Challenges in Mega Projects
No Of Nozzles = 13000
Total Flow Rate=800 L/M

Projects - from our point of view
No Of Nozzles = 1000
Total Flow Rate=600 L/M
Industrial

No Of Nozzles = 800

Total Flow Rate = 300 L/M
No Of Nozzles = 500

Total Flow Rate = 120 L/M
MEGA Project

- No Of Nozzles = 33,826
- Total Pump Capacity = 27,800 L/M
- Multiple system configurations: electrical, diesel and gas-driven pump units
- No. of Pump stations: 21
- Flow rates are based on pump unit capacity, not the dimensioning criteria of single object protection as it was in previous examples.
Projects Overview

- Passenger Ship
- Hotel
- Industrial
- Data Centre
- Mega Project

Water mist fire protection by HI-FOG®
Reliable System = Complex Arrangement

Reliable system

System types (wet, dry, pre-action)

Various different applications

Various pump rooms

Control System

Alarm System
7 contributing factors

1. Owner
2. Civil defense
3. Main contractor
4. Consultant
5. Operator
6. Site Progress
7. Finance
1-System: to be type approved
2-Design: to be submitted in advance before any contractual commitments.
3-Installation : with approved tools in accordance with NFPA requirements
4-Civil Defense Approvals

1-Company
2-Product
3-Installation

Owner Expectations
Local Civil Defense Approval

- SASO certificate in accordance to Saudi standards
- Tools inspection
- Design office inspection
- ISO
- Insurance liability
- 3rd. Party Approval
- Reference list in Saudi Arabia !!
- Other approvals (i.e. ARAMCO, ..)
1. Co-operation with other subcontractors

2. Complete turnkey scope of delivery

- High pressure water mist system: 37%
- Fire alarm: 25%
- Cables: 13%
- Supports: 15%
- Water tank: 10%

Main contractor Expectations
- Coordination with HVAC, lighting, cable tray, ...
- Study the expansion of the building structure
- Provide extra materials (within the scope of work) i.e. (flow switches, ball valves, ...)

Shop Drawings Requirements
Full compliance with NFPA750-NFPA13-NFPA20

Compliance with local fire code

Full compliance with consultant specification
Do you have stock of materials?

Do you have sufficient man power?

Do you have staff in site for As-built?

Do you have certified staff?

Do you have staff on-site for design modifications?
Cash flow management in mega projects is challenging
• Owner: you are expensive
• Civil defense: you must be in compliance with all codes & regulations
• Consultant: you have to 100% compliance with every thing
• Supplier: I am the key person
• Local inspector: you have to certify
Mega projects require huge designing & engineering resources before the contract.

- Piping layout drawings & electric plans
- Pump room drawings
- System specifications & DIOM
- Detailed BOQ

which may need to be updated many times.
• Mega projects are challenging to execute because of:
  • Customers and authorities are very demanding.
  • Mega project require a lot of on-site resources.
  • Financial planning is challenging.
Thank you!