuation and must include information about the duration of the operation and all hazards associated with the operation. Only those directly conducting the operation are allowed to remain in the building.

4. Sources of ignition must be secured before these operations commence and must remain secure until after the space has been ventilated. Sources of ignition include electricity, portable electronic devices (such as cell phones), telephone lines, and any other sources of spark or flame. Certain types of electrical appliances deemed safe for hazardous atmospheres may be allowed when approved by the fire department.

5. Materials used to seal the affected structure or space must comply with flame propagation performance standards and must be approved by the fire department prior to installation.

6. Every access point to the affected structure or space must have both a warning sign and watch personnel to protect against unauthorized entry. The style and content of the warning signs and the duration of their posting must be approved by the fire department.

7. Personnel engaged in these operations must have proper respiratory protection available.

8. At the end of the operation, the affected structure or space must be safely and properly ventilated, and all fumigation or fogging product containers, residues, debris, and other materials must be properly disposed of.

Note: Sulfur burners used to burn sulfur pills is a form of fumigation and must be treated as such. This method is typically utilized to treat powdery mildew on the plants.

Rack Storage

Rack storage systems present unique challenges for firefighting operations. They allow a larger volume of combustible material than would be present if only the floor was being used, and they place that combustible material in a vertical orientation that increases the potential for fire spread. For these reasons, rack storage systems are very heavily regulated by fire and building codes. There are provisions for structural stability of the racks, aisle widths, exterior access doors for firefighters, special types of fire protection systems, and building features to control the spread and ventilation of smoke.

Permits are required prior to the installation of any rack storage system. A qualified design professional will be required to analyze your space and submit documentation for rack storage to the local building department and fire department.

Hazardous Materials

Marijuana manufacturing processes utilize various hazardous materials subject to the activity. The AHJ should require a detailed chemical inventory in accordance with the fire code to determine the hazards and classifications of the materials used within any cultivation, infused product manufacturing, and concentrate extraction occupancy facility.

Marijuana cultivation or grow operations include similar materials to that of other indoor botanical or greenhouse operations. They may employ the use of pesticides, insecticidal fumigation or fogging techniques, in addition to nutrients and fertilizers. The materials can range from benign to toxic.

Carbon dioxide (CO2), an asphyxiant gas, is also commonly used in marijuana grow operations. Growing in a greenhouse or indoors, the CO2 levels can be reduced as the plants use CO2 during photosynthesis. Enriching the air with CO2 supports plant growth and development. Carbon dioxide may be stored in mini-bulk cryogenic liquid cylinders that are vacuum jacketed, in steel or aluminum cylinders as liquefied compressed gas or be produced by carbon dioxide generators. Supply gases for CO2 generators are natural gas and/or propane.

Dry Ice (Solid Carbon Dioxide), quantities of dry ice aren't restricted by codes such as NFPA 400 Hazardous Materials Code or NFPA 55 (which does cover liquid carbon dioxide in a tank or other container), but there are potential issues such as asphyxiation, burns, and explosions.

Infused product manufacturing and concentrate extraction processes, also known as hash oil extraction, may utilize flammable and combustible liquids, flammable gases (LP Gas), and asphyxiant gases. Water-based marijuana, food-based marijuana, and solvent-based marijuana are typical marijuana concentrates.

Each concentrate requires different processes, as well as the use of different materials to extract the product from the plant. Processing may employ the use of closed-loop solvent extraction, pressurized equipment, steam distillation, heat, ice, water or other methods that do not require solvents.

Processing types include, but or not limited to:

1. Water-based marijuana concentrates extract cannabinoids through the use of water, ice or a solid form of carbon dioxide, better known as dry ice. Materials in this category are typically non-hazardous.

2. Food-based marijuana concentrates extract cannabinoids through the use of food products such as propylene glycol, glycerin, butter, olive oil or other typical cooking fats. Materials in this category may be hazard classified as physical hazards or combustible liquids.

3. Solvent-based marijuana concentrates extract cannabinoids through the use of pressurized closed loop systems and non-closed loop systems. Materials in this category may be classified as physical hazards using flammable liquids (hexane, isopropanol, ethanol, grain alcohol); flammable liquefied gas - LP Gases butane, n-butane, propane; and health hazards, such as, high pressure carbon dioxide gas systems. *Note that most of these are not 'closed systems' as they have to be opened at some time to get product and waste out, thereby releasing volatile gases.*

Compressed Gases

Compressed gases of varying materials may be used in multiple processes in cultivation or extraction and are governed by Chapter 50 and Chapter 53 of the IFC. Listed below are highlighted sections and only refer to common requirements surrounding compressed gases in marijuana facilities. This list is not all-inclusive. Examples of these gases include, but are not limited to, butane, propane, and carbon dioxide.

A code analysis regarding compliance with these chapters in the related processing phases shall be provided by a third-party Oklahoma Licensed Professional Engineer. The code analysis should cite all applicable building and fire codes/standards and identify compliance and/or non-compliance. Operational processes involving compressed gases that should be documented in the analysis should include annual LPG use & storage amounts; annual CO2 enrichment system process and storage amounts – including natural gas generators and for any system containing more than 100 lbs. of CO2; annual compressed gas use & storage (required for 6,000 cu/ft. or more of an inert – 1 lb. of CO2 = 8.74 cu/ft.).

