

# CALACA POWER COMPLEX

| Title of Document          |  |  |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |                                     |  |          |            |       |                 |                               |   |          | Document ID No. |       |                 |             | INCS-SW-U1-001           |  |
|----------------------------|--|--|-------------|------------------------------|--|-------------------------------------|--|----------|------------|-------|-----------------|-------------------------------|---|----------|-----------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |  |  |             |                              | Contractor   |                                     |  |          |            |       |                 |                               |   |          | Revision No.:   |       |                 |             | 1                        |  |
| Department(s)              |  |  |             |                              | Instrumentation and Control Specialists Inc.   |                                     |  |          |            |       |                 |                               |   |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |  |  |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |                                     |  |          |            |       |                 |                               |   |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process  | Activities, Equipment, Products or Services  | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk                       | Legal Compliance (if any)  | INHERENT |            |       | RISK ASSESSMENT | HOC                           | Control Measures  | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |  |  |             |                              |  |                                     |  | Impact   | Likelihood | Risk  |                 |                               |   | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |  |  |             |                              |  |                                     |  | I        | L          | I x L |                 |                               |   | I        | L               | I x L |                 |             |                          |  |
| 1                          | Site Survey of scaffold erection area before start erecting.               | Site Evaluation for the work area. Evaluate the possible hazard and risks at the work area.  | NR          | Occupational Health & Safety | Site Hazards and Lay out   | Bodily Injury, fracture, disability | OSHS Rule 1070 Occupational Health and Environmental Control<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 2          | 8     | MEDIUM RISK     | EL<br>S<br>EC<br>A<br><br>PPE | 1. All prsnnel to have completed the site specific induction.<br>2. precise coordination<br>3. Ensure that workers are educate on spotting potential hazards.<br><br>Personnel to wear mandatory PPE's on site such as but not limited to hardhat, safety glass, safety shoes, earplug/earmuff.   | 1.843    | 1.024           | 1.887 | LOW RISK        |             |                          |  |
| 2                          | Preparation of Documents or Permit to Work (PTW).                          | Prepare necessary documents (pen and papers)   | R           | Occupational Health & Safety | Misccommunication with Project Enduser and Project Owner                                     | Delay of Permit to Work (PTW)       | OSHS Rule 1070 Occupational Health and Environmental Control<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 1        | 1          | 1     | LOW RISK        | EL<br>S<br>EC<br>A<br><br>PPE | Coordinate the activity to the Enduser and Project owner before commencing work.  | 0.800    | 0.800           | 0.640 | LOW RISK        |             |                          |  |
| 3                          | Preparation and mobilization of tools, equipment and scaffolding materials | prepare tools, equipment and materials to be used for erecting of scaffold (tubular pipes, fixed/swivel clamps, toeboards, platforms, beam clams, and all necessary scaffold materials and accessories). | NR          | Occupational Health & Safety | Hit againts personnel or property  | bodily injuries, property damage    | OSH RULE _1414 - Scaffoldings  | 4        | 3          | 12    | HIGH RISK       | EL<br>S<br>EC<br>A<br><br>PPE | 1. Check Vehicle of its road worthiness.<br><br>2. comply with plant road speed limits and driving regulations.<br>3. banksman or spotter shall be provided during loading, unloading, moving operation.<br><br>Personnel to wear mandatory PPE's on site such as but not limited to hardhat, safety glass, safety shoes, earplug/earmuff.  | 1.235    | 1.029           | 1.271 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |                                     |  |          |            |       |                 | EL<br>S<br>EC<br>A<br><br>PPE | 1. Keep access and egress routes clear and segregate the work area from others and vehicles in access areas.<br>2. remove any items that may obstruct the work activity; and<br>3. Check for any items that may cause slips, trips and falls and remove or secure them as required.<br><br>Use Suitable foot wear                           |          |                 |       |                 |             |                          |  |
| 4                          | Mobilization of Manpower   | Mobilization of manpower to the work area for the scaffolding erection   | R           | Occupational Health & Safety | Hit by moving machinery  | Bodily injury/Fatality              | OSHS Rule 1080 Personal Protective Equipment and Devices   | 5        | 3          | 15    | EXTREME RISK    | EL<br>S<br>EC<br>A<br><br>PPE | 1. Ensure all workers abide to the traffic rules and regulations in the plant.<br>2. Ensure workers use the pedestrian walkway provided during travelling.<br><br>Be extra careful when crossing the road<br><br>Personnel to wear mandatory PPE's on site such as but not limited to hardhat, safety glass, safety shoes, earplug/earmuff. | 0.500    | 0.300           | 0.150 | LOW RISK        |             |                          |  |

