

# Humboldt Power Plant, Eureka, CA

In June of 1961, Ben C. Gerwick, Inc. completed the work on the caisson for the Humboldt Nuclear Power Plant, working as a subcontractor to Bechtel.

The power plant was being installed as an addition to Pacific Gas and Electric Company's existing steam plant at Humboldt Bay. The caisson had an overall depth of 85 ft, of which the lower 60 ft was composed of two concentric cylinders with outside diameters of 59-1/2 ft and 26-1/2 ft. The cylinders were joined by three radial walls extending their full length which divided the annular space into three suppression chambers. The inner cylinder housed the reactor. The upper 25 ft of the caisson were rectangular in cross-section and housed fuel-storage, maintenance and access rooms, and fuel loading. The walls of the caisson were approximately four ft thick with a resulting weight of the entire caisson of approximately 6,000 tons.

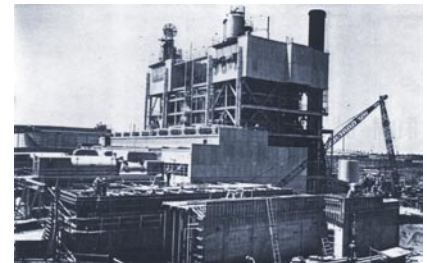
The caisson was installed by means of a cutting edge and jetting, which allowed sinking of the caisson to the required depth. The cutting edge was a 60 ft diameter steel ring fabricated of 1/4-inch and 3/4-inch plate and welded together from quadrants delivered to the job site. The cutting ring served as the bottom form for the first concrete lift and was subsequently used to sink the caisson into the ground as construction progressed by circulating air and water around the sides of the caisson to reduce skin friction.

Material released from jetting underneath the cutting edge was removed by clamshell from inside and around the circumference of the caisson.

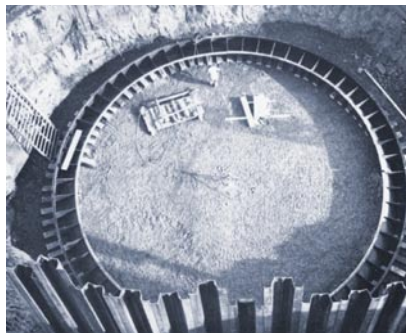


*Aerial view showing construction of the concrete caisson for the nuclear reactor.*

When the caisson reached the final grade, a tremie concrete bottom seal was cast which was then lined with 3/16-inch steel plate.



*Plant near completion.*



*Installation of cutting edge to facilitate sinking of the caisson.*

Year of Completion: 1961

Construction Cost: \$400,000

Client: Bechtel Corporation

## Services Performed:

- Site Inspection
- Constructability Studies
- Construction Supervision
- Concrete Casting
- Tremie Concrete
- Bottom Preparation
- Temporary Support Systems
- Assessment of Hydrodynamic Loads