Non-Destructive Testing			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

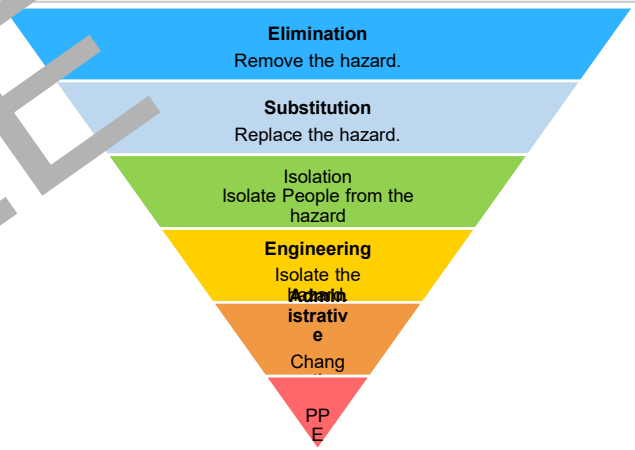
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS	SCOPE OF WORKS
Client:	
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. WHS Governance, Legal Compliance & Due Diligence	• Inadequate understanding of WHS Act 2011 and WHS Regulations as they relate to non-destructive testing (NDT), radiography, corrosion testing and magnetic particle / electromagnetic testing • Lack of clear roles, responsibilities and accountability for WHS in NDT operations (PCBU, officers, workers, contractors) • Failure of officers to exercise due diligence in relation to radiation safety, hazardous chemicals, confined spaces and plant used for NDT • Weak WHS management system integration between client, principal contractor and NDT service provider • Inadequate consultation, co-operation and co-ordination of activities between multiple PCBUs at shared worksites • No formal review of WHS performanc for NDT activities (audits, inspections, incident trends)	4A	• Establish and maintain a documented WH Manage System aligned to WHS Act 2011, WHS Regulations, relevant Codes of Practice and NZS tandards for NDT and radiation safety • Define and document WHS roles, responsibiliti and delega authorities for company officers, NDT supervisors, radiation safety ers (RSOs), and rkers • Implement an officer diligen program includi WHS briefings, performance reports, and periodic verification of ND sk co ols (e. site visits, a dits, leadership walks) • Develop an nforce a WH legal r ster vering radiation, pressure equipment, hazardous chemicals, ele cal safet confined sp s and plant relevant to NDT services • Put ce for sultation arrangements such as WHS committees, toolbox meetings and pre-start coordi meeti with all PCBUs on site • Condu sc duled i rnal and external WHS audits of NDT operations, including radiation safety audits a lice e/regis ation compliance checks • Im t a structured management review process (at least annually) to evaluate WHS performance, incide d emerging risks in NDT and to update policies and procedures	3H
2. NDT Method Selection, Job Planning & Engineering Review	• Selection of inap opriate NDT method (e.g. radiography ere ultra magnetic testing wo ue lowe risk and equivalent outcome) • Inadequate engineering review component design, acces materials leading to unsafe testing conditions • Failure to consider interaction between strong magnetic fields, ferrous structures and other plant or medical implants • Insufficient planning for work at height, inside confined spaces, in hazardous areas, or near pressurised systems during testing • Commercial pressure driving unsafe timeframes or method selection without adequate risk assessment	4A	• Implement a formal NDT method selection procedure that considers technical suitability, radiation/field exposure, access constraints, environmental conditions and client requirements • Require engineering review and sign-off by a competent NDT Level 3 or equivalent technical authority for complex or high-risk tasks (e.g. radiography, strong magnetic field use, critical structural inspections) • Mandate pre-job risk assessments and job-specific WHS plans that identify hazards such as height, confined space, electrical, pressure, flammable atmospheres and magnetic interference risks • Integrate WHS considerations into all NDT instructions and techniques, including clear limitations and preconditions (e.g. isolation, exclusion zones, ventilation) • Introduce a formal variation / change management process where method, access or plant conditions change from the original plan • Include explicit criteria to consider non-radiographic alternatives where reasonably practicable to reduce radiation risks • Set clear policies around refusal of unsafe work and escalation pathways when commercial or schedule pressures conflict with WHS requirements	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
