

III - Inspection Items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
i) Turning device Mechanical type	i. Clogging and foreign matter in oil passage ii. Wearing out and expansion of driving chain or V-belt iii. Wearing out and play of bearing and bush		
Hydraulic type	i. Contact of pinion and spur gear ii. Kick lever iii. Clearance of nozzle and rotor		
2) Major valves (MVS, RSV, ICV and GOV)	i. Valve, valve seat, valve stem and contact of back seat ii. Crack, erosion, wearing out and seizure of valve stem iii. Deposits and scale on valve stem iv. Wearing out and erosion of gland packing and bush sleeve		Check item described in item During/After dismantling should be repeated in detail, if necessary. i. Gap between bush and valve stem ii. Curvature and hardness of valve stem iii. Fatigue and expansion of bolts for high temperature parts)

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p>v. Wearing out of high temperature moving parts</p> <p>vi. Looseness of engaging parts</p> <p>vii. Crack, erosion and corrosion of valve casing</p> <p>Especially drain hole, corner and welded parts should be checked carefully.</p> <p>viii. Crack and erosion on welded parts and stellite building parts</p> <p>ix. Steam leak from tightening parts and flange</p> <p>x. Crack, wearing out, fatigue and brittle fracture of bolts and nuts.</p> <p>xi. Looseness, crack, erosion and fatigue of pin</p> <p>xii. Coupling</p> <p>xiii. Crack and fatigue of spring</p>	<p>iv. Compression of packing</p> <p>v. Tightning of valve casing</p> <p>vi. Clearance and position of each parts</p> <p>vii. Working condition and characteristics</p>

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
	<p>xiv. Damage and wearing out of cylindrical piston and cylinder</p> <p>xv. Damage and wearing out of servo motor and pilot valve</p> <p>xvi. Wearing out of pin joint</p> <p>xvii. Play and wearing out of lever link mechanism</p> <p>xviii. Can, crosshead and bearing.</p>		

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
3) Governing unit a) Speed governor	<ul style="list-style-type: none">i. Fatigue, crack and deformation of bellows and diaphragmii. Sludge and foreign matters in oil orifice, strainer ballcheckiii. Wearing out of moving parts such as servo-motor, pilot bush and valveiv. Wearing out of lever, pin stopper and spindlev. Wearing out, deformation and damage of spring and bearingvi. Clearance and positionvii. Looseness of each portion	
		During/After reassembling
		Check items described in item During/After dismantling should be repeated in detail, if necessary.

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	
b) Emergency tripping device	i. Wearing out, deformation and clearance of latching unit, and wearing out of link and back-stop.		Check items described in item During/After dismantling should be repeated in detail, if necessary
	ii. Trip lever pin and lock bolt.		
	iii. Fatigue and deformation of spring		
	iv. Damage and corrosion of moving parts of spindle and bush		
	v. Looseness of spring and adjusting bolts.		
	vi. Clearance and position of each portion		
	vii		
c) Bled steam pressure control device	i. Wearing out and looseness of pin and lockpin		
	ii. Wearing out and damage of piston and cylinder in hydraulic mechanism		
	iii. Oil leakage		
	iv. Foreign matter and deposits		

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
<p>d) Control device</p>	<ul style="list-style-type: none"> v. Clearance and position of each portion i. Wearing out and deformation of connecting pin, bearing stopper and split pin ii. Wearing out of servo-motor and pilot iii. Friction of lever and linkage iv. Looseness of lever and cam mechanism v. Decomposition of rolling and seal packing. vi. Clearance and position 		
<p>e) Electric Hydraulic governing device</p>	<ul style="list-style-type: none"> i. Oil quantity check of servo operated valve ii. Dynamic and static characteristics of EHG. iii. Wearing out and deformation of connecting pin, bearing, stopper and split pin iv. Wearing out of servo-motor and pilot. 		

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p>After cleaning</p>	
	<p>v. Friction of lever and linkage. vi. Looseness of lever and cam mechanism vii. Decomposition of rolling and seal packing viii. Clearance and position</p>	
4) Lubricating and control oil system		
a) Oil	<p>i. Oil quality and deterioration tendency - total acid number - Kinetic viscosity - deterioration - Others</p>	
b) Oil tank	<p>i. Kinds and quantity of deposits at tank bottom. ii. Separation of inner painting, deterioration and stain.</p>	<p>Check items described in item During/After dismantling should be repeated in detail, if necessary.</p>

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
c) Oil cooler	<ul style="list-style-type: none"> iii. Looseness of lock bolt of tank inside iv. Deterioration and wear-out of packing v. Foreign matter, stain and damage on oil strainer and filter. vi. Opening and deformation of inspection hole vii. Oil level gauge viii. Oil tank tightness 	
	<ul style="list-style-type: none"> i. Cooling water quantity <ul style="list-style-type: none"> - Fouling, kind and quantity of deposits - Crack, corrosion and erosion - Crack of separating plate - Separation of inner wall coating ii. Cooling tube and tube plate 	<p>Check items described in item During/After dismantling should be repeated, if necessary.</p>

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
d) Oil pump	<p>After cleaning</p> <ul style="list-style-type: none"> - Clogging of cooling tube outside and inside. - Kinds and quantity of deposits - Corrosion and erosion - Crack of expansion iii. Packing iv. Consumption of corrosion protection zinc plate i. Centering ii. Contact, corrosion, erosion, wearing out and crack of impeller and runner iii. Mouth ring and bush iv. Damage and wearing out of gland packing v. Deflection and wearing out of rotor vi. Contact and damage of bearing 	<ul style="list-style-type: none"> Check items described in item During/After dismantling should be repeated, if necessary. i. Clearance between impeller, liner and casing. ii. Gap of mouth ring and bush iii. Deflection of rotor iv. Gap between bearing and rotor v. Thrust bearing

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p style="text-align: center;">After cleaning</p> <ul style="list-style-type: none"> vii. Damage of inner casing viii. Tooth contact and wearing out of gear pump, and damage of piston, cylinder and rod ix. Shaft coupling x. Looseness of engaging parts, and fretting xi. Flange xii. Fouling and clogging of oil passage xiii. Electrolytic corrosion 	<ul style="list-style-type: none"> vi. Clearance of labyrinth packing. vii. Engagement viii. Centering

III - Inspection Items		
Equipment/Machine	During/After dismantling	During/After reassembling
e) Oil purifier	<ul style="list-style-type: none"> i. Centrifuge <ul style="list-style-type: none"> - Cone damage - Belt tension - Fouling of separating plate ii. Bowzer <ul style="list-style-type: none"> - Deposits - Fouling of filter bag and cartridge filter - Deterioration of lubricating oil - Fouling and deposits of filter - Lubricating oil leakage 	<p>Check items described in item During/After dismantling should be repeated in detail, if necessary.</p>
f) Other oil passage	<ul style="list-style-type: none"> i. Foreign matter and damage of strainer ii. Sludge in pipe line and looseness of coupling iii. Deterioration of packing iv. Operating condition and wearing out of non-return valve v. Damage, wearing out and sticking-up of diverter valve 	<p>Check items described in item During/After dismantling should be repeated in detail, if necessary.</p>

Equipment/Machine	III - Inspection items	
	During/After dismantling	After cleaning
g) Oil flushing	<ul style="list-style-type: none"> vi. Oil pressure regulator vii. Fire protection counter-measure viii. Oil pressure setting 	<ul style="list-style-type: none"> i. Inspection of cleanliness in oil passage during oil system flushing after reassembling <ul style="list-style-type: none"> - Foreign matter in bearing oil supply strainer - Foreign matter in return oil strainer to tank - Foreign matter in each portion ii. Oil quality check at completion of oil flushing iii. Confirmation of operating condition

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
5) Condenser		
a) Condenser Shell	<ul style="list-style-type: none"> i. Corrosion and deposits in cooling water tube outside ii. Deformation, corrosion and erosion <ul style="list-style-type: none"> - Shell plate - Stair pipe - Expansion joint - Baffle plate - Tube support plate - Strainer - Support spring 	<ul style="list-style-type: none"> i. Corrosion and erosion and crack of shell plate, piping, expansion joint on drain injection nozzle and welded parts. ii. Damage on drain injection nozzle inside iii. Looseness between intermediate shell plate and clamping bolts iv. Damage due to vibration on tube support v. Ammonia attack on air cooling parts vi. Erosion of cooling tubes due to drain injection (start-up by pass line)
b) Water box and tubesheet	<ul style="list-style-type: none"> i. Deposits and scale on water box and tubesheet 	<ul style="list-style-type: none"> i. Separation and damage of anticorrosive paint and lining. ii. Corrosion of partition tubesheet iii. Consumption of corrosion protection zinc plate

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
		During/After reassembling
c) Cooling tube	<ul style="list-style-type: none"> i. Abnormality of tube ends ii. Foreign matter, deposits and scale on tube inside 	<ul style="list-style-type: none"> iv. Abnormality on electrolytic protection device <ul style="list-style-type: none"> - Anticorrosive plate - Deposition due to overcurrent - Insulation resistance v. Tubesheet settling bolts
d) Condenser cleaning device	<ul style="list-style-type: none"> i. Brush cleaning system <ul style="list-style-type: none"> - damage on basket - wearing out of washing brush ii. Ball cleaning system <ul style="list-style-type: none"> - clogging and damage of ball collector - Valve related to ball collection 	<ul style="list-style-type: none"> i. Corrosion and erosion of tube inside ii. Tube rolling iii. Tube plugging <p>Leakage should be checked carefully after water filling in cooling tube</p>

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
6) Heat Exchanger a) Feed water heater	<ul style="list-style-type: none"> - Damage check (in case of anticorrosive treatment) i. Deposits and scale on baffle plate ii. Deformation and discoloration iii. Damage, corrosion and erosion iv. Leakage from bolt-tightened diaphragm gasket seal 	<ul style="list-style-type: none"> i. Corrosion and erosion of water chamber ii. Damage on water chamber corner, diaphragm corner, water chamber baffle plate and water box welded parts iii. Tube leakage iv. Damage of tube plate end v. Plugged Tube vi. Damage of heating tube due to drain flow and drain velocity (HP/LP heater) vii. Damage of heating tube protector viii. Damage due to ammonia attack (LP heater) 	No leak should be confirmed by hydraulic test.

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
b) Air Ejector	<ul style="list-style-type: none"> i. Corrosion and erosion of nozzle and diffuser ii. Deposits, scale, discoloration and stain iii. Corrosion, erosion and crack of tube plate and water chamber 	<ul style="list-style-type: none"> i. Foreign matter and erosion of tube. ii. Tube rolling iii. Clogging and damage of strainer iv. Damage of cooling tube due to ammonia attack 	No leak should be confirmed by air leak or hydraulic test.
c) Gland Steam Condenser	<ul style="list-style-type: none"> i. Deposits and scale of cooling water tube ii. Damage and leakage from tube rolling iii. Spring, valve stem and guide of water chamber by-pass system iv. Corrosion, erosion and scale of cooling tube i. Deflection, wearing out and moving part of rotor ii. Contact, wearing out and crack of impeller and runner 		No leak should be confirmed by hydraulic test.
c-1. Gland Steam Condenser			
c-2. Gland Steam Exhauster			

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
d) Deaerator	<ul style="list-style-type: none"> iii. Wearing out of brush iv. Abnormality of bearing v. Damage of casing inside vi. Damage and wearing out of gland packing i. Deposits and scale ii. Deformation, corrosion and erosion <ul style="list-style-type: none"> - Tank and deaerating chamber inside - Inner piping and feed water distribution piping - Distributor, baffle-plate, pass partition plate, tray and tray support plate - Nozzle and seat ring 	<ul style="list-style-type: none"> i. Corrosion, erosion, crack and damage ii. Nozzle, seat ring, spring and tray iii. Foreign matter, erosion and crack of feed water, heating and balancing pipings iv. Tube plate and tube rolling (in case of vent condenser)
		During/After reassembling

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
7) Auxiliary Pumps a) Condensate Pump	<ul style="list-style-type: none"> i. Damage due to foreign matter and seizure ii. Clearance of each parts iii. Corrosion and erosion iv. Rotor, bearing and journal v. Gland 	<ul style="list-style-type: none"> i. Crack, wearing out, erosion and damage of runner, guide and casing ii. Deflection and curvature of rotor iii. Looseness of guide and sleeve iv. Contact and wearing out of bearing v. Levelness measurement of bedplate 	<ul style="list-style-type: none"> i. Movement measurement of main rotor ii. Casing inside iii. Tightening of casing gasket and bolts iv. Bearing and engagement v. Tightening of shaft seal vi. Centering vii. Test running
	b) Circulating water pump	<ul style="list-style-type: none"> i. Deposits and scale of casing and suction pipe inside and outside ii. Damage due to foreign matter and seizure iii. Clearance iv. Corrosion and erosion v. Abnormality of rotor, bearing and journal vi. Damage of gland vii. Loss and consumption of anticorrosive plate and zinc plate. 	<ul style="list-style-type: none"> i. Crack, corrosion, erosion and wearing out of runner, rotor, sleeve and casing ii. Looseness of sleeve and runner iii. Curvature of rotor iv. Connecting pin of vertical type shaft pump fixture sleeve

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
c) General use pumps (Vertical Type)	<p>During/After cleaning</p> <p>viii. Corrosion of suction pipe and baffleplate</p> <p>ix. Abnormality of reverse washing valve and water chamber linkage valve</p> <p>x. Uneven settlement of circulating water pipe</p> <ul style="list-style-type: none"> - Deformation of rubber expansion - Separation and damage of lining 	<p>vii. Centering</p> <p>viii. Test run</p>
	<p>i. Centering</p> <p>ii. Shaft coupling</p> <ul style="list-style-type: none"> - Bolts and bush <p>iii. Shaft seal</p> <ul style="list-style-type: none"> - Leakage - cooling condition <p>iv. Bearing</p> <ul style="list-style-type: none"> - Fouling of lubricating oil - Leakage from bearing casing 	<p>i. Movement measurement of rotor</p> <p>ii. Casing inside</p> <p>iii. Tightening of casing, gasket and bolt</p> <p>iv. Bearing engagement</p> <p>v. Tightening of shaft seal</p> <p>vi. Centering</p> <p>vii. Test run</p>
	<p>After cleaning</p> <p>i. Rotor</p> <ul style="list-style-type: none"> - Erosion, wearing out and crack of runner - Damage, wearing out and crack of bush - Deflection measurement of rotor - Gap measurement of bush, etc.. <p>ii. Shaft seal</p> <ul style="list-style-type: none"> - Wearing out of rotor sleeve 	

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
	<p>v. Casing</p> <ul style="list-style-type: none"> - Leakage from casing contacting surface <p>vi. Rotor movement measurement</p> <p>vii. Levelness measurement of bedplate</p>	<ul style="list-style-type: none"> - damage of packing <p>iii. Bearing</p> <ul style="list-style-type: none"> - Wearing out and damage of bearing - Measurement of bearing clearance <p>iv. Casing</p> <ul style="list-style-type: none"> - Erosion and crack - Casing contacting surface of bolts <p>v. Shaft coupling</p> <ul style="list-style-type: none"> - Wearing out and damage of bolts and bush - Engagement 	

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
<p>d) General use pump (Horizontal type)</p>	<p>i. Centering</p> <p>ii. Shaft coupling <u>Gear Coupling</u></p> <ul style="list-style-type: none"> - Abnormal sound and grease or oil leakage - Tightening of bolts and packing <p><u>Flange type coupling</u></p> <ul style="list-style-type: none"> - Tightening of bolts and bush <p>iii. Shaft seal</p> <ul style="list-style-type: none"> - leakage - cooling condition <p>iv. Bearing</p> <ul style="list-style-type: none"> - Fouling of lubricating oil - Leakage from bearing casing <p>v. Casing</p> <ul style="list-style-type: none"> - Leakage from casing contacting surface 	<p>i. Rotor</p> <ul style="list-style-type: none"> - Erosion, wearing out and crack of runner - Damage, wearing out and crack of bush - Welded parts and setting bolts - Gap measurement of bush, etc. - Deflection measurement of rotor <p>ii. Shaft seal</p> <ul style="list-style-type: none"> - Wearing out of rotor sleeve - Damage of packing - Contact and damage of O-ring of mechanical seal 	<p>i. Measurement of rotor movement and rotor position</p> <p>ii. Casing inside</p> <p>iii. Tightening of casing, gasket and bolts</p> <p>iv. Bearing engagement</p> <p>v. Tightening and setting of shaft seal</p> <p>vi. Shaft coupling, and lubricating oil of gear coupling</p> <p>vii. Centering</p> <p>viii. Test run</p>

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
	vi. Rotor movement measurement	iii. Bearing <ul style="list-style-type: none"> - Wearing out and damage of ball bearing, and deformation of oil ring - Wearing out, damage, crack and contact of sleeve and bearing - Wearing, damage and crack of thrust bearing, and contact of pivot and pad - Measurement of bearing clearance 	
		iv. Casing <ul style="list-style-type: none"> - Erosion and crack - Casing contacting surface and bolts 	
		v. Shaft coupling <ul style="list-style-type: none"> - Wearing out and crack of gear coupling and tooth contact - Deterioration of gear coupling and O-ring, and damage of bolts. 	

