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Official Publication of the Building Operators Association (Calgary)

November 2023



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FRONT COVER: The lagoon at Bowness Park welcomes skaters from mid-November to mid-March, depending on the weather. (Cody Stuart / CREB®Now)

Important Phone Numbers

Emergency	911
Alberta Boiler Association	403 291 7070
Alberta Labour (Emergency)	403 297 2222
Buried Utility Locations	1 800 242 3447
City Of Calgary (All Departments)	311
Dangerous Goods Incidents	1 800 272 9600
Environmental Emergency	1 800 222 6514
Poison Centre	403 670 1414
Weather Information (24hr)	403 299 7878

Executive & Committees

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Chairman	chairman@boacalgary.com
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Treasurer	treasurer@boacalgary.com
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Les Anderson	



President's Message



BOA
Building Operators Association of
Canada

I hope this message finds you and yours well and in good health



The Building Operators association's Guest speaker this month is from Intellimeter. We have published many articles by Alberto Quiroz of Intellimeter; his company specializes in electric/electronic metering and monitoring. The theory that to best manage systems, we need to be able to measure them. Our speaker will talk on that very same subject. Intellimeter is well on the leading edge of power stations for electric vehicles and the installation of them in properties. If you manage these systems in your facility, this would be a great meeting to attend.

The winter season is upon us. And by all accounts it is going to be a moderately cold winter. The effect of El Nino is speculated to produce a considerable amount of snow. That

leads to the question on how best to manage the snow removal contracts, by call or by seasonal monthly contract. Pick right, you're a hero.

We still are having a lot of our buildings not fully occupied leaving many of our spaces unattended by the ever-watchful eyes of occupants. For the Operators this means a responsibility to personally attend the areas looking for problems such as cold spots, walking the areas, searching for leaks from below and above.

Have a safe month, Les.

Smiles))

With kind regards,

Les Anderson PE, RPA



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TEST YOUR OPERATOR IQ!



Are you equally adept at troubleshooting problems in the boardroom and the boiler room? As the resident facility guru, there's a lot riding on whether or not you know the difference between sounds control and a sound investment.

Try our monthly Operator IQ challenge...answers on page 26

1. A fire eye is used to:

- a. notify the programmer about the presence of a flame
- b. detect hot spots in the furnace
- c. turn off the pilot gas
- d. turn on the main fuel

2. The flame detector is directed:

- a. at the hot refractory
- b. into the boiler room
- c. at the convection section of the boiler
- d. into the furnace area
- e. furnace floor

3. The flame failure control is tested by:

- a. blowing down the low-water cutoff
- b. adjusting the pressuretrol
- c. calling the inspector
- d. securing the fuel supply to the burner
- e. a supervisor or operator

4. Combustion:

- a. is endothermic and can occur in an inert atmosphere
- b. is always a visible process in that light is given off
- c. is exothermic, self sustaining, and can occur in an inert atmosphere
- d. always requires a source of ignition
- e. requires the presence of air

5. The presence of carbon monoxide in the atmosphere near a heating system:

- a. could provide information regarding combustion efficiency
- b. is found in 75% of heating systems tested
- c. can be reduced by decreasing heating system draft
- d. is the main cause of low efficiency in heating systems
- e. is more reliable than flue temperature as an indicator of combustion efficiency



Understanding the CSA 282 - Emergency electrical power supply for buildings

Bill Henderson

Even the most jaded luddite among us must now concede that climate change is happening all around us. This year the fires started burning in northern Alberta as soon as the snow melted and European countries are scrambling to find enough water to keep them from the 40 degree Celsius heat and it is only the beginning of summer!

With extreme climatic conditions embracing every corner of the planet we know that we need to plan for increasingly frequent power grid disruptions. Our technology relies on a central grid to keep our buildings warm or cool and our Life Safety equipment operating. Every property and facility manager needs to be aware of their responsibilities with respect to emergency standby power in the face of the inevitable loss of utility power.



To assist those of us charged with the Life Safety of our occupants, the Canadian Standards Association has developed the CSA 282-15 Emergency electrical power supply for buildings. This standard in conjunction with other codes, comprise an action plan to assist us keeping our facilities safe and comfortable for everyone who passes through our doors.

