1. Executive Summary

This report presents a comprehensive Available Safe Egress Time (ASET) analysis conducted using Fire Dynamics Simulator (FDS) computational fluid dynamics modeling. The analysis evaluates the time available for safe evacuation before untenable conditions develop at the designated exit location.

> ### ASET Result
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> Available Safe Egress Time: **5.5 seconds**
> Critical Failure: **Temperature**
> The analysis indicates that untenable conditions develop at 5.5 seconds due to Temperature exceeding safe limits. This ASET value must be compared with Required Safe Egress Time (RSET) to determine if the building design provides adequate safety margins.

Key Findings

- **Exit Location:** (8.00, 3.00, 1.80) meters (X, Y, Z coordinates at breathing zone height)
- **Analysis Method:** FDS computational fluid dynamics simulation with Plot3D data extraction
- **Tenability Assessment:** Five physiological criteria evaluated (temperature, visibility, CO_2, CO, O_2)
- **Safety Approach:** Performance-based design per NFPA 101 and ISO/TR 16738 guidelines