

Applies to: All Facilities Management Employees

GUIDELINES:

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PURPOSE:

The purpose of these guidelines is to define roles and responsibilities in requesting, coordinating scheduling and executing utility outages and restoration procedures for outages related to emergencies, daily operations and construction projects.

STRATEGIC VISION:

Strategic Goal: Resources and Business Continuity
Safeguard resources by proactively managing all outages to minimize operational impacts.

DEFINITIONS:

- **OUTAGE NOTIFICATION FORM:** A document that is sent by Facilities Management to all Stakeholders notifying them of the details of the Outage.
- **PRIMARY CONTACT:** The person (Facilities Operations Technician/Supervisor or Project Manager) with overall stewardship and accountability for a utility outage.
- **STAKEHOLDER:** Individuals and groups who are involved in and/or are impacted by an Outage, typically a Business Manager.
- **UTILITY:** Any service provided by an outside source, or manufactured in house (gas, water, electricity, chilled water, steam, DI water, vacuum, etc.), which facilitates building operations.
- **FISC:** Facilities Integrated Service Center
- **CSR:** Customer Service Representative (in the FISC)
- **HRMS:** Human Resources Management System

SCOPE:

This outage procedure covers the operation of all building systems under the direct support of WUSM Facilities Management (FMD) and Facilities Capital Projects. Periodic building system outages may be required for the purposes of construction, renovation, isolation, maintenance, replacement, or repairs to existing systems, subsystems or component parts thereof. Outages may also occur as a result of natural or human-caused hazards such as floods, tornadoes, or severe storms. Systems that could experience outages may include but are not limited to:

- Steam and condensate
- Domestic hot and/or cold water
- Chilled water supply and return
- Compressed air
- Electrical
- Natural gas
- Vacuum systems
- DI water systems
- Elevator systems
- Fire alarm testing
- HVAC
- Sprinkler systems
- Heating hot water systems
- CO2 systems
- Climate rooms

These procedures do not apply to isolation valves, switches or other such devices that isolate a point of service device that will result in only the loss of service of the specific piece of equipment, fixture or other device. Examples of such situations would include but not be limited to:

- Plumbing fixtures (sinks, toilets, showers, drinking fountains, etc.)
- Redundant devices such as pumps, fans or other equipment that are being appropriately backed-up by operational duplicate devices.
- Individual VAV boxes, air terminals, reheat valves, coils, radiators, fan coils, unit heaters or other HVAC devices controlling a single space.
- Lighting and power circuits serving a single space or device including discrete electrical devices such as occupancy sensors, light fixtures, light switches and receptacles.
- Climate rooms

In these cases, the primary contact must still notify all affected stakeholders regarding the impact of the outage.

SITUATION AND ASSUMPTIONS:

A. Situations

1. All utility or building system outages and service interruptions will be classified in one of three possible categories:
 - a. **Planned Service Interruption** - An interruption in utility services, which can be foreseen. Planned outages include all repair projects, with enough lead time

(preferably 10 or more business days) to allow them to be accomplished on a non-emergency basis and all capital and renovation projects, which require outages during construction.

- b. **Limited Notice Service Interruption** – An interruption in utility services initiated by FMD that cannot be foreseen or which does not allow for extensive pre-planning or coordination prior to the interruption. Limited Notice Outage and Service Interruptions outages may be required when repairs must be accomplished within a short time frame (which may not allow for time to personally meet with customer) to safeguard property, research and occupant health.
 - c. **Facilities Emergency** – An interruption in utility services that has occurred and was not initiated by FMD. This may occur as the result of a natural or human-caused hazard. Examples of facilities emergencies may include but are not limited to mechanical failure, flooding within buildings, electrical outages or “power blips”, or hazardous materials incidents.
2. The designated FMD primary contact is the person who will remain as the single primary point of contact throughout any outage.

B. Assumptions

1. WUSM FMD staff will work diligently to ensure that every possible action is taken to minimize the length and severity of outages in order to provide the least amount of interruption to campus customers
2. WUSM FMD will endeavor to always use Planned Service Interruption if possible and will only utilize Limited Notice Service Interruption when deemed necessary for work to be done immediately in order to safeguard property, research and occupant health.

PROCESS:

A. Planned Service Interruptions – [PLANNED]

1. A Planned Service Interruption is an interruption in utility services, which can be foreseen. Planned service interruptions include all repair projects, with enough lead time to allow them to be accomplished on a non-emergency basis and all capital and renovation projects, which require outages during construction.
2. All Planned Service Interruption that will result in an interruption of normal

system service will be reviewed, approved, and implemented with the full knowledge and involvement of the appropriate stakeholders. The appropriate Facilities Operations (FO) supervisors will be contacted for approval for operations that affect the delivery of services to facilities. In particular, all actions affecting building HVAC operations must be done with the prior knowledge and approval of the applicable FE technicians.

3. **Planned Service Interruption Notification Process**

- a. **Evaluate Outage** - Evaluate the potential outage to determine if it appropriately meets the criteria for classification as a Planned Service Interruption including criticality of system, impact on property, research and occupant health, and necessary time needed to meet with stakeholders.
- b. **Plan Outage** - The primary contact will meet in person with appropriate stakeholders in physical spaces that may be impacted by the outage to discuss:
 - Impacts of outage/service interruption
 - Preferred Scheduling
 - Outage Duration
 - Contingency plans to minimize disruption and protect the building systems and program operations
 - Special logistical considerations such as room access, etc.
- c. **Communicate Outage**
 - i. The primary contact will complete the appropriate Outage Notification Form and submit it to FO Supervisor. For Planned service interruptions the outage notification form will be labeled in green as **[PLANNED]**.
 - ii. Outage notifications using the appropriate Outage Notification Form will be issued as early as possible (preferably ten (10) business days prior to the scheduled outage) to the Facilities Integrated Service Center (FISC) designee via ServiceNow. FISC designee will forward the notification to the appropriate stakeholders.
 - iii. Notifications will be distributed through various outlets depending on the level of impact. Outlets may include but are not limited to:
 - Emails to Faculty/Staff/Student groups

- Emails to Department Business Managers, Designated Building/Lab Liaisons (BLL), and/or Key Management Contacts (KMC).
- Postings to the FMD Website
- Postings in elevator lobby areas

d. Execute Outage

- i. The primary contact will coordinate all aspects of the outage.
- ii. If the outage is unsuccessful (i.e. the intended scope of work could not be accomplished) the primary contact will notify and/or meet the appropriate stakeholders to correct problems and propose a rescheduled date.

B. Limited Notice Service Interruptions - [LIMITED NOTICE]

1. A Limited Notice Service Interruption is an interruption initiated by FMD that cannot be foreseen or which does not allow for extensive pre-planning or coordination prior to the interruption.
2. Limited Notice Service Interruptions may only be initiated when repairs must be accomplished within a short time frame (which may not allow for time to personally meet with customer) to safeguard property, research and occupant health.
3. **Limited Notice Outages and Service Interruptions Notification Process**
 - a. **Evaluate Outage** - Evaluate the potential outage to determine if it would be able to meet the criteria for classification as a Planned Outage instead of a Limited Notice Outage including criticality of system, impact on property, research and occupant health, and necessary time needed to meet with stakeholders. **Whenever possible, Planned Service Interruptions should be used as the preferred method over Limited Notice Service Interruptions.**
 - b. **Communicate Outage**
 - i. The primary contact will complete the appropriate Outage Notification Form and submit it to the FO Supervisor. For Limited Notice Service Interruptions the outage notification form will be labeled in yellow as [LIMITED NOTICE].

ii. Notification Responsibilities:

1. **During FISC Business Hours** - Outage notifications using the appropriate Outage Notification Form will be issued to the FISC designee via ServiceNow. FISC designee will immediately distribute the notification to the appropriate stakeholders.
2. **After FISC Business Hours** - Outage notifications using the appropriate Outage Notification Form will be immediately distributed by the FMD Computer Room to the appropriate stakeholders.

iii. Notifications will be distributed through various outlets depending on the level of impact. Outlets may include but are not limited to:

- Emails to Faculty/Staff/Student groups
- Emails to Department Business Managers, Designated Building/Lab Liaisons (BLL), and/or Key Management Contacts (KMC).
- Postings to the FMD Website
- Postings in elevator lobby areas

c. **Execute Outage**

- i. The primary contact will coordinate all aspects of the outage.
- ii. If the outage is unsuccessful (i.e. the intended scope of work could not be accomplished) the primary contact will notify and/or meet the appropriate stakeholders to correct problems and propose a rescheduled date.

C. **Facilities Emergency - [EMERGENCY]**

1. A Facilities Emergency is classified as an interruption in utility services which is not initiated by FMD and may occur as the result of a natural or human-caused hazard. Examples of facilities emergencies may include but are not limited to mechanical failure, flooding within buildings, electrical outages or “power blips”, tornado damage, or hazardous materials incident.

2. Facilities Emergency notifications are more informative in nature and intended to provide situational information and/or updates related to an unexpected and uninitiated service outage.
3. Facilities Emergencies may result in the need for further Planned or Limited Notice Service Interruptions in order to respond and recover from damages or repair the root cause of the problem.
4. **Facilities Emergency Notification Process**
 - d. **Evaluate Emergency Event** - Evaluate the outage or emergency event to determine if it has the potential to adversely impact WUSM property, research and/or occupant health. If the event does not have the potential for disruption of services, or impact to research or occupant health and can be managed by FMD FO staff, a formal Facilities Emergency notification may not be necessary.
 - e. **Communicate Outage**
 - iii. The primary contact will complete the appropriate Outage Notification Form and submit it to the FO Supervisor. For Facilities Emergencies the outage notification form will be labeled in red as [**EMERGENCY**].
 - iv. The primary contact or FO Designee will communicate all available outage information to Protective Services Dispatch Center (2-4357) including the following information if available:
 - Impact/Scope of outage or interruption
 - Expected outage duration
 - Current status of repair
 - Point(s) of contact for continued updates
 - v. The Protective Services dispatch center or on-duty supervisory staff will contact WUSM Emergency Management at (417) 425-9838 to provide update on current situation.
 - vi. Notification Responsibilities:
 3. **During FISC Business Hours** - Outage notifications using the appropriate Outage Notification Form will be issued to the FISC designee via ServiceNow. FISC designee will immediately distribute the notification to the appropriate

stakeholders. Should the need arise to verbally communicate directly with impacted customers during a facilities emergency the FISC will maintain responsibility for making telephone calls to stakeholders during business hours.

4. **After FISC Business Hours** - Outage notifications using the appropriate Outage Notification Form will be immediately distributed by the FMD Computer Room to the appropriate stakeholders. Should the need arise to verbally communicate directly with impacted customers during a facilities emergency the FMD Computer Room will maintain responsibility for making telephone calls to stakeholders outside of standard FISC business hours.

- vii. Notifications will be distributed through various outlets depending on the level of impact. Outlets may include but are not limited to:

- Emails to Faculty/Staff/Student groups
- Emails to Department Business Managers, Designated Building/Lab Liaisons (BLL), and/or Key Management Contacts (KMC).
- Postings to the FMD Website
- Phone Calls to BLL/KMC

D. Process of Distributing Outage Notification Form

1. In order to send out a communication regarding a planned, limited notice or emergency outage, the following steps will be taken:
 - a. Primary Contact will submit necessary outage information to the appropriate FO supervisor via email or verbally. If necessary, the FISC customer service representative (CSR) or Computer Room technician can also use the ServiceNow form. If a contractor is requesting a shutdown or street closure, the contractor should fill out the Contractor Request for Shutdown or Street Closure Form and send it to the Primary Contact. See attachment 3.
 - b. The FO supervisor, FISC CSR or Computer Room technician will log into ServiceNow and fill out the Outage Notification Form and submit it to the FISC.
 - c. The FISC (or Computer Room after-hours) designee will find the form(s) in the shared address book (wusmfacilities@wusm.wustl.edu). The designee will

forward the email, remove “FW:” and delete any signature block and/or email information above the FMD logo. The designee should briefly review the outage for grammatical errors or any other errors before sending it out.

- d. The designee will use the BCC line to enter the following distribution lists:
 - i. Building(s) Affected
 - ii. All Outage Group
- e. The designee will then send out the outage.