As a facility manager you need to implement an inspection and reporting system that closely follows the CSA 282 standard to demonstrate your

diligence and adherence to Life Safety. This is important because not only will the local fire marshal ask to see the generator inspection log but the TSSA and your insurance company will also be focused on this document should any issues arise due to loss of power to fire pumps, elevators, fire alarms and so on. The two sections that deal with inspecting and reporting are in Section 11 and are as follows, verbatim:

11 Operation and maintenance program

11.1.1 Operation and maintenance

The emergency electrical power supply equipment shall be operated and maintained in accordance with the manufacturer's recommendations and instruction manuals and the requirements of Clauses 11.1.2 to 11.5.

11.1.2 Inspection, testing, and maintenance log

A permanent log of the inspection, testing, and maintenance of the emergency electrical power supply system shall be maintained in accordance with the manufacturer's manual of operating and maintenance instructions and cover at least the items specified in Tables 2 to 6.

This log shall be kept on site and shall include:



- a) the date on which an inspection, testing, and maintenance exercise was carried out;
- b) the name(s) of the person(s) who performed the inspection, testing, and maintenance;
- c) notes on any unsatisfactory conditions observed or discovered and the steps taken to correct such



Generator Maintenance Log Sheet

Date	Hour Meter	Oil Pressure	Voltage	Amps	Hz	Engine Temp	Fuel Level	Battery Levels	Coolant Level	Oil Level	Block Heater	Battery Charger	Leak Check	No Alarms	Unit in Auto	Tech Initials	Comments

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conditions; and
d) copies of the design and installation performance test certificates.

11.5 Maintenance

11.5.1 General

The emergency electrical power supply shall be maintained as specified in the manufacturer’s manual of operating and maintenance instructions, provided that the manual covers at least the items specified in Tables 2 to 6. The owner's representative shall ensure that competent personnel perform the maintenance work.

11.5.2 Frequency of procedures

The minimum frequency of inspection, testing, and maintenance procedures shall be as specified in Tables 2 to 6. Additional requirements may be specified by manufacturers, operators, or authorities having jurisdiction and shall be

permanently recorded in the manual of operating and maintenance instructions and the log.

11.5.3 Records

A permanent log of the maintenance work (including inspections and tests) shall be maintained in accordance with the manufacturer’s manual of operating and maintenance instructions (see Clause 11.5.1). The permanent log shall be kept on site and shall include at least the following:
a) the date on which the work was done;



Cont'd on page 10



Maintenance Inspection Report as per CSA 282

Customer:	
Location:	
Date:	2019-03-19
Technician:	Iain Fraser
Work Order #:	28122

Unit Hours:	171.2
kW/Voltage:	300 / 600
Service Type:	AS<
Deficiencies requiring immediate attention?	No

Generator Specifications:

Genset Make:	GENERAC	Model:	---	Serial #:	---
Engine Make:	DETROIT	Model:	6063MK35	Serial #:	1941078

Generator Inspection:

Room/Gen Condition	Pass	Vibration	Pass	Air Intake	Pass	Time Delays	N/A
Battery Condition	Pass	Rad. Condition	Pass	Air Exhaust	Pass	Voltage Drop	N/A
Battery Charger	Pass	Guards	Pass	Air Filter	Pass	Circuit Breaker	Pass
Battery Connections	recommend	Coolant Level	Pass	Exhaust Flex	Pass	Fuses	Pass
Battery Charge Voltage	26.82	Coolant Cond.	-33	Crankcase Breather	Pass	Alarm Functions	Pass
Battery Load Test	Pass	Hoses & Pipes	Pass	Muffler	Pass	Temperature	Pass
Starter Solenoid	Pass	Belts	Pass	Load Handling	Pass	Oil Pressure	Pass
Cranking	Pass	Block Heater	Pass	Generator End	Pass	Low Coolant Shutdown	Pass
Oil Change	Changed	Governor	Pass	AC Connections	Pass	Overspeed	Pass
Oil Sample	N/A	Stability	Pass	DC Connections	Pass	Alt. Charge Run Volts	27.76
Oil Level	Pass	Clean and Bright	Pass	Voltage Regulator	Pass	ATS Condition	Pass
Oil Leaks	Pass	Fuel Filter	Changed	Regulator Rheostat	N/A	Transfer Switch Op	Pass
Oil Filter	Pass	Fuel Lines	Pass	Control Panel	Pass	Transfer Delay	3
Engine Condition	Pass	Fuel Level	76	Meters/Gauges	Pass	Retransfer Delay	60
Turbo	Pass	Fuel Solenoid	Pass	Relays and Timers	N/A	Cooldown Timer	300

Load Test:

Load Test Time	Freq. (Hz)	Volts:			Amps:			Temp.	Oil Pressure	kW
		PH1	PH2	PH3	PH1	PH2	PH3			
5	60.0	599	600	600	47	47	47	122	60	48
15	60.0	598	598	599	266	266	266	183	52	282
15	60.0	598	599	599	265	266	266	183	51	281
15	60.0	599	599	599	266	266	266	185	52	282
15	60.0	599	599	599	266	266	266	185	52	282
15	60.0	599	599	599	265	266	266	185	52	282
15	60.0	599	599	599	266	266	266	185	51	282
15	60.0	599	599	599	266	266	266	185	51	283
15	60.0	598	599	599	266	266	266	185	51	283

Notes:

Annual maintenance and inspection complete. Engine temperature and oil pressure alarms tested. The noted gen-set underwent a two hour load test in accordance with CSA 282 Standards (Emergency Electrical Supply Guidelines for Buildings) demonstrating the capacity to handle a sustained load while engine temperature and oil pressure remain within acceptable parameters. Site was left with all in good working order, and controller in AUTO. No deficiencies to report.

was done;

b) a note of parts replaced;

c) a note of any unsatisfactory condition discovered and the steps taken to correct it;

d) the name of the person who performed the work; and

e) a note verifying that any switches or controls that were deactivated for safety purposes during maintenance have been restored to their intended operating condition.

Please note that this short primer is by no means exhaustive on the subject of the CSA 282 and how it applies to facilities, condominiums, health care residences and many other places where the public safety is of primary concern.

We have included some photos of our weekly inspection log to be completed by on site maintenance staff along with a completed annual inspection report completed by a T&T Power Group technician. If you want copies of the weekly inspection log or need some assistance in setting up a planned generator maintenance regime that complies with the CSA 282, please contact me by email at bill.henderson@tppowergroup.com

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Lest we forget



Don't Snooze on Safety: Fighting fatigue in the workplace

Feeling tired, foggy, mentally, or physically tired, or lacking motivation? These are all signs and symptoms of fatigue. Whether it's due to working long hours, not getting enough sleep, or from long periods of stress or anxiety, workplace fatigue is a hazard employers should be concerned about.



The impact of fatigue can be considered a form of impairment, making it a workplace hazard that can be dangerous for not only the worker, but also for other employees and even members of the public. Consider delivery truck drivers, for example. If preventative measures aren't put in place, long hours from shift work or extended workdays may result in the drivers feeling fatigued while on the road, putting themselves and others at risk.

Research has shown that the number of hours awake can impact the body in a similar way to blood alcohol levels. One study reported that 17 hours awake is equivalent to a blood alcohol content of 0.05, and 21 hours awake is equivalent to a blood alcohol content of 0.08 (the legal limit for drivers in Canada). Other studies have shown that workers who have slept for less than five hours before work, or have been awake for more than 16 hours, have a significantly higher chance of making mistakes at work because of fatigue.

While it can be difficult to isolate the effect of fatigue on incident and injury rate, recognizing it as

a workplace hazard and implementing controls can help employers proactively prevent fatigue-related incidents.

Work and non-work-related causes

There are a number of factors that can contribute to fatigue at work. These factors may include long work hours or long hours of physical or mental activity, insufficient break time between shifts, or changes to jobs or shift rotations. Inadequate rest, excessive stress, and balancing multiple jobs are also contributing factors.

