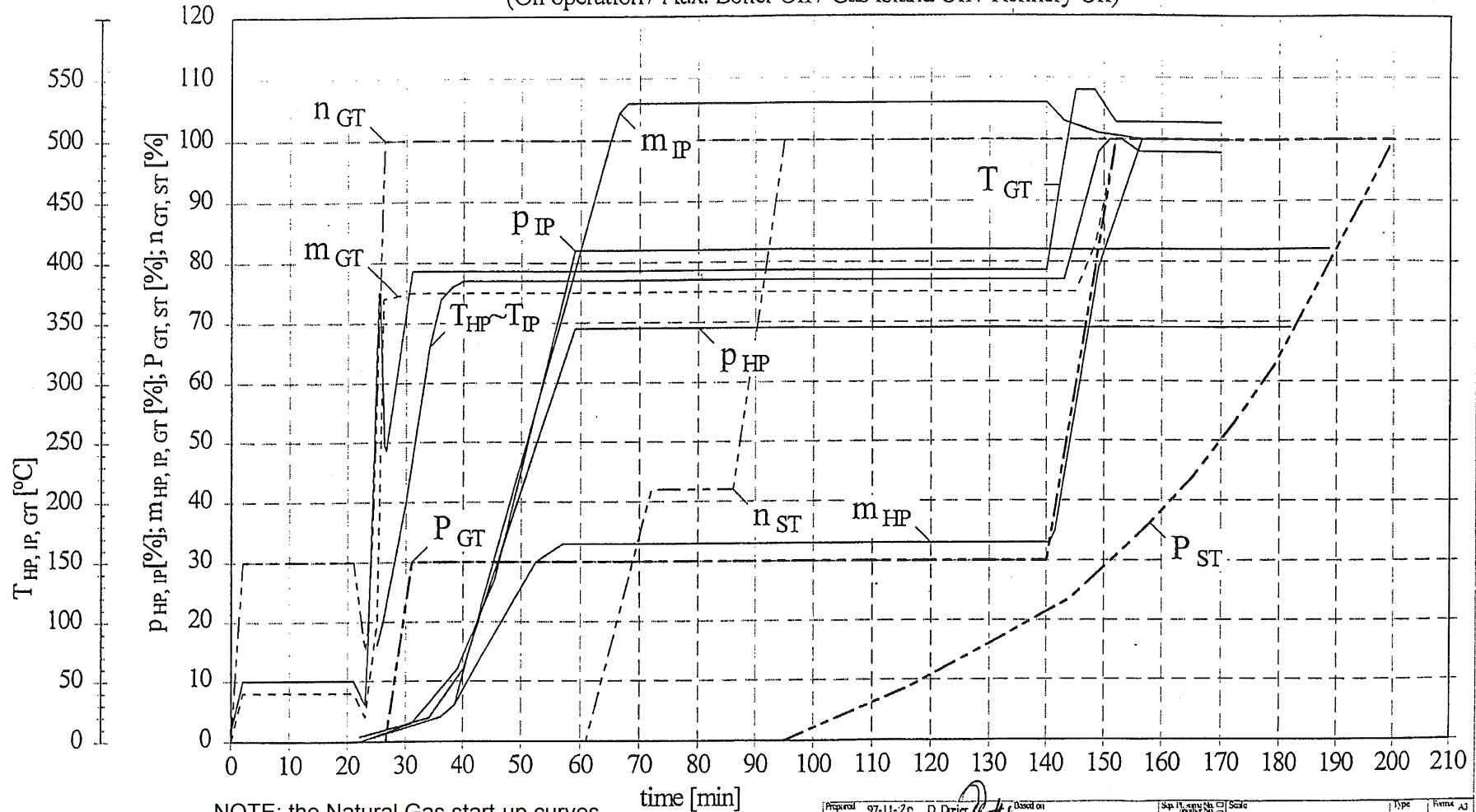


API IGCC, Start-up Curves - Cold Start (after 100hrs)
(Oil operation / Aux. Boiler Off / Gas Island Off / Refinery Off)



