

Challenge

Issue

The lined plunger-pump suction valves in bauxite reactor feed operation wear out prematurely in <3000 hours and require expensive change outs. Cost to upgrade valve bodies to high alloy is prohibitive.

Goals

- Increase liner life of valve
- Avoid cost of high alloy upgrade

Root Cause

Abrasive bauxite slurry in alkali solutions at 160°F (70°C) wore previous coating, exposing base metal of valve.



Worn coating exposes metal in <3000 hours

Solution

Preparation

- Machine new valves to create liner cavity
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

1. Apply **ARC BX1*** to internals of valve at nominal thickness of 260 mils (6.5 mm) and re-machine to tolerances

**ARC BX1 is the "Bulk" package size of ARC 890*



Valves machined and ready for coating

Results

Client Reported

- Valve life extended to >8000 hours (2.5 x previous life)
- Worn valves can be repaired and sent back to field without need for spare parts replacement
- Ongoing application with high success



ARC BX1* coated valve