City of Edmonton
City of Edmonton Facilities

Standard Operating Procedure

Building System Shutdown Procedure
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VER	Date	Revision Summary	Author	Checked	Appv'd
05	2021-08-24	Multiple small revisions to accommodate permit changes	Shawn Allers	Daryle Tilroe	Shawn Allers
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OVERVIEW

Construction and maintenance work within existing occupied facilities provides logistic and workplace challenges with disruptions to the occupants and potential delays to the contracting team.

To deal with the potential impact of trades' related work within occupied facilities, a Building Systems Shutdown process has been established, which provides advance notice to occupants and operations teams in the *City of Edmonton* facilities of work that is being planned within existing facilities that could impact their daily activities. Notification of trades' related work is critical to the operation of *City of Edmonton* facilities to minimize the disruption to occupants.

To provide consistency in notification for all projects and *contractors*, a permit process for *contractors* has been established. The Building System Shutdown permit is intended to have the *contractor* gather the background information necessary to receive approval to undertake the work within a planned time frame and ensure that the occupants of the facility have been notified of the impact of the work program.

This procedure is intended to provide background information for filling out the permit, definitions of roles, and sample forms for use by the *contractor*.

Building System Shutdowns have three categories.

Planned: Planned shutdowns are interruptions of building services for construction and / or major system repairs generally undertaken by *Contractors*. Planned shutdowns may extend out for 8 hours or longer. Planned shutdowns require pre-planning of work and may involve other permits.

Pre-Planning of work for select activities (highlighted in section B of the permit) is mandatory. For projects requiring a mandatory *pre-planning meeting* where there could be an impact to business (business disruption) or have health and safety risks to workers or occupants, *step back meetings* may also be required to run through the course of the shutdown.

Permits for planned shutdowns require 10 days advance notice.

Routine Maintenance: General maintenance activities that are repetitive (non-critical) in nature, require shutting down of building systems to undertake maintenance activities (e.g. filter changes, testing of emergency generators, fire alarm testing) and can be scheduled in advance. Maintenance shutdowns require coordination / advance notification. Shutdowns under this category are short duration (2 to 4 hours). Maintenance shutdowns are undertaken either by *City* or Standing Order *Contractors.*

Emergency: Emergency shutdowns are for unplanned failure events of equipment, systems or other infrastructure that disrupt facility operations. Shutdowns in the case of emergencies are submitted after the issue has been corrected.

