

**NUCLEAR PROJECT MANAGEMENT - Control Room Envelope(CRE) Unfiltered Leakage Measurement for Eskom Koeberg Nuclear Power Station**

Department	Group	Number	Activity/Task/Process/Procedure/Requirement/Requirement	Procedure/Process/Requirement/Requirement	Environmental/Health/Safety/Security/Other	Environmental/Health/Safety/Security/Other	Risk Category	Initial Frequency	Initial Probability	Initial Severity	Initial Risk Value	Initial Risk Classification	Operational Controls	Frequency	Probability	Severity	Risk Value	Risk Classification	Controlled By	Reviewed By	Approved By	Date			
<p>Although captured in the mitigations below, prior to performing ANY activity, ALWAYS consider the following: <b>MITIGATION</b>, i.e. situational awareness, self-checking, pre-job brief, peer checking, procedure use, place-keeping, questioning attitude, effective communication, coaching, handover and authorisation and knowledge; <b>OTHER CONTROLS</b>, i.e. monitoring, measurement &amp; inspection; Operational control (i.e. procedures, SHE programme, Engineering control etc.</p>													<p>Applicable Legal &amp; other requirements &amp; applicable sections (Eg. National Environmental Management Waste Act no. 92 of 2008; Section 19; National water act, Section 3; National Environmental Management Act, Section 5; Occupational Health and Safety Act No. 85 of 1993 section 8 General duties of employers to their employees)</p>												
<p><b>OPERATIONAL CONTROLS</b></p> <p><b>Elimination/Substitution</b> (i.e. performing work at ground level instead of working at heights, replacing a hazardous chemical substance with a less hazardous chemical substance etc.)</p> <p><b>Engineering Controls</b> (i.e. machine guarding, barriers, fencing, drip trays, leak tight tanks, sumps etc.)</p> <p><b>Administrative Controls</b> (i.e. monitoring and measurement, procedures, training, safety signage, worker rotation, observations, inspections, SHE Talks etc.)</p> <p><b>Personal Protective Equipment</b> (i.e. gloves, safety boots, hard hat, coverall, hearing protection, safety harness, safety glasses/goggles, breathing apparatus, respirators etc.)</p>																									
MPM	CONSTRUCTION	1	ACCESS AND EGRESS ON KNPS																						
MPM	CONSTRUCTION	1.1	ON SITE EMERGENCY AND EVACUATION PLAN	ACCESS OF PERSONNEL	EMERGENCY AND MUSTER PROCEDURE PROCESS	UN-ACCOUNTED PERSONNEL TRAPPED IN DANGEROUS AREAS	P	0.5	-0.5	0.0	0.0	Medium Risk	NA	MUSTER SUPERVISORS VISIBLE SIGN POSTING OF MUSTER STATION. IDENTIFICATION AND DISPLACEMENT	ACCOUNTABILITY LIST	BE FAMILIARISED WITH EMERGENCY RESPONSE EXERCISES AND IDENTIFICATION OF OFFICER ALARMS TO BE ADHERED TO.	MAJOR HAZARD INSTALLATION REGULATIONS 61 (A-C) (BHWI procedure 444-611)	0.5	0.0	2.0	Very Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24	
