Satellite Information Services

BROADCAST ENGINEERING
Method Statement

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System:	Generator Weekly Checks	Customer:	SIS
Sponsor:	Charles Sbardelotto		

Document History

Version	Date	Description	Status	Authors
1.0	19/06/2008	Generator Weekly Checks	DRAFT	AF
2.0	09/08/2009	Modified for new control panel in Corsham Street	DRAFT	AF
	Click here to enter a date.			

Method Statement

Objective

This is part of a preventative maintenance program where weekly routine checks are carried out on the Corsham St. and Brunswick Pl generator systems, to ensure that the operational viability of these systemsis kept at an optimum at all times.

Reason for change

N/A

Proposed Date, Time and Duration

This procedure is a weekly preventive procedure and should take no longer than 45 minutes to perform, unless more attention is required.

Services affected

Potentially all infrastructure at the Corsham Street and Brunswick Place premises

Risk Assessment

Probability = low
Impact = potentially high if the generator fails to automatically start when needed

Resources

The preventive procedure is carried out by Engineering Support
Ext 8616

Method

Checks on the Corsham Street Generator cabin

NOTE: Please be aware that the generators can start automatically at any time.

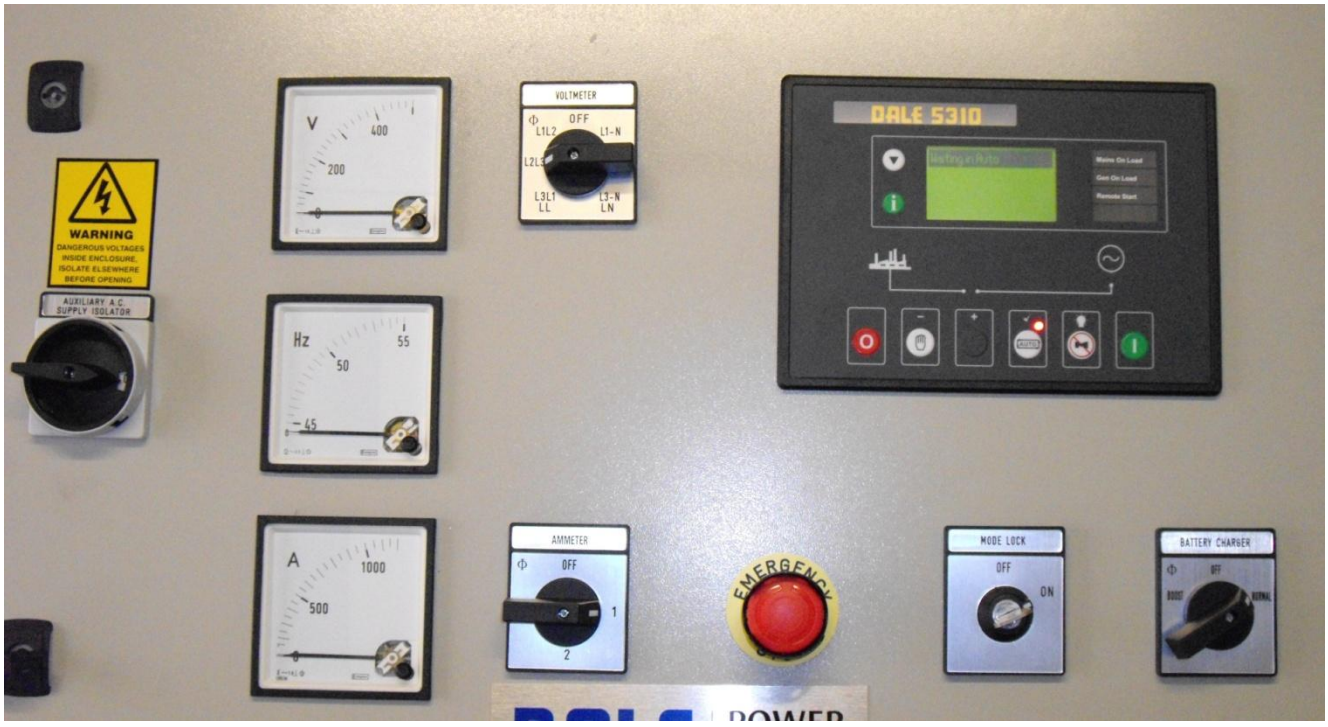
The ear defenders are situated in the electrical control cabin and in the generator cabin.

The location of the distribution board is in the corner of the generator cabin. All circuit breakers should be in the ‘on’ position.

The spare standby batteries should be checked to make sure the float charger is working. One red power light and one Green light indicating the battery is fully charged and being float charged. The electrolyte levels on all cells (12 in total, 6 on each battery) should be checked by removing the tops and visually checking for the electrolyte level to 15mm above the plates inside and if needed toped up with distilled water. **NEVERADDACID.**Check also that no cell is gassing excessively.

