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شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MINUFIYA UNIVERSITY

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MODELING AND CONTROL OF AN ISOLATED DIESEL GENERATING UNIT

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In

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CONTENTS

<i>List of symbols</i>	v
<i>List of tables</i>	vii
<i>List of figures</i>	viii
<i>Acknowledgment</i>	xii
<i>Abstract</i>	xiii
Chapter(1)Introduction	1
1.1 General.....	1
1.2. Previous work	2
1.3Thesis outline.....	4
Chapter(2) Modeling of the proposed system	6
2.1. Introduction	6
2.2. Diesel engine model	6
2.3. Synchronous generator model	10
2.4. Load model.....	12
2.5.State variable calculation	16
2.6. Complete diesel generating unit	18

Chapter(3) Reduced order models and controllers design....20

<i>3.1. Introduction</i>	20
<i>3.2. linearized and reduced order model</i>	20
<i>3.3. Optimal control design</i>	26
<i>3.3.1. Proportional Controller</i>	26
<i>3.3.2 Proportional &integral Controller</i>	31
<i>3.4 Conventional automatic controller</i>	33

Chapter(4) Simulation analysis35

<i>4.1. introduction</i>	35
<i>4.2 Full order nonlinear model</i>	36
<i>4.3 Closed loop models</i>	42
<i>4.3.1 Proportional Controller</i>	42
<i>4.3.2 Proportional &integral Controller</i>	50
<i>4.4 Conventional automatic controller</i>	51

Chapter(5) Experimental results.....61

<i>5.1. Introduction</i>	61
<i>5.2. An electronic prototype model</i>	62
<i>5.3. Electronic prototype simulation results</i>	78
<i>5.3.1 Initial conditions</i>	78

5.3.2 Open loop results	81
5.3.3closed loop model results	86
Chapter(6)General conclusions and future work.....	90
6.1 General Conclusions.....	90
6.2 Future work	91
References	82
Appendix 1.....	96
Appendix 2.....	98
Appendix 3.....	110
Appendix 4.....	111
Appendix 5.....	112
Arabic summary	118

LIST OF SYMBOLS

τ'_{do}	: Open circuit – direct axis transition time constant of the synchronous generator (sec)
τ''_{do}, τ''_{qo}	: Synchronous generator open circuit sub-transient time constants in the d and q axes respectively (sec)
τ_1	: Time delay due to the fuel combustion process (sec)
τ_2	: Electrical time constant of the diesel engine (sec)
ϕ	: Load power factor angle of the synchronous generator
δ	: Power angle of the synchronous Generator (radians)
r_a	: armature resistance of the synchronous generator (p.u)
R_L, X_L	: Load resistance and reactance respectively (p.u)
X_d, X_q	: Synchronous reactance in the d and q axes circuits of the synchronous generator respectively (p.u)
X''_d, X''_q	: Sub-transient reactance of the synchronous generator in the d and q axes circuits respectively (p.u)
I_L	: Load current (p.u)
V_t	: Terminal voltage of the synchronous generator (p.u)
E'_q	: The quadrature component of the synchronous generator transient voltage (p.u)

E_d'', E_q''	: The sub-transient voltages of the synchronous generator in the d and q axes respectively (p.u)
E_{fd}	: Synchronous – generator field voltage
P	: Active power of the synchronous generator
Q	: Reactive power of the synchronous generator
t_e, t_m	: Electrical and mechanical torque of the synchronous generator.
F_u	: Fuel rate of the diesel engine
Z	: The fuel rack value position
ω_o	: Name plate synchronous speed (rad/sec)
ω	: Angular speed of the synchronous generator
λ_d, λ_q	: Flux linkage of the synchronous generator in the d and q axes respectively (p.u)

LIST OF TABLES

Table	Page
(3-1)The eigenvalues of the open loop linearized models	25

LIST OF FIGURES

Figure	Page
(2-1) Diesel engine block diagram.	8
(2-2) Equivalent schematic diagram of diesel engine.	8
(2-3) Alternative system of diesel engine block diagram.	11
(2-4) Nonlinear model of the synchronous generator.	14
(2-5) The phasor diagram of the synchronous generator.	17
(2-6) Diesel generating unit.	19
(3-1) Comparison between nonlinear and 3 rd order models for 5% increase in the field for 0.2 –sec duration.	27
(3-2) Comparison between nonlinear and 3 rd order models for 5% increase in the fuel for 0.2 –sec duration.	28
(3-3) STI-type AVR system model	34
(3-4) Block diagram of a diesel engine and the speed Governor.	34
(4-1) Response of the open loop model for 5% increase in the field for 0.2-sec duration.	37
(4-2) Response of the open loop model for 5% increase in the fuel for 0.2-sec duration.	38
(4-3) Response of the open loop model for 50% step increase in the load impedance.	39

(4-4) Response of the open loop model for 3-phase short circuit	40
(4-5) Response of the open loop model for 50% step decrease in the load impedance.	41
(4-6-a) Response of the P controller closed loop model for 50% increase in the load impedance.	44
(4-6-b) Response of the P controller closed loop model for 50% increase in the load impedance.	45
(4-7-a) Response of the P controller closed loop model for 50% decrease in the load impedance.	46
(4-7-b) Response of the P controller closed loop model for 50% decrease in the load impedance.	47
(4-8-a) Response of the P controller closed loop model for 3-phase short-circuit for 0.2 sec duration.	48
(4-8-b) Responses of the P controller closed loop model for 3-phase short-circuit for 0.2-sec duration.	49
(4-9) Response of the PI controller closed loop model for 50% increase in the load impedance.	52
(4-10) Response of the PI controller closed loop model for 50% decrease in the load impedance.	53
(4-11) Responses of the PI controller closed loop model for 3-phase short-circuit for 0.2-sec duration.	54