CONTROL SYSTEMS CHANGE MANAGEMENT

PROCEDURE

PRO396

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1. REVISION HISTORY

REVISION NUMBER	DATE	AMENDMENT DETAILS	RESONSIBLE OFFICER
1	December 2015	Original Version	Kanchana Hattotuwegama
2	December 2016	General Review	Kanchana Hattotuwegama
3	May 2019	Full Review	Gavin Davidson
4	October 2019	Full Review	Sharron Burling
5	February 2022	Full Review	Sharron Burling
6	July 2022	Process Modification and Reissue	Sharron Burling
7	October 2022	Minor Updates	Sharron Burling
8	November 2023	Process Updates	Payam Ganjavi

Table 1 - Revision History

2. ACRONYMS AND DEFINITIONS

ACRONYM	DEFINITION
EH	Enterprise Historian
EWS	Engineering Work Station
PLC	Programmable Logic Controller
UU	Urban Utilities
RTU	Remote Telemetry Unit
SCADA	Supervisory Control and Data Acquisition

Table 2 - Acronyms and Definitions

3. ENGAGEMENT

NAME	ROLE
Marvie Angeles	Maintenance Delivery Lead – Control Systems
Mark Parusel	Network Configuration Leader
Paul McPhee	Process Technology Manager

Table 3 - Business Endorsement

NAME	ROLE	BUSINESS GROUP
Simin Sabah	Operational Standards Leader	Service Delivery
Thomas Chooi	Operational Standards Engineer	Service Delivery
Peter Bailey	Senior Process Engineer	Environmental and Industrial
Amin Malekizadeh	Senior Process Engineer	Environmental and Industrial
Wakib Khan	Senior Process Engineer	Environmental and Industrial
Giles Dunn	Senior Controls Engineer	Environmental and Industrial
Angeli Catuira	Process Engineer	Environmental and Industrial
Justin Todhunter	Process Engineer	Environmental and Industrial
Jamie Barnes	Operational Integrity Lead	Environmental and Industrial
Rod Zorn	Senior Commissioning Manager	Integrated Solutions
Scott Adams	Senior Commissioning Manager	Integrated Solutions
John Titmarsh	Senior Commissioning Manager	Integrated Solutions
John Clayton	Senior Commissioning Manager	Integrated Solutions
Jared Rodley	Commissioning Manager	Integrated Solutions
Matt Bartholomew	Principal Engineer - Control Systems	Integrated Solutions

Table 4 - Business Consultation

4. BACKGROUND

4.1 Objective

The objective of this procedure is to ensure that control system changes are documented, reviewed, and communicated in a consistent way and that potential operational risks associated with the implementation of the change are identified and controlled.

This document details the change management process that is to be followed for control system changes affecting Urban Utilities assets. Where changes involve the modification of Operational Technology infrastructure a separate ICT change management process may need to be followed. If the change is likely to involve these types of assets, engagement with both the Maintenance Delivery - Control Systems and the Operational Technology group will be necessary so change approval can be provided as quickly as possible. To assist in this determination, please refer to *4.4.1 - Sample Control Systems Actions* which provides same example changes and the business group and/or process that would manage that change.

The importance of a documented change management process is to minimise the impact of change-related actions upon service continuity and quality, with the imperative being to maintain the integrity of organisational day-to-day operations.

4.2 Scope

This procedure relates to the implementation of control systems changes. It is to be followed when undertaking planned and responsive changes to ensure that they are properly reviewed, approved, and recorded.

The template documentation supporting this procedure will ensure that:

- a minimum information standard is met;
- standard methods and approaches are used and captured in the testing and implementation of a control systems change; and
- the required Urban Utilities Technical Standards are followed.

4.3 Engagement

While utilising standard methods and approaches for testing will assist in the successful approval of changes, there will always be change elements that differ in one way or the other. Therefore, engagement with both Control Systems and the relevant Operations groups must be sought at the earliest possible point of design. This engagement should continue throughout the design and change development, right up to the point of change request submission.

This is the only way that approval timeframes can be guaranteed.

