

Date: 27/02/2024

Version: V1.0

| Category | Ref | Category 1 - 5 | NHS Assure KSAR Observation | NHS Assure KSAR Recommendation | Board Response | Board Action | Owner | Target Closeout Date | Actual Closeout Date | Evidence of Closeout | Status (RAG rating) |
|------------|-----|----------------|--|--|----------------|--------------|-------|----------------------|----------------------|----------------------|---------------------|
| Electrical | E1 | 2 | <p><u>KSAR Workbook Question 1.08 - Witness Testing</u></p> <p>There is no evidence provided confirming the strategy for witness testing and final sign-off. It is unclear what witness testing activities have been clarified, checked, or signed off for each electrical system, including all specialist CDP systems, in a pre-planned manner.</p> | <p>NHS Ayrshire & Arran and the PSCP should ensure detailed activities are confirmed, recorded, checked, and signed off for each system.</p> <p>An updated and complete witnessing tracker requires to be provided with input from all relevant parties.</p> <p>Evidence should be provided by NHS Ayrshire & Arran to confirm that an independent body has reviewed the final commissioning results for all systems.</p> | | | | | | | |
| Electrical | E2 | 3 | <p><u>KSAR Workbook 5.1 - Health Board Policy</u></p> <p>Assurance has not been provided that the health board and PSCP have considered local health board policy requirements as part of the commissioning process.</p> <p>The email and drawings that are included and titled "Fire Evacuation sign off" are not relevant to the discharge of the Health Board Policy requirements noted in question 5.1 of the Commissioning KSAR Workbook.</p> | <p>NHS Ayrshire & Arran and PSCP to provide assurance that the personnel from the Commissioning company have been trained in, and are aware of, the local electrical policy and procedures.</p> <p>NHS Ayrshire & Arran and PSCP to provide assurance that the Electrical Safety Group has been involved.</p> <p>Confirmation is required which safe system(s) of work will be implemented, including details of the relevant AE and AP's.</p> <p>NHS Ayrshire & Arran to assurance that the safe systems of work have been documented and reviewed in accordance with SHTM 06-02.</p> | | | | | | | |
| Electrical | E3 | 3 | <p><u>KSAR Workbook 5.2 - Standards and Guidance</u></p> <p>The 'Cortech & Staff Attack Commission RAMS Information' notes that the 'Method of Witness Testing' is "To be confirmed". This confirmation should be provided.</p> | <p>NHS Ayrshire & Arran and PSCP to ensure that updated Cortech commissioning RAMS are completed to note the methodology, timelines and attendances for witness testing in order to provide adequate assurance.</p> | | | | | | | |
| Electrical | E4 | 4 | <p><u>KSAR Workbook 5.2 - Standards and Guidance</u></p> <p>It was noted that several individual Inspection and Test Plans were provided, however no summary document was provided noting all personnel and their respective responsibilities.</p> | <p>NHS Ayrshire & Arran to provide details of individuals roles and responsibilities</p> | | | | | | | |
| Electrical | E5 | 3 | <p><u>KSAR Workbook 5.2 - Standards and Guidance</u></p> <p>There was no schedule of the Commissioning documentation and records that will be produced and handed over provided, therefore it is not clear how the health board and their advisors will assess the documentation as being complete.</p> | <p>PSCP to ensure that a list is developed of all Commissioning documentation and records that will be handed over during, and upon, completion of the project.</p> <p>This schedule should consider all Operating and Maintenance manuals, all certification, all installed drawings and information. This list should include information for all electrical systems, including all specialist sub-contractor systems such as data systems, fire alarms, security systems, lightning protection, etc.</p> | | | | | | | |
| Electrical | E6 | 3 | <p><u>KSAR Workbook 5.3 - Stakeholder Involvement</u></p> <p>The latest Aecom inspection report notes that the "commissioning plan & programme" are in the process of review, however there is no note of the status or closure of these reviews.</p> | <p>NHS Ayrshire & Arran to ensure that input from stakeholders in the review of commissioning documents and process is fully documented, confirming details of all parties that were involved in the review process.</p> | | | | | | | |