The batteries contain DILUTE SULPURIC ACID; DO NOT BREATH ANY GASSES EMITTED FROM THE FILLING HOLES.

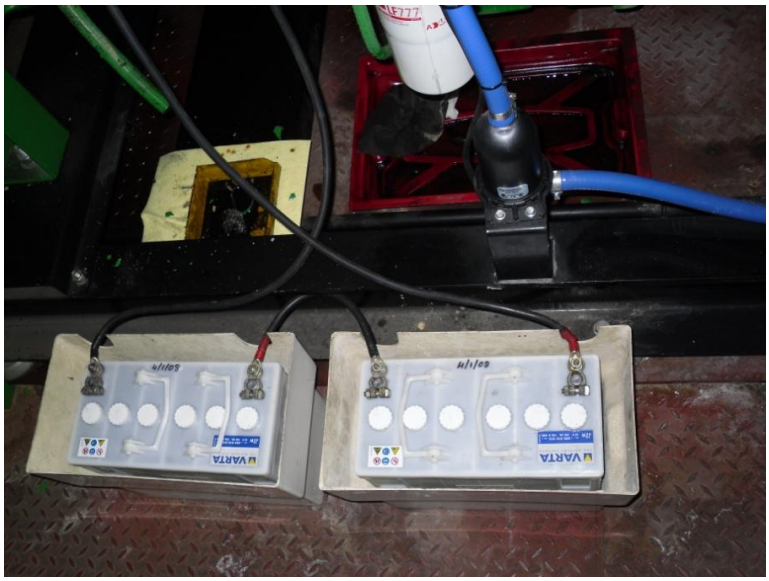
Protective gloves and safety eye goggles are available for this operation from the gray cupboard within the generator room with the keys being in the gray key box just to the right of the entrance door.



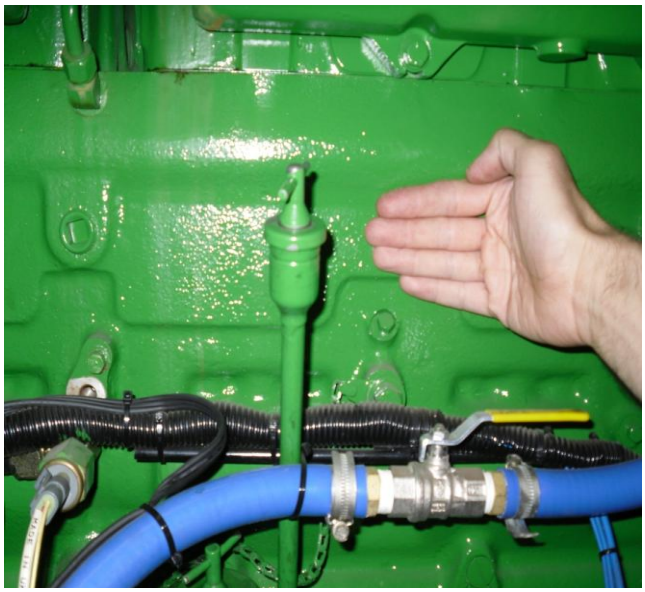
This is the main control panel mounted on the end of the generator. The display on the Dale 5310 should show ‘Waiting in Auto’. If any errors are shown, the book on the controller is located on the bookshelf to the right of the shift leader’s desk, or the support provider, Dale Power Solutions, should be informed. The Auxiliary AC supply switch on the left hand side of the panel should be ON, the Battery Charger switch on the Right hand side should be set to Normal, and Mode Lock should be ON.

No other gauges or switches will show any useful data to the checking procedure at this time until the generator runs.

To the right of the control panel on the side is the main generator output switch; this should be in the up position as shown.

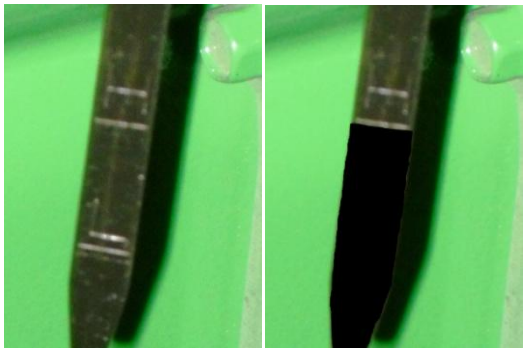


Further along are the main batteries shown above with their protective top cover removed, these are checked in exactly the same way as the spare standby batteries in the step carried out previously (electrolyte level checking and toping up)



Just above the main batteries is a black water heater**/**pump, there is also one on the other side of the generator to check also. These may or may not be pumping water and the blue pipes may or may not be hot depending on the ambient temperature, as long as the main block of the engine feels warm to the touch then these are working correctly, if the block is cold to the touch then investigation will be needed as the generator will be unlikely to start. A good place to feel the temperature of the engine block is above the water isolating lever to the right of the oil dipstick as shown. Also check the yellow lever for the water isolating valve is as shown in line with the pipe (the on position).

