

Licence to Operate a Steam Turbine

| Code | Name | Description |
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| UEPOPL001-01PC | Plant Identification Major Components | <p>List the major components of each of the following systems and record what you believe the components function to be.</p> <ol style="list-style-type: none"> 1. Main Steam System 2. Condensate Supply System. 3. Circulating Water System or Air Cooling System (where fitted). 4. Gland Steam System. 5. Air Extraction System. 6. Lube and Control Oil Systems. 7. Exhaust Steam System (where fitted). 8. Chemical dosing system including chemical dosing points. 9. Instrument air system supplying the boiler (if fitted). |
| UEPOPL001-02PC | Plant Identification Single Line Drawings | <p>Draw a single line sketch of each of the following systems.</p> <ol style="list-style-type: none"> 1. Main Steam System 2. Condensate Supply System. 3. Circulating Water System or Air Cooling System (where fitted). 4. Gland Steam System. 5. Air Extraction System. 6. Lube and Control Oil Systems. 7. Exhaust Steam System (where fitted). |
| UEPOPL001-03PC | Workplace Health & Safety Legislation | <p>* This is a prior to course requirement.</p> <p>Using a browser to connect to the Internet search for the Workplace Health and Safety Regulations for the jurisdiction in which you reside. For example; https://www.workcover.nsw.gov.au/ and then look for Laws & Legislation and locate the WHS Regulations.</p> <p>You should go to Part 4.5 High Risk Work and read and review it. Then in your own words write a short outline of the requirements for:</p> <ol style="list-style-type: none"> 1. Training and Assessment to obtain a Licence to Perform High Risk Work. 2. Licence conditions such as duration, renewal, loss of licence, expiring licence, renewal etc. 3. Employer's obligations to High Risk Work. 4. PCBU obligations to High Risk Work. |
| UEPOPL001-1.1 | Steam Turbine Operations are Assessed and Prepared. | <p>Explain to your mentor and list the considerations when planning Steam Turbine Operation.</p> <p>Example: Returning from maintenance, Cold Start etc.</p> |

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| UEPOPL001-1.2 | Steam Turbine Operating Procedure Utilisation. | <p>List the Check Sheets and Operating Procedures required for the various different Steam Turbine Operations. Explain to your mentor the reasons for choosing these and when and how they would be used.</p> <p>Example: Cold Start Procedure used after long term outage or maintenance. Check Sheets utilised prior to using the Procedure.</p> |
| UEPOPL001-1.3 | Personal Protective Equipment Use in Steam Turbine Operation. | <p>List the various Personal Protective Equipment you require when working on your plant. Explain to your mentor whenever there is and special PPE required.</p> <p>Example: Standard PPE for Hot Work, Special PPE such as a Face Mask when decanting Chemicals.</p> |
| UEPOPL001-1.4 | Hazard and Potential Hazards in work area are identified and assessed for risk and control. | <p>Identify as many hazards as you can in your plant and list them. Explain to your mentor the methods of control you would put in place for three such hazards.</p> <p>Example: High Temperature Pipework - Ensure adequately insulated and where insulation is damaged barricade off.</p> |
| UEPOPL001-1.5 | Appropriate Communications methods are identified according to procedures. | <p>Identify all means of communications used in your workplace. List the different types and explain to your mentor when you would use each.</p> <p>Example: Two way radio - recommissioning.</p> |
| UEPOPL001-2.1 | Downstream user of output from Steam Turbine is advised of a start-up. | <p>Describe to your mentor who you would advise of that the Steam Turbine you are in charge off will be starting. List who this may be and also the information you would inform them of.</p> <p>Example: Local operators, Electrical Engineer and Electricity Grid Authority - No 1 Steam Turbine Generator commencing start from 0800 online synchronising 0930.</p> |
| UEPOPL001-2.2 | Controls for identified hazards and potential hazards in work area are managed appropriately. | <p>List the type of hazards and potential hazards that may arise during the starting of the Steam Turbine. Explain to your mentor the control measures you would adopt to manage the risk of three such hazards.</p> <p>Example: Drain Valve gland fails during the start-up phase. Area barricaded and fault reported.</p> |
| UEPOPL001-2.3 | Availability of quality steam from upstream provider is confirmed. | <p>List the conditions required to ensure Steam Quality is correct before providing steam to the turbine. Explain to your mentor how these are verified and what action would be taken to ensure only steam of the quality required is provided.</p> <p>Example: Correct steam conditions - Temp etc. - Adequate drainage.</p> |
| UEPOPL001-2.4 | Pre-operational safety checks of Steam Turbine are conducted according to procedures. | <p>List the Steam Turbine Pre-Start Checks you perform on site. Explain to your mentor what additional checks may be required when returning a turbine to service. List these additional checks and explain one such check in detail.</p> |

