Global PS&S Guidance – Electrical Safety

People Safety and Security

This document contains specific guidance on the implementation of the requirements contained in the Nokia Global Electrical Safety Standard.

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Organization	People Safety and Security
Document type	Internal
Document version	Version 3.0
Document ID	SP-44ISPA3ISPS4-1013285096-140
Document location	People Safety and Security SharePoint

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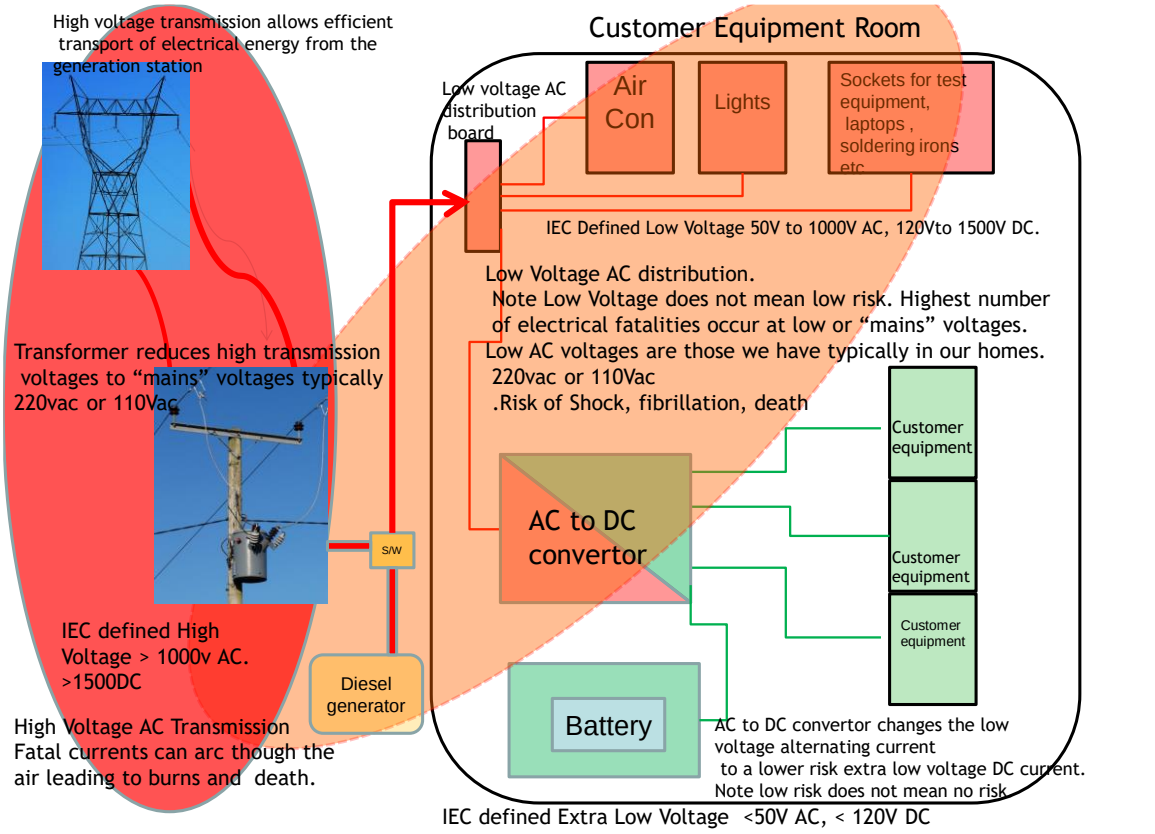
1.1 Electrical Voltage, Current, and Risk.

. In our business, we generally encounter three ranges of voltages.

- Extra Low voltage DC typically 48VDC.
- Low Voltage AC typically 220VAC
- Transmission Voltages. 10kVAC and above



Extra Low DC voltage **Low Voltage AC**

Transmission Voltage AC

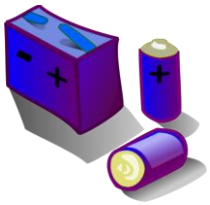
The graphic above shows the relationship between the generation, high voltage transmission, and ultimately the transformation at the customer's premises from Low voltage AC to Extra-low voltage DC which our customer's end equipment typically requires.

We in Nokia do not work on High Voltage. This is a highly specialized area and requires training and competence of a particularly high level. We only use specialized competent subcontractors who have been selected and vetted for this type of work.

We may work adjacent to high voltage equipment on Electricity Pylons when we work on base station equipment such as antenna systems, RF heads, and feeder cables mounted on the pylons. In these cases, we can work safely by keeping outside the minimum working distance defined by the pylon owner or the utility company based on the voltages concerned.

Our Fixed Network business encounters situations in which we install cables underground and may have to locate utilities or services including high voltage or low voltage cables and avoid them during site works. Special precautions must be followed in these instances.

Low Voltage AC. This is the voltage that we typically encounter in our homes or workplaces (220VAC). Do not be confused by the term "Low" as Low Voltage AC does not imply low risk. Most electrical fatalities occur due to electrocution at Low Voltage AC.



Extra Low Voltage DC

Batteries are a source of direct current and voltages. Direct current differs from alternating current in that the flow of electricity is in one direction only unlike AC where the direction is constantly changing multiple times per second. (Frequency typically 50Hz or 60 Hz). Batteries can be connected in various ways so that the voltage and the current available to power the customer's equipment can be configured. Typically, our equipment operates at - 48VDC. The battery is used to power the equipment during power failures. Large capacity batteries are used in situations where equipment is required to be powered for longer periods of time during an outage. From a safety perspective, large-capacity batteries can produce very large currents in fault conditions.

Extra-low voltage is not extra-low risk! The risk of electrocution is lower but significant risks associated with DC remain. Under short circuit conditions, arc flash can occur with the potential for permanent eye injury, severe burns can occur as can secondary injuries such as falls. We need to be aware of the risks associated with DC and follow our Life Saving Rules and do not work on DC circuits unless trained and competent to do so.

DC electrical installations that rely on batteries for backup can also present additional risks associated with gasses emitted by batteries under charge. The gases given off by charging batteries can be explosive in the right mix of gas and air and thus it is essential to ensure that batteries are well ventilated to prevent gas build-up and ignition sources are eliminated. In situations, an accidental short circuit can release a spark that can ignite the gas mixture and cause an explosion and fire.