Flammable Gases

Flammable gases of varying materials may be used in multiple processes in cultivation or extraction and are governed by Chapter 50, Chapter 58 and Chapter 61 of the IFC. Other referenced standards and/or documents from the IFC include, NFPA 58, Chapter 6 of NFPA 58, Appendix B of NFPA 58, NFPA 70 and the *International Fuel Gas Code*. Sections listed below are highlighted sections of each, only refer to common code issues surrounding flammable gases in Marijuana Facilities, and are not inclusive of all requirements. Some examples of these gases include, but are not limited to butane and propane.

A code analysis regarding compliance with these chapters in the related processing phases shall be provided by a third party Oklahoma Licensed Professional Engineer. The code analysis should cite all applicable building codes and fire codes/standards, as well as identify compliance and/or non-compliance. Operational processes involving flammable gases that should be documented in the analysis should include annual flammable gas usage and storage amounts.

Pesticides and Fertilizers

Cultivation and extraction operations generally contain hazardous materials regulated by fire code, such as fertilizers, pesticides, and flammable gases and liquids. In some cases, retail facilities sell flammable liquids or gases for do-it-yourself extraction. There are several factors that need to be considered to remain compliant with the storage and use of these materials:

1. All hazardous materials must be classified in accordance with the categories and definitions provided in fire code. This can be a complicated process and may require professional assistance.

2. Once hazardous materials have been classified, there is a maximum allowable quantity that can be stored in a facility. It is possible, and even likely, that different products share a classification and must be counted together towards the maximum allowable quantity. There are options to increase the maximum allowable quantity in a facility, such as use of special hazmat cabinets, building rooms with fire-resistive construction to create control areas, and installation of fire sprinkler systems.

3. Facilities where hazardous materials are stored in certain quantities must have special signage installed outside to make firefighters aware of what is located in the building.

Gas Detection and Alarms

Detection of gas or vapor release is typically not required unless the MAQ of hazardous materials are exceeded. However, Chapter 50 of the IFC states, if the release of hazardous material can cause immediate harm to a person or property a means to mitigate the release shall be provided. This could include the need of a gas detection system.

When using a flammable gas or flammable liquid, processes that are extracting oil from the marijuana plant will typically have some type of leak or gas detection.

Carbon Dioxide is a very common gas used within the marijuana cultivation operation and can also be used to remove the oil from the plant as discussed within the Hazardous Material section. CO2 enrichment areas must conform to IFC 5307.4. Permits may be required by the AHJ.

When a gas detection system is required, the meter is required to be listed and labeled in accordance with UL 2075. Mechanical interlocks that shut down the flow of gas to the unit when gas is detected are required in any facility that is not constantly attended. If personnel are constantly attending the process in which gas is being used and can physically shut off the gas supply, the interlock is not required. In either case, atmospheric monitoring must give an audible alarm indicating the presence of gas in the air has reached its permissible exposure limit (PEL). Shutdown procedures must be followed by the manufactures recommendations and the room must be vacated until all alarms read normal. All equipment used in the detection of flammable and/or toxic gases must be approved by the AHJ and may require construction and mechanical permits. Emergency plans for administrative controls and shutdown should be reviewed and approved by the AHJ.

Liquefied Petroleum Gases (LPG), Indoor and Outdoor

Sites that have LPG such as propane and or butane are regulated under Chapter 61 of the IFC, NFPA 58, and Chapter 6 of NFPA 58. LPG gases are heavier than air and seek low lying areas. LPG has an extremely high expansive ratio, meaning amounts of LPG can lead to dangerously explosive levels quickly. A permit may be required by the local AHJ, but will always be required by the Oklahoma LP Gas Administration.

LPG Requirements:

- Allowed locations if LPG containers within a building are found in NFPA 58 and subject to the approval of the fire code official.

- Compliance for portable containers is determined by NFPA 58 and IFC Sections 6103.2.1.1 through 6103.2.1.7.

- Use of LPG in basements, pits or similar locations is prohibited in areas where heavier than- air-gas can collect.

- Within F occupancies, where manifolded, the water capacity of containers can reach 735 pounds per manifold.

- Because of the physical properties of LPG, special consideration should be given as to the location of LPG. The locations allowed are regulated by NFPA 58 as well as the approval of the fire code official.

- LPG needs to be used with approved equipment for LPG.

- LPG can only be released to atmosphere with accordance to NFPA 58 Section 7.3.

- No Smoking signs, as required by the fire code official, need to be present, as well as combustible material must to be maintained a distance of 10 feet from containers. If containers, regulators and piping are subject to vehicle traffic then protection is required in accordance with NFPA 58.

- Locations for extinguishers need to be in compliance with IFC Section 906 and placed according to NFPA 58.

- LPG containers cannot be stored near a means of egress.

- No more than 200 lbs. of the 2.5 lb. containers may be stored within buildings accessible to the public.

- The use of any un-odorized LP Gas requires a permit from the Oklahoma LP Gas Administration.

- **Any extraction process that utilizes solvents (flammable gases and or liquids) and compressed gases (CO2) will always be required to be in an AHJ approved C1D1 room and or building. Post-extraction processing will almost always be required to be in an AHJ approved C1D2 environment.**

Highly Toxic and Toxic Materials

Reserved

Flammable and Combustible Liquids

Flammable and combustible liquids are used for solvent based extraction of marijuana concentrated products. Hazards involved are the release of the solvent and low level ignition sources. Often these liquids are under pressure and a release could easily result in an explosion.

