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|--|----------------|
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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 |
| Dangerous Goods Incidents..... | 1-800-272-9600 |
| Environmental Emergency..... | 1-800-222-6514 |
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PRESIDENTS MESSAGE



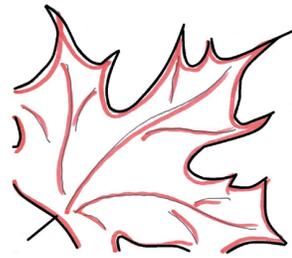
I hope this message find you and yours well and in good health

With the Covid-19 virus so close to us, it would be in all our best interests to prepare for it. That is to say that even more we should practice the best hygiene rules that we follow in flue season. Wash your hands often, keep those hands away from your eyes and mouth, avoid touching objects that others do.

It is always better to prevent virus infection, than try to weather the flue. We should look to develop standardized routine for disinfection within our facilities, we need to be effective in keeping areas clear of potential contamination. The possibility that we will come in contact with Covid-19 is near, and if we practice good hygiene rules, we have the possibility that infections can be avoided. I am sure that BOMA will distribute information we can follow for a pandemic occurrence and when we receive it, we will be sure to pass it along to the members who are on our distribution list.

May 12 is our biennial trade show at the Danish Canadian club. Mike Gerald of BGE Filtration and myself will be in contact with companies who had previously had a table at the last trade show and offer the first right of refusal to this years event and after that we will open it up to anyone in our industry who would like to display company and their products at the show. We have a total of 32 tables available, and they go fast. The tables, as they are paid for will be posted on our website, please go to; boacalgary.com to view displayer status. If you would like to be put on the vendor list it can be done on the website and Paypal is registered to pay for the event, or you can contact Mike or myself. We will be inviting other associations to attend the trade show as well. IFMA, CREW, IPE, BOMA and AEE.

Warm regards, Les



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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.

If you're ready for 21st century challenges, then you are ready for our monthly Operator IQ challenge...answers on page 17.

1. A two position damper, equipped with a fan that provides 100% outdoor air and a ratio of damper opening, requires a/an:

- A) gradual switch
- B) offset returned air duct
- C) air mixer
- D) three phase damper interchange
- E) variable volume tank

2. Air conditioning with respect to heating coils is achieved with:

- A) a combination of tempering control functions
- B) the selected mixing of warm return air and cooler outside air
- C) selective heating by passing air through the heating coils
- D) proportioning the amount of air flow through the face damper for heat addition, or through the bypass dampers for no heat addition
- E) all of the above

3. Dehumidification is achieved by:

- A) absorbing the moisture with a sponge filter
- B) absorbing moisture with a chemical drying agent
- C) cooling the air to a corresponding dew point temperature
- D) heating air to a corresponding wet bulb temperature
- E) saturating the air until the precipitation point at room temperature is reached

4. In severely cold weather what adjustment must be made to properly preheat the outside air?

- A) the temperature controller's throttling range must be increased
- B) the outdoor damper should be closed
- C) two separate preheater coils should be installed
- D) damper must be heated
- E) preheat coil temperature should be increased

5. To control static pressure in the air ducts a differential pressure controller is installed, which controls the static pressure by:

- A) increasing air temperature
- B) decreasing air temperature
- C) modulating the damper on the suction side of the fan
- D) modulating the damper on the discharge side of the fan
- E) grounding the ductwork and carrying the charge to a battery

Emergency Preparedness: Understanding Facility Vulnerabilities

By identifying weaknesses in facilities and plans, managers can improve an organization's resilience in an emergency

Written by Scott Cormier, Vice President of emergency management, environment of care and safety at [Medxcel](#).

Every day, institutional and commercial facilities face potential threats from natural disasters. No matter a facility's function, it is vital that maintenance and engineering managers and their peers be prepared for the worst.

In the United States in 2018, there were 108 natural disasters, including severe storms, floods, hurricanes, wildfires, winter storms, tornadoes and earthquakes. The estimated losses totaled \$81.9 billion. Worse, there were 355 fatalities. If the wildfires in California in 2018 and Australia in 2020 are any indication, even facilities that are not typically in the path of destruction must prepare for natural disasters.

Institutional and commercial facilities of all types have to properly invest in effective planning, mitigation and preparation. When the emergency plan is activated, ensuring the protocols are current, efficient, and followed is the key to a successful outcome. Where should managers begin? Along with other emergency planners, they need to perform risk assessments that identify and prioritize the most likely potential threats, spotlight specific vulnerabilities and undertake upgrades to mitigate worst-case scenarios.

Identifying threats

Each year, weather-related calamities lead to about 500 deaths and \$15 billion in damages. It is important to identify which disasters are common or imminent for different facilities, as it is unlikely a

facility will experience every type of natural disaster in a year. But it is possible the side effects from one disaster will impact a facility after the major event.

For example, when Hurricane Harvey made landfall in August 2017, the primary damage was flooding, not high-speed winds. Facilities that were only bracing for high winds without preparing for flooding would have been hit with unforeseen damages.

So-called 100-year storms occur more frequently. Not only should managers identify the most common disasters facing their facilities. They also should identify the extreme versions of these disasters. It also is advisable to review history. What major storms have impacted this area before? What major storms have impacted this facility before?

It is not enough to borrow plans from other organizations. Examining the way a neighboring institution prepared for and weathered a storm can help guide a facility's plans, but each plan must be specific to the organization's location and the unique risks associated with that location. Managers also should include local response organizations in the planning process so they can assist and practice before an emergency.

In an emergency, the most critical improvement identified in the after-action report is usually not a piece of equipment. Instead, it is communication inside and outside the organization. Before fortifying HVAC systems, managers need to ensure that everyone inside the organization is part of a comprehensive communication plan to keep them informed. To effectively manage an

Continued on page 9.....



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KENKEN PUZZLE

How to solve the Kenken puzzle: (answer on pg. 21)

- Fill in the numbers from 1 -6 (in this case 6, because the kid is 6x6).
- Do not repeat 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 not in the same row or column.

2-		11+		3÷	
5-		5+	2÷	3-	
15x				4	48x
3-	1	1-			
	12x	5	8x	5-	
6				8+	

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...continued from page 7

emergency, all personnel must be on the same page – medical, legal, custodial and facilities management. Everyone must understand actions and expectations. Outside partners such as local, regional, state and federal response organizations, as well as vendors and other local healthcare facilities, also need to be a part of the plan.

Communication is essential for proper disaster preparedness, and staff communication should begin as part of the planning process. Understanding which staff are available to assist during a disaster and any needs they have — child, family or pet care, for example — is crucial. Who is essential personnel, and who is not? By determining this in advance, managers can ensure everyone knows their role in a crisis.

Another unforeseen hindrance many facilities run into with emergency management is leadership – or a lack thereof. Some executives view emergency management and safety as a line item in a spreadsheet or a compliance issue. Consequently, many leaders choose to drastically reduce costs in this department in order to save facilities money. But that decision can have long-lasting and damaging effects.

When leaders understand the importance of emergency preparedness, they are more likely to dedicate resources. They also will ensure the right people are managing the program, rather than assigning the oversight as an additional duty to someone already overwhelmed or lacking the experience and knowledge necessary to oversee an emergency program simply because it is something they should do.

In the case of a storm, leadership will play an integral role in decision making. For example, in preparing for a hurricane, critical decisions like additional resources and evacuation need to be made at least 48 hours before landfall, when the exact impact area and intensity are still unknown. The leadership team also is responsible in determining staffing plans, canceling electives and closing off-site locations.

After accounting for facilities' more intangible vulnerabilities, managers can perform a risk

assessment that includes vulnerabilities to water and wind damage, flood-prone areas of a campus, and generator capacity — for example, seeing if HVAC systems are connected to generator power.

Finally, every facility must maintain records or systems, such as the medical records department in a hospital. Those departments need a certain amount of physical space, access to files and software systems to get through every day.