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|----------------------------|--|--|-------------|------------------------------|--|--|---|----------|------------|-------|-----------------|-----|--|----------|-----------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |  |  |             |                              | Contractor   |  |   |          |            |       |                 |     |  |          | Revision No.:   |       |                 |             | 1                        |  |
| Department(s)              |  |  |             |                              | Instrumentation and Control Specialists Inc.   |  |   |          |            |       |                 |     |  |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |  |  |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |  |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process  | Activities, Equipment, Products or Services                              | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk  | Legal Compliance (if any)   | INHERENT |            |       | RISK ASSESSMENT | HOC | Control Measures   | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |  |  |             |                              |  |  |   | Impact   | Likelihood | Risk  |                 |     |  | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   | I        | L          | I x L |                 |     |  | I        | L               | I x L |                 |             |                          |  |
| 5                          | Manual Loading and unloading of scaffold materials               | Loading and unloading of scaffold materials use for erection of scaffold | NR          | Occupational Health & Safety | Ergonomically hazard   | bodily injury/back injury/Hand injury  | OSHS Rule 1080 Personal Protective Equipment and Devices                                  | 4        | 3          | 12    | HIGH RISK       | EL  | 1. Ensure material is carried in small quantity to minimize the weight carried.<br>2. use of mechanical aid if necessary (crane or boomtruck)  | 0.400    | 0.300           | 0.120 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | A   | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              | PPE  | Wear Safety Gloves   |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              | Tripping and Slipping hazard   | Bodily Injury, fracture, disability  | OSHS Rule 1080 Personal Protective Equipment and Devices                                  | 4        | 2          | 8     | MEDIUM RISK     | EL  | 1. Keep access and egress routes clear and segregate the work area from others and vehicles in access areas.<br>2. remove any items that may obstruct the work activity; and<br>3. Check for any items that may cause slips, trips and falls and remove or secure them as required.<br>4. Maintain good housekeeping at work area. | 0.400    | 0.200           | 0.080 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
| A                          | 1. avoid carrying large material that could obstruct view ahead. |  |             |                              |  |  |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
| PPE                        | Ensure slip anti slip resistant shoe are worn                    |  |             |                              |  |  |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
| 6                          | Preparation of work area   | Asses work area access and weather condition                             | NR          | Occupational Health & Safety | Poor access and egress   | Bodily Injury  | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 2          | 8     | MEDIUM RISK     | EL  |  | 0.400    | 0.200           | 0.080 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | EC  | Make sure all access and egress, access ladders, steps and ramps are safe and secure.  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | A   | 1. All personnel to have read and understood the RA that is specific for their area of work.<br>2. RA is to be modified where and when necessary to reflect the changing work area.  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              | PPE  | Personnel to wear mandatory PPE's on site such as but not limited to hardhat, safety glasses, safety shoes, earplugs/earmuffs. |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              | Poor or bad weather condition  | Bodily injuries, property damage   | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 2          | 8     | MEDIUM RISK     | EL  | Immediately cease work in hazardous weather condition such as:<br>1. strong winds that may cause loss of balance.<br>2. Rain is causing a slippery work surface.   | 0.400    | 0.200           | 0.080 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
| A                          |  |  |             |                              |  |  |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
| PPE                        |  |  |             |                              |  |  |   |          |            |       |                 |     |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              | Ergonomally hazards  | bodily injury/back pain  | OSHS Rule 1080 Personal Protective Equipment and Devices                                  | 4        | 3          | 12    | HIGH RISK       | EL  | Ensure material is carried in small quantity to minimize the weight.   | 1.024    | 0.768           | 0.786 | LOW RISK        |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
|                            |  |  |             |                              |  |  |   |          |            |       |                 | A   | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)<br>3. avoid awkward position to prevent body pain/back pain.   |          |                 |       |                 |             |                          |  |

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| Department(s)              |   |  |             |                              | Instrumentation and Control Specialists Inc.   |   |   |          |            |       |                 |   |  |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |   |  |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |   |          |            |       |                 |   |  |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process                         | Activities, Equipment, Products or Services  | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk                               | Legal Compliance (if any)   | INHERENT |            |       | RISK ASSESSMENT | HOC   | Control Measures   | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |   |  |             |                              |  |   |   | Impact   | Likelihood | Risk  |                 |   |  | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   | I        | L          | I x L |                 |   |  | I        | L               | I x L |                 |             |                          |  |
| 7                          | Erection/Modification of scaffolding        | Lay Sole board, if required place base plates at suitable location   | NR          | Occupational Health & Safety | Pinch point, sharp edges around the base plate   | bodily injury/hand injury/cuts              | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 4          | 16    | EXTREME RISK    | PPE   |  | 1.475    | 2.048           | 3.021 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | EL  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | A   | 1. Educate worker on proper hand placement<br>2. Buddy buddy system<br>3. proper communication and coordination before lifting tubular pipes.<br>4. provide an awareness training regarding line of fire and hand finger safety. |          |                 |       |                 |             |                          |  |
| PPE                        | Ensure hand gloves is worn in any operation |  |             |                              |  |   |   |          |            |       |                 |   |  |          |                 |       |                 |             |                          |  |
| 8                          | Install the lift ledgers and transoms       | pitch the standard at spacing of not more than 2.5m apart. Secure foot-tie at inner side of not more than 460mm from ground. | NR          | Occupational Health & Safety | Ergonomally hazards  | bodily injury/back pain                     | OSHS Rule 1080 Personal Protective Equipment and Devices                                  | 4        | 3          | 12    | HIGH RISK       | EL  |  | 1.612    | 0.400           | 0.645 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | S   | Ensure material is carried in small quantity to minimize the weight.   |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | A   | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)<br>3. avoid awkward position to prevent body pain/back pain.                             |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | PPE   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              | Pinch point, sharp edges around the base plate   | bodily injury/hand injury/cuts              | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 4          | 16    | EXTREME RISK    | EL  |  | 1.843    | 2.048           | 3.775 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | EC  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | A   | 1. Educate worker on proper hand placement<br>2. Buddy buddy system<br>3. proper communication and coordination before lifting tubular pipes.<br>4. provide an awareness training regarding line of fire and hand finger safety. |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | PPE   | Ensure hand gloves is worn in any operation  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              | Hit by falling scaffold tubes, ratchet spanner and coupling                                  | Bodily injury/ fatality/ damage to property | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EL  |  | 1.129    | 0.753           | 0.850 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       |                 | EC  | 1. Ensure vertical tubes are not releasd until the foot ties are securely installed. 2. ensure ratchet spanner is secured to the erectors body.  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       | A               | 1. Ensure worker are trained and qualified to erect, dismantle or modify scaffold.<br>2. Ensure close supervision<br>3. implement a buddy system for assistance to hold vertical tubes during securing of foot-tie. |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       | PPE             | Ensure wearing of proper/basic PPE's such as but not limited to Haardhat, Safety shoes, safety glass, hand gloves.  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |   |          |            |       | EL              |   |  |          |                 |       |                 |             |                          |  |

