



FOODSERVICE INSIGHT

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SPECIAL
REPORT

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Why training is key

Prevention is better than cure when it comes to the risk of potential gas leaks in the kitchen

Regulatory research

Gas safety codes and regulations can differ from region to region throughout the United States

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IMPROVING GAS SAFETY IN COMMERCIAL KITCHENS

REDUCE THE RISK OF FIRE BY IMPLEMENTING APPROPRIATE TECHNICAL SOLUTIONS FOR GAS SAFETY

NAVIGATING REGULATIONS AND PRACTICAL SOLUTIONS IN THE USA

With a raft of varied regulations in different states, and risks to both business and human life, it's never been more important to ensure your staff training and gas safety systems pass muster

EXECUTIVE SUMMARY

Serious fires in commercial kitchens are rare, but when they do occur the consequences can be devastating. There's the obvious risk to human life, plus the reputation and viability of a business. Gas safety is a critical concern, and poor maintenance, incorrect installation, wear and tear, or human error all contribute to fire risk.

It does not even take a fire to bring serious consequences for a business. Failure to comply with the complex web of fire safety regulations in the US can hinder an operator's ability to keep a business running, and can incur financial penalties or forced closures.

Although it does not create legislation directly, The National Fire Protection Association (NFPA) plays a defining role in regulation. Its consensus-based codes and standards are widely adopted by federal, state, and local governments.

The main legislation governing safety in the workplace – the Occupational Safety and Health Act of 1970 (OSH Act) – created the Occupational Safety and Health Administration (OSHA) and mandates that employers provide a workplace free from recognized hazards. Local safety codes, which can vary across the US, also carry significant penalties for non-compliance.

Gas safety brings many other challenges, including: the risk from aging infrastructure and equipment; high staff turnover resulting in poorly maintained equipment, due to a lack of experience or training; budget limitations restricting cycles of maintenance, cleaning and inspection; and retrofits in constrained spaces resulting in non-regulation installation or damage.

FCSI-member consultants firmly emphasize the importance of integrated gas safety planning and consistent maintenance, and recommend a wide range of technical solutions. Excess flow valves, flexible connectors, and shutoff systems are all key contributors to regulatory compliance and operational safety.

In the current climate, with experienced staff in short supply, high staff turnover, and tight margins, it is urgent that operators consider all aspects of safety, but especially gas safety, as business-critical.

This paper discusses technical options and best practices to ensure regulatory compliance and maximize safety, drawing on the technical and procedural insights of FCSI member consultants, and equipment manufacturer Dormont in support of safer commercial kitchens.

KEY TAKEAWAYS

Gas safety is critical to foodservice operations but not always front of mind. Planning, maintenance, training, and appropriate technical solutions are key to reduce fire risk in the kitchen.

In the current climate, with experienced staff in short supply and tight margins, it is urgent that operators consider gas safety as business critical



INTRODUCTION

The risk of fire in commercial kitchens may seem low, as relatively few incidents are reported each year. When fires do break out, however, the consequences for a business and its reputation can be extremely serious, even if no employees or customers are present.

Gas leaks, though infrequent, are a major fire safety concern. In March 2024, Po Freddie's BBQ in Atlanta burned down following an explosion caused by a gas leak. No one was injured, but the owner, who had operated the business for more than 50 years, saw it destroyed in a matter of hours.

In August 2025, the failure of a hose connected to a fryer caused a fire at Thirsty's Burgers and Beer in Rapid City, South Dakota, when a gas leak was ignited by a spark that jumped to the hose during cleaning. Thankfully, nobody was hurt in the incident and the only damage was to the old hose.

The gases used for cooking and water heating are efficient and cost-effective, but also highly flammable, posing a serious risk if they escape into the air undetected, due to faulty equipment, aging infrastructure, improper installation, or inadequate maintenance.

When a leak occurs in a restaurant, the buildup of gas creates a volatile environment where even a small spark could trigger a catastrophic explosion. The risk of severe damage to property, and serious injury or loss of life means the prevention of leaks should be high on the agenda for restaurant owners, managers, and staff. Sadly, the relatively rarity of fires caused by gas leaks means the issue is often a low priority.