Classified locations are for areas where flammable liquids are stored, handled, dispensed and or mixed. The locations are held to the requirements of IFC Table 5703.1.1.

Piping systems for flammable and combustible liquids need to be in accordance with IFC Sections 5703.6.1 through 5703.6.11 and the design of such systems need to be in accordance with NFPA 30 Chapter 27.

Hazardous Ventilation

Flammable/combustible liquids and compressed gases used in extraction or processing in Marijuana Facilities are required to be vented in accordance with IFC Chapters 50 and 53 and portions of the *International Mechanical Code.* This ventilation may include systems for gas rooms, exhausted enclosures, gas cabinets, indoor storage areas and storage buildings. Listed below are highlighted sections of the IFC

that refer only to common code issues surrounding ventilation of flammable/combustible liquid vapors and compressed gases in Marijuana Facilities and are not inclusive of all requirements.

A code analysis regarding compliance with these chapters in the related processing phases may need to be provided by a third party Oklahoma Licensed Professional Engineer. The code analysis should cite all applicable building codes and fire codes/standards and identify compliance and/or non-compliance.

Referenced Standards and Codes

Current Editions of the following:

- NFPA 10- Standard for the Installation of Fire Extinguishers
- NFPA 13- Standard for the Installation of Sprinkler Systems
- NFPA 30- Flammable and Combustible Liquids Code
- NFPA 55- Compressed Gases and Cryogenic Fluids Code
- NFPA 58- Liquefied Petroleum Gas Code
- NFPA 70- National Electrical Code
- NFPA 72 - National Fire Alarm and Signaling Code
- NFPA 497- Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
- IFC 5307 CO2 Enrichment
- IFC Chapter 39 Cannabis Processing and Extraction

Considerations for Other Regulatory Departments

Building Construction

Cultivation, grow, processing, and or extraction facilities should comply with the AHJ adopted fire and building codes for Use and Occupancy for a Factory (F-1), moderate hazard occupancy, primarily due to unconventional electrical systems, fumigation, carbon dioxide enrichment, maze like rooms, and the usual close proximity to other occupancies.

Dispensaries should meet AHJ adopted fire code and building code for the use and occupancy for Mercantile (M) occupancy.

Many times other marijuana industry centered facilities will be based on a use and occupancy classification of a Mercantile Occupancy, “M” International Building Code (IBC 309.1) or possibly a “B” if there is patient care and similar.

“Use of a building and or structure or portion thereof, for the display and sale of merchandise and involves stocks of good, wares or merchandise incidental to such purposes and accessible to the public.”

When a building department determines a structure or portion thereof to be a “classified” occupancy, the designer of record may be required to demonstrate “declassification” through ventilation designs or other methods.

In rare instances the building (greenhouse) may have a classification of a Utility Occupancy only when the greenhouse utilizes the natural abilities of the earth (sunlight/wind only) and has no electrical and or mechanical within.

Electrical

Grow facilities have a very high electrical demand due to the grow lights, air conditioning units, and other equipment. The electrical system must be sized and installed in accordance with the National Electric Code (NEC). Fire Codes prohibit the use of extension cords or power strips as permanent wiring to equipment, lighting, fans, etc. If the facility was created as a remodel to an existing building, it may be necessary for the electric utility company to upgrade the conductors and/or transformer serving the building. However, when dealing with a hazardous process some AHJs and designers have chosen to classify the location according to NFPA 70 Article 500.

Mechanical

Oklahoma state laws require that the marijuana infused product operations be located in a designated room and most AHJ’s require a hazardous exhaust system installed to capture any potential release of flammable gas.

Many AHJs require a system be installed to ensure that the odor from such locations cannot be detected at the exterior of the facility. Confirm with International Mechanical Code (IMC) for confirmation of air changes required. An engineered system may be required when carbon dioxide or other gases are utilized.

Technical Assistance

The fire code official is authorized to require the owner or agent to provide, without charge to the jurisdiction, a technical opinion or report.

In marijuana cases, a qualified professional can provide engineering certification to a piece of equipment for compliance with fire code, standards or best practices. The professional can also provide an Occupancy Evaluation Report that evaluates the occupancy and identifies facility compliance with the fire and building codes specific to the marijuana operation.

Zoning

Marijuana facilities, in many jurisdictions, have historically been required to adopt the same commercial zoning restrictions as other businesses. Such businesses that sell these types are often prohibited from locating in residential or mixed-use neighborhoods. Each jurisdiction might have specific requirements and should be evaluated prior to purchase, lease or occupancy.

Licensing

Most jurisdictions adopt licensing code and regulations that are supplementary to the state marijuana code and rules, and therefore deal mainly with the licensing and disciplinary procedures and processes. The regulation piece may also have an inspection process involved.

Law Enforcement

Most law enforcement agencies maintain a licensing database, and marijuana/medical marijuana licensees and businesses are subject to inspections (scheduled or compliance audits) in accordance with state law. In Oklahoma the main law enforcement regulatory agencies are the Oklahoma Bureau of Narcotics and Dangerous Drugs and the Oklahoma Medical Marijuana Authority.

Office of the Oklahoma State Fire Marshal

The mission of the State Fire Marshal is to promote safety and awareness and reduce the loss of lives and property to the citizens and businesses of Oklahoma through public education, fire investigations, life safety inspections, building plan reviews, code assistance/enforcement and statistical data collection.