Feelings of fatigue can be increased by dim lighting, limited visual alertness due to weather, low light, or other factors, high temperatures, or noise. It also becomes an issue when tasks must be sustained for long periods of time, or where they are repetitive, paced, difficult, boring and monotonous, or non-strenuous.



Workers may be dealing with external contributing factors, such as a sleep disorder or prescription medication that affects the length or effectiveness of their sleep.

Some disorders such as insomnia, sleep apnea, restless legs syndrome or narcolepsy, can cause extended wakefulness or disruptions to circadian rhythms. Illness and other medical conditions can also affect sleep length and sleep quality.

Assess the risks

Take a thorough look at your workplace, and identify objects, situations and processes that have the potential to cause harm due to fatigue. Once you've identified fatigue as a hazard, you can evaluate how likely and severe the risks are, then decide how to effectively eliminate or control the harm. Note that the work environment should have appropriate lighting, temperature, and noise levels. Fatigue may be increased by long, repetitive, and monotonous tasks so it's important to offer a variety of tasks throughout the workday.

If possible, optimize the design of the shift schedule by establishing the length of the rotation period and the direction of shift rotation. Create a schedule for shift workers that rotates forward, allowing them to go from a day shift to an afternoon or evening shift, and then into a night shift. This rotation is easier on the body and helps to build a routine.

If the job allows for it, try to adjust the work plan for the day. The most demanding and high-risk tasks should be avoided towards the end of the shift, or between certain hours (between the hours of midnight and 6 a.m.) when employees may be less alert.



Train workers

In addition to feeling very tired, weary, or sleepy, workers should also know how to recognize less obvious symptoms — reduced ability to be productive, lack of motivation, depression, headaches, and increased frequency of illness. Feelings such as giddiness, boredom, loss of

appetite, and digestive issues may also be signs of fatigue



Train everyone on the hazards of fatigue, including how to recognize symptoms such as weariness, sleepiness, irritability, being mentally or physically tired, and reduced alertness, concentration, and memory.

Promote healthy habits

Equip workers with the information they need to help address fatigue. Getting enough quality sleep is the habit sure to make the biggest impact. There is no one way to get good sleep — what works for one person may not work for another. General tips include going to bed and getting up at the same time every day; limiting screen time before sleep; exercising regularly; and using the bed primarily just for sleeping instead of activities like watching television. Not tired? Don't force it. Do something quiet instead, like reading a book.

It may also help workers to establish eating habits that help encourage sleep and feeling good.

Having meals at regular times is important to function at our best. Skipping meals or eating at irregular times can contribute to fatigue, food cravings, or increased eating at the next meal. When working night shifts, it's good to have a "main meal" before going to work. A heavy meal during the night may cause heartburn, gas or constipation, or make workers sleepy or sluggish.

Eating snacks between meals is a great way to stay nourished and get through work shifts with some

energy. At breaks, opt for healthy snacks that include combinations of a variety of foods from the four food groups. Consider caffeine intake as well. Excessive caffeine can cause insomnia, headaches, irritability and nervousness. It is recommended that foods containing caffeine should not be consumed up to eight hours before sleeping.

Social considerations for shift workers

The amount and quality of social interactions people have are related to their physical and mental health. Individuals like shift workers, who cannot establish regular routines in their daily activities, have more difficulty planning for family responsibilities and participating in clubs, sports and other social activities. The shiftwork makes it harder for them to cope with physical and mental fatigue than non-shift workers.

The lack of regular social contact can lead to feelings of loneliness and isolation. Since recreational opportunities are often minimal for workers on non-day or night shifts, some organizations offer facilities for social activities with the needs of shift workers in mind.



Providing access to quality childcare for shift workers' children can also help ease strain on their families.

Create a culture of support

Encourage employees to speak up if they're experiencing any symptoms of fatigue that may affect their ability to do their jobs safely. Workplaces can also provide mental health services such as employee assistance programs and promote healthy lifestyle campaigns that encourage healthier eating and drinking habits, and

physical activity.

Fatigue can include mental, physical, or subjective states, and can cause workers to potentially be inattentive, physically exhausted, or drowsy. By following these tips and addressing potential hazards and associated risks, employers can be assured knowing that they're helping workers to stay alert and stay safe while on the job.