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| UEPOPL001-2.5 | Start-Up Checks are performed upon ancillary plant. | List the ancillary plant associated with the Steam Turbine in you plant. For each ancillary perform pre-start checks and record each event. Example: Turbine Oil Systems - Lube - Control. |
| UEPOPL001-2.6 | Maintenance requirements are identified and reported according to procedures. | List the process of identifying defects and how these are reported for maintenance. Explain what records are retained. Example: Plant inspections - SAP Reporting. |
| UEPOPL001-2.7 | Steam Turbine started and placed on line according to procedures and Start-up checks. | Under direct supervision of the mentor perform start-up checks and bring a steam turbine on line according to company procedures and manufacturer's guidelines. You should perform this task sufficient times for your mentor to deem you competent in the practical operations. Example: Cold Start ID Fan and placed on load. 35 minutes from first roll to full auto. |
| UEPOPL001-3.1 | Steam Turbine is monitored procedurally including operational checks and fault finding. | List the operating parameters monitored for your Steam Turbine and document the reasons these parameters are important. Explain to your mentor the actions taken to correct any deviation for each parameter listed. Example: Steam Temperature - Correct temperature is to be maintained to ensure the correct heat energy is provided to the turbine and performance is maintained. |
| UEPOPL001-3.2 | Operating Log is maintained clearly and accurately, according to established procedures. | List the items that are normally recorded in the plant log book. Explain to your mentor the purpose of maintaining a log book. Complete a Log Book record for a shift and attach it to your Training Plan Log Book so you can demonstrate effective use. Example: Log of daily events, plant in/out service etc. - Log book records are a legal requirement, records history etc. |
| UEPOPL001-3.3 | Operating status of Steam Turbine is diagnosed and verified. | List the various operating status in which the steam turbine could be. Explain to your mentor how you would verify the status. i.e What would you check to determine the status and record the verification with your list of statuses. Example: Offline on standby - Condenser under vacuum so the plant ready for a restoration of services. Checked turbine sub-systems and determined that the turbine was on barring with lube oil, cooling water, condensate and vacuum systems in service. |
| UEPOPL001-3.4 | Status of Steam Turbine is communicated to other personnel including downstream users. | List and explain to the mentor who needs to be informed of the status of the Steam Turbine during operations. Example: Power House Electrician - To Synchronise where appropriate. |

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| UEPOPL001-3.5 | Steam Turbine emergencies and contingencies are managed. | <p>List the types of emergencies that may typically encountered in Steam Turbine operations. Itemise the steps taken to make safe the plant under each emergency listed. List any environmental considerations for each emergency.</p> <p>Example: Lube oil leak on oil cooler pressure sensing point. Consideration of oil spillage and possibility of fire. Assess if Turbine should be tripped or other means of control the leak are appropriate.</p> |
| UEPOPL001-4.1 | Energy Isolation Procedures are followed. | Describe the Isolation Process and Permit to Work System to your mentor. Complete one small, one medium and one major isolation and provide a copy of the isolations with your Training Plan Look Book. |
| UEPOPL001-4.2 | Routine shutdown of Steam Turbine performed according to procedures and manufacturer's instruction. | <p>Under direct supervision of the mentor shutdown a Steam Turbine according to company procedures and manufacturer's guidelines.</p> <p>You should perform this task sufficient times for your mentor to deem you competent in the practical operations.</p> <p>Example: Shutdown for short term outage. Offline for 4 hours.</p> |
| UEPOPL001-4.3 | Maintenance requirements are identified, recorded and reported according to procedures. | <p>Explain to the mentor three different maintenance tasks to be completed during an outage and list the task, the work group responsible and the operator involvement in assisting the maintenance staff to complete the work.</p> <p>Example: Lube Oil Filter Cleaning - Isolation of Oil Filters to enable Fitter to clean or replace the filters.</p> |

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