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
8) Pressure reducer and attenuator	<ul style="list-style-type: none"> i. Contact of disc ii. Crack, erosion, wearing out and seizure of disc spindle iii. Deposits and oxide on disc spindle and bush iv. Runout and wearing out of moving parts v. Looseness of engagement vi. Crack and erosion of casing iron valve body - Edge parts - Nozzle vii. Crack and erosion of welded parts and stellite building parts viii. Erosion of nozzle and reducer, and injecting condition ix. Erosion of throttling plate, perforated plate and thermal sleeve x. Separation of lining 	During/After reassembling

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	
9) Bar Screen and Rotating Screen	xi. Steam leak and erosion of tightening parts and flange		During/After reassembling
	xii. Crack and wearing out of bolts and nuts		
	xiii. Connecting parts		
	i. Deposits and shells		
	ii. Damage of screen		
	iii. Corrosion, erosion and deformation		
	iv. Wearing out		
	v. Accumulation of soil and sand		
	vi. Expansion of linkage chain		
	vii. Wearing out of link and pin		
	viii. Wearing out of chainwheel and sprocket		
ix. Wearing out and abnormality of rotor and bearing			

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p>After cleaning</p> <ul style="list-style-type: none"> x. Deformation of bucket and net frame xi. Backlash of gear xii. Looseness of key xiii. Damage and consumption of anticorrosive zinc plate 	
<p>3 Generator and Exciter</p> <p>1) Generator proper</p> <p>a) Rotor</p>	<ul style="list-style-type: none"> i. Rotor blade ii. Fan holddown bolt iii. Oil contamination and flaws on the journals iv. Rust discoloration of tees v. Wedge vi. Runout of wedge vii. Gas duct viii. Incrustation of dust on retaining ring 	

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p>ix. Deformation of coil end</p> <p>x. Slackened coil end block</p> <p>xi. Damage to insulating materials</p> <p>xii. Dislocation of slot underlay</p> <p>xiii. Gasket for coil bushing</p> <p>xiv. Position and locking state of balance weight</p> <p>xv. Measurement of insulation resistance</p> <p>- Generator rotor field only</p> <p>- Generator field with connections</p> <p>- Generator stator only</p> <p>- Generator stator with isolated phase bus</p> <p>- Generator end (collector end)</p>	<p>After cleaning</p>

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
<p>b) Stator Frame</p>	<p style="text-align: center;">After cleaning</p> <ul style="list-style-type: none"> - Generator steady bearing - AC exciter bearing - Pilot exciter bearing - Oil deflectors - Seal casing i. Oil leakage within machine ii. Contamination of ventilation pipe iii. State of RTD mounting and leads iv. Rust development on ledges v. Gasket gland fastening conditions vi. Header pipe mounting conditions vii. Internal contamination of hydrogen gas cooler 	<p style="text-align: center;">During/After reassembling</p>

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
c) Stator Core	<ul style="list-style-type: none"> i. Tightness of gap baffle mounting stubs ii. Slackened core ends iii. State of epoxy-resin-treated core ends iv. Slackened rib holddown bolts v. Slackened coil end support bolts and fittings vi. Rust development vii. Fouling of gas duct viii. Slackened compression ring ix. State of inner cage support. 	
d) Stator Coil	<ul style="list-style-type: none"> i. Coil end contamination ii. Coil end support conditions iii. State of coil insulation 	
		During/After reassembling

Equipment/Machine	III - Inspection items		
	During/After dismantling	After cleaning	During/After reassembling
e) Terminal Box	<ul style="list-style-type: none"> iv. Dislocation of slot underlay v. Slackened stator coil wedge vi. Damaged or slackened connections i. Oil leakage ii. Coil bushing connection (overheat and other abnormalities in insulation materials) iii. Bushings iv. Cracks in support porcelain insulators v. State of gaskets for terminal board and bushings vi. High voltage bushings and gaskets 		

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning
f) Bearings	<ul style="list-style-type: none"> i. Contamination ii. Fitness of bearing metal iii. Cracks iv. Bearing metal lock 	
g) Collector ring	<ul style="list-style-type: none"> i. Contamination ii. Marks or wearing out iii. Bus ring tightness iv. Measurement of insulation resistance 	
h) Brushes	<ul style="list-style-type: none"> i. Contact ii. Chips and cracks iii. Discoloration of pig-tails 	
		During/After reassembling

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
i) Brush Holder	<ul style="list-style-type: none"> i. Slack ii. Abnormalities on brush slideways 		
j) Seal Casing	<ul style="list-style-type: none"> i. Measurement of gap between seal ring and journal ii. Seal ring and ID iii. Wearing out and discoloration of seal ring slideways iv. Rust, crack and wearing out of springs 		
k) Air Deflector	<ul style="list-style-type: none"> i. Electrolytic corrosion at joint 		
l) BCT	<ul style="list-style-type: none"> i. Filter ii. Leads and conduit pipe iii. Upper gasket 		

