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Important Phone Numbers

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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
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Executive & Committees

President	president@boacalgary.com
Les Anderson	C: 403 921 0648
Vice President	chairman@boacalgary.com
Mark Arton	(c) 403-305-7029
Associate VP	associate.vice.president@boacalgary.com
Vacant	
Chairman	chairman@boacalgary.com
Mark Arton	(c) 403-305-7029
Treasurer	treasurer@boacalgary.com
Carrissa Speager	(c) 403-969-0329
Secretary	secretary@boacalgary.com
Monika Bhandari	(c) 403-470-4169
Education Committee	education@boacalgary.com
Vacant	
Membership Committee	membership@boacalgary.com
VACANT	
Promotions Committee	promotions@boacalgary.com
VACANT	
Activities Committee	403-874-0850
Samson Isowode	
Technical Concerns	chairman@boacalgary.com
Kyle D'Agostno	
Webmaster	webmaster@boacalgary.com
Les Anderson	



President's Message



Building Operators Association
Box 22116, Bankers Hall
Calgary, AB T2P 4J5
www.boacanada.ca

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

I was reflecting recently on BOA history; it can be found on our website. This year we can and will celebrate 58 years as a not-for-profit association. I was reading the mandates of the association as well the original mission statement, and I am happy to say we have not moved from the original intent. We support the Building Operators in education, community and we hold safety in the workplace as a priority that we all must share. Yes, we have added programs to the association, and we have acquired relationships and bonded with other associations with similar interests and have signed MOUs with them. That has made us a better association, by broadening our foundation. By the past presidents leaderships, we have held true to what we are today.

Our Mission statement, To build and maintain closer relationships among Building Operators through networking, education and the exchange of ideas . BOA commits to improve the methods and efficiency of building operations in partnership with accredited programs and promotes safety at the worksite at all times.

It has been a trying time this last two years, the cancellation of monthly meetings. It is

nice to talk to each other face to face. To shake the hands of friends and greet each other with a smile and a good word is coming back. We are going to gather once more with a September meeting and on October 18th 2022, from 12-6PM we are going to celebrate the end of the drought with our biannual **Trade Show**. We will again have it at the Danish Canadian club. We have booked the venue and have started to send out invitations to our associates to bring their products or show you their skills to demonstrate to you what it is they can do for you. It a great chance to once again, meet with other Building Operators from other companies, The venue will have some finger food, there is a cash bar. And we have been tossing around the thought of having a keynote speaker in the afternoon.

I hope to see other related associations at the event. We will provide tables to them so that they can share with you their goals and objectives. I hope to see you there, friend. It will be good to see your face smile and shake your hand.

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 19

1. Carbon dioxide causes return line corrosion and may be:

- a. eliminated by adding magnesium to the water
- b. absorbed by sodium sulphite
- c. the result of bicarbonate decomposition
- d. neutralized in the boiler with sodium hydroxide
- e. neutralized with filming amines

2. Chemicals are fed to a water tube boiler:

- a. with a small centrifugal pump
- b. into the top drum only
- c. with a positive displacement pump
- d. into the bottom drum only
- e. prior to operating the blow off valves

3. Coagulants added to water:

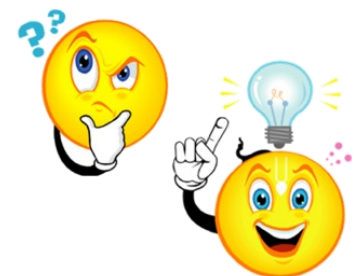
- a. make the water soft
- b. will remove fine particles more readily
- c. remove the dissolved solids
- d. causes the fine particles to float to the surface
- e. remove chemicals not used up

4. Corrosion products in feedwater can cause:

- a. slag deposits in superheaters
- b. decreased steam pressure
- c. increased steam pressure
- d. increase in boiler efficiency
- e. tube failure

5. Excess sulfite residuals are necessary to prevent:

- a. pitting
- b. hardness
- c. carry over
- d. acidity
- e. sludging



Steps to Conducting a Job Hazard Analysis

As an employer, you are legally required to take steps to correct all known hazards in your workplace. A job hazard analysis is an efficient way for you — and your employees — to take a look at all workplace activities and understand where the hazards may lie.

Implementing a JHA at your job site may seem like a daunting task, but it doesn't have to be. Every job hazard analysis can be broken down into four actionable steps to help employers and employees navigate this important step toward safety.



Which jobs should you analyze?

Deciding which job to start with may seem like the most intimidating step, but don't overthink it. Review your accident logs and take note of near misses, including those that might not have been officially recorded. This will give you a good idea of which jobs are typically more hazardous.

Interviewing employees is another smart step to take in this process. These are the people doing the jobs day in and day out, so they probably have a good idea of how hazardous the job actually is.

In addition to those jobs that you can identify as more hazardous, be sure to also consider:

- Newly created jobs
- Jobs with recently changed procedures
- Complex jobs that require written instructions
- Jobs with entirely new personnel

What are the tasks involved with that job?

Once you have determined which jobs to analyze, you need to break down each job into a series of steps. This can be done by simply observing an employee (or employees, if necessary) in action. Be sure the observer is someone who serves in a safety role or is a direct supervisor familiar with the job. This will ensure the steps are recorded properly.

During the observation, the notetaker of course should be recording each step of the process, but this is also the time to document shortcuts employees might take or steps not normally considered, such as setting up or cleaning up equipment.

Make sure everyone involved reviews the notes after the observation is complete. You want a job's tasks to be clear but avoid making them too generic or too specific. Try to keep the number of individual tasks under 10. Any more than that and you might want to consider breaking up the job into multiple phases for easier manageability.

What are the hazards of each task?

Now that you have clear documentation of the job and all the steps involved, it is time to get to the meat of the JHA. Evaluate each step in the job process and think about the potential hazards of that step.

Many times, this will be obvious — such as operating heavy machinery — but don't discount the seemingly innocuous things like repetitive bending and lifting or other ergonomic issues.

While the inherent dangers will vary with every job and with each specific task, some questions to ask yourself might be:

- Are there pinch points or the potential for body parts to be caught between moving machinery?
- Is there a potential for slips, trips or falls?
- Does the task expose employees to excessive noise or vibration?
- Is there potential for exposure to hazardous substances?

At this point in the JHA, you may want to revisit the accident and injury logs. Where did things go wrong? What can be improved?



By reviewing real-life scenarios relating to that job, you can accurately assess the dangers. Employees who regularly do the job in question can also be a great resource at

this step, as minor injuries or near-misses may not always be recorded.

How can you implement controls?

Once you have evaluated each step of the job, you can now implement controls to minimize or eliminate the hazards in order to keep your workers safe. For example, if a worker has to repeatedly bend over to pick up material, you may need to reconsider the storage location of those materials.

This is where you will use the hierarchy of hazard controls, which aims to control occupational dangers. First, you should try to eliminate, or completely remove, the hazard. Of course, this is often not possible, so substitution is the next step. Think of something like replacing lead-based paint with a nontoxic product.

Engineering controls create a physical barrier between the worker and the hazard, such as installing guard rails. The danger is still present, but it is physically less likely to occur. One step below this is administrative controls, which is simply the implementation of safer work practices, like signs or increased training.

Finally, and perhaps what people most often think of when it comes to hazard controls, is personal protective equipment (PPE). Appearing at the very bottom of the hierarchy, PPE is the least effective means of controlling hazards. However, it is often much easier to implement, and various types can be utilized in a number of workplace scenarios.

Don't Stop with the JHA

So you have completed your analysis, determined what the major hazards are and how you want to move forward to fix them.



Now what? In order to move ahead as safely as possible, you must be sure your workforce is aware of your findings and the actions you will be taking.

Not only does every worker have the right to up-to-date workplace hazard information, it also helps you to know that everyone is on the same page when it comes to dangers in the workplace. After all, would you rather have 70% of workers know the dangers of a certain job or have 100% be aware and cover all your bases?

As you begin to implement safety controls, no matter where they fall within the hierarchy, you should continually keep your employees updated on the steps that are being taken. You may choose to send out regular emails, post updated signs in high-traffic areas or have in-person meetings.

No matter your method, making sure all employees are involved makes them know you care for them and their safety.