Feeling tired, foggy, mentally, or physically tired, or lacking motivation? These are all signs and symptoms of fatigue. Whether it's due to working long hours, not getting enough sleep, or from long periods of stress or anxiety, workplace fatigue is a hazard employers should be concerned about.

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Common Maintenance Misconceptions for Concrete Floors

By Justin Brown



Knowing the facts will help lower maintenance and boost the performance of your floors.

Concrete floors play a crucial role in commercial buildings, offering the appeal of low maintenance, durability, and aesthetics. Because of these traits, polished concrete floors are one of the fastest-growing floor types, however, there are many misconceptions when it comes to how to properly care for these floors. As winter approaches, take a proactive approach to maintaining your concrete floors with the information you need to succeed.

Here are some of the more common myths about maintaining these floors and what you need to know about their true maintenance requirements.

Myth #1: Concrete floors are “maintenance-free”

It is commonly believed that once concrete floors have been installed, you can forgo any maintenance. This is false. Building service contractors (BSCs) need to have a complete understanding of how to properly maintain concrete floors, creating a regular cleaning schedule with the right products to help floors keep their shiny appearance and extend their lifespan.

This is especially important as the weather

starts to turn and the floors are exposed to snow, ice, and more through the winter.

Myth #2: Polished concrete maintenance is more costly and time-consuming

Maintaining polished concrete floors is not costly or time-consuming; it can be done during the day, often with existing tools and equipment. Instead of shutting down an entire facility to replace or strip the floors, the refurbishment process can occur during the workday with an automatic scrubber. Implementing a daily maintenance system minimizes workplace disruption, allowing employees to carry on with their day, along with keeping maintenance manageable and saving on labour.



Ultimately, it comes down to ensuring the appropriate cleaners and pads are used. Selecting the right system can help reduce costs, minimize the time it takes to maintain a high-shine finish, and bring life back to a floor that has become worn or dulled.

Myth #3: you can strip and wax concrete

Stripping and waxing concrete floors requires extensive labour and time. If it is not done correctly, the floors will deteriorate over time, requiring additional stripping waxing as the shine dulls or deteriorates, creating a costly maintenance

issue. Wax is non-breathable, which means that the porous concrete beneath cannot breathe, and leftover moisture will be trapped inside. This could create issues with blemishing and wear patterns on the flooring, diminishing the look of the concrete.



The average cost to strip and wax floors is about \$2.25 per square foot. Costs can increase or decrease based on the finish, the condition of the floor and the time it takes to complete the process.

When concrete floors are properly maintained throughout the year using a daily maintenance system, stripping and waxing becomes unnecessary.

Myth #4: Any floor cleaning products can be used on concrete floors

It's important to understand the chemistry behind stain protection on concrete floors. When any cleaner comes into contact with the concrete surface, the Ph levels of the cleaner change. Check the cleaner to ensure it will not create a harmful chemical reaction to your floors.

Consider using a full-system approach for

stain protection and maintenance to prevent any confusion and to achieve your desired results.

Embrace the benefits of proper floor care

Concrete floors are easily maintained and implementing a daily maintenance system can help increase the durability and longevity of your floors. Don't skimp on using the correct products and equipment because that will end up costing more money down the road, with damage or increased maintenance. Understanding the proper maintenance techniques creates a cost-effective way of making sure your floors look great and are durable for years to come.

Justin Brown is a technical support specialist for Ameripolish, a leading provider of architectural concrete products for prepping, strengthening, coloring, protecting and maintaining concrete floors.

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“Autumn carries more gold in its pocket than all the other seasons.”

