

Ref: CINTRA/SOP/004.04	Date of issue: 18 Dec 2020	Next review date: 31 Mar 2021
Title : CINTRA SOP on Safety Management and Manpower		
Audience : All CINTRA Staff and Students		

1. AIM

This document outlines the appointment and responsibilities for staff, student, members of the public, members of the CINTRA Safety Committee and emergency response members within CINTRA.

2. SCOPE

This SOP is applicable to all staff under the management of the CNRS International-NTU-Thales Research Alliance (CINTRA). It is to provide a reference for all general operations and specific tasks undertaken by CINTRA Safety Committee. For role and responsibilities of Emergency Response personnel, please refer to CINTRA SOP on Emergency Response Plan.

3. DEFINITIONS

3.1 **Emergency Response Personnel** assumes specific duties in an emergency that may occur in the Centre to provide necessary assistance to mitigate the emergency. (Please refer to CINTRA SOP on Emergency Response Plan for roles and responsibilities of respective Emergency Response Personnel).

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- 3.2 **Person-In-Charge** is the person (faculty or research staff) delegated by the Director CINTRA acting on behalf of CINTRA as occupier.
- 3.3 **Safety Management Personnel** refers to the persons appointed to the Safety Committee or appointed to be responsible for particular area for CINTRA whose role is to promote workplace health and safety matters in the Centre, aligning to NTU's requirement.

4. ROLES AND RESPONSIBILITIES

4.1 **University**

De Facto 'Employer' whose obligations are defined in the Workplace Safety and Health Act.

4.2 **CINTRA Management Committee**

4.2.1 The following CINTRA Staff collectively manages the Centre:

- Prof COQUET Philippe, Director CINTRA
- Prof TAY Beng Kang, Dy Director CINTRA
- Dr DINH Xuan Quyen - Dy Director CINTRA and Management Representative CINTRA Safety Committee

4.3 **Director CINTRA**

4.3.1 'Occupier' whose obligations are defined in the Workplace Safety and Health Act.

4.3.2 Takes the legal responsibility whilst he can delegate the implementer but not responsibility.

4.3.3 Responsible for appointing a Management Representative to drive the implementation of the Safety Management System in the Centre.

4.3.4 Ensures Workplace Health & Safety Committee is implemented in CINTRA.

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- 4.3.5 Ensures necessary resources are allocated to implement NTU safety procedures and establish relevant safety management system in CINTRA where applicable.
- 4.3.6 Ensure the communication of safety procedures and safety management system is made to all personnel in the Centre.

4.4 **Management Representative**

- 4.4.1 Overall in-charge to oversee and drive the implementation of the Safety Management System in the Centre.
- 4.4.2 Triggers and conducts management review at least once per year.
- 4.4.3 Ensures records of management review and decisions made are documented and communicated to the relevant stakeholders.

4.5 **CINTRA Safety Committee**

- 4.5.1 To oversee the development and implementation of SMS for the Centre.
- 4.5.2 To review the safety performance and the safety objective(s) for the Centre and update the management when relevant.
- 4.5.3 To conduct safety inspection of the workplaces on a monthly basis and to cover each lab at least twice a year.
- 4.5.4 To investigate accidents and incidents in the Centre and implement follow up actions, and where necessary, ensure the safety issues are communicated throughout the Centre.
- 4.5.5 To implement emergency response for the Centre.
- 4.5.6 To promote safety activities for the Centre.
- 4.5.7 To implement audit and inspection reports and take corrective and preventive action plans for non-compliances noted so as to prevent similar re-occurrences.
- 4.5.8 To update the Director CINTRA on any safety issues and/or propose measures to improve the workplace safety.
- 4.5.9 To ensure compliance to legislative and licensing requirements.

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4.5.10 To set one or more Centre specific safety objective(s) each calendar year and to review the completion of this objective.

4.6 **Person-in-Charge**

- 4.6.1 Responsible for the provision of a safe and healthy working environment within his laboratory / office.
- 4.6.2 Specifies the roles and responsibilities of persons involved in the implementation of any safety measure or safe work procedures; and administers disciplinary action for violations.
- 4.6.3 Ensures implementation of WSHA regulations and other relevant local safety regulations, and develops lab-specific safety specifications.
- 4.6.4 Ensures workplace safety inspections are carried out regularly.
- 4.6.5 Ensures that all lab users are properly trained in Safety.

4.7 **Laboratory Safety Representative (LSR) and Admin Office Safety Representative (AOSR)**

- 4.7.1 Play the role of Lab / Admin Office Safety Officer of his/her assigned Laboratory/ office.
- 4.7.2 Implements CINTRA Standard Operating Procedures, WSHA regulations and other relevant local safety regulations, and develops lab-specific safety rules and specifications.
- 4.7.3 Carries out regular (monthly) workplace safety inspections and ensure that only safe methods of working are in operation and that all regulations are being observed.
- 4.7.4 Ensures registration, inspection and renewal of Permit or license for the use of Lasers, X-rays, Pressure Vessels, boilers, flammable materials and hazardous substances in the workplace are carried out with proper documentations and compliance to requirements by local legislations on its use and disposal.
- 4.7.5 Investigates and reports all accidents/incidents and dangerous occurrences to NTU Office of Health, Safety and Emergency

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(OHSE) and ensures that appropriate remedial measures are taken to prevent a recurrence.

- 4.7.6 To form in-house (Lab Level) emergency response team and plans to handle immediate emergency response in his/her workplace.

4.8 **Executives (Technical & Administrative)**

- 4.8.1 Emergency response and handle immediate emergency situations in his/her workplace.
- 4.8.2 Conducts risk assessment for all work related activities, projects, processes and operation of equipment in the workplace and ensure that Safe Work Procedures (SWP) are written to mitigate residue risks.
- 4.8.3 Ensures that staff and members of public (students, visitors, vendors and contractors) are briefed and understand the potential hazards, safety and emergency procedures in relation to the workplace.
- 4.8.4 Ensures Standard Operating Procedure (SOP) for lab equipment/ process has been carried out, safety precautions and emergency response procedures and contacts are documented and communicated.
- 4.8.5 Investigates and reports all accidents/incidents and dangerous occurrences to OHSE. Take reasonable, practical and appropriate remedial measures to prevent a recurrence.
- 4.8.6 The provision, use, suitability and required standards of protective clothing and safety equipment.
- 4.8.7 Complete all Safety courses related to his/her workplace hazards or as required by relevant regulations.

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4.9 **Principal Investigators**

- 4.9.1 Overall responsible for the safety and health of all experiment / project students and researchers under his/her care.
- 4.9.2 Endorse and approve Risk Assessment for all experiments, projects, process and equipment conduct by students and researchers under his/her care.
- 4.9.3 Ensures all proposed/planned acquisitions of new equipment meet local safety legislations and are budgeted for safety measures.
- 4.9.4 Provides a pre-purchase and post-installation Risk Assessment of the proposed new equipment or process under his/her charge.
- 4.9.5 Ensures that the risks and hazards involved are minimized, control measures taken, properly documented and communicated to students and researchers under his/her charge.
- 4.9.6 Ensures that staff and students under their purview comply with CINTRA safety rules.
- 4.9.7 Monitors compliance of all students/users under their charge and administers disciplinary action for violations as recommended by CINTRA Safety Committee.
- 4.9.8 Investigates and reports all accidents/incidents and dangerous occurrences to OHSE. Take reasonable, practical and appropriate remedial measures to prevent a recurrence.

4.10 **Contractors & Subcontractors**

- 4.10.1 Shall adhere to Risk Assessment Guidelines set by Ministry of Manpower (MOM).
- 4.10.2 Responsible for the safety of the sub-contract job irrespective of any duties, which may be delegated to others within his/her scope of work.
- 4.10.3 Investigates and reports all accidents / incidents and dangerous occurrences to the main contractor.
- 4.10.4 Ensures that appropriate remedial measures are taken to prevent a recurrence.