Train Your Employees

Sometimes conducting a job hazard analysis will reveal large gaps in safety, while other times you may find that a job is being conducted as safely as possible. No matter what, you can be sure that a well-trained employee is always going to

be safer than a poorly trained employee.

Taking online safety training is convenient as each of your employees can receive training on a wide range of topics that apply to them, from lockout/tagout to understanding regulations for their specific job.

Another benefit to taking training online is how easy it is to repeat training as often as is needed — or as often as you would like. Some regulations require training to be conducted at least annually, but because you never know when an inspection could occur, it is never a bad idea to brush up on safety training even when not required.

In addition to hundreds of course options for your employees, we also offer training on how to conduct a job hazard analysis if you want a more in-depth guide on using a JHA to protect your workers.

It's never a wrong time to evaluate your current safety program, or implement a new one, to protect your employees.

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**ONE OF THE
TESTS OF
LEADERSHIP
IS THE ABILITY
TO RECOGNIZE
A PROBLEM
BEFORE IT
BECOMES AN
EMERGENCY.**

ARNOLD GLASOW

Alberta bill aims to bring structure, simplicity to OHS

OHS professionals have endured their share of significant change over the last two years, with more shifts arriving in Alberta at the end of last year through Bill 47 — the Ensuring Safety and Cutting Red Tape Act, 2020.

The act, which went into effect on Dec. 1, 2021, presents a series of amendments to pre-existing health and safety legislation, with the goal of offering workplaces and OHS professionals across the province's varied industries more clarity and structure in managing workplace safety, especially during a time when those qualities are more valued than ever.



Making safety simple

Joseph Dow, press secretary for the Alberta government's labour and immigration

department in Edmonton, described the major overall change to OHS legislation as "streamlining and simplifying technical rules and requirements, and moving them from the OHS Act and OHS Regulation into the OHS Code."

The impact of these refinements, said Dow, is a provincial OHS Act that's "shorter, less prescriptive and easier to understand. Plus, most of the technical rules and requirements are in one place, which makes them easier to find and apply for job creators and workers."

This update and consolidation of many overlooked or outdated safety guidelines benefits numerous industries, he said, including mining sites, where rules were previously spread across Alberta's OHS Act, OHS Regulation and OHS Code, along with radiation safety laws, which were not only unclear,

but more than three decades out of date.

"Radiation equipment safety laws had not been significantly revised for 35 years, and often duplicated or did not align with other workplace health and safety legislation," Dow explained. "Along with this update, radiation rules required a similar refinement to mining standards and now exists in a single, consistent piece of legislation."

Prioritizing the changing needs of safety

The on-site implications of these new amendments are the emergence of a province-wide safety standard that is more dynamic and industry-specific, said Dow, giving employers more control in defining safety according to, not only the needs of their individual work environments, but also the quickly evolving standards of occupational safety.

By giving employers "rules that are more flexible and easier to understand, job creators and workers now have more ability to adapt to changing health and safety trends and issues particular to their industries," he said.

The adaptability that the bill adds to OHS also extends beyond the workplace, with the consolidation brought on by these amendments allowing for further updates and refinements to be made with ease on a legislative level.

"From a policy perspective, consolidating requirements into the OHS Code makes them easier to change and update because the code is a regulation," said Dow. "This ensures that rules can stay current with best practices and changing trends, such as advances in technology and new protective equipment."

In allowing for more efficient and needs-based applications of safety standards across Alberta's varied industries, Dow believes that the dynamic nature of these new amendments lets employers

achieve a new level of prioritizing the safety of their work environments and those within them.

“Workplace health and safety is in everyone’s interest,” he said. “By making OHS laws easier to understand and follow, we can improve workplace health and safety and ensure every person returns home safely and healthy at the end of each workday.”

“For too long, these laws were often viewed as to-do lists. Alberta’s government changed that by listening to job creators and workers.”



Out with the old...

The demands of job creators and workers that Bill 47 sought to address were largely in reaction to previous OHS legislation implemented several years ago by Alberta’s former NDP government, explained Loretta Bouwmeester, partner at Mathews Dinsdale Block weights & Clark, an occupational health and safety-focused law firm based in Calgary.