Electrical Safety Standard Requirements, Point by Point Guidance

People's Non-Negotiable Requirements:

3.1	**General Awareness**	
	3.1.1 Everyone working for Nokia, whose role involves working on or coming into proximity of electrical systems, circuits and installations must receive sufficient training related to the electrical risks to which they are exposed.	All individuals working for Nokia (employees and subcontractors) meeting this description must be identified and must receive General Electrical Awareness training.
	3.1.2 The training must cover the risks arising from Nokia or customer electrical equipment and the associated electrical installation i.e., fixed wiring, switches breakers, protective devices, power supplies, or batteries, in the general vicinity. **3.1.3** The training must cover the defined rules, expected behaviours and controls detailed in this standard. **3.1.4** The training must cover the "right to refuse" to work on something they believe is dangerous and the escalation process to be	The minimum requirements of the General Awareness training are defined in this section of the Electrical Safety Standard. These requirements must be integrated into the scope of the localized training. The concept of "Right to Refuse" must be addressed during the training such that all affected workers understand that they are empowered to refuse to undertake work that might put themselves or others in danger and without fear of retribution. Extract from our Life Saving Rules training. "We must respect each other's right to refuse to do something we believe is dangerous. "This may take confidence, but you can remind others of the life-saving Rules and why it is vital that we always follow them – no matter what!"

	followed for both unsafe practices and reporting unsafe installations.	
3.2	**Competence and Supplier Qualification**	
	3.2.1 Only suppliers that have been H&S qualified to deliver electrical work are to be used.	This requirement is aligned with our Life Saving rule on Electrical Safety (DO NOT WORK ON ANY ELECTRICAL SYSTEM UNLESS YOU ARE TRAINED.). All suppliers who provide electrical services must be evaluated and approved for such work by Procurement. We need to identify and ensure that all the suppliers we use to undertake electrical work are qualified to do so. This includes suppliers that work on our projects in the field but also those who work in our premises and labs.
	3.2.2 Only persons, including subcontractors competent to design, install, commission, maintain or decommission electrical circuits and equipment may do so.	This requirement is aligned with our Life Saving rule on Electrical Safety (DO NOT WORK ON ANY ELECTRICAL SYSTEM UNLESS YOU ARE TRAINED.). Only a competent person may undertake electrical work. A competent person is someone possessing the following attributes: Technical knowledge (acquired by academic study or through a combination of academic study and practical training) of electricity and electrical work. Knowledge and understanding of the system to be worked on and practical experience of working on that system. Understanding of the hazards which may arise during the work and the precautions which need to be taken. Knowledge of relevant local safety regulations; and Ability to recognise at all times whether it is safe to continue. Hold the necessary locally required certifications.

		The Electrical Standard requires that only those competent to undertake electrical work may do so. Workers may achieve competence through a combination of academic education, on-the-'s training, apprenticeships, experience, and knowledge. In many countries including all member states of the European Union, national registration schemes are in place to validate, confirm and grant status to work on low voltage AC circuits. Workers may be competent to work on Extra Low Voltage circuits if trained to do so and are properly supervised. If there is no recognized national or regional authority that certifies suitably qualified electrical workers, criteria for the job will need to be established and those criteria are applied when approving contractors (and their employees) to work on electrical equipment or the electrical installation. The criteria used, should reflect the category of electrical work to be undertaken (from Category1 to 4). In addition, all workers who will work on a site where electrical work is undertaken must receive basic awareness training and understand the prohibition on electrical work unless qualified to do so and the dangers of working adjacent to electrical work. It is up to the employer to demonstrate that the worker they task with electrical work is competent to do that work. Ask the subcontractor to supply evidence of competency, (Training records, Evidence of qualification, experience). The employer must ensure that electrical work is appropriately supervised and monitored.

<table>
<tr>
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<td>Appendix 1 of this Guidance Document categorizes the electrical tasks typically undertaken by Nokia and its subcontractors. A summary is provided here:

<table>
<tr><th>Category of work</th><th>Description</th></tr>
<tr><td>CAT 1</td><td>Plug in /out only. No live work. (AC &DC)</td></tr>
<tr><td>CAT 2</td><td>Minor electrical works, formal training, under supervision. Absolutely no live work</td></tr>
<tr><td>CAT 3 A</td><td>High-capacity DC. Qualified Electricians</td></tr>
<tr><td>CAT 4</td><td>Electrical Installation work AC and DC. Qualified Electricians</td></tr>
<tr><td>High Voltage</td><td>(>1000 AC, >1500 DC) except by specialized High Voltage electricians</td></tr>
</table>

In some countries (i.e., EU member states) it is illegal for an unregistered/unqualified person to undertake any low voltage electrical work.
In situations where local legal requirements supersede this guidance, those legal requirements must be met.</td>
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<tr>
<td></td>
<td>3.2.3 Where local electrical registration/certification schemes exist, only registered/certified electrical contractor’s personnel will be used for electrical work; Records of certifications or evidence of qualifications must be held and made available on request by subcontractors;</td>
<td>In many countries including all member states of the European Union, national registration schemes are in place to validate, confirm and grant status to work on low voltage AC circuits (CAT4).
Our categories of electrical work highlight the fact that not everyone who does certain low-risk electrical work needs to be a fully qualified electrician. Workers may be competent to work on Extra Low Voltage Circuits Category 1 and 2 if trained to do so and are properly supervised. These workers are prohibited from undertaking higher-risk work or working live.</td>
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		Nokia requires that only qualified electrical workers can work on high-capacity DC circuits due to the risks involved. It is up to the employer to demonstrate that the worker they task is competent. Ask the subcontractor to supply evidence of competency, (Training records, Evidence of qualification, experience).
	3.2.4 In countries where no such registration/certification schemes exist, further evaluation and assessment of the individual/s must be completed before they are permitted to undertake electrical work on behalf of Nokia (this must be determined and approved in-country).	In cases where no formal registration schemes exist, a local evaluation criterion must be established to examine the training, knowledge, and experience of individuals and only those meeting the criteria for each of the categories of electrical works be engaged in our projects. The evaluation should not rely entirely on paperwork to avoid reliance on false documentation. For newly selected individuals close monitoring should be used to confirm competence. In addition, all workers who will work on a site where electrical work is undertaken must receive basic electrical awareness training and understand the prohibition on electrical work unless qualified to do so and the dangers of working adjacent to electrical work. Appendix 5 below sets out the elements of an evaluation criterion.
	3.2.5 Work on high transmission voltages can only be undertaken by specialized electricians trained to work in such high voltage environments.	(>1000 AC, >1500 DC) can only be done by specialized High Voltage electricians.

3.3	**Medical Fitness to Work**	
	3.3.1 Electrical workers must be medically and physically fit to work and be assessed according to local legislation where required. **3.3.2** If no legislative requirements exist, as a minimum, a medical fitness assessment must check for the absence of colour vision deficiency, or medical conditions that might impact an individual's ability to work with electricity safely.	Electrical Workers must be medically fit to work and not suffer from medical or physical conditions that could impact their ability to do their work safely. Many countries require a medical examination annually or at other specified frequency. If this is the case the medical examinations must be done. Colour vision deficiency can affect a person's ability to distinguish colours, especially in coloured wiring situations. Electrical work can be strenuous with a long period of working on ladders and platforms, in a standing position or awkward positions. Electrical work may need to be done externally. A medical examination can ensure that the individual is capable of electrical work and that there are no medical or physical impediments to undertaking electrical work safely. Illnesses such as epilepsy, diabetes, or other medical conditions can prevent an individual from undertaking certain electrical work safely.

3.4	**Design, Installation & Maintenance of Electrical Systems**	
	3.4.1 All electrical systems and equipment must be designed and installed by a competent person in accordance with local legal requirements and must specifically consider the Intended load; electrical source capacity, cabling requirements, fault, and overload protection, means of isolation and emergency shut off, earthing and bonding.	This requirement specifies that any new extension or modification must be designed and installed by a competent person. A designer must take into account as a minimum: • The electrical load that the new or extended electrical installation will add. • Intended load; electrical source, cabling requirements, routing, rack capacity, electrical and mechanical requirements, voltage drop, fault and overload protection, means of isolation and emergency shut off, earthing and bonding. • Safe access and egress to access and maintain the equipment. • Environmental factors such as humidity, explosive atmospheres (including hydrogen gas build-up from charging batteries), or other specific conditions need to be taken into account in the design.
	3.4.2 When working on third-party premises: The site occupier/owner/customer must be consulted prior to any installation or modification of electrical systems i.e., as-built drawings, circuit diagrams, circuit loading.	Our work on customer sites can often involve alterations or extensions to existing electrical installations. It is important that we confirm with the customer that the installation can accommodate the new extension and that the alteration or extension of the installation does not compromise the overall safety of the site.

