WESTERN SUSSEX HOSPITALS

NHS FOUNDATION TRUST

CRITICAL ALARM RATIONALISATION WORKS

REF T/1339/PMS

SPECIFICATION OF WORKS

MAY 2018

Notice

This document and its contents have been prepared and are intended solely for Western Sussex Hospitals NHS Foundation Trust.

Client signoff

Client	Western Sussex Hospitals NHS Foundation Trust
Project	Critical Alarm Rationalisation
Document title	Specification - Scope of Works
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B10 WESTERN SUSSEX HOSPITAL (CHICHESTER ST RICHARDS / WORTHING) CRITICAL ALARM RATIONALISATION

100.010 INTRODUCTION TO WESTERN SUSSEX HOSPITAL CRITICAL ALARM RATIONALISATION

Western Sussex Hospital NHS Foundation wishes to undertake a "Critical Alarm Rationalisation" process at the following hospitals;

St Richards Hospital
Spitalfield Lane
Chichester
West Sussex
PO19 6SE

Worthing Hospital
Lyndhurst Road
Worthing
West Sussex
BN11 2DH

100.020 WHAT IS THE REQUIREMENT?

- Currently there is a wish to consolidate all the current hard-wired critical alarms transmission / response within either of the Hospital Telephonist's facility
- The critical alarm rationalisation will facilitate a bidirectional methodology which will allow for either Chichester or Worthing to be the primary location for both Hospitals critical alarms delivery / hosting
- This will require all hard-wired critical alarms to be re-routed to both Hospitals Telephonists facility.
- The new consolidated critical alarm system will provide monitoring/response/resolution "In Working Hours" and "Out of Working Hours"

100.30 HOW DO BOTH HOSPITALS CURRENTLY HANDLE CRITICAL ALARMS

Both Hospitals currently handle critical alarms by manual staff interaction from the central Hospitals Telephonist rooms and have the following similarities;

- Critical alarm definition
  - There is no clear definition of what denotes a critical alarm at both Hospitals
  - It could be assumed that each Hospital has a different perception of what denotes a critical alarm
  - This could prove to be a point of concern during any future critical alarm consolidation to Worthing Hospital
- Both Hospitals use a combination of;
  - Telephonists located critical alarm panels
    - Some alarm panels are either obsolete but still in use or redundant and have not been removed
  - External Bleeps
  - External panic pendants
  - End-user telephone activation
  - External third party monitoring systems
- Procedures & Telephonist staff training
  - St Richards, Chichester
    - Procedures are kept up to date by the Telephonist Facility Manager and are contained in a reference book
    - This forms the basis of a new staff members induction and a point of reference should additional support be required

100.101 SOUTHLANDS (SHOREHAM) REMOTE SITE
System State - Active

Description

- There is a "Emergency Bleep" system located in the Telephonist Facility which notifies the Telephonist Staff if any of the following critical alarms activate;
    - Boiler Alarms
    - Medical Gases
    - Plant / Mechanical Fault

Comment

- The "Emergency Bleep" system is active but is not supported by clear date stamped Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 16 – Southlands (Shoreham) Emergency Bleep System

100.100 GENERAL ALARM PANEL
System State - Active

Description

- There is a "General Alarm" control panel that originally monitored numerous critical alarms, however this has now been reduced to the following critical alarms;
    - East Wing Plant Rooms
    - Mortuary Cold Store
    - Sewage Plant
    - Mortuary (Put Out Security Alert) Panic Alarm
    - West Wing Calorifier Room
    - Urgent Call Engineer
    - Endoscope Sewer Pumps Failure

Comment

- The General Alarm control panel is active but is not supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 16 – General Alarm control panel

100.090 GENERAL CRITICAL PLANT ALARMS
System State - Active

Description

- There is a "Critical Plant" alarm control panel that monitors;
- Boiler No1, 2, 3 & 4
- Each Boiler has the following control panel indications / functionality
    - Isolated
    - Fault
    - Key / Push button to isolate
    - Steam Boiler No1 & 2
- Each Steam Boiler has the following control panel indications / functionality
    - Isolated
    - Fault
    - Key / Push button to isolate

Comment

- The Critical Plant Alarm control panel is active is not supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 15 – General Critical Alarm control panel

100.080 PERSONAL ATTACK PANIC ALARM
System State – Not Active

Description

- There is a "Personal Attack" alarm sounder (Reception) located in the Telephonists Facility
- The sounder (Reception) was tested during the survey and found to be defective

Comment

- The "Personal Attack" alarm sounder (Reception) is powered down and believed to be redundant and at the time of survey the Telephonist staff did not have clear information on its status
- There seems to be a lack of "Personal Attack" protection that on activation transmits alarm notification to the Telephonists Facility

Figure 14 – Personal Attack "Panic" sounder (Reception)

100.070 MEDICAL GAS
System State - Active

Description

- Within the Switch room there are three in number of gas alarms panels
    - Medical Gas Panel No1 - West
    - Medical Gas Panel No2 - West
    - Medical Gas Panel No3 - East
- On alarm activation the light will glow against the individual alarm activating, highlighting the particular alarm, i.e. Medical Air, Vacuum etc.