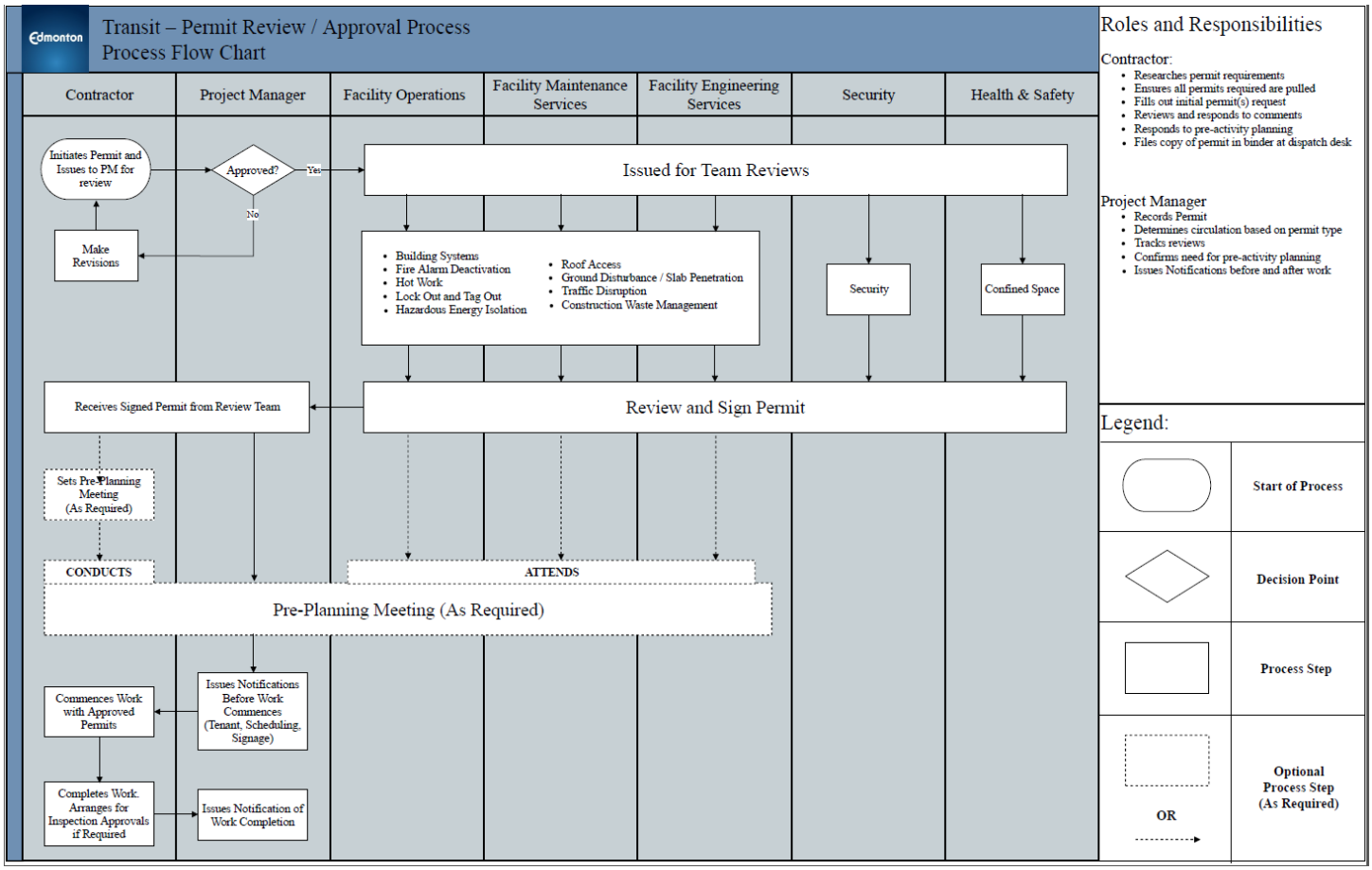
The Building Systems Shutdown permit follows a process path for approvals as noted in the following flow chart.

Definitions

CoE Project Manager	The individual in overall charge of the planning and execution of the *CoE* capital project. Depending on the project, the *project manager* could be either an external *contractor* resource or an internal *CoE* staff person.
Contractor	Prime *contractor* / Construction manager and sub-trades employed directly by the prime *contractor* for the specific project. The *contractor* is responsible for the gathering of all necessary background data required to fill in the applicable permits.
Pre-Planning Meeting	Planning meeting specific to the shutdown used to gather information on building systems that will be impacted by the shutdown. Open discussion on risks that are to be managed, duration of the shutdown, work areas and what requirements would be placed on *CoE* staff. Pre-activity meetings for critical or long-term shutdowns are to be run by the prime *contractor* / construction manager (or designate)
Step Back Meeting	Meetings held at the start of each work day during critical shutdowns to discuss the day's activities and determine if anything has changed. *Step Back meetings* are to be short duration – max 20 minutes and focus on business disruption / life safety. As well, a look ahead at the next day's activities are to be presented.
Project Review Team (PRT)	Personnel within *Facility Maintenance Services (FMS)* tasked with reviewing design documents and interacting with project teams. There are three separate areas of expertise within these teams; Mechanical, Electrical and Structural / Architectural.
FMS Supervisor	General Supervisor, Maintenance Planning and Engineering Services or designate.
Facility Maintenance Services	Unit responsible for maintenance and operation of *City of Edmonton* facilities. Provides Architectural, Structural,

	Electrical and Mechanical maintenance trades to undertake minor projects and respond to issues within *City* Facilities.
Facility Engineering Services	*CoE* Integrated Engineering services act as a technical resource on facility infrastructure for design changes to base building systems. For shutdowns, the resource would be for a review of potential impacts to the building and / or ancillary systems.
CoE Insurance and Claims Management & Corporate Security	Will need to be informed on any shutdowns that impact building alarms (physical intrusion and life safety). Insurance and Claims Management is to be advised on any Fire Alarm or Gas Detection system impairment that will last longer than 24 hours
EHS - CoE Environmental Health & Safety	A copy of the permit is required to be provided to the Corporate Occupational Hygiene Consultant if environmental monitoring, hazardous material abatement is part of the project activities.
IT / OCT	*City of Edmonton – Information Technology (IT) /Open City Technology (OCT)*. There are three separate operating areas within the *City*. *City* Fire Rescue and *City* Police have their own *IT* units that are contacted separately. All other *City* departments utilize a centralised corporate *IT* area with one primary contact.
Facility Operations Managers (1&2)	Facility Operations managers represent building users and functions within various *City* Facilities and are responsible for oversight of either the operation of the building or activities within the facility. The contract person could vary by location and work activities within a facility. Depending on the service provided there could be internal maintenance managers for support functions, operations managers for dispatch, or a single facility manager. The *CoE Project Manager* and *Contractor* Site superintendent will be responsible for determining the correct contact people for each site and project.

Process Flow Chart



BUILDING SYSTEMS SHUTDOWN START PERMIT PROCESS

The *contractor* starts the application process for a permit. The top of the permit has the following required information fields to be filled out that are used for tracking and filing of permits:

Project Name:	**Name of the project**	**Capital Project Number:**	
Initial Application Date:	**Date the application is initiated**	**Facility Name:**	**Eg City Hall**
Bldg ID#:	**___-___ eg CIT101**	**Permit # (put this and CP# in email subject line):**	
Permit Revision/ Renewal #:	**For use on permits that require revision to scope or extension to the end of date**	**Date of Revision:**	

Input requirements for permits are to be researched by the *contractor* and any possible impacts discussed in the following sections are to be submitted for review in a minimum 10 business days in advance of the required shutdown.

BUILDING SYSTEMS SHUTDOWN SECTION A - SHUTDOWN REQUEST INFORMATION

Section A of the permit is for data on who will be responsible for the work during the shutdown, dates and times of work, the impact of the shutdown, the description of work (including a work plan of which two example formats are included in this section), confirmation if temporary services will be required.

Facility Maintenance Services are called when disruptions to building infrastructure impact the daily activities of user groups within *occupied* facilities. Notification of trades' related work on infrastructure is critical to the operation of *City of Edmonton* facilities to minimize disruption to occupants. Through the permit process, *Facilities Maintenance Services* is looking to minimize call outs on infrastructure disruption caused by unplanned trades' related work.

Contractors are required to undertake investigating and pre-planning work activities related to shutdowns of building's systems and / or components that could impact user groups.

Facility Maintenance Services provides assistance through the *FMS – Project Review Team* to *contractors* through advance input during construction meetings on systems interfaces that need to be considered, input at pre-activity meetings and adding review comments to the permit. *Facility Maintenance Services* does not provide manpower for the investigation of interfaces, validation of existing conditions, scheduling / planning of shutdowns, input into work task activity planning or contingency planning. These are responsibilities of the *contractor* in the development of the work plan. *Facility Maintenance Services* must be informed of any systems that are in the work area that they will be required to look after during the shutdown period.

Minimum requirements for a work plan include:

- A drawing of the work area with reference notes
- Sequence description of work
- Control zones
- Entrance and Egress paths to the work area
- Material storage areas
- Signage
- Special precautions if any are required

Two examples of work plans are provided as information / guidance for use by the *contractor*. For Fire Alarm Impairments, the scope of work / work plan is to include a description of the panels, devices, network or system (sprinklers / hydrants) that will be isolated.

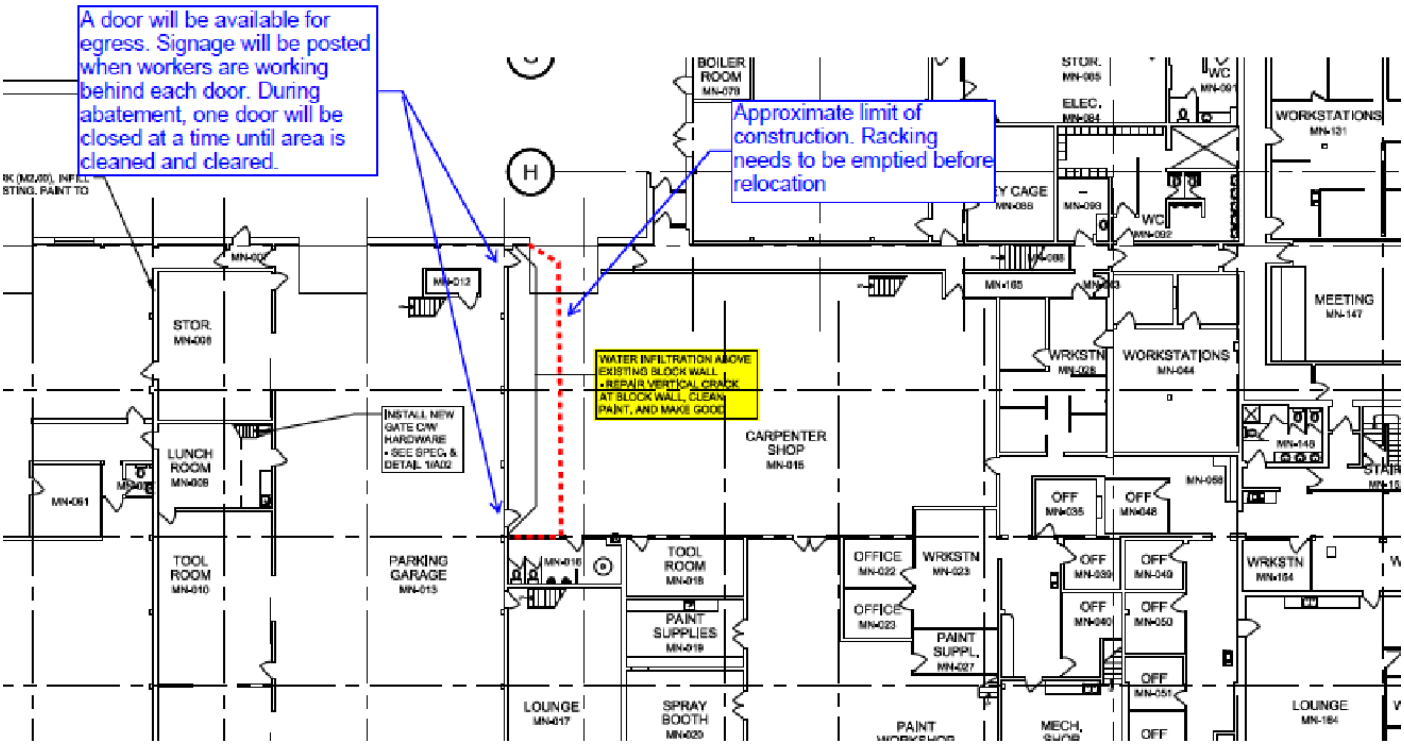
Example 1

Shutdown / Tie-in Procedure - Request #			
escription:			
roject:		Coordinator:	
tart Date:		End Date:	
tart Time:		Duration:	
ontractor:		Risk Rating:	Low
SSR:	Not Required	PSI	Not Required