The Oklahoma State Fire Marshal oversees the entire State of Oklahoma unless the County or City has provided the State Fire Marshal an approved document, entirely filled out with no alterations, (AHJ letter) to the Oklahoma State Fire Marshal's Office.

The Oklahoma State Fire Marshal has the statutory obligation to ensure all jurisdictions accepting the responsibility of being the AHJ adhere to the minimum state-adopted building codes and standards and the ADA. See 74 O.S. §§ 317, 324.4, and 324.11. The Office of the State Fire Marshal retains the authority to review and or audit any projects permitted by a municipality, town, and or county.

"Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structures, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical, or plumbing systems, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the Oklahoma State Fire Marshal's Office and obtain the required permit."

Additionally, the Oklahoma State Fire Marshal requires permits to include but not limited to:

- Building (New or Existing), Fire Alarm, Fire Sprinkler, Hood Suppression, Alternative Suppression, Carbon Dioxide, Access Control, Smoke Control, Carbon Monoxide, and Storm Shelters.

Oklahoma LP Gas Administration

The mission of the Oklahoma LP Gas Administration is to protect the health and welfare of the citizens of the State of Oklahoma and to promulgate rules relating to safety compliance in storage, distribution, dispensing, transporting and utilization of Liquefied Petroleum Gas (LPG) in this state and in the manufacture, fabrication, assembly, sale, installation or use in this state of LPG systems, containers, apparatus or appliances.

Additionally, it is:

- To adopt national safety codes of the National Fire Protection Association (NFPA 58 and 54) and Oklahoma rules.
- To enforce compliance through administrative penalties.
- To investigate propane related accidents, fires and explosions.

Oklahoma Medical Marijuana Authority

OMMA is part of the Oklahoma State Department of Health. The OMMA was established to oversee the medical marijuana program for the State of Oklahoma. OMMA is responsible for processing commercial and patient license applications, providing customer service to licensees and applicants, facilitating the rulemaking process based on state statutes, enforcing rules, investigating possible violations of medical marijuana laws and more.

The OMMA is not responsible for building, fire code, and or life safety compliance, as this responsibility will always fall to the State Fire Marshal and or the local AHJ. Per OMMA Rules, *Section 310: 681-6-2* Construction of premises, all commercial licensees shall meet the standards of any applicable state and local electrical, fire, plumbing, waste and building specification codes including but not limited to the codes adopted by the Oklahoma Uniform Building Code Commission.

Referenced Standards

Current Editions of the Following Standards:

• NFPA 1: Chapter 38- Marijuana Grow & Extraction Facilities
• NFPA 10: Fire Extinguishers
• NFPA 13: Standard for the Installation of Sprinkler Systems
• NFPA 30: Flammable and Combustible Liquids Code
• NFPA 55: Compressed Gases and Cryogenic Fluids Code
• NFPA 58: Liquefied Petroleum Gas Code
• NFPA 70: National Electrical Code
• NFPA 72 - National Fire Alarm and Signaling Code
• NFPA 497: Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas

Referenced International Codes

• International Building Code

Referenced International Codes (cont.)

- International Fire Code
- International Existing Building Code
- International Mechanical Code
- International Fuel Gas Code
- International Plumbing Code

Oklahoma Codes

All state minimum codes as currently adopted by the Oklahoma Uniform Building Code Commission.

Annex A - Building, Plumbing, Mechanical, Electrical, and Fire

Obtain all required permits. Not unlike any other new business venture, permits will be required for installations, replacement, movement, additions, modifications, removal of building improvements, remodeling of tenant spaces, electrical, mechanical, plumbing, and new signs at a minimum. Here are some examples, not all inclusive of what may be needed:

- Building: Moving or adding walls, installing counters and display cases that are attached to the floor or ceiling, storage racks, and attached safes.
- Plumbing: New or altered indoor plumbing. Changing or adding outdoor drainage or wastewater lines.
- Electrical: Data cabling for cash register point of sale systems, computers and security/camera systems, new or changed electrical wiring, receptacles, switches, and fixtures.
- Mechanical: New, upgraded or moved ventilation, heating, air conditioning systems; odor mitigation, gas appliance, gas hot water tank installation or removal.
- Sign: New primary business sign or replacing face of existing sign, temporary sign permits, (i.e., for grand opening, new business announcement, balloons, banners, etc.).
- Fire: Sprinklers (new and maintenance), gases, oxygen tanks, propane storage and installations, etc.

Fire Code Section

Build a good relationship with the building code official and or fire marshal. Be proactive and contact the building code official and or fire marshal in the authority having jurisdiction as early as possible. They will tell the business what permits, if any, are needed for the operation. Most cities have fire inspection divisions that WILL be checking a business space for fire and life safety issues. It is to the advantage of the business owner to have the fire department on-site as early in the process as possible.

- DO NOT assume the fire marshal automatically contacts a business.
- Do NOT rely on a checklist from another jurisdiction. Each area may have additional or different requirements.
- DO NOT assume a general building permit is all that is needed.
- All unincorporated areas of the State of Oklahoma fall under the jurisdiction of the State Fire Marshal unless otherwise noted.

By Oklahoma State Law, each local AHJ can modify and or enact stricter codes as adopted by the Oklahoma Uniform Building Code Commission, however no municipality or subdivision shall enact or enforce any ordinances, rules for construction of or major alterations to buildings with standards less stringent than the building code, as last adopted by the Oklahoma Uniform Building Code Commission.