Comment

- The Medical Gas control panels (3) are active and are not supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 13 – Medical Gas control panels (3)

100.060 EMERGENCY CRASH ALARM ACTVATION
System State - Active

Description

- There are three methods of Emergency "Crash" Alarm activation
  - By bell (1st Call)
  - By three-pin-plug sounder (2nd Call)
  - By phone (3rd Call)
- The three in number methods in Emergency "Crash" Alarm activation provides three levels of redundancy

Comment

- The three methods of Emergency "Crash" Alarm are not supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation, the process seems to have evolved over time and passed on by word of mouth
- There is no date when all three "Emergency Crash" activation methods were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 12 – Emergency "Crash" Alarm – Three methods of alarm activation

100.050 LIFT ALARM (EAST WING)
System State – Not Active

Description

- The East Wing Lift Alarms are provided by a small control panel located in the Telephonists Facility
- At the time of survey the control panel was not powered and assumed to be obsolete

Comment

- The Lift Alarms (East Wing) control panel is powered down and believed to be redundant and at the time of survey the Telephonist staff did not have clear information on its status

Figure 11 – Lift Alarms (East Wing) control panel

Figure 9 – Intruder Alarm Main & Repeater control panels

100.040 LIFT ALARM (MAIN)
System State - Active

Description

- The Main Site Lift Alarms are transmitted to the Telephonists Facility by telephone
- At the time of survey the Telephonists do not know how many lifts are within the Hospital or there locations
- There are limited Lift Alarm emergency procedures but these are not date stamped

Comment

- The Main Site Lifts Alarms are active but the Telephonists are unclear as to how many lifts are protected, this lack of information further explains why there are now clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- Due to the lack of information the Telephonists do not know if the lift alarms are fully tested and maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

Figure 10 – Main Lift Telephonists instructions

E11 WORTHING HOSPITAL CRITICAL ALARM SYSTEM STATUS

100.010 WORTHING CRITICAL ALARM STATUS
The current operational status of the Worthing Hospital critical alarms is as follows;

100.020 FIRE ALARM SYSTEM
System State - Active

Description
- There is a control panel and computer which provide fire alarm protection
- In addition there is a site map attached to the control panel door which provides details of the Hospital fire zones

Comment
- The Fire Alarm System is are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when last reviewed or contained in any form of reference book
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level

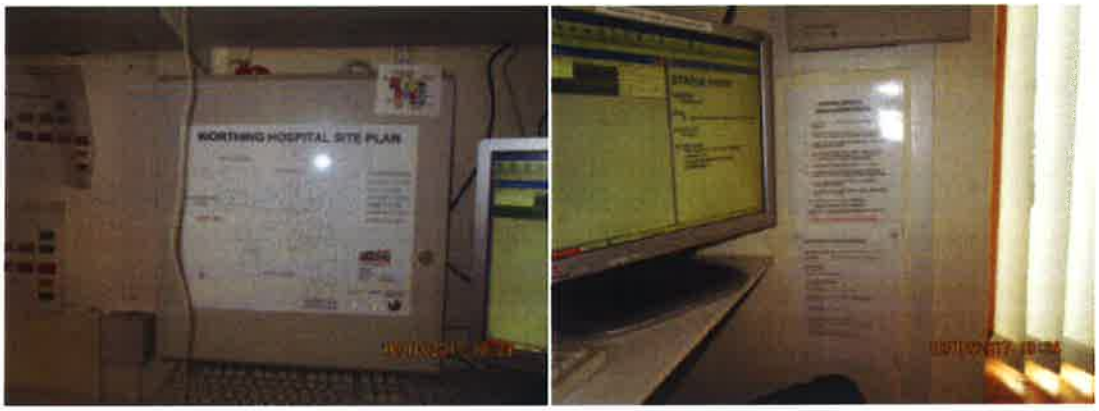

Figure 8 – Fire Alarm System, computer & local Telephonists instructions

100.030 INTRUDER ALARM SYSTEM
System State – Not Active

Description
- There is an Intruder Main & Repeater control panels are located in the Telephonists Facility
- There is a sign of previous Intruder alarm locations attached to the main Intruder control panel
- Both Intruder control panels are not active and believed to be redundant

Comment
- The Intruder Alarm system is powered down and believed to be redundant and at the time of survey the Telephonist staff did not have clear information on its status.
- Apart from the historical list of previous Intruder alarm protected locations there are no Telephonist Standard Operating Procedures (SOP)
- With the Intruder Alarm System being out of service / redundant, the question of how the hospital is currently protected from Intruders needs to be discussed and established

100.100 EMERGENCY CRASH CALL PROCEEDURES
System State - Active

Description

- The Telephonists receive emergency call notification "Crash" via the telephone which could be related to;
- Cardiac Arrest
    - The Telephonist will activate *6 on the Bleep keyboard and proceed with standard operation procedures to notify the "Cardiac Arrest" emergency
- Obstetric Major Emergency (Code Blue)
    - The Telephonist will activate *4 on the Bleep Keyboard and proceed with standard operation procedures to notify the "Obstetric major Emergency"
- Paediatric
    - The Telephonist will activate Group Alert on the Bleep keyboard and proceed with standard operation procedures to notify the "Paediatric Emergency"
- Trauma
    - The Telephonist will activate *5 on the Bleep keyboard and proceed with standard operation procedures to notify the "Trauma Emergency"

Comment

- The Emergency "Crash" Alarms are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation

Figure 7 – Emergency "Crash" Alarm dedicated telephone switchboard points

100.080 AIR CONDITIONING UNIT – EQUIPMENT ROOM
System State - Active

Description

- To ensure the temperature is maintained at an acceptable level for the safety and working of the equipment housed within, two wall mounted air conditioning units have been installed.
- The unit on the west wall is programmed to work at all times, maintaining a temperature of approximately 74 degrees.
- The unit above the double doors has been programmed to become active if the room temperature goes above 74 -76 degrees. This will mean both units are active, usually during the summer.
- A room thermometer is available on the central pillar.

Comment

- The Air Conditioning Unit – Equipment Room temperature alarm is active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation

100.090 MORTUARY FRIDGE ALARMS
System State - Active

Description

- The body storage fridge alarms in the Mortuary are dealt with by an outside company called 'TUTELA'.
- If the alarms activate TUTELA will contact St Richards's switchboard.

Comment

- The Mortuary Fridge Alarms are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation

100.070 SCANTRONIC ALARM SYSTEM
System State - Active

Description

- The Scantronic Alarm System is located within the Telephonists Facility
    - A number of internal and external alarms are connected to the system
    - In the event of an alarm activating, the Scantronic Alarm system will print, as well as display the appropriate numeric code.
    - On activation the procedure associated with the numeric code should be followed.-*see Scantronic Alarm System Procedure File.*
    - There are (4) wall mounted telephones located on the back wall of the Equipment Room.
    - Initially, one of the telephones will ring followed by the activation of the Scantronic Alarm system.
    - On receipt of the alarm system activating, a code will be displayed on the Scantronic screen. Confirm that the code number is the same as printed on the Scantronic paper print-out.

Comment

- The Scantronic Alarm System is active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation (two reference books)
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital
- There is also a knowledge gap with only the Telephonist Facility Manager being able to operate / reset the Scantronic Alarm System
- The Scantronic Alarm System is obsolete and should be considered for replacement

Figure 6 – Scantronic Alarm System

100.050 INTRUDER ALARM
System State - Active

Description

- There is no Intruder alarm control panel within the Telephonists Facility all alarms are relayed via the switchboard.
    - Dieticians Department – Intruder Alarm
    - Pharmacy Intruder Alarm
    - Chichester Medical Education Centre (CMEC)
    - Histopathology Department – Intruder Alarm

Comment

- The Intruder Alarms are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation

100.060 LIFT ALARMS
System State - Active

Description

- The following "Lift" alarms are received via the switchboard
    <u>Staff Service Lifts</u>
    - West Wing – Rear of Ante-Natal
    - Stillman House – Lift Lobby
    - Out Patients Dept. – Left of the stairs leading to 1st floor OPD
    - Main Hospital – Just past Mortuary, next to the 1st set of stairs off main corridor
    - Main Hospital – Left of Lavant and Ashling ward
    - CMEC – Left of Reception/Foyer

