



Anytime. Anywhere.

# D.L. Ricci Corp. Case Study #329

## "Really Big Machining"

- Set-Up:**
- An Upper Midwest Nuclear Plant had a unique problem
  - In order to install a new Steam Generator they needed to sever & prep a massive surface
  - They looked around and found no machine on the market that would work
  - Through a vendor, D.L. Ricci was asked if they could build this facing & severing machine
  - After much back and forth consultation a design was approved and the work began
- Plan:**
- D.L. Ricci staff had 6 months to build, test and deliver this one-of-a-kind product
  - Ricci engineers used our clamshell design as a base and made it much bigger
  - Some of the gear work was farmed out but nearly all components were made here
  - The product was finished a month ahead of schedule and called the MM180
  - The MM180 with it's 180" diameter became the World's largest gear driven clamshell lathe
  - In-House testing with a massive mock-up showed power plant staff it could do the job
- Operation:**
- Being a split-frame clamshell, the MM180 broke down into 4 large boxes for transport
  - The MM180 was set-up at the nuclear site by up to 5 D.L. Ricci staff
  - It operates on 72 precision ground bearings
  - It has 28 locator pads, all adjustable for concentricity (8 of these adjustable for flatness)
  - On-Site the MM180 first severed off the 3/16" shipping covers
  - Later the MM180 changed a 3° prep to a 7° prep on the generator's 4" thick wall
  - Power plant staff were impressed with the machine and its operators
- Results:**
- This project was a major challenge and the results have been all positive
  - From engineering design, to shop production and on-site machining this project has been an example of the creative and can-do attitude of Ricci staff
  - Plant staff were delighted saying, "It worked great, quietly and efficiently and held very, very tight tolerances".
  - This unique machine has had a great deal of interest for other large diameter turning



Ricci engineers and shop staff work on the MM180 and its components



World's largest gear driven clamshell lathe on giant mock-up at D.L. Ricci's Red Wing HQ