3. Radiation Safety & Regulatory Control (Industrial Radiography)	• Uncontrolled exposure to ionising radiation from radiography sources or X-ray generators due to poor systems or supervision • Inadequate licensing and registration of radiation sources, operators and premises as required under state/territory radiation laws • Failure to establish and maintain effective exclusion zones and warning systems around radiography activities • Loss, theft or misplacement of radioactive sources due to inadequate security arrangements and inventory control • Inadequate monitoring of cumulative dose for radiation workers and absence of dosimetry program • Poor emergency preparedness for radiation incidents, including source damage, stuck sources or unexpected exposure	4A	• Maintain a Radiation Management Plan and associated procedures compliant with WHS Regulations and applicable state/territory radiation legislation for industrial radiography • Ensure all radiographers, assistants and RSOs hold current licences/authorisations and that all sources/equipment are registered as required by regulators • Implement robust systems for planning and controlling exclusion zones (e.g. barrier design, access control, radiation warning lights, sirens and signage) for each radiography job • Maintain a strict radioactive source security protocol including locked storage, transport security, key control, seal integrity checks and real-time inventory tracking • Implement a personal dosimetry program for all radiation workers including regular review of dose records, investigation thresholds and specialist health monitoring where required • Conduct periodic leak tests and performance checks of radiation sources and X-ray equipment with documented records • Develop and test a radiation emergency response plan including stuck source procedures, evacuation, dose assessment, regulator notification and post-incident medical review • Conduct independent radiation safety audits at defined intervals and after any significant incident	2M
4. Strong Magnetic Fields & Electromagnetic Testing Management	• Adverse interaction between strong magnetic fields and workers with pacemakers, implanted medical devices or metallic implants • Attraction of loose ferromagnetic tools or components leading to impact or crush injuries near powerful magnets • Interference with nearby electrical or electronic equipment (e.g. control systems, instrumentation) during magnetic particle and electromagnetic testing • Inadequate demagnetisation processes leading to downstream hazards (e.g. lifting, machining, instrumentation malfunction) • Uncontrolled exposure to strong magnetic fields due to poorly defined exclusion zones and access controls	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
5. Corrosion Testing & Materials Evaluation Systems	• Incorrect interpretation of corrosion or material testing results leading to unsafe plant remaining in service • Lack of systematic inspection intervals for corrosion monitoring and wall thickness testing on critical equipment • Poor traceability and record-keeping of corrosion data, locations and previous inspection outcomes • Failure to integrate corrosion test results into asset integrity / maintenance management systems • Use of incompatible or faulty testing equipment resulting in unreliable readings • No structured peer review or verification process for high-consequence findings	3H	[redacted]	2M
6. Competency, Training & Certification of NDT Personnel	• NDT tasks performed by personnel without appropriate qualifications, certification or supervision (e.g. Level 1 working without Level [redacted]ght) • Insufficient traini[redacted]on WHS legislative duties, radiation sa[redacted]ty, ma[redacted] hazards and corrosi[redacted]ng princip[redacted]s • Inadequate competency assessm[redacted] for new technologies or metho[redacted].g. phased array, digital radio[redacted]phy) • Training records not maintained or verified, leading to expired certifications or unrecognised gaps • Language, literacy or cultural barriers impacting understanding of procedures and safety requirements	4A	[redacted]	2M
7. Plant, Equipment, Calibration & Maintenance Management	• Failure of NDT plant or equipment (e.g. radiography cameras, X-ray sets, magnetic yokes, UT units) due to inadequate maintenance systems	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Use of out-of-calibration instruments leading to incorrect results and unsafe asset decisions • Lack of formal pre-use inspection and testing regimes for critical NDT equipment and accessories • Use of non-conforming or damaged ancillary equipment (tripods, cables, lifting gear, ladders, scaffolds) during inspections • Inadequate management of obsolete software, firmware or digital imaging systems impacting safety or data integrity		[redacted]	