2. Distribution Lists

- a. If a customer contacts the FISC or other FMD personnel and requests to be placed on the distribution list (or if someone requests to be taken off the list), please email the Communications Coordinator with the information. The Communications Coordinator will add/remove the name from the list and will also request the customer to have his/her Business Manager add/remove their name as a “key management contact” or “building lab liaison” in HRMS.
- b. All updates to “key management contact” or “building lab liaison” in HRMS come through via email to the Communications Coordinator. Each update will be entered into the distribution lists, as applicable.
- c. All “return to sender” types of emails should be forwarded to the Communications Coordinator upon receiving so the lists can be kept up to date.

Please note, if it is a revised outage/service interruption and it has already been sent out by the FISC (i.e. a Supervisor puts an outage into ServiceNow but uses the wrong date), the Primary Contact should not send through another outage through ServiceNow. Instead, he/she should retrieve the original notification, write “REVISED” in bold, red type at the top (above the FMD logo) and highlight in yellow the changes. Then, he/she should email the revised notification to the FISC with an explanation of the changes. The FISC can then send out to the above distribution lists.

E. Special Guidance for FMD staff responsible for executing Planned and Limited Notice Outages and Service Interruptions

1. All isolation operations will comply with proper Lockout – Tag out procedures of the University and as stipulated by OSHA Regulations. Lockouts will be of the group type including a lock from the Utilities Department and one from the party performing the work. No system may be restarted or returned to service without the knowledge, approval or involvement of the appropriate Facilities Engineering (FE) personnel.
2. Valves associated with these guidelines also include drains, sprinkler control valves, vents, bypasses and any other auxiliary devices associated with the

various systems. Switches associated with these guidelines will also include circuit breakers, knife switches, safety switches, disconnects, motor circuit protectors and toggle switches.

3. When work activities conclude, a review of all affected equipment, valves, switches and other such devices will be undertaken either by visual inspection or by operation in such a manner to determine that these devices have been left in the proper position for the respective system to operate normally.
4. Should there be a system failure or emergency situation during the outage, necessary actions will be taken to control the situation without the need to explicitly follow the requirements of these guidelines and its procedures. Subsequent to the event, the system configuration and these guidelines will be followed.

F. Restoration of Services

1. After restoration of services, technicians representing each technical area of Facilities Management will survey the affected buildings/areas and ensure that systems in their respective areas are operational and that equipment is set in its normal operating position. This includes (but is not limited to): building HVAC and controls, elevators, fire alarm, building electric and emergency power systems and building plumbing systems, etc. The following is a brief outline of the post-event check out by different areas of Facilities Management:
 - a. HVAC and Controls: After restoration of services, the lead mechanical technician will confirm that all equipment and systems (chillers, boilers, air-handlers, pumps, exhaust fans, fume hoods and domestic water system, etc.) that were locked down and tagged out during the outage are ready for start-up (onsite or remotely). For buildings without direct digital control (DDC) systems, the controls technician will physically visit each area of the building and confirm the operations of heating, ventilation and cooling systems.. Upon confirmation, these systems will be brought on-line and the services in the building restored to the pre-event operating conditions.

Simultaneously, the computer room technician will start the equipment and building check-ups via control workstation interface.

