

Utilization of solid oxide fuel cell in amalgamated frequency-voltage control of RES-based restructured power systems

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Nomenclature

*	best aggregate suggested by exponent
Δf_i	modification of frequency of areas engaged
ΔP_{Di}	degree of load modification of areas engaged
a_{ij}	considerable rated power of area- i /considerable rated power of area- j
B_i	portion of frequency bias of areas engaged
D_i	degree of load modification of areas engaged (p.u. MW)/modification of frequency of areas engaged (Hz)
f	balance point valuation of frequency measured in Hertz (Hz)
H_i	degree of inertia constant of areas engaged
i	count of areas suggested
K_{pi}	gain constant of power system representation
pf_{io}	area contribution factor
P_{ri}	considerable rated power of area suggested
R_i	factor related to governor's speed regulation of area suggested
T	total moment of simulation measured in seconds
T_{ij}	portion of synchronization
T_{pi}	time-constant of power system prototypes
β_i	attributions of frequency outcome of area suggested

Impacts of FACTS controllers in frequency regulation services of modern restructured power system

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Nomenclature

*	corresponding augmented value of the parameters
Δf_k	amendment of frequency of area- m
ΔP_{Dk}	load amendment of area- m
a_{kj}	$-(P_{rk}/P_j)$
Apf_{kj}	area-participation-factor for area- k , $k=1, 2$ and $j=1, 2, 3$
B_k	frequency bias coefficient of area- m
B_k	frequency response characteristics of area- m
H_k	inertia constant of area- m
IPFC	interline power flow controller
k	area count
K_{kj}	power system block-Gain
P_{kj}	area rated power
P^{OS}	peak overshoot
P^{US}	peak undershoot
R_k	governor speed regulation of area- m
S^T	subsiding time
T	simulation time (s)
TC-PS	thyristor-controlled-phase-shifters
TC-SC	thyristor-controlled-series-capacitor
T_{IPFC}	IPFC-time constant