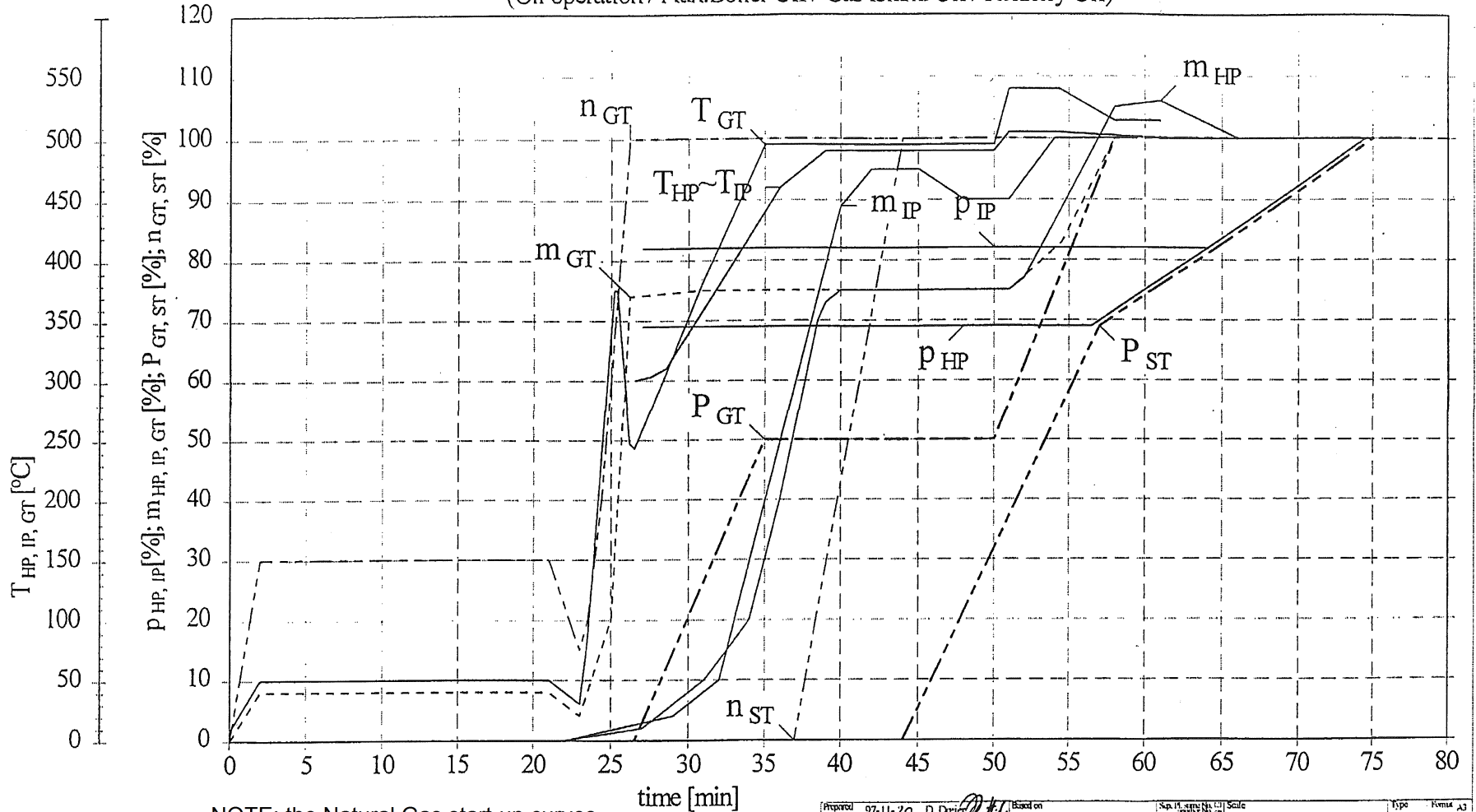
NOTE: the Natural Gas start-up curves do not deviate from the above ones as the loading gradient does not change

Prepared	97-11-20	D. Dreier	Based on	Rev. No.	Scale	Type	Format
Approved	97-11-25	F. Drouot	Responsible dept.	KWGA12			A3
Revised	97-11-26	J.-P. Richey	Task or dept.				
Revision	A						
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				Doc No.	HTDA_305 088	No. of sheets	Sheet No.

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API IGCC, Start-up Curves - Hot Start

(Oil operation / Aux.Boiler Off / Gas Island Off / Refinery Off)

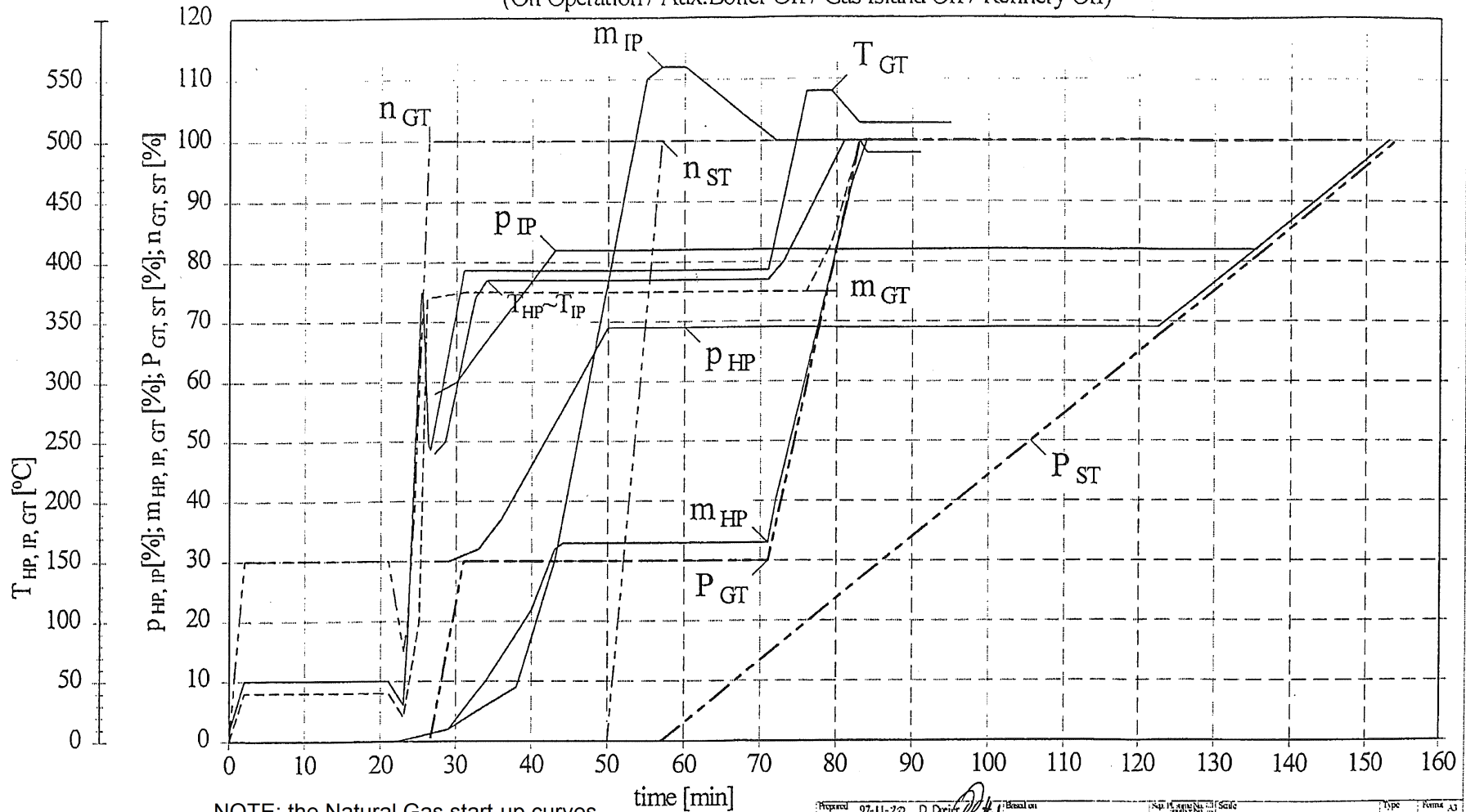


NOTE: the Natural Gas start-up curves do not deviate from the above ones as the loading gradient does not change

Prepared	97-11-20	D. Dreyer	Based on	Sup. H. safety No. 171	Scale	Type	Form A3
Approved	97-11-25	F. Dreyer	Responsible dept.	KWGA12		Title	
Revised	97-11-26	J.-P. Rind	Taken over dept.			Start-up Diagram Hot Start	
Revised	97-11-26	J.-P. Rind			API IGCC		Language
Revised	0				Project		API
ABB			ABB Power Generation Ltd		Doc No.		HTDA 305 089
					No. of sh.		3
					Sht. No.		1

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API IGCC, Start-up Curves - Warm Start (after 36 hrs) (Oil Operation / Aux.Boiler Off / Gas Island Off / Refinery Off)



