United Utilities'

Pumping Station Local Practice

Water for the North West

Contents

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1. Introduction

This document outlines United Utilities (UU) local practice for its standards relating to adoptable pumping stations.

Under the Ofwat Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code"), Water UK have produced Sector Guidance (SG) which includes revised procedures, service levels, adoption agreements and design & construction guidance.

UU's local practice will be in the form of a new Pumping station addendum which should be read in conjunction with sewerage sector guidance Appendix C (Design & Construction Guidance)

2. Pumping Station Addendum

2.1 Why United Utilities require a Pumping Station addendum

The addendum sets out requirements that are specific to UU where a Developer wishes to design and construct a pumping station for inclusion within an adoption agreement, with reference to Sewerage Sector Guidance (SSG) Appendix C.

It is intended that the addendum provides specific guidance for the design and general specification when making an application to UU, to align with UU's asset standards as well as Sewerage Sector Guidance Appendix C. UU's asset standards are intended to enable a coherent operation and maintenance strategy so that UU can provide the best possible service to its customers, and to enable an efficient adoption process with developers.

Version 1.0 January 2020 is an updated version of the UU addendum previously used with Sewers for Adoption 7th edition.

2.2 What are the main changes from previous United Utilities addendum?

The UU addendum has been revised in accordance with the UU Code of Practice 'Installations in Potentially Explosive Atmospheres associated with Water and Wastewater', October 2019.

As a general rule, most new sewage and surface water pumping stations will no longer be classed as hazardous areas. However, the UU addendum still includes specific guidance where a pumping station is required to be classed as a hazardous area.

Developers or Contractors will now be required to provide a short UU Risk Assessment, as part of the design submission. Where the risk assessment indicates that the area may be classed as non-hazardous, no further work will be required. A hazardous area drawing will no longer be required and the previous requirements to provide hazardous area M&E equipment is no longer required (with significant cost savings).

Although most installations will now be determined as non-hazardous, cable ducts to control kiosks will still require to be gas sealed to prevent the ingress of non-flammable gas (e.g. hydrogen sulphide), that are detrimental to electrical equipment.

Should the Risk Assessment indicate that the new sewage or surface water pumping station is designated as a hazardous area, the installation will need to be compliant with the UU Code of Practice.

'Packaged pumping stations' in accordance with WIS 4-04-01 or WIS 4-04-02 are now permitted, provided they fully conform to all requirements of SSG Appendix C and the UU Addendum.

Provision of systems utilising a controlled potable supply will now be accepted in lieu of chemical systems, to avoid septicity during phased developments.

The UU requirement for the provision of a flowmeter is clarified.

The requirement for surge protection of the complete electrical installation has been updated in accordance with the revised IET electrical regulations, BS7671 18th Edition. The requirement for a kiosk fire detector is formalised to ensure compliance with UU's insurance policies.

The following changes are specific to the electrical specification and are listed and justified below;

Abnormal Operation - Interruption / loss of ultrasonic signal

This clause has been corrected/deleted to be how the UU design has been previously provided.

Installation of cables

Amends the requirements for the cable ducts, reducing them to be 100mm diameter on the basis that it unlikely that additional cables will be required to be installed in the future. This also allows an easier installation of ducts at site.

Earthing and Bonding

Removes the requirements for the provision of a contactor to automatically remove the connection of the DNO's earth in the event of the operation of a portable generator. The requirement is for a removable earth bar link to be provided. In UU the removal of this is undertaken by a manual operational procedure. This amendment simplifies the control system required.

Earth Electrode

Requires the earth electrode to be connected to the main earth bar by a removable earth bar link. In UU the removal of this is undertaken by a manual operational procedure.

2.3 Reasoning for unchanged content from the previous United Utilities addendum

The following refers to UU specific requirements within the **electrical** specification and provides our reasoning;

Earthing and Bonding

Ensures that the electrical installation is provided with a main earth bar within the kiosk and not within the control assembly or marshalling section. This is to be complete with isolation link facility for both the DNO earth and the earth electrode.

Termination of wiring

Ensures that junction boxes are provided for the disconnection of pumps and instrumentation locally at the pumping station wet well. These are required to be installed without access into the main wet well chamber for health and safety to personnel. In addition, no permanently installed cables need to be removed from cable ducting during any normal maintenance activities.

Connection of a mobile generator

Requires that the generator connection facility is provided as a separate panel. This is required for both Health and Safety purposes and for the continuity of operation of the site services.

Connection of a standby generator is a manual activity taken under an operational procedure by competent personnel. Therefore this equipment does not require any automation.

Wet Well Level Monitoring

Clauses have been amended to name the signals when they are required as per UU standard.

Telemetry Signals

Clause required to provide a block of hardwired telemetry signals for use should technical consideration change in the future. This has previously been provided to UU in the SFA 7th edition design. The requirement is now incorporated into the addendum.

Table F3 signal names have also been amended.

Ultrasonic Level Controller (ULC) Specifications

The clause allows the use of a proprietary pump controller that has an integral telemetry outstation.

The provision allows for cost savings as the pump control is pre-configured with plug and play software and there is no need to provide a separate UU telemetry outstation.

Functional Units - Form 4 Assemblies

Incomer Compartment
Amends the requirement for the generator connection to be provided as a separate panel. Refer also to F3.3.7.

Amends the requirement for the distribution board to be provided as a separate unit.

Motor Starter Compartments

This clause ensures that if a deviation is required from the list of indications, this is agreed with UU.

Common Control Compartment

The signal names have been amended as per F3.3.8.5. Note that most SFA pumping stations will not require spill monitoring to be provided.

Functional Units - Form 2 Assemblies

Incomer

Amends the requirements for the distribution board to be provided as a separate unit.

Motor Starters

Ensures that if a deviation is required from the list of indications, this is agreed with UU, also ensures that Health and Safety electrical locking off provision is provided for a Form 2 assembly suitable for a UU electrical safety padlock.

Common control compartment

The signal names have been amended as per F3.3.8.5. Note that most SFA pumping stations will not require spill monitoring to be provided.

2.4 Appendices

See appendix 1 Pumping station Addendum.