    <u>Patient Lifts</u>
    - Women & Children, West Wing – Between Day Surgery and Ante-Natal, Ground Floor
    - Out Patients Dept. – Left of the stairs leading to 1st floor OPD Lift 1 & 2
    - Out Patients Corridor – Adjacent to Pathology Stairs, near MFU
    - Main Hospital – Two lifts in Link Corridor, Main Reception and Ashling Ward
    - Chichester Treatment Centre – Several

Comment

- The Lift Alarms are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital

- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level during the hours of Monday to Friday 08:30 to 16:30 when the FAI protocol is in-place, this should be considered in any future rationalisation to Worthing Hospital

Figure 5 – Fire Alarm Control Panels (2) and Hospital Fire Zone Maps

100.040 CRITICAL PLANT ALARMS
System State - Active

Description

- There is a "Critical Plant" alarm control panel that monitors;
  - Stillman House Boiler No1 & 2
    - Each Stillman Boiler has the following control panel indications / functionality
    - Control Circuit Healthy
    - Water Alarm
    - Lockout
    - Mute
    - Audio alarm
    - Boiler hold off key push button
- There is also expansion for two further items of plant

Comment

- The Critical Plant Alarm control panel is active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital

Figure 4 – Critical Plant Alarms control panel

100.040 FIRE ALARM SYSTEM (TWO PANELS)
System State - Active

Description

- There are two fire alarm panels located in the Telephonists Facility which provide 24/7 protection to the Hospital
- The response to a fire alarm is dictated by the time and day of activation;
- Monday to Friday – 08:30 to 16:30 hours (excluding bank holidays)
  - To reduce the number of times the Fire and Rescue Service (F & R Service) is called the internal Fire Alarm Intervention Team (FAI Team) will initially respond to all fire alarm activation's
- Monday to Friday – 16:30 to 08:30 hours (excluding bank holidays)
  - A member of the FAI Team will contact the Telephonist and request that the auto dialler be restored to normal service.
  - In the unlikely event that the Telephonist does not receive a call from a member of the FAI Team at 16:30 hours the Telephonist will restore the auto dialler to normal service.
- Fire Alarm Activation
  - The Telephonist will activate Fire Group Alert on the Bleep keyboard and proceed with standard operation procedures to notify the "Fire Alarm Emergency"

Comment

- The Fire Alarm control panels are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation

100.030 PERSONAL ATTACK PANIC ALARM
System State - Active

Description

- There are two "Personal Attack" alarm control panels which cover the following areas within the Hospital
  - Ward Attack Alarms (Main section of the Hospital)
  - Personal Attack Alarm panel
  - Patients Affairs – Personal Attack Alarm
  - Blood Sciences Personal Alarm
  - Pharmacy Satellite – Personal Attack

Comment

- The Personal "Attack" Panic Alarm control panels (2) are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital

Figure 3 – Personal "Attack" Panic alarm control panel and local instructions

100.020 MEDICAL GAS (4 PANELS)
System State - Active

Description

- Within the Switch room there are four in number of gas alarms panels
- Medical Gas Panel No1
  - VIEN West Ward
- Medical Gas Panel No2
  - Labour Ward Entrance
  - Urgent
  - DSU Only
  - DSU Only Urgent
- Medical Gas Panel No3
  - CTC Medical Gas Alarm
  - Medical Gas Alarm Panel No4
- Main Hospital
- On alarm activation the light will glow against the individual alarm activating, highlighting the particular alarm, i.e. Medical Air, Vacuum etc.

Comment

- The Medical Gas control panels (4) are active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the systems were fully tested or maintained, this is a concern as at the time of survey the Telephonists reported problems with the DSU alarm notifications, namely, on alarm activation there was no warning sound associated with an active alarm
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital

Figure 2 – Medical Gas control panels (4)

E10 CHICESTER ST RICHARDS HOSPITAL CRITICAL ALARM SYSTEM STATUS

100.010 CHICHESTER ST RICHARDS CRITICAL ALARM STATUS
The current operational status of the Chichester St Richards Hospital critical alarms is as follows;

100.020 LIFESAVER – LONE WORKING
System State – Active

Description

- The "Lifesaver" control panel is manufactured by SBES and provides lone worker scalable protection from a single user to over 1000 users.
- Current method of alarm notification
- Control Panel Display, in the event of an alarm being raised the SBES control panel displays the alarm alert message on the LCD display, in addition an internal siren can be triggered or muted if required.
- Alternative methods of alarm notification
- SBES Radio Pagers, alarms can be displayed on alpha numeric radio pagers.
- SMS Text Messages, alarms can be sent direct to mobile telephones.
- Speech Messages, the telecom modules can be programmed with up to 10 telephone numbers, which upon alarm activation the system will automatically dial the programmed numbers and relay the alarm message.
- Beacon Sounders, beacon sounders can be activated on alarm activation.