8. Work Environment, Site Access & Interface with Other Operations	• Uncontrolled interaction between NDT activities and concurrent operations (e.g. welding, hot work, crane lifts, process operations) • Poor access to work areas leading t unsafe improvisation for positioning equipment or personnel • Exposure to hazardou pheres (flammable, toxic, o gen-deficient) during NDT in proc s plants or confined spaces • Environmental extre es (heat, cold wind, rain) adversely affecting NDT quality and worker safety • Insufficient control of public or third-party access near mobile radiography, magnetic or corrosion testing operations (e.g. in workshops, laydown yards, wharves)	3H	[redacted]	2M
9. Contractor, Subcontractor & Client Interface Management	• Misalignment between client, principal contractor and NDT provider WHS expectations and standards • Inadequate prequalification of subcontracted NDT providers, including radiation licences and equipment compliance	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Poor communication of site-specific risks, isolation status and emergency procedures to visiting NDT crews • Lack of clarity over supervision, authority to stop work and incident reporting responsibilities for contractors • Contractual arrangements that incentivise shortcuts or discourage reporting of safety concerns		[redacted]	
10. Fatigue, Remote & After-Hours Work Management	• Fatigue-related errors in NDT interpretation or set-up, especially during night shifts or extended shifts • Driving and travel risks to remote or offshore NDT locations without adequate journey management • Working alone or in small teams in remote or isolated locations during radiography or magnetic testing • Limited access to immediate medical or emergency response for NDT technicians at remote si • Pressure to conti e work when fatigued due to sc dule constr or limited specialist pe	3H	[redacted]	2M
11. Hazardous Chemicals, Consumables & Waste from NDT	• Exposure to hazardous s from penetrant testing, developers, cleaners, corrosion inhibitors and etchants • Inadequate labelling, storage and handling of chemical products and radiography processing chemicals (if used) • Generation of hazardous waste (e.g. contaminated rags, chemical residues, lead screens) without appropriate disposal systems • Chemical incompatibility incidents (e.g. mixing cleaners, use in confined or poorly ventilated areas)	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Lack of Safety Data Sheet (SDS) access and training specific to NDT consumables		[redacted]	
12. Information Management, Reporting, Records & Data Integrity	• Loss or corruption of NDT records (radiographs, digital images, corrosion data) impacting future asset safety decisions • Inadequate traceability between NDT reports, test locations, equipment and personnel • Failure to report or analyse near misses, non-conformances and WHS incidents arising from NDT activities • Unauthorised access or alteration of NDT results that could compromise plant integrity or regulatory compliance • Poor document control leading to use of superseded procedures or techniques	3H	[redacted]	1L
13. Emergency Preparedness & Incident Management for NDT Activities	• Uncoordinated response to NDT-related emergencies such as radiation overexposure, chemical spills, falls from height or confined space incidents • Lack of specific procedures for radioactive sources, damaged X-ray equipment or loss of source containment • Inadequate first aid and medical response capability for NDT-related injuries or exposures • Poor post-incident investigation and learning processes, leading to recurrence of systemic failures • Failure to notify regulators as required for notifiable incidents involving radiation or serious injury	4A	[redacted]	2M
14. Health Monitoring, Radiation Dose &	• Undetected long-term health impacts from chronic low-level ionising radiation exposure in radiography personnel	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
Occupational Exposure Management	• Musculoskeletal disorders from repetitive manual handling of NDT equipment, awkward postures and work in confined spaces • Inadequate health monitoring programs for workers exposed to radiation, noise, chemicals or strong magnetic fields • Failure to recognise and manage individual sensitivity or medical restrictions related to radiation and magnetic fields • Poor linkage between exposure data (dose records, noise monitoring, chemical use) and health monitoring outcomes		[redacted]	

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work