What happens when a disaster occurs and knocks the software systems offline or blocks access to records? How will the hospital operate? Managers often wait until a disaster has created a problem before trying to find a solution, losing precious time in the process. They need to address every vulnerable area of facilities. A business continuity plan will help to identify the hardware, software, space, and other resources that each area of a facility requires to remain operational. It is crucial to recognize these needs in order to develop alternative solutions before a disaster disrupts any of the requirements.

Uninvested leadership or communication breakdowns can hinder emergency preparation well before the tornado sirens start blaring. If a manager has been hesitant to upgrade critical equipment such as generator-backed flood lights or computer systems, this might be an irritation in day-to-day work. But in an emergency, it could paralyze a facility.

Managers need to take a systematic approach to examining all equipment necessary for facility operations by examining their age, reliability, necessity, and how often technicians use them for operations, then ranking the equipment from most vulnerable or outdated to least and comparing that with its necessity in an emergency. A generator might be functional, but if it cannot handle the capacity for the system it is linked to for an extended period of time, it might be time for an upgrade.

For example, old handheld satellite phones have given way to satellite technology that connects the entire phone system. This allows managers to maintain published phone numbers, and the

Continued on the page 11...

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Continued from page 9...

technology is more cost effective than the handheld phones.

FirstNet, a cellular priority network sponsored by the federal government, gives the emergency response team top priority communication during a disaster, which is important when thousands of cell phones are competing for access. FirstNet also is one of the first cellular services restored after a disaster.

Health care facilities offer a host of examples of opportunities for managers to upgrade critical equipment to contribute to emergency preparedness.

One example involves aging equipment. Tools such as decontamination shelters, respirators and protective coveralls purchased years ago must be maintained and replaced. While many of these items were purchased with federal grants, those funds are diminishing while the need for the equipment remains the same. Reviewing hazards, vulnerabilities and mitigation strategies can help managers decide which pieces of equipment are priorities.

Managers also should remember that health care facilities remain soft targets, given the increasing rate of workplace violence. Health care security is not only a part of the patient safety program. It also is part of emergency preparedness. Coordinating in-house teams and ensuring they are available during a disaster and not committed to other agencies is crucial.

One common mistake facility leaders make is hesitating to activate an incident command system (ICS) and hospital command center (HCC), which primarily serve to gather information, make decisions, and communicate. Waiting too long to activate these resources can create gaps in the decision-making and communication processes. It is much easier to scale back or close an ICS than it is to start too late.

Better safe than sorry has always been a prudent strategy, and proper preparation pays off in the face of catastrophe. Institutional and commercial facilities have differing roles to play during emergencies, from vital operations to simple

shelter. But no matter the function, all involved must understand the plan in a crisis, and it is up to emergency planners to identify those roles.

By prioritizing and proactively addressing potential threats, finding and planning fixes for vulnerabilities, and understanding necessary upgrades to mitigate worst-case scenarios, managers and emergency planners can ensure that no matter the disaster or its severity, the facility will be able to continue operations or bounce back and continue performing its core mission.

Scott Cormier is vice president of emergency management, environment of care and safety at [Medxcel](#) specializing in facilities management, safety, environment of care, and emergency management. He leads the development and implementation of emergency management, general safety and accident-prevention programs for a national network of hospitals.

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Save the Date!

May 12, 2020
BOA Biennial Trade Show
Danish Canadian Club
727 - 11th Avenue SW
2:00 - 6:00pm

Successful Plumbing Upgrades: Urinals

Toilets, urinals and faucets are key components of plumbing and restroom upgrades that deliver water conservation and savings

Urinals are important components of water-conservation upgrades to plumbing systems and restrooms. Green building standards have set 0.5 gpf as the water-use limit for urinals across the board, compared to 1 gpf for urinals that have been installed in most existing facilities.