III - Inspection items		
Equipment/Machine	During/After dismantling	After cleaning During/After reassembling
m) Gas Cooler	<ul style="list-style-type: none"> i. Defects on tube sheet side walls ii. Fouled fins iii. Cracks in cooling pipe iv. Air detrainning pipe 	
N) Fan Nozzle	<ul style="list-style-type: none"> i. Electrolytic corrosion at the joint ii. Fan baffle mounting studs 	
2) Exciter	<ul style="list-style-type: none"> i. Centering <ul style="list-style-type: none"> - Runout check ii. Measurement of insulation resistance <ul style="list-style-type: none"> - Exciter statof - Exciter rotor - Pilot exciter - Exciter bearings 	

III - Inspection items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<p>iii. Oil deflectors</p> <ul style="list-style-type: none"> - Oil leakage - Measurement of gaps of oil deflector <p>iv. Bearing metals</p> <ul style="list-style-type: none"> - Measurement of side gap - Conditions of white metals - Orifice diameter of oil inlet <p>v. Collector ring</p> <ul style="list-style-type: none"> - Conditions of dust - Contact surface - Wearing out of brushes - Conditions of brush chippings - Conditions of pigtailed - Wearing out of brush holders 	

III - Inspection items			
Equipment/Machine	During/After dismantling	After cleaning	During/After reassembling
	<ul style="list-style-type: none"> - Clearance of brush and holder boxes - Fixing bolts - Wearing out of ring - Conditions of ring film - Mechanical abrasion <p>vi. Protective covers</p> <ul style="list-style-type: none"> - Measurements of air deflector gaps <p>vii. Rotor Fan</p> <ul style="list-style-type: none"> - Fan bolts and rotor fan <p>viii. Exciter rotor</p> <ul style="list-style-type: none"> - Oil leakage - Dust and rust - Core - Stator wedge - Temperature detectors and leads - Measurement of insulation resistance of stator coil 		

Equipment/Machine	III - Inspection Items	
	During/After dismantling	After cleaning
c) H ₂ seal oil unit	<p>i. Vacuum pump and motor</p> <ul style="list-style-type: none">- Stator and rotor- Alignment between vacuum pump and motor- Coupling- Ball bearing- Grease and oil <p>ii. Measurement of insulation resistance</p> <p>iii. Temperature, vibration and abnormal sound</p> <p>iv. Seal oil pump</p> <ul style="list-style-type: none">- Ball bearing- Stator and rotor- Grease and oil- Measurement of insulation resistance	
		During/After reassembling

Equipment/Machine	III - Inspection Items	
	During/After dismantling	After cleaning
	<p>- Temperature, vibration and abnormal sound</p> <p>v. Piping system</p> <p>-Oil Leakage</p> <p>vi. Tanks</p> <p>-H₂ detaining tank</p> <p>-Air detaining tank</p> <p>-Vacuum tank</p> <p>-Float trap</p> <p>-Oil filter</p> <p>-Pipings</p> <p>-Relief values</p> <p>-Oil pressure regulating valve</p> <p>vii. Hydrogen gas control panel</p> <p>-Activated alumina or silica gel of H₂ gas drying chemicals</p>	
		During/After reassembling

III - Inspection Items		
Equipment/Machine	During/After dismantling	During/After reassembling
	<ul style="list-style-type: none">- Teflon gasket- Leak test- Measurement of insulation resistance of heater <p>viii. Storage tank</p> <p>ix. Filters</p> <p>x. Y-type strainer</p> <p>xi. Strainer on outlet of deionizer</p>	

III - Inspection Items		
Equipment/Machine	During/After dismantling	During/After reassembling
<p>4. Electrical equipments and control system</p> <p>1) Electrical equipments</p> <p>a) Transformer (main transformer and station auxiliary transformer)</p>	<p>i. Cleaning of transformer and accessories</p> <p>ii. Cooling fans and oil pumps</p> <p>iii. Alarm device</p> <p>iv. Relief device</p> <p>v. Terminal box and blocks</p> <p>vi. Fire fighting device</p> <p>vii. Bushings</p> <p>viii. Bushing connection parts</p> <p>ix. Tightness of conductor connection</p> <p>x. Valves, heat discharger and welded parts</p> <p>xi. Control cubicle</p>	