4.4 Types of Changes

Various actions are performed on control system assets during operation, maintenance, and engineering activities. *4.3 - Engagement*
While utilising standard methods and approaches for testing will assist in the successful approval of changes, there will always be change elements that differ in one way or the other. Therefore, engagement with both Control Systems and the relevant Operations groups must be sought at the earliest possible point of design. This engagement should continue

throughout the design and change development, right up to the point of change request submission.
This is the only way that approval timeframes can be guaranteed.

Types of Changes details the change request expectations for implementing some typical actions. Where a control system action is identified as requiring change management the relevant change management process detailed in *7 - Change Management Procedure* must be followed.

4.4.1 - Sample Control Systems Actions details some sample actions with which change management process is required to be followed, and what documentation would need to be provided with that request. The level of change management required for a control system change is defined by the risk associated with the actions to be taken for that change. The action with the highest risk will be used to set the requirement level of documentation for that change.

The change management form (FOR603) and associated Implementation and Test Plans and Risk Assessments are detailed in *5 - Change Management Form*.

4.4.1 Sample Control Systems Actions

The following table *(Table 5 - Sample Control Systems Actions)* lists some sample control systems actions, what type of change request may be required, and what accompanying documentation would need to be submitted as part of that change. Where the change isn't explicit, engagement with the Maintenance Delivery - Control Systems group and/or Operational Technology group is advised in order to confirm requirements.

ITEM	ACTION	EXAMPLE	CONTROL SYSTEMS CHANGE	OT (ICT) CHANGE	SUPPORTING DOCUMENTATION REQUIRED
Programmable Controller	Online monitoring of Programmable Controller	Connect to a Programmable Controller via a UU engineering work station to review the status of runtime Programmable Controller logic for fault finding, documentation or operational support.	No	No	N/A
Programmable Controller	Save backup of a running Programmable Controller	Save backup of a running Programmable Controller to ensure the backup is current and that tag values are saved. This may be done in preparation for planed work.	No	No	N/A
Programmable Controller	Upload and resolve code mismatch between backup and the running Programmable Controller	Upload Programmable Controller running logic and correct mismatches with backup to create a current and fully documented backup.	No	No	N/A

ITEM	ACTION	EXAMPLE	CONTROL SYSTEMS CHANGE	OT (ICT) CHANGE	SUPPORTING DOCUMENTATION REQUIRED
Programmable Controller	Online parameter value change - Maintain function	Modification of a parameter value using an EWS that is not available within an HMI system to maintain correct operation of equipment. Changes such as scaling of a replacement instrument.	Yes	No	Scope of Work UU Template Test Sheets UU Implementation and Test Plan Operator Notification
Programmable Controller	Online parameter value change - Change function	Modification of a parameter value using an EWS that is configured in a Programmable Controller function. Chances such as enable / disable flags, configuration integers, range settings etc.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan UU Template Risk Assessment Operator Notification
Programmable Controller	Online logic edit and/or code download.	Any change to an operational controller such as: - Modifying a logic, instruction, function, routine execution, or scheduling. - Adding a logic, instruction, function, routine execution, or scheduling. - Downloading new code/configuration - Change in hardware configuration, (adding new hardware or modifying an existing hardware, updating a GSD file)	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan UU Template Risk Assessment Operator Notification
Programmable Controller	Full Download - Recovery	Downloading a failed or replaced Programmable Controller to recover from a fault where the Programmable Controller logic is not executing.	No	No	N/A
Programmable Controller	Firmware Compatibility	Flashing the firmware of a nonoperational controller module to change it to a compatible version to recover from a fault. If the controller is operational the change will be categorised as "Firmware Upgrade"	No	No	N/A
Programmable Controller	Firmware Upgrade	Flashing the firmware of a Programmable Controller module to upgrade to a standard or recommended level.	Yes	No	Scope of Work UU Template Test Sheets UU Implementation and Test Plan UU Template Risk Assessment Operator Notification
Programmable Controller	Programmable Controller CPU replacement	Replacing a failed CPU module with a spare to recover from a fault. Like for like CPU module where no configuration changes are required. If a like for like replacement were not applicable or configuration change was required for recovering for the fault, this will be considered as " Control System Change".	No	No	N/A

ITEM	ACTION	EXAMPLE	CONTROL SYSTEMS CHANGE	OT (ICT) CHANGE	SUPPORTING DOCUMENTATION REQUIRED
Programmable Controller	Programmable Controller Module replacement	Replacing a failed module with a spare to recover from a fault. Modules such as IO cards, communication cards etc.	No	No	N/A
Programmable Controller	Programmable Controller Module replacement where PLC/Rack shutdown is required	If the module failure is not causing any critical fault and module replacement requires PLC/ Rack shutdown	Yes	No	UU Template Risk Assessment Operator Notification
Programmable Controller	Implementation of a new Programmable Controller for new site or process	Installing a new Programmable Controller at either a new or existing site with standard or new code.	Yes	No	Scope of Work Functional Specification Drawings UU Template Test Sheets UU Implementation and Test Plan UU Template Risk Assessment Operator Notification
SCADA	Database modification - Alarms	Any modification to an alarm system to add, delete or modify an alarm configuration including changes to descriptions, categories, and priorities.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan Operator Notification
SCADA	Database modification - Trends	Any modification to a trend configuration that modifies the way a tag value is recorded. Changes such as frequency, historian inclusion, adding or deleting.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan Operator Notification
SCADA	Database modification - SCADA Tags	Any modification to a SCADA tag configuration. Changes such as unites, scaling, historian inclusion, adding or deleting.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan Operator Notification
SCADA	Communications modification	Any modification to a server communication system configuration including drivers, addressing, settings etc.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan
SCADA	Archiving of logs and trend files - Following work instruction	Housekeeping and archiving of historical files to manage system resources. Such as moving files to different drives or centralised storage.	No	No	N/A
SCADA	Archiving of logs and trend files - Unexpected	Housekeeping and archiving of historical files to manage system resources. Such as moving files to different drives or centralised storage.	Yes	No	Scope of Work UU Template Test Sheets UU Implementation and Test Plan
SCADA	Mimic modification - Functional	Modification to SCADA mimics or library functions that modify the functionality of the mimic. Changes such as adding or modifying the presentation of equipment, correcting functional problems.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan Operator Notification

ITEM	ACTION	EXAMPLE	CONTROL SYSTEMS CHANGE	OT (ICT) CHANGE	SUPPORTING DOCUMENTATION REQUIRED
SCADA	Mimic modification - Cosmetic	Modification to SCADA mimic or library functions that do not modify the functionality of the mimic. Changes such as display text, positioning, tag references, correcting non-functional problems.	No	No	N/A
SCADA	Instantiation of new site or process, new template, or modifications to existing template	Bringing a new site into the SCADA system either using a newly created template or existing.	Yes	No	Scope of Work Functional Specification Drawings UU Template Test Sheets UU Implementation and Test Plan UU Template Risk Assessment Operator Notification
Virtual server	VM server restart (no change)	Restart of an application or windows server to clear a fault condition. Situation where no change has been made.	No	No	Operator Notification
Virtual server	VM Server restart	Restart an EWS because of a software installation	Yes	Yes	Scope of Work UU Template Test Sheets UU Implementation and Test Plan Operator Notification
Physical servers	Power interruption / Restart of the physical server	Interrupting/ disconnecting power to the physical server for electrical circuit modifications or disconnecting the main power for more than UPS lifetime.	Yes	Yes	Scope of Work UU Template Test Sheets UU Implementation and Test Plan Operator Notification
Network switches	Power interruption/ Network disconnection	Interrupting/ disconnecting power to the main network switches (e.g., Level 2/3 network switch) or disconnecting network cables from the switch	Yes	Yes	Scope of Work UU Template Test Sheets UU Implementation and Test Plan Operator Notification
Radio / Telecoms	Download Configuration	Download the configuration into a radio that has lost its configuration or has been replaced.	No	No	N/A
Radio / Telecoms	Replacement	Replace a faulty radio with a new device and modify the control system configuration such as serial number.	No	No	N/A
Peripherals	Alarm reporting and notification	Any modification to a control system asset that supports the reporting or notification of an alarm condition to an operator. Changes such as SCADAPhone, EDAC, Citect Paging etc.	Yes	No	Scope of Work Functional Specification UU Template Test Sheets UU Implementation and Test Plan Operator Notification
Infrastructure	Attaching Machine to any SCADA domain	The addition of a new host to an operational domain. Changes such as adding a host, IP addressing.	No	Yes	N/A
Infrastructure	Mounting or building Virtual Machine	Any modification to VMware ESXi server or client configuration on operational servers. Changes such as resources, availability, installed applications.	No	Yes	N/A

ITEM	ACTION	EXAMPLE	CONTROL SYSTEMS CHANGE	OT (ICT) CHANGE	SUPPORTING DOCUMENTATION REQUIRED
Infrastructure	Operating system patch or upgrade	Installing any windows or ESXi operating system patch or version upgrade.	No	Yes	N/A

Table 5 - Sample Control Systems Actions

4.4.2 Planned Change

All control system changes should be planned with the change formally approved before any implementation work is done. The person implementing the change (the Implementor) is required to:

- Complete the template Implementation and Test Plan – TEM717
- Complete the template Risk Assessment form – TEM716
- Complete the Change Management form - FOR603

Other than for a responsive change, a change request must be submitted, reviewed, and approved before a change is implemented. This ensures that potential issues can be identified before any action is taken in an operational/production environment.

4.4.3 Responsive Change

Certain situations require immediate changes to the control system. This type of change is related to responsive work orders where an immediate change is required to resolve a problem that has occurred during normal operation. In these situations, the actions taken should be approved by an operations representative. Records of any changes made should be documented and operations should be notified that the changes are in place.

As soon as reasonably practicable after a responsive change, the nature of the change should be fully documented and the change management process followed retrospectively utilising the change management form and associated documentation detailed in *6 - Change Request Supporting Documentation*. Based on the review process, the changes made may need to be reversed or require additional work to ensure that the implementation is adequate.

5. CHANGE MANAGEMENT FORM

The following roles and responsibilities will be required to complete each change request and associated change management form:

- **Implementor** – Person(s) contracted/engaged to perform the change for Urban Utilities project/maintenance work Implementor
    - Responsible for completing section A of the Change Management Form.
    - Prepare all the required supporting documentation to be submitted.
    - Primary implementor is responsible for listing details of all implementors.
    - Provide the Urban Utilities Requestor with the Change Management Form and all supporting documentation.
    - **Ensure the following notification is provided:** If the change requires interruption to a physical server or main network switch, a minimum of one business day ahead of the proposed change, notification must be emailed to the Maintenance Delivery - Control Systems and Operational Technology teams.
- **UU Requestor** - Maintenance or Project Delivery Partner responsible for the project/maintenance work
    - Responsible to complete section B of the Change Management Form.
    - Responsible for ensuring all implementors have the required operational technology access authorisation in place for the duration of the works.
    - Responsible for submitting change management form for review/decision.
    - Engage with Process/Network Representative and Implementor in relation to any queries relating to the proposed change.
    - Engage with Treatment/ Network Operations and the Implementor in relation to any issues regarded implementation of the proposed change.
    - Ensure the Change Management Form is approved by all parties prior to starting work.
    - Change Management Form should be submitted prior to requesting a permit to work if applicable.
- **UU Control Systems Representative** – An internal Urban Utilities representative with responsibility of operation/maintenance of control systems within the water/sewer network or Resource Recovery Centre.
    - Responsible to complete and sign section C of the Change Management Form.
    - Conduct a review of Change Management Form; accompanying Test Sheets; and Implementation and Test Plan.
    - Notify the Urban Utilities Requestor of any missing, incomplete, or unapproved documentation that requires action.
    - Specify any required deliverables in section E of the Change Management Form.

- Forward the signed Change Management Form to the Process/Network Representative together with all the completed associated documentation.
- File the Change Request and supporting document in QDox.
- Formally approve or reject the change request.

- **UU Process/Network Representative** – An internal Urban Utilities representative with responsibility for operation of the water/sewer network or Resource Recovery Centre
  - Responsible to complete and sign section D of the Change Management Form.
  - Conduct a review of Change Management Form and the supporting documentation and confirm that the work is adequately planned and is suitable for implementation.
  - Review and complete the risk assessment.
  - Notify the Urban Utilities Requestor of any missing, incomplete, or unapproved documentation that requires action.
  - Work with operational representatives to confirm the change is understood and all impacts communicated and document engagement.
  - Specify any required deliverables in section E of the Change Management Form.
  - Notify Enterprise Historian of any SCADA/EH tag changes (FOR MOSAIC AND RADTEL only).
  - File the Change Request and supporting document in QDox and record file references in section D of the Change Management Form.

5.1 Section A – Change Request

The change request section is used to capture the location/site of the proposed change and details of the proposed change(s) as well as risk to process/operations and affected control equipment.

If there are more than one implementor of the change(s), the primary implementor must list all the proposed implementors.

It is mandatory that the Ellipse ID is included for each affected control device. Should the device be new, or an Ellipse ID is not available the process described in *TEM618 – Asset Management Equipment Register* will need to be followed and the proposed loadsheet should be supplied for review.

5.2 Section B – UU Requestor

In this section, the Urban Utilities Requestor must provide the Urban Utilities Project IP Number if it is a Capital Project being delivered by Urban Utilities.

The submission date is the date the change request form and all supporting documentation is submitted to the Urban Utilities Process/Network representative for review/decision.

It is the Requestor's responsibility to ensure that all implementors must have the necessary operational technology access authorisation approvals in place prior to, and for, the entire period of the change implementation.

Access authorisation approval can be applied for through the Operational Technology group. New/updated access requests should be submitted by the Requestor through Urban Utilities Employee Centre.

5.3 Section C – UU Control Systems Representative

This section of the form records the review to be undertaken by the Urban Utilities Control Systems Representative. The objective of the review by the Urban Utilities Control Systems Representative is to review the change management form, ITP and risk assessment and assess the method by which the change will be undertaken via the submission of a completed Urban Utilities template Implementation and Test Plan.

5.4 Section D – UU Process/Network Representative

This section of the form documents the review of the documentation supporting the change by the Process/Network Representative. This is a critical part of the change request process, given the process/network representatives' knowledge of operational function and process risk that may result from any change. It is essential that the change request documentation is sufficiently detailed to enable the process/network representative to make a fully informed and risk-based assessment of the change.

Given the prior review undertaken by the Control Systems Representative, the objective of the review by the Urban Utilities Process/Network Representative is to review the change management form, risk assessment, and supporting documentation.

6. CHANGE REQUEST SUPPORTING DOCUMENTATION

Supporting documentation is required for each change and varies according to the scope and impact of the change. Document templates can be downloaded either via QPulse, or from the Control Systems Change Management TAP page.

6.1 Mandatory Documents

All change management requests must include the following documents:

- Completed Change Management Form - FOR603
- Scope of work
    - Entered directly into FOR603 or included as supporting documentation where appropriate.
- Completed UU Implementation and Test Plan – TEM717
- Completed UU Template Risk Assessment – TEM716
- Test Sheets (Completed Factory Test and Proposed Site Acceptance Test)

6.2 Supporting Documents

Based on the type of change, impact and criticality, additional documentation may be required to communicate the change to wider group and to ensure that any risks are identified and controlled. The following additional documents may be required by the Process/Network Representative prior to approval of any change:

- Updated and approved Functional Specification
- Updated drawings where applicable
    - For any project work, pre-approved drawings must be submitted. This process does not provide electrical drawing approval in any form. Drawings are submitted as part of this process for information only.
    - For maintenance activities performed by the Urban Utilities maintenance partner, drawings will be completed and submitted for approval post change.
- Enterprise Historian update package (for SCADA/EH tag additions or changes only) – **ONLY FOR MOSAIC/RADTEL SCADA CHANGES**
- Evidence/confirmation of Network Control Room notification
- Evidence/confirmation of Treatment Plant Process and Operator notification

6.3 Review Responsibilities

The following table describes which business group is responsible for the review of control systems change documentation.

DOCUMENT	ELEMENT	GROUP/ROLE RESPONSIBLE
Implementation and Test Plan – TEM717	Process and functionality test plans	Process/Network Representative
Implementation and Test Plan – TEM717	Control systems code/configuration test plans	Control Systems Representative
Test Sheets (FAT/SAT)	All	Control Systems Representative

DOCUMENT	ELEMENT	GROUP/ROLE RESPONSIBLE
Functional Specification	Process / operational related specifications	Process/Network Representative
Functional Specification	Control systems hardware, code and/or configuration specifications	Control Systems Representative
Approved Electrical Drawings – Project Work Only	All	Project Team / Project Approval Process
Approved Electrical Drawings – Project Work Only	Control systems hardware and IO selection	Control Systems Representative – cursory check / information only
UU Template Risk Assessment – TEM716	Process and operational risks	Process/Network Representative
UU Template Risk Assessment – TEM716	Risks to control systems assets, code, or configuration	Control Systems Representative
Control Room or Operator Notifications	All	Process/Network Representative

Table 6 - Document Review Responsibilities

7. CHANGE MANAGEMENT PROCEDURE

The change management process is designed to allow review and approval of the change to be conducted by multiple parties in parallel to minimise the overall cycle time for review. *8 - Appendix A – Process Map* shows a detailed process map outlining the actions and interactions between the parties involved. The key process steps are described below:

7.1 Control Systems Change Realisation

Using *Table 5 - Sample Control Systems Actions* as a guide, determine if the activity to be performed will require control systems change approval and/or operational technology ICT change approval board approval. Early engagement with both the process/network representatives and the Maintenance Delivery – Control Systems or Operational Technology group on the proposed changed will assist in this determination.

Once the relevant change process has been identified, *Table 5 - Sample Control Systems Actions* can also be used as a guide to the mandatory and additional documentation that will need to be supplied with the change. Again, early engagement with the process/network representatives and the Maintenance Delivery - Control Systems group can assist in ensuring the correct documentation is supplied with each request.

It is also prudent at this point, to ensure that the implementor/s all have the required operational technology access authorisation in place for the duration of the works.

7.2 Control Systems Change Submission

The completed control systems change form (Section's A and B) along with all the supporting documentation will need to be submitted to the relevant process or network representative for action.

The completed form and all associated documentation will then need to be emailed to: ***CSChangeRequest@UrbanUtilities.com.au*** for triage.

To ensure that change approval is granted prior to the intended change taking place, ensure that the completed form and required documentation are submitted at least 10 working days beforehand. It is recommended that this timeframe however is confirmed with the relevant process/network representatives through early engagement.

7.3 Control Systems Change Approval

Once the request has been submitted and triaged, the Urban Utilities Control Systems Representative will review the form and associated documents and confirm that the work is adequately planned and is suitable for implementation. Where there is any missing, incomplete, or unapproved documentation, the Urban Utilities requestor will be notified.

Once the Control Systems Representative is satisfied that the change can proceed, they will then complete and sign section C of the document and pass the request to the Urban Utilities Process/Network Representative.

The Process/Network Representative will then review the form and accompanying documentation. Where there is any missing, incomplete, or unapproved documentation that requires further action, the Urban Utilities requestor will be notified.

The Process/Network Representative will also liaise with operational representatives to ensure that all the relevant parties understand the changes, and any operational impacts are communicated appropriately.

Where the change is occurring to equipment within a Petroleum & Gas facility, the Process/Network Representative will have to seek approval from the P&G MoC custodian who will review the change against the facility risk assessment for the impact to safety on critical systems. The P&G MoC custodian will then either advise the Process/Network representatives of a rejection or approval of the change, note the change in the P&G MoC register and advise the P&G committee.

Once the Process/Network Representative is satisfied that the change can proceed, they will complete and sign section D of the document. The CS reviewer will then formally approve the change and provide the completed form back to the Urban Utilities requestor.

7.4 Control Systems Change Preparation

Before the control systems change can occur, the Urban Utilities requestor needs to ensure that the following has been completed:

- Fully approved control systems change with completed form
- All Implementors have the required operational technology access to all the systems involved in the change
- Notification of the change is provided to operations detailing the intended change window including any relevant interruptions
- Where the change requires interruptions to control systems or operational technology infrastructure (servers, level 2/3 network switches etc) both the Maintenance Delivery - Control Systems and Operational Technology teams will require at least 1 business days' notice
- Ensure that any physical access permits are completed and approved as required

7.5 Control Systems Change Implementation

The Implementor will need to advise the appropriate operations area of their intended works, as stipulated in the physical access permit. Once operations approve their access, the Implementor can complete the change as stipulated in the control systems change approval documentation.

If at any point during the change, the Implementor needs to deviate from the approved change plan, then either the implementor or Urban Utilities requestor will need to contact the Process/Network representative for approval to continue. Where appropriate the Process/Network representative will liaise with the Control Systems Representative for technical advice. If the change cannot proceed, all work will cease, the implementor will need to roll anything back to how it was before he/she started, then re-issue the change request with the required modifications.