Item	Description	Responsible	Complete	Initial
1.	AREAS AFFECTED			
1.1				
1.2				
1.3				
1.4				
1.5				
1.6				
2.	PRELIMINARY WORK ACTIVITY LIST			
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
3.	SHUTDOWN WORK ACTIVITY LIST			
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.	POST COMPLETION ACTIVITY LIST			
4.1				
4.2				
4.3				
5.	CONTINGENCY PLAN			
5.1				
5.2				

Attachment(s):

Example 2



	Parking Garage MN-013	11 days	Tue 4/16/19	Tue 4/30/19	0%			NA	NA
	Carpenter Shop MN-015	29 days	Wed 3/6/19	Mon 4/15/19	0%			NA	NA
	Shutdown request	2 wks	Wed 3/6/19	Wed 3/20/19	0%	125SF	Delnor	NA	NA
	Remove material from racking	1 wk	Wed 3/13/19	Wed 3/20/19	0%	125SF	City of Edmonto	NA	NA
	Install barricades	1 day	Wed 3/20/19	Wed 3/20/19	0%	123	Delnor	NA	NA
	Relocate racking	3 days	Wed 3/20/19	Mon 3/25/19	0%	126SF	Delnor	NA	NA
	Abatement	5 days	Mon 3/25/19	Mon 4/1/19	0%	127SF		NA	NA
	Repair cracks in carpenter shop masonry wall	3 days	Mon 4/1/19	Wed 4/3/19	0%		Scorpio	NA	NA
	Paint wall	3 days	Mon 4/8/19	Wed 4/10/19	0%	127FS+2 days	Imperial Painting	NA	NA
	Reinstall racking	3 days	Thu 4/11/19	Mon 4/15/19	0%	128	Delnor	NA	NA
	Paint Workshop MN-021	11 days	Wed 4/17/19	Wed 5/1/19	0%			NA	NA

SECTION B SHUT DOWN EFFECTS

1. The *contractor* is to identify which building systems will be impacted by the shutdown. This will require a review of the site and discussion with the facility operations staff.
2. Select systems, if required to be shut down, require a *pre-activity meeting* to ensure proper planning of the shutdown.
3. Planning meetings specific to the shutdown are used to gather information on building systems that will be impacted by the shutdown. An open discussion is to be had on risks that are to be managed, duration of the shutdown, work areas and what requirements would be placed on CoE staff. Planning meetings for critical or long-term shutdowns are to be run by the prime *contractor* / construction manager (or designate).
4. As part of the permit planning process, the *contractor* will need to review if other permits are required and all requirements under those permits.
5. The *contractor* is responsible for notification to outside agencies (EPCOR, ATCO, Inspection Group) for services required for isolation of utilities, reconnection, permits or inspections.
6. The *pre-activity meeting* is where *Facility Maintenance Services* shall be notified for all roof access requirements that involve hot work, repair, the replacement of building system equipment, hoisting of equipment onto the roof, modifications to the roofing systems (ie replacement of skylights) or the installation of an outside access ladder attached to the building.
7. *Step Back Meetings* are to be run by the *contractor* through the course of the shutdown for shutdowns where there could be an impact to business (business disruption) or have health and safety risk to workers or occupants. *Step back meetings* are to be short in duration and are for discussing the day's activities, risks to be managed, and contingency plans if required.
8. Should the planned work program under the shutdown involve work activities related to Fire Alarm, and/or Fire Suppression, Security Systems, Gas Detection Systems, there are additional requirements outlined for these systems as supplementary instructions in the permit.
9. Impairment of Fire Alarm / Fire Suppression / Security System / Gas Detection systems is required to be reported by the *project manager* via email to Insurance and Claims

Management. Contact to CoE Fire is through the *City* approved Fire Alarm Maintenance *contractor*, who will coordinate with CoE Fire Rescue.