| Electrical | E7 | 4 | <p><u>KSAR Workbook 5.3 - Stakeholder Involvement</u></p> <p>No assurance has been provided on the process to implement and record any changes that are required as a result of findings during the commissioning process, and the extent of support required from NHS Ayrshire & Arran stakeholders.</p> | <p>NHS Ayrshire & Arran to provide assurance that any stakeholders required to support the commissioning process have been identified.</p> <p>This should include details of the escalation process and management should the Commissioning Engineers recommend any variations to the installation or settings.</p> | | | | | | | |

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| 32 | Electrical | E8 | 3 | <p>KSAR Workbook 5.3 - Stakeholder Involvement</p> <p>The NSAIS Witnessing Tracker uploaded in the 'Witnessing' folder is incomplete. The Witnessing Tracker also contains several systems that are not noted on the 'Electrical Witnessing-7-11-23'.pdf.</p> | <p>NHS Ayrshire & Arran should ensure that a Witnessing Tracker is completed for witnessing undertaken for all electrical and specialist sub-contractor systems, including evidence of attendance and sign-off for all systems.</p> | | | | | | |
| 33 | Electrical | E9 | 2 | <p>KSAR Workbook 5.3 - Stakeholder Involvement</p> <p>The 'Commissioning Info Review Tracker' is incomplete and only notes AECOM's comments, with no input from the system designers or health board.</p> <p>This tracker also only notes comments against the final certificates and as such does not provide the required assurance that documentation from earlier stages in the commissioning process has been reviewed and commented on.</p> | <p>NHS Ayrshire & Arran to ensure that the Commissioning information review process is concluded and documented, with input from relevant parties.</p> <p>In addition to the commentary on the final certificates, the board should consider documenting comments on all commissioning documentation such as the programme, commissioning plan, ITPs, visual inspection reports, as installed drawings and operating and maintenance manuals.</p> | | | | | | |
| 34 | Electrical | E10 | 4 | <p>KSAR Workbook 5.3 - Stakeholder Involvement</p> <p>The MEP Supervisor reports uploaded in the 'NEC Supervisor' folder note that the "latest commissioning information on viewpoint" is being reviewed but there are no records of the outcome of these reviews. Also the latest report provided is dated Nov 23.</p> | <p>NHS Ayrshire & Arran and PSCP to ensure that any comments on commissioning documentation are recorded. This should include details of all reviewers, their findings and any updates required.</p> | | | | | | |
| 35 | Electrical | E11 | 3 | <p>KSAR Workbook 5.4 - Accuracy of Commissioning Information</p> <p>There is no assurance provided by NHS Ayrshire & Arran that they have reviewed and signed off on the final design data that is used for commissioning, prior to commissioning commencing.</p> | <p>NHS Ayrshire & Arran to ensure that input from NHS Ayrshire & Arran representatives on the review of all final design data is fully documented.</p> | | | | | | |
| 36 | Electrical | E12 | 3 | <p>KSAR Workbook 5.4 - Accuracy of Commissioning Information</p> <p>No assurance has been provided that the as-installed condition and parameters of the installation reflects the characteristics and values of final design information.</p> | <p>NHS Ayrshire & Arran to ensure that the as-installed condition is validated against the agreed design information, to confirm the characteristics of the system to be used for commissioning.</p> <p>PSCP to ensure that this is verified and confirmed by the respective designers of each element of the electrical services on the project, including all specialist sub-contractor packages. Ensure the process is documented.</p> | | | | | | |
| 37 | Electrical | E13 | 3 | <p>KSAR Workbook 5.4 - Accuracy of Commissioning Information</p> <p>There is no evidence provided of any change control or audit processes that were used to verify and record any changes to the electrical installation and the design parameters updated as a result of any such changes.</p> | <p>NHS Ayrshire & Arran to document the change control processes in place, and confirmation of their involvement in the change controls/design changes, incorporating any changes to the systems and/or their design conditions.</p> | | | | | | |
