

Activity ID	Description	Duration	WEEK																			
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Emergency Power Supplies Plant Room																						
TP08-01	Em. Power supplies P/room (EPS) Av for C'ment	0			◆																	
TP08-02	EPS Car park extract ductwork	2w																				
TP08-03	EPS H/L Toilet extract ductwork	1w																				
TP08-04	EPS H/L Basement extract ductwork	1w																				
TP08-05	EPS H/L Drainage pipework	2w																				
TP08-06	H/L Generator exhaust flues to loading bay	2w																				
TP08-07	Fuel oil pipework from loading bay storage tank	2w																				
TP08-08	H/L EPS generator exhaust flues & silencers	2w																				
TP08-09	EPS Plant room construct and paint plinths	1w																				
TP08-10	EPS Plant room supply ductwork & louvres	2w																				
TP08-11	Deliver & position generators	1w																				
TP08-12	Deliver & install EPS plant room supply fans	1w																				
TP08-13	Connect exhaust flues to generators	1w																				
TP08-14	Deliver & install EPS plant room extract fans	1w																				
TP08-15	Deliver & position fuel oil day tanks	1w																				
TP08-16	H/L EPS supply intake ductwork from loading bay	2w																				
TP08-17	EPS Plant room extract ductwork & louvres	2w																				
TP08-18	EPS P/room generator cooling pipework & pumps	2w																				
TP08-19	Connect cooling pipework to generators	1w																				
TP08-20	H/L EPS extract ductwork to loading bay	2w																				
TP08-21	Generator cooling p/work to west satellite riser	2w																				
TP08-22	EPS Plant room fuel oil pipework & pumps	2w																				
TP08-23	Test EPS plant room supply & extract ductwork	1w																				
TP08-24	Deliver & position main generator switch panel	1w																				
TP08-25	Generator fuel oil pipework Comp & tested	0																				
TP08-26	Test EPS plant room generator cooling pipework	1w																				
TP08-27	Deliver & position generator control panels	1w																				
TP08-28	EPS Plant room generators electrical	3w																				
TP08-29	EPS P/room ventilation control panels & wiring	1w																				
TP08-30	EPS Electrical bracketry & LV containment	2w																				

Template Programme TP08 - Emergency Power Supplies Plant Room

Activity ID	Activity Description	Predecessors / Comments
TP08-01	Em. Power supplies P/room (EPS) Av for C'ment	Identification of the commencement date. Walls built, access available, area dry and free of debris etc.
TP08-02	EPS Car park extract ductwork	High level transient service. Not associated with the installation of the emergency power supplies, but needs to be included as part of the co-ordinated plant room installation.
TP08-03	EPS H/L Toilet extract ductwork	As activity TP08-02
TP08-04	EPS H/L Basement extract ductwork	As activity TP08-02
TP08-05	EPS H/L Drainage pipework	High level drainage pipework from gullies cast into the slab above. And transient pipework using the emergency power supplies plant room as a thoroughfare. Not associated with the installation of the generators and associated plant, but needs to be included as part of the co-ordinated plant room installation. Needs to be installed before the ductwork and pipework because it is one of the highest services and has to be installed at specific invert levels to create a fall. Plus it would not be accessible to install following the installation of the ventilation and mechanical services.
TP08-06	H/L Generator exhaust flues to loading bay	This flue installation activity does not actually take place within the plant room. But because it does not traverse through other "areas" and there would be no point in creating a separate "area" just for this item it is OK to record this activity in the plant room that it serves. Alternatively it could be included in a group of basement ventilation risers.
TP08-07	Fuel oil pipework from loading bay storage tank	As activity TP08-6 - but in relation to the fuel oil pipework. This is a pipe-in-pipe installation as is the requirement for this installation in un-ventilated areas i.e. risers.
TP08-08	H/L EPS generator exhaust flues & silencers	This is a high level heavy operation involving the installation of the exhaust flues and silencers. Generally there is a separate flue for each individual generator. When these have to be installed above the generators it would be beneficial to install them prior to the generator deliveries.
TP08-09	EPS Plant room construct and paint plinths	Could be constructed earlier - as part of the availability for commencement sequence. Or as in the case of this template deferred until the high level services have been installed.
TP08-10	EPS Plant room supply ductwork & louvres	High level ductwork, in this instance installed prior to the delivery of its fans. This is to enable the ductwork to be installed prior to the delivery of the generators.
TP08-11	Deliver & position generators	Long lead-in items. Need to ensure that the delivery route to the plant room is clear, and it is essential that the plinths are complete. The delivery date may have to be earlier depending upon the site logistics and other plant deliveries.
TP08-12	Deliver & install EPS plant room supply fans	Fan deliveries will have a longer lead-in period than ductwork manufacture. Therefore it is always preferable to identify the fans as a separate activity to ductwork, dampers and plenums etc.
TP08-13	Connect exhaust flues to generators	These connections of the flues to the generators will influence the exact final locations of the generators.
TP08-14	Deliver & install EPS plant room extract fans	As item TP08-12. However fire-rated fans will have a longer lead-in period than un-fire-rated fans.
TP08-15	Deliver & position fuel oil day tanks	Could be delivered earlier dependant upon the layout and co-ordination of the plant room and site logistics. Each generator will have its own day tank.