7.6 Control Systems Change Closeout

Once the change has been successfully implemented and tested as documented in the change request approval, the implementor will need to ensure that the following is complete before leaving site or logging out of Urban Utilities systems:

- Confirm with operations that all systems are functioning as intended
- Any modified code or configuration files have been successfully backed up and stored in the appropriate configuration repository

- Change Management Form, ITP and Test Sheets are all completed, signed, and stored in the appropriate repository
- Any updated drawings, documentation and test plans and sheets are able to be accessed by any Urban Utilities support partner as agreed

As soon as possible after the change has been implemented the Urban Utilities requestor will need to advise both the Process/Network representative and Control Systems Representative by email that the change has been completed, and that all closeout requirements have been met. The Control Systems Representative will then confirm that the relevant control systems artefacts are located where appropriate and will then close the change.

8. APPENDIX A – PROCESS MAP

Control Systems Change Management Process (A)

Implementor

Control Systems Action

Control Systems Change Request Required?

No → Complete Works

Yes → - Complete Section A of Change Management Form (FOR603)
- Prepare supporting documents
- Refer to Requestor for review

Do all Implementors have the required Operational Technology Access in place for the full duration of works?

Yes → C - 4

UU Requestor

Early Business Enagement

Yes → - Complete Section B of Change Management Form (FOR603)
-Ensure appropriate documentation provided and filed

- Change Management Form (FOR603) and supporting documentation Sent via email to Control Systems Change Request inbox

B - 2

UU Process/Network Representative

Early Business Engagement

Business Engagement

No

UU Control Systems Representative

Early Business Engagement

Triage request and review change

B - 1

Operational Technology

Early Business Engagement (if applicable)

Apply for relevant Operational Technology access for the full duration of works

Operations

Early Business Engagement (if applicable)

Control Systems Change Management Process (B)

Implementor

Prepare for Change

C - 3

UU Requestor

A - 2

- Liaise with Implementor to address queries with change and update Change Management Form (FOR603) and/or supporting documentation

- Notified of Change approval Approval
- Provide completed form and approval to Implementor

UU Process/Network Representative

Reject change by completing Section C of Change Management Form (FOR603)

No

P&G MoC Approval?

Yes

No

Yes

Is change fit for approval?

Yes

Change occurring to equipment within a Petroleum & Gas Facility?

No

- Complete Section D of Change Management Form (FOR603)
- File documentation and update Change Management Register
- Refer to CS to issue approval

UU Control Systems Representative

A - 1

Is change fit for approval?

No

Reject change by completing Section C of Change Management Form (FOR603)

Yes

- Complete Section C of Change Management Form (FOR603)
- Update Change Management register and file documentation

- Advise Requestor CS review is complete
- Refer change to Networks/ Process Engineer for approval

- Provide completed form and approval to Requestor

Notification of any interruptions to control systems infrastructure – at least 1 business day notice

Yes

Operational Technology

- Confirm that all Implementors have appropriate Operational Technology access to complete the change
- Notification of any interruptions to operational technology infrastructure – at least 1 business day notice

Operations

Liaise with the relevant operational representatives to ensure that all parties understand the changes, and any impacts are communicated.

Operations are notified of the change, and Implementors have all the relevant access permits to complete the works

Control Systems Change Management Process (C)

Urban Utilities

Implementor

B - 3

Provide all required notifications

Implement change

Change Successful?

Rollback and Re-start change process with adjustments

A - 4

Begin Change Closeout

Code or configuration files are backed up and stored appropriately

ITP / Test Sheets are completed, signed and stored approprately

Drawings, and test documents are able to be accessed by Urban Utilities support partner as agreed

UU Requestor

Advise that change is complete and all closeout requirements met

UU Process/Network Representative

No

No

Yes

Adjust and Continue?

Advise that change is complete and all closeout requirements met

Confirm process/ network closeout requirements are met

Close Change

Yes

UU Control Systems Representative

Advise that change is complete and all closeout requirements met

Confirm Control System closeout requirements are met

Operational Technology

No

Operations

Approve access to complete the change (if required)

Systems are all functioning as intended?