

Sinter operation Control System with Artificial Intelligence

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Synopsis :

At Nos. 3 and 4 Sinter Plants of Kawasaki Steel's Mizushima Works, a sinter operation control system with a diagnostic expert system has automated its sintering plant operation. Control functions include burning through point (BTP) control at 1- and 5-min cycles, equipment protection, sintered ore production control, and quality control. Software structures include expert rules (about 500 rules) and FORTRAN program (about 11 K steps). The expert system has achieved reduction by half of BTP dispersion and highly stabilized production quality.

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要旨

水島製鉄所の第3, 第4焼結工場に診断型エキスパートを用いた

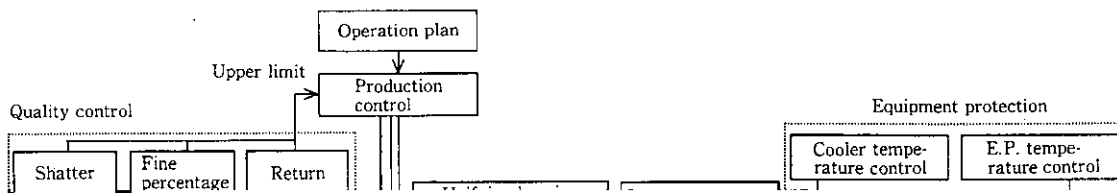
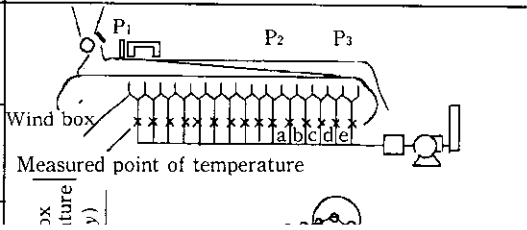


Table 1. Definition of actual BTP

	Definition		
BTP	Burn through point which is end point of sintering (point P3)	 <p>The diagram illustrates a sintering furnace. On the left, a 'Wind box' is shown with a fan. A horizontal tube contains a sintering bed, represented by a series of vertical lines. Three points are marked along the top of the tube: P1 at the inlet, P2 in the middle, and P3 at the outlet. Below the tube, a 'Measured point of temperature' is indicated with a vertical line and a sensor symbol. A coordinate system is shown at the bottom left with 'x' and 'y' axes.</p>	
BTP _A	Actual BTP which is expressed x-coordinates of top of approximate equation (1)		
	Long time radiative BTP which is usually 1		