| 38 | Electrical | E14 | 3 | <p>KSAR Workbook 5.4 - Accuracy of Commissioning Information</p> <p>Upon review of the uploaded documentation, there is no assurance that the designers have reviewed and signed off all commissioning results and certification. It is only the LV Electrical Completion Certification and Fire Alarm Certification that are currently signed off by the respective designer.</p> | <p>PSCP to ensure that all final commissioning schematics and documents have been signed off by the relevant designers, including all specialist sub-contractors/designers as appropriate.</p> <p>Note that this sign off is required in addition to the commentary provided below on the certification that was submitted.</p> | | | | | | |
| 39 | Electrical | E15 | 2 | <p>KSAR Workbook 5.4 - Accuracy of Commissioning Information - Emergency lighting documentation.</p> <p>The Emergency Lighting Lux Levels pdf uploaded notes a "fail" with regard to the emergency lighting levels, however the certificate is completed and signed off showing no such failure.</p> <p>The emergency lighting completion certificate has not been signed off by the "owner/occupier".</p> | <p>Confirmation is required as to the accuracy of the emergency lighting certification in respect to the lux levels drawings provided, and if there is an area which doesn't achieve the required lux levels.</p> <p>NHS Ayrshire & Arran should sign off the emergency lighting completion certification, following confirmation of the above point.</p> | | | | | | |

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| 20 | Electrical | E16 | 3 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information - Fire alarm documentation.</u></p> <p>The fire alarm acceptance certification has not been signed off as accepted.</p> <p>The fire alarm battery and charger load calculation sheet is incomplete.</p> <p>The fire alarm commissioning certificate does not confirm the specification that the system performs against.</p> <p>The fire alarm completion certificate is not signed off on behalf of the "customer".</p> <p>The fire alarm installation certificate is incomplete.</p> | <p>NHS Ayrshire & Arran to complete the fire alarm acceptance certificate to record their acceptance of the fire alarm system installed.</p> <p>The fire alarm system designer requires to complete and submit the battery and charger load calculation to provide verification that these secondary power supply elements of the fire alarm system have been correctly sized against the fire alarm equipment installed.</p> <p>The fire alarm commissioning certification requires to be complete to record the specification/grading that the fire alarm system complies with, from BS5839-1.</p> <p>NHS Ayrshire & Arran require to complete the fire alarm completion certificate.</p> <p>The specialist fire alarm contractor requires to provide a complete fire alarm installation certificate.</p> | | | | | | |
| 21 | Electrical | E17 | 3 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information - Lightning protection documentation.</u></p> <p>The lightning protection commissioning method statement that is provided is incomplete.</p> | <p>PSCP to ensure that all parties complete the appropriate sections of the lightning protection commissioning certification.</p> | | | | | | |
| 22 | Electrical | E18 | 2 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information</u></p> <p>Quartzelec documentation relating to the connection of the power supply from the existing Ayrshire Central Hospital network to Foxgrove.</p> <p>-The Quartzelec low voltage test sheet notes a recommendation with respect to the earthing of the existing HV switchgear.</p> | <p>NHS Ayrshire & Arran to acknowledge receipt and understanding of the recommendation made by Quartzelec in respect to the earthing of the existing HV switchgear.</p> | | | | | | |
| 23 | Electrical | E19 | 3 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information - E&I Main LV switchgear documentation</u></p> <p>The E&I Factory Acceptance Test sheet is incomplete.</p> <p>The E&I Site Acceptance test sheet is incomplete.</p> | <p>PSCP to ensure that completed and signed off Factory Acceptance Test and Site Acceptance Test documentation relating to the main LV switchgear is provided to the board for review.</p> | | | | | | |