"It depends on where you look in the country," says Brent Robertson FCSI of Texas-based consultancy Cospers & Associates. "In metro areas it is a big concern. Less so in suburbs and rural areas. The rules are not different, but metro areas have more funding, so they have gas monitoring systems and other high-end safety features."

Where operators have large budgets for high-end exhaust systems, with all the latest features, fire prevention and alert systems can be built in. At the other end of the spectrum, a traditional base model hood with no added safety features can add to the risk.

"So, too, can make-up air systems," says Robertson. "If they make a particular area

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of the kitchen too cold then the hood may be shut off to stop the system working, and exhaust fumes may build up. Gas safety can easily become a secondary concern, further down the list than cost and revenue.”

Despite the risk of a kitchen being shut down due to failures in gas safety, the issue is often overlooked until an incident occurs.

“There are many risk factors if gas safety systems are not properly designed,” says Brett Daniel FCSI, VP and project manager at US foodservice design company Camacho. “You need a licensed engineer to ensure things like airflow monitoring, gas interlock systems, and proper ventilation are there. These factors will be reviewed by authorities, and it is important to adhere to safety standards.”

“Even when gas safety is high on the list, there can still be problems,” he adds. “Monitoring is crucial, as is a system to shut off the gas if a leak is known to be happening. Put in as many safety measures as possible, then maintain them and train people on them.”

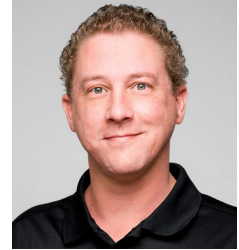
THE ROLE OF REGULATIONS AND INDUSTRY BEST PRACTICES IN IMPROVING SAFETY

As Daniel observes, safety features are the subject of review by various authorities. The regulatory framework in the US is increasingly stringent and complex. Many different rules at federal, state and local level must be understood.

The National Fire Protection Association (NFPA) does not directly create legislation, but it provides consensus-based codes and standards that are widely adopted at all levels. These models may become law if they are incorporated into building codes and state or local regulations.

NFPA standards define key parameters for fire prevention and building safety. Developed by approximately 9,000 volunteers in more than 250 technical committees, they reflect a diverse range of expertise, and are recognized as comprehensive and reliable.

NFPA 54 – the National Fuel Gas Code – defines criteria for the safe design, installation, operation, and maintenance of fuel gas piping systems, appliances, and



From top: Brent Robertson FCSI, Cospir & Associates; Brett Daniel FCSI, Camacho; Andrey Teleguz FCSI, Scopos Hospitality; Dave Lawrence, Dormont

equipment. It is the American National Standard (ANSI Z223.1) and covers the use of natural gas, manufactured gas, liquefied petroleum gas, and gas-air mixtures within the flammable range. It details requirements for piping, materials, components, venting, and safety.

NFPA 96 – the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations – sets the minimum fire safety requirements for the design, installation, operation, inspection, and maintenance of commercial kitchen exhaust systems to prevent grease-related fires. Adherence to NFPA 96 is frequently a requirement of local fire codes.

Failure to comply with mandatory standards can result in hefty fines, business closures and costly damages. Insurance claims may also be denied in the event of a fire.

Alongside the NFPA, the Occupational Safety and Health Administration (OSHA), which was created by the Occupational Safety and Health (OSH) Act of 1970, monitors safety in commercial kitchens. The OSH Act mandates that employers provide a workplace free from recognized hazards, and empowers OSHA to enforce those standards.

OSHA monitors many aspects of worker safety, but has specific requirements for gas safety in commercial kitchens. It requires employers to ensure gas-fired equipment, installations, and ventilation are maintained by qualified personnel in compliance with relevant codes and standards.

Key OSHA-aligned practices include regular maintenance and inspection by a competent person, proper ventilation to remove heat and fumes using canopies and extractor systems, and ensuring gas interlock systems are in place for certain appliances.