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|----------------------------|----------------------------------|--|-------------------------|---|--|---|---|--------------|------------|--|-----------------|-------|--|----------|-----------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |                                  |  |                         |   | Contractor   |   |   |              |            |  |                 |       |  |          | Revision No.:   |       |                 |             | 1                        |  |
| Department(s)              |                                  |  |                         |   | Instrumentation and Control Specialists Inc.   |   |   |              |            |  |                 |       |  |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |                                  |  |                         |   | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |   |              |            |  |                 |       |  |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process              | Activities, Equipment, Products or Services                                  | R/ NR/ A/ E             | Risk Category   | Aspect / Hazard  | Impact / Risk                               | Legal Compliance (if any)   | INHERENT     |            |  | RISK ASSESSMENT | HOC   | Control Measures   | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |                                  |  |                         |   |  |   |   | Impact       | Likelihood | Risk   |                 |       |  | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   | I            | L          | I x L  |                 |       |  | I        | L               | I x L |                 |             |                          |  |
| 9                          | Erect working flatform           | Install temporary platform (at least 500mm wide) and temporary access ladder | NR                      | Occupatio<br>nal Health & Safety  | Ergonomally hazards  | bodily injury/back pain                     | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4            | 3          | 12   | HIGH RISK       | S     | Ensure material is carried in small quantity to minimize the weight.   | 1.024    | 0.768           | 0.786 | LOW RISK        |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | EC    |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | A     | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)<br>3. avoid awkward position to prevent body pain/back pain.                             |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | PPE   |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  | NR                      | Occupatio<br>nal Health & Safety  | Pinch point, sharp edges around the base plate   | bodily injury/hand injury/cuts              | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4            | 4          | 16   | EXTREME RISK    | EL    |  | 1.843    | 2.048           | 3.775 | LOW RISK        |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | S     |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | EC    |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | A     | 1. Educate worker on proper hand placement<br>2. Buddy buddy system<br>3. proper communication and coordination before lifting tubular pipes.<br>4. provide an awareness training regarding line of fire and hand finger safety. |          |                 |       |                 |             |                          |  |
|                            |                                  |  | NR                      | Occupatio<br>nal Health & Safety  | Hit by falling metal, decking, ladder, ratchet spanner and coupling.                         | Bodily injury/ fatality/ damage to property | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5            | 3          | 15   | EXTREME RISK    | EL    |  | 1.129    | 0.753           | 0.850 | LOW RISK        |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | S     |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | EC    | 1. Ensure metal decking, ladder are not released until it is secured.<br>2. Ensure ratchet spanner is secured to the erectors body.  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              |            |  |                 | A     | 1. Ensure worker are trained and qualified to erect, dismantle or modify scaffold.<br>2. Ensure close supervision<br>3. implement a buddy system for assistance to hold the flatform during securing.                            |          |                 |       |                 |             |                          |  |
| NR                         | Occupatio<br>nal Health & Safety | Falling from height/drop object or small materials /falling of ladder        | Bodily Injury/ fatality | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5  | 3   | 15  | EXTREME RISK | EL         | Stop work if severe weather condition (wind speed is above 16 knots).  | 0.079           | 0.053 | 0.004  | LOW RISK |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              | S          |  |                 |       |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              | EC         | 1. work area to be barriered off by suitable means to prevent access of unauthorized personnel.<br>2. Install independent lifline for anchoring points of lanyard encase of sacfold collapse.<br>3. Secure tools using nylon rope, provision of tool bag for small object to prevent from falling. |                 |       |  |          |                 |       |                 |             |                          |  |
|                            |                                  |  |                         |   |  |   |   |              | A          | 1. must be supplemented by the posting of prominently located signage.<br>2. secure PTW with secondary PTW for W@H<br>3. ensure 100% tie-off of FBH lanyard  |                 |       |  |          |                 |       |                 |             |                          |  |

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| Title of Document          |   |  |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |   |  |          |            |       |  |   |  |          | Document ID No. |       |                 |             | INCS-SW-U1-001           |  |
|----------------------------|---|--|-------------|------------------------------|--|---|--|----------|------------|-------|--|---|--|----------|-----------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |   |  |             |                              | Contractor   |   |  |          |            |       |  |   |  |          | Revision No.:   |       |                 |             | 1                        |  |
| Department(s)              |   |  |             |                              | Instrumentation and Control Specialists Inc.   |   |  |          |            |       |  |   |  |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |   |  |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |  |          |            |       |  |   |  |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process                               | Activities, Equipment, Products or Services  | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk                           | Legal Compliance (if any)  | INHERENT |            |       | RISK ASSESSMENT  | HOC   | Control Measures   | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |   |  |             |                              |  |   |  | Impact   | Likelihood | Risk  |  |   |  | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  | I        | L          | I x L |  |   |  | I        | L               | I x L |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | PPE<br>1. personnel to wear safety helmets and footwear.<br>2. personnel to wear suitable full body harness with double lanyards. |  |          |                 |       |                 |             |                          |  |
| 10                         | Erection of Edge protection, ladder and toe board | Erection of scaffolding protection by means of toe board, install ladder to access each individual lift. | NR          | Occupational Health & Safety | Falling from height/fall of person during erection and dismantle/falling of ladders          | Serious injury/ fatality                | OSH RULE _ 1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK   | EL  | Stop work if severe weather condition (wind speed is above 16 knots).  | 0.129    | 0.086           | 0.011 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | S   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | EC  | 1. Ensure ladder is tie-down by putting couplers of scaffold wires.<br>2. install independent life line for anchoring of FBH lanyard.  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | A   | 1. must be supplemented by the posting of prominently located signage.<br>2. secure PTW with secondary PTW for W@H<br>3. ensure 100% tie-off of FBH lanyard<br>4. ensure all workers has trained and aware of working at heights<br>5. ensure close monitoring and supervision<br>6. avoid over reaching to prevent personnel from accidental falling. |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | PPE   | 1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |          |                 |       |                 |             |                          |  |
|                            |   |  | NR          | Occupational Health & Safety | Ergonomically hazards  | bodily injury/ back pain/ muscle strain | OSH RULE _ 1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 3          | 12    | HIGH RISK  | EL  |  | 0.803    | 0.602           | 0.483 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | S   | Ensure material is carried in small quantity to minimize the weight.   |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | EC  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | A   | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)<br>3. avoid awkward position to prevent body pain/back pain.<br>4. avoid over reaching to prevent muscle strain  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | PPE   |  |          |                 |       |                 |             |                          |  |
|                            |   |  | NR          | Occupational Health & Safety | Pinch point, sharp edges around the base plate   | bodily injury/hand injury/cuts          | OSH RULE _ 1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 4          | 16    | EXTREME RISK   | EL  |  | 1.475    | 1.638           | 2.416 | LOW RISK        |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | S   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | EC  |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | A   | 1. Educate worker on proper hand placement<br>2. Buddy buddy system<br>3. proper communication and coordination before lifting tubular pipes.<br>4. provide an awareness training regarding line of fire and hand finger safety.   |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       |  | PPE   | Ensure hand gloves is worn in any operation  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            | EL    | no modification is to made to the scaffold, specially removal of ties or structural members. |   |  |          |                 |       |                 |             |                          |  |
|                            |   |  |             |                              |  |   |  |          |            |       | S  |   |  |          |                 |       |                 |             |                          |  |