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4.11 **Staff Members and Students**

- 4.11.1 It is their primary duty to observe all safety rules and regulations.
- 4.11.2 Adhere to safe working procedures (SWP) and principles introduced at the workplace.
- 4.11.3 Must not behave in a way that is likely to cause injury to themselves or to others.
- 4.11.4 Put on all personal protective equipment issued by the workplace while carrying out their duties.
- 4.11.5 Co-operate with their supervisors, lab staff on safety matters.
- 4.11.6 Inform all unsafe conditions in their works/experiments to their supervisors.
- 4.11.7 Report all accidents and incidents to the supervisors / lab staff immediately.

4.12 **Visitors, Vendor, Contractors and Others**

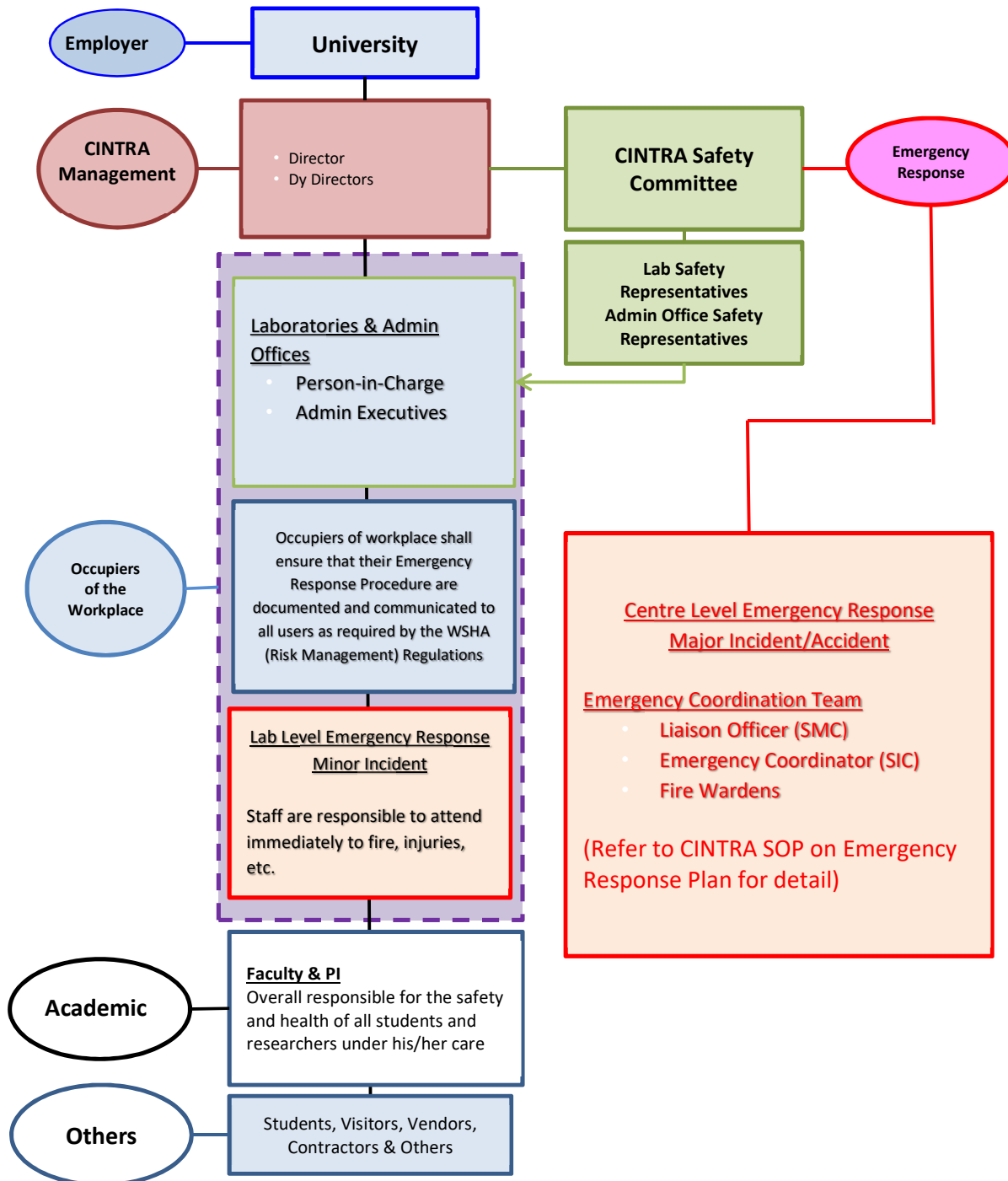
- 4.12.1 Strictly adhere and follow to the safety practices and guidelines.
- 4.12.2 To be accompanied by staff members or occupier of the workplace.