| 24 | Electrical | E20 | 3 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information - Sub mains cabling documentation.</u></p> <p>The sub mains cable test sheet provided is incomplete.</p> | <p>PSCP to ensure that they provide completed documentation relating to all sub-main cable tests to the board for review.</p> | | | | | | |
| 25 | Electrical | E21 | 3 | <p><u>KSAR Workbook 5.4 - Accuracy of Commissioning Information - AOV documentation.</u></p> <p>The certification provided for the AOV systems is incomplete.</p> | <p>PSCP to ensure that they provide completed certification relating to all AOV systems that is populated and signed off by all respective parties to the board for review.</p> | | | | | | |
| 26 | Electrical | E22 | 3 | <p><u>KSAR Workbook 5.5 - Pre-Commissioning and Inspections</u></p> <p>No assurance was provided that NHS A&A have reviewed and accepted the pre-commissioning documentation that has been uploaded.</p> | <p>NHS Ayrshire & Arran to ensure that adequate pre-Commissioning checks and documentation, in line with SHTM 06-01 and BS7671 have been documented for all systems and have been reviewed/accepted by the health board prior to commencing works.</p> | | | | | | |
| 27 | Electrical | E23 | 2 | <p><u>KSAR Workbook 5.5 - Pre-Commissioning and Inspections</u></p> <p>Visual inspection sheets are not provided for all electrical systems such as data installation, fire alarm system, security and access control systems.</p> <p>The Visual Inspection sheets that are provided are incomplete (not signed off as being witnessed).</p> | <p>PSCP to ensure that visual inspection sheets are documented for all electrical services and specialist sub contractor systems, NHS Ayrshire & Arran to ensure that these are reviewed and signed off by the PSCP and NHS Ayrshire & Arran representatives.</p> <p>Ensure that the pre-commissioning check sheets have been completed and signed-off by the contractor and health board representatives.</p> <p>Ensure that stakeholder engagement in pre-commissioning processes (IPC/Electrical Safety Group/AE/AP etc) is documented.</p> | | | | | | |
| 28 | Electrical | E24 | 3 | <p><u>KSAR Workbook 5.5 - Pre-Commissioning and Inspections</u></p> <p>The Suttons Commissioning Progress Reports are only provided up until 11/09/23, with this latest report noting a large number of commissioning tasks 'in progress' and yet to be completed and list a number of commissioning activities that have yet to commence at the time of the report.</p> | <p>PSCP to ensure that progress on the commissioning process is documented through updated commissioning reports, through to commissioning completion, to record the progress and closure of all commissioning tasks.</p> <p>Ensure that NHS Ayrshire & Arran have reviewed and accepted these reports and reporting process in order to provide assurance of due process.</p> | | | | | | |

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| Electrical | E25 | 2 | <p>Electrical 5.6 - Emergency Power Systems</p> <p>As a fixed electrical generator system is not provided for this project, the information noted in question 5.6 of the KSAR Commissioning workbook that relates to such a system is not required, however, there is no assurance that a risk assessment has been carried out on the requirements for bringing a temporary generator to site.</p> | <p>NHS Ayrshire & Arran to ensure that they develop the methodology/risk assessment of bringing a temporary generator to site, the sequence of connection, the switching sequence and the reversal of this process to remove such a temporary generator. This methodology requires to be recorded, accepted and verified by relevant stakeholders within NHS Ayrshire & Arran.</p> | | | | | | | |
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| 33 | Instructions: Please insert additional rows above as required. | | | | | | | | | | |
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| 36 | 1. Action Plan Inception | | | | | | | | | | |
| 37 | Signed off by (name & position) from Health Board: | | | | | | | | | | |
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| 39 | Date: | | | | | | | | | | |
| 40 | | | | | | | | | | | |
| 41 | Signature | | | | | | | | | | |
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| 43 | 2. Action Plan Review | | | | | | | | | | |
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| 46 | Signed off by (name & position) from Health Board: | | | | | | | | | | |
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