# CALACA POWER COMPLEX

| Title of Document          |                     |  |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |   |   |          |            |       |                 |     |  |          | Document ID No. |       |                 | Revision No.:  |                          |  |
|----------------------------|---------------------|--|-------------|------------------------------|--|---|---|----------|------------|-------|-----------------|-----|--|----------|-----------------|-------|-----------------|----------------|--------------------------|--|
| Division ( If applicable ) |                     |  |             |                              | Contractor   |   |   |          |            |       |                 |     |  |          | Revision No.:   |       |                 | 1              |                          |  |
| Department(s)              |                     |  |             |                              | Instrumentation and Control Specialists Inc.   |   |   |          |            |       |                 |     |  |          | Effective Date: |       |                 | Oct 15-21,2018 |                          |  |
| Activity                   |                     |  |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
| Item No.                   | Procedure / Process | Activities, Equipment, Products or Services                                  | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk                                   | Legal Compliance (if any)   | INHERENT |            |       | RISK ASSESSMENT | HOC | Control Measures   | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan    | Opportunities Identified |  |
|                            |                     |  |             |                              |  |   |   | Impact   | Likelihood | Risk  |                 |     |  | Impact   | Likelihood      | Risk  |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   | I        | L          | I x L |                 |     |  | I        | L               | I x L |                 |                |                          |  |
|                            |                     |  | NR          | Occupational Health & Safety | Collapse of scaffold when erected and during dsmantle  | Serious injury/ fatality / property damage      | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EC  | 1. Structural design of scaffold must be review and sign by a structural engineer.<br>2. Scaffolds to be located upon firm and solid foundations that are capable of withstanding all impose load.<br>3. scaffold to be physically tied throughout all satges of erection and dismantling.   | 0.230    | 0.154           | 0.035 | LOW RISK        |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | A   | 1. All sacaffolders must be a NCII Certified<br>2. Ensure that scaffolding working load is not exceeded or overloaded.<br>3. level of material stored on the scaffold should be kept to the lowest possible level at all times.<br>4. Use the scaffold in accordance withthe loading specified on the hand over certificate/scaffold tag                     |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | PPE | Ensure wearing of proper/basic PPE's such as but not limited to Haardhat, Safety shoes, safety glass, hand gloves.   |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  | NR          | Occupational Health & Safety | Struck by Scaffolding when erected   | Bodily injuries, fracture, disability, fatality | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EL  |  | 1.843    | 1.229           | 2.265 | LOW RISK        |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | EC  |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | A   | 1. scaffold must be erected by a person holding a certificate of competency for scaffolding.<br>2. ensure buddy system when lifting tubular pipe to prevent struck by injuries.<br>3. provide safe means of raisisng, lowering and storing tools, scaffold materials and debris.<br>4. make sure safe distance are maintained to prevent struck by injuries. |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | PPE | Ensure wearing of proper/basic PPE's such as but not limited to Haardhat, Safety shoes, safety glass, hand gloves.   |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  | NR          | Occupational Health & Safety | Incomplete scaffold structure/ scaffold collapsed  | Bodily injury/ property damage                  | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 3          | 12    | HIGH RISK       | EL  | unauthorized removal of interference with scaffold components  | 0.202    | 0.042           | 0.008 | LOW RISK        |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | EC  | Scaffold inspected by competent person prior to use  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | A   | 1. Scaffold to be barricaded toprevent unauthorized used.<br>2. make sure all scaffold components stayin place until the scaffold is dismantled.   |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | PPE | Ensure wearing of proper/basic PPE's such as but not limited to Hardhat, Safety shoes, safety glass, hand gloves.  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 |     |  |          |                 |       |                 |                |                          |  |
| 11                         | Use of scaffold     | Tagging of scaffolding for safe use, SLPGC safety officer conduct inspection |             |                              |  |   |   |          |            |       |                 | EL  |  |          |                 |       |                 |                |                          |  |
|                            |                     |  |             |                              |  |   |   |          |            |       |                 | S   |  |          |                 |       |                 |                |                          |  |

# CALACA POWER COMPLEX

| Title of Document          |                           |   |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |   |   |          |            |       |                 |  |                  |          | Document ID No. |          |                 |             | INCS-SW-U1-001           |  |
|----------------------------|---------------------------|---|-------------|------------------------------|--|---|---|----------|------------|-------|-----------------|--|------------------|----------|-----------------|----------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |                           |   |             |                              | Contractor   |   |   |          |            |       |                 |  |                  |          | Revision No.:   |          |                 |             | 1                        |  |
| Department(s)              |                           |   |             |                              | Instrumentation and Control Specialists Inc.   |   |   |          |            |       |                 |  |                  |          | Effective Date: |          |                 |             | Oct 15-21,2018           |  |
| Activity                   |                           |   |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |   |          |            |       |                 |  |                  |          |                 |          |                 |             |                          |  |
| Item No.                   | Procedure / Process       | Activities, Equipment, Products or Services   | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk   | Legal Compliance (if any)   | INHERENT |            |       | RISK ASSESSMENT | HOC  | Control Measures | RESIDUAL |                 |          | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |                           |   |             |                              |  |   |   | Impact   | Likelihood | Risk  |                 |  |                  | Impact   | Likelihood      | Risk     |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   | I        | L          | I x L |                 |  |                  | I        | L               | I x L    |                 |             |                          |  |
|                            |                           | prior to use the scaffold.  | NR          | Occupational Health & Safety | Fall from height /Fall from scaffold or working platform                                     | serious injury/ disability/ fatality                              | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.  | 0.903            | 0.602    | 0.544           | LOW RISK |                 |             |                          |  |
| 12                         | working on/below scaffold | working on scaffold for the installation works, cable pulling and other work at heights activities. | NR          | Occupational Health & Safety | Fall of materials  | Bodily injury, disability, fatality, property or equipment damage | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EL<br><br>S<br>EC<br>1. All Raising and lowering of materials to be carried out in controlled manner (i.e. hand to hand, by light-line, nylon rope and fitting bags.)<br>2. Provide safety nets if necessary<br><br>A<br>1. post warning signs and work within the sealed area<br>2. Only the material being used to be out on the scaffold until boarded areas are erected to store.<br>3. materials to be stored in a safe and secure manner, to prevent them accidentally falling or being knocked off the working platform when at height.<br>4. Ensure close monitoring and supervision.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber. | 0.903            | 0.602    | 0.544           | LOW RISK |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   | NR          | Occupational Health & Safety | Fall from height /Fall from scaffold or working platform                                     | serious injury/ disability/ fatality                              | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   | 0.632            | 0.421    | 0.266           | LOW RISK |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |
|                            |                           |   |             |                              |  |   |   |          |            |       |                 | EL<br><br>S<br>EC<br>1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifline<br><br>A<br>1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times.<br><br>PPE<br>1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |                  |          |                 |          |                 |             |                          |  |

# CALACA POWER COMPLEX

| Title of Document          |   |   |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |   |   |          |            |       |                 |     |   |          | Document ID No. |       |                 |             | INCS-SW-U1-001           |  |
|----------------------------|---|---|-------------|------------------------------|--|---|---|----------|------------|-------|-----------------|-----|---|----------|-----------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |   |   |             |                              | Contractor   |   |   |          |            |       |                 |     |   |          | Revision No.:   |       |                 |             | 1                        |  |
| Department(s)              |   |   |             |                              | Instrumentation and Control Specialists Inc.   |   |   |          |            |       |                 |     |   |          | Effective Date: |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |   |   |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |   |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
| Item No.                   | Procedure / Process   | Activities, Equipment, Products or Services   | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk   | Legal Compliance (if any)   | INHERENT |            |       | RISK ASSESSMENT | HOC | Control Measures  | RESIDUAL |                 |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |   |   |             |                              |  |   |   | Impact   | Likelihood | Risk  |                 |     |   | Impact   | Likelihood      | Risk  |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   | I        | L          | I x L |                 |     |   | I        | L               | I x L |                 |             |                          |  |
| 13                         | Dismantle scaffold  | Scaffold dismantled in accordance with plant safety, Enduser and supplier instruction | NR          | Occupational Health & Safety | falling of Materials   | Bodily injury, disability, fatality, property or equipment damage   | OSH RULE _1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 5        | 3          | 15    | EXTREME RISK    | EL  | 1. All Raising and lowering of materials to be carried out in controlled manner (i.e. hand to hand, by light-line, nylon rope and fitting bags.)<br>2. Provide safety nets if necessary | 0.903    | 0.602           | 0.544 | LOW RISK        |             |                          |  |
|                            |   |   |             |                              |  |   |   |          |            |       |                 | S   |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   |          |            |       |                 | EC  |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              | A  | 1. post warning signs and work within the sealed area<br>2. Only the material being used to be out on the scaffold until boarded areas are erected to store.<br>3. materials to be stored in a safe and secure manner, to prevent them accidentally falling or being knocked off the working platform when at height.<br>4. Ensure close monitoring and supervision.  |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              | PPE  | 1. personnel to wear suitable full body harness with double lanyards and shock absorber.  |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              | EL   | 1. Scaffold to be dismantled in accordance with manufacturers or supplier instruction.  | 1.032   | 0.688    | 0.710      |       | LOW RISK        |     |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   |          |            |       |                 |     |   | S        |                 |       |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   |          |            |       |                 |     |   | EC       |                 |       |                 |             |                          |  |
|                            |   |   |             |                              | A  | 1. Make sure area beneath and around the scaffold is kept at all times during deconstruction.<br>2. Make sure the lower ties are only removed when the scaffold is dismantled down to that level to avoid collapse.<br>3. Make sure ropes for lowering equipment are securely tied.<br>4. Make sure safe distance are maintained at alltimes during the dismantling process.<br>5. ensure 100% tie-off of FBH lanyard |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
| PPE                        | 1. personnel to wear suitable full body harness with double lanyards and shock absorber.  |   |             |                              |  |   |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
| EL                         | 1. Complete edge protection to working platform<br>2. safe access and egress from the scaffold must be provided<br>3. Installed independent lifeline  | 0.632   | 0.421       | 0.266                        | LOW RISK   |   |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   | S        |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
|                            |   |   |             |                              |  |   |   | EC       |            |       |                 |     |   |          |                 |       |                 |             |                          |  |
| A                          | 1. Secure supporting PTW for working at heights<br>2. Ensure close supervision<br>3. Ensure 100% tie-off of full body harness lanyard<br>3. ensure 3 point of contact while descending and ascending on scaffold ladder and working platform.<br>4. Make sure all workers stayfully within the scaffold at all times. |   |             |                              |  |   |   |          |            |       |                 |     |   |          |                 |       |                 |             |                          |  |