—JIM BISHOP



KenKen Puzzle

How to solve the KenKen puzzle:

(Answers on page 26)

- Fill in the numbers from 1 –6
- Do not repeat the number in any row or column
- The numbers in each heavily outlined set of squares, called cages, must combine (in any order) to produce the target number in the top corner using the mathematical operation indicated
- Cages with just one square should be filled in with the target number in the top corner
- A number can be repeated within a cage as long as it in the same or column

1	6			7		3	2		
5	4					8		9	1
			2		4		6		
2	3		7		6	8			9
	9	7							
		5	4		9	1			3
8							3	7	
		3		6	7				
	1	6		4	3		8	2	



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Rooftop Solar Photovoltaics Spark Safety Advice

By Barbara Carss

Wiring and workmanship draw inspectors' critical attention



Rooftop solar photovoltaics can help real estate owners/managers lower energy costs, boost operational resiliency and meet ESG commitments, but proponents of the technology caution that it also packs a potentially lethal electrical charge. Vigilant maintenance and risk management are critical for what is, in essence, a power plant affixed to a highly valuable asset.



Clean Energy Associates (CEA), a consultancy providing project management, engineering and

technical services for solar, green hydrogen and energy storage systems, is sounding the alarm after safety audit data from more than 600 rooftop solar PV installations worldwide revealed a disconcerting magnitude of fire hazards. Just 3 per cent of audited sites were completely clear of safety concerns, while nine of the 10 most prevalent issues surfaced in more than one quarter of the inspections.

“This is frightening: one, for your buildings; and two, for the industry,” Chris Chappell, CEA’s senior director of engineering services, asserted during a recent online presentation. “These things are happening on your roofs right now.”

Canada was among the 14 countries in North America, Europe and Asia-Pacific where the safety audits were conducted. Nearly half the examined installations — 49 per cent — were improperly grounded in some places, posing risks for on-site personnel and compromising equipment performance, while 47 per cent of the installations sported cracked or soiled modules, creating shock and fire hazards in addition to diminishing operational performance.

Connectors emerge as a hazardous link

A large share of the identified risks relate to connectors — or the wiring and cabling connecting the modules, racking and inverters — of which there may be hundreds or thousands in a rooftop installation. Faulty connectors could be the source of arc flashes, an opening for water infiltration or an ignition source should they overheat, melt and drop down onto the roof ballast. Chappell and his colleague Ankil Sanghvi, CEA’s engineering

manager, cited examples of all those occurrences during the presentation.



“The 10 most common items that we found, these are not equipment-related per se. These all have to do with workmanship,” Chappell maintained. “The modules, inverters and racking are all integrated with wires and it’s these little things that are the biggest issues that we see on sites.”

Sloppy or perilous practices include: pairing the positive and negative sides of connectors from two different assemblies; placing wiring over sharp metal edges that can inflict damage as they expand and contract in fluctuating temperatures; and over-torquing connectors or other kinds of aggressive handling that can cause cracks in components. Manufacturers’ specifications typically state the required type of DC connector, but safety auditors found that instruction had been flouted at 41 per cent of the sites they examined. Connectors were improperly installed in about the same portion (40 per cent) of systems.

“These connectors are UL listed and come as an assembly. You can’t cross and mix parts, but it happens a lot, more times than not, because the threads (from different assemblies) are the same,” Chappell explained.

“This is a big no-no. We have seen, a lot of times, connectors burning because of cross-mating,” Sanghvi concurred. “With all DC connectors,

please follow the manufacturer’s manual very closely and please make sure that you are using the right tools while assembling the connectors.”

Hotspots implicated in arc flashes and ignitions

In some cases, lurking fire hazards should first become evident through a drop in power output. For example, damaged, soiled or shaded modules can cause a mismatch in voltage that will result in underperformance and can also lead to hotspots where one cell is operating at a higher temperature than those surrounding it. Such hotspots could potentially ignite nearby organic material and/or cause the backside of the module to melt, increasing the risk of arc flashes.

Shading could occur if modules are crowded too closely together. Natural elements — including wind, hail, lightning and animals — and on-site personnel could cause other types of damage. In the latter case, Sanghvi chides some marketers for misleading messaging.

“We see module manufacturers advertising their modules by walking on them and showing people: Look how strong they are,” he recounted. “Every time they walk on the module, they break the cells.”

“Those cracks are going to grow and grow and grow,” Chappell added. “Tell the teams up on your rooftops: Do not walk or kneel on the modules.”