	3.4.3 Commissioning of Electrical Systems: All new and altered wiring installations must be inspected, tested, and certified by a competent person in accordance with local legislation, prior to the system being put into service.	Commissioning refers to putting the electrical installation extension or alteration into service. All electrical installations must be tested prior to being put into service. Commissioning tests include visual inspection of the wiring, connections, circuit protection and termination of the electrical circuits. A functional test of the electrical circuits and testing of the protective elements of the circuits for example Residual Current Detectors (testing to include both by introducing a test fault to ensure the RCD triggers and isolates the supply and by separately pressing the test button). Specific electrical tests may be required such as earth loop impedance tests. It is good practice to arrange for a formal commissioning certificate to be provided by the competent person undertaking the commissioning activity. Examples of certificates and the information contained can be found in BS7671:2008 for minor work and more comprehensive works. Records of testing should be made.

	3.4.4 Maintenance of Electrical Systems. **All electrical systems must be safe to use and work on and must be:** • Inspected and tested in line with manufacturers' recommendations (e.g., for UPS) and by a competent person in accordance with local legislation or where this is not specified, at a maximum interval of 5 years for fixed wiring installations. • Supported by appropriate records, including up-to-date circuit diagrams/plans. • Live/functional testing of an electrical system must only be carried out by a competent person and only after appropriate control measures have been implemented. • If the environment in which electrical systems or equipment are located poses a specific risk, maintenance requirements and schedules must reflect that additional risk.	All electrical fixed wire installations and the equipment connected as part of that electrical distribution network need to be maintained, inspected, and tested at a frequency to ensure that it remains safe to use. Electrical distribution networks can deteriorate over time due to the repetitive cycles of heating up and cooling down, similarly, the cables, switches and other passive elements can suffer degradation over time. The electrical distribution networks including associated equipment such as (UPSs, Power factor correction systems and backup generators) should be subject to preventative maintenance at a frequency determined by the equipment manufacturers and the fixed wire network at a minimum frequency of once every five years. This is predominantly a requirement for Nokia People and Places (Real Estate – Workplace Resources) to implement in our premises or labs. In a leased property situation, the requirements are typically met by the landlord. Documentation on any upgrade or extension to the fixed wire network needs to be made and recorded. Live testing of an electrical installation is very risky and shall only be undertaken by a competent person (electrician) who is (trained, certified, and knowledgeable. Additional risk reduction controls such as de-energising where possible to permit inspection, personal protective equipment (PPE) such as gloves clothing, insulating hard hats, insulating mats or blankets, safety glasses or face shields, Damp, corrosive, or high temperatures environments, can reduce the service life of the equipment or the fixed installation and a higher maintenance frequency may be appropriate.

3.5	**High Voltage Rooms**	
	3.5.1 Access must be restricted to authorized persons using physical access control.	Nokia does not work directly on high voltage equipment or high voltage supply or switching plant. Only specialized electricians qualified to undertake such work may do so. Where HV rooms are present on a customer's site, site induction should describe the risk to workers and ensure that all workers not authorised should not enter such rooms.
	3.5.2 All tools and equipment used must be specifically rated and insulated.	Nokia does not normally work on high voltage equipment or supply or switching plant. Only specialized electricians qualified to undertake such work may do so. Only suitable HV tools and equipment may be used.
	3.5.3 Barriers and signs including hazard warning signs must be in place to restrict access to the high voltage rooms and the live conductors within.	Warning signs must be fixed to notify persons of the prohibition on entry and the hazards within
3.6	**Distribution Boards/Power Supplies**	
	3.6.1 Distribution boards, power supplies and electrical panels must be fitted with guarding, screening, or shielding to prevent contact with live terminals or conductors.	Access to live parts (low voltage AC) within distribution boards, power supplies and electrical panels must be prevented. This requirement can be met by only selecting distribution boards which comply with the International Protection Marking Standard (IEC standard 605290 OR IP Code of IP2X or better. The rating 2 means that objects of a diameter of 12.5mm cannot reach or touch the inside the panel/board. This IP2X rating is often referred to as the "finger test".

	3.6.2 Distribution boards and electrical panels within publicly accessible areas must be locked.	Distribution boards (low voltage AC and extra-low voltage DC) and electrical panels within publicly accessible areas must be locked. This is to prevent unauthorized access, danger to life, vandalism, and resultant service outages. Low Voltage boards or panels should be marked with the electrical hazard symbol or alternative if local regulations require it. 
	3.6.3 Distribution boards or enclosures containing exposed live busbar systems or readily accessible uninsulated terminations are considered live.	Distribution boards or enclosures containing exposed live busbar systems or readily accessible unshrouded terminations are considered as live unless isolated and proven dead. Never take a chance. Before work can begin the distribution, board or enclosure must be isolated using an approved lock-out tag-out procedure and tested and confirmed as dead before work can begin.

3.7	**UPS, Batteries and Battery Arrays**	
	3.7.1 All UPS systems including smaller base station UPSs and the larger equipment room UPSs, must be designed, and installed in such a way that live components are insulated and guarded or enclosed to prevent inadvertent access.	Live terminals or contacts must not be accessible except for deliberate work or maintenance and only when precautions are taken. (See live working)
	3.7.2 UPS systems can store large amounts of energy at various voltages and must be maintained by competent trained specialists in accordance with the manufacturer's specifications.	Only competent persons with appropriate, knowledge, skills and experience can work on higher capacity battery systems. Where a manufacturer specifies maintenance requirements, safety precautions, personal protective equipment, maintenance training requirements and procedures, those must be followed.
	3.7.3 The battery manufacturer's gas venting requirements must be complied with in all design, installation, and maintenance operations. Failure to do could result in the accumulation of gas with a risk of explosion. The presence of the required venting arrangements must be part of site inspection regimes, with an emergency procedure in place to react to their absence.	The presence of the required venting arrangements must be part of site inspection regimes, with an emergency procedure in place to react to their absence. The emergency response to the absence of venting should be documented and include, reporting of the observation, immediate repair, if possible, the opening of vents or apertures to permit natural ventilation (whilst not compromising the security of the equipment nor permitting access to electrical connections), scheduling the repair as apriority.
	3.7.4 All tools and equipment used must be specifically rated and insulated.	Fully insulated tools must be used when working on connected batteries.

	3.7.5 All work on Nokia and customer UPS systems is to be considered as CAT 3A, therefore requiring an appropriately trained qualified electrician, unless the system capacity in ampere-hours is less than 50Ahr.	Only competent persons with appropriate, knowledge, skills and experience can work on higher capacity battery systems.

