Australian Sustainable Business Group

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Valve Failure Guilty Outcome

In EPA v Delta Electricity (Delta) [2025] NSWLEC 151 Justice Pritchard found Delta guilty of breaching s 64(1) POEO Act, of failing to comply with s O2.1 — operate in a proper and efficient condition— of its Environment Protection Licence (EPL). The penalty will be decided later.

Delta operates Vales Point Power station at Mannering Park, which has a 1,320 MW generation capacity. As part of its operations it uses large volumes of lake water to condense the steam generated for electric power generation. As Lake Macquarie is brackish and contains natural biota the cooling water must be screened and treated otherwise natural lifeforms will foul the heat exchanger and surfaces used to condense the steam. To clean up the lake water it is first screened then treated with hypochlorite solution as it is ingested into the plant. Generation of hypochlorite solution comes from two sources:

- Electrolytic generation—similar to that, but much larger scale to a salt water swimming pool.
- A storage of concentrated hypochlorite solution used as a backup if the first fails.

Both systems are operated by a Distributed Control System (DCS) which controls the level of hypochlorite in the system. An intermittent sticky valve was identified as the root cause of an incident on 22 September 2022, where the valve was found to be stuck open. This is quite unusual as the valve is a fail-safe close position valve around two years old. It is opened using compressed air controlled by a solenoid valve. Two weeks before the incident the valve was noted as having been semi stuck and the solenoid valve was replaced. On 22nd the valve was visually identified as being stuck open, despite the DCS considering it closed. Delta responded immediately, including contacting the EPA as the leak triggered a Material Harm incident. The outcome of the leak caused a fish kill, the third such occurrence in a month. However, the court considered the first likely from other causes. The EPA expert estimated about 130 litres of excess >12.5% hypochlorite solution was added to the ingestion side of the cooling water. This slug of hypochlorite would have somewhat degraded going through the cooling water system before it was discharged back into the lake waters. S3.8 of the EPL sets a 0.2 mg/L chlorine limit, which was assