CLIENT BASELINE RISK ASSESSMENT PER CONSTRUCTION REGULATION 5(1)(b), 2014, OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993

correctional services
Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

INDEPENDENT DEVELOPMENT TRUST (IDT)

on behalf of the
DEPARTMENT OF CORRECTIONAL SERVICES (DCS)

ISS Maintenance — 8 Correctional Centres

INDEPENDENT DEVELOPMENT TRUST (IDT) on behalf of DEPARTMENT OF CORRECTIONAL SERVICES (DCS)			
CHS BASELINE RISK ASSESSMENT: ISS Maintenance — 8 Correctional Centres Contract: DCS08WP01-PH2-ISS-MAINT-CON02			
Author:	Prean Govender	**Signature:**	
Approved:	Desigan Pather	**Signature:**	
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Approved by:

Desigan Pather (PR CHSA 114/2021)

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Change Log

Rev	Date	Description of Change	Author	Approved
Rev 00	19.05.2026	Initial issue. Baseline Risk Assessment for the maintenance of Integrated Security Systems (ISS) at eight Department of Correctional Services facilities.	P. Govender	D. Pather
Rev 01	29.05.2026	Revised per IDT review comments. Updated SANS 10085-1 scaffolding reference from 2004 to 2024 edition.	P. Govender	D. Pather

Contents

Introduction

This Baseline Risk Assessment (BRA) has been compiled in terms of Construction Regulation 9 of the Construction Regulations, 2014, promulgated under the Occupational Health and Safety Act, No. 85 of 1993 (OHSACT).

The purpose of the BRA is to identify the hazards and associated risks that may arise during the maintenance of Integrated Security Systems (ISS) at eight (8) Department of Correctional Services (DCS) facilities, and to prescribe the control measures required to manage these risks to an acceptable level.

This BRA must be read in conjunction with the Construction Health and Safety Specification (CHSS), Doc. Ref. 058_ISS_CHSS_001_Rev00. The Principal Contractor must review this BRA, develop task-specific risk assessments for all activities, and update the BRA as new hazards are identified during the course of the works.

The nature of this project introduces unique risks not typically encountered in conventional construction or maintenance projects. All works are conducted within operational correctional facilities where inmates are present. The security, safety, and orderly operation of each facility must be considered as a primary risk factor in all risk assessments.

Scope

The scope comprises the preventative maintenance, servicing, repair, and continued operational support of Integrated Security Systems (ISS) at eight (8) correctional centres operated by the Department of Correctional Services (DCS), under Contract DCS08WP01-PH2-ISS-MAINT-CON02, for a period of thirty-six (36) months.

The correctional centres included in this contract are:

1. Embongweni Maximum Correctional Centre (Kokstad Management Area)
2. Kokstad Medium B Correctional Centre (Kokstad Management Area)
3. Napierville Medium A Correctional Centre (Pietermaritzburg Management Area)
4. Qalakabusha Correctional Centre (Empangeni Management Area)
5. Tswelopele Correctional Centre (Kimberly Management Area)
6. Standerton Correctional Centre (Standerton Management Area)
7. Gqeberha North End Correctional Centre (St Albans Management Area)
8. Tzaneen Correctional Centre (Tzaneen Management Area)

The ISS sub-systems covered include CCTV (IP-enabled cameras, video walls, storage servers), access control (fingerprint/card readers, pneumatic doors, gates, turnstiles), perimeter detection (inner/outer fence detection, sensor arrays), fire detection and suppression (addressable detectors, alarm panels, gas suppression), intercom and PA (staff/cell/visitation intercoms, PA speakers, intercom exchanges), X-ray and metal detection (baggage scanners, walk-through metal detectors, cell phone detection), network infrastructure (POE switches, PLCs, ISS servers, CCTV servers, operator workstations), and UPS/emergency power (3 kVA UPS systems, standby generators, compressors).

General occupational health and safety provisions

Hazard identification and risk assessment (Construction Regulation 9)

The principal contractor must conduct a comprehensive hazard identification and risk assessment before commencing any work at each correctional centre. The risk assessment must consider the unique hazards of working within secure correctional environments and the potential impact of maintenance activities on the security systems protecting each facility.