3.8	**Installation non-negotiable requirements:** **Management Requirements** Nokia People and Places (Real Estate – Workplace Resources) must ensure that:	
	3.8.1 All electrical systems located within Nokia premises are designed, installed, commissioned, decommissioned, and maintained in such a way that makes them safe to be used, worked on or nearby.	Nokia People and Places (Real Estate – Workplace Resources) must ensure that the electrical installations in our premises are designed by competent persons and that the installation is commissioned, decommissioned, and maintained throughout its operational life. In many cases, People and Places (Real Estate – Workplace Resources) will select and engage professional competent resources to meet this requirement via a third-party contract. People and Places (Real Estate – Workplace Resources) may rely on the landlord to meet this requirement in leased buildings. Where local regulations stipulate the frequency of the electrical installation preventative maintenance, that maintenance schedule must be met as a minimum.
	3.8.2 Up-to-date circuit diagrams and plans are maintained for all electrical systems within Nokia premises where Nokia is responsible for design, installation, or maintenance.	People and Places (Real Estate – Workplace Resources) must ensure that suitable records of the electrical installation are maintained including updating circuit diagrams and distribution plans as necessary following changes, and records of maintenance. Nokia People and Places (Real Estate – Workplace Resources) must maintain the records themselves or contract that to suitable contractors or ensure that it is being done by the landlord in a leased property.

	3.8.3 All electrical work carried out within Nokia premises is appropriately planned and managed.	People and Places (Real Estate – Workplace Resources) must ensure that all electrical work is planned and managed on Nokia premises. This requirement is necessary so that no changes, alterations, or reconfiguration of the electrical distribution network and its electrical protective arrangements are made without People and Places (Real Estate – Workplace Resources) knowledge. All electrical work must be requested and approved by People and Places (Real Estate – Workplace Resources). People and Places (Real Estate – Workplace Resources) must ensure that any electrical work including, design, installation, commissioning, testing, drawing updates and circuit loading and protection are undertaken by competent resources. People and Places (Real Estate – Workplace Resources) may subcontract any work to suitable specialist resources. No individual is authorised to commission electrical work on our premises. It must be done by People and Places (Real Estate – Workplace Resources) only.
	Nokia Laboratory/R&D/IT groups are responsible for ensuring that:	
	3.8.4 All electrical equipment, cabinets/racks, and electrical cords within their areas are suitably and safely maintained.	Nokia labs, R&D and IT are responsible for the safe use of electrical equipment and the electrical distribution network in their labs. All electrical work on equipment, racks, and power distribution arrangements must be undertaken by suitably trained and competent persons. A third-level engineering qualification does not in itself qualify an individual to undertake electrical work in a lab. Connections from the electrical supply (mains or extra-low voltage) must be safe, electrically protected (fusing, RCDs, means of isolation) and mechanically protected (suitable cable runs, suitably coated conductors, fixed securely). The labs must be subject to regular inspections and maintenance to monitoring the quality and safety of the lab electrical installations. Good housekeeping and the avoidance of fall or trip hazards should be practised in labs.

	3.8.5 All electrical work within their areas, excluding that which takes place directly on/within test equipment and racking etc., is coordinated, and controlled by Nokia WR. Only competent persons may undertake electrical work within labs.	The low voltage ac distribution network in the various labs can only be extended, altered, decommissioned, commissioned, and tested by competent persons before being handed over to the lab engineers. Where People and Places (Real Estate – Workplace Resources) manage the building then this work can only be undertaken or commissioned by People and Places (Real Estate – Workplace Resources). Arrangements may be put in place by People and Places (Real Estate – Workplace Resources) and Lab Management to identify a suitable approved competent contractor to undertake electrical work.

3.9	**Method and Practice Non-negotiables:** **Working On Live Electrical Systems**	
	3.9.1 Live working is typically prohibited, however, if it is not possible to isolate the circuits concerned, or de-energizing them creates a greater hazard, an exception process must be established which ensures: • The reasons for the work needing to be conducted live are recorded. • A safe system of work is defined by a person competent in managing live working and the controls necessary to reduce the very high risks involved. • There are at least two qualified persons present i.e., lone working is not permitted. **Note**: Swapping out circuit boards or packs that are designed to be swapped out whilst the rack or unit is powered up is not considered "live" working.	Working "Live" means touching energised or live electrical circuits. Working live is a risky activity whether it is low voltage AC or extra-low voltage DC. To eliminate risk never work live. Always isolate the circuits to be worked on. Isolating the supply and using Lock out /Tag out methods (See Appendix 4 for more on Lock out/Tag out) to ensure that the individuals doing the work maintain control and the circuits are not inadvertently made life during the work. Never work live unless it is necessary to do so. Live working can only be done by a competent person trained in live working and following a predefined procedure to do the work safely (safe system of work). Two persons are required to work live. The second person can help if things go wrong. In the case that it is necessary to work on live low voltage AC or extra low voltage DC, PPE may need to be chosen including safety glasses with side shields, face shields, arc flash face shields, rubber gloves, rubber mats, rubber blankets. PPE should be selected with reference to a documented risk assessment and precautions taken according to the risk being managed. i.e., in situations where high-capacity batteries are being worked on an arc flash face shield or arc flash suit may be deemed appropriate. Appendix 3 – Personal Protective Equipment (PPE). Sets out further guidance on the selection of PPE. Only fully insulated and correctly rated tools can be used during live work. Is testing live voltages "Live Working"? Yes, however, this can be done safely if insulating gloves and insulated test probes and a properly rated meter are used by a competent person (see Appendix 3 – Personal Protective Equipment (PPE)). Testing for voltages during commissioning or fault-finding does not require an exception process.

3.10	**Method and Practice Non-negotiables:** **Isolation of Electrical Systems**	
	3.10.1 Electrical systems must be isolated from **all sources** of electrical power prior to working on or adjacent to exposed conductors or terminals. This includes supply from backup generators, UPS, control circuits and other dual supply situations.	The safest way to work on electrical systems is to do so with the equipment or installation disconnected from the supply and proven dead. The disconnection or isolation of the equipment or installation should be total and include isolation from alternative supplies such as backup generators, separate control, or signal circuits uninterruptable power supplies (UPS) or batteries.
	3.10.2 Physical isolation methods should be used where possible i.e., removal of fuses, circuit isolators, or Lock-out /Tag-out.	The physical removal of fuses or isolators by the individual undertaking the work and the retention of those fuses or isolators by that person ensure that that person remains in control. **See Appendix 4 for more information on Lock-Out/Tag-Out.**
	3.10.3 If there is the possibility of the system being re-energized by another person, without the knowledge of the person working on the system physical isolation is mandatory.	Lock Out Tag Out is one of the primary isolation methods used whereby the supply of energy is switched out and a physical lock (with the key held by the person in charge of the lockout) is used to ensure that it cannot be switched on. The tag is completed with information including the name of the person responsible for locking out the supply. **See Appendix 4 for more information on Lock-Out/Tag-Out.**
	3.10.4 If physical isolation is not possible the switching point must be supervised for the duration of the work.	If it is not possible to physically and completely isolate the circuits, then the switching point must be supervised for the duration of the work to ensure that the circuit is not re-energised.

3.11	**Method and Practice Non-negotiables:** **Proving 'Dead'**	
	3.11.1 The system/equipment/circuit must be tested and "proved dead" using appropriate insulated test equipment prior to any work starting.	Having checked that all sources of supply have been identified and isolated and that the circuits to be worked on are physically isolated and/or locked out/tagged out, never assume that a circuit is dead prior to starting work. Prove it using instruments. ***Are you sure that the backup generator cannot inadvertently start and provide a live feed to the work area?***
	3.11.2 The test must be repeated after any interruptions such as meal breaks or needs to leave the location for any amount of time.	Where work is interrupted due to lunch breaks, end of the working day or other interruptions the circuits to be worked on must be again proved "dead" prior to restarting work.