Code considerations that may need an inspection and/or permit include:

- Occupancy rating of building: Does it need reviewing/change?
    - ◊ Walls: Are they fire-rated? They shall not be covered by any combustible material
    - ◊ Exits and entries: Are they correct according to type of occupancy/size of building.
- Ventilation: Is it appropriate for the processes at your facility that are in use?
- Fire Extinguishers: Are they present and properly mounted, in required numbers?
- Equipment should be listed by a nationally recognized testing laboratory (e.g., UL-listed) – extracting systems, drying ovens, exhaust fans, grow lights, CO2 enhancers, vacuum pumps, gas detectors/alarms, and associated equipment.
- Hazardous materials on site including:
    - ◊ Compressed gases – stored properly, used in closed systems only, within permit limit amounts.
    - ◊ Flammable liquids and gases – stored in approved containers, within permit limit amounts.
    - ◊ Storage and use of other hazardous materials.
    - ◊ Maximum allowable quantities of hazardous materials.

Oklahoma Building Design & Engineering Requirements

Architectural Requirements: See Building Types and Exempt Building Types in Oklahoma to determine whether an Oklahoma Licensed Architect is required.

Engineering Requirements: New construction or renovation of a commercial building which requires a foundation, and structural, mechanical, electrical and plumbing engineering systems are required to be designed by a qualified Oklahoma Licensed Professional Engineer. If the building is considered a "Significant Structure" as defined by OAC 245:15-1-3, then a Professional Structural Engineer (P.E., S.E.) is required to be the Engineer of Record for the project. Further, professional engineering licensing laws require that all professional engineers practice within their designated area(s) of competence as listed in the board records, 59 O.S. 475.18(A) (14) and OAC 245:15-9-4.

Oklahoma Board of Engineers

MEMORANDUM

FROM: Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors

BOARD ADOPTION DATE: 2/17/22 (**First Revision Date**: 6/9/22)

SUBJECT: When is an Oklahoma Licensed Professional Engineer required to be involved in the design, construction and/or renovation of a cannabis facility ("facility").
[Ref. Checklist of Code Requirements for Cannabis Facilities - #1 Type of Facility]

OMMA: OAC 310:681-6-2 Construction of Premises, *All commercial licensees shall meet the standards of any applicable state and local electrical, fire, plumbing, waste and building specification codes including but not limited to the codes adopted by the Oklahoma Uniform Building Code Commission as set forth in OAC 748: 20.* [Source: Added at 35 Ok Reg 659, eff 8-25-18 (emergency); Added at 35 Ok Reg 709, eff 8-25-18 (emergency); Added at 36 Ok Reg 1759, eff 9-13-19; Amended at 37 Ok Reg 1461, eff 9-11-20]

POSITION STATEMENT

Because of the special circumstances regarding cannabis facilities involving hazardous material and life safety issues affecting workers and the public, it shall be the position of the Oklahoma State Board of Licensure for Professional Engineers and Surveyors as follows:

New Construction
Regarding a "facility" classified as Group B, F-1, H-2, H-3 or U: the mechanical, electrical, and plumbing systems, as well as the structural engineering, are required to be designed by an Oklahoma Licensed Professional Engineer "Oklahoma P.E." with designated competence in each specific discipline of engineering involved. The risk category per IBC 1604.5 shall be considered II, III or IV.

Renovations
Regarding a renovated structure classified as Group B, F-1, H-2, H-3 or U: the existing mechanical, electrical and plumbing systems, as well as the structural engineering, are required to be evaluated by an "Oklahoma P.E." with designated competence in each specific discipline of engineering involved, to determine if the existing facility requires any revisions to the engineered systems or layout of the facility to be in compliance all applicable codes. Any alterations to the existing engineered systems shall be designed by an "Oklahoma P.E." with designated competence in that discipline of engineering. The risk category per IBC 1604.5 shall be considered II, III or IV.

Oklahoma Board of Engineers (cont.)

New Construction and Renovated Facilities

Letters of Code Compliance required by Authorities Having Jurisdiction (AHJ's) may be prepared and submitted by an architect, owner, contractor etc. if the required engineering design services of an "Oklahoma P.E." with competence in the specific discipline(s) of engineering involved were performed. An architect, owner, or contractor shall not independently certify that the mechanical, electrical and/or structural engineering elements of a project meets code. An architect, owner, or contractor may certify to a Letter of Code Compliance if no engineering design services were required for the project. However, an architect, owner, or contractor shall not design mechanical, electrical, or structural systems in lieu of obtaining the services of an "Oklahoma P.E.". This is a direct violation of O.S. Title 59, § 475.1 et seq.