Risk Assessment Methodology

The risk assessment methodology used in this BRA is a semi-quantitative 5×5 risk matrix. Each hazard is evaluated based on the probability of occurrence (P) and the severity of the potential consequence (S). The risk rating (RR) is determined as follows:

	High
	Moderate
	Low- Moderate
	Low

L4	L4	L4	L3	L3
L4	L3	L3	L2	L2
L3	L3	L2	L2	L1
L2	L2	L1	L1	L1
L1	L1	L1	L1	L1

	SEVERITY				
	Health & Safety	Financial	Environment	Community safety and health	Quality
1	First aid treatment	Minor damage < R10 000	Minor impact within plant boundary	Complaints from public e.g. smell	Minor and infrequent customer complaints
2	Medical treatment (recordable)	R10 000 < Material Damage < R100 000	Minor impact extending beyond the plant boundary within site	Local public being told to take shelter indoors or evacuation, or adverse local publicity	Customer complaints that have the potential to deteriorate if not resolved
3	Loss time injury(Recordable)	R100 000 < Serious Damage < R 500 000	Moderate reversible impact at local scale	Hospitalisation or multiple press articles regarding complaints eg. Smell	Loss of one important customer that may impact market share
4	Fatality	R500 000 < Major Damage < R1 000 000	Serious reversible impact on a national scale	1-2 public fatality	Loss of one important customer that may impact market share
5	More than one fatality	Catastrophic > R1m	Very serious irreversible impact on a national scale	More than three public fatalities	Loss of significant number of key customers, causing significant loss of market share

	1	2	3	4	5
Likely-hood	Very Unlikely	Low	Possible	Likely	Almost Certain
Frequency	The event may occur once in every 10 - 20 years	The event may occur once in every 5 - 10 years	The event may occur once in every 2 - 5 years	The event may occur within next 1 - 2 years	The event may occur at least once a year or is already occurring
PROBABILITY					

Review of risk assessments

This BRA represents the baseline assessment of risks for the ISS maintenance contract. The Principal Contractor must review and update this BRA:

Before commencing work at each new correctional centre
Whenever there is a change in the scope of work, equipment, or methodology
Following any incident, near-miss, or non-conformance
When new hazards are identified during the course of the works
At each monthly progress meeting
When DCS identifies new security-related constraints or requirements

Typical hazards covered in this risk assessment:

Electrocution and electrical burns (ISS systems, UPS, generators, temporary electrical)
Arc flash from switchgear and distribution boards
Falls from height (roof-mounted cameras, perimeter fence poles, cable trays, towers)
Exposure to battery acid and hazardous chemicals (UPS rooms, cleaning agents, fire suppression gases)
Security breach / compromise during ISS system maintenance downtime
Inmate interaction, contraband, and hostile environment within correctional facilities
Tool control failure — unaccounted tools accessible to inmates
Fire from hot work, flammable materials, and electrical faults
Asphyxiation from accidental discharge of gas suppression systems
Radiation exposure from X-ray equipment maintenance
Pneumatic system hazards (compressed air doors, crush/trapping injuries)
Working in confined spaces (cable ducts, service tunnels, equipment rooms)
Manual handling of heavy ISS equipment (servers, UPS units, panels, cameras)
Noise exposure (power tools, PA system testing, generator operation)
High noise levels (grinding, cutting, drilling)
High levels of dust (drilling, chasing, concrete work)
Unsafe structures
Unsafe working environment
Poor quality and spec — risk to project integrity, delays
Unable to resource identified controls
Not budgeting for H&S requirements
Poor communication with DCS facility management
Driving fatigued
Driving under the influence of alcohol
Unlicensed driver
Unroadworthy vehicle
Use of defective equipment/vehicle
Incompetent operators
Hazardous chemicals
Inadequate security
Working at heights
No permissions granted
Inadequate risk communication
Sharp edges
Unsecured load
Inadequate signage
Inadequate signalling
Inadequate access control
Unauthorised use of equipment
Inadequate maintenance of vehicles
Manual handling
Blood pathogens
Inadequate eating facilities
Inadequate ablutions
Smoking
Emergency preparedness
Working in the dark
Working with noise generating equipment
Improper stacking and securing of loads
Working at elevated positions

Overhead services
Falling objects
Exposed electrical wires
Trailing cables
Sparks
Flying particles
Dust, fumes
Vibration
Long-distance travel fatigue between geographically dispersed centres (5 provinces)
Inclement weather and adverse weather conditions (rain, high winds, extreme heat)
Working outdoors: sun exposure, UV radiation, heat stress, and dehydration
Fire and explosion risk from hot work, flammable materials, and fuel storage
Inadequate supervision of sub-contractors and management of multiple trade interfaces
Pressurised systems, vessels, and compressed gas cylinders
Confined space entry (cable ducts, service tunnels, equipment rooms)
Social unrest, intimidation, and organised construction site extortion
Inadequate community and stakeholder engagement
Failure to report near-misses, incidents, and non-conformances
Communicable disease exposure within correctional facility (TB, COVID-19)
Accidental damage to critical security infrastructure during maintenance
Skills transfer risk — DCS artisan trainees exposed beyond competence
Information security breach (ISS data, configurations, passwords)

Baseline Risk Assessment Register

Project: ISS Maintenance — 8 Correctional Centres | Doc No: 058-BRA-001 | Rev: 01 | Date: 29/05/2026 | Prepared: Prean Govender | Approved: Desigan Pather (PR CHSA 114/2021)

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
1. Appointment of Designers	Not appointing competent registered designers	Legal non-compliance	Unsafe act	Delays / Financial / Reputational	S	N			3	4	L1	• Ensure designers are appointed and professionally registered • Designers to hold valid ECSA or SACPCMP registration • Appointment letters in writing
	Designers not completing inspections or approving designs	Unsafe installations	Unsafe act	Injury / Property damage / System failure	S	N			3	4	L1	• All ISS designs and changes to be approved by appointed designers • Designers to perform legal duties as mandated • Design sign-off before installation
2. Appointment of Competent Principal Contractor	Principal Contractor not competent for ISS maintenance in correctional environments	Unsafe working environment	Unsafe act	Injury / Security breach / Property damage	S	N			3	4	L1	• Principal contractor to have necessary competency, CIDB grading (8EB+), and experience • PSIRA registration verified • DCS security clearance obtained for all key personnel
3. Procurement	Purchasing non-compliant or incorrect ISS components	Poor quality — risk to system integrity and facility security	Unsafe condition	System failure / Security compromise / Injury	S	N			3	4	L1	• Technical specification compliance • OEM or approved equivalent components only • Budget reviewed as project progresses • Quality inspection upon delivery
4. Budget and Resources	Not budgeting for H&S requirements	Unable to resource identified controls	Unsafe condition	Injury / Illness / Non-compliance	S	N			3	4	L1	• Prelim budget to include H&S resources • Budget reviewed as project progresses • H&S cost template completed per contract requirements
5. Driving to Site (Multi-Centre Travel)	Driving fatigued (long distances between centres across provinces)	Falling asleep at the wheel	Unsafe act	Injury / Fatality	S	N			3	5	L1	• Journey management plan for inter-centre travel • Maximum driving hours policy • Rest stop requirements • Driver fatigue awareness training
	Driving under the influence of alcohol	Loss of control	Unsafe act	Injury / Fatality	S	N			3	5	L1	• Zero-tolerance alcohol policy • Random breathalyser testing • Disciplinary procedures
	Inclement weather during long-distance travel	Reduced visibility / loss of control	Unsafe condition	Injury / Fatality	S	N			3	4	L1	• Weather reports before travel • Journey management • Delay travel if unsafe conditions
	Unsafe route / hijacking (rural and urban travel across 5 provinces)	Criminal attack / robbery	Unsafe condition	Injury / Fatality / Loss of equipment	S	N			3	5	L1	• Route risk assessment • Avoid high-risk areas / travel in pairs • GPS tracking • No ISS equipment or documentation visible in vehicles
	Unlicensed / unroadworthy vehicle	Loss of control	Unsafe act	Injury / Fatality	S	N			3	5	L1	• Driver licensed and medically fit • Vehicle roadworthy certificate • Pre-trip vehicle inspection
6. Access to Correctional Facility	Inadequate security vetting of contractor personnel	Security breach / contraband introduction	Unsafe act	Criminal prosecution / Contract termination / Inmate escape risk	S	N			3	5	L1	• PSIRA registration for all personnel • DCS security clearance obtained • Background checks • Contraband awareness training
	Failure to comply with DCS entry/exit search procedures	Contraband introduced / tools unaccounted for	Unsafe act	Security incident / Criminal prosecution	S	N			3	5	L1	• All personnel submit to search • Tool control register — daily reconciliation • Prohibited items briefing at induction
	Unauthorised interaction with inmates	Security breach / manipulation / hostage risk	Unsafe act	Injury / Criminal prosecution / Contract termination	S	N			2	5	L1	• Strict prohibition on inmate interaction • DCS escort in inmate areas • Zero-tolerance policy • Immediate removal from site for violations

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
	Inadequate access control at work areas within facility	Inmate access to tools, equipment, or unsecured areas	Unsafe condition	Injury / Escape / Weapon fabrication	S	N			3	5	L1	• Rigid barricading of all work areas • DCS approval for all access plans • Continuous monitoring • Tool count at start and end of each shift
	Cell phone or camera taken into facility without authorisation	Security protocol violation	Unsafe act	Criminal prosecution / Contract termination	S	N			3	4	L1	• Prohibited items list in induction • All devices surrendered at entry • Written authorisation for any electronic devices • Search compliance
7. Site Establishment (Within Correctional Facility)	Insufficient storage and work area within secure environment	Poor housekeeping / tools left unsecured	Unsafe condition	Security risk / Injury	S	N			3	4	L1	• DCS-allocated storage and office space • Secure lockable containers for tools • Daily cleanup and tool count
8. Health and Hygiene	Inadequate ablution and eating facilities	Illness / hygiene-related disease	Unsafe condition	Illness / Lost time	H	N			3	3	L2	• DCS-provided facilities maintained • Potable water availability confirmed • Weekly hygiene inspection
	Communicable disease exposure in correctional facility	TB, COVID-19, or other disease transmission	Unsafe condition	Illness / Fatality	H	N			3	4	L1	• Medical fitness certificates for all employees • Awareness training on communicable diseases • PPE (masks where required) • TB screening awareness
9. Electrical Installation and Maintenance	Contact with live electrical components	Electrocution / electrical burns	Unsafe act / condition	Injury / Fatality	S	N	A		3	5	L1	• LOTO procedure before all electrical work • Permit to work for live work • Only competent electricians (trade-tested / registered) • Insulated tools and PPE • Test before touch
	Arc flash / short circuit	Burns / blast injury / fire	Unsafe condition	Injury / Fatality / Equipment damage	S		A		2	5	L1	• Arc flash risk assessment for switchgear • Arc flash PPE where applicable • Correct fuse ratings and circuit protection • Competent persons only
	Defective portable electrical tools	Electrocution / fire	Unsafe condition	Injury / Fire	S	N			3	4	L1	• Daily inspection by user • Monthly formal inspection by competent person • RCD protection • Tool register and tagging
	Working on UPS batteries (acid, stored energy)	Chemical burns / electrical shock / explosion	Unsafe condition	Injury / Chemical exposure	S,H	N			3	4	L1	• UPS isolation procedure • Acid-resistant PPE (gloves, goggles, apron) • Spill kit available • Competent battery technician • Ventilation in battery rooms
	Trailing cables / poor cable management	Trips / falls / damage to cables	Unsafe condition	Injury / System damage	S	N			4	3	L2	• Cable management during work • Cable covers / overhead routing • Housekeeping inspection • Work area clean-up daily
10. CCTV System Maintenance	Working at heights (roof-mounted cameras, poles, elevated brackets)	Fall from height	Unsafe condition	Injury / Fatality	S	N			3	5	L1	• Fall protection plan • Full body harness and lanyard • Competent person for work at heights • Ladders inspected before use • Edge protection where required
	Camera downtime creating surveillance blind spots	Security gap during maintenance	Unsafe condition	Security breach / Inmate escape	S	N			3	5	L1	• DCS notification before any camera goes offline • Maintenance window approved by Head of Centre • Physical patrol to cover blind spot during downtime • Minimise maintenance duration
	Manual handling of heavy monitors / video walls / servers	Musculoskeletal injury	Unsafe act	Injury	H	N			3	3	L2	• Manual handling training • Use trolleys and mechanical aids • Team lifting for heavy items • Ergonomic risk assessment
11. Access Control System Maintenance	Secure door or gate left unsecured during maintenance	Unsecured zone — inmate escape or movement risk	Unsafe condition	Escape / Security breach / Injury	S	N			3	5	L1	• DCS approval before any access control device taken offline • Physical lock or DCS guard posted at unsecured opening • Maintenance window coordinated with DCS • Immediate notification if delay

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
	Pneumatic door system malfunction (trapped limbs, crush injury)	Crush / trapping injury	Unsafe condition	Injury	S	N	A		3	4	L1	• System de-energised and locked before maintenance • Warning signs posted • Competent pneumatic technician • Test in controlled conditions before restoring
	Compressed air system (pneumatic doors) — pressure release	Uncontrolled energy release	Unsafe condition	Injury	S	N	A		3	4	L1	• Depressurise system before work • LOTO on compressor and air lines • Pressure gauges checked • Competent person only
12. Perimeter Detection System Maintenance	Working at heights on perimeter fence structures, poles, and towers	Fall from height	Unsafe condition	Injury / Fatality	S	N			3	5	L1	• Fall protection plan specific to fence/pole work • Full body harness • Stable access platform or MEWP • Exclusion zone below
	Perimeter detection offline creating detection gap	Undetected perimeter breach	Unsafe condition	Escape / Security incident	S	N			3	5	L1	• DCS notified and physical patrols deployed • Maintenance window approved by Head of Centre • Minimise duration of gap • Section-by-section approach where possible
	Exposure to weather (sun, rain, wind) during outdoor work	Heat stress / hypothermia / lightning strike	Unsafe condition	Illness / Injury / Fatality	H,S	N			3	4	L1	• Weather monitoring • Cease outdoor work during electrical storms • Sun protection (hats, sunscreen, hydration) • Scheduled breaks in shade
13. Fire Detection and Suppression System Maintenance	Fire zone left unprotected during detector/panel maintenance	Undetected fire	Unsafe condition	Fire damage / Injury / Fatality	S	N			3	5	L1	• Fire watch deployed for duration of maintenance • DCS notified • Zone-by-zone approach — never isolate entire facility • Portable extinguishers at work area
	Accidental discharge of gas suppression system	Asphyxiation / gas exposure	Unsafe condition	Injury / Fatality	S		A		2	5	L1	• Gas suppression system isolated and locked before work in protected area • Warning signs posted • SCBA available where required • Competent person only • Occupancy check before re-activation
	Exposure to fire suppression gases (FM200, CO2, etc.)	Chemical exposure / asphyxiation	Unsafe condition	Illness / Injury / Fatality	H,S		A		2	5	L1	• MSDS for all suppression agents on file • Ventilation of work area • Gas detection where required • Respiratory protection available
14. Intercom and PA System Maintenance	Intercom system offline — communication failure in emergency	Unable to communicate emergency / lockdown	Unsafe condition	Delayed response / Injury	S	N			3	4	L1	• DCS notified of intercom downtime • Alternative communication (radios) in place • Zone-by-zone approach • Prioritise high-security areas
	Noise exposure during PA system testing	Hearing damage	Unsafe condition	Hearing loss	H	N			3	3	L2	• Hearing protection during testing • Test at reduced volume where possible • Warning to nearby personnel before testing
15. X-Ray Scanner and Metal Detector Maintenance	Radiation exposure from X-ray scanner during maintenance	Radiation exposure	Unsafe condition	Illness (long-term)	H	N			2	4	L2	• X-ray system powered down and locked before any maintenance • Radiation safety procedures per manufacturer • Only manufacturer-trained technicians • Dosimetry badges if required
	X-ray / metal detector offline — screening gap at entry points	Contraband entry during maintenance	Unsafe condition	Security breach / Injury	S	N			3	4	L1	• DCS notified • Manual search procedures implemented • Maintenance window approved • Backup/portable unit where available
16. UPS and Generator Maintenance	Contact with battery acid (sulphuric acid)	Chemical burns / eye injury	Unsafe condition	Injury	H,S	N			3	4	L1	• Acid-resistant PPE (goggles, gloves, apron) • Eyewash station accessible • Spill kit • MSDS on file • Competent battery technician

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
	Generator maintenance — exhaust fumes, rotating parts, fuel	Carbon monoxide exposure / entanglement / fire	Unsafe condition	Illness / Injury / Fire	S,H	N			3	4	L1	• Generator isolated and locked before maintenance • Ventilation ensured • Guarding on rotating parts • Fuel handling per HCS Regulations • Fire extinguisher at hand
	Loss of backup power during maintenance — full facility power failure risk	Security system total failure	Unsafe condition	Security breach / Evacuation	S	N		E	2	5	L1	• UPS/generator not taken offline without DCS and Client approval • Maintenance scheduled during low-risk period • Portable generator on standby if available • Verify primary power stable before maintenance
17. Network Infrastructure (Servers, Switches, PLCs)	Server/switch failure during maintenance — ISS system outage	Partial or total ISS failure	Unsafe condition	Security breach / System downtime	S	N			3	5	L1	• System backups verified before maintenance • Redundant systems confirmed operational • DCS notified • Maintenance window approved • Rollback plan in place
	Electrical shock from server room equipment	Electrocution	Unsafe condition	Injury / Fatality	S	N			3	5	L1	• LOTO procedure • Insulated tools • Competent person only • ESD protection measures
18. Working with Power Tools	Contact with rotating or cutting parts (drills, grinders, saws)	Laceration / amputation / eye injury	Unsafe act	Injury	S	N			4	3	L2	• Guards fitted and operational • PPE (safety glasses, gloves where appropriate) • Competent operators • Tool inspection before use • RCD protection
	Noise exposure from power tools	Hearing damage	Unsafe condition	Hearing loss	H	N			4	3	L2	• Hearing protection mandatory • Noise assessment • Rotation of exposure where possible
19. Manual Handling of ISS Equipment	Lifting and carrying heavy equipment (servers, UPS, panels, cameras)	Musculoskeletal injury / crush injury	Unsafe act	Injury	H,S	N			3	3	L2	• Manual handling training • Mechanical aids (trolleys, hoists) • Team lifting for items > 25 kg • Ergonomic risk assessment
20. Hot Work (Welding, Soldering, Grinding)	Fire from sparks, open flame, or heat near flammable material	Fire / explosion	Unsafe condition	Property damage / Injury / Fatality	S	N			3	5	L1	• Hot work permit • Fire watch during and 30 min after • Flammable materials removed • Fire extinguisher at point of work • DCS approval in sensitive areas
	Welding fumes / UV radiation / sparks	Respiratory illness / eye injury / burns	Unsafe condition	Illness / Injury	H,S	N			4	3	L2	• Welding screen / curtains • Appropriate PPE (welding helmet, gloves, apron) • Ventilation / extraction • MSDS for welding consumables
21. Handling Hazardous Chemical Substances	Exposure to solvents, cleaners, battery acid, fire suppression agents	Chemical burns / respiratory illness / poisoning	Unsafe condition	Illness / Injury	H	N			3	4	L1	• MSDS available for all chemicals • Appropriate PPE • Spill kit available • Chemical substances register • Storage per HCS Regulations
22. Stacking and Storage of ISS Equipment and Spares	Unstable stacking / unsecured storage	Falling objects / crush injury	Unsafe condition	Injury / Equipment damage	S	N			3	3	L2	• Stacking and storage supervisor appointed • Weekly inspections • Secure locked storage within facility • Maximum stack heights observed
23. Housekeeping	Poor housekeeping — tools, cables, offcuts left in work area	Trips / falls / security risk (tool misuse by inmates)	Unsafe condition	Injury / Security breach	S	N			4	3	L2	• Daily cleanup at end of shift • Tool count and reconciliation • Cable offcuts and e-waste collected • Weekly housekeeping inspection • Immediate clean-up of spills
24. Working in Confined Spaces (Cable Ducts,	Atmospheric hazards (oxygen deficiency, toxic	Asphyxiation / poisoning	Unsafe condition	Injury / Fatality	S,H		A		2	5	L1	• Confined space permit to work • Atmospheric testing before entry • Standby person posted

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
Tunnels, Equipment Rooms)	gases)											• Rescue plan and equipment available • Communication maintained
25. Emergency Preparedness	Inadequate emergency plan for correctional facility	Uncoordinated response during emergency / lockdown	Unsafe condition	Injury / Fatality / Security incident	S	N		E	3	5	L1	• Emergency plan developed with DCS • Integration with facility lockdown procedures • Emergency drills participated in • Contractor assembly point identified • Emergency contacts displayed
26. Skills Transfer to DCS Artisans	DCS artisan exposed to hazards beyond competence level	Injury during training activity	Unsafe act	Injury	S	N			3	4	L1	• Risk assessment for training activities • Supervision by competent person at all times • PPE provided to trainees • Artisan competency assessed before hands-on work • No high-risk tasks without assessment
27. Inclement Weather — Outdoor Maintenance	Lightning strike during outdoor perimeter/camera work	Electrocution	Unsafe condition	Injury / Fatality	S		A		2	5	L1	• Weather monitoring — cease outdoor work during electrical storms • Lightning detection app or alert system • Seek shelter immediately • 30-minute rule after last lightning
	Heat stress / sunburn during prolonged outdoor work	Heat stroke / dehydration / skin damage	Unsafe condition	Illness	H	N			3	3	L2	• Sun protection (hat, sunscreen, shade breaks) • Hydration (water available at work area) • Schedule heavy outdoor work for cooler hours
28. Social and Community Risk	Construction site extortion / community unrest at or near correctional facility	Intimidation / work stoppage / physical harm	Unsafe condition	Injury / Delays / Financial loss	S	N			3	4	L1	• Community liaison strategy • DCS security interface • SAPS contact details on file • Awareness training for personnel • Immediate reporting of threats
29. Incident Reporting	Failure to report near-misses, incidents, and non-conformances	Repeat incidents / legal non-compliance	Unsafe act	Injury / Prosecution / Contract termination	S	N			3	4	L1	• Incident reporting procedure • Training on reporting obligations • Near-miss reporting encouraged • Monthly statistics compiled • Disciplinary action for non-reporting
30. Scaffolding (ISS Equipment Access)	Pinch points during scaffold erection and dismantling	Hands or body parts trapped between scaffold components	Unsafe condition	Injury	S	N			4	3	L2	• Training and awareness for scaffold erectors • Supervision by competent scaffold inspector • Use of cut-resistant safety gloves • PPE — hard hat, safety boots, gloves • Scaffolding to comply with SANS 10085-1:2024 and Construction Regulations 2014
	Heavy scaffold components causing musculoskeletal injury	Lifting of heavy scaffold materials causing back injuries	Unsafe condition	Injury	S	N			4	3	L2	• Correct lifting techniques — bend knees, not back • Maximum 15 lifts per minute per employee • Job rotation and rest breaks • Mechanical aids where practical • Supervision
	Ergonomic strain from repetitive scaffold assembly	Musculoskeletal injury from repetitive lifting and positioning	Unsafe condition	Injury	S	N			3	3	L2	• Job rotation and breaks • Ergonomics procedure • Supervision
31. Working at Heights (General)	Fall from elevated position during ISS installation or maintenance	Fall from height causing serious injury or fatality	Unsafe condition	Fatality / Major injury	S	N			3	5	L1	• Safe work procedure — Working at Heights and Fall Rescue Plan • Fall arrest system (full body harness, lanyard, approved anchor points) • Fall prevention — lifeline, guardrails, barricading • All scaffolding to comply with SANS 10085-1:2024 and Construction Regulations 2014 • Competent scaffold erectors, supervisors, and inspectors appointed • Daily inspections by appointed competent person • Weather conditions considered (wind, rain) — work suspended if unsafe • Exclusion zones established below work area • Signage posted • Lanyards used for securing tools and portable equipment at height
32. Demolition / Removal of Old ISS Infrastructure	Uncontrolled collapse of structure during removal of old ISS equipment	Collapse causing injury or fatality to workers	Unsafe condition	Fatality / Major injury	S	N			3	4	L1	• Demolition / removal method statement approved before commencement • Structural assessment where removal affects building integrity • Exclusion zones established and enforced • LOTO procedures for all electrical and electronic systems • DCS facility management notified and approval obtained • Supervision by competent person