3.12	**Method and Practice Non-negotiables:** **First Aid & Emergency Response**	
	3.12.1 An individual or individuals trained and capable of giving first aid and cardiopulmonary resuscitation (CPR) must be available on-site where electrical work Category 3A and Category 4 or any live work is undertaken.	Trained first aiders and CPR practitioners must be available on-site where electrical work on high-capacity DC systems (Category 3A) and Low voltage AC Category 4 or any live work is undertaken. The ability to respond to an emergency quickly and correctly can reduce the loss of life, the severity of the injury, and property or equipment damage. The consequences of an electrical emergency can often be of such severity that readiness to deal with such emergencies is prudent and is a requirement of our Nokia Standard. First aiders must be trained to assess the situation and without putting themselves at risk control the hazard, administer first aid or cardiopulmonary resuscitation (CPR) to persons if required and call for help as needed.
	3.12.2 A site-specific emergency plan must be in place and communicated to workers at sites where electrical work Category 3A and Category 4 are undertaken.	A site-specific emergency plan must be in place and communicated to workers at sites where electrical work is undertaken. Such a plan will have evacuation instructions, any special or site-specific instructions, alarm signal explanations, and contact numbers to both report and seek support should an emergency occur. **See Appendix 6 for an outline of the site-specific emergency plan.**

3.13	**Method and Practice Non-negotiables:** **Working Adjacent to Live Electrical Systems**	
	3.13.1 Buried/Hidden Cables The location of all services must be identified using a previously determined and consistent method prior to any intrusive works. This includes before cutting, piercing, or drilling any wall, floor, ceiling, or any other structural element where a likelihood of contacting energised electrical cables or parts exists.	Hidden electrical cables are a particular hazard when concealed behind walls or directly buried in the ground. The hazard can also include other services especially underground such as gas, water, sewage, and telecoms cables. Nokia has established standard operating procedures to help guide those digging in the vicinity of buried services. Contact Health and Safety if you need more detailed information on the techniques used. The procedure consists of a robust examination of available information on what is in the ground and at what depth, this information is typically available from local authorities and in many countries, a “Dial before you dig” service is offered by the utility companies. A combination of a site survey, the use of detection equipment and trial digging are essential to avoid unintended asset strikes. The individuals undertaking the digging are particularly at risk and so must be trained on the techniques to expose the assets without harm including the use of suitable tools, the wearing of PPE, safe digging, and appropriate supervision. The combination of local knowledge and the use of handheld detectors can be useful to check services running behind walls.

	3.13.2 Overhead Lines When working near overhead power lines: • Safe horizontal and vertical clearance distances from overhead lines must be established; if any need to go any closer than 10m horizontal distance you must seek professional advice from the electricity utility company or competent professional. • Clearly marked exclusion zones must be set up and maintained. • The use of vehicles, plants, machinery, equipment, or materials that could reach beyond the safe clearance distance is not permitted, except where specific supplementary controls are implemented to ensure that safe distances are maintained. See Appendix of Guidance Document for details of safe clearance distances.	People are killed and injured each year by accidental contact or near contact with overhead electricity lines. Most of these accidents occur when there is contact or near contact with overhead lines by cranes or excavators, by tipping trucks or truck-mounted cranes, by mobile extendable machinery, or by metal equipment such as scaffolding, metal gutters, long metal handled concrete floats or metal ladders. Such accidents can be prevented by taking all practicable precautions to prevent accidental contact or near contact - which may cause electrical arcing from the overhead line. Safe horizontal and vertical clearance distances from overhead lines must be clearly established; Appendix 2, Working Adjacent to Overhead Lines, of this document gives guidance on the clearance to be maintained from overhead lines. As a rule, if you need to approach closer than 10 m to overhead lines seek specialist advice. Clearly, marked exclusion zones must be set up and maintained, this can be done using physical barriers, warning signage, bunting, goalposts (for the safe movement of vehicles under overhead cables), warning tape, access control and an induction process that emphasizes the risk associated with crossing into the exclusion zone. The exclusion zone needs to be monitored and any encroachment acted on immediately. Working near high voltage lines is very high risk and experienced high voltage safety practitioners should be engaged to ensure the safety of our workers and our subcontractors. The use of vehicles, plants, machinery, equipment, or materials that could reach beyond the safe clearance distance is not permitted. Examples of equipment that should not be permitted include Cherry pickers, and MEWPS (Mobile Elevated Work Platforms). Appendix 2, Working Adjacent to Overhead Lines, of this document gives guidance on the clearance to be maintained from overhead lines. It may be possible to work safely closer to the overhead lines but that can only be undertaken after a specific risk assessment and the implementation of additional controls. In this very high-risk situation, an experienced high voltage safety practitioner should be engaged to ensure the safety of our workers and our subcontractors.

	• Where supply lines contact a structure that is to be climbed, the integrity of the insulation on the cables must be confirmed before climbing can begin. A combination of visual inspection of the cables at points of contact and the structure's earthing arrangements should be undertaken. If this integrity cannot be confirmed, a competent electrician must inspect the installation and confirm that it is safe to climb.	The risk associated with overhead (catenary) power cables that connect to a structure to be climbed needs to be assessed prior to climbing. The risk can relate to unintended electrical contact by the live conductors to the structure, especially if the structure is conductive. A visual inspection may be sufficient to confirm that the power cables are properly insulated from the structure. However, if in doubt have a qualified electrician check it. Additional protection can be achieved by fitting insulated shrouds on low voltage overhead or catenary electric cables that connect to a structure

3.14	**Method and Practice Non-negotiables:** **Exclusion Zones**.	
	3.14.1 Exclusion zones including the use of barriers and signage must be used if there is a risk of untrained persons entering the areas where electrical work is being done.	The establishment of a clearly marked exclusion zone alerts individuals in the work area of the dangers associated with electrical work, especially as protective panels may be removed to facilitate the work and exposed conductors may be live.
	3.14.2 The access points must be physically controlled or supervised at all times.	The use of physical barriers is recommended, but if not possible then the area needs to be supervised to prevent unauthorised entry.

3.15	**Method and Practice Non-negotiables:** **Safety Signs**	
	3.15.1 Safety and warning signs must be used to inform of the danger of electrical hazards whilst work is ongoing. The signage should be pictorial and easily recognizable to all persons.	Safety and warning signs must be used to inform of the danger of electrical hazards. Signage should be pictorial where possible and not just text, so they are easily recognizable to all persons and not dependent on one language. They should be placed so they are clearly visible.

3.16	**Tools and Equipment Non-negotiables:** **Tools & Protective Equipment**	
	Hand Tools: All hand tools used for working on or near live electrical systems must be: **3.16.1** Fully insulated. **3.16.2** Maintained in good condition. **3.16.3** Checked for defects before use and replaced as necessary. **3.16.4** Rated for the voltages they are intended to be used on.	No further guidance is offered.

