WELCOME!!
Monthly Building Coordinator Meeting
Via ZOOM

January 18, 2023
Agenda


➢ Engie Overview—John Weyer, Distribution Plant Manager

➢ Other Items
Facilities Management

FM Cold Weather Protocol

Updated January 5, 2013

Cold Weather Protocol

Cold Weather Protocol Steering Group Members:
- FM & Your Service Manager
- Senior Manager of Operations and Maintenance
- Director of Operations and Maintenance
- Manager of Controls Engineering
- Manager, Maintenance Planning

Annual Preparation Cadence:
- By late November/early December:
  - Steering Team review Cold Weather Protocol
  - Building Operations & Maintenance and FM@IFS team review of Cold Weather Protocol
  - Update the template of the planned work order project
- Review of prior year’s Cold Weather Event projects to inform creation of the planned work orders for the current year (renewal of approved projects)
- Intentional focus on any areas currently impacted by construction or maintenance projects, vulnerable areas, etc.

- December:
  - Cold Weather Protocol presented at Building Coordinator Meeting*
  - Refresher communication for on-call team on Cold Weather Protocol

Preparatory Actions when Trigger Event is Forecasted:
- When outside air temperature is forecasted below 0°F for longer than 24 hours (Accuweather), a steering group meeting will be scheduled (Director responsibility) to discuss all safety and preparedness activities that are relevant for the given cold weather situation:
  - Resource Considerations:
    - Assign designer(s), as necessary
    - Addition of a secondary on-call team member into standby status (FM@IFS Manager)
    - Hotel rooms secured for primary and secondary on-call members (FM@IFS Manager)
    - Managers secure volunteer lists of team members who will be available to take calls as needed. FM@IFS manager compiles this information for the on-call
The Issue:

➔ Buildings are vulnerable to damage during extended periods of sub-zero temperatures
➔ Opportunity to pivot our approach from being person-driven to process-driven
• Buildings Impacted: MRF, MERF, FH, BB, CB, BCSB, DSB
• $1M+ Risk Management Claim
Initial Process:

→ Initial version of the Cold Weather Protocol was developed after 2018
  • Identified a response trigger of sub-zero temperatures for more than 24 hours
  • “Menu” of risk mitigation actions identified:
    • Additional standby resources
    • Building schedule removal
    • Building walks
    • Etc.
  • Communication and roles/responsibility identified

Cold Weather Response (CWR)
When we call for Cold Weather Response:
Anytime OA Temp is forecasted below zero for longer than a 24 hour period, maintenance leadership will meet.
This group consists of:
• FM @ Your Service Supervisor
• Senior Manager of Operations and Maintenance
• Associate Director of Operations and Maintenance
• Manager of Data Analytics and Commissioning
This team will determine:
• Agree upon the approach to activate the CWR Action Plan
• The required attendees for the CWR daily report meeting
• When it is appropriate to establish an Incident Control Center (ICC)

Cold Weather Response Action Plan
When the Cold Weather Response is activated, a daily report out meeting will be initiated. The Cold Weather Response Report out meeting will be a daily update from each of the four members of the group. If additional members are needed, they will be added as an ad hoc basis.
If a larger response is required, an Incident Control Center will be set up full-time. The procedures and members of this will be set up based upon the needs of the response.

Associate Director of O&M Responsibilities
Establishes communication protocol and acts as primary contact for reporting to campus and leadership.
FM @ Your Service Responsibilities
FM @ Your Service Supervisor acts as the primary contact for resource procurement and vendor communication.
If Cold Weather Response is called, will set up hotel for one on-call personnel (Primary). A Secondary person will be assigned from the on-call list for backup for Primary.
The Primary and Secondary will be in on-call paid status.
Invitations will be sent out for volunteer maintenance support to be called in as needed. These personnel will not be on on-call paid status unless actually called.
Contact OPM to let them know our staff will be walking buildings more frequently and provide the name of the primary on-call person. They will be notified of a secondary on-call person, but the name will not
• Cold Weather Protocol leveraged 4 times throughout the winter, with a Thaw Protocol put into place coming out of the Polar Vortex
• Building walks caught 20 open windows in 2 buildings alone
• Buildings Impacted: ML
• No significant Building Impact
Continuous Process Improvement:

