



*System: CSPR*

## Kinetics Noise Control Solutions

### Outdoor Positive Displacement and Vacuum Blowers – Sound Control

#### Client

A leading packager of positive displacement and vacuum blowers supplying to the product conveying industry

#### Issues

- Ten packaged (1500 HP) units, supplied to a large liquid natural gas (LNG) terminal did not meet the stringent noise specification.
- The packager knew a lot about process blowers and vacuum equipment, but little about sound control.

#### Solutions

- The KNC representative reviewed the specifications with the client and educated the client on acoustics and the available **NOISEBLOCK™** options to meet the stringent specification.
- The client contacted their local Kinetics Noise Control, Inc. (KNC) representative.

- Working as a team, the client, KNC representative and KNC's engineering team worked together to design a system that would work well with the operations of the process equipment as well as meet the noise specification.
- Although the packager assumed complete four-sided roofed enclosures were needed, a review performed by KNC's in-house engineering team determined barrier wall systems with open tops were sufficient to meet the specified site sound levels.
- Barrier walls allowed for an easy connection of each blowers' filter house. The use of barrier walls is not always the solution but in this case analysis proved they were sufficient and eliminated the need for enclosures.



**United States:** Dublin, Ohio • *Phone:* (614) 889-0480 • *Fax:* (614) 889-0540  
**Canada:** Mississauga, Ontario • *Phone:* (905) 670-4922 • *Fax:* (905) 670-1698  
**Asia:** Hong Kong, China • *Phone:* (852) 21912488 • *Fax:* (852) 21912477  
[www.kineticsnoise.com](http://www.kineticsnoise.com) • [sales@kineticsnoise.com](mailto:sales@kineticsnoise.com)



### Advantages of Proposed Solution

- **NOISEBLOCK™** barrier wall systems are easily designed to any required wind and seismic loads.
- Custom design and fabrication of the knock-down components saved the client money in both packaging and shipping.
- The Kinetics Noise Control, Inc. (KNC) engineering team and representative worked closely with the unit packager to design necessary and easy access for equipment maintenance.

### Considerations

- Environmental noise issue
- Qty = (10) 1500 HP, packaged vacuum blowers
- Continuous operation
- 183 mph wind load specification

### Project Goals

- Quiet the area with 10 vacuum blowers running simultaneously (100 dBA) to 85 dBA at 3'-0" from the barrier wall systems
- The barrier wall systems must be designed as free standing without knee braces

### NOISEBLOCK™ Applied Products

The **NOISEBLOCK™** panels of each barrier wall system were manufactured of KNC model STL-4, 16 gage solid outer skins and 22 gage, perforated inner skins with acoustic grade fill suitable for outdoor exposure, all material was galvanized steel, Type G90. The tongue and groove panel connections allowed for quick installation and inherently allowed for easy drainage of rain water. The structural steel components were supplied as assemblies with a factory hot-dipped, galvanized finish. All products are cost effective and backed by KNC's extensive, independently tested database and proven performance. The ten identical barrier wall systems were: 14'-2" W x 18'-4" L x 14'-0" H.

Due to a recent, devastating hurricane, the wind load specification for the project was raised to withstand 3 second wind gusts of 183 mph. Also, because of the potential for flooding in the area, the blowers were mounted on 20'-0" high concrete pedestals. Therefore, the height from grade to the top of KNC's barrier wall systems was 34'-0". This presented a unique challenge for KNC's structural engineering team. However, due to the inherent strength of the **NOISEBLOCK™** panels and the use of structural columns and supports, the proposed design met the requirements of the specification. Also included in the submittal package was a copy of the structural steel calculations as well as a P.E. stamped, piece-marked, installation drawing set.

### Resolution

The modular nature of the factory fabricated panels and factory assembled structural steel components made field installation quick and easy. The satisfied packager has since worked with the local KNC representative on multiple projects.