MPM	CONSTRUCTION	1.2	PERSONNEL ACCESS INTO KNPS SITE	ACCESS OF PERSONNEL	INTOXICATED PERSONNEL ENTERING KNPS.	INJURES DUE TO PERSONNEL WORKING INTOXICATED	P	1.0	0.5	1.0	0.5	Medium Risk	NA	ADHERE TO KNPS SECURITY SIGN POSTING SECURITY PERSONNEL AND PROCEDURE.	ONLY BREATHERS TESTING WILL BE DONE BEFORE ENTERING THE SITE. RANDOM DRUG TESTING WILL BE PERFORMED.	NATIONAL KEY POINT ACT NO 102 OF 1980/20A	1.0	-0.5	3.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24		
NPM	CONSTRUCTION	1.3	PERSONNEL USING STAIRS/LIFTS/GOODS LIFTS	ACCESS OF PERSONNEL	USING STAIRS UNSAFE WHEN NOT USING HAND RAILS USING LIFTS/GOODS LIFT INCORRECTLY	FATALITY/ SERIOUS INJURY	P	1.5	0.5	1.0	0.0	Medium Risk	NA	STAIRS TO BE PROTECTED. SITUATIONAL AWARENESS. ALWAYS HAVE 3 POINT CONTACT	JOB OBSERVATION- HP TOOLS	SHE TALKS MAKE USE OF HANDRAILS AND NEVER RUN UP OR DOWN A STAIRCASE	OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT NO. 95 OF 1993) REGULATION 10 (HP TOOLS PROCEDURE (KSA, 122))	1.5	-0.5	3.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24	
MPM	CONSTRUCTION	1.4	PERSONNEL WALKING AROUND GENERAL AREAS OF KNPS	ACCESS OF PERSONNEL	PERSONNEL NOT ABIDING TO KNPS PEDESTRIAN CROSSING REGULATIONS	INJURY/ IMPAIRMENT	P	1.0	0.5	0.0	0.5	Medium Risk	NA	EMPLOYEES ARE REQUIRED TO COMPLETE ALL RELEVANT PFD PROCESSES AND COURSES	JOB OBSERVATION/ 2M RULE	BE VOLUNTARY IN RELIEF TOOL BOX TALKS	OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT NO. 95 OF 1993) REGULATION 6(1) NATIONAL ROAD TRAFFIC ACT 93 OF 1996	1.0	-0.5	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24	
NPM	CONSTRUCTION	1.5	PERSONNEL WALKING AROUND GENERAL AREAS OF KNPS	ACCESS OF PERSONNEL	ENTERING NOISE ZONES GREATER THAN 85dB WITH OUT CORRECT HEARING PROTECTION	NOISE INDUCED HEARING LOSS (HEI)	P	1.0	0.0	0.0	0.0	Medium Risk	NA	ADHERE TO SIGN POSTING ON SITE	ADDITIONAL TESTING TO BE DONE REGULARLY TO MONITOR HEARING. TESTS MUST BE DONE BY OCCUPATIONAL HYGIENES TO ADDRESS THE HEARING LOSS	WEAR CORRECT PPE/ EAR PROTECTION. ENSURE EMPLOYEES ARE CORRECTLY INSERTED INTO THE EAR PLUGS AND PPE IS WORN.	NHL REGULATIONS 15.6.9	1.0	0.0	1.0	Very Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24	
MPM	CONSTRUCTION	1.6	PERSONNEL WALKING AROUND GENERAL AREAS OF KNPS	ACCESS OF PERSONNEL	PERSONNEL BEING EXPOSED TO SMOKES AND OTHER DANGEROUS RELIEF WHILE AT KNPS	FATALITY/ PERMANENT DISABILITY	P	2.0	0.0	0.0	7.0	High Risk	NA	OBSERVING OF SMOKES SIGN POSTING. ONLY SMOKES CATCHERS TO CONTACT SMOKES. NOU ON EXTENSION 1201208 OR 983 8633 407	APPLY 2M RULE. TOOLS TALK ON ENVIRONMENTAL AWARENESS. I.E. SMOKES	SHE TALKS OPERATING EXPERIENCE. IT IS IMPORTANT TO KNOW HOW THE DIFFERENT TYPES OF SMOKES OCCUR. MAKE IT TO BE AWARE. MEDICAL SERVICE OR TREATING PVD SIGN TO	OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT NO. 95 OF 1993) SECTION 14. GENERAL DUTIES OF EMPLOYERS. SECTION 21 (GENERAL PROVISIONS SUBSECTION (C))	2.0	-0.5	2.0	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24
MPM	CONSTRUCTION	2	FFD PROCESS																						