Types of urinals include wash-out, siphon, blowout and waterless. Wash-out urinals typically use 0.125-0.5 gpf and release a stream of water from the top of the urinal to wash away waste via dilution before leaving the trap. Siphon and blow-out urinals offer larger flow rates of 0.5-1 gpf, using the larger water stream to fill the lower bowl and p-trap to create a siphon action via the p-trap. Blowout urinals are typically the more aggressive application and are commonly found in high-use commercial applications, such as stadiums.

As with toilets, managers need to select the appropriate flushometer for the proper corresponding fixture type in both new construction and plumbing system upgrades.

Unfortunately, the drawbacks with any flushometer remain the same with the potential for non-calibrated and faulty devices, which can result in decreased efficiency and loss of water savings. Many urinal manufacturers offer a sleeker, all-in-one model with the flushometer integrated into the porcelain housing, but this can lead to an increased replacement costs — compared to replacing individual components — as well as increased difficulty in troubleshooting potential issues.

Although waterless urinals have come a long way since their inception and are allowed by the corresponding green building ratings, they can present users and maintenance personnel a number of issues. Waterless urinals have their applications and place in facilities, but they might not be the most appropriate option for every situation or application. Newer waterless urinals have increased the trap membrane in order to suppress odors encountered with the original

waterless urinals, but these systems still require increased preventive maintenance and material costs related to maintaining and replacing the membranes.

Even managers who have specified newer waterless urinals can probably attest that they do not completely remove the odor and might not be the most appealing option, especially if they add any significant preventive maintenance to already stretched resources.

Faucets

Options for lavatory faucets include manual handle faucets and automatic mixing faucets. Unless a faucet has a specialized use — such as in laboratory or for nutritional applications — managers should be able to specify a 0.5 gallons per minute (gpm) faucet with an aerator or retrofit the existing facility with compliant 0.5 gpm aerators.

Green building standards identify 1.2 or 1.5 gpm for commercial faucets in private lavatory faucets — those not available to the general public — and 0.5 gpm in public settings and 0.25 gallons per cycle for metering faucets regardless of flow rate. Managers can streamline the selection process by looking for the WaterSense label in order to identify fixtures that meet stricter performance standards. Some manufacturers have ventured to go as low as 0.4 gpm for their aerators.

The U.S. Centers for Disease Control and Prevention does warn that the installation of laminar flow restrictors or aerators can promote the growth of Legionella. As a result, they recommend routine cleaning of these devices, as well as necessary testing for Legionella bacteria.

Dan Forino, P.E., CCP, is regional director with Horizon Engineering Associates in New York City. Forino has 11 years of experience in building commissioning and oversees the firm's health care team, focusing on the regional health care institutions and overseeing their sustainability and indoor air quality consulting divisions.

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BOILER LOGS

Written by Les Anderson, President BOA
Calgary

Logs can be divided into two classifications:
Daily occurrences within the facility and Boiler
logs.

BOILER LOGS

A log book, in any boiler heating plant is a legal document that is required by Regulation to record such activities as maintenance work, Inspections, tests. The Power Engineers Regulation requires that a permanent log book be updated and maintained for, boiler heating plants. This log book should be provided in each boiler room to record maintenance work, inspections, certain tests, and other pertinent data. Brief details of repairs or other work done on a boiler plant including time started, time completed, and signature of person in charge should be recorded. The log book must be a permanent record that cannot be altered. That is to say is that it must be written in ink and continuous so that more entries cannot be done at a later time.

As technology has advanced, so have the methods of recording information. In some jurisdictions an electronic log can be acceptable if and only if it can be shown to be a permanent accurate record.

The Engineers Regulations State: Section 6
6 The chief power engineer of a power plant and the power engineer in charge of a heating plant or a thermal liquid heating system must ensure that a log book is updated and maintained to record

(a) matters relating to the operation and maintenance of that power plant, heating plant or thermal liquid heating system,

(b) the testing and servicing of safety valves and other safety devices and controls, and

(c) any other matter that may affect the safety of the power plant, heating plant or thermal liquid heating system.

