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Technical Briefs

(Continued from page 154)

0.30 ppm average. This improvement comes directly from the new drum internals. Samples at the saturated header drain read 0.66 ppm, and at the superheater sampling points 1.0 ppm. ASME Paper, Spring 1948 meeting. No copies available.

REPAIRING BLADES OF ADJUSTABLE-BLADE TURBINES WITH STAINLESS STEEL, by Joel B. Justin, consulting engineer, and E. T. Davis, Indiana Michigan Electric Co. Describes methods of repairing blades of adjustable-blade hydraulic turbines with stainless steel and using precast-blade stainless-steel inserts at the plants of the Kanawha Valley Power Co. About 5 tons of welding rods were used in repairing cavitation of 646 sq ft of blade area in the London, Marmet and Winfield plants.

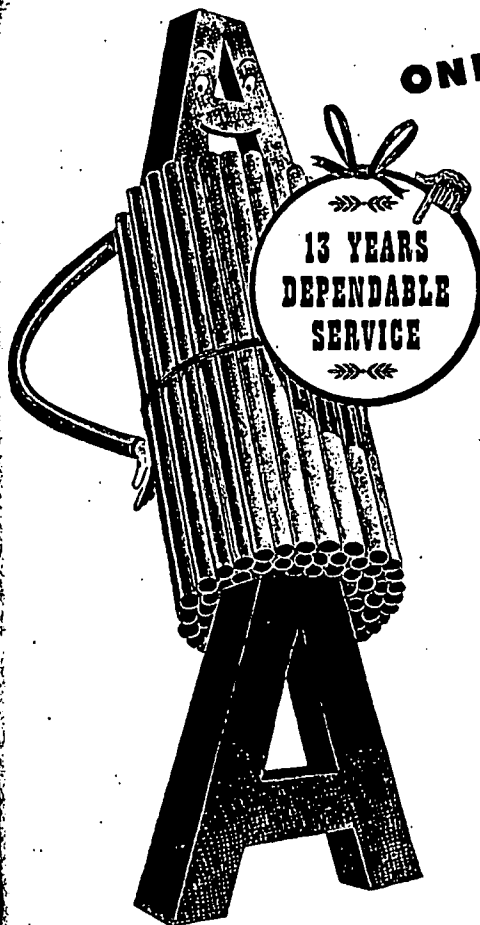
Marmet and London plants are identical. Put in service in 1933, they operate under 24-ft normal head. Each plant has two adjustable-blade turbines, rated 7600 and 7250 hp, and one 6600-hp fixed-blade unit. The Winfield plant, which went into operation in 1937 under a 28-ft head, has three 9200-hp adjustable-blade turbines.

These plants operate at high-capacity factors and at reduced head a large part of the year because of high tail water. Several units run over 8000 hr per year. They operate above their rated capacity, which no doubt increased the pitting of the runner blades.

Although somewhat different repair methods were used on some of the units, in general the same procedure was followed on all. The Winfield units were cavitated more as to area and severity than at Marmet and London. Often periphery of the blades was entirely gone, with holes through the trailing ends. There were 98 sq ft of this surface to repair on the blades of each unit. The cast throat rings were cavitated 3/4 in. deep by 2 ft wide, and in places, holes went through the 1 1/4-in. steel casing. On these rings, an 87-sq-ft area had to be repaired, making a total of 185 sq ft on each unit. The paper describes these repairs in detail including shaft sleeves repaired by metal spraying and machining in place. ASME Paper No. 48-F-1.

The 31st annual convention and business meeting of National Coal Assn was held Oct 4-6 at the Waldorf-Astoria in New York.

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