Generator Maintenance For Poultry Farms
Emergency Preparedness

- Condition Of Diesel Fuel
- Test Under Load
- Preventative Maintenance Plan
Diesel Fuel Is **Naturally Unstable.**

The shelf life of diesel fuel is 6 to 12 months under optimal storage conditions. Modern refining techniques (catalytic cracking) have made fuels less unstable.
AVOID BIO-DIESEL

- Degrades Quickly
- Must Be Used Within 90 Days Of Manufacture
- Flexible Hoses, Gaskets, Seals, O-Rings Will Be Gradually Dissolved
- Up To 10% Less Power
REGULAR CHECKS

• Oil Level
• Coolant Level
• Fuel Level (if diesel)
• Check for leaks
• Check for signs of rodents or animals
Check Weekly

• Block Heater

• Battery Charger

• Batteries
BLOCK HEATER

• Keeps engine block coolant at 100 to 120 degrees

• Assists with fast starting
BLOCK HEATER
BATTERY CHARGER

• Keeps batteries fully charged and ready to crank the engine.
• Charging alternator on engine on charges when engine is running.
#1 CAUSE OF NOT STARTING
BEFORE
BATTERY AGE

• Replace Any Battery That Is Over 3 Years Old For Maximum Reliability
BATTERY CHECKS

• Turn battery charger off to check battery cell levels and voltage

• No smoking

• Batteries will explode
Function Of The ATS

- Senses When Normal Power Fails/Dips
- Sends Signal To Start Generator
- Senses When Normal Power Returns
- Timer For Generator Cooldown
- Sends Signal To Shutdown Generator
- Sends Signal For Weekly Exercising
ATS Checks

- Signs Of Water Entry Or Moisture
- Dirt Dobbers, Spiders, Insects
- Burnt Smell
- Blackened Components
CAUTION – AUTO START
AUTOMATIC START
BEST TIME TO CHECK

- Check after exercising
- Let generator cool down
- Check fluids
- Check control panel – Did generator shut down from exercising or due to a fault condition?
RUN UNDER LOAD

- Exercise Under Load
- Heats Up The Generator End
- Dries Out Moisture
- Minimum Load – 30%
LOAD BANK TEST

• Simulates Actual Electrical Load

• Tests Generator At 100% Of Rating

• Assure Performance Of Engine And Generator
MAINTENANCE SCHEDULE

- Oil and filters must be changed every 250 hours

- Automobile at 55 mph = 1800 rpm

- 55 mph x 250 hours = 13,750 miles
BEST PREPARATION

PM AGREEMENT
PM AGREEMENTS

- Known Pricing
- Automatically Scheduled
- Priority Service Over Non-PM Customers
- Lowest Labor Rates
PM AGREEMENTS

• Service By Experienced Technician

• Minor Repairs While On Site

• Repair Before Failure

• Right Oil, Right Coolant, Right Parts
PM AGREEMENTS

• Don’t Hear From PM Customers During Storms

• 39 Years Of Proven PM Experience

• Annual PM Agreement Can Be Cheaper Than A Single Unplanned Service Call
MOST IMPORTANT PART

• Inspection Service

• Sometimes Called A Level I Service

• Inspection By An Experienced Technician

• Uses A Checklist
## INSPECTION CHECKLIST

### Preventive Maintenance Report

<table>
<thead>
<tr>
<th>Date:</th>
<th>Make/Model:</th>
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<tbody>
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<table>
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<tr>
<th>Customer:</th>
<th>Serial Number:</th>
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<table>
<thead>
<tr>
<th>Location:</th>
<th>Hour Reading:</th>
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<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Description Of Service / Comments</th>
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### Air System

- [ ] Cleaned / Replaced Air Cleaner Element
- [ ] Replaced Complete Air System For Deterioration
- [ ] Cleaned And Changed Oil In Bath Filter
- [ ] Checked And Tightened Turbocharger Shift End Play

### Lubricating System

- [ ] Changed Engine Oil
- [ ] Changed Transmission Oil
- [ ] Change Hydraulic Oil
- [ ] Changed Oil In Final Drive
- [ ] Changed Complete Engine For Oil Leaks
- [ ] Checked PTO Valve

### Cooling System

- [ ] Hoses / Radiator: Changed Complete Radiator Element In Coolant Leaks
- [ ] Checked Coolant System For Coolant Leaks
- [ ] Checked Coolant System For Coolant Leaks
- [ ] Checked Coolant System For Coolant Leaks

### Fuel System: Gasoline

- [ ] Natural
- [ ] LPG
- [ ] Diesel
- [ ] Diesel
- [ ] Diesel
- [ ] Diesel

### Electrical System

- [ ] Cleaned And Ignitioned All Electrical Connections
- [ ] Checked Electronic Level Of Batteries
- [ ] Hydrometer Readings
- [ ] Checked Operation Of All Starting Units
- [ ] Inspected / Replaced Points, Condenser, And Plugs (PM Only)
- [ ] Inspected Ignition System (Magneto, Distributor, Wiring, etc.)
- [ ] Set Timing Rut PM Only
- [ ] Checked Operation Of Safety Switch: Replaced Before Fuses

### Controls / Test / Change Switch

- [ ] Checked Oil, Sump, Wrench: Oil Pressure
- [ ] PSI
- [ ] Amps Per Lay
- [ ] Voltage Per Lay
- [ ] Frequency And Phase As Required
- [ ] Checked Exhaust System For Leaks
- [ ] Checked Timing Sequence On Cycling Cycles, Cycling Time
- [ ] Checked Operation Of Transfer Switch

### Time Delay

- [ ] Exchanger
  - [ ] Checked Engine / Generator Controls For Proper Settings
  - [ ] Started Engine From Test Position
  - [ ] Started Engine From Automatic Position
  - [ ] Started Engine From Test Position
  - [ ] Inspected / Replaced Post Lights

### Additional Comments and Recommendations

<table>
<thead>
<tr>
<th>Generator Tech:</th>
<th>Customer Rep:</th>
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</table>
ANNUAL SERVICE

- Basic PM
- Sometimes Called A Level II Service
- Oil, oil filter, fuel filter change
- Inspection Service
EVERY 3 YEARS

• Full Service

• Sometimes Called A Level III Service

• Oil, oil filter, fuel filter change

• Batteries, belts, hoses, air filter, coolant
REPLACE BELTS
REPLACE BATTERIES
REPLACE AIR FILTER
COOLANT CHANGE
SUMMARY

• Check Fuel Condition
• Have Annual Service Performed
• Full Service If Not Done In 3 Years
• Load Test With At Least 30% Load
• Ongoing PM Program In Place
Questions

???