Physics Research Building
Outage Planning Tip Sheet – February 7th, 8th, and 9th

Who: The University Energy Savings Project Team

Ohio State Energy Partners (Engie)

- Subcontractor: Ecosystem
- Subcontractor: BCI (Building Controls Integrators)
- Subcontractor: Siemens Building Technologies Division

Tri-Annual Planned Maintenance Team

OSU Maintenance: (FOD)

What: 3-day building systems outage at PRB

Two simultaneous outage campaigns bundled for user convenience

- Controls Conversion (part of University Energy Savings Project)
- Tri-Annual Maintenance: Preventive maintenance usually done by FOD in early January and shifted here to lessen total number of outages impacting research

When: February 7th, 8th, and 9th – Friday, Saturday, Sunday

Where: PRB Basement Mechanical Room 0120M

Why: Supports work related to the Comprehensive Energy Management Project, a broad program underway campus-wide to achieve stated sustainability goals.

Creates system down time to complete normal planned maintenance activities.

How: Multiple work crews from both the energy team and from FOD will simultaneously shut down nearly every major building system and complete repairs or modifications in parallel to the highest possible extent to minimize down time.

How Much: Total number of workers expected on site during outage: 20-30

Projected energy savings in PRB from the energy savings effort is 26%

FREQUENTLY ASKED QUESTIONS

Q1 Will there be a power outage during this work?

A1 No: Power will remain on.

Q2 Will this work impact the normal use of my office and my comfort levels?

A2 Yes: With all systems down at once active heating and cooling of individual rooms will not be possible and rooms will drift to whatever equilibrium condition the situation creates. By shutting down systems simultaneously, the team hopes to retain heat in the building to the highest possible extent to preserve comfort levels. Occupants should nonetheless be prepared for the possibility that offices could be colder than normal. Corner offices and exterior offices will be more vulnerable to cold conditions than interior offices.

Q3 The announcements have mentioned the building will be closed beginning at 7:00 pm on Friday and continuing through Sunday, can I still enter the building?

A3 No: Unless there is a specific research or other urgent need, general occupancy of the building is considered blocked. Accommodations will be made on a case-by-case basis. Contact the facility team to make an entry request. Swipe card locks will remain active but signage and personnel barricades will be present at entrances. Faculty are exempt from the building closure and can enter the building as they need, but should expect diminished building performance.

Q4 Is this planned maintenance cycle different than the normal PM actions taken three times per year?

A4 Yes: Many differences to a normal preventive maintenance (PM) outage will be present and are highlighted further in the FAQ section. One general difference is that the Department seeks to bundle periodic project-related outages with the normal 3x/yr. maintenance outages to the highest practical extent. This outage is a bundled outage combining normal PM work and project work. Complexity of the outage is largely due to the project work. The normal PM date was shifted to allow for this bundling to the project-related work. The normal cadence for PM outages for the balance of the year will remain unchanged with PM outages 2 of 3 and 3 of 3 occurring in early May and early September per past standard practice.

Q5 With all systems off line at once will it be quieter in the building?

A5 Yes: It will be substantially quieter than normal throughout the building, principally on Friday during normal business hours, and most occupants will notice this and some may find the lack of system background noise unsettling and/or distracting.

Q6 Will the operation of fume hoods be impacted by all air supply and exhaust being off at one time?

A6 Yes: All air handler systems and all primary exhaust fans will be off line simultaneously. Fume hood sashes should be in fully closed position and hoods should not be used at all. Fume hood users should expect their hood flow alarms to go off and remain in alarm for substantial periods.

Q7 My lab uses process cooling water to cool equipment, will this be impacted?

A7 Yes: Process Cooling Water (PCW) will be offline all day on Friday. Lasers, refrigerator rooms, chillers, Liebert AC units, and all other water-cooled lab equipment will be without cooling.

Q8 Will this work impact the normal use of my lab and my lab environmental conditions?