3.17	**Tools and Equipment Non-negotiables:** **Portable Power Tools**	
	3.17.1 Electrical power tools must be selected in the following order of preference unless local legal requirements define more restrictive requirements: • Battery powered. • Those powered by an isolating transformer with an earthed centre tapped voltage of 110V AC. • If powered directly from a mains supply, be of double insulated construction and protected at the point of connection by a Residual Current Device. (RCD). • The RCD should be tested using the device test button before use.	The hierarchy of power tool source selection reduces the risk of electric shock to the users. Battery-operated tools are preferred, followed by an isolated centre tapped earthed transformer operating at half the mains voltage. If a mains voltage tool must be used, then it must be protected by a residual current detector (RCD) which automatically isolates the supply to the tool if an earth leakage current is detected. Before each use, the RCD test button must be operated to check it is working.

	3.17.2 All portable electrical power tools and equipment must be appropriately inspected and maintained which means: • As a minimum, all portable electrical tools and equipment must be visually inspected before use and taken out of service if faulty. • Regular inspection by a competent person should be undertaken; the frequency of which is dictated by local legal requirements or based on the type of equipment, the severity of use and usage rate. The frequency of inspection of portable tools should be at least annually. • Results of inspections should be recorded.	Portable electrical tools can be subject to wear and rough treatment. Storage in dedicated storage boxes can protect power tools during transport. As a minimum, all power tools need to be inspected before use and if faulty, they should be taken out of service and sent for repair or a replacement source. In addition to the regular inspection before use, a scheduled more thorough recorded inspection should be undertaken at a frequency dependent on the severity of use of the tool, but annually at a minimum. In the case of a rock breaker or chasing tool that is subject to long periods of intensive use a higher frequency of inspection, testing and maintenance would be appropriate.

3.18	**Tools and Equipment Non-negotiables** **Ladders & Platforms**	
	3.18.1 Only non-conductive ladders/platforms can be used in the vicinity of exposed electrical circuits or whilst undertaking electrical work. **3.18.2** Ladders should be subject to regular documented inspections.	Conductive ladders can increase risk when used in the vicinity of electrical circuits. A metal ladder falling against or inadvertently touching a live panel could electrocute the ladder user. Where local regulatory requirements have more stringent requirements on what ladders can be used, then those requirements must be met. Ladders should be subject to regular inspection to confirm they are in good condition. Many injuries caused by electrical accidents are due to secondary effects such as falling from a ladder following an electric shock.

3.19	**Tools and Equipment Non-negotiables:** **Portable Electrical Appliances**	
	3.19.1 As a minimum, all portable electrical appliances and equipment (laptop power supplies, kettles, desk lamps, printers, etc.) must be visually inspected before use and taken out of service if faulty. **3.19.2** In addition, regular inspection by a competent person should be undertaken; the frequency of which is dictated by local legal requirements or based on the type of equipment and usage rate. (Usually referred to as Portable Appliance Testing (PAT). **3.19.3** Results of inspections should be recorded.	The electrical appliances we use in our offices and indeed in our homes should be taken out of service if they are on inspection seen to be faulty (frayed wires, cracked plug tops, obvious signs of damage or deformation etc). In many countries, it is a regulatory requirement that a structured independent inspection is undertaken. This regular (typically annual) inspection ensures that portable electrical appliances are in good order and electrically safe to use. PAT typically involves the establishment of an inventory of portable appliances, keeping records of the testing undertaking and the fixing labels with the expiry date of the testing validity. It is good practice to prohibit workers from bringing in the electrical appliance (heaters, kettles, IT equipment, etc) unless approved by the People and Places (Real Estate – Workplace Resources) or their nominated agents.

3.20	**Tools and Equipment Non-negotiables:** **3.20 Personal Protective Equipment (PPE)**	
	3.20.1 All PPE must be appropriate for the electrical risk encountered, inspected at a frequency dictated by local regulations or annually as a minimum and especially before use, and taken out of service if defective and replaced. **3.20.2** An approved list of the PPE must be maintained for all foreseeable works. For electrical works appropriate, hardhats, insulated gloves, and face guards. Specific selection guidance can be found in the Guidance to the Electrical Standard.	We should only rely on PPE as a primary control if other controls higher on the hierarchy have been examined and implemented if possible. In the case that it is necessary to work on live low voltage AC or extra low voltage DC, PPE can include safety glasses with side shields, face shields, rubber gloves, and rubber mats. PPE should be selected with reference to a documented risk assessment and precautions taken according to the risk being managed. i.e., in situations where high-capacity batteries are being worked on an arc flash face shield or arc flash suit may be deemed appropriate. **Appendix 3 – Personal Protective Equipment (PPE). Sets out further guidance on the selection of PPE**.

Appendix 1 - Competency Categories:

Persons undertaking work activities on electrical installations or equipment are required to have and maintain a level of competence appropriate for the work they will carry out. Refresher training or re-examination shall be carried out as defined in local legislation, or where not defined every three years.

The table below categorises the types of electrical tasks Nokia staff and its subcontractors undertake and sets out a minimum level of training and or qualification required by them to do it.

Competency Category	Tasks	Minimum Training Requirements
CAT1 – Telecommunications Equipment & Simple Electrical Works Work is generally limited to plugging equipment into or out of racks, turning items of equipment on or off or replacing items of equipment. This is analogous to the electrical activities an unskilled person would undertake in their own home.	Competent to perform: • Switching activities – limited to the operation of circuit breakers and switches. • Replacement of in-shelf, rack, and end-of-suite fuses in DC systems up to 60V and fuses integral to equipment units in mains AC systems up to 230V. • Minor repairs including replacement of plug-in components such as lamps, PCBs, or fuses in disconnected equipment. Caveat – dead systems – unskilled. Workers in this category are **not allowed** to perform: Modifications to the electrical installation, including wiring, connections (other than that described above) nor • Live working; and	Operatives would need a basic understanding of electricity and its hazards i.e., general electrical safety awareness and knowledge of the mobile telecom industry and working practices. Internal or external provided and evaluated electrical awareness training covering as a minimum: • Review of electricity and supplies. • The effects of electricity on the body. • The dangers and risks associated with misuse of electricity. • Testing methods and requirements. • DC safety practices and equipment. • Electrical safety assessment. • Local legislative requirements.

Competency Category	Tasks	Minimum Training Requirements
	• Work within power distribution racks.	
CAT2 – Minor Electrical Works Allowed to carry out minor electrical work on installations. Work is limited to adding to, repairing or replacement of existing electrical AC or DC low-capacity circuits.	Competent to: • Perform and test electrical installation work and certify the electrical installation as safe. • Connect equipment racks or individual units into Mains AC fused spurs. • Run cables, fit standard plugs, and replace blown fuses. • Perform testing for LV electrical installation works. • Install, maintain, and test DC systems under 50 AH capacity, or not exceeding 50V (i.e., nominal -48VDC) • Sign the appropriate certificate on completion. The workers in this category are **not allowed** to provide new circuits to a distribution board nor undertake "live" AC work.	Operatives would require formal electrical training and be under the direct supervision of someone qualified to registered electrician or equivalent standard. Training to include: • Electrical science. • Local legislative requirements. • Health & safety. • Installation design. • Earthing & bonding • Inspection and testing of electrical installations. • Fault Diagnosis & rectification. • Practical evaluation of skills.
CAT3A: High-Capacity DC Allowed to install, maintain and test high-capacity DC systems. Detailed work activities on larger battery systems would involve testing and changing batteries making disconnections and reconnections to	Competent to: • Install, maintain, and test DC systems over 50 AH capacity, or exceeding 50V.	Fully qualified registered electrician (time served apprenticeship with relevant qualifications, including inspection, test, and certification of an installation). Persons with electrical qualifications equivalent to a fully qualified electrician may also perform CAT3A work if assessed and verified as competent.