CHECKLIST OF CODE REQUIREMENTS FOR CANNABIS FACILITIES

1. Type of Facility
   a. Grow facility with processing/packaging
   b. Grow facility without processing/packaging
   c. Extraction facility
   d. Bakery
   e. Edible manufacturing
   f. Retail sales
   g. Testing laboratory
   h. Grow supply store

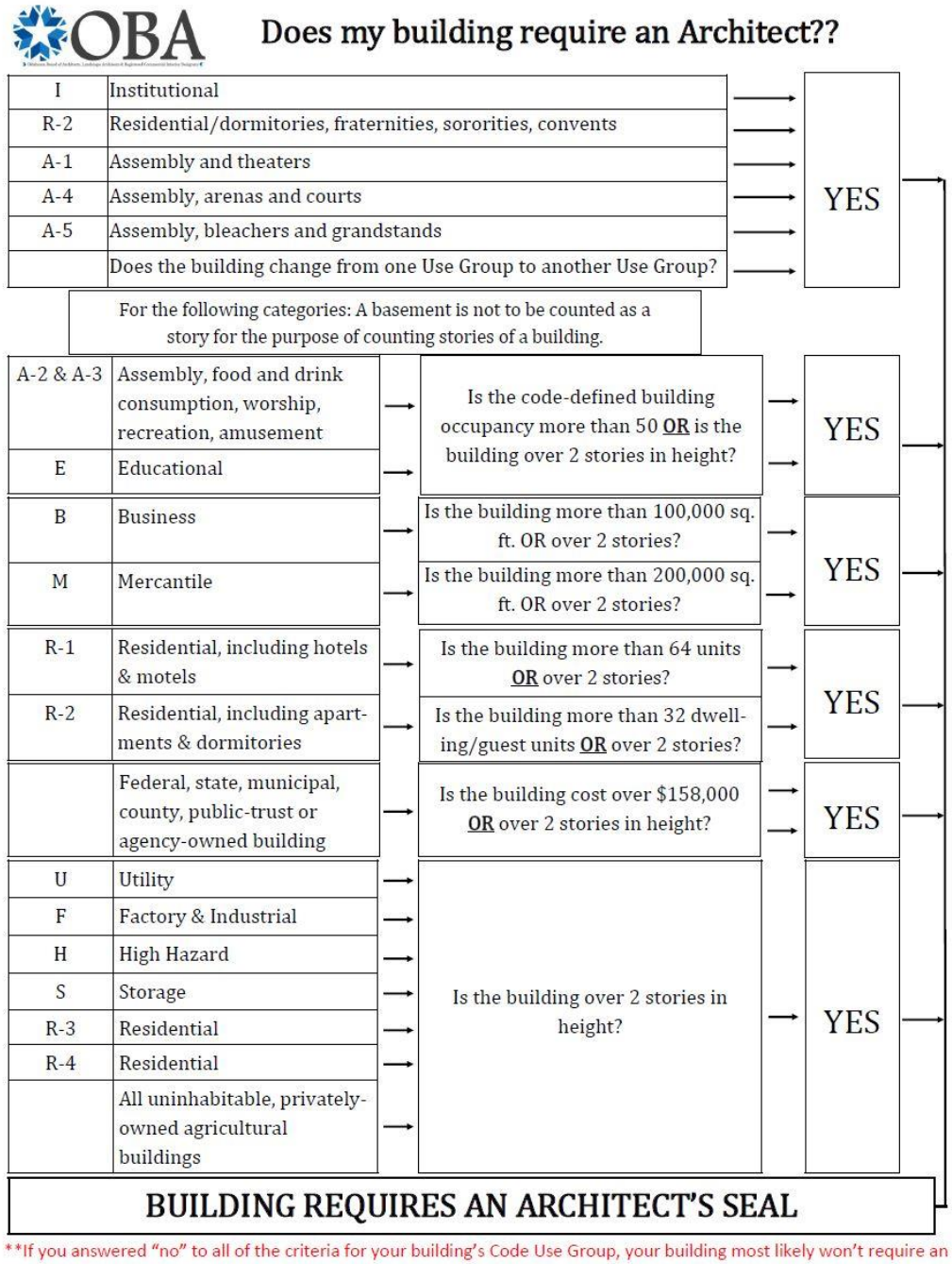
2. Occupancy Classification
   a. Group B
      i. Testing laboratory
   b. Group F-1
      i. Grow facility with processing/packaging
      ii. Greenhouses for commercial cannabis production which contain mechanical/electrical/structural systems
      iii. Extraction facility where hazardous materials DO NOT exceed the maximum allowable quantities
         1. Control areas may be utilized
      iv. Bakery/edible manufacturing
   c. Group H-3 (in some instances H-2)
      i. Extraction facility where flammable liquids exceed the maximum allowable quantities
   d. Group M
      i. Retail sales
      ii. Grow supply stores
   e. Group U
      i. Grow facility without processing/packaging
      ii. Greenhouses for commercial cannabis production which do not contain mechanical/electrical/structural systems

Building Design Requirements (Oklahoma Board of Architects)

Building Types and Exempt Building Types in Oklahoma

Per 59 OS 46.21b, the following building types require an Architect or are exempt from needing an Architect to design and seal all architectural plans, based upon the building's Code Use Group:

(All codes used in Oklahoma are adopted from the Oklahoma Uniform Building Code Commission)



If you answered "no" to all of the criteria for your building's Code Use Group, your building most likely won't require an Architect. However, the local or state authorities having jurisdiction may require an Architect where the State Architectural and Registered Commercial Interior Designers Act does not.

Oklahoma Board of Architects (cont.)

Examples of Most Common Buildings for Cannabis Facilities

1. **Common M Buildings:** Medical marijuana center, store, or dispensary, department stores, drug stores, markets, retail or wholesale stores, sales rooms

2. **Common F Buildings:** Marijuana grow facilities, marijuana oil extraction operations, marijuana-infused product kitchens/bakeries, factories manufacturing low-hazard items

3. **Common H Buildings:** Buildings in which high hazard products are manufactured

4. **Common U Buildings:** Grow facilities without processing/packaging; Greenhouses for commercial cannabis production which do not contain mechanical/electrical/structural systems.

    a. **Greenhouse -** A structure or thermally isolated area of a building that maintains a specialized sunlit environment used for and essential to the cultivation, protection or maintenance of plants.