We had a process that was working, but information tracking and sharing was very cumbersome:

Risk points were identified in a word document.
The Goal:

Develop a “One-Stop Shop” leveraging our Computerized Maintenance Management Software for the process.
Collaborative Approach focused on Sustainability:

→ “Cold Weather Project” set-up in AiM with Planned Work Orders
  • Pre-populated with a work order for each known area of vulnerability
  • Pre-populated with a building walk work order for each building
  • When trigger is met (forecast <0F for >24hrs), planned work orders are promoted and can follow the standard AiM FM Workflow

→ Mother Nature helped us with a practice round in January 2021!

→ And then came February 2021:

<table>
<thead>
<tr>
<th>Project #</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1316</td>
<td>Cold Weather Event 1 (1/19/20) FY21</td>
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<tr>
<td>1322</td>
<td>Cold Weather Event 2 (2/5-2/19) FY21</td>
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2021

- 12 Days with highs 10F or lower (Feb 5-16)
- 1 building impacted (FH)
Cold Weather combined with blizzard conditions and a holiday

- 45 Consecutive hours below 0F (Dec 22-24)
The Results, 2022:

Cold Weather Project 1326 with over 120 work orders. Fantastic tool to proactively find issues, Notes examples:

- Air filters were very plugged with snow. I shoveled out the intake, removed and cleaned filters with compressed air. Pressures were back to normal. No abnormalities observed in the building or on the BAS.

- Walked around building stairwells with thermo gun, checking temp on the HHW and the area. Found ENT 7 door seals are worn and no longer seal the outside air from coming in. This is a stairwell entrance. Wrote up a job to have Key and Access remove old and add a new bottom and sides seal to the door. This will keep that area much warmer.

- Checked today was 52°F and I pulled one outside door closed that was ajar.

- Have boiler temps set and space heater set high in door spaces.
The Results, 2022:

Summary of Work:

- 2 on-call technicians with 24/7 support a block from campus
- Building schedules removed
- Heightened monitoring of building alarms and support personnel response
- Multiple Outages were proactively delayed
- Several messages sent to Building Coordinators to share with occupants
  - Issues with windows found—and addressed prior to sub zero temperatures,
    Thank you!!
- Only 1 issue requiring ServPro at EMRB (<$30,000)
Great Example!!

Hi Stephanie,

Hi James,

Hi! I am open for assistance with the latch issue on the windows in the 3rd and 4th floors. Some windows will not latch, and the top window has shifted down, and the top/bottom windows will not line up in order to make the latch functional.

Contact: Lisa James 319-335-6560

Created by MECHELLE MARXXEN On 12/18/22 1:48 PM
Last Edited by LORI RAKES 12/18/22 3:38 PM

Status: COMPLETE
Project: 23-754820
Customer Request: 117700

-3 rooms in PH: 3rd and 4th floors - Some windows will not latch - Top window has shifted down and top/bottom windows will not line up in order to make latch functional.

-Contact Lisa James 319-335-6560

-secured all windows on list.

-Phoresow

-Patrick Horoscowsky

-Peter Van Elswy

-General

-4208 - 2nd window
-4209 - both
-4199 - left window
-4189 - desk back, right window
-4218 - left window
-4188
-4184 - right bank of windows
-4163 - right bank of windows
-4164 - both
-3192 and 3194 have plastic covering, not checked
-3194
-3203 - right and left
-3185 - right window
-3183
-3189 - 1 window back left, right window in bank
-3165A
-Front desk left back cubicle, right window
Where are we now / Where are we going?
Continuous Improvement will continue!

→ Cold Weather Protocol
   Updated based on feedback from our Debrief conversations

→ Continuous Improvement and additional risk mitigation activities

→ Reviewing work orders to create Planned Project for next trigger event
Questions?
ENGIE North America at UI

Building Coordinator’s Meeting, January 18, 2023

John Weyer, BSEE, MBA
Distribution Plant Manager
ENGIE North America at The University of Iowa
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M: 319 560 4133
Who is ENGIE at UI?