CEA’s safety audit data shows hotspots detected on modules at 31 per cent of the inspected sites. As well, hotspots were recorded in enclosures encasing solar batteries at 19 per cent of sites. That’s in part attributed to improper termination of wiring to enclosures, which was found at 40 per cent of the audited sites.

Sanghvi recommended infrared scans as part of the maintenance schedule with scans of all enclosures at a maximum interval of six months. As part of daily operational oversight, he suggests keeping watch for “inconsistencies” with connectors and obvious damage like cracks and broken pieces.

Nevertheless, potential hazards are often difficult to detect through cursory visual scrutiny and impossible in some cases. For example, he recalled physically opening an enclosure during one field inspection and finding some questionable splices.

“A lot of these decisions are made on the side by a technician or an electrician,” Sanghvi reflected. “For this particular site, no one knew the splices existed in this box. No one knew there was something bad going on in this box. Luckily, we found this before it became a major incident.”



Timely risk management reminder for envisioned new project development

Vigilant safety monitoring programs could be particularly important for building owners/managers who acquire rooftop solar PV systems through a transaction and have had no input into its design and installation. In any case, some aspects of that process can become murky through the chain of contractors and sub-contractors involved. For new installations, Chappell sketches out some basic parameters.

“What you want to do is control your installers with design,” he submitted. “In your notes and your design drawings, you want to tell everyone: This type of connectors is acceptable; cross-mating is not. Then you meet with that EPC (engineering,

procurement and construction) and you reiterate: Do you understand?”



A risk management reminder is timely as jurisdictions throughout North America and around the world encourage new solar PV installations in an effort to increase renewable supply and promote distributed energy resources (DERs) that can help alleviate demand pressure on the electricity grid. In Ontario, for example, a regulation was enacted last year to permit third-party net metering, freeing prospective clients, such as commercial and multifamily landlords and condominium corporations, from upfront capital investment and ongoing operating costs.

This aligns with the Ontario government’s vision to tap into an estimated 10,000 megawatts of DER capacity, as outlined in the clean energy plan it released earlier this summer. “Eligible third-party ownership arrangements now include leasing, renting and financing options with energy service providers as well as power purchase agreements with a licensed third-party generator, making rooftop solar and other DERs accessible to more Ontarians looking to better manage their energy costs,” it states.

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Commercial cleaning remains critical even with lower building occupancy

Create systems that work for your customers and your company.

Building occupancy has changed, and that means that commercial cleaning has had to pivot once again to accommodate the needs of their corporate customers. Less frequent cleaning and more flexibility means adjusted budgeting, labour, and scheduling for cleaning companies. Employees are still coming into the office though, so systems need to be put in place to accommodate businesses and cleaners.



RELATED: How cleaners can still thrive with lower building occupancy

The heightened attention to cleanliness and sanitization means that employees are concerned about how clean their offices are, and not just for safety. Despite many of them not being there full time, cleanliness is still important to staff, with 70 per cent of employees feeling that the cleanliness of their work area affects their job satisfaction.

In addition, three out of 4 employees believe that the level of cleanliness at their workplace is a reflection about how much their employer cares about their wellbeing. This means that cleaning companies are more important today than ever before, even if their schedules might look a little different.

As more companies accept a hybrid work model, many companies are downsizing their footprint, creating shared workspaces, and meeting rooms are being used on a rotating schedule. This could be good news for cleaners, as the offices will still be used daily, needing cleaning and sanitization. Research shows that office buildings have about 4,800 dirty surfaces, and even without full-time occupation, spaces like refrigerators and door handles remain high-touch and high risk for the spread of viruses.

Technology can help cleaners and businesses decide on a cleaning schedule that suits everyone's needs, with innovation like occupancy sensors which can analyze the building use, assess traffic patterns, and predict high traffic times so health and safety can remain a priority.

Because of the lower building occupancy, cleaners have more flexibility for labour and scheduling, often allowing them to come and clean during the day, rather than at night. This means that cleaners may be able to achieve a better work-life balance while servicing their customers and better managing labour.



Even though building occupancy may remain lower for years to come, commercial cleaners need to lean on their expertise to accommodate evolving needs and continue to grow the business.