Competency Category	Tasks	Minimum Training Requirements
multiple batteries and/or strings. Work may involve DC distribution and cabling systems. Typically, voltages would be -48v systems.		Electrical engineers who have qualified with a third-level qualification do not qualify to undertake CAT3A work unless they have received supplementary relevant training including practical training and are assessed as competent to do such work. Formal electrical, test and inspection qualifications would be expected.
CAT3B: High Voltage DC Allowed to perform High Voltage DC work. **Note: Not undertaken by Nokia staff**	Competent to: • Work on High Voltage DC systems.	Not in the scope of this standard.
CAT4: Electrical Installations Allowed to perform and test electrical installation work and certify the electrical installation as safe.	Competent to • Perform electrical installation work, • Perform the design, selection, installation, and testing required. • Certify the electrical installation as safe.	Fully qualified registered electrician (time served an apprenticeship with relevant qualifications, including inspection, test, and certification of an installation). Persons with electrical qualifications equivalent to a fully qualified electrician may also perform CAT4 work if assessed and verified as competent. Electrical engineers who have qualified with a third-level qualification do not qualify to undertake CAT4 work unless they have received supplementary relevant training including practical

Competency Category	Tasks	Minimum Training Requirements
		training and are assessed .as competent to do such work. Formal electrical, test and inspection qualifications would be expected.
CAT5: High voltage installations and equipment **Note: Not undertaken by Nokia staff** Allowed to perform high voltage installations and work on equipment. Only applicable to HV certified engineers employed by approved HV contractors or by the Electricity Supply Authorities.	Competent to: • Perform high voltage installations and equipment.	Must have relevant electrical qualifications along with authorized personal certification to be able to work on HV supplies.

Appendix 2 – Working adjacent to Overhead lines.

Making contact or near contact with overhead lines is dangerous. Overhead high voltage electric conductors are often bare (uninsulated) and if an object approaches too closely it is possible that a flashover will occur and an electric current flow with the likelihood of fatal or severe shock and burns to any person nearby. In order to prevent such incidents, minimum safety clearance for overhead lines is prescribed.

The minimum safety clearance is influenced by the voltage of the overhead line. A summary from the association representing the electricity and gas distributors in England, Scotland, Wales, and Ireland is set out below.

This summary is taken from The Energy Networks Association (ENA)'s Technical Specification 43-8 for "Overhead Line Clearances", Issue 3 (2004).

Description of Clearance	Minimum clearance (metres) at 400kV	Minimum clearance (metres) at 275kV
To ground	7.6	7.0
To normal road surface	8.1	7.4
To road surface of designated '6.1 metres high load' routes	9.2	8.5
To motorway or other road surface where Skycradle can be used	10.5	9.8
To motorway road surface where scaffolding is to be used on: (i) Normal 3 lane motorways (ii) Elevated 2 lane motorways	 16.3 13.3	 15.6 12.6
To any object on which a person may stand including ladders, access platforms etc.	5.3	4.6
To any object to which access is not required AND on which a person cannot stand or lean a ladder	3.1	2.4
To trees under or adjacent to line and: (i) Unable to support ladder/climber (ii) Capable of supporting ladder/climber (iii) Trees falling towards line with line conductors hanging vertically only	 3.1 5.3 3.1	 2.4 4.6 2.4
To trees in orchards and hop gardens	5.3	4.6
To irrigators, slurry guns and high pressure hoses	30.0	30.0
To street lighting standards with: (i) Standard in normal upright position (ii) Standard falling towards line with line conductors hanging vertically only (iii) Standard falling towards line	 4.0 4.0 1.9	 3.3 3.3 1.4

Keep at least 10m horizontal clearance from any overhead line. This guidance is given on the basis that it is often difficult to determine the voltages present on the overhead line. If work must be undertaken at a horizontal distance of fewer than 10m consultations with the electrical utility company should be undertaken.

In summary: Any closer than 10m, get professional advice!

Appendix 3 – Personal Protective Equipment (PPE)

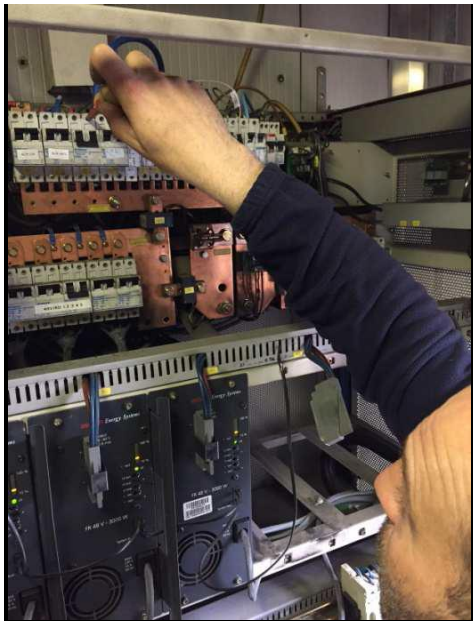
Personal Protective Equipment whilst undertaking live Electrical work must be used correctly, suitable for the individual and the risk, maintained as per the manufacturer's instructions and stored properly when not in use.

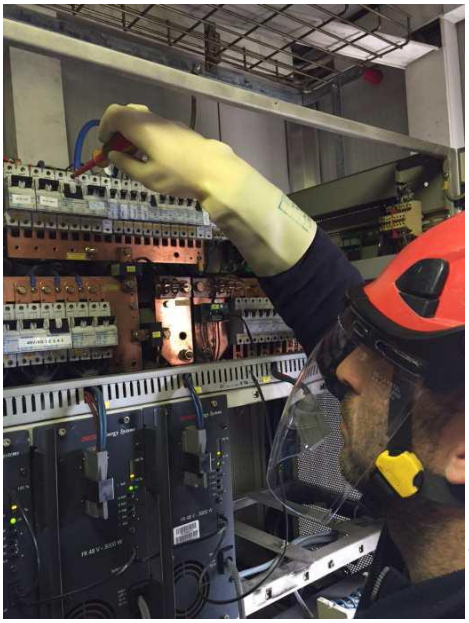
Appropriate PPE can include:

- Insulating hard hat.
- Eye protection, glasses with side shields, full face shield.
- Fire retardant clothing.
- Rubber gloves (testing voltages on live circuits). Class 00 minimum
- Rubber-soled shoes.
- Rubber insulating blankets.
- Arc flash suit.

The selection of the PPE required should be undertaken following a risk assessment which applies the hierarchy of controls methodology to eliminate the risk, substitute less risky alternatives, and provide engineering controls and/or administrative controls. PPE is always the last resort. PPE should be selected based on the residual risk and in combination with a documented safe system of work.

Testing for voltage is "live working". To avoid the risk of electric shock, or arc flash, which can lead to electrocution, and burns to the skin and eyes, the skin should be covered with protective gloves and the eyes protected by a full-face flash guard.





The responsibility for the provision of personal protective equipment is with the company that the individual works for which could be an external contractor. The PPE must be inspected and tested at a frequency recommended by the manufacturer. If PPE is found to be faulty or in poor condition on inspection it must be replaced immediately, the faulty equipment marked as “faulty or “not to be used” and repaired or disposed of as appropriate.
The individual must receive training on the hazards that the PPE is protecting the worker from, the correct use of the PPE and its correct storage when not in use.
Each country must maintain an approved list of the PPE required to be used in accordance with the type of work and risk of the activity carried out.