Comment

- The Lifesaver system is active and supported by clear Standard Operating Procedures (SOP) for the Telephonists to implement on alarm activation
- The Telephonists instructions are not date stamped when they were last reviewed
- There is no date when the system was fully tested or maintained
- There is reliance on human interaction by the Telephonist to raise the alarm activation to the next escalation level, this should be considered in any future rationalisation to Worthing Hospital

Figure 1 – Lifesaver control panel and local instructions

- **New Controls Methodology (End User Internal / External System Access)**
  - To allow the associated critical alarm stakeholders view the Healthy / Fault condition of the critical alarms. A "View only North Commander 2.0 controller" will be connected to the Primary North Commander 2.0 controller by RS485 protocol *(this allows for no physical connection over IP to the Primary controller)*
  - The "View only North Commander 2.0 controller will be connected to the site IT network via IP and allow the stakeholders view the critical alarm Healthy / Fault condition of the associated critical alarms via web pages.
  - Integration onto the Trust IT Network will be via North Building Technologies systems and protocol drivers and GSM modems. It is understood that security of access is important and that close liaison with the Trust IT Department is essential.
  - At the time of drafting this specification the client has confirmed that all current functional critical alarms were to be retained and integrated

Note: It is recommended that the Controls Specialist conducts a site survey to determine their critical alarm routing methodology

D10 NEW RATIONALISED CRITICAL ALARM METHODOLOGY

100.010 NEW RATIONALISED CRITICAL ALARM METHODOLOGY

The new rationalised critical alarm methodology will be a separate integrated system based on North Building Technologies Obsys technology and range of products. Communication protocols will be based on Ethernet IP, RS 485 and RS232. Each critical alarm integrated by either "software or physical digital input", and will be represented in a modular alarm panel display on the Telephonists room (both Chichester & Worthing) main control panels. The new control panel will provide a function to determine which of the two Hospitals (Chichester / Worthing) Telephonists room critical alarm panels are in "Primary" control.

- Hospital Telephonist room in control is termed "**Primary**"
- Remote unmanned Telephonist room is termed "**Secondary**"

On the trigger of a critical alarm the following actions will be generated;

- **Actions following Critical Alarm trigger**
  - The associated critical alarm healthy / fault control panel lamp will change state (green = healthy, red = fault)
  - Trigger main control panel piezo alarm buzzer
  - Generate a SMS text message and deliver to designated recipients
  - Generate an email to designated recipients (Note this will be either via the Trust email server or external email server)
  - Change state of associated critical alarm website page
  - The common critical alarm healthy / fault control panel lamp will change state (green = healthy, red = fault) on the Worthing Hospital Telephonists critical alarm panel

100.020 TELEPHONISTS ROOM MAIN CONTROL PANEL

A new "modular" critical alarm main control panel will be installed in the Chichester St Richards Telephonist's room to accommodate the new rationalised critical alarm system controls.

Note: Any existing redundant controls / panels will be removed by others.

- **New Controls Methodology (Telephonists Room)**
  - The Controls Specialist will design and install a new which will allow for central integration of all required site critical alarms
  - The new control panel will be based on North Building Technologies Obsys & product range
  - The new control panel will use Ethernet IP, RS485 and RS232 communications protocols
  - Each integrated critical alarm will be represented in a modular display format on the new control panel door, each critical alarm will have a healthy / fault status light representation on the control panel door
  - A lamp test facility will be incorporated to test all control panel lamps
  - It is assumed that all IT connectivity requirements will be provided by the clients IT Department, this includes IP addresses, subnet masks, default gateways, data points, and access to site IT switches, email server provision, etc
  - The Controls Specialist will assess the current "Active" critical alarm systems located in the Telephonists rooms (Chichester and Worthing); and determine how to integrate each critical alarm "point of trigger", this will either be achieved by a software protocol integration or by a digital input capture

- **New Controls Methodology (External to Telephonists Room)**
  - The Controls Specialist will assess critical alarm systems for which the "points of trigger" are located external to the Telephonists room and determine how many local breakout control panels are required to capture remote critical alarm "points of trigger"
  - The local breakout control panels will communicate via North Building Technologies Obsys & products via Ethernet IP or RS485 / RS232 communication protocols