# CALACA POWER COMPLEX

| Title of Document          |   |   |             |                              | Risk Assessment for Scaffolding Erection-SCPC Unit 1 Cable Replacement from Field to DCS/MCC |                                     |  |          |            |                                |                 |     |  |          | Document ID No.     |       |                 |             | /NCS-SW-U1-001           |  |
|----------------------------|---|---|-------------|------------------------------|--|-------------------------------------|--|----------|------------|--------------------------------|-----------------|-----|--|----------|---------------------|-------|-----------------|-------------|--------------------------|--|
| Division ( If applicable ) |   |   |             |                              | Contractor   |                                     |  |          |            |                                |                 |     |  |          | Revision No.:       |       |                 |             | 1                        |  |
| Department(s)              |   |   |             |                              | Instrumentation and Control Specialists Inc.   |                                     |  |          |            |                                |                 |     |  |          | Effective Date:     |       |                 |             | Oct 15-21,2018           |  |
| Activity                   |   |   |             |                              | Erection, Modification and dismantling of scaffolding at Unit-1 Rehab                        |                                     |  |          |            |                                |                 |     |  |          |                     |       |                 |             |                          |  |
| Item No.                   | Procedure / Process                         | Activities, Equipment, Products or Services | R/ NR/ A/ E | Risk Category                | Aspect / Hazard  | Impact / Risk                       | Legal Compliance (if any)  | INHERENT |            |                                | RISK ASSESSMENT | HOC | Control Measures   | RESIDUAL |                     |       | RISK ASSESSMENT | Action Plan | Opportunities Identified |  |
|                            |   |   |             |                              |  |                                     |  | Impact   | Likelihood | Risk                           |                 |     |  | Impact   | Likelihood          | Risk  |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  | I        | L          | I x L                          |                 |     |  | I        | L                   | I x L |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | PPE | 1. personnel to wear suitable full body harness with double lanyards and shock absorber.   |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | EL  |  |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | S   | Ensure material is carried in small quantity to minimize the weight.   |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | EC  |  |          |                     |       |                 |             |                          |  |
|                            |   |   | NR          | Occupational Health & Safety | Ergonomally hazards  | bodily injury/back pain             | OSH RULE _ 1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 3          | 12                             | HIGH RISK       |     | 1. Educate worker of correct manual lifting method.<br>2. Advice worker to seek help if the load is to heavy/large (Buddy Buddy System)<br>3. avoid awkward position to prevent body pain/back pain.<br>4. avoid over reaching to prevent muscle strain  | 0.803    | 0.602               | 0.483 | LOW RISK        |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | PPE |  |          |                     |       |                 |             |                          |  |
| 14                         | Housekeeping before, During and after (5's) | Housekeeping before, During and after (5's) | NR          | Occupational Health & Safety | slips, trips and falls at the same level   | Bodily Injury, fracture, disability | OSH RULE _ 1414 - Scaffoldings<br>OSHS Rule 1080 Personal Protective Equipment and Devices | 4        | 2          | 8                              | MEDIUM RISK     | EL  | 1. Remove and segregate materials, waste materials, store tools, equipment on their designated area<br>2. . Keep access and egress routes clear and segregate the work area from others and vehicles in access areas.<br>3. remove any items that may obstruct the work activity; and<br>4. Check for any items that may cause slips, trips and falls and remove or secure them as required. | 0.400    | 0.400               | 0.160 | LOW RISK        |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | S   |  |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | EC  |  |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | A   | 1. Make sure the work area is left clean and tidy  |          |                     |       |                 |             |                          |  |
|                            |   |   |             |                              |  |                                     |  |          |            |                                |                 | PPE | Ensure wearing of proper/basic PPE's such as but not limited to Hardhat, Safety shoes, safety glass, hand gloves.  |          |                     |       |                 |             |                          |  |
| Prepared by / Date:        |   |   |             |                              | Noted by / Date:   |                                     |  |          |            | Reviewed by / Date:            |                 |     |  |          | Approved by / Date: |       |                 |             |                          |  |
| JAYSON G. ESCAMILLAN       |   |   |             |                              |  |                                     |  |          |            | E.V. RODRIGUEZ                 |                 |     |  |          | J.D. MACATANGAY     |       |                 |             |                          |  |
| I&CS                       |   |   |             |                              | SAFETY INSPECTOR   |                                     |  |          |            | TL RISK MANAGEMENT/SAFETY HEAD |                 |     |  |          | IMS REPRESENTATIVE  |       |                 |             |                          |  |

**INSTRUCTIONS:**

Please contact Safety and Environment Department if you have questions.

|              | COLUMN  | DESCRIPTION   |   |   |   |   |             |  |             |  |   |   |              |   |
|--------------|---|---|---|---|---|---|-------------|--|-------------|--|---|---|--------------|---|
| 1            | <b>Processes, Activities, Equipment, Products or Services</b>   | <p>Enlist all processes, activities, equipment, materials and services that are covered Department's operation.</p> <p>You may refer to the following:</p> <ul style="list-style-type: none"> <li>Processes/ activities as indicated by your Departmental procedures;</li> <li>Lists of equipment which are included in your operation;</li> <li>Materials or products that you use in your operation; and</li> <li>Services that you offer to other Department or party</li> </ul>   |   |   |   |   |             |  |             |  |   |   |              |   |
|              | <b>Risk Category</b>  | Identify if it is safety, environmental, operational, etc. related.   |   |   |   |   |             |  |             |  |   |   |              |   |
| 2            | <b>R/NR/A/N/E</b>   | <p>Identify if the Process, activity, equipment, product or service mentioned is</p> <table border="1"> <tbody> <tr> <td>R</td> <td>Routine</td> <td>When operations or activity are performed in accordance to operation conditions</td> </tr> <tr> <td>NR</td> <td>Non-Routine</td> <td>When there is deviation from plan or operating conditions giving change in product specification or minor accident</td> </tr> <tr> <td>A</td> <td>Abnormal</td> <td>Abnormal condition of process, activities, equipment, product</td> </tr> <tr> <td>E</td> <td>Emergency</td> <td>All foreseeable emergency situations</td> </tr> </tbody> </table>   | R   | Routine   | When operations or activity are performed in accordance to operation conditions | NR  | Non-Routine | When there is deviation from plan or operating conditions giving change in product specification or minor accident | A           | Abnormal   | Abnormal condition of process, activities, equipment, product | E | Emergency    | All foreseeable emergency situations  |
| R            | Routine   | When operations or activity are performed in accordance to operation conditions   |   |   |   |   |             |  |             |  |   |   |              |   |
| NR           | Non-Routine   | When there is deviation from plan or operating conditions giving change in product specification or minor accident  |   |   |   |   |             |  |             |  |   |   |              |   |
| A            | Abnormal  | Abnormal condition of process, activities, equipment, product   |   |   |   |   |             |  |             |  |   |   |              |   |
| E            | Emergency   | All foreseeable emergency situations  |   |   |   |   |             |  |             |  |   |   |              |   |
| 3            | <b>Hazard / Aspect</b>  | <p>Identify hazards / aspects related to the process / task.</p> <table border="1"> <tbody> <tr> <td>Aspect</td> <td>An element or characteristic of an activity, product, or service with the environment</td> </tr> <tr> <td>Hazard</td> <td>Source, situation, or act with a potential for harm in terms of ill health or a combination of these</td> </tr> </tbody> </table>  | Aspect  | An element or characteristic of an activity, product, or service with the environment                                     | Hazard  | Source, situation, or act with a potential for harm in terms of ill health or a combination of these  |             |  |             |  |   |   |              |   |
| Aspect       | An element or characteristic of an activity, product, or service with the environment                                     |   |   |   |   |   |             |  |             |  |   |   |              |   |
| Hazard       | Source, situation, or act with a potential for harm in terms of ill health or a combination of these                      |   |   |   |   |   |             |  |             |  |   |   |              |   |
| 4            | <b>Risk / Impact</b>  | <p>Identify risk / impact of the hazard / aspect to the environment / worker.</p> <table border="1"> <tbody> <tr> <td>Impact</td> <td>Any change to the environment, whether adverse or beneficial, arising from a facility's activities, products or services.</td> </tr> <tr> <td>Risk</td> <td>Possible effect of the hazard to the worker based on the facility's activities, products or services.</td> </tr> </tbody> </table>  | Impact  | Any change to the environment, whether adverse or beneficial, arising from a facility's activities, products or services. | Risk  | Possible effect of the hazard to the worker based on the facility's activities, products or services. |             |  |             |  |   |   |              |   |
| Impact       | Any change to the environment, whether adverse or beneficial, arising from a facility's activities, products or services. |   |   |   |   |   |             |  |             |  |   |   |              |   |
| Risk         | Possible effect of the hazard to the worker based on the facility's activities, products or services.                     |   |   |   |   |   |             |  |             |  |   |   |              |   |
| 5            | <b>Legal Compliance</b>   | List down related Legal and Other Regulatory Requirements if applicable   |   |   |   |   |             |  |             |  |   |   |              |   |
| 6            | <b>Residual Risk</b>  | Risk assessment after the effective implementation of controls.   |   |   |   |   |             |  |             |  |   |   |              |   |
| 7            | <b>Controls</b>   | <p>Identify controls following the hierarchy. Note that controls belonging in the lowest may not reduce the risk (impact x likelihood), thus, an OTP may need to be prepared stronger controls.</p> <table border="1"> <thead> <tr> <th>Hierarchy of</th> <th>HOC SAFETY</th> <th>TYPE OF CONTROLS</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td></td> <td>E</td> <td>ELIMINATION</td> <td>modify a design to eliminate the hazard, e.g. mechanical lifting devices to eliminate the hazard</td> </tr> <tr> <td></td> <td>S</td> <td>SUBSTITUTION</td> <td>substitute a less hazardous material or reduce energy (e.g. lower the force, amperage, pressure, temperature, etc.)</td> </tr> </tbody> </table> | Hierarchy of  | HOC SAFETY  | TYPE OF CONTROLS  | DESCRIPTION   |             | E  | ELIMINATION | modify a design to eliminate the hazard, e.g. mechanical lifting devices to eliminate the hazard |   | S | SUBSTITUTION | substitute a less hazardous material or reduce energy (e.g. lower the force, amperage, pressure, temperature, etc.) |
| Hierarchy of | HOC SAFETY  | TYPE OF CONTROLS  | DESCRIPTION   |   |   |   |             |  |             |  |   |   |              |   |
|              | E   | ELIMINATION   | modify a design to eliminate the hazard, e.g. mechanical lifting devices to eliminate the hazard                    |   |   |   |             |  |             |  |   |   |              |   |
|              | S   | SUBSTITUTION  | substitute a less hazardous material or reduce energy (e.g. lower the force, amperage, pressure, temperature, etc.) |   |   |   |             |  |             |  |   |   |              |   |