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Activity ID	Activity Description	Predecessors / Comments
TP08-16	H/L EPS supply intake ductwork from loading bay	As activity TP08-6 - but in relation to the supply air ductwork.
TP08-17	EPS plant room extract ductwork & louvres	High level ductwork - could be installed prior to the delivery of the generators.
TP08-18	EPS P/room generator cooling pipework & pumps	High level cooling pipework within the plant room, which will ultimately be connected to radiator units located on the roof. The purpose of this is to keep the engines cool when the generators are running. There are two cooling pipes (flow and return) associated with each generator.
TP08-19	Connect cooling pipework to generators	Requires the final positioning of the generators and the completion of services that are installed at a higher level.
TP08-20	H/L EPS extract ductwork to loading bay	As activity TP08-6 - but in relation to the extract air ductwork.
TP08-21	Generator cooling p/work to west satellite riser	The pipework that this activity refers to is outside of the emergency power supplies plant room. And as such its installation should be recorded throughout the "areas" it traverses to the west satellite riser. However, because these areas are not identified in any of the other template programmes it has been included here in this instance.
TP08-22	EPS plant room fuel oil pipework & pumps	Requires the final positioning of the day tanks and generators.
TP08-23	Test EPS plant room supply & extract ductwork	The testing is carried out upon the completion of the ductwork installation.
TP08-24	Deliver & position main generator switch panel	Long lead-in item. Provided by the electrical contractor and controls the output of the emergency power supplies to the changeover panels.
TP08-25	Generator fuel oil pipework Comp & tested	Progress identification milestone for the fuel oil pipework.
TP08-26	Test EPS plant room generator cooling pipework	Because the generator cooling pipework has to be installed through the basement, up the west satellite core riser and across the roof to the generator radiators it will be separately tested following its installation through each of these sections.
TP08-27	Deliver & position generator control panels	Provided by the generator supplier. Each generator has its own electrical control panel. These are connected to a common generator control panel, which synchronises all of the supplies and feeds into the electrical contractor's main generator switch panel.
TP08-28	EPS Plant room generators electrical containment	The electrical installation is always going to be the lowest service because it has to remain accessible. This activity refers to the electrical containment provided by the generator installer between his generators and control panels.
TP08-29	EPS P/room ventilation control panels & wiring	This plant wiring will be carried by the generator installation contractor. All LV supplies to control panels will be provided by the electrical contractor.
TP08-30	EPS Electrical bracketry & LV containment	This activity refers to the containment provided by the electrical contractor within the EPS plant room. It is for the outgoing emergency LV supplies and LV supplies to the plant control panels.
TP08-31	Generator riser cooling p/work complete & tested	Progress identification milestone for the generator cooling pipework.
TP08-32	EPS P/room fuel oil control panels & wiring	This plant wiring will be carried by the generator installation contractor. The LV supply to the control panel will be provided by the electrical contractor.