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5. Safety Management

5.1 Safety Management Flow Chart



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5.2 Manpower Chart

5.2.1 CINTRA Safety Committee

Chairman	Prof Phillippe Coquet Phone: 6790 6596	
Deputy Chairman Cum Management Representative	Dr Dinh Xuan Quyen Phone: 6316 2955	
Safety Advisor	Mr Chia Teck Beng, Benny (Office of Health and Safety) Phone: 6904 7396	
CINTRA Safety Officer	Dr Liang Kun Phone: 6316 2955	
Recording Secretary	Ms Choo Hwee Pin Phone: 6790 6595	

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Representative - Radiation Administrator	<p>Dr Xia Nan</p> <p>Phone: 6790 6595</p>	
Representative - Emergency Preparedness Coordinator	<p>Dr Zeng Yongquan</p> <p>Phone: 6790 6595</p>	
Representative - Safety Outreach Coordinator	<p>Liliana Tjahjana</p> <p>Phone: 6790 6595</p>	

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5.2.2 Responsibilities and Authority of CINTRA Safety Management Team

Appointment	Responsibilities	Authority
Chairman	<ul style="list-style-type: none"> • Workplace Health & Safety is implemented in CINTRA. • Ensures necessary resources are allocated to implement NTU safety procedures and establish relevant safety management system in CINTRA where applicable. • Lead and drive the committee in achieving its function. • Review and approve Centre policy, where applicable. 	<ul style="list-style-type: none"> • Enforcement - Close down labs that do not meet safety regulations. • Appoints a Management Representative (MR) to drive the implementation of the Safety Management System in the Centre.
Dy Chairman & Management Representative	<ul style="list-style-type: none"> • Workplace Health & Safety is implemented in CINTRA. • Overall in-charge to oversee and drive the implementation of the Safety Management System in the Centre. • Triggers and conducts management review at least once per year. • Ensures records of management review and decisions made are documented and communicated to the relevant stakeholders. 	<ul style="list-style-type: none"> • Enforcement - Close down labs that do not meet safety regulations. • Appoints personnel to drive the implementation of the Safety Management System in the Centre. • CINTRA SMS / SOP approver.
Safety Advisor (OHS – POC)	<ul style="list-style-type: none"> • Assist Chairman and Dy. Chairman in implementing Centre safety management system. • To educate/enforce safety and legal requirements in CINTRA, University's safety documents as well as CINTRA's SMS. 	<ul style="list-style-type: none"> • Enforcement - Stop work order for operations that do not meet safety regulations.
Recording Secretary	<ul style="list-style-type: none"> • Keeping of Minutes of meeting. • Send notice of meeting date, time and venue. 	

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<p>CINTRA Safety Officer</p>	<ul style="list-style-type: none"> • To advise the Centre management pertaining to HSE matters. • To assist in implementing Centre safety management system. • To promote workplace health, safety and environment (HSE) initiatives amongst stakeholders, such as staff, faculty, students, collaborators and contractors. • To educate/enforce safety and legal requirements in University's safety documents, CINTRA SOPs, as well as CINTRA's SMS. • To review and strive for continual improvement for Centre of CINTRA's HSE performance. 	<ul style="list-style-type: none"> • Enforcement - Stop work order for operations that do not meet safety regulations. • Assists Chairman in the implementation of disciplinary actions meted out. • Issue of Non-Conformity for unsafe acts. • Issue of Non-Conformity for unsafe practices. • Establish a safety inspection regime for Centre (at both Lab/Office and Safety Committee levels). • Ensure CINTRA's safety inspections are aligned with NTU's procedures. • Maintain and update CINTRA's Safety Inspection documents. • Raise issues of concern, where necessary, of a serious nature to CINTRA Safety Committee, Principal Investigators or lab staff for resolution. • Review and keep records of all inspection report findings.
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5.2.3 Roles and Responsibilities of Safety Appointment Holders