The oil dipstick is removed by twisting the T bar approx 3 turns anticlockwise then pulling upwards. Make sure to have wipes ready to catch any oil drips from the bottom of the dipstick and to wipe it clean once inspected.



The picture on the left above shows the dipstick dry to show the markings, the High and Low marks are clearly visible, the oil level upon removal of the dipstick should be between the 2 marks but near the high mark as much as possible. The right picture shows the oil level at its correct position. The oil should look a golden brown to black colour. If the oil has a white milky look or anything different then this could indicate an internal engine problem and Dale Power should be consulted.

CAUTION: - If the level is higher than the high mark, or lower than the Low mark THE ENGINE SHOULD NOT BE OPERATED.

Once finished checking the dipstick should be inserted back and the T bar tightened clockwise to finger tight only, do not over tighten.

The main floor under the generator should also be checked at this time for any fluids that might have leaked from any pipe work, this could include diesel oil, engine oil, cooling water, if anything abnormal is found this should be investigated further. Pay special attention to under the main cooling radiator at the front of the engine, any loss of coolant could result in major problems when the generator set is running.

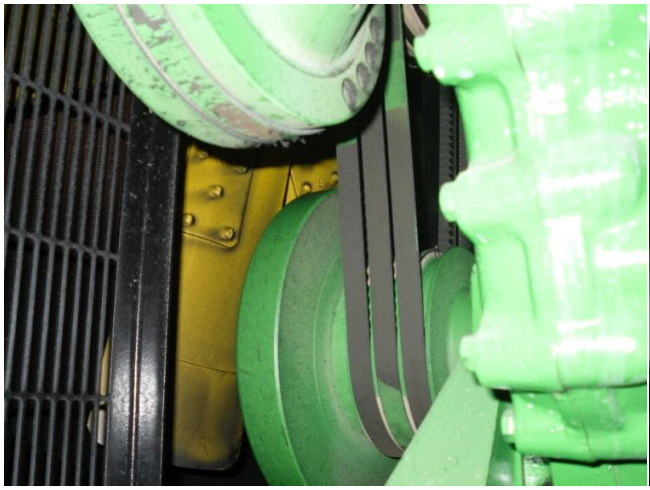
Above the batteries hidden slightly behind a metal plate is an air intake suction indicator. There is one on both sides of the generator to be checked. It can be seen in the picture the band inside the indicator should be *green* indicating the airflow into the generator is good, if this turns *red* then the air filters will need replacing by Dale Power.

Moving to the other side of the generator is a fuel gauge on the day fuel tank, when this tank is full it indicates approx 575 litres. If less than full it should be topped up by pressing and holding in the *green*button on the pump fuel controller situated on the wall below the main fuse board above the standby batteries. Once the tank is full the pump will automatically switch off. This is a good check as it shows the fuel supply pump chain is operational and working, but **note the *green* switch will do nothing if the day tank is already full**. The tank level should be noted.

It is advisable to keep the day tank as full as possible to prevent unwanted condensation of water vapour in the fuel tank especially during the winter or cold weather.

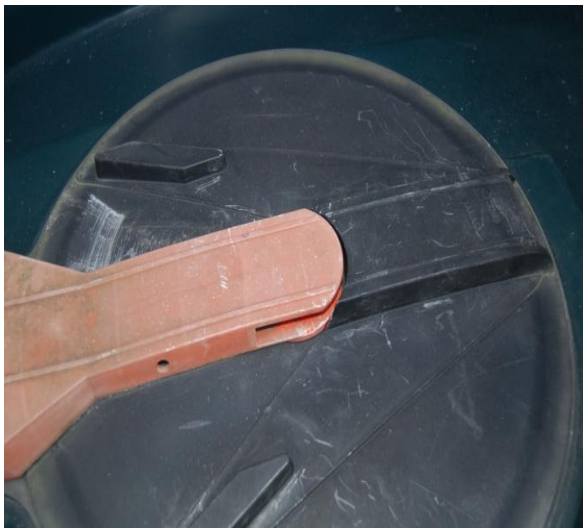
Slightly further along is the second of the two air intake suction gauges to check, as before this should show a *green* band.