Note: To qualify as a "U" Occupancy with the OSFM, the greenhouse must be free of any commercial growing equipment (grow lights, mechanical ventilation systems, etc.). The structure must be a true greenhouse which utilizes that natural abilities of the earth (i.e. natural sunlight/natural ventilation).

If you have any questions about which types of buildings require an Architect that are not answered by the 59 Oklahoma State Architectural and Registered Commercial Interior Designers Act Section 46.21b, please call the OBA office at (405) 949-2383

Agency Resources

Office of the Oklahoma State Fire Marshal
2401 NW 23rd, Suite 4
Oklahoma City, Oklahoma 73107
405-522-5005 • Fax: 405-522-5028 • TDD/TTY: 1-800-722-0353

Oklahoma Liquefied Petroleum Gas Administration
3815 N. Santa Fe, Suite 117
Oklahoma City, Oklahoma 73118
Office: 405-521-2458 • Fax: 405-521-6037

Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors
220 NE 28th Street, Suite 120
Oklahoma City, OK 73105
Office: (405) 521-2874 • Fax: (405) 523-2135

Oklahoma Board of Architects
220 N.E. 28th Street Suite 150
Oklahoma City, OK 73105
Office: (405) 949-2383

Oklahoma Department of Labor (Boiler/Pressure Vessels Program)
3017 N Stiles, Suite 100
Oklahoma City, OK 73105
Office: (405) 521-6100
odolboilers@labor.ok.gov

NOTES SECTION

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SAFETY ISSUES FOR CANNABIS-RELATED FACILITIES

The number of states passing laws to permit the use of cannabis, or marijuana, for medicinal and recreational purposes continues to increase, and this has many jurisdictions trying to navigate uncharted territory, The first step in understanding what safety risks are present in a cannabis-related facility is knowing what type of facility is being proposed or inspected. Often, cannabis-related facilities will focus on one aspect of the industry: growing, processing, or selling. Each of these types of facilities presents unique hazards and related safety issues.

DID YOU KNOW? The term cannabis includes all forms of the plant, including marijuana and hemp.

CANNABIS FACILITIES AND NFPA 1

Not all hazards present in cannabis facilities are unique to the industry, so it is important to remember that the fire code, building code, and other applicable regulations might already have provisions for dealing with some of the hazards present. However, there are hazards unique to growing and processing facilities. These hazards are addressed in Chapter 38 of the 2018 edition of NFPA 1, *Fire Code*. This chapter contains requirements for fire inspectors to help ensure the safety of building occupants, the safety of firefighters, and the protection of property where cannabis is grown or processed.

OCCUPANCY CLASSIFICATION

The hazards in an occupancy vary based on the types of activities being conducted, the types of materials being used, and the quantities of the materials being used. The most fundamental question when it comes to cannabis facilities is: what is the occupancy classification?

The occupancy classification of the facility should be based on the occupancy definitions found in Chapter 6 of NFPA 1 and the applicable building code. Depending on the facility and its use, some likely occupancy classifications for cannabis-related facilities may be:

- Growing and processing facilities (including extraction rooms): Classified as industrial or storage.
- Selling facilities: Classified as mercantile
- Consumption facilities: May be classified as assembly or business depending on the occupant load

Just like other types of buildings, there could be more than one occupancy present. If that is the case, the building would need to be protected as a multiple occupancy building as outlined in Chapter 6 of NFPA 1. Similar to other types of facilities, the hazard of contents would also need to be evaluated. If the facility was found to have high hazard contents, which are contents that are likely to burn with extreme rapidity or are likely to explode, then the high hazard contents provisions would need to be applied. (See Chapters 60-75 of NFPA 1 as applicable.)

DID YOU KNOW? Cannabis growing, processing, and selling facilities are not distinct occupancy classifications.

SAFETY ISSUES FOR CANNABIS-RELATED FACILITIES (CONTINUED)

GROWING FACILITIES

Growing facilities are typically large warehouse type buildings subdivided into rooms. The grow rooms are closely monitored to provide exactly the right conditions for the plants. Usually, plants are moved throughout the building as they reach different stages and require different conditions for optimal growth.

While there are a number of things to consider when inspecting these types of facilities, two important questions to ask are the following:

1. What types of containers and trays are the plants growing in?
2. What types of fertilizers and fumigants are being stored and used?

The growing plants are typically not very combustible. They are kept under such moist conditions that flaming combustion would likely be difficult to achieve. However, the other materials present can and will impact fire growth. The types of containers and trays that the plants are growing in, as well as the growing medium, could impact things like the sprinkler system design. Fertilizer and fumigants could be hazardous materials, oxidizers, or hazardous to humans. Any of those types of materials could require additional requirements to be followed, such as those for high hazard contents.

Some common inspection issues are summarized in the table below along with topics to consider and where to find them in NFPA 1. Numbers in parenthesis are chapter numbers.

