EMAI Biosecurity Upgrade

DESIGN AND CONSTRUCTION OF LABORATORY BIOCONTAINMENT FACILITIES

Wednesday 12 May 2010

8.30-9.00	COFFEE / REGISTRATIONS
9.00-9.30	**Welcome and Introductions**
9.30 to 10.30	**Principles of biocontainment** (Tony Della-Porta) *This presentation will cover primary and secondary barriers, aerosol containment, PC1 to PC4 containment levels and practices, and international standards and guidelines. This presentation will also cover the causes of laboratory infections and how engineering controls assist in the prevention of these infections.*
10.30-10.50	MORNING TEA
10.50-11.50	**Standards and Regulations**: **Australian regulations, standards and Health Security Act and what an assessor looks for**. (Neil Walls & Tony Della-Porta) *This talk will cover AS/NZS243.3, AS/NZS2982, OGTR and AQIS Regulations and what assessors often find wrong in facilities. It will also cover the Department of Health and Ageing requirements under the* ***National Health Security Act:2007*** *for Tier 1 and Tier 2 Security-sensitive Biological Agents.*
11.50-12.30	**Specialised sandwich panels** *(Dagard)* (Tony Della-Porta) *This technology utilises the combination of specialised clean room and biocontainment panels, a design and construction service, and supply of integrated doors, windows and penetrations*
12.30-1.15	LUNCH
1.15-1:45	**Penetrations** (Neil Walls) *Correct penetration of electrical, hydraulic, air handling and other services is critical to the saleability of biocontainment facilities. We will describe and demonstrate penetrations that can be utilised in biocontainment facilities.*
1:45-2:45	**Air Tightness, Air Pressures, Leakage and Testing** (Neil Walls) *The standards and authorities require that a PC3 or PC4 facility must be able to support gaseous decontamination. This requires the facility to be*

sealed to a very high standard. This session looks at how this is achieved and measured.

2:45 – 3:00 AFTERNOON TEA

3.00-4:00 **Air handling systems** (Neil Walls)
The design and requirements of air handling systems for PC2, PC3 and PC4 laboratories and animal facilities. This presentation will include details on air flow rates, conditioning, directional air flow, maintaining pressure zones, duct system design and HEPA filtration requirements

4:00 – 5:00 **Case Study: Identify what can go wrong** (GROUP EXERCISE) (Tony Della-Porta)
This will be a group exercise to identify faults in a number of biocontainment projects which will be illustrated and discuss of the findings will illustrate some of the common problems seen in biocontainment facility

5:00 - 5:10 WRAP UP OF DAY 1

Thursday 13 May 2010

8.30-9.00 COFFEE / INTRODUCTION TO DAY 2

9.00-9.45 . **Hydrogen Peroxide and Chlorine Dioxide** (Neil Walls)
With formaldehyde likely to be banned for use in Australia within the next 10 years vaporized hydrogen peroxide is becoming the method of choice. This presentation will describe the principles of this method and will discuss the use of Steris and Bioquell equipment.

9:45 – 10:15 **Waste treatment principles and issues** (Tony Della-Porta)
This will cover the treatment waste and decontamination. It will cover autoclaves, disinfectants, sterilisation, and decontamination.

10:15-10:30 MORNING TEA

10:30 – 11:30 **Liquid waste treatment** (Neil Walls)
There are a number of alternative methods of dealing with potentially contaminated liquid waste. These vary greatly in cost, effectiveness against different risk organisms and volume capacity. This session will examine current technologies that are available. It will also introduce some new methods that are being considered in this growing industry. There will be a coverage of the potential use of the Actini continuous flow system for treatment of animal liquid waste.

11:30-12.15 **Solid and carcass waste treatment** (Neil Walls)

	*Some waste includes a mixture of solids and liquids, such as animal waste material and infected carcasses. A number of alternative methods of dealing with this difficult waste material will be examined, with some recommendations concerning their particular advantages and limitations as well as spatial considerations for plant and infrastructure.*LUNCH
12:15-12:45	**Building monitoring and control systems** (Neil Walls) *Neil will talk about the principles of control systems for biocontainment facilities and where the technology is heading.*
12.45	WRAP UP AND LUNCH