The OSHA enforcement framework includes workplace inspections to verify compliance with safety standards. These can happen as part of a programmed series of inspections, in response to employee complaints, or as part of accident investigations.

Local fire safety codes may vary greatly. Fire safety is primarily governed at the state and local levels, with authorities adopting and enforcing codes within their specific jurisdictions. Federal and state laws mandate adherence to locally adopted model codes, with the International Fire Code (IFC) and NFPA Life Safety Code (NFPA 101) widely used at local level.

Subtle differences emerge when comparing fire safety codes in different regions. New York, for instance, broadly follows national standards and city-specific rules, requiring Class K extinguishers within 30ft of cooking appliances and compliance with NFPA 96 for fixed systems demanding automated control of fuel and electricity to cooking equipment upon activation.

California also relies on national models, but applies state amendments and has specific rules for appliance and plumbing systems under the Uniform Mechanical Code.

“For operators, fire safety may be back of mind,” says Daniel. “It can be taken for granted that equipment will work when it is turned on. Only in the event something happens will safety jump to the forefront of their minds,” he adds.

“For permitting and inspections, however, the authorities are very concerned about safety. That is why it should be part of employee training programs.”



Key pieces of legislation stipulate basic requirements and best practice for a safe workplace

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CHALLENGES AND OPPORTUNITIES FOR OPERATORS

Aging infrastructure will always present safety risks, as wear and tear from regular use can cause significant damage to kitchen equipment. Space constraints are also a risk factor. Kitchens are shrinking to maximize front-of-house space and reduce costs, causing limitations on space for ventilation and gas shutoff access.

Perhaps the biggest risk factor, however, is the lack of experienced staff and high rates of employee turnover. Training is, therefore, a vital part of any gas safety protocol – but it can be a drain on time and money.

Financial and operational pressures, particularly for small and medium-sized operators, may push training down the list of priorities.

“Staff turnover makes a focus on safety more important than ever,” explains Robertson. “We see turnover and reduced staff in kitchens every day. We see a focus on getting bodies in the kitchen so they can cook, which means training may not be a high priority, particularly when it comes to gas safety.”

“Operators should remember, however, that an ounce of prevention saves a ton of cure,” he adds.

“They should put the emphasis back on technical solutions. Though they don’t want to be wholly dependent on automated systems, every machine needs a failsafe.”

There are clearly many technical and procedural issues to consider in the design phase for both new builds and retrofits.

OSHA’s best practices for gas safety include:

- All gas appliances, fittings, and pipework must be installed, maintained, and repaired by a qualified professional.
- Gas appliances, pipework, and flues require regular maintenance and safety inspections by a competent person.
- Gas appliances that generate heat and fumes must be fitted with canopy hoods.
- Proper extraction systems and exhaust fans are essential to ensure efficient ventilation.
- Permanent air vents must be kept open and unobstructed.
- Commercial kitchens must have a gas interlock system to prevent gas from flowing to appliances unless the ventilation system is operating correctly.
- Ovens, burners, and associated equipment should be kept free from debris and regularly cleaned.

“Looking at gas safety as early as possible in the design process is important,” says Robertson. “There are technical and procedural aspects to both prevention and response. Cleaning is probably top of the list. In gas appliances, burners may stop working if they are not properly cleaned, so the other burners take the pressure of being used more, so the range may wear out quicker.”

“Select appliances that have proper systems for ventilation and grease extraction, and make sure you have clear pathways out of the building if there is a fire” adds Daniel. “Make sure safety systems are in place, including fire suppression in exhaust hoods, and regularly revisit training and procedures.”



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TECHNICAL SOLUTIONS FOR IMPROVING GAS SAFETY

Continuous focus on training can raise safety standards, but it doesn't come cheap. Consultants recommend prioritizing training up front, rather than spending money later to repair damage or avoid closure for non-compliance. A holistic approach to gas safety, however, prioritizes technical solutions.

“Moveable gas connectors are required by code for equipment on casters,” says Dave Lawrence, senior regional sales manager, foodservice at Dormont Manufacturing. “Equipment must be movable for cleaning purposes or anchored to the floor and sealed. Also, when equipment is replaced, a new gas connector must be installed. People want to run operations as cheaply as they can, so once connected they may not think about it again, but they need the right processes and the right equipment.”

Gas detection and monitoring systems are increasingly common, and gas interlock systems are often mandatory to prevent hazardous gas buildup. These systems link gas supply to the functioning of ventilation systems and cut off the gas if exhaust fans fail or airflow is insufficient.

Excess flow valves (EFV) are set to become commonplace. The technology is advancing rapidly. Dormont, for example, has developed an industry-first valve that limits gas flow if the hose is disconnected or ruptured, drastically reducing the risk of hazardous leaks and catastrophic equipment failure.

Dormont's EFV, already proven in the residential market, is the first to become available for commercial kitchens. The device fits on the supply side of the gas connection and monitors the flow of gas through the pipe.

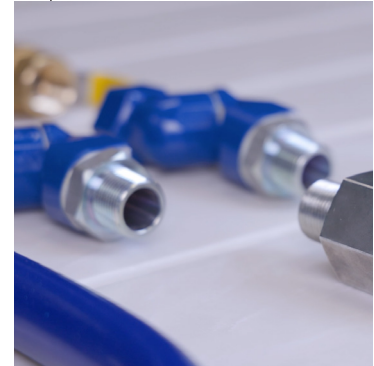
That data can be read on a smartphone. When the gas flow surpasses a set level, the valve automatically shuts off supply. Though not designed to detect small leaks, it will respond to catastrophic leaks.

“For the EFV to activate requires a rupture or a major disconnect,” says Jeff Brown, Dormont's regional sales manager – West.

“This does not happen often, but if a quick-disconnect gas fitting has been installed backwards, which can happen, or if equipment is pulled out too much or without the right technique, causing a large tear, then the EFV is like insurance. That is what operators and consultants see in this technology – they are buying peace of mind.”

“We standardize Dormont quick-disconnects with restraining devices on every project,” says consultant Andrey Teleguz FCSI, president of SCOPOS Hospitality Group. “It's a reliable, no-nonsense solution,” he adds.

We also design in automatic shutoff valves tied to exhaust and suppression systems. More kitchens are adding gas-leak detectors that trigger alerts or automatic shutoffs when ventilation fails. It's not just a nice-to-have anymore – it is a baseline expectation in our designs.”



Moveable gas connectors are required by code for equipment on casters

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CONCLUSION

Regulatory pressure makes building a culture of gas safety essential – and the ready availability of technology and best practice makes it relatively simple to do.

“For new builds, gas safety needs to be part of the early design conversations – not something caught late on,” says Teleguz. “It should be baked in from the start. For retrofits, the challenge is figuring out what is behind the walls or what has been altered over time. We always recommend a commissioning walkthrough with the operations team at the end. That small step goes a long way.”

With regular maintenance, frequent employee training, and appropriate emergency procedures in place, operators can go a long way to preventing gas-leak explosions. Fitting gas-leak detection systems and emergency shut off valves such as EFVs can greatly reduce risk too.

Gas safety cannot be left to chance. It is up to operators, consultants, and technical solution providers to work together to take a proactive approach to compliance, consistently upgrading both equipment and processes to meet the high standards the industry and its regulators demand.



WHY CHOOSE DORMONT?

For over 70 years, Dormont has helped thousands of customers enjoy the peace of mind that comes from high-quality, readily available products they can rely on. As the inventor of the first moveable gas connector, its USA-based factory solely focuses on making the best. You can rely on Dormont's performance because every single one of its products is leak tested and manufactured according to ISO standards. That means you can trust that your products will consistently perform without failures.

- ISO-certified factory
- Every product leak-tested
- Exceeds ANSI standards

For more information visit
watts.com/our-story/brands/dormont



Gas safety cannot be left
to chance, say the experts



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