|          |                           |  |  |  |   |
|----------|---------------------------|--|--|--|---|
|          | <b>Controls<br/>(HOC)</b> | <b>EC</b>  |  | <b>ENGINEERING<br/>CONTROLS</b>              | install ventilation systems, machine guarding, sound enclosure, etc.  |
|          |                           | <b>A</b>   |  | <b>ADMINISTRATIVE<br/>CONTROLS</b>           | safety signs, hazardous area marking, photo signs, markings for pedestrian walkways, visual sirens/lights, alarms, safety procedures, etc. inspections, access controls, safe systems of work, tagging and work permits, etc. |
|          |                           | <b>PPE</b>   |  | <b>PERSONAL<br/>PROTECTIVE<br/>EQUIPMENT</b> | safety glasses, hearing protection, face shields, harnesses and lanyards, respirators and gloves  |
| <b>8</b> | <b>Significance</b>       | Refer to Risk Assessment Matrix  |  |  |   |
| <b>9</b> | <b>OTP</b>                | If the Residual Risk is High or Extreme (10 and above), an OTP may need to be submitted to implement stronger controls to reduce the risk. |  |  |   |

|                              |
|------------------------------|
|                              |
| by your                      |
|                              |
|                              |
|                              |
| plan or w/in the             |
| ing rise to                  |
| t or services                |
|                              |
|                              |
| e that interacts             |
| human injury or              |
|                              |
| al, resulting from           |
| ties activities,             |
|                              |
|                              |
| t level (e.g., PPE)          |
| ed to formalize              |
|                              |
| g. introduce manual handling |
|                              |
| duce the system<br>essure,   |

The procedure(s) for hazard identification and risk assessment shall take into account:

| HOC<br>ENVI | TYPE OF CONTROLS | DESCRIPTION   |
|-------------|------------------|---|
| S           | Source Reduction | Don't buy it!<br>End product redesign,<br>Hazardous chemical substitution,<br>Hazardous chemical modification,<br>Purchasing and inventory control, best<br>Management practice and good housekeeping |
| W           | Waste Reduction  | Don't waste it!<br>Benchmarking, employee training, maintenance, process control<br>Process modification and equipment modification   |

|  |
|--|
| ng, interlocks,                                      |
| to-luminescent<br>varning<br>quipment<br>of working, |
| elds, safety<br>oves                                 |
|  |
| nitted to design                                     |
|  |

|          |                 |  |
|----------|-----------------|--|
| <b>R</b> | Waste Recycling | Don't throw it away!<br>Closed loop recycling, waste segregation, reuse waste, reclaim waste |
| <b>T</b> | Treatment       | Turn waste into resources!<br>Convert waste into new products, find outside users for wastes |