Name	Appointment	Responsibility
Dinh Xuan Quyen (Dr)	Management Representative Safety Inspection & Internal Audit Coordinator	<ul style="list-style-type: none"> • Establish and document audit management of CINTRA. • Schedule and plan internal audits for CINTRA labs. • Document all audit reports. • Ensure corrective/preventive actions are follow-up.
Liang Kun (Dr)	Safety Officer Workplace Risk Assessment System (WRAS) Administrator	<ul style="list-style-type: none"> • Establish and document the Centre's risk management practices. • Work with team to create Centre level's RA and Safe Work Procedure (SWP) for common activities. • Manage the risk register for CINTRA and housekeep the risk assessment records in the WRAS. • Assist Centre users with their RA/Workplace Risk Assessment System (WRAS) issues or feedbacks. • Liaise with OHS on the use of WRAS, if necessary.
Dinh Xuan Quyen (Dr)	Contractor Management Coordinator	<ul style="list-style-type: none"> • Establish and document contractor management system for CINTRA. • Maintain the CINTRA Contractor List of approved contractors. • Communicate CINTRA contractor management requirements to staff and contractors. • Ensure all contractor management procedures are comply.
Dinh Xuan Quyen (Dr) and Liang Kun (Dr)	Incident Management Coordinator	<ul style="list-style-type: none"> • Establish an incident management system within CINTRA. • Involve in investigating any accident, incident and near miss within CINTRA. • Provide support and guide investigation team in the investigation. • Document and record all incident within CINTRA or affecting CINTRA staff/student.

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Name	Appointment	Responsibility
Mohamed Boutchich (Dr)	Maintenance of Equipment	<ul style="list-style-type: none"> • Maintain maintenance records of equipment, such as gas detectors, fume hoods, within CINTRA periodically. • Ensure maintenance regime for equipment as per CINTRA SOP on Maintenance Regime. • Ensure implementation of lockout and tagout system within CINTRA. • Establish system for hot work operation, working at height operation, confined space operation and lifting operation within CINTRA. • Ensure safety requirements are met for these operations. • Assist on electrical conformance and safety matters within CINTRA.
Choo Hwee Pin (Ms)	Safety Training Administrator	<ul style="list-style-type: none"> • Establish and document the training procedures for Centre of CINTRA. • Document the safety training records for CINTRA. • Ensure CINTRA training matrix is updated and reviewed. • Communicate training matrix to staff, students and stakeholders. • Monitor training progress of staff, students and stakeholders.
Choo Hwee Pin (Ms)	Documents Controller	<ul style="list-style-type: none"> • Control safety document on behalf of CINTRA. • Maintain a list of all approved OSH documents for the Centre. • Issue each document with unique number, including revisions made. • Check submitted document by the Author has been approved and is in accordance with the requirements having all relevant information. • Archive obsolete documents. • Communicate new document released.
Choo Hwee Pin (Ms)	CINTRA Safety Web Master	<ul style="list-style-type: none"> • Maintain Website updated.

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Name	Appointment	Responsibility
Xia Nan (Dr)	Radiation Administrator	<ul style="list-style-type: none"> • Endorse purchase requisition for lasers, ultrasonic equipment, XRD, upon satisfying that conditions are met. • Liaise with NEA's PRNSD on the list of radiation workers and the exchange of TLD badges. • Monitor the status of NEA Licences in the Centre.
Liliana Tjahjana	Safety Outreach & Communications	<ul style="list-style-type: none"> • Organize safety programmes that support staff and students' safety & wellbeing within Centre. • Ensure new safety information is communicated to staff and students. • Review and update information on CINTRA Safety Notice Boards periodically. • Review and update information on CINTRA Safety Website periodically.
Zeng Yongquan (Dr)	Emergency Preparedness & Contractor Management	<ul style="list-style-type: none"> • Establish and document emergency response procedures for CINTRA. • Work with Emergency Response Team and University Fire Safety Manager on continual improvement of emergency response procedures within CINTRA. • Plan for emergency drills and table top exercises in CINTRA. • Maintain emergency equipment at operational ready status.

