

### Design

The Basis of Design for AFP is developed using standards, legislative requirements, industry guidance / good practice, corporate standards and where required, class requirements. MMI has the experience and expertise to assess fire hazards and hence can develop the system requirements and performance standards to mitigate or manage them. Detailed design is undertaken using a number of modelling tools, including Pipenet, Flowmaster and Ledaflow (taking into consideration pump locations, piping runs, fire hazards, fire zones and interactions with other systems).

### Review & Assessment

The active water system requirements are reviewed and assessed against the design criteria, the current hazards, or changes in operational needs. This involves assessing the deluge rates or deluge / water curtain locations, to ensure adequate protection is provided to both personnel and plant. Modifications in the system to incorporate any changes are based on a review of the capacity of existing AFP systems, while taking into consideration pump output curves, pipe layouts / sizes and water drop test results.

Reliability and redundancy assessments of the full system are undertaken to not only estimate the potential for system failure, but to determine whether the system will deliver the required water capacity in a degraded state.

### Practical Experience

As well as modelling and desk-based modelling capabilities, MMI Engineering has practical experience in the assessment of AFP systems. Project examples include:

- Experiments and tests to assess the ability of deluge systems in providing protection against, and mitigation of, jet and pool fires
- Deluge drop tests
- Strong vibration assessments of installed AFP systems
- Location and coverage reviews of deluge systems

