

Custom-designed and manufactured portable oil flushing system



Application

Truncheon Bascule Bridge Drives

Service

Onsite Seal & Lubrication Overhaul

Highlights

- Provided team of four field service technicians
- Original oil lubrication flushed, new oil added
- Single piece oil seals replaced with newly designed split labyrinth seals
- Custom-designed portable oil flushing system utilized

The historic Third Street bridge, located next to Giants baseball stadium in San Francisco, recently underwent a major \$25M rehabilitation. Designed by Joseph Strauss (engineer of the Golden Gate Bridge), the bridge opened in 1933 and now carries five lanes of traffic across McCovey Cove. Renamed after Lefty O'Doul in 1980, the famous bridge required repairs and/or replacement of damaged steel members, welds, concrete counterweights, support piles, bridge fenders. Rust removal and re-coating as well as removal and replacement of the steel deck was also completed.

The single-leaf bascule bridge utilizes three Nuttall Gear drives that raise and lower the 200 ft. bridge deck approximately 400 times per year, allowing marine traffic to pass. In operation since the bridge opened, the gearing in the original 86-year old drives was in excellent condition. However, the gearboxes needed to have their oil lubrication flushed and replacement seals installed to provide decades of additional service. New breathers and inspection cover gaskets were also installed.

The bridge's rehab mechanical contractor contacted Nuttall and awarded them with the contract to perform the necessary work. Nuttall Gear was able to quickly access the original Westinghouse drive drawings and specifications from 1932. Nuttall's Drive Reliability Team of four experienced technicians was dispatched to the bridge site to ensure that the work would get completed within the scheduled downtime window.

The original 86-year old oil seals were cut off and new custom-designed seals were installed. The new split labyrinth seals replaced the original single-piece seals that were difficult to remove without fully disassembling the bridge's operating machinery.

Nuttall designed and manufactured a custom oil flushing system specifically for moveable bridge drives. The unique compact assembly saved significant time and effort on this job.

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