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Activity ID	Activity Description	Predecessors / Comments
TP08-33	EPS P/room generator mains cables & terminations	Main cabling and terminations between the generators and their control panels - carried out by the generator installation contractor.
TP08-34	EPS P/room Gen cooling control panels & wiring	This plant wiring will be carried by the generator installation contractor. The LV supply to the control panel will be provided by the electrical contractor.
TP08-35	EPS P/room & B/ment cooling pipework insulation	Will follow the successful testing of the pipework.
TP08-36	EPS P/room generator control cables & Terms	Cabling and terminations between the generator control panels - carried out by the generator installation contractor.
TP08-37	Emergency power supplies cables & terminations	Carried out by the electrical contractor. This activity refers to all of the emergency power supply cables & terminations, which feed the changeover panels located around the building. Some of these supplies may have to be deferred until the containment can be completed to their respective areas. Like the installation of LV cables from a switch room the cable installation from the EPS plant room will be identified by an activity within the switch room of their origination, and not by separate activities within the areas through which they pass through.
TP08-38	EPS Fuel oil pipework insulation	Follows the successful testing of the pipework.
TP08-39	EPS Plant room fire alarm interface connections	These interface with the fire and life safety arrangements and will require all control panels to be installed. The Fire alarm 1st fix would form part of a general installation of the whole floor.
TP08-40	EPS Plant room BMS interface connections	Requires the generator installation contractor to have his control panels installed. The BMS 1st fix would form part of a general installation of the whole floor.
TP08-41	EPS Generator plant LV cable Terms	Termination of the electrical contractor's LV cables into the generator contractor's plant control panels.
TP08-42	Generator ventilation system interfaces complete	This activity indicates that the ductwork testing, control wiring / BMS interface & fire alarm connections are complete, and the generator ventilation system is available for commissioning once the LV power supply is available.
TP08-43	Generator fuel oil system interfaces complete	This activity indicates that the pipework testing, control wiring / BMS interface & fire alarm connections are complete, and the generator fuel oil system is available for commissioning once the LV power & fuel oil supplies are available.
TP08-44	EPS Plantroom power available for commissioning	Completion of the termination and testing of the incoming and outgoing EPS plantroom LV supply cables, and power available from the LV switch room.
TP08-45	Commission EPS plantroom ventilation	Checking that the design criteria (making sure that the fans are moving the air as specified) is met and balancing the air flow (by setting louvres) and ensuring that the BMS controls and monitoring work correctly. Needs to be functioning to cool the plant room prior to the generator commissioning.
TP08-46	EPS P/room ventilation system commissioned	Indicates when TP08-45 has been successfully accomplished.
TP08-47	Flush fuel oil pipework	Cleansing of the fuel oil pipework with chemically treated water (to remove debris) prior to availability for filling with fuel oil.
TP08-48	Fill fuel oil bulk storage tank	Provision of fuel oil to the bulk storage tank following the successful pipework flushing.

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Activity ID	Activity Description	Predecessors / Comments
TP08-49	Commission fuel oil pumps and controls	This needs to be successfully completed to enable the fuel oil to be pumped to the generators.
TP08-50	Roof generator cooling pipework complete	Indication of the generator cooling pipework & connections completion to the roof radiator units.
TP08-51	Fill & test generator cooling pipework	Requires the completion of all generator cooling pipework.
TP08-52	Generator cooling system interfaces complete	This activity indicates that the pipework testing, control wiring / BMS interface connections are complete, and the generator cooling system is available for commissioning once the LV power is available.
TP08-53	Generator fuel oil system commissioned	Indicates that the fuel oil delivery system will be available for the commissioning of the generators.
TP08-54	Flush generator cooling pipework	Cleansing of the generator cooling pipework to remove debris and residue left by the welding process.
TP08-55	Chemical clean & final flush Gen cooling P/work	Further flushing, and chemical cleaning of the generator cooling pipework to ensure that all of the residue has been removed from the generator cooling pipework system.
TP08-56	Power Available for L17 & L18 commissioning	Indicates the earliest date that there will be a permanent LV power supply available for the commissioning of the plant located within the level 17 & 18 plant rooms. I.E. LV power available to the generator radiators.
TP08-57	Generator cooling system commissioned	Indicates that the cooling "system" will be available for the commissioning of the generators.
TP08-58	Generators pre-commission & start-up	Initial setting up / pre-testing / start-up and running of the individual generator sets.
TP08-59	Commission & load test generators	Synchronised commissioning of generators. Testing of generators using assimilated loads (as there will be in-sufficient loads available at this stage of the project to test the generators duty).
TP08-60	Integrated generator commissioning	Intermittent period for testing controls and remote starting in relation to other systems.
TP08-61	Black Building Testing	Involvement of all fire & life safety system testing following the completion of each systems individual commissioning. Testing and demonstration of the cause and effects following partial and complete power failure to the building.

General Notes:

- 1 To be read in conjunction with the Basement Levels B2 and B3 Plant Room Layouts
- 2 To be read in conjunction with Figure 1.5
- 3 The commissioning processes described would also be consistent for other pipework / ventilation "systems"