

AL-6XN Chosen For Turning Vane At Central Illinois Public Service Newton Station



Specifications

UNS: N08367 **ASTM:** B 688, A 240, B 675, A 312, B 676, A 249, B 804, B 691, A 479, B 462, A 182, B 564, B 366, B 472
ASME: SB-688, SA-240, SB-6 75, SA-312, SB-276, SA-249, SB-691, SA-479, SB-462, SA-182, SB-564, SB-366 Code Case N-438-3, B-31.1 Case 155-1

Chemical Composition, %

	Ni	Cr	Mo	Mn	Cu	Si	C	N	S	P	Fe
MIN	23.5	20.0	6.0	—	—	—	—	0.18	—	—	—
MAX	25.5	22.0	7.0	2.0	0.75	1.0	0.03	0.25	0.03	0.04	balance

Case History

Newton Power Station of Central Illinois Public Service had an undesirable cyclone effect in one of their flue gas stacks. In order to correct the problem, a “V” shaped van assembly was designed to act as a vortex baffle in the base of the stack.

This plant burns high sulfur coal. Therefore, the corrosiveness of the flue gas was a concern in selecting the alloy to be used. To resolve this problem Louis Kent, Maintenance Superintendent, conducted coupon tests lasting several months. AL-6XN was chosen because it demonstrated excellent resistance to pitting and crevice attack. These are well documented modes of failure in flue gas condensate environments.

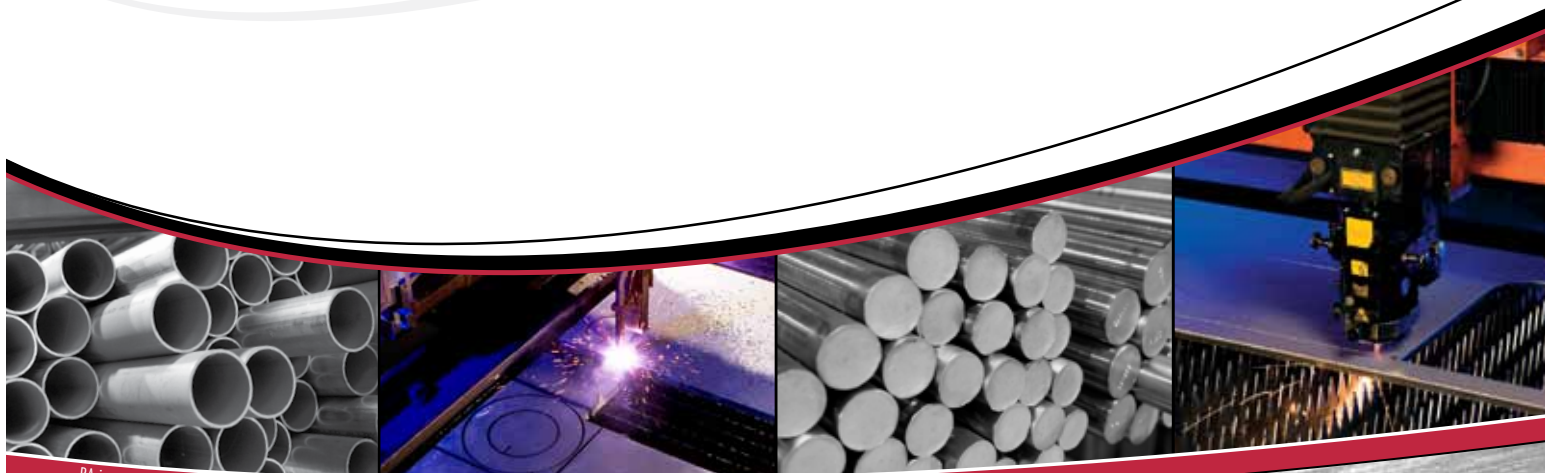
The unit stands 34-1/2 feet high and spreads from a 2 foot wide base to 15 feet at the top. The baffle vanes are curved surfaces approximately 3 feet wide by 10 feet long and are plasma cut by Rolled Alloys prior to shipment. The entire assembly was fabricated on the generator floor from 1/4 inch AL-6XN plate. All welding was accomplished using the recommended alloys 625 welding consumables.

The final assembly was moved from the generator floor to the stack base and then dropped in from the top with a 400 foot boom crane.

AL-6XN continues to grow as an alloy of choice for tough environment corrosion control problems in the power industry.



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