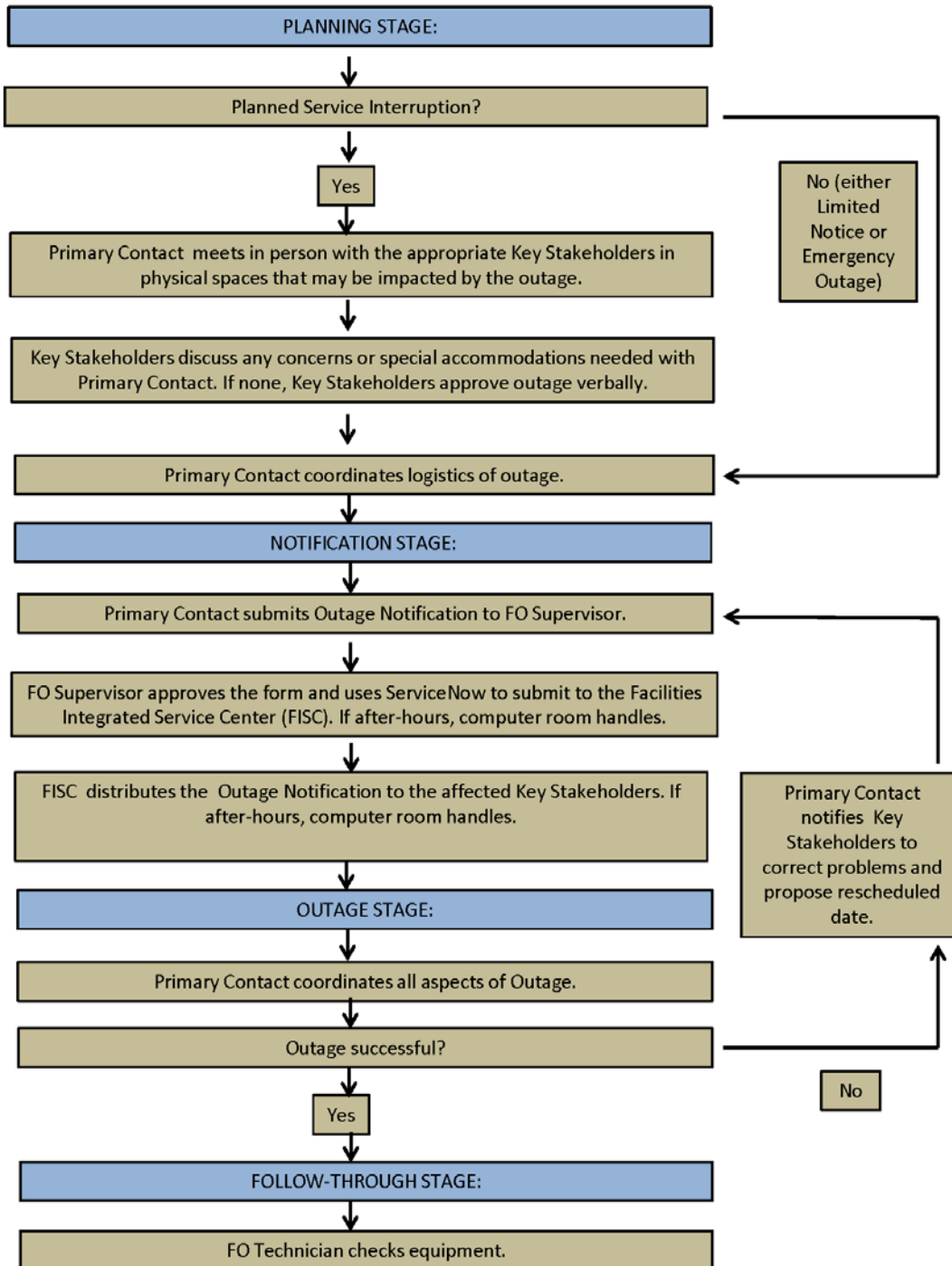
- b. Electrical: Electricians will de-energize the electrical feeders involved in the outage and rack out breakers and ground when necessary. After work is completed, the steps above will be followed in a reserve order prior to re-energizing the feeders. After re-energizing the feeders amperage

readings will be taken again and compared with the pre-event readings to confirm that all systems are back in operation. Critical systems such as domestic pumps, chillers, pumps, and air handlers will be physically checked by electricians.

For outages involving building electrical systems, the building electrical system will be de-energized, locked out and tagged out by the electricians prior to any work or repairs. After the outage event, the electricians will confirm that the electrical systems are ready to be restored.

- c. **Plumbing:** After services are restored, Facilities Management plumbers will walk the affected buildings to confirm all the fixtures and systems are operational and set back to the normal operating conditions.

ATTACHMENT 1: PLANNED SERVICE INTERRUPTION FLOWCHART



ATTACHMENT 2: SAMPLE PLANNED SERVICE INTERRUPTION NOTIFICATION



Planned Service Interruption Notification

Please share and post this communication as appropriate.

To: Key WUSM Stakeholders
CC: Facilities Management
Buildings Affected: Wohl Clinic
Type of outage: Air Handling Unit
Outage Start Date/Time: 02-20-2015 05:00:00 AM CST
Outage End Date/Time: 02-20-2015 10:00:00 AM CST
Impact: This will affect the support area on the 1st floor of Chromalloy as well as the 2nd through the 5th floor of the clinic only. During this time, air flows will be at lower rate. This is needed to repair a component on the main HVAC system serving these areas.

We thank you for your patience and understanding at this time.

