



ASSOCIATION OF
CONSULTING ENGINEERS
SINGAPORE

ACES-Trane Technical Seminar



Date: 17 June 2026 (Wed)

Time: 2.00 pm to 5.00 pm

Mode of Delivery: In-person

Venue: ACES Office at 18 Sin Ming Lane
#06-01 Midview City S573960

Fee: Complimentary for ACES Member
\$50 nett per person for Non-Member

CPD: PDU to be confirmed

Topic: ASHRAE Standard 15 – Safety standard for Refrigeration Systems

Synopsis

ASHRAE Standard 15 (Safety Standard for Refrigeration Systems)

is an internationally recognised standard governing the design, installation, and operation of refrigeration systems. In Singapore, SS-553 (Code of Practice for Air-Conditioning & Mechanical Ventilation in Buildings) explicitly calls for its adoption - under section 5.10.4 **Use of Refrigerants** (SS553:2026)- as a best practice guide. ASHRAE Safety code and SS-553 are routinely listed as part of compliance framework. However, owing to a lack of in-depth understanding of its requirements pertaining to plant-room safety, implementation can fall short of the intent of this standard. The key requirements for chiller plant-room safety are provisions for mechanical ventilation, leak detection system with alarms, piping of pressure relief devices outside and provision of self-contained breathing apparatus (optional). Since a few years ago, Standard 15 has been updated -with additional requirements- to address the adoption of slightly flammable refrigerants (A2L) such as R32 in VRF system and R1234ze in chillers. This talk focuses on the above key requirements, highlighting areas where certain aspects may be overlooked or misunderstood. All approved refrigerants (listed under ASHRAE STD 34) are safe to use, provided proper safety measures are put in place. ASHRAE STD 15, first edition more than 80 years ago, is the gold standard for safe application of refrigerants in HVAC&R systems.

Learning Objectives:

- 1) Understand the scope and applicability of ASHRAE STD 15 to chiller plantroom
- 2) Identify refrigerant classification (STD 34) and safety data
- 3) Understand the key plantroom requirements for Non-Flammable (A1, B1) refrigerants
- 4) Know the additional requirements for A2L (Slightly flammable) refrigerants
- 5) Calculate Mech Ventilation Rate for A1/B1 and A2L refrigerants (different formula apply)
- 6) Know the difference between smoke extraction and refrigerant vapour extraction systems

Speaker: Mr. Yow Kuan Yee, Technical Consultant, Trane Air-Conditioning

Yow is a Technical Consultant with Trane Air-Conditioning and has 45 years of experience in the HVAC industry. He retired in 2020 and continues to support Asia Pacific on a part-time basis as technical consultant and principal trainer. He has been actively involved in regional training and is a regular presenter on green chiller plant design and optimisation, including the ACES-Trane HVAC workshop in 2015. He is a life-member of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and has served as Chairman of the Education Committee of the Singapore Chapter. He is also a past president of the Air-conditioning Association of Singapore (ARA). He holds a degree in Mech Engineering (NUS) and an MBA from Nanyang Business School (NTU).

Registration Link & QR

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