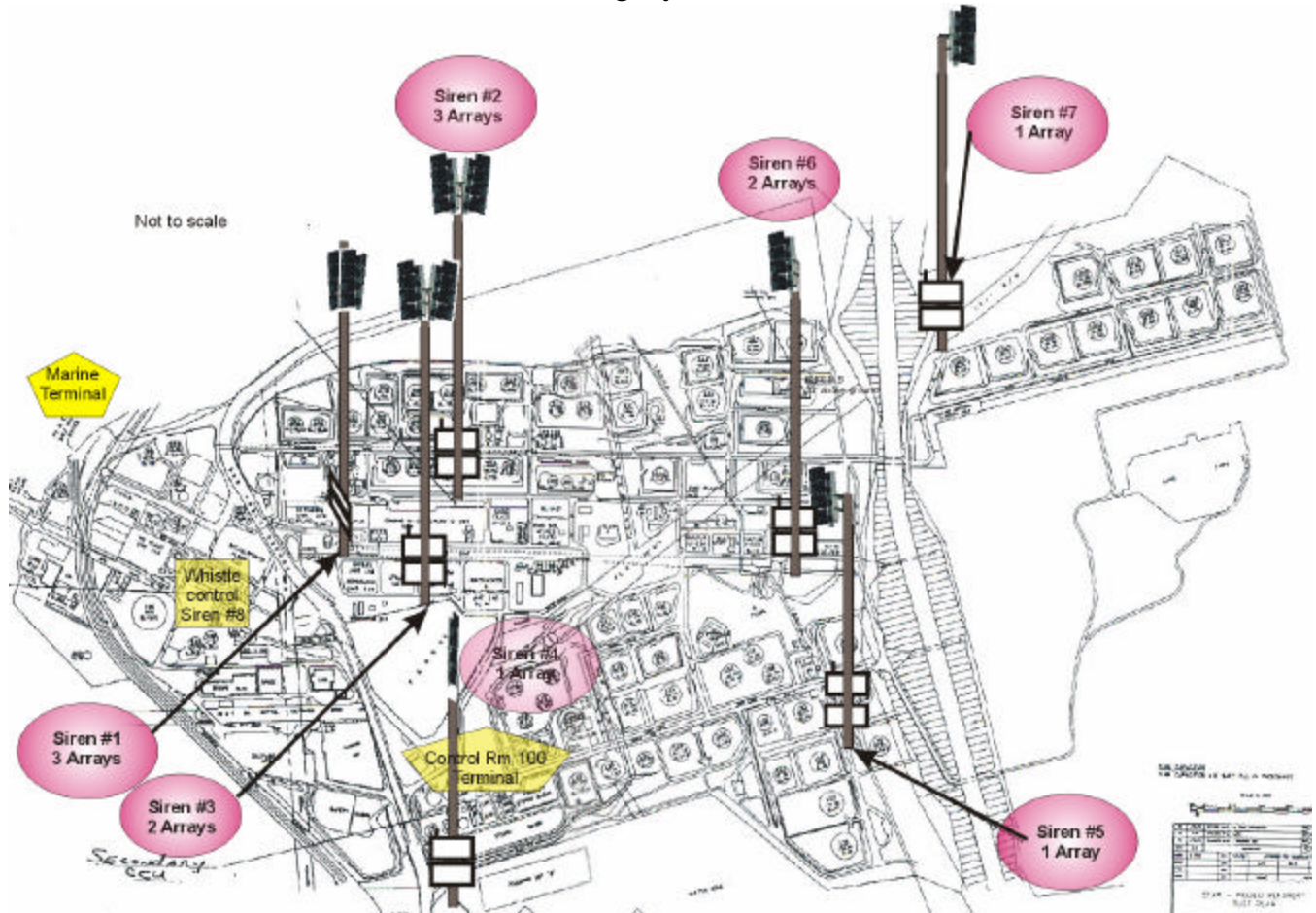


Tosco San Francisco Area Refinery, Rodeo, CA

In-Plant Alerting System



When Tosco's San Francisco Area Refinery decided to replace the old Steam Whistle system with a modern, state-of-the-art, in-plant alerting system they defined their needs: to provide an alert and notification system that is able to:

- Immediately alert and notify their employees and contractors about emergency that may be harmful to their well-being;
- Inform which zone is alerted and provide the all-clear signal once the emergency is over.

Special consideration was given to select a tone that would not require re-training of the many employees and contract workers, a difficult task considering that everyone can hear delayed sound from various sirens. It became even more difficult when the sound spill into the nearby residential area had to be minimized.

Solution Selected: Hormann America Outdoor Warning System: The system was cleverly designed and includes the following equipment:

- Electronic Sirens installed at the plant's area
- Remote Activation Module to activate existing steam whistle
- Push-button, simple-to-operate Activation Controller at their Marine Terminal
- Monitoring and back-up Controller in another control room.

The sirens are each with one to three re-entrant four-speaker array projectors mounted vertically. These sirens have high power output and sound propagation pattern that enables best sound coverage of the area. The vertical support structures are positioned at 90 degree and 180 degree intervals, tilted downwards for best acoustical coverage and minimize sound spill.

Hormann America is maintaining the system on a long-term maintenance agreement. The system automatically pages Hormann's maintenance employees when a problem (such as power failure) is detected.