“Candidly, there was so much feedback received by the government in response to the NDP changes,” she said. “It was such a hot topic that it needed to be addressed from a constituency perspective, and a number of industry associations had proactively provided feedback and submissions on needed changes.”

The majority of this feedback concerned what was perceived as sudden and sometimes unclear changes introduced by the prior government,

Bouwmeester said.

“The concern was that the pendulum had swung abruptly, and in a way that made things difficult.”

Previous legislation was focused on achieving safe processes over safe outcomes, which caused confusion and frustration due to what some believed was limiting and unclear definitions regarding an organization’s roles and responsibilities in managing the safety of their workplace.

With Bill 47, Bouwmeester said, “this government wanted to see safe outcomes, and didn’t want to bind the hands of an employer so that they were more process focused than outcome focused. It’s the outcome that matters, though, and that outcome is safe workplaces.”



Evolving toward clearer responsibilities

By introducing more clearly defined roles and adaptability into Alberta’s workplace safety policies, the Ensuring Safety and Cutting Red Tape Act serves what Bouwmeester described as a “continued, balanced evolution” from prior legislation.

One manner in which the legislation has evolved is by offering a new clarity when defining internal responsibility systems and the organizational roles played in efficiently achieving workplace safety.

“Enabling innovation has been a big focus of this government, and they saw changing this legislation

“What the new legislation makes clear is that the employer is responsible for work-related safety issues. The old legislation, with that really broad definition, blurred the boundaries,” said Bouwmeester. “This is an important (change), because this created so much angst for supervisors.”

A return to employer accountability

Frustration arose from the prior legislation’s creation of “an independent obligation on supervisors to ensure their own competency,” Bouwmeester said.

“If their employer wasn’t providing the tools, arguably they had to do it themselves, where now, the responsibility is more squarely with their employer.”

Returning to a system where supervisor competency is once again an employer responsibility means that it is on organizations to ensure “that their supervisors are competent to carry out their duties, and if the supervisor is not competent, that can have a blowback effect on the employer,” rather than solely the employee, according to Bouwmeester.



The increased safety responsibility of employers does not mean employees have any less of a say regarding the safety of their workplace, however.

Bouwmeester remarked that “a main, big change is that OHS officers can issue orders, and if they have to get a court order to enforce it because an employer is not complying, the court can now order costs against that employer, so the employer has to pay for OHS to make them comply.”

“Essentially, if you’re offside, the consequence is now bigger.”

Jack Burton is a freelance writer in Toronto.

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KenKen Puzzle

How to solve the KenKen puzzle:

(Answers on page 19)

- 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 is in the same row or column

1	10 x		1 -	2 -	3 -
3 +		2 ÷			
20 x	2 ÷		3 ÷	2 ÷	4
		2			6 +
2 ÷	20 x		6 x		
	4	5 -		3 -	

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Fall 2022

Pumps: The Heart of HVAC

James Piper

Proper maintenance remains essential for efficient pump operation, but new technologies offer managers greater opportunities to control costs

The centrifugal pump has long been the workhorse of HVAC systems, supporting the operation of chillers, boilers, cooling towers, domestic water systems, and hydronic distribution systems. And while practically every other component in an HVAC system has been greatly modified to meet ever changing requirements for efficiency and



reliability, centrifugal pumps have not changed very much.

That does not mean today's centrifugal pumps are the same as those of 20 years ago. Manufacturers have made significant improvements in impeller designs, construction materials, bearing and seal designs, and couplings. But these changes have been more evolutionary than revolutionary.

As a result, many managers simply overlook the pump as an opportunity to improve the performance and reliability of HVAC systems. Building designers replicate designs used in the past in new building designs or renovation plans. System operating practices simply follow past tried and true practices. And when pumps fail,

technicians replace them with new ones with the same characteristics.

The situation is changing today. Many advances that have affected other areas of building HVAC operation are being applied to pumps and their operation. As a result, engineering and maintenance managers can achieve levels of operating efficiency that were unheard of as recently as 10 years ago. And while improved operating efficiency is a primary benefits of today's pump installations, it is not the only one. System performance has improved. Reliability has increased. Maintenance requirements have been reduced.

Improving Pump Efficiency

The overall efficiency of any pump used in a building HVAC system is determined by a number of factors, including:

- the efficiency of the pump and motor
- the efficiency of the pump control
- how well technicians maintain the pump and its related components.