MPM	CONSTRUCTION	2.1	PFD TESTING OF PERSONNEL	ACCESS TRAINING FOR PERSONNEL	PERSONNEL NOT DOING PRESCRIBED PFD TRAINING	INJURES DUE TO PERFORMING A JOB BY INCOMPETENT PERSONNEL	P	2.0	0.5	0.0	7.0	High Risk	NA	EMPLOYEES ARE REQUIRED TO COMPLETE ALL RELEVANT PFD PROCESSES AND COURSES	ASSIGNED PFD COURSES TO ENSURE THE EMPLOYEES ARE WORKING ON THE CORRECT COURSES	ALL RELEVANT PFD COURSES MUST BE PASSED TO GAIN ACCESS TO SITE.	GENERAL SAFETY REGULATIONS 201 (C)	2.0	0.0	2.0	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24
MPM	CONSTRUCTION	3	DRIVING VEHICLES ON/ONTO KNPS SITE																						
MPM	CONSTRUCTION	3.1	OPERATION OF VEHICLES ON KNPS SITE	VEHICLE OPERATION	UNROADWORTHY VEHICLE. INCOMPETENT OPERATOR. DISREGARDING KNPS RULES AND REGULATIONS	FATALITY/ SERIOUS INJURY	P	2.5	0.5	1.0	0.0	Medium Risk	NA	CORRECT SERVICE INTERVALS MUST BE OBSERVED ON ALL VEHICLES. PPE. INSTRUCTIONS MUST BE TO BE DONE	SPEED LIMIT TO BE OBSERVED ON ALL SITES (SPEED LIMIT (ONITE) IS 35. 35km/hour. Control Rule	DRIVER TO HAVE A VALID SOUTH AFRICAN LICENCE / DRIVER TO BE COMPETENT	CONSTRUCTION REGULATION 23 (1)(B) NATIONAL ROAD TRAFFIC ACT 93 OF 1996/ESKOM Procedure 23-92	2.5	0.5	1.0	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24
MPM	CONSTRUCTION	3.2	OPERATION OF VEHICLES ON KNPS SITE	VEHICLE OPERATION	MEDICALLY UNFIT DRIVER	DAMAGE TO PLANT AND EQUIPMENT	A	2.0	1.0	2.0	0.0	Medium Risk	NA	ALL DRIVERS OPERATING MUST BE MEDICALLY FIT AND HAVE PHYSICAL FITNESS CERTIFICATE AS PER MAN/OP ETC.	ALL EMPLOYEES TO BE INDICATED AND THE VALIDITY OF THESE CHECKED.	APPROVED ANNEXURE 2 BY ONITE	CONSTRUCTION REGULATION 23(1)(B)	2.0	0.5	2.0	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24
NPM	CONSTRUCTION	4	PERSONNEL USING LADDERS																						
MPM	CONSTRUCTION	4.1	USING LADDER	OPERATION AND USE OF LADDERS (STEP)	UNSAFE USE OF LADDERS	PERMANENT DISABILITY	P	1.0	0.5	1.0	0.5	High Risk	NA	BARRICADE AREA WHERE NECESSARY. BARRICADE POINT CONTACT PPE JOB. BREF. LADDER TO BE SECURELY TIED DOWN OR SUPPORTED BY HOLDING AT THE BOTTOM	SUPERVISORY AND SAFETY INSPECTOR'S JOB OBSERVATIONS	WEAR APPROPRIATE PPE WHEN WORKING AT HEIGHT. WORKING AT HEIGHT TRAINING.	MAN OR 08539 (13A, W/SH 10-418)	1.0	0.5	1.0	4.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24
MPM	CONSTRUCTION	4.2	USING LADDER	OPERATION AND USE OF LADDERS (EXTENSION LADDERS)	UNSECURE LADDER	FATALITY/ PERMANENT DISABILITY	P	2.5	1.0	1.0	0.5	Medium Risk	NA	BARRICADE THE AREA TO PREVENT UNAUTHORISED PERSONNEL ENTERING THE AREA.	PPE JOB BREF SAFETY INSPECTIONS	WEAR APPROPRIATE PPE. WORKING AT HEIGHT TRAINING.	MANAGEMENT DIRECTIVE 08539 (13A, W/SH 22-418)	2.5	-0.5	1.0	3.0	Low Risk	MPM/PSM	YVONNE KOPPELMAA	2024-04-24



MPM CONSTRUCTION	8.5	WORKING WITH OTHER CONTRACTORS ON SITE/ INTERFACE WITH CONTRACTORS ON SITE	EXPOSURE TO OTHER CONTRACTOR RISKS ON SITE	NON-MATERIAL OBSTRUCTIONS, DROP OVERLOOKING MACHINERY	MINOR TO SERIOUS INJURIES	P	1.0	0.0	1.0	6.0	Medium Risk	NA	INTERGRATED PRE-JOB BRIEF'S DISCUSSING ALL RISKS AND REGULATIONS IN CONNECTION WITH ACTIVITIES, DISCUSSING ROLES AND RESPONSIBILITIES	ADHERING TO PROJECT PROGRAM	EFFECTIVE PRE-JOB BRIEFING EFFECTIVE AND CLEAR COMMUNICATION, HP TOOLS, TOOLBOX TALKS	OCCUPATIONAL HEALTH AND SAFETY ACT 85 OF 1993 SECTION 8 AND 14, CHR. KSA 669	3.0	-0.5	1.0	3.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