Outage Notice Issued By: Facilities Integrated Service Center
Phone: 314-362-3100
Email: WUSMFacilities@wusm.wustl.edu

Planned – An interruption in utility services, which can be foreseen and includes all projects with enough lead time (preferably 10 or more business days) to allow them to be accomplished on a non-emergency basis.

Limited Notice – An interruption in utility services which cannot be foreseen and includes outages which must be accomplished within a short time frame to safeguard property, research and occupant health.

Emergency – An interruption in utility services that has occurred and was not initiated by FMD. This may occur as the result of a natural or human-caused hazard, such as a flood or "power blip".

OUTAGE0001273

Ref:MSG1841351

ATTACHMENT 3: CONTRACTOR REQUEST FOR SHUTDOWN OR STREET CLOSURE
FORM



Facilities Management

Contractor Request for Shutdown

Type of Outage/Service Interruption:

Utility Closure (i.e. electrical, HVAC, domestic hot or cold water) (if yes, go to step 1)

Street Closure (if yes, go to step 2)

Step 1 – Utility Outage/Service Interruption

Type of Outage: **Planned** **Limited Notice**

Explain nature of limited notice notification:

Planned – An interruption in utility services, which can be foreseen and includes all projects with enough lead time (preferably 10 or more business days) to allow them to be accomplished on a non-emergency basis.

Limited Notice – An interruption in utility services which cannot be foreseen and includes outages which must be accomplished within a short time frame to safeguard property, research and occupant health.

This form must be submitted by the Planner/Project Manager and sent to the Facilities Operations Supervisor in accordance with the following: outside contractors/Capital Projects that may be involved with or affected by the Energy Control Procedures must submit their procedures to the FO Building Technician and the FO Supervisor prior to approval for performing any work. Once the Facilities Operations Supervisor receives the form and approves it, her/she will need to submit an outage/service interruption notification through ServiceNow, which will then be distributed by the Facilities Integrated Service Center (FISC) via email.

Ten (10) working days' notice is required on all planned shutdowns.

WUSM Planner/Project Manager:

WUSM Project #:

WUSM Facilities Operations Supervisor:

Project Name/Area:

Building(s) Affected: Floor(s):

Type of outage: If "other", explain:

Outage Start Date:

Outage Start Time:

Contractor Request for Shutdown

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Contractor Request for Shutdown

Outage End Date:

Outage End Time:

Explanation of outage/service interruption:

Project Superintendent:

Contract:

Telephone #:

Location of Piping, Wiring, Etc.:

Size of Piping:

Number of Connections:

Is Pipe Insulated? Yes No

Asbestos? Yes No

Estimated Hours to Perform Work:

Subcontractor Name:

Regular Time or Premium Time

Estimated Cost: \$

Contractor's Requested Date:

Request Approved By:

C.C. Assistant Director of Maintenance and Engineering & Facilities Tech – Fire Alarms

Date:

Step 2 – Street Closure

Type of Outage: **Planned**

Limited Notice

Explain nature of limited notice notification:

Planned – An interruption in services, which can be foreseen and includes all projects with enough lead time (preferably 10 or more business days) to allow them to be accomplished on a non-emergency basis.

Limited Notice – An interruption in services which cannot be foreseen and includes outages which must be accomplished within a short time frame to safeguard property, research and occupant health.

This form must be submitted by the Planner/Project Manager and sent to the Facilities Operations Supervisor in accordance with the following: outside contractors/Capital Projects that may be involved with or affected by the Energy



Facilities Management

Contractor Request for Shutdown

Control Procedures must submit their procedures to the FO Building Technician and the FO Supervisor prior to approval for performing any work. Once approved by all parties, this form must be emailed to the Communications Coordinator (at least ten (10) working days' notice is required on all planned shutdowns). Once the Communications Coordinator receives the form, he/she will approve it and include the notification in the weekly Facilities Operations Update.

WUSM Planner/Project Manager:

WUSM Project #:

WUSM Facilities Operations Supervisor:

Project Name/Area:

Street(s) Affected:

Explanation of street closure:

Map of street closure:

Start Date:

Start Time:

End Date:

End Time:

Project Superintendent:

Contract:

Telephone #:

Request Approved By:

Date:

Planned, Limited Notice and Emergency Outage guidelines can be found at:

<http://facilities.med.wustl.edu/about/facilities-management-guidelines/>.