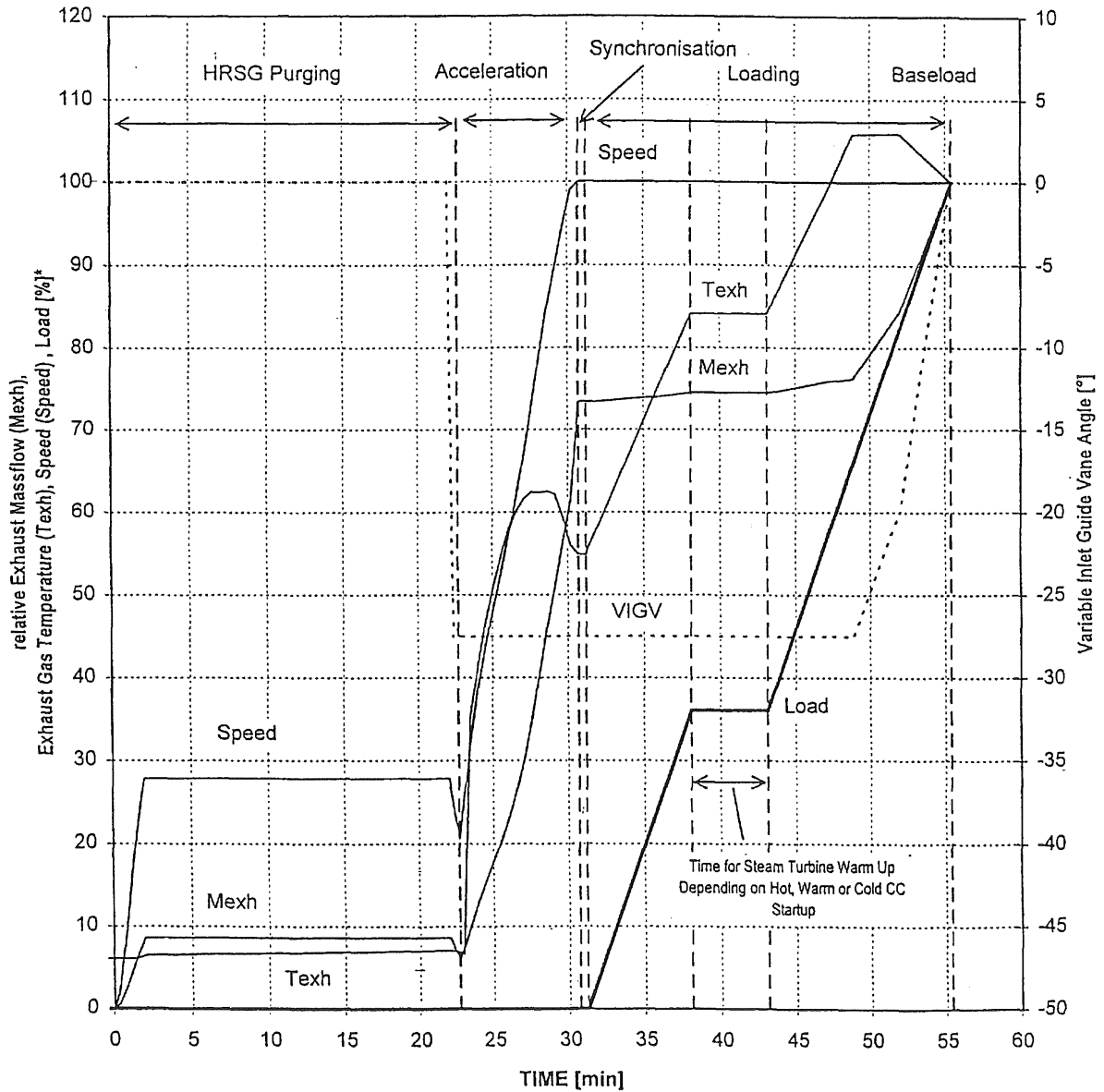
NOTE: the Natural Gas start-up curves do not deviate from the above ones as the loading gradient does not change

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Prepared	97-11-20	D. Dreier	Based on	97-11-20	Start-up Diagram	Type	Normal
Approved	97-11-25	F. Droux	Responsible Dept.	KWG012	Start-up Diagram Warm Start		
Released	97-11-26	J.-P. Ritz	Takeover Dept.		API IGCC		
Revision	0						
ABB ABB Power Generation Ltd				Project	API	PS	NSS
				Doc. No.	HTDA 305 090	No. of sheets	Sheet No.

ABB		ABB Power Generation Ltd.		HTCT 672186	
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Valid for Organisation	Derived from	Replacement for	Classification	Dataset	
api ENERGIA 13E2 MBTU				ew02	

**API IGCC / GT13E2 - MBTU
START-UP OF THE GAS TURBINE
WITH PURGING**



ISO CONDITIONS
FOR INFORMATION ONLY

NOTE: the Natural Gas start-up curves do not deviate from the above ones as the loading gradient does not change

* Relative Parameters are relative to the Oil wet Baseload Value,
relative Exhaust Gas Temperature is defined as $(Texh,actual [^{\circ}C] / Texh,baseload [^{\circ}C]) * 100\%$

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