MPM CONSTRUCTION	8.6	WORKING WITH OTHER CONTRACTORS ON SITE/ INTERFACE WITH CONTRACTORS ON SITE	IMPROPER PLANNING OF RESPECTIVE TASKS	CONFUSION AMONGST WORKERS, WORKERS IN UNAUTHORIZED AREAS/ LINE OF FIRE	MINOR TO SERIOUS INJURIES	P	2.0	0.5	3.0	6.0	Medium Risk	NA	ADHERING FOLLOWING PROJECT PROGRAM	HP TOOLS/ STAFF/ 2M RULE	AUTHORIZATION OBTAINED, PROPER COMMUNICATION BETWEEN CONTRACTORS, PRE-JOB BRIEFING/POST-JOB BRIEFING/ POINT TO WORK IN WORK AREA	OCCUPATIONAL HEALTH AND SAFETY ACT 85 OF 1993 SECTION 8 AND 14, CHR. KSA 669	2.0	0.1	1.0	3.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
MPM CONSTRUCTION	9	OFFICE WORK																							
MPM CONSTRUCTION	9.1	OFFICE	WORKING IN OFFICE	WORKING ON COMPUTERS, SITTING POSITION PRACTICES POOR ERGONOMICS AT WORK STATION.	WORK RELATED UPPER LIMB DISORDER, REPETITIVE STRAIN	P	3.0	1.0	2.0	6.0	Medium Risk	NA	CORRECT WORK STATION LAYOUT/ ERGONOMICALLY FRIENDLY CHAIR/AVOID LONG WORKING SESSIONS	ERGONOMICS ASSESSMENT/ JOB OBSERVATIONS, TAKE REGULAR BREAKS	SEE REDUCTION AND AWARENESS	OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO.85 OF 1993/REGULATION 81)	3.0	0.0	1.0	4.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
MPM CONSTRUCTION	9.2	OFFICE	USING HYDROBOL	ARBLOCK IN HYDROBOL, CAUSING HOT WATER TO SPLASH ONTO HANDS	BURNS	P	3.0	0.5	3.0	6.0	Medium Risk	NA	FOLLOW SAFETY INSTRUCTIONS ON HYDROBOL	HP TOOLS/ STAFF/ 2M RULE/ Awareness	OPERATIONAL EXPERIENCE	OSHACT NO.85 OF 1993 (SEC.81)	3.0	0.0	1.0	4.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
MPM CONSTRUCTION	9.3	OFFICE	WORKING IN OFFICE	WORKING ON COMPUTERS BEING EXPOSED TO GLARE AND BURNOUT	HEADACHE, EYE STRAIN	P	3.0	1.0	2.0	6.0	Medium Risk	NA	REGULAR CHECKS TO BE DONE BY REGISTERED OCCUPATIONAL HEALTH PHYSICIAN TO ENSURE CORRECT LUX LEVELS	ENSURE SUFFICIENT LIGHTING LEVELS ARE MAINTAINED UNDER ALL OPERATING CONDITIONS	SEE REDUCTION AND AWARENESS	ENVIRONMENTAL REGULATION 3	3.0	0.0	1.0	4.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
MPM CONSTRUCTION	10	ENVIRONMENTAL																							
MPM CONSTRUCTION	10.1	WASTE DISPOSAL	WASTE DISPOSAL	INCORRECT DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS WASTE	DAMAGE TO ENVIRONMENT	E	2.0	-0.5	1.0	3.0	Low Risk	NA	ADHERE TO KAS-012 PROCEDURES FOR HAZARDOUS AND NON-HAZARDOUS WASTE AND SCRAP DISPOSAL	SEE SEN SAFETY OFFICER TO MONITOR THE CORRECT DISPOSAL OF WASTE	ENVIRONMENTAL AWARENESS AND IMPACT ON BIODIVERSITY, PLANT AND ANIMAL LIFE, RESPECT ENVIRONMENT	NEW WASTE ACT NO.59 OF 2008	2.0	-1.0	1.0	4.0	Low Risk	Kada Fisher	Yvonne Pym	YVONNE NOMFUZA	2020-03-24
Completed By:			Kada Fisher	Reviewed by:	Yvonne Pym	Sign:				Authorized By:		YVONNE NOMFUZA	Sign:				Date:								