



6th CPSS

Chemical Process Safety Sharing

Webinar (MS team)

5th November 2020



**Linkage software – SAFETI and CFD for
blast wall design**

Khun Chanida Chaikittiratana /SCG



6th Chemical Process Safety Sharing (CPSS)

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Agenda

- 09:30 – 09:40 Safety Moment**
- 09:40 – 10:00 Opening Speech by IRPC**
Mr. Apirom Pongnoppa / IRPC & Prof.Dr. Paisan Kittisupakorn / TIChE
- 10:00 – 10:45 1# IRPC Alarm management**
Mr. Sakda Arunpan / IRPC
- 10:55 – 11:40 2# Digitalize PSE and Operating Window Collaboration Project**
Mr. Sompong Wannasiriluckakda & Mr. Pattara Tepnu / GC
- 13:00 – 13:45 3# Pre Startup Safety Review (PSSR)**
Mr. Sermsak Nuntapong / TOP
- 13:55 – 14:40 4# Linkage software – SAFETI and CFD for blast wall design**
Khun Chanida Chaikittiratana /SCG
- 14:50 – 15:35 5# Improve IPL for ISO Tanker (Un)Loading Operations handling hazardous chemicals & Dangerous goods**
Mr. Senthilvelan Karthikganesh / Solvay

Note :Sharing Topic 15 Minutes /Topic & Discussion 30 Minutes./Topic

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CFD and SAFETI for building improvement



- QRA by SAFETI software



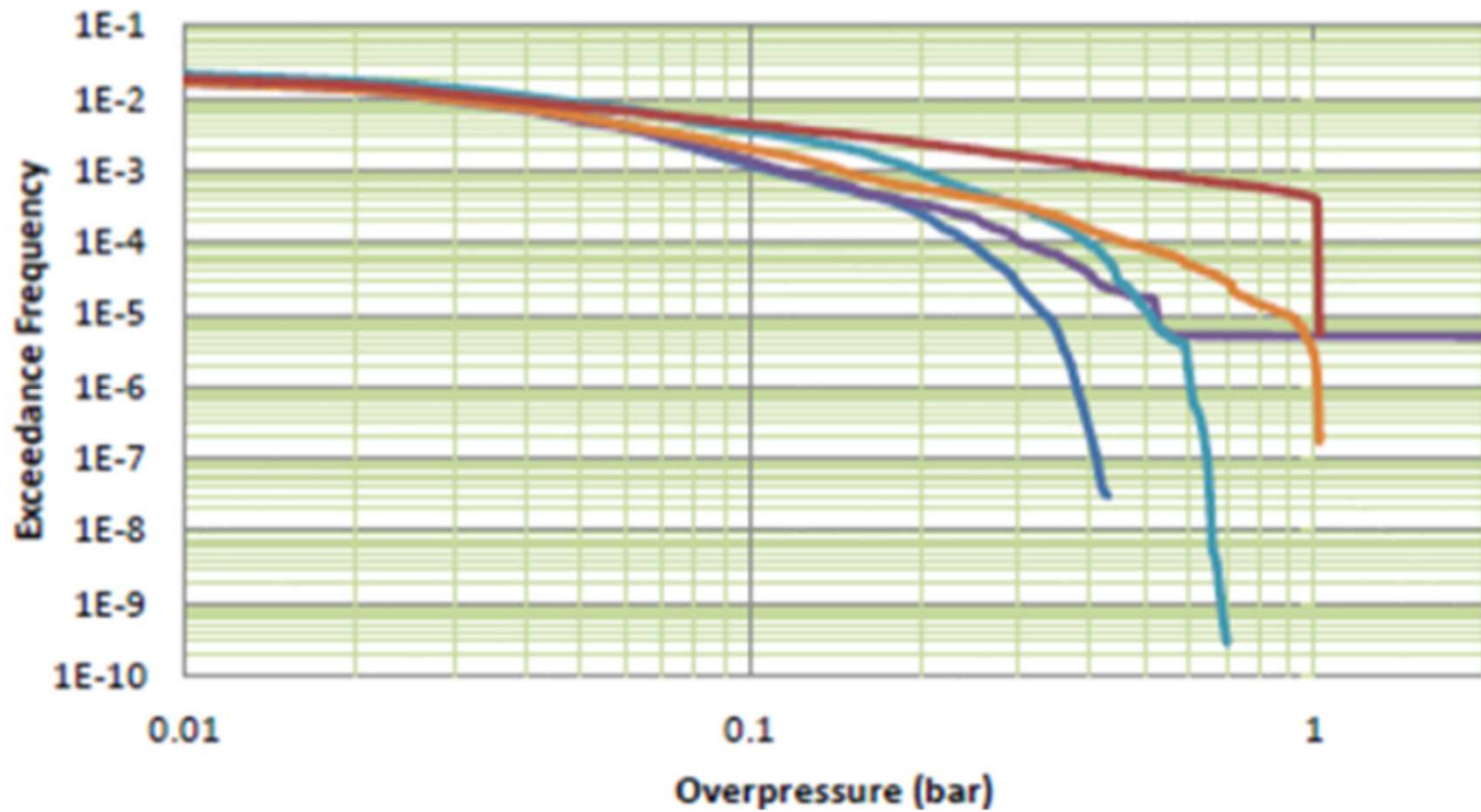
- Option for mitigation

- Apply CFD for blast wall design

QRA by SAFETI



Example of side-on overpressure exceedance curve by SAFETI software





Option for mitigation



>> Improvement - Option



Retrofit

- Strengthening and retrofit

Enclose

- Cocoon type protection building

Hybrid

- Shielding blast wall type



Option for mitigation



We selected :