New pump designs and high-efficiency drive motors can improve operating efficiency. For example, by replacing a pump motor with a high-efficiency model, managers can achieve a reduction in energy requirements of 1-5 percent. Similarly, installing a high-efficiency pump can reduce energy requirements 1-3 percent. While these efficiency improvement numbers are relatively small, the typical annual hours of operation for many pump applications can make the resulting savings very



significant.

While using higher-efficiency pumps and motors will improve operating efficiency somewhat, the greatest improvements in efficiency come from new designs of pump controls. Traditional pump installations use constant-speed pumps. Technicians use building, balancing, throttle or bypass valves to reduce flow when demand is low or to balance the flow to different areas of the building.

These valves restrict the flow of water through the end device, but the pump still uses the same amount of energy to operate. Also, technicians tend to set these valves and forget them. Conditions and loads change in a building, but the valve setting remains the same.

An alternative to throttling flow that improves both performance and energy efficiency is the use of variable-frequency drive (VFD). VFDs have slowly gained acceptance in use with building HVAC pumps because of their ability to effectively control the operation of a pump over a wide range of flow requirements, while also



significantly reducing the energy requirements for the pumping system.

For example, as control valves cut back on the flow of water through terminal heating or cooling devices, the control system senses the reduced flow requirement and directs the VFD to reduce the pump speed to match the conditions found. Since the vast majority of systems operate at loads below peak capacity 95 percent of the time or more, VFDs can greatly reduce pumping energy requirements. In a typical HVAC application, pump energy savings

typically are 20-50 percent annually.

Enter the Intelligent Controller

While VFDs can greatly improve the energy efficiency and control effectiveness of pumping systems, manufacturers have developed a new generation of controls that goes even further. This new generation of pump controls — intelligent pump controllers — offers improvements in pump reliability while further improving system performance.

Intelligent controls can better adjust to system load changes, better control pump operations, and provide control over a wider range of load conditions, and produce smoother pump startups.

Intelligent controllers also use VFDs to regulate pump speed, but they do so not as a standalone device, but as another element in the overall building automation system. By connecting the pump and its controller to a digital field bus, data from the pump and its sensors can integrate into the system. Software monitors the operating conditions and identifies conditions that are outside normal operations and those that could damage the pump.

For example, if the flow to a pump is restricted, the flow rate through the pump decreases. A conventional VFD control systems then signals the pump to increase its speed, possibly resulting in cavitation, a condition that can rapidly damage pump components. In contrast, an intelligent pump controller detects cavitation condition, notifies the operator of the situation, and — if programmed to do so — reduces the flow rate sufficiently to prevent cavitation without shutting down the system.

Cavitation is just one condition that intelligent controllers can detect. Operators can program the software to detect abnormalities, from sticking control valves to system leaks. Technicians can use the system to identify recurring or intermittent problems that otherwise might go undetected.

Don't Overlook Maintenance

No matter how advanced the control system or how good the design, pump systems will operate effectively and efficiently only if managers schedule

maintenance properly. Too often, though, they ignore maintenance until something goes wrong.

The resulting costs from pump repairs and disruption to building operations typically exceed the cost of ongoing pump maintenance by a factor of 10 or more. Maintenance activities and the frequency with which they must be performed vary with the capacity of the pump and the nature of the load that it is serving.

One of the most important maintenance tasks is to pay attention to a pump's operation. Does it look and sound normal, or has it developed unusual sounds or vibrations? Louder-than-normal or unusual sounds can indicate a range of problems, from misalignment and bad bearings to cavitation.

A small leak rate at pump seals is normal, but a sudden flooding of the area near pump shafts indicates that a seal has failed and needs replacing. Excessive heat can indicate a failing bearing or a motor that might need replacing. By checking the pump regularly, maintenance technicians can identify pump problems early, reducing repair costs and disruptions to operations. Although it might be too late to prevent having to overhaul or replace the pump, at least the maintenance department, rather than the pump itself, will be able to pick the time when the pump is out of service.