Next is the other water heating / pump device, check for leaks and the black handled valve above should ALWAYS be in the open position, there is also another black handled valve to the left of the pump just visible in the picture above. This is also a good advantage point to check under the generator for leaks on this side of the generator.




The main fan belts can also be examined from this side, visually check the parts of the belts that can be seen and check they appear to be in good condition with no cracking. There are 3 belts driving the main radiator fan, and the 2 that drive the water pump, make sure they are present. The green paint on the belts is unimportant but the belt condition under the paint is important.

Fuel tank checks

The 2000 Litre fuel tank is situated at ground level under the generating set. To check the fuel level, pull the lever and twist the top. There is no gauge for this tank so visual inspection of the fuel has to be carried out.

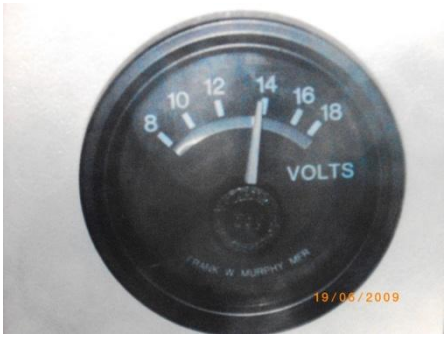
The main fuel tank of 5000 litres has a level gauge that is situated in the electrical cabin next to the generator.

The Day tank (in Litres), the Main fuel gauge (shown above in percentage) and the fuel gauge in Brunswick place (also percentage, covered in next step) should all be recorded in the paperwork to the left of the gauge above, dated and signed.

Brunswick Place generator set

The tank is mounted on the gantry and has a capacity of approximately 1000 litres.

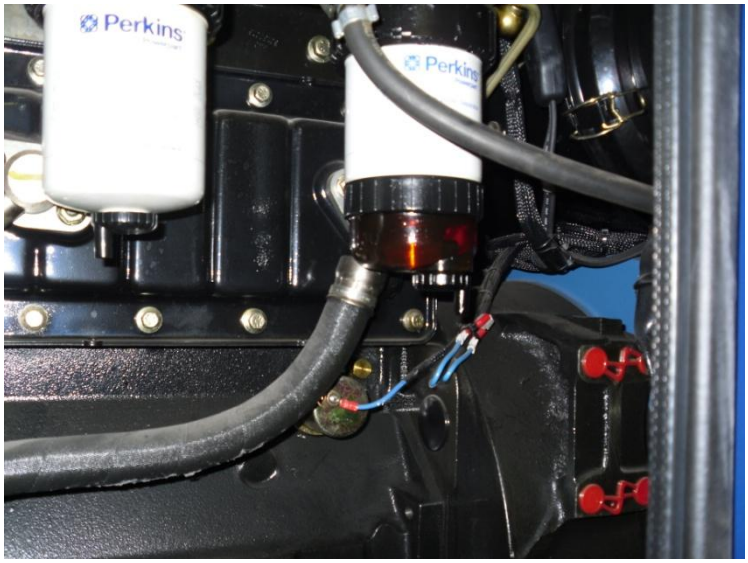
The electronic fuel gauge unit can be found at ground level directly underneath the generator set. Check the level and record to paperwork.



The control panel checks consist of making sure the green power on light is on, the key switch is in the AUTO position, and the battery Volts (lower left gauge) shows 13.8V as this shows a fully charged battery.

The battery checks are the same as the Corsham Street generator but a screwdriver will be needed to lift of the protective cover on the cells to view the electrolyte level, note there is only one 12V battery on this generator. The floor of the generator can be checked for leaking fluids.

This isthe other side of the generator. The yellow is the top of the dipstick. It can be seen in the middle of the picture above. This is just pulled out and the oil level should show, be on the upper notch of the dipstick. The bucket is to catch diesel fuel that seeps from the diesel filters, the floor of the generator can also be checked for leaks. The engine block should feel warm to the touch and this indicated the block heaters are working correctly.



The fluid in the bottom of the diesel filter should be reddish in colour, if there is a clear liquid under the reddish diesel this indicates water is in the fuel and the water should be drained off using the drain tap under the filter.

Materials

Distilled water if required
Gloves
Eye protection
Ear defenders
Wipes

Constraints

The engineering support engineers carry out this preventive maintenance procedure, and takes place once per week. Duty support engineers are scheduled accordingly

Testing

N/A

Contingency plan

If during this preventive maintenance procedure it is identified that any of the generator checks need further attention then the manufacturer – Dale Power Solutions - must be contacted for further assistance immediately.

References

Further information on the Corsham street generator can be found in engineering to the right of the shift leader's position

Distribution

Department	Recipients
Engineering	Engineering
Production	
Operations	
IS	
Development	
Facilities	
Other	