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| **Work area/ operation** | CB11.10.403 | **Accessors** | Liam Jiang, Jeb Gabarda, Sihong Jiang | |
| **Subject Coordinator’s Name** | Gavin Paul | **Lab Supervisor’s Name** | | Michael Lee |

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| **ACTIVITY** - Describe hazardous activities related to the work area or operation. | **ASSOCIATED HAZARDS** | **INHERENT RISK**  - Harm that could occur from these hazards if controls fail or are not in place. | **EXISTING CONTROL MEASURES** | **PROPOSED CONTROL MEASURES**  - Proposed action to minimise risk to an acceptable level. | **RESIDUAL RISK LEVEL** (H,M,L) |
| Both arms moving simultaneously | Moving objects | Possibility of arms colliding with each other | Emergency switch | Sensors to detect possible collision. Have each arm move after other has stopped | L |
| Robot arm picking up “chess piece” | Moving object | “Chess piece” could drop or be flung if arm does not have a proper grip and is moving too fast | PPE | Have a safety barrier around arm to prevent pieces being launched | L |
| Leaving the robot arm unattended | Moving objects, fire hazard, electrical hazard | Arm may collide with objects or others | Turning off the robot, always having a supervisor looking after arm | Warning signs to not leave machinery unattended, teaching users to not leave machinery unattended | H |
| Robot arm moves incorrectly | Moving objects, fire hazard, electrical hazard | Cause damage to the arm, leading to a possible fire/electrical hazard | Emergency switch, PPE | Clear space between user and robot before initiating arm. Keep close observation of unexpected movement | M |
| Reprogramming the robot while active | Moving objects, electrical hazard | Arm may move in an unexpected way when user/others are in the strike zone | Keeping clear of robot when reprogramming. | Sensors to detect when user is in arm reach range | H |

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| **Approval of assessment** | I am satisfied that that the proposed controls will reduce risk to an acceptable level. **X**Yes ☐No | **Signature(s)** | Liam Jiang, Jeb Gabarda, Sihong Jiang | **Date** | 7/10/2022 |