Beyond periodic checks on pump operations, maintenance personnel should follow the manufacturer's recommended schedule of maintenance activities. But these are the minimum maintenance requirements. Pumps serving critical applications in a building will require additional maintenance activities if they are to enhance system reliability.

A successful pump installation requires that managers change their ways of thinking about pumps. Sticking with old design and operating practices will prevent the system from operating as efficiently and reliably as it could, and waiting to adopt new technologies that are available

means missed opportunities to ensure smooth building operation and enhanced energy efficiency.

Finding Failure

Even with proper maintenance, pumps fail. When they do, instead of simply replacing or rebuilding the existing pump, maintenance and engineering managers should take the time to determine the cause of the failure.

Pump failures fall into four general categories:

- a defective pump
- a poor application design
- improper maintenance
- poor operating practices.

Unless managers and technicians determine the cause of the failure, it will be impossible to ensure that the failure will not be repeated with the new pump.

For example, if a pump fails because of contamination in the circulating fluid, replacing the pump without taking steps to remove the contaminants will only result in the premature failure of the replacement pump. Similarly, if a pump fails due to stress induced by thermal expansion and contraction in the piping system, the replacement pump also will fail unless technicians properly install expansion joints at the pump connections.

James Piper, P.E., Ph.D., is a national consultant with more than 25 years of experience in facilities management issues.

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As spring approaches, WorkSafeBC reminds employers of fall risks

WorkSafeBC is reminding employers and workers of the risks associated with falls at work.

WorkSafeBC cautions that nearly every worksite has the potential for a fall, whether it's from a roof, short ladder, medium-sized truck or a tall scaffold. Falls usually result from a combination of hazards, including working at heights without fall protection; not following safe-work procedures; slippery surfaces; and overexertion.

In 2021, WorkSafeBC accepted 4,050 claims related to injuries caused by falls from elevation. These types of falls are more likely to occur in construction, manufacturing, and forestry industries. For example, last year, there were 497 serious injuries and six fatalities in the construction sector from falls.



“Falls from elevation can cause serious, life-altering injuries, and even death,” says Suzana Prpic, Senior Manager of Prevention Field Services at WorkSafeBC.

“Many of these falls can be prevented by fall protection planning and proper and consistent use of fall protection equipment.”

As spring approaches, and outdoor construction work increases, WorkSafeBC is reminding employers that the Occupational Health and Safety Regulation requires workers to use fall protection systems when a fall from three metres or more could occur, or where a fall from a lesser height could result in injury.

Slips, trips, and falls: the human and business costs

Of all workplace injury claims in B.C., 20 per cent of them are related to slips, trips, and falls.

Injuries from falls can include sprains, bruises, concussions, fractures, and even burns and cuts. Further, across all sectors, slips, trips and falls are the costliest workplace incidents—and some of the biggest causes of general productivity loss. Pain and suffering, disability, stress, and even a loss or change of employment can result.

These same injuries cost B.C. businesses more than 260,000 lost workdays and more than \$206 million in workers' compensation payments. “Workplace injuries can happen in an instant and without warning. That's why employers must ensure they take preventative steps to reduce or eliminate the risks of slips, trips and falls at work,” says Prpic.

Resources

WorkSafeBC also has the following resources available for employers:

[Falls from elevation – WorkSafeBC](#)

[New resources help construction employers create fall protection plans specific to their worksites | WorkSafeBC](#)

[Slips, trips & falls – WorkSafeBC](#)

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WHY IT IS IMPORTANT TO CONTROL ENERGY CONSUMPTION DEMAND

Picture a person living alone who consumes 8,000 US Gallons of water a month; Then picture a fire hydrant used by the firemen when putting a fire out in a small shed, that took a few hours, used exactly 8,000 US Gallons of water.