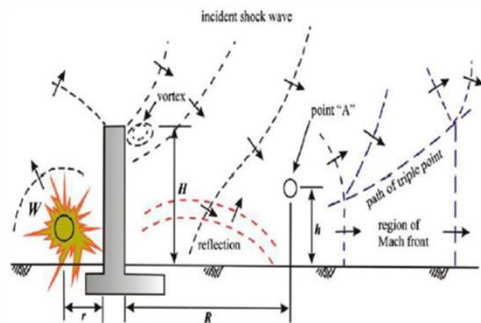
Hybrid

- Shielding blast wall type



We apply CFD software :

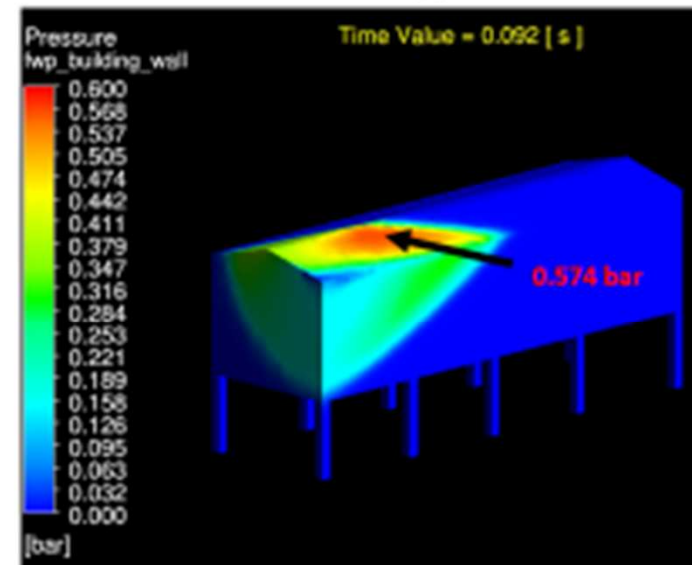
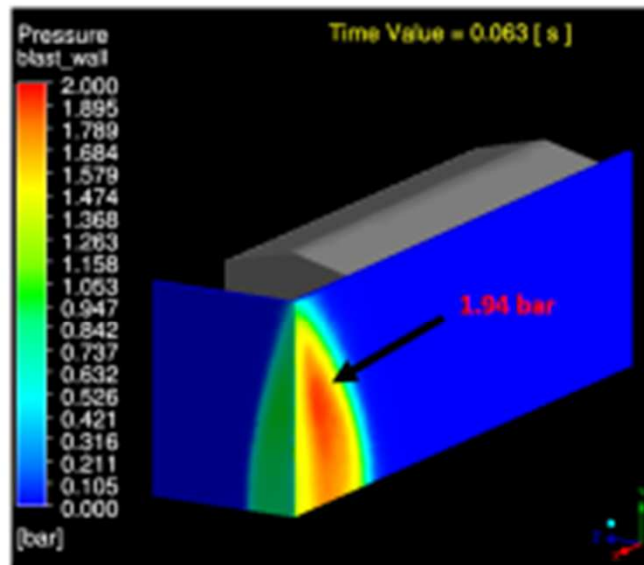
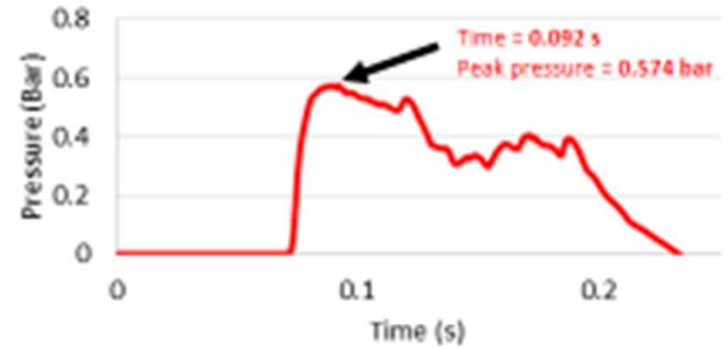
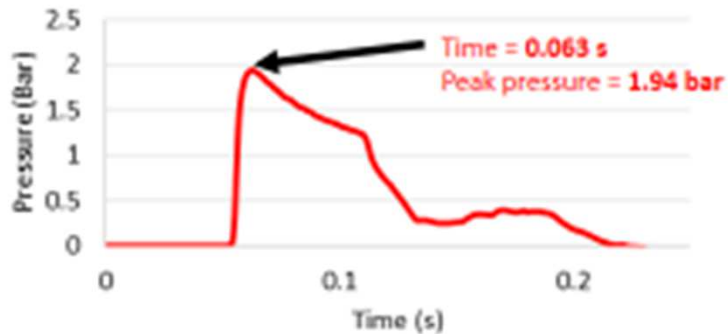
To ensure the existing fire water house can absorb the remaining blast pressure that behind the new blast wall



Note :

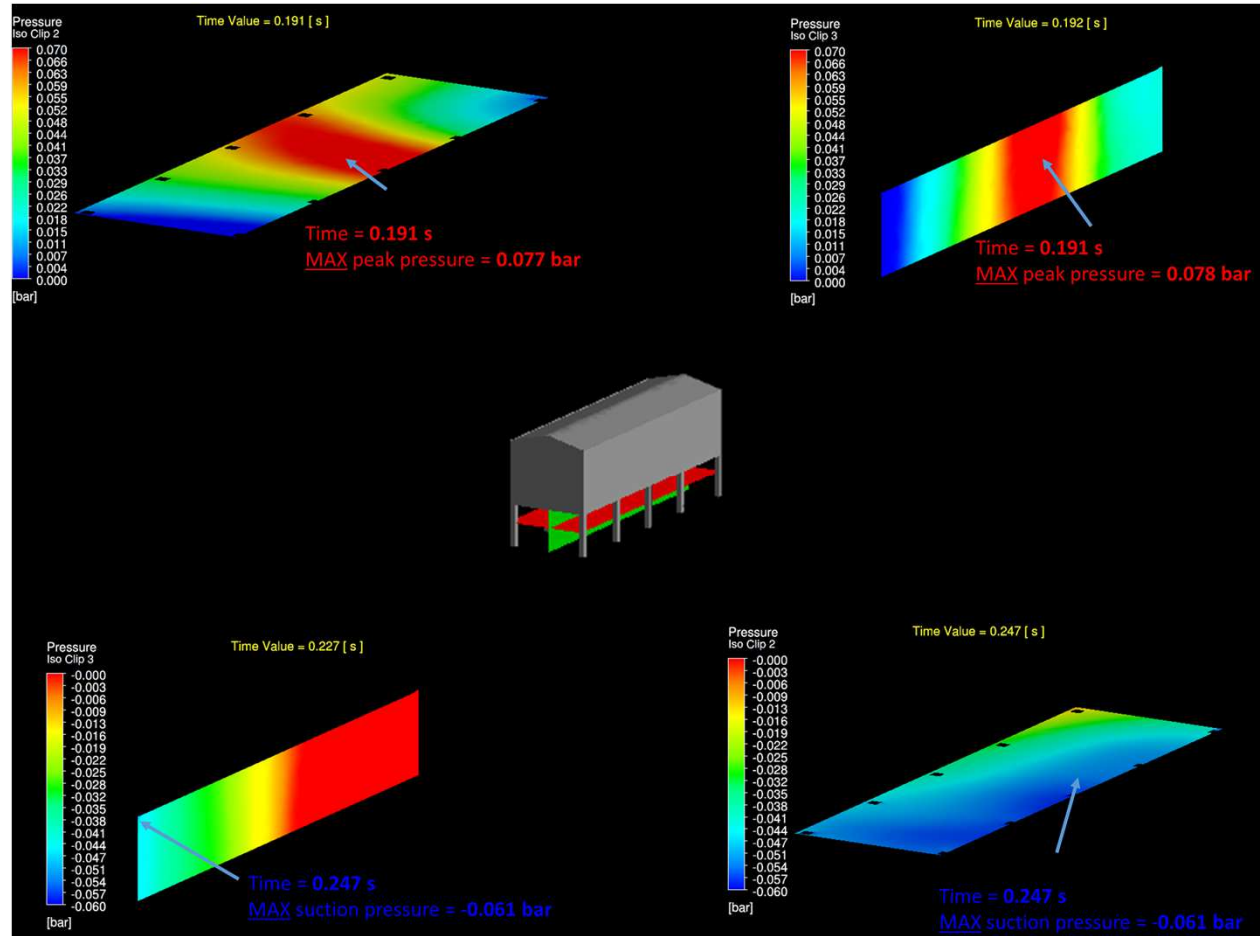
Blast load input to Vendor for design structural/foundation strengthening of the existing fire water pump building need CFD modeling (out of service from vendor)

Apply CFD for blast wall design



Apply CFD for blast wall design

Peak pressure and maximum suction pressure





Upcoming project :



Future



Study for more accurate model

- Theory
- Experiment

Expand scope for study

- CFD for vapor cloud dispersion



Thank you for your attention



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