GROWING HAZARDS	SAFETY ISSUES	TOPICS TO CONSIDER
Egress	» A crowded area of plants moved often according to their grow cycles can become a maze for first responders and workers trying to exit » Lack of clear egress paths and clearly marked exit doors	Means of Egress (14); Occupancy Fire Safety (20); Marijuana Growing, Processing, or Extraction Facilities (38)
Lights	» Extensive use of hot lighting systems often run for 24 hours a day and can be sources of ignition » Lighting systems hung using materials that could cause the lights to fall	Building Services (11); Occupancy Fire Safety (20); Marijuana Growing, Processing, or Extraction Facilities (38)
Combustible Interior Finishes	» Areas separated by tarps or other flammable materials that could create fire hazards and egress issues » Wall and ceiling finishes can increase fire spread and smoke development	Features of Fire Protection (12); Occupancy Fire Safety (20); Marijuana Growing, Processing, or Extraction Facilities (38)
High Electrical Loads	» High quantities of lighting, air conditioning, fans, and other systems that use a significant amount of electrical energy » Overloaded circuits and wiring that can spark fires	Building Services (11); Occupancy Fire Safety (20); Marijuana Growing, Processing, or Extraction Facilities (38)
Fumigation and Fertilization	» Hazardous materials for fumigation or fertilization measures could present health and fire risks to employees and first responders » Systems installed to deliver fumigation and fertilization could increase the risk to the facility due to failures and leaks	Marijuana Growing, Processing, or Extraction Facilities (38); Hazardous Materials—if used (60-75)
Illegal Locks/ Barriers	» Noncompliant doors and locking mechanisms can hinder egress in a fire or other emergency	Means of Egress (14); Occupancy Fire Safety (20); Marijuana Growing, Processing, or Extraction Facilities (38)
CO_2 Enrichment	» Failures or leaks of CO_2 enrichment systems can pose health and safety risks to employees and first responders	Marijuana Growing, Processing, or Extraction Facilities (38); Compressed Gases and Cryogenic Fluids (63)

SAFETY ISSUES FOR CANNABIS-RELATED FACILITIES (CONTINUED)

PROCESSING FACILITIES

Processing facilities are all the other types of facilities that transform the plant into products for consumption. One common type of processing facility is an extraction room. During the extraction process, chemicals are removed from the plant for use in other cannabis-based products. The extraction process is commonly completed by using a solvent, such as LP-gas or carbon dioxide, to strip the oils holding these chemicals from plant clippings.

While there are a number of things to consider when inspecting these types of facilities, the following are two important questions to ask:

1. What hazardous materials are used in the facility?
2. How much of the hazardous material do they have within control areas?

Hazardous materials are used throughout the production of cannabis, mainly during the extraction process. Other chapters in NFPA 1 provide requirements for hazardous materials, including limitations on the maximum allowable quantities (MAQs), protection of areas that use excessive quantities of hazardous materials, separation of areas using hazardous materials, and safe practices for those materials in use. It is important to identify the types and quantities of the hazardous materials present to properly apply the other chapters of NFPA 1.

Some common inspection issues are summarized in the table below, along with topics to consider and where to find them in NFPA 1. Numbers in parenthesis are chapter numbers.

EXTRACTION PROCESS HAZARDS	SAFETY ISSUES	TOPICS TO CONSIDER
LP-Gas Extraction	» Bulk handling and mixing of gases » Off-gassing from products can occur and could be hazardous » Improperly designed, installed, or maintained equipment can create leaks or explosions	Marijuana Growing, Processing, or Extraction Facilities (38); Liquefied Petroleum Gases and Liquefied Natural Gases (69)
CO_2 Extraction	» Failures or leaks of CO_2 systems can pose health and safety risks to employees and first responders	Marijuana Growing, Processing, or Extraction Facilities (38); Compressed Gases and Cryogenic Fluids (63)
Extraction Equipment	» Inconsistent or incomplete peer review for approved, non-listed extraction equipment » Inconsistent or inadequate personnel training » Inconsistent use of codes for equipment review » Lack of accredited certification programs for equipment operators » Undocumented or unapproved equipment modifications or maintenance	Marijuana Growing, Processing, or Extraction Facilities (38)

SAFETY ISSUES FOR CANNABIS-RELATED FACILITIES (CONTINUED)

EXISTING FACILITIES

For existing facilities, it is important to keep in mind that this is an ever-changing industry. Although these types of facilities might be on a set inspection schedule, additional inspections could be required. Some examples of times when additional inspections could be needed are when any of the following changes occur at a facility:

- Modifications to the grow area, rooms and storage areas, extraction equipment, process rooms, or processing equipment within a facility
- Changes in occupancy
- Changes in material used in a new or existing grower or processor facility

DID YOU KNOW? UL 1389 is a new standard for listing extraction equipment.

There are inherent dangers in cannabis-related facilities and the more that is understood in how these facilities operate, the safer the facility, its workers, and responders will be. Outlined above are the very basics, but there is always more to consider especially for an industry that is changing so rapidly. Other considerations include proper permitting, proper sprinkler system design, and how to inspect and regulate new extraction processes. Regardless of what role you have in this (building owner, inspector, first responder, etc.), there is a common goal: to maintain the highest level of safety in these types of facilities. Ensuring that facilities comply with the appropriate standards is one way of doing that.

Additional Reference Information

- NFPA 1, *Fire Code*, 2018 edition
- *Fire Code Handbook*, 2018 edition
- NFPA 70®, *National Electrical Code®*, 2020 edition
- UL 1389, *Standard for Plant Oil Extraction Equipment for Installation and Use in Ordinary (Unclassified) Locations and Hazardous (Classified) Locations*, 2019 edition

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