ASME Section 6 Part 6.09

B. Log Book. A permanent log book should be provided in each boiler room to record maintenance work, inspections, certain tests, and other pertinent data. Brief details of repairs or other work done on a boiler plant (including time started, time completed, and signature of person in charge) should be recorded. Performance and results of tests, inspections, or other routines required by codes or laws, insurance company inspection reports, and initial acceptance test data should be recorded.

Examples of Steam Boiler and Hot water heating Boilers logs can be found in ASME Section VI: Exhibits A and B

DAILY OCCURRENCE LOGS

Although not a requirement by law. Daily Record keeping may me a requirement by Company policy. It is good practice to keep a log of daily occurrences within a facility. Building management is a busy job and to keep a record of repairs, replacements and conversations that have gone on, is in keeping of good business practice. Operators have a busy and varied day. To have a record to review when asked of a certain event is much more professional than trying to remember.

Other logs may be: Chemical Treatment logs, Equipment maintenance, chiller logs, utility logs

February General Meeting Minutes

Building Operators Association

Chaired by: Mark Arton	Minutes by: Monika Bhandari	Call to order: 5:13pm	Location & Date: Danish Canadian Club, February 11, 2020
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- **Introduction of Attendees**

- **Safety Talks!**

- Jolt A Victim Back to Life

- **Guest Speaker:**

Name: **Craig Hatch, of CFMS Alberta Ltd. From: CFMS Alberta Ltd. President and General Manager**

Topic: **Re-commissioning leading to on-going Commissioning**

- **Deliverables for the re-commissioning process**
- **Overview of energy metering**
- **Overview of continuous commissioning**

Focusing on what / how the building operations staff can assist and/or be involved in the processes.

- **New Business:**

- James Electric Gift card \$200 draw at the end of the year for those Operators attending 4 out of 9 meetings in the year
- Bi-annual Trade Show will take place in May 12, 2020 from 2pm to 6pm;
- First pick given in March to those who had a table last Trade Show; open to everyone in April
- Booths available at \$350 per booth, lots of vendors and building operators attend, draw prizes and 50/50 (proceeds will be donated to charity)

- **50/50 draw:** \$22 **Winner: Les Anderson**
- **Snowball:** \$334.00 **Winner: Francois Gagnon**
Not present: carried over to next month

- **Motion put forward by Jon to adjourn meeting and seconded by Braedan; motion approved**

- **Meeting adjourned at 6:30pm**

- **Networking**

February Executive Meeting Minutes

February 5, 2020, Co-op, 11th Ave SW, AB, 5:05 pm

Casey K, Mike G, Mike T, Carrissa S, Les A, Mark A, and Monika B

Agenda:

Trade Show

Tours

Website

Guest Speakers

Trade Show:

- To touch base with previous exhibitors before the end of the month; start contacting right away
- Will take place May 12, 2020 at Danish Canadian Club, from 2pm to 6pm; set up at noon until 2pm; tear down after 6pm
- Approximately 30 booths capacity, cost: \$350, will be offered to Exhibitors from last Trade Show starting in until March 15; will open to all other Exhibitors thereafter
- Les to connect with Impark for parking on the day of the Tradeshow
- Reach out to our Sponsors
- IFMA, BOMA, CREW, Partnerships and IPE will be invited to be a part of the Tradeshow
- To ask Vicki to design the cards to promote the Tradeshow
- 50/50 draw to take place; money raised to go to Veteran's Food Bank
- Contact Cougar to send the scholarship information to Casey and Les

Tours

- Discussed possible venues for educational tours

Website

- Discussion at looking at new website host and CRM for BOA website
- To include Social media adaptability
- Motion made by Mike T to transfer the website and domain to Go Daddy; all in favour; seconded by Carrissa
- Date to be completed by August 20, 2020:

Guest Speakers

- Next meeting: Craig Hatch from CFMS Alberta Ltd

Adjourned: 6:05pm

NEXT GENERAL MEETING
GUEST SPEAKER
MARCH 10, 2020, 5PM
DANISH CANADIAN CLUB

Chisholm Mechanical
Contractors



Above: Craig Hatch, President and General Manager of CFMS Alberta Ltd. and Mark Arton, Chairman, Building Operators Association of Calgary at the February General Meeting.



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MARCH AGENDA BOA CALGARY GENERAL MEETING

Approval of Agenda

Approval of Minutes

Guest Speaker

50/50 Draw

Snowball

Safety Talks

Old Business

Executive Reports:

Activities

Education

Treasurer

Membership & Promotions

Technical Concerns

New Business

Adjournment

FEBRUARY GENERAL MEETING ATTENDANCE

Les Anderson	BOMA
John Rutherford	Quality Combustion
Mark Arton	Westcorp PM
Monika Bhandari	CCIS Building Operator Training Program
Mike Thompson	ADD/CPWW
Tony Wallace	Chisholm
Dennis Sievers	Chisholm
Logan Haika	Chisholm
Roy Beauvais	
Duane Dys	Gateway Mechanical
Nabeel Abdullah	International Construction Ltd.
Rob Parker	
Ed Smid	Belimo
Braeden Davis	Student (SAIT)
Kerry Pawchuk	Precision Boiler Services
Matt Keresztes	Reggin Technical
Ricardo Sanabria	Colliers
Nathan	Go Oil Canada
Grace Tian	Chinese Cultural Centre
Leonard Maglalang	Oxford Properties
Geonoffrey Pader	Westcorp PM
Brian Smithson	
Tolu Aro	Winsport
Trevor Sinkovich	

Kenken Puzzle Answer

²⁻ 4	2	¹¹⁺ 6	5	³⁺ 3	1
⁵⁻ 1	6	⁵⁺ 4	²⁺ 3	³⁻ 2	5
^{15x} 3	5	1	6	⁴ 4	^{48x} 2
³⁻ 5	¹ 1	¹⁻ 3	2	6	4
2	^{12x} 3	⁵ 5	^{8x} 4	⁵⁻ 1	6
⁶ 6	4	2	1	⁸⁺ 5	3

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- 1) C 2) E 3) C 4) C 5) C

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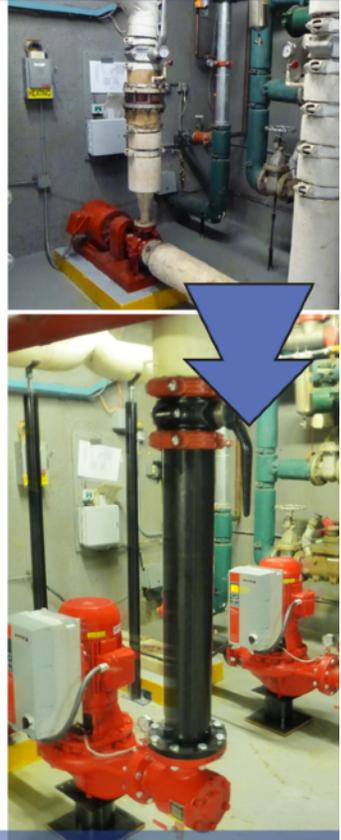
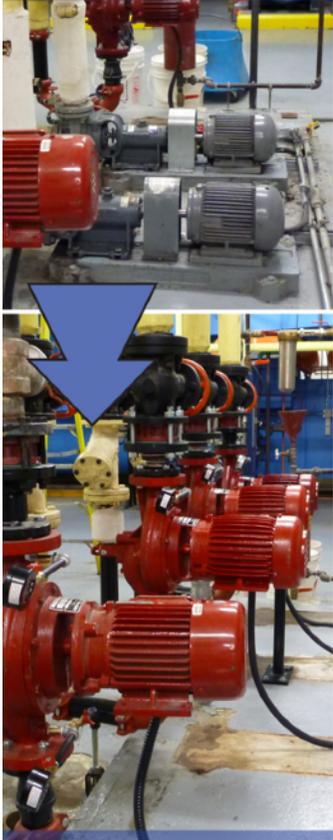
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