C12 VALUATIONS AND INVOICE SUBMISSION

VALUATION AND INVOICE SUBMISSION

100.010 VALUATIONS
All valuations / Invoices will be submitted for approval.

100.020 STAGED INVOICING
Payment of works to the Controls Specialist will be via staged invoicing.

C11 PROGRAM OF WORKS

100.010 ENABLING WORKS

Following the award of works to the successful Controls Specialist (August 2018) will commence enabling works at the Worthing Hospital; this will include a site survey from which a project plan Gantt chart will be formulated.

C10 REMOVAL OF COMPLETE SYSTEMS

100.010 PERFORMANCE OBJECTIVES:

To provide an effective critical alarm rationalisation for Chichester St Richards NHS Hospital Telephonists room enabling a bi-directional reduced manning functionality with Worthing NHS Hospital Telephonist's room.

100.020 DESIGN PARAMETERS:

- The Electricity at Work Regulation, 1989
- Health and Safety at Work Act 1974
- Health and Safety at Work Regulations 1989
- Control of Asbestos Regulations 2012
- BS 9999: 2008 Code of practice for fire safety in the design, management and use of buildings
- BS 7671, IET Wiring Regulations, 17th Edition 3rd Amendment
- BS 5839 Fire Detection and Alarm Systems for Buildings
- BS EN 54 Fire Detection and Fire Alarm Systems
- The Waste Electrical and Electronic Equipment Directive (WEEE Directive)
- CDM Regulations 2015
- Pressure Equipment Regulations 1999
- Provision and Use of Work Equipment Regulations 1998 (PUWER)
- HSE Approved Code of Practice and Guidance L8 - The control of Legionella bacteria in water systems

100.030 GENERAL CONTROLS SPECIALIST REQUIREMENT DESCRIPTION:

The Controls Specialist shall provide a functional critical alarm renationalisation system with bi-directional functionality for both Chichester St Richards NHS Hospital and Worthing NHS Hospital Telephonist's rooms.

100.040 REMOVAL OF OBSOLETE CRITICAL ALARM SYSTEMS (NON-ACTIVE):

To site maintenance department will remove any obsolete non-active critical alarm systems and also make good and fabric requirements.

        - The various documented procedures do however contain conflicting dates so it is confusing to see which is the current in-date procedure
    - Worthing Hospital
        - There is no procedure reference book within the Telephonist Facility, all procedures are based on a "word of mouth" format and supported by a mixture of current / redundant A4 wall mounted procedures
        - There is no formal induction process
- "In Working Hours"
    - The manning of both Telephonists facilities have an increased level of manning during working hours
- "Out of Working Hours"
    - There is no response due to critical alarms not being externally to required recipients, therefore the "Worst case" as above impacts on hospital services and patients

F10 TWELVE MONTHS NEW CRITICAL ALARM SYSTEM MAINTENANCE SUPPORT

100.010 TWELVE MONTHS NEW CRITICAL ALARM SYSTEM MAINTENANCE SUPPORT
The new critical alarm system is to be supported by a twelve month support agreement. This will cover the two new (Telephonist room) control parts and local breakout control panels.

Note: The maintenance agreement will exclude all host proprietary integrated critical alarm systems.

100.020 NEW CRITICAL ALARM SYSTEM CONTROL PARTS WARRANTY
All new control parts will be supported by an inclusive twelve month warranty.

Note: The parts warranty provision will exclude all host proprietary integrated critical alarm systems.

100.040 TWELVE MONTH NEW CRITICAL ALARM SYSTEM REQUIREMENT

The Controls Specialist will provide a supply cost for a twelve month maintenance support package, which will include the following.

- **Twelve month new critical alarm system maintenance support package requirement**
  - Six general site maintenance visits;
    Three site visits for Chichester St Richards, one visit every four months
    Three site visits for Worthing, one visit every four months
  - Provide sample costs for call-out and out of hours working
  - Carry out functional test of software routines and reset
  - Check all PC hardware for operation
  - Check settings of all controllers and adjust if necessary
  - Confirm alarm handling functionality and status
  - Inspect software data for an unauthorised changes or corruption
  - Check digital inputs and alarms are correct
  - Logic is operational
  - Time programs are correct
  - Check and operate system interlocks
  - Check all terminals / wiring is secure and undamaged
  - Backup all controllers and supervisor terminals