Former UI Utilities department of UI Facilities Management,
  • Operating UI’s utility production and distribution systems on the main campus and Oakdale:
    • Steam
    • Chilled Water
    • Electricity
    • Water
    • High Quality Water

Concession Agreement

- $1.165B up-front payment
- Coal-free by 2025
- Deliver reliable electricity, water, heating, and cooling services to the UI campus community.
  - Enforced thru Key Performance Indicators (KPIs)
- Invest in the University’s core missions of teaching, research, and scholarship
- Prepare students to live and work in the 21st century through direct engagement and education in sustainable energy technologies and processes
- Facilitate knowledge exchange among the campus community and the State of Iowa, Nation and World
ENGIE NA

ENGIE North America

• 1,500 employees
• Headquartered Houston TX
• Providing energy services to:
  • K-12 and Community College Education
  • Higher Education
  • State and Local Government
  • Federal Government
  • Hospitals and Medical Research

• Renewable grid wind, solar and storage projects
• Electric and gas energy supply retailer
ENGIE North America

- Energy Solutions fleet operates district energy or combined heat & power (CHP) systems at:
  - The University of Iowa
  - The Ohio State University, Columbus
  - Harvard Medical School and five affiliated hospitals and research institutions, Boston
  - University of Maryland, College Park
  - Nassau District Energy, Nassau County, Long Island, NY
  - Coors, Golden CO
  - United Launch Alliance, Decatur AL
  - Georgetown University, Washington DC
ENGIE Globally

ENGIE Global

- 101,500 employees
- Headquartered Paris, France. Key player in European energy.
- Operates in dozens of countries worldwide, on 5 of 7 continents.
- Solar, wind, natural gas and electricity networks, district energy, thermal production.
- Committed to accelerate the transition towards a carbon-neutral world.
  - Target of Net Zero Carbon by 2045, for us and for our clients
ENGIE at UI

Demographics:

- Approximately 120 employees total. About 100 in Operations. Balance in administration, purchasing & accounting, IT, data management, environmental, safety, capital projects.
- In March 2020, ~80% of UI Utilities employees transitioned to ENGIE. We continue to have a strong core of employees from UI.
- ~10 full-time positions currently open.
- ~16 part-time students currently employed.

- Staff at Main Power Plant, Oakdale Power Plant, Water Plant, West Campus Chilled Water Plant, Madison Street Services Building and University Services Building.
Who to call?

- Operations during business hours (0700-1530)
  - ENGIE managers & planners
  - Or FM@YourService

- Operations after-hours
  - On-call staff

- Business-related

- No answer or not satisfied?
  - Senior leadership, 24/7
Campus Portfolio

→ Main Power Plant
  • 7 boilers
  • 2 satellite boilers
  • 795 kpph capacity
  • 3 steam turbine generators
  • 4 natural gas engines
  • 39.2 MW capacity
Natural Gas Engine Generators

TG6

CCW System

Boiler 10

RO Train

IOWA
NEW TURBINE GENERATORS 7 and 8
Campus Portfolio

→ Water Plant
  • Source of Potable Water for the Campus.
    • Research facility for advanced studies in Environmental Engineering
  • Production Capacity
    • Average Daily Production: 2.4 MG
    • Max Day Production: 5.3 MG
Intake Structure

Flocculation Mixing Basins

Sedimentation Basin

RO Trains

High Service Pump

Water Tower

IOWA
Campus Portfolio

Chilled Water Plants
- Chiller Plant 1 & Chiller Plant 2
- North West Chiller Plant
- North Campus Chiller Plant
- 14 chillers total
  - 61% electric
  - 39% steam
  - 43,300 tons cooling capacity
1B Plant Cooling Towers

UIHC CW Control Valve

NW Plant Cooling Towers

CH-7 (4,000 Ton Steam Unit)

Heat Exchanger (UIHC for MRI cooling)

CW Distribution Pump

CH-3A & CH-3B (2,400 Ton Electric Units)
Campus Portfolio

→ Electrical Distribution
  • Peak load of 63 MW
  • Over 45 miles of 13.8kV underground cable, via concrete-encased duct banks and approximately 300 vaults
  • Over 250 building substation transformers & associated switchgear

  • Connected to MidAmerican Energy grid at two substations shared with MidAmerican Energy, one at 161kV, one at 69kV. System contains an Across Campus Tie (ACT) to connect the two substations in the event of an emergency.

  • Maintains ~2,700 outdoor lights--streetlights, parking lot, and walkway lights.
Campus Portfolio

→ Mechanical Distribution

• Tunnels, vaults, and direct-buried piping for steam and condensate, chilled water and domestic water piping and hydrants, compressed air, as well as storm and sanitary sewer collection systems.
• ~14,500 ft of steam distribution tunnels (roughly 2.75 miles). Most all new piping now direct buried.
• 89 steam distribution vaults.
• 4 hot water distribution vaults.

• Piping:
  • Steam, 78,000 feet of 1” to 30” pipe, 20 and 150 psig distribution systems
  • Chilled Water, 48,000 feet of up to 36” pipe
  • Domestic Water, 186,000 feet of up to 20” pipe.
  • Storm and Sanitary, 300,000 feet of up to 36” pipe.
  • Hot Water, 1,628 feet of pipe.
  • Compressed Air, 23,533 feet of pipe.

• Underground Locator as part of Iowa One Call system. 1,000 locate tickets annually
Campus Portfolio

→ Meters & Controls
  • Maintains Utility Controls Network
    • Platform upon which Power Plant, Chilled Water, Water Plant, substation and Oakdale control systems reside.
    • Transmits meter data for revenue billing and utilities operations data for historical collection and analysis.

  • Maintains 65 miles of fiber optic cable (separate from ENGIE and UI IT systems) with numerous servers, workstations, network switches, routers. Compliant with industry cybersecurity standards.

  • ~425 electric meters, ~100 chilled water interfaces with 118 chilled water meters, 163 steam meters, 76 CW metering PLCs, and bringing ~100 water meters onto the network.
Steam Meter

Electric Meter

Utility Network Switch

Utility Network Cabinet at PP

CW PLC Cabinet
Campus Portfolio

→ Oakdale Power Plant
  • 4 gas boilers, 57 kpph capacity
  • 2 gas generators, 2.85 MW capacity
  • 5 chillers, 2,240 tons capacity
Natural Gas Engine Generator

CH-01 (600 Ton Electric Unit)

Oakdale Boilers (1-4)

Water Softeners
High Quality Water Services

- Chemical treatment to 90 closed loops for building air conditioning systems.
- Campus pools and therapy spas at CRWC, FH, Sports Medicine, UIHC; hydraulics modeling wave basins main and Oakdale campuses.
- High Quality Water Systems in ~45 buildings consisting of RO, DI and softening systems for heating & cooling systems, humidification, labs, and processing of medical equipment.
- Disinfection and sampling of new/remodeled/repaired piping systems, chlorination/dechlorination, main break sampling.

Oakdale Campus Water System
- State and federal permit-required bacteria and lead/copper sampling.
- ~300 water meters for monthly billing.
- Sampling and analysis for regulated storm water outfall discharges and environmental regulatory reporting.
## Capital Projects

### Completed
- North Campus Chiller Plant
- Water Plant Filter Rehabilitation
- Power Plant Roof replacement
- Westlawn Condensate Return
- North Clinton Steam Line

### Construction
- Steam PRV
- Power Plant Gas Detection
- TG-6
- PLC Upgrades
- Chiller Overhaul
- Oakdale Chiller Plant

### Contracting
- Wrestling Facility Utilities
- CHA Steam and Condensate
- CHA Forced Sewer Main

### Final Design Review
- Water Plant Intake Structure Replacement
- Storm Water phase 1
- North Campus Chiller Plant Safety
- EPGF
- Water Plant – Ferric Sulfate and Fluoride Replacement
Capital Projects, Campus Master Plan Support

10-Year Master Planning View

Next Meeting:

Next meeting via zoom:
February 15, 2023

Proposed Agenda:
- Risk Management
Thank you!