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Appendix A: CINTRA Safety Responsibility, Accountability and Authority

Function	Responsibilities	Accountability	Authority
Director	To implement the required safety management system aligning to the University's requirements.	Accountable for the safety performance for the Centre.	Empowers to take action and/or delegates resources to make the Centre safer.
Management Representative (MR) and Safety Committee Members	<ul style="list-style-type: none"> a) To assist the Director CINTRA on the development and implementation of the safety management system. b) Make continual improvement to the OSHMS. c) To carry out the management review with the Director (or the Centre Management Committee) at least once a year on the OSHMS implementation status. 	Accountable to ensure that the safety management system is implemented effectively in the Centre.	<ul style="list-style-type: none"> a) Require persons in the Centre to co-operate and implement the required safety requirements. b) Carry out the disciplinary action against persons who violate safety rules.
Supervisory staff (Principal Investigator, Laboratory Managers, Administration Managers)	<ul style="list-style-type: none"> a) Directly responsible for the occupational health and safety of persons under their supervision. b) Ensure risk assessment is conducted for the activities under their purview and put in place practical measures to control the risks. c) Report promptly to the Centre management or CINTRA Safety Committee and involve in incident investigation where necessary. 	<ul style="list-style-type: none"> a) Directly accountable for the safety and well-being of the persons reporting to them. b) Accountable for the safety and maintenance of equipment and materials bought and used by his staff and students in his/her work area. c) Accountable to ensure findings highlighted from safety 	Authority to give instructions to persons entering into their workplace to abide by the safety rules or barred them from entering the area when safety rules are not observed.

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Function	Responsibilities	Accountability	Authority
	<ul style="list-style-type: none"> d) Ensure persons under their supervision attend the relevant safety training or re-training. e) Communicate safety requirements to persons under their supervision to heighten safety awareness. f) Ensure the provision of PPE are provided for their staff and students for the activities to be carried out. 	<p>inspections, audits or incidents are follow up and closed.</p>	
Individuals (faculty members, research staff or students)	<ul style="list-style-type: none"> a) Adhere to all Centre safety rules and requirements. b) Report all incident promptly and assist in the investigation. c) Report unsafe act or condition to his/her Principal Investigator (PI) and CINTRA Safety Committee or safety officer. d) Attend or take the required safety training, include any refresher training. e) Carry out risk assessment for the work activity and seek approval by his/her Principal Investigator (PI) before work commencement. f) Use the required PPE where necessary. 	<ul style="list-style-type: none"> a) Accountable for his/her personal safety as well as the persons working around them by following all the established safety requirements or procedures. b) Accountable to ensure he/she completes the required safety training as instructed by Centre. 	<ul style="list-style-type: none"> a) Authorized to refuse to continue with the work should the environment becomes unsafe or is hazardous to oneself. b) Authority to highlight, stop or correct any observed unsafe practices or conditions to other persons in the work area in preventing an accident.

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Version History

This Table below reflects the summary of changes made to the document. The full change information is indicated with yellow highlight in the document content.

Revision	Section	Details of Change	Document Author	Effective Date	Approved
00	N.A	Initial Release	Dinh Xuan Quyen (Dr)	08 JUN 2017	Prof Phillippe Coquet
01	5.2.1	Change: Dr Zeng Shuwen to Liliana Tjahjana Change: Benny's contact numbers	Benny Chia	09 APR 2018	Dr Dinh Xuan Quyen
	5.2.3	Replace: Dr Zeng Shuwen with Liliana Tjahjana			
02	5.2.1	Replace: Dr Xu Zhilin with Dr Luo Yiyang	Wang Xingli (Dr)	09 Jul 2018	Dr Dinh Xuan Quyen
	5.2.3	Replace: Dr Xu Zhilin with Dr Luo Yiyang			

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03	5.2.3 and 5.2.1	Replace Ms Jing Fei with Ms Choo Hwee Pin	Choo Hwee Pin	09 Mar 2020	Dr. Dinh Xuan Quyen
04	Whole Document	Update names.	Dr Zeng Yongquan	18 Dec 2020	Dr Dinh Xuan Quyen

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