

Nuclear  
Decommissioning:  
La Crosse BWR

LOCATION  
La Crosse, WI

CUSTOMER  
Bigge Power  
Constructors

DESCRIPTION  
Provide Access to  
the Boiling Water  
Reactor for  
Segmentation and  
Disposal



**PROJECT:** Provide access to the BWR (Boiling Water Reactor) vessel in order to remove and segment the vessel sized to fit its storage containers.

**CHALLENGES:** This job posed several major challenges. First, the work area was less than 10' from the pool of spent fuel. Second, the bioshield wall was composed of 2 types of concrete separated by corrugated metal, but there was no information about how these were connected and nor how the cut pieces would react when lifted. The La Crosse BWR was one of the first commercial reactors. Built in 1963 by Allis-Chalmers, the control rod drives entered from the bottom rather than through the top head as per standard configuration. To further complicate the job, access and visibility were extremely limited, and keeping the wire tracking on the vessel's rounded bottom was problematic.

**SOLUTION:** We approached the project in three phases. First, we cut a 40' x 60' opening in the side of the reactor containment structure which consisted of 9" thick concrete and a 1" thick carbon steel liner. The second phase was cutting an opening in the 6'-9' thick bioshield wall. The outer half of the bioshield was regular concrete, the inner half was high density concrete, and they were separated with corrugated 3/8" thick carbon steel. We cut this wall into 23 pieces weighing up to 30,000 lbs. each. For removal, we designed special rigging attachments which held the pieces together while they were lifted out.

This gave us access to the reactor vessel where our diamond wire saws began segmenting the appurtenances from the reactor so it would fit into its storage canister. This required cutting 10 nozzles, 29 stainless steel control rod drive tubes, and 12 other welded attachments. To keep the cuts within tolerance, we set up pulleys and moved them constantly to keep the wire tracking on the rounded bottom of the vessel.

Controlling the water and slurry was another complication due to the small spaces. Slurry from the concrete cutting was not contaminated and was sampled then dumped. But we recycled water from the control rod drive cuts.

**OUTCOME:** All three phases were successfully completed under schedule and without a first aid incident.