A8 Yes: As described in answer A2 labs, like offices, will drift to whatever equilibrium condition the situation creates. For labs with high equipment heat loads, this might mean the lab becomes warmer and for labs without high heat loads, the lab may become cooler.

Q9 The announcement mentions that commissioning work will continue "as needed" on Monday and Tuesday February 10th and 11th, do I need to make plans for interruptions on these days?

A9 Yes: The work involves replacing sensors and PLCs and moving each control wire from old system to new. This is hundreds of wires and dozens of sensors. It is planned that basic functionality of the new controls will be achieved during the outage. However, some labs may need fine adjustments to return to pre-outage levels of stability. Monday and Tuesday are set aside for this work. Labs that have had tight control adjustments made for air balance, temperature, or other fine tuning should anticipate that additional time may be required.

Q10 If I have other questions is there a resource available to me?

A10 Yes: Contact a member of the facility team.

Q11 Does this complete the work associated with the University Energy Savings Project at the PRB?

A11 Yes: The controls conversion is the final phase of work. No further work is currently under development. Most contractor workers will depart the PRB work site and only a small number will remain on campus for ongoing support of these modifications in PRB and in other campus buildings extending out over the next few years.

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Physics Research Building
Systems Matrix - On/Off Status
3-Day Outage February 7th, 8th, and 9th

Prepared by:
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Day	Time	AIR SYSTEMS										WATER SYSTEMS				Building Access
		AH-1	AH-2	AH-3	AH-4	EXH-1	EXH-2	EXH-3	EXH-4	EXH-5	EXH-6	HHW	BCHW	STM	PCW	
Friday - February 7th	7:00 am	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	8:00 am	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	9:00 am	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	10:00 am	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	11:00 am	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	12:00 pm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	1:00 pm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	2:00 pm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	3:00 pm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OPEN
	4:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	OPEN
	5:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	OPEN
	6:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	OPEN
	7:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	OPEN
	8:00 pm to 12:00 am	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
Saturday - February 8th	1:00 am to 6:00 am	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	7:00 am	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	8:00 am	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	9:00 am	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	10:00 am	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	11:00 am	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	12:00 pm	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	1:00 pm	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	2:00 pm	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	3:00 pm	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	CLOSED
	4:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	5:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	6:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	7:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	8:00 pm to 12:00 am	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
Sunday - February 9th	1:00 am to 6:00 am	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	7:00 am	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	8:00 am	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	9:00 am	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	10:00 am	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	11:00 am	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	12:00 pm	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	1:00 pm	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	2:00 pm	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	3:00 pm	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	4:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	5:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	6:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED
	7:00 pm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	CLOSED

Glossary of Abbreviations Used in System Availability Matrix		
Abbreviation	**Unit**	**Services which areas**
AH-1	Air Handler 1	Delivers supply air to lab side, south half
AH-2	Air Handler 2	Delivers supply air to lab side, north half
AH-3	Air Handler 3	Delivers supply air to clean room in basement
AH-4	Air Handler 4	Delivers recirculating and supply air to office side
EXH-1	Main Exhaust Fan 1	Exhausts lab side including fume hoods – interlocked to AH-1
EXH-2	Main Exhaust Fan 2	Exhausts lab side including fume hoods – interlocked to AH-1
EXH-3	Main Exhaust Fan 3	Exhausts lab side including fume hoods – interlocked to AH-1
EXH-4	Main Exhaust Fan 4	Exhausts lab side including fume hoods – interlocked to AH-2
EXH-5	Main Exhaust Fan 5	Exhausts lab side including fume hoods – interlocked to AH-2
EXH-6	Main Exhaust Fan 6	Exhausts lab side including fume hoods – interlocked to AH-2
HHW	Heating Hot Water	Provides heating source in all rooms and labs
BCHW	Building Chilled Water	Provides cooling, largely inactive in winter months.
STM	Steam	Provides source of heat energy to heating hot water
PCW	Process Cooling Water	Provides cooling to lab equipment, cold rooms, AC Units, etc.