KAWASAKI STEEL GIHO
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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 ll K steps). The expert system has achieved reduction by half of BTP dispersion and highly stabilized production quality.

焼結操業管理に対するエキスパートシステムの適用*

川崎製鉄技報
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Sinter Operation Control System with Artificial Intelligence

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

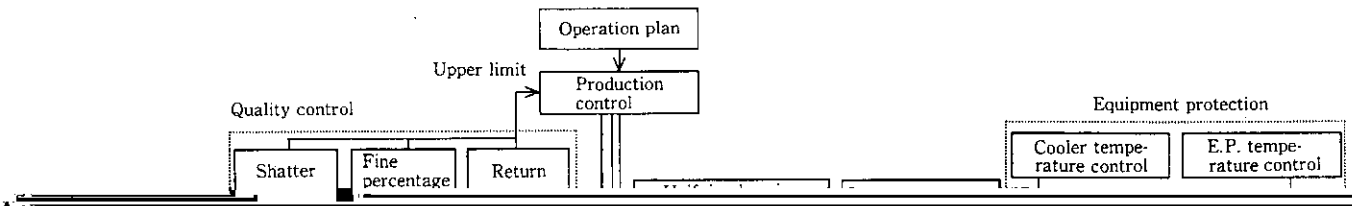
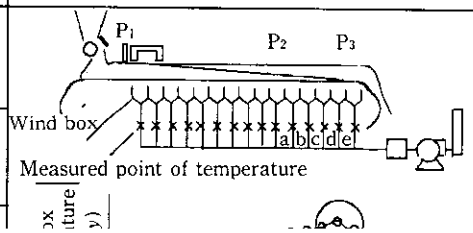
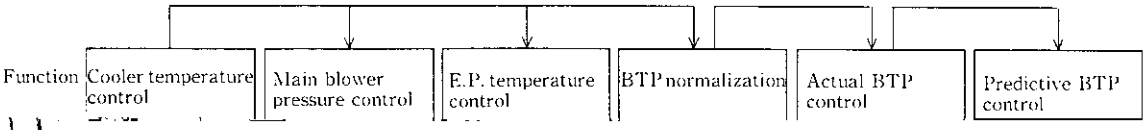
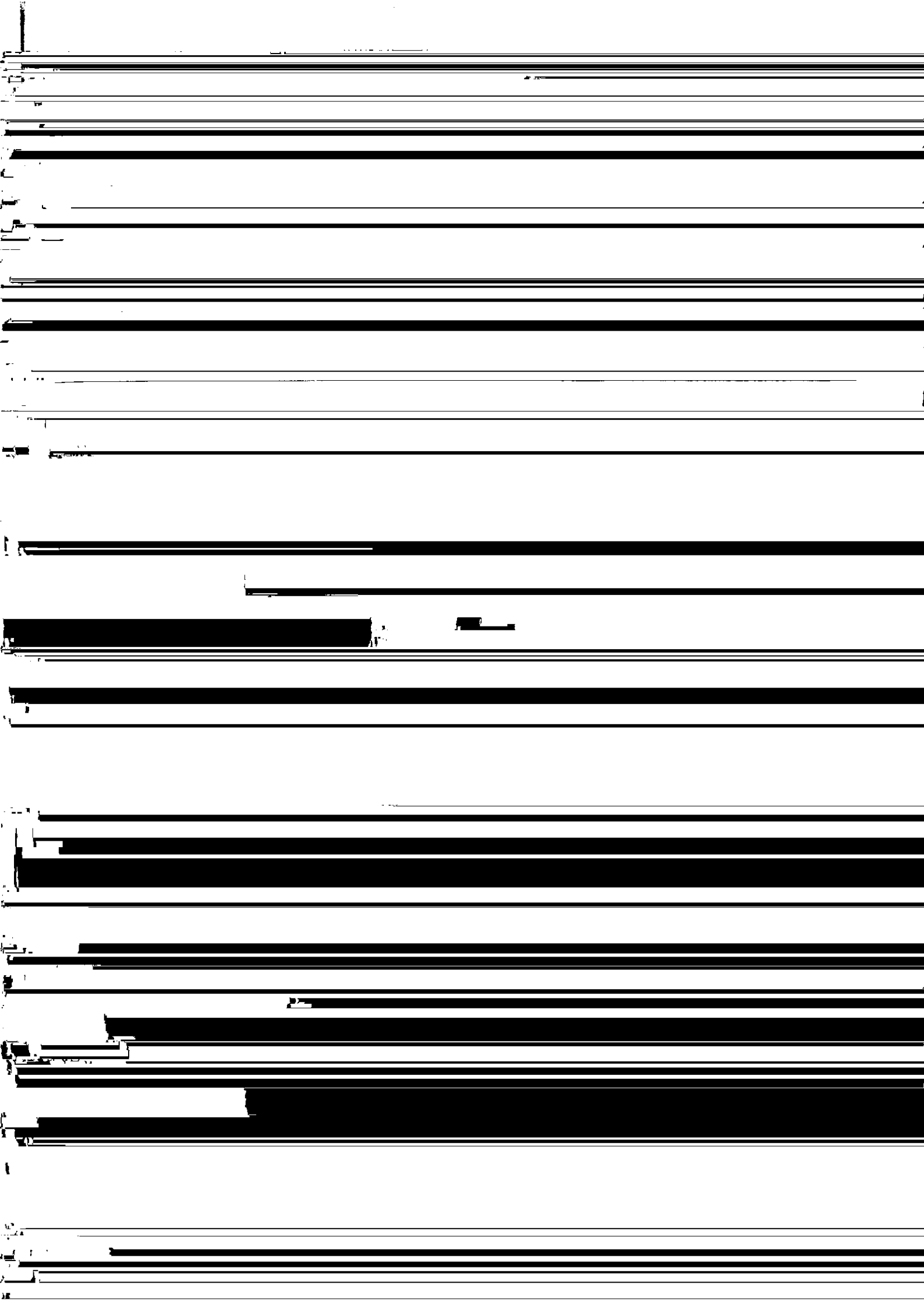
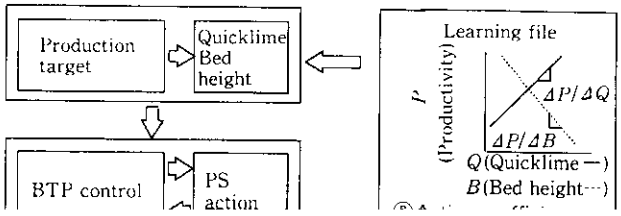

Operation plan
Upper limit
Production control
Quality control
Shatter
Fine percentage
Return
Equipment protection
Cooler temperature control
E.P. temperature control

Table 1. Definition of actual BTP and its applications

	Definition	
BTP	Burn through point which is end point of sintering (point P3)	
BTP_A	Actual BTP which is expressed x-coordinates of top of approximate equation (1)	
	Long time predictive BTP which is predicted	


Function
Cooler temperature control
Main blower pressure control
E.P. temperature control
BTP normalization
Actual BTP control
Predictive BTP control




Production target
Quicklime Bed height
BTP control
PS action
Learning file
P (Productivity)
ΔP/ΔQ
ΔP/ΔB
Q (Quicklime—)
B (Bed height···)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コスモス操業状況（4DL）
総合評価 92点
通気管理状況
生産評定
日 1.45