Task / Activity	Hazard	Associated Risk	Cause	Consequences	SHE	NML	ABN	EMR	P	S	RR	Required Control Measures
	Asbestos or hazardous materials in existing building fabric	Exposure to asbestos fibres during infrastructure removal	Unsafe condition	Occupational illness / Fatality	H	N			3	4	L1	• Pre-demolition asbestos survey by accredited inspector before any works commence • Registered asbestos contractor appointed for all removal and disposal • Asbestos management plan in place • Workers informed and trained on asbestos awareness • Air monitoring during removal activities
33. Commissioning and Testing of ISS Systems	Unexpected startup of ISS equipment injuring persons nearby	Entanglement or crushing from uncontrolled equipment movement	Unsafe condition	Major injury / Fatality	S	N			3	4	L1	• Commissioning team to communicate clearly before energising • LOTO before any person works near moving equipment • All personnel clear before test start • DCS facility management notified • Exclusion zones during commissioning
	Electrical fault during initial energisation of ISS systems	Electrocution or fire from fault during live testing	Unsafe condition	Major injury / Fatality	S	N			3	4	L1	• Qualified electrician to supervise initial energisation • Insulation and continuity tests completed before energisation • Fire extinguisher available at panel during energisation • Emergency procedures in place • System tested in sections, not all at once
	High noise during ISS system commissioning affecting facility occupants	Noise-induced hearing damage or disturbance to inmates and staff	Unsafe condition	Occupational illness / Disruption	H	N			4	3	L2	• DCS facility management notified 48 hours before commissioning • Commissioning scheduled to minimise impact on facility operations • Hearing protection provided to commissioning team • Noise monitoring where required

Abbreviation Key

SHE	Safety, Health, Environment — classification of the hazard in terms of its primary impact area.
NML	Normal — hazard exists under routine, planned operating conditions.
ABN	Abnormal — hazard exists during non-routine, start-up, shutdown, or upset conditions.
EMR	Emergency — hazard applies in unplanned emergency situations (fire, lockdown, system failure).
P	Probability — likelihood of the hazard materialising and causing harm (1–5 scale).
S	Severity — magnitude of consequence should the hazard materialise (1–5 scale).
RR	Risk Rating — result of P × S lookup against the 5×5 risk matrix. L1 = High (Red), L2 = Moderate (Orange), L3 = Low-Moderate (Blue), L4 = Low (Green).

Risk Matrix — Definitions

	High
	Moderate
	Low- Moderate
	Low

L4	L4	L4	L3	L3
L4	L3	L3	L2	L2
L3	L3	L2	L2	L1
L2	L2	L1	L1	L1
L1	L1	L1	L1	L1

			SEVERITY		
	Health & Safety	Financial	Environment	Community safety and health	Quality
1	First aid treatment	Minor damage < R10 000	Minor impact within plant boundary	Complaints from public e.g. smell	Minor and infrequent customer complaints
2	Medical treatment (recordable)	R10 000 < Material Damage < R100 000	Minor impact extending beyond the plant boundary within site	Local public being told to take shelter indoors or evacuation, or adverse local publicity	Customer complaints that have the potential to deteriorate if not resolved
3	Loss time injury(Recordable)	R100 000 < Serious Damage < R 500 000	Moderate reversible impact at local scale	Hospitalisation or multiple press articles regarding complaints eg. Smell	Loss of one important customer that may impact market share
4	Fatality	R500 000 < Major Damage < R1 000 000	Serious reversible impact on a national scale	1-2 public fatality	Loss of one important customer that may impact market share
5	More than one fatality	Catastrophic > R1m	Very serious irreversible impact on a national scale	More than three public fatalities	Loss of significant number of key customers, causing significant loss of market share

	1	2	3	4	5
Likely-hood	**Very Unlikely**	**Low**	**Possible**	**Likely**	**Almost Certain**
Frequency	The event may occur once in every 10 - 20 years	The event may occur once in every 5 - 10 years	The event may occur once in every 2 - 5 years	The event may occur within next 1 - 2 years	The event may occur at least once a year or is already occurring
PROBABILITY					

Hazard List

The following 16-category hazard classification provides the reference framework used in this Baseline Risk Assessment.

1. Process Hazards

1.1 Toxic chemical	1.2 Flammable materials
1.3 Sparks / molten material	1.4 Fire suppression gases (FM200, CO2)
1.5 Battery acid (sulphuric acid)	1.6 Solvents and cleaning agents

2. Transportation Hazards

2.1 Motor vehicle (inter-centre travel)	2.2 Pedestrians within facility
2.3 Parking of vehicles within secure perimeter	2.4 Towing of vehicles and plant
2.5 Long-distance travel fatigue (5 provinces)	2.6 Hijacking risk on travel routes

3. Position Hazards

3.1 Ladders	3.2 Scaffolding
3.3 Elevated platforms (MEWP / cherry picker)	3.4 Roof-mounted equipment (cameras, antennas)
3.5 Perimeter fence poles and towers	3.6 Fall into opening or edge
3.7 Cable trays and overhead structures	

4. Operational Equipment & Systems

4.1 Pressurised systems (pneumatic doors)	4.2 Compressors
4.3 Portable gas cylinders	4.4 Standby generators
4.5 UPS systems (stored electrical energy)	4.6 Hydraulic vehicle gates
4.7 Commissioning or decommissioning ISS	

5. Tools Hazards

5.1 Hand tools	5.2 Pneumatic power tools
5.3 Portable electrical tools (drills, grinders)	5.4 Soldering equipment
5.5 Cable crimping and termination tools	5.6 Multimeters and test equipment

6. Health Hazards

6.1 Noise (power tools, generators, PA testing)	6.2 Dust (drilling, chasing)
6.3 Smoke or fumes (soldering, welding)	6.4 Vibration
6.5 Chemicals (solvents, cleaners, battery acid)	6.6 Radiation (X-ray scanners)
6.7 Contagious diseases (TB, COVID-19)	6.8 Illumination (poor lighting in ducts/rooms)
6.9 Ergonomics (manual handling of equipment)	6.10 Heat stress and UV / sun exposure

7. Confined Spaces

7.1 Cable ducts and raceways	7.2 Service tunnels
7.3 Equipment rooms (sealed/enclosed)	7.4 Underground vaults
7.5 UPS / battery rooms (off-gassing)	7.6 Ceiling voids

8. Lifting Operations

8.1 Chain-blocks	8.2 Slings and ropes
8.3 Lifting devices (equipment hoists)	8.4 Forklifts (if applicable)

9. Utilities

9.1 Electrical wiring (plugs, cables)	9.2 Electrical equipment (ISS systems)
9.3 Electrical switchgear and DB boards	9.4 Portable electric equipment
9.5 DC supplies (batteries, UPS)	9.6 Medium voltage (generator output)
9.7 Static electricity (server rooms / ESD)	9.8 Compressed air (pneumatic doors)
9.9 Network cabling (fibre, CAT6, coaxial)	

10. Environmental Aspects

10.1 E-waste (replaced ISS components)	10.2 Hazardous waste (batteries, chemicals)
10.3 Non-hazardous waste (packaging)	10.4 Air pollutant (generator exhaust)

11. Extreme Weather & Natural Disasters

11.1 Lightning	11.2 Flooding
11.3 Hail	11.4 Wind
11.5 Extreme heat	

12. Underground Mining Hazards

Not applicable to this project.

13. Buildings & Structure Hazards

13.1 Doors and gates (pneumatic, motorised)	13.2 Fixed ladders
13.3 Walkways	13.4 Roofing (access for cameras/antennas)
13.5 Perimeter fencing and structures	13.6 Control room ergonomics
13.7 Server room / equipment room hazards	13.8 Fire

14. Office & Furniture Hazards

14.1 Desktop and laptop computers	14.2 Chairs and workstations
14.3 Cables and leads (site office)	14.4 Ergonomic workstation setup

15. Product Safety Hazards

15.1 ISS equipment (cameras, panels, detectors)	15.2 Storage of ISS spares
15.3 Packaging	15.4 Handling of sensitive electronic equipment

16. Security Hazards

16.1 Contraband introduction	16.2 Tool control failure
16.3 Unauthorised inmate interaction	16.4 Security system downtime during maintenance
16.5 Theft of ISS equipment or components	16.6 Sabotage
16.7 Hijacking (travel between centres)	16.8 Construction site extortion
16.9 Hostage risk within correctional facility	16.10 Information security breach (ISS data)