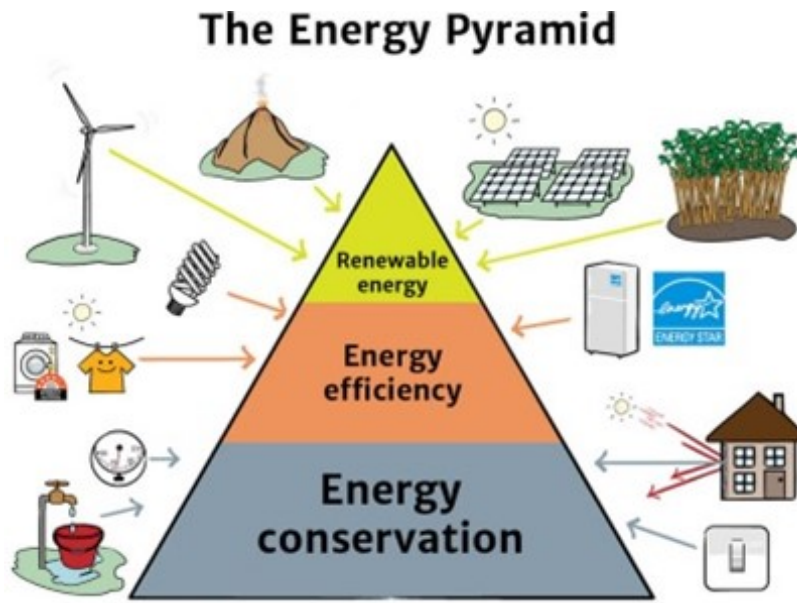
Similarly in an industrial building, two adjacent facilities may consume the same amount of kWh of electricity every month, except that factory 'A' consumes a constant amount every day and factory 'B' only operates one day a month.

While the actual consumption of Gallons and kWh is exactly the same in both cases, which one costs more?

This is how we can explain demand; the infrastructure required to deliver the amount of water, or the amount of energy required is very different. In the first case, a ½" diameter pipe can deliver the water, in the other one, an 8" diameter pipe is required. Similarly, when it comes to electricity, a larger feeder and a larger transformer will be required to deliver the

power in the latter case.

Demand or what a customer contracts with the utility as demand, is equivalent to the maximum power required at any time. It's the energy or service provider's responsibility to install a properly sized feeder to deliver that amount of power whenever required. The infrastructure cost to provide for the need is high and increases as demand increases.



This is one of the reasons electric utilities apply a demand charge to most commercial and industrial bills. When it comes to residential units and residential buildings utilities apply 'Time-of-Use' (TOU) rates to encourage consumption when the demand is low.

With TOU, the price you pay depends on when you use electricity, the utility, the region, and the season of the year. There are multiple levels of TOU rates, here are some examples.

- Off-peak: When demand for electricity is

lowest, typically at night between 7 pm - 7 am on weekdays and during weekends and holidays.

- Mid-peak: When demand for electricity is moderate, typically weekdays from 11 am - 5 pm. These periods are during the daytime, but not the busiest times of the day.
- On-peak: When demand for electricity is generally higher, typically weekdays from 7 am - 11 am and 5 pm - 7 pm. These are the busiest times of day - generally when people are cooking, starting up their computers, and running heaters or air conditioners.

Peak Demand creates problems for utilities, first on the supply side; because at that point, the System Operator needs to dispatch additional generation which is required to ramp up fast, meaning that Solar and Wind are out of the question, leaving the spot to fossil-fuel-based generation. Second, the cable infrastructure that transmits and distributes that additional energy required overloads the grid, accelerating the degradation of the infrastructure.

To consumers the results are reflected on Demand Charges (Demand is measured in kW) on their bill, these charges are applied based on:

- The contracted demand, utilities apply demand charges based on the maximum amount of power that a customer used in any interval (typically 15 minutes) during the billing cycle.
- on the Coincidental Demand, utilities apply demand charges based on the amount of power a customer used during the intervals when the utility as a whole experienced a peak in demand, during the billing cycle, or

on both

Demand Response: The lowest cost kW is the one not generated and not transmitted. For utilities or for the Electrical System Operator (Dispatcher) this means that instead of dispatching additional generation, it curtails consumption and pays for the kW curtailment as if that power was generated. For consumers is a way of monetizing an



option to disconnect a load to reduce consumption. By reducing the load on the grid, a balance between demand and production is reached.

So, the question remains, why is demand control important? Because it protects the overall electrical infrastructure and promotes environmental sustainability through energy management. As the growth in popularity of Electric Vehicles continues to rise, it is crucial to protect the electrical infrastructure and the grid itself. Property owners and property managers need to realize that future consumption of electricity will increase and that an EV Energy Management System is fundamental for controlling the overall building demand while protecting the building infrastructure and maintaining energy costs.

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^{10x} 5	2	³⁻ 1	4	²⁰⁺ 6	3
⁹⁺ 4	5	^{6x} 2	²⁻ 3	1	6
^{3÷} 6	1	3	5	¹⁻ 2	4
2	¹⁶⁺ 6	4	^{2÷} 1	3	⁶⁺ 5
¹⁻ 3	4	6	2	^{40x} 5	1
^{3÷} 1	3	¹⁻ 5	6	4	2



TEST YOUR OPERATOR IQ ANSWERS

Answers: 1) c 2) c 3) b 4) e 5) a



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March 2022 Meeting Minutes



Chaired by: Mark Arton	Minutes by: Monika Bhandari	Call to order: 5:01pm	Webinar: March 15, 2022
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New Business:

- Digital magazine is now out for April 2022
- Tradeshow possibly in October 2022
- September meeting possibly in-person—to look into this to determine restrictions and logistics for proposed time
- Join the BOA; details on www.boacalgary.com
- Past webinars available on the website and the building operators Calgary YouTube channel
- New guest speakers wanted for webinars; contact Les or Mark if interested

JOIN US: TUESDAY APRIL 12, 2022 AT 5PM FOR OUR VIRTUAL MONTHLY MEETING

Presenter: Grant Eliuk

Title & Brief: Introduction to Energy Performance & Thermal Imaging for Buildings

**Grant is a Certified Energy Appraiser, NIA
Level 3 Infrared Thermographer, FLIR**

Applied Thermographer for Electro - Mechanical, Building Envelope & Roofing, Building Construction, Fire Protection, Basic & Special Hazards / Processes, IA

The fundamentals of Energy Performance in Buildings, giving building operations staff a greater understanding of how various components and systems interact with each other to provide a safe & comfortable indoor environment while minimizing energy losses to the outside environment.

[Click on this link to register for the BOA Monthly Meeting](#)



Just for laughs!





Why should you always knock on a refrigerator door before opening it?
In case there's a salad dressing.

womans day

What do you call a pony with a sore throat?
A little hoarse.



Guess what time the man went to the dentist?
Tooth hurt-y.



Dad Jokes Hall of Shame

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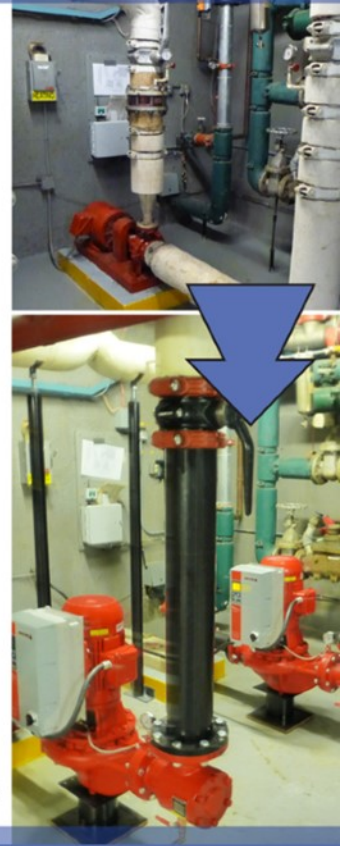
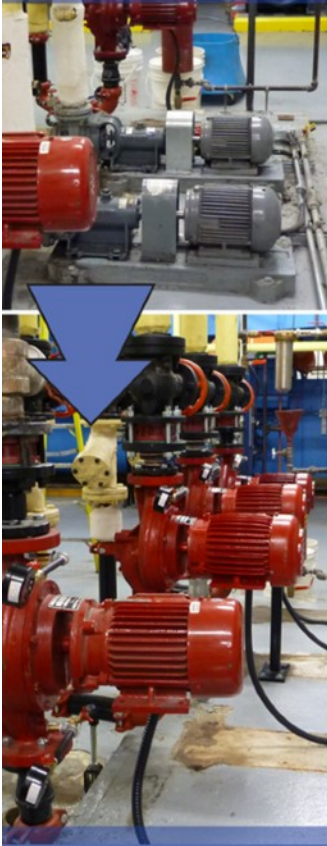
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