PPE Selection - Electrical Guidance.		
Type of Personal Protective Equipment.	**Description**	**Comments**
Head Protection	Hard hat (insulating).	Protective headgear must meet or exceed ANSI Standard Z89.1-1986 (US), EN 397 (Europe)
Eye protection,	Glasses with side shields, full face shield, arc flash shield.	Arc flash shield EN166/170 or equivalent
Fire retardant clothing.	Covering body, arms, and legs.	Flame retardant clothing will not support combustion and should be used where the risk of arc flash is present. In arc flash accidents, burns are exacerbated by burning non-fire-retardant clothing.
Hand protection	Rubber gloves (testing voltages on live circuits)	Class 00 minimum. IEC 60903 Ed. 3.0 - Live working - Electrical insulating gloves
Rubber-soled shoes.	No comment	No comment
Rubber insulating blankets.	Insulating blankets to protect against contact with exposed electrics	ASTM D1048 - 14
Arc flash suit.	Full arc flash suit	Standard: IEC 61482-2 or equivalent
Hearing protection	Selected to mitigate ambient noise in a high noise environment but also acute noise due to electrical discharge.	No comment
Reference resources to aid selection:	https://www.osha.gov/Publications/osha3151.pdf	
	IEC 60903 Ed. 3.0 - Live working - Electrical insulating gloves	
	https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/personal-protective-equipment/index_en.htm	

Appendix 4 – Lock-out/Tag-out

Lockout /Tagout (LO/TO) – An organized set of procedures designed to ensure that equipment being serviced, installed, or maintained is completely shut down and free of hazardous energy before work operations proceed and to ensure that equipment is not re-energized prior to the completion of the work.

The isolator should be locked in position (for example by a padlock), and a sign should be used to indicate that maintenance work is in progress.

The above photograph shows an isolator locked out and two locks in place. Two or more locks are used when more than one person is working on the locked-out equipment.

Before entering or working on the equipment, the effectiveness of the isolation must be verified by a suitably competent person.

Appendix 5 – Competence Evaluation Criteria.

In the context our Nokia's Electrical Safety Standard, competence refers to the combination of suitable qualifications and knowledge, suitable training and skills and sufficient experience to undertake specific electrical work without supervision or with only minimal supervision.

The table below describes the criteria that can be applied for each of the key elements of "competence."

	Element	Criteria
1	Qualifications (Knowledge)	Has the candidate successfully acquired knowledge by undertaking an academic course, delivered by a recognized institution, and in which achievement is tested by examination? The course must meet or exceeds the accepted level held by electrical workers engaged in CAT 3A and CAT 4 work in the country concerned.? The course must include inspection, testing and commissioning. The course must include Electrical Safety.
		Can the candidate produce documentary evidence of the attainment of the award for successful completion of the course?
		Validate the academic award with the awarding institution.
2	Training (Skills)	Has the candidate produced evidence of training to support their claim of suitable training? The training may be in the form of specific skills development or practical courses with clear objectives and learning outcomes. The training may take the form of a craft apprenticeship in which the apprentice is coached and monitored by a competent Electrical Worker or Electrician. Electrical Safety should be an integral part of any training course. Practical training on inspection, testing and commissioning must be included if this is in the scope of the work envisaged.
		Validate that the training claimed has been undertaken and completed. Has an apprenticeship been completed?

	Element	Criteria
		Confirm that the scope of the training covers the Categories that the individual will be required to work on. (Example: for CAT 4 work the individual training must incorporate low voltage AC.)
		Confirm that the scope of the training covers the type of electrical work the individual will be required to work on, such as design, installation, maintenance, installation, inspection, testing and commissioning, and decommissioning. If live working is envisaged in the scope of work, then training to undertake such work should be validated. Low Voltage AC, Extra low voltage DC, CAT 3A or CAT 4 installations.
		Confirm that the scope of the training covers the type of electrical equipment the individual will be required to work on, fixed installation elements, switches, air conditioning, rectifiers, telecommunications equipment, lighting, etc.
		Confirm that the scope of the training covers the type of electrical hazards which may arise during the work and the precautions which need to be taken.
3	Experience	Evaluate the level of experience the individual has to ensure that his/her experience is comprehensive and appropriate to the type of work, type of installation, type of equipment they will be required to work on, and the level of supervision envisaged. Competence is the combination of Knowledge, Skills, and Experience. Any evaluation should ensure that the individual has acquired relevant knowledge through academic and practical training or a combination of both. Has the individual developed the skills required through training or “on-the-job” coaching or a combination of both? Any “experience” the individual has should be relevant to the work envisaged.
		Confirm that the worker has experience of work in line with the local regulatory requirements.

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Appendix 6 – Outline Site-Specific Emergency Plan.

The table below describes many of the key elements of an Emergency Plan. There may be other local or organizational factors that need to be considered in developing a site-specific emergency plan. It is essential that the plan is communicated to workers and that a copy of it is available to those on the site.

	Description	Reason
1	Location of site. Address, Postcode or GPS coordinates	Record the address to be given to any emergency services to locate the site should an emergency occur. The location information must be suitable so that the emergency services can rapidly locate the site or location.
2	Identify and record the emergency numbers to be used in an event: Emergency Medical Services. Emergency Fire Services. Nokia numbers to report emergencies. Customer numbers to report emergencies.	Record the contact numbers to be used in an emergency event. The phone numbers should primarily be those which help can be sought from. In some cases, these numbers may be local or close medical clinics or individual doctors' practices.
3	Names and local/mobile phone numbers of first aider or trained CPR practitioner	Trained first aider and trained CPR practitioner (can be the same individual) required to be on-site for Category 3A, 4 and any live work.
4	Are there any local/customer requirements to be integrated into the plan? Include local evacuation procedures if any. Include a map if necessary.	Information on alarms, and instructions to follow should an audible/visual alarm be raised. Example Fire Alarm (description of the sound, defined exit route, assembly points, etc.)
5	Location of any emergency services on-site, for example, First Aid kit, eye shower.	If there are emergency services or equipment or materials available on site, the plan should indicate where they are. If reliance is being made on First Aid kits in vehicles that should be stated, and the presence of the kit confirmed.
6	Instructions on how to raise an alarm in the case an emergency arises	How to activate the emergency alarm either on-site or phone numbers to call.
7	Inform workers of the location of the plan.	Make the detail of the plan readily available.

A word sample site-specific emergency plan is embedded below for completeness.

Sample Site Specific Emergency Plan.doc

Change History

Ver	Status	Date	Author	Owner	Reviewed by	Reviewed date	Approver	Approval date	Description of changes
1.0	Approved		Robert Nolan	Robert Nolan	Gareth I Davies		Gareth I Davies		
2.0	Approved	2022.05.18	Sameh Eisa	Marty Bishop	Marty Bishop	2022.05.18	Marty Bishop	2022.06.28	Changes to reflect organizational changes.
3.0	Approved	2023.10.11	Sameh Eisa	Sameh Eisa	Paulo Conceicao	2023.10.11	Paulo Conceicao	2023.10.11	Changes to reflect organizational changes, rebranding, formatting, and Document ID.