10. A copy of the Building Systems shutdown and safety plan is to be provided to Insurance and Claims Management prior to the isolation of the system.
11. For Security system shutdowns, the *contractor* needs to undertake the process of testing before turning the system back over to *CoE* Corporate Security. Steps in the close out process include:

• Corporate Security and *FMS* notified on completion of work by phone with confirmation email
• Confirm that the Security Alarm System has been reactivated with either a CoE representative or contracted service provider. Notification by phone with confirmation email.
• For new installation of door monitoring and control, confirm commissioning of door hardware by *FMS*.
• Corporate Security to be contacted to confirm reactivation and operation of the camera system if applicable. Validation of camera coverage and operation is required
• If work involves programming, have the approved *CoE contractor* confirm to *FMS* that programming is complete and tested
• Confirm that the Security System commissioning and check process has been completed. Includes a test of the system. Copy of test documentation is to be available for *FMS* and / or *CoE* review.

12. Insurance and Claims Management will be in touch with the *project manager* directly should there be any recommendations that are requested by *CoE* insurers related to the system impairment.
13. The *contractor* is to identify any other project-specific plans or permits that are required.
14. Work in *CoE* facilities may involve both *CoE* internal and outside agencies / code authorities that are required to provide permits, inspections, and final approval of work. The *contractor* is required to contact these agencies prior to undertaking work activities and on completion.

15. Notification when required to *CoE* facilities Operations by email to _____ (*Project Manager* to obtain Facilities Operations contact information).

SECTION C REVIEW OF SHUTDOWN REQUEST

The *CoE project manager* is to identify who the shutdown request is to be circulated to for review, fill out the *CoE* contact name, and number and the date that the form has been sent to the person for review.

The FMS - *project review team* has three separate areas of technical expertise (mechanical, electrical and structural) and the *project manager* is to select which of these areas are required to review the permit application.

For Information Technology / Open City Technology (*IT / OCT*) there are three separate groups. *City* Police and Fire Rescue have their own *IT* departments and contact personnel. All other units are handled through a central corporate department. Only the required unit is to be selected.

For additional information on the various review groups please see the "Definitions" section at the end of this document.

Should the permit be reviewed in a construction meeting with actions agreed on, the review section is to note the construction meeting and date (preferred method would be to copy-paste all information over).

SECTION D REVIEW COMMENTS

Feedback (comments) from the review team will be noted under section D. Feedback could include other systems impacted, signage requirements, time limits on work or a need for special notifications or work requirements (protective screens, temporary power or water).

The *CoE project manager* with the applicable construction *project manager* is responsible to reconcile the review comments.

SECTION E SHUTDOWN APPROVED

Sign-off of the approved shutdown is circulated back through the *CoE* to the *contractor*.

Note that *CoE Health Safety and Environment (HSE)* and *IT/ OCT* sign-off is only required for select activities.

SECTION F NOTIFICATION TO OCCUPANTS

Notification to the occupants is to be done by the *CoE project manager* or *facility operations manager* utilizing email and signage (sample follows) to the facility occupants.

SECTION G SHUTDOWN CLOSE OUT

Close out of the permit is the responsibility of the *contractor*. A copy of the permit signed off and verified as complete is to be returned to the *City of Edmonton project manager.*

Sample Shutdown Notification

Information required <u>on this notification</u>: System(s) to be shutdown, date of the shutdown, duration of the shutdown, why the shutdown is required, a description on the impact to the building and occupants and a contact person to call with questions.

NOTICE OF SHUTDOWN

OF

BUILDING DOMESTIC WATER

On Thursday Dec 6, 2018 at 9 am the building domestic hot water service will be shutdown for 8 hours. Water service will be restored at approximately 5PM.

The shutdown is required to replace a failed domestic hot water storage tank.

For the period that the domestic hot water service is off domestic cold water will remain available for use throughout the facility.

For further information related to the shutdown contact:

name	*number*