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Our Reference: PE210296 - VAR

4 Mar 2022

Taylor Construction Group Pty Ltd
Level 13
157 Walker Street
North Sydney NSW 2060

Attention: Mr Simon Chow

Re: PE210296 Conservation Lab Building J DG Risk Assessment – Close out letter

ACOR Consultants (WA) Pty Ltd was engaged by Taylor Construction Pty Ltd (Taylor) to evaluate a proposed design of a Conservation Laboratory and provide advice in accordance with regulations and applicable standards to ensure dangerous goods storage and handling compliance.

ACOR has assisted relevant stakeholders to understand the requirements and advice on any alternative solutions to achieve compliance in relation to dangerous goods storage through a workshop.

Report "*PE210296 Conservation Lab Building J DG Risk Assessment R0 02 20211201"* was submitted by ACOR on 1 December 2021. This report captures all the non-compliances identified at that time in: Table 10 AS/NZS 2982:2010 Action items (Table 10) and Table 11 AS/NZS 2243.10: 2004 Action items (Table 11) of the report. All the comments from relevant stakeholders were also incorporated in this report.

It is to be noted post issue of this report it has come to our attention that 2243.10: 2004 has been superseded by AS 2243.2 Safety in laboratories, Part 2: Chemical aspects and storage. This information was shared with Taylor. A full compliance checklist against 2243.2 was not completed as it was not a part of the original scope. However, high-level changes have been informed. For the purpose of this deliverable AS 2243.10 will be referred as it was applied and relevant at the time of assessment.

This letter is to serve as a close out to the action items raised within the report based on the final suite of drawings received, 'ISSUED FOR COORDINATION 'on 24 February 2022 from Simon Chow, Design Manager.

Attached to this letter is the action items and ACOR's close out comments based on information provided.

Taylor to note that this deliverable acts only as a supplementary document to the previously issued report and in no form serves as a replacement.

It is Taylor's responsibility to ensure that all the findings in the report is acknowledged and implemented accordingly. Any further changes to the design, Australian standards or information in any other drawings not received by ACOR, Taylor to hold the responsibility that they are compliant with the requirements of regulation and relevant Australian Standard.

To summarize the evaluation of action items against the recently issued report using information received:

- The aisle width requirements have been addressed by removing the items from the respective areas of the lab.
- Relevant drawings have informed on the wall finishes, access and egress, DG cabinets' location, fume cupboard location and electrical fittings within the different areas of the lab. These drawings do

not directly address the requirements in the action items such as compliance to relevant standard (AS/NZS 3000 for electrical fitting, AS 1668.2 for ventilation, chemical resistance). Taylor to ensure that the specifics of the action items have been addressed as required.

- Signage must be installed as required prior to usage of the laboratory
- Majority of AS 2243.10 action items have been identified as on-going operational instructions and ACOR recommends for them to be added as a part of laboratory's internal procedures and train relevant staff accordingly.

Refer to the attachments of this deliverables for elaborated responses from ACOR pertaining the lab categorized into Yes, No or Procedural.

Yours Faithfully,

Mounica Achuthan

Digitally signed by Mounica Achuthan
DN: C=AU, E=MAchuthan@acor.com.au, O="ACOR Consultants Pty Ltd ", OU="Petrochemical ", CN="Mounica Achuthan "
Date: 2022.03.04 15:24:58+08'00'

