|  |  |
| --- | --- |
| **Non-Technical Summary** | |
| **Action area** | Chillers |
| **Overview of Activities** | Chilling of water using a Daikin EUWA100MZY Free cooling chiller. |
| **Operating Techniques** | Feed water is held in a 30000L Plastic Tank.  Water is recirculated through the free cooling chillers to reduce the water temperature from around 10˚C to around 5˚C. From here it flows to the reactor on demand to cool the reactor coil. This is a closed water system.  A water treatment chemical is added to the feed water to reduce corrosion and prohibit bacterial growth. |
| **Raw Materials** | Mains water is used.  Water treatment chemicals are delivered in 25L drums. |
| **Waste from the process** | There is no waste from the process. |
| **Water use** | Water is provided to the site from the mains supply.  Water is used as feed water and undergoes chemical treatment to prevent pipework corrosion and prohibit bacterial growth. |
|  | |
| **Point source emissions to air** | There are no point source emissions to air. |
| **Fugitive emissions to air** | None. |
| **Monitoring of emissions to air** | N/A |
|  | |
| **Point source emissions to surface water** | A closed system so no emissions to surface water are present. |
| **Fugitive emissions to surface water** | Overflowing of the feed tank could occur so it is included in a maintenance schedule. All emission points are listed in the Emission Points document. |
| **Point source emissions to sewer** | There are no emissions to sewer. |
| **Monitoring of emissions to water** | Not required. |
| **Emissions to land** | No emissions to land from the installation. |
|  | |
| **Odour** | This is a closed system. There is no discernible odour. |
| **Noise & Vibration** | No noise complaints have been received. |
| **Energy** | The primary sources of energy used at the installation are electricity imported from the National Grid.  Half hourly meters are installed on the site across the site to record electricity usage. |
| **Environmental Management system** | The installation operates under an environmental management third party certification scheme to ISO14001:2015.  The process is supported with a management consultant who carries out compliance audits. |
| **Environmental Risk Assessment** | An Environmental Risk Assessment has been undertaken as part of the installation permit. |
| **Incident Management** | Written procedures are in place to manage the identified risks, including procedures relating to spill response, emergency preparedness and response to major emergencies. The Site has a Major Incident Plan and a Fire Prevention Plan which outlines the processes to follow to ensure adequate systems, resources and training are in place to effectively prevent and minimise the impact of an incident. |