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please note this does not include the ABSA exam

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Answers: 1)a 2)e 3)d 4)e 5)a

Kenken Puzzle Answer

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3	7	9	2	1	4	5	6	8
2	3	1	7	5	6	8	4	9
4	9	7	3	8	1	2	5	6
6	8	5	4	2	9	1	7	3
8	5	4	1	9	2	6	3	7
9	2	3	8	6	7	4	1	5
7	1	6	5	4	3	9	8	2



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but the beginning of a new adventure.
Time to take risks and do the
unexpected.

~ Unknown

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Presenters: **David Van Tighem, Application and Product Solutions, D.A.D. Sales**
Alberto Quiroz, P.Eng, CITP, Intellimeter, President

Alberto Quiroz will be presenting virtually and David Van Tighem of D.A.D. Sales (local applications and product solutions) representative for Intellimeter will attend the meeting in person to assist and answer any questions

Bio's:

David: As the esteemed representative of D.A.D. Sales, David Van Tighem is an accomplished Electrical Engineering Technologist, graduating with honors and a stellar 4.0 GPA from the Southern Alberta Institute of Technology (SAIT). With a distinguished eight-year tenure in the Electrical Engineering field, he has garnered a noteworthy track record. His achievements encompass the design of intricate electrical distribution systems in collaboration with BC Hydro for lower mainland Vancouver, the management and establishment of an Original Equipment Manufacturer (OEM) electrical panel shop, and his role as a highly regarded Rockwell Automation Specialist, diligently serving across the diverse landscapes of Alberta. Today, Mr. Van Tighem's expertise is channeled into pivotal areas, including Electric Vehicle Energy Management and Infrastructure in partnership with Flo and Intellimeter, pioneering Industrial Automation with Eaton Industrial Controls, and illuminating the world through advanced lighting design with RAB Design and SATCO.

Alberto is the President of Intellimeter. He has a degree in Mechanical and Electrical Engineering and is a Certified International Trade Professional (CITP), and is a Professional Engineer registered in the province of Ontario. At Intellimeter, he has specialized in the Submetering of Electricity, Water, Gas, and Thermal Energy in buildings, and is now more focused on Energy and Demand Management for EV Charging.

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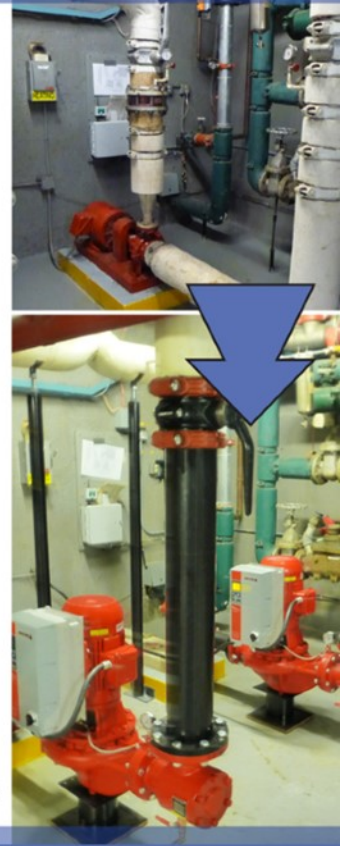
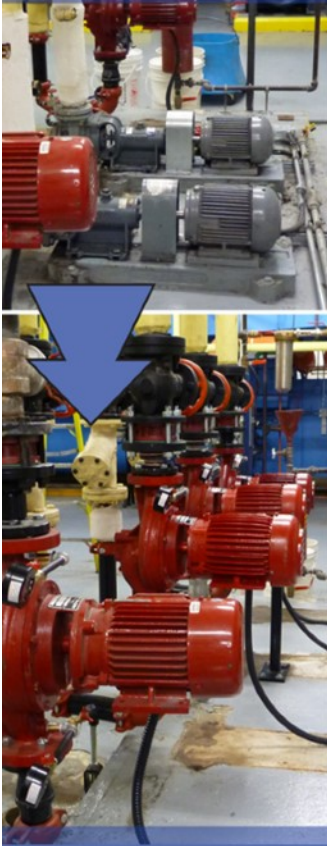
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