Mounica Achuthan

Project Engineer – Energy

Close out comments for action items

Table 10 Action items AS 2982: 2010	Complies	Close out comments from ACOR Consultants
The following materials used within the laboratory to be chemical resistant - Walls of the lab - Sealants used for joints - Shelving - High benches and its cabinetry - Any openings in the floor	No	As per J-WD-A1404 Rev 19, the walls of the laboratory is moisture resistant . J-WD-A7005 Rev 06 states that stainless steel benchtops are used for high benches. Cabinetry and drawers/shelving to FF&E Spec. As per J-WD-A1704 08 wall finish codes of the laboratory is PA-6 and the wall inside the wet lab, analytical space and dirty lab is VIN-03. No information on openings in the floor and sealants has been provided. Taylor to ensure that they are chemical resistant.
Access and egress to all the areas of the laboratory to be always unobstructed and compliant to the relevant building code	Procedural	As per J-WD-A1404 Rev 19, it appears that access and egress are unobstructed. Relevant stakeholders of the laboratory to maintain this. ACOR assumes the laboratory has been built to a relevant building code.
If any write up areas are provided, they are required to be separated from where the hazardous chemicals are being used	Procedural	No drawing provided confirms this. ACOR identifies this as a procedural action item and is required to be incorporated as a part of lab's operational procedures. ACOR also recommends that personnel at the lab are trained on procedures to follow within the lab.
The portable sink in the wet lab to be altered or removed to achieve compliance to the aisle width requirement for assessment area 1 and 2. Refer to Figure 4	Yes	The mobile sink has been removed from the wet lab J-WD-A1404 Rev 19. This action item does not apply
The pre-fab cupboard in the conservation laboratory assessment area 1 (as identified in Figure 5 to be removed to achieve compliance to the aisle width requirement	Yes	The pre-fab cupboard has been removed as per J-WD-A1404 Rev 19. This action item does not apply
One of the pre-fab cupboards in the conservation laboratory assessment area 2 (as identified in Figure 5) to be removed to achieve compliance to the aisle width requirement	Yes	The pre-fab cupboard has been removed as per J-WD-A1404 Rev 19. This action item does not apply
Electrical wiring and services installation to be compliant with AS/NZS 3000	No	No drawing provided confirms this. Taylor to ensure this is implemented accordingly. DG cabinets have been identified in Conservation lab, wet lab, dirty lab and fume cupboards within Analytical space and dirty lab as per J-WD-A1604 Rev 09. J-WD-A1504 Rev 14 has identifies electrical lighting services, emergency services and suspended electrical power services in the ceiling. Table 12 Hazardous area zones of the report defines the hazardous zones around relevant DG cabinets and fume cupboards. Taylor to ensure to comply with this accordingly.
Hazardous area classification as per Appendix A to be applied and all electrical installation within these areas are to be intrinsically safe	Procedural	No drawing provided confirms this. Taylor to ensure this is implemented accordingly. DG cabinets have been identified in Conservation lab, wet lab, dirty lab and fume cupboards within Analytical space and dirty lab as per J-WD-A1604 Rev 09. J-WD-A1504 Rev 14 has identified electrical lighting services, emergency services and suspended electrical power services in the ceiling. Table 12 Hazardous area zones of the report defines the hazardous zones around relevant DG cabinets and fume cupboards. Taylor to ensure to comply with this accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on procedures to follow within the lab.
Socket outlets throughout the lab are required to be fitted with residual current protection	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly
Ventilation of the laboratory to be compliant to AS1668.2	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly
Contaminant levels does shall not exceed Worksafe Australia Exposure standards for Atmospheric contaminants in the Occupational Environment NOHSC: 1003, adequate ventilation to be provided to address this.	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly
At least one safety shower to be provided within the lab, and it shall be capable of being operated so that water flow remains constant without requiring use of operator's hand. It shall be compliant to AS4775	Yes	J-WD-A1404 Rev 19 shows a eye wash and safety show is provided in Wet lab and is therefore compliant with these requirements
Safety notice board to be installed including list of emergency contacts and any particular hazards to be provided in a prominent place in each working area. Safety signs comply with AS 1319, hazards signs and placards with NOHSC: 300	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly
Suitable lab coat hooks to be provided adjacent to the access door and proper storage for PPE	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly
Suitable storage area for safe temporary storage of solid or liquid wastes within the laboratory to be provided until removed by a suitable agency or any other approved means	No	No drawing provided confirm this. Taylor to ensure this is implemented accordingly

Table 11 Action items AS/NZS 2243.10 2004	Complies	ACOR comments based sketches received from Taylor Construction
The aggregate quantities of Hazardous chemicals stored within 10 m of any cabinet location does not exceed 250 L or 250 kg, including no more than 10 L or 10 kg of PG 1 of Class 5.1	Yes	The maximum quanity of DG's being stored at any given time is 150 L, 5 x 30 L DG cabinets. Therefore compliant with this clause. Relevant Laboratory stakeholder to ensure that no more than 10 L or kg of PG I of Class 5.1 is stored
Class 8 chemicals are to be stored to prevent reaction between any other incompatible material	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on hazards associated with the different DG stored on site.
3 m separation distance to ignition sources other than ceiling lights	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures.
Incompatible Class 5.1 chemicals should be stored separately, SDS is to be referred to understand compatibilities	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on hazards associated with the different DG stored on site.
All chemicals to be labelled as per regulatory requirements	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on hazards associated with the different DG stored on site and procedures to follow within the lab.
HAZCHEM signage to be installed at the point of entrance where the emergency service organisation will be entering the area	No	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly
SDS to be made available for all the dangerous and hazardous chemicals stored in the lab	No	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly
Storage quantities of hazardous chemicals outside of the cabinets to be maintained as Table 9 of Section 7.3.	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on procedures to follow within the lab. Refer to PE210296 Conservation Lab Building J DG Risk Assessment R0 02 20211201
Decanting containers to not exceed 25 L or kg	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on procedures to follow within the lab.
Suitable spill kits to be provided	No	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly
Flammable liquids to be decanted using hand operated pumps	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly. ACOR identifies this as a procedural action item and is required to be incorporated as a part of their operational procedures. ACOR also recommends that personnel at the lab are trained on procedures to follow within the lab.
Spillage containment equal to the largest container to be provided when dispensing	Procedural	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly
At least one fire extinguisher to be made available outside the door to the store. The minimum size of fire extinguisher shall be equivalent to a 2A 60B(E) for powder-type extinguishers or a 2A 20B for foam extinguishers	No	No drawings provided to confirm this. Taylor to ensure this is implemented accordingly