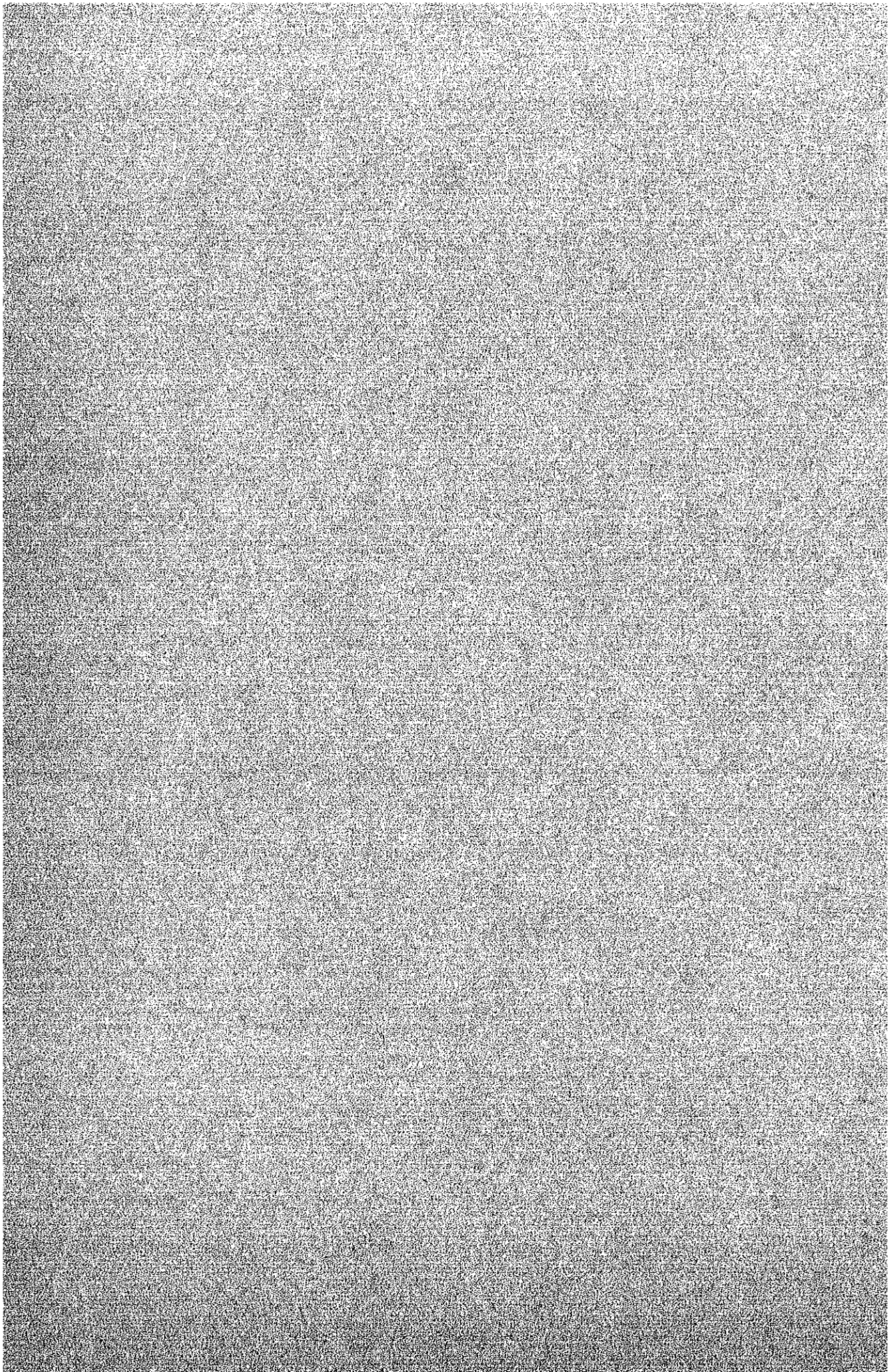
III - Inspection Items		
Equipment/Machine	During/After dismantling	After cleaning
	xii. Measurement - Insulation resistance - Oil insulation resistance - Oil oxidation	
b) Circuit breakers	i. Insulator and bushing - Bushing - Conductor connection ii. Control unit - Control and link mechanism - Cable and terminal blocks iii. Control air pipings - Air leakage - Air filter iv. Disconnecting parts - Contacts	
c) Disconnecting switch	i. Bushing - Bushing and connecting parts - Looseness of conductor connecting parts	
		During/After reassembling i. Measurement - Insulation resistance - Open - close test - Minimum pressure working test

Equipment/Machine	III - Inspection Items		
	During/After dismantling	After cleaning	During/After reassembling
d) Surge absorber	<ul style="list-style-type: none"> ii. Control unit <ul style="list-style-type: none"> - Control and link mechanism iii. Disconnecter <ul style="list-style-type: none"> - Disconnecting parts - Cable and terminals block - Earthing device and earthing wire iv. Actuator <ul style="list-style-type: none"> - Air supply system - Air leakage v. Measurement <ul style="list-style-type: none"> - Insulation resistance - Open - close test 		
	<ul style="list-style-type: none"> i. Bushing and connecting parts ii. Conductor connecting parts iii. Lightning arrestor 		

Equipment/Machine	III - Inspection Items	
	During/After dismantling	After cleaning
e) Neutral grounding equipment	<ul style="list-style-type: none"> i. Transformer ii. Reactor iii. Resistor iv. Conductor connecting parts v. Measurement - Resistance - Insulation resistance 	
f) Cubicle		<ul style="list-style-type: none"> i. Instruments and protection relays ii. Adjustment of instruments mounted on cubicle iii. Cable, wire and terminal block
g) Power supply unit		<ul style="list-style-type: none"> i. Removable mechanism ii. Primary and secondary conductors iii. Cable, wire and terminal block iv. Control circuit v. Interlock system vi. Conductor connecting parts vii. Electromagnetic contact- or

III - Inspection Items		
Equipment/Machine	During/After dismantling	During/After reassembling
b) Local Control System	<ul style="list-style-type: none">i. Controllerii. Detectors and transmitters<ul style="list-style-type: none">- Temperature- Pressure- Flow- Level- Draftiii. Controller<ul style="list-style-type: none">- Pneumatic actuators- Gauges- Position indicators- Reducing valvesiv. Setting pointsv. Control valvesvi. Transducervii. Limit switches	

APPENDIX-5 OPERATION GUIDLINE FOR ABNORMAL CONDITION



OPERATION GUIDLINE FOR ABNORMAL CONDITION

<u>T I T L E</u>	<u>PAGE</u>
I. ITEM TO BE PREPARED -----	1
II. AN EXAMPLE -----	1

Operation guideline for abnormal condition

1. Item to be prepared.

Regarding the following items, measures for each case should be prepared for operation.

- . Unit tripping
- . Black-out
- . Fluctuation of frequency and voltage
- . Power frequency abnormal
- . AC control power failure
- . DC control power failure
- . Instrument air failure
- . Boiler tube failure
- . Burner trouble
- . Electrical fault

2. An Example

An example of measures for trouble is shown on the next page.

1. Fluctuation of frequency and voltage.

(1) Reason

- a. Trouble of the turbine governer control system.
- b. Delay of isolation of fault point

(2) Operation

Refer to the table of "Measures for fluctuation of frequency and voltage".

Measure for Fluctuation of Frequency and Voltage (An example)

Position Item	Super intendant of shift	Control room operator				Local Operator		
		Electrical	Boiler	Turbine	Boiler	Turbine	Basement	Others
Hunting (Voltage and frequency)	<ul style="list-style-type: none"> * Confirm the hunting of voltage * Instruct monitoring of unit operation to all operator 	<ul style="list-style-type: none"> * Confirm the voltage and frequency * Pay attention to operating condition of generator and AVR * AVR shall be on Auto. 	<ul style="list-style-type: none"> * Pay attention to: Fuel and Air flow Drum press. Steam and water flow Steam temp. Fuel oil press. Current of auxiliaries * If boiler firing condition becomes unstable, put ABC on Man. 	<ul style="list-style-type: none"> * Pay attention to: Governor valve lift Turbine vibration 	<ul style="list-style-type: none"> * Pay attention to drum press. and level 	<ul style="list-style-type: none"> * Pay attention to turbine vibration 	<ul style="list-style-type: none"> * Confirm the condition of auxiliaries 	<ul style="list-style-type: none"> * Confirm the condition of auxiliaries
Trouble shooting	<ul style="list-style-type: none"> * Request to the load dispatcher to check the transmission line * Instruct to inspect the operating condition of AVR 	<ul style="list-style-type: none"> * Caution to the generator field current (Do not operate in leading power factor) 	<ul style="list-style-type: none"> * If boiler firing condition becomes unstable, put ABC on Man. 	<ul style="list-style-type: none"> (Turbine shall be stopped if vibration exceeds 5 mils) 	<ul style="list-style-type: none"> * Confirm the boiler firing condition 	<ul style="list-style-type: none"> * Pay attention to turbine vibration 		
Unit stop	<ul style="list-style-type: none"> When it is judged that the operation can not be continued, instruct plant tripping 		<ul style="list-style-type: none"> Follow to the measures for unit tripping 					