# IMPACT & LIKELIHOOD ASSESSMENT

| Impact Assessment   |                    |  |   |   |  |
|---|--------------------|--|---|---|--|
| <p>&gt; The level to which the risk would affect the financial results of the business and the ability of the business to deliver its strategy and objectives, e.g:</p> <p>a. Impact on achievement of strategic and corporate objectives</p> <p>b. Impact on people including customers, staff and the public</p> <p>c. Impact on reputation (e.g., due to environment/product incident)</p> <p>&gt; Impact score should consider other relevant factors in relation to risk identified based on experience/expert judgement</p> |                    |  |   |   |  |
| Impact Criteria   | Impact Level       |  |   |   |  |
|   | SCORE              |  |   |   |  |
|   | Insignificant<br>1 | Minor<br>2                                 | Moderate<br>3   | Major<br>4  | Critical<br>5  |
| Health and safety Risk  | No impact          | Self-medication; local first aid treatment | Require treatment by a medical practitioner                             | Temporary disability/Impairment, Lost time injury, Medical treatment with restricted duties | Fatality or severe irreversible/permanent disability   |
| Environmental   | No impact          | Temporary inconvenience to community       | Immediate containment / control, harm to environment, clean up required | Localized impact (DENR) reportable incident (Localized contained within the site)           | Offsite impact and DENR reportable incident (Offsite - affecting neighboring property/water); Major impact (immediate or long term harm); High potential for adverse publicity |

## CT/WORKPLACE RISK

| Likelihood Assessment  |   |  |   |                                      |   |
|--|---|--|---|--------------------------------------|---|
| <p>&gt; The chances of risks occurring based on the information below and your own management experience and intuition</p> <p>&gt; Likelihood and impact should be assessed BOTH on a Gross or Inherent (before the application of controls) and Net or Residual (after the application of controls) basis</p> |   |  |   |                                      |   |
| Likelihood Criteria  | Likelihood                                    |  |   |                                      |   |
|  | SCORE   |  |   |                                      |   |
|  | Rare<br>1                                     | Unlikely<br>2  | Likely<br>3   | Highly Likely<br>4                   | Almost Certain<br>5                     |
| Probability  | 1 out of 1,000,000 chances<br><br>0.00%       | 1 out of 100,000 chances<br><br>0.00%                              | 1 out of 10,000 chances<br><br>-0.01%                                   | 1 out of 1,000 chances<br><br>-0.10% | 1 out of 100 chances<br><br>-1%         |
|  | The event has not occurred in any industry    | The event has not occurred in the business and within the industry | The event has occurred within the industry but not yet in the business. | Has happened in the past once        | Has happened in the past more than once |
|  | Possibility of event from happening is remote |  |   |                                      |   |

## RISK ASSESSMENT MATRIX

|            |       | IMPACT |    |    |    |    |
|------------|-------|--------|----|----|----|----|
| LIKELIHOOD | SCORE | 1      | 2  | 3  | 4  | 5  |
|            | 5     | 5      | 10 | 15 | 20 | 25 |
|            | 4     | 4      | 8  | 12 | 16 | 20 |
|            | 3     | 3      | 6  | 9  | 12 | 15 |
|            | 2     | 2      | 4  | 6  | 8  | 10 |
|            | 1     | 1      | 2  | 3  | 4  | 5  |

| MANAGE |                         |   |
|--------|-------------------------|---|
| VALUE  | OVERALL RISK ASSESSMENT | Occupational Health & Safety and Environment (SMPC G-IMS-01)      |
| 1 - 4  | LOW RISK (LR)           | Supervisor / worker to review and discuss prior to starting work. |



|         |                   |  |
|---------|-------------------|--|
| 5 - 9   | MEDIUM RISK (MR)  | Supervisor / worker to review and discuss prior to starting work.  |
| 10 - 12 | HIGH RISK (HR)    | Safe work method developed and validated by authorized person; detailed JSEA prepared by Supervisor with work crew; Confirm that work crew understand requirements and implement controls. |
| 13 - 25 | EXTREME RISK (ER) | Stop - Analyze work method and ensure substantial safe work controls (e.g., work permit system) are determined and applied. Revised methodology to be authorized by Responsible Manager.   |



| IMMEDIATE RESPONSE / ACTIONS TO BE TAKEN   |  |
|--|--|
| Other Risk Types<br>(Lifted from SMPC ERM Policy)  |  |
| <ul style="list-style-type: none"><li>• Action is advisable if it is cost effective</li><li>• The issue does not necessarily warrant immediate attention but should have an agreed programme for resolution within a reasonable time if it is cost effective.</li><li>• Business concern is not likely to significantly impact the validity and accuracy of balance sheet and P&amp;L accounts but would materially affect the economy and adequacy of a process.</li><li>• Matters that generally include recommendations which will lead to a general improvement in the control environment over time or could improve economy and adequacy of a process.</li></ul> |  |

- Action required to control the risk
- Corrective action by appropriate management is required not exceeding six months.
- Business concerns are:
  - a. Significant to affect the validity and accuracy of balance sheet and P&L accounts.
  - b. Significant to affect the validity, accuracy, economy and adequacy of the process.
  - c. An internal control weakness that could lead to potential exposure to error or fraud but which are compensated for by some controls to mitigate gaps and/or deficiencies.
  - d. Area of business risk or non-compliance with legislation or regulation considered to be of such a nature that it should receive management's attention over a reasonable period.
- Value added ideas. These matters generally include recommendation which will have significant improvement on the accuracy, economy and adequacy of a process.

- Immediate action required to control the risk
- Immediate corrective action by appropriate management is required within 1 -3 months.
- Business concerns are:
  - a. Material to affect the validity and accuracy of balance sheet and P&L accounts.
  - b. Material to affect the validity, accuracy, economy and adequacy of the process.
  - c. An internal control weakness that could lead to potential exposure to error or fraud and no compensating controls exist to mitigate gaps and/or deficiencies.
  - d. High business risk area or non-compliance with legislation or regulation which is of such a serious nature that SMPC or Subsidiary could suffer material financial loss.
  - e. Contravention of any company policy, statute or regulation
- Material value added ideas. These matters generally include recommendations which will have significant improvement on the validity, accuracy, economy and adequacy of a process.

## CONTROL ASSESSMENT AND CONTROL

| ESH CONTROL         | BOTH IMPACT &<br>LIKELIHOOD | IMPACT OR<br>LIKELIHOOD | IMPACT ONLY |
|---------------------|-----------------------------|-------------------------|-------------|
|                     |                             |                         |             |
| Elimination         | 90%                         | 0%                      | 0%          |
| Substitution        | 50%                         | 0%                      | 0%          |
| Engineering Control | 51%                         | 30%                     | 0%          |
| Administrative      | 36%                         | 20%                     | 0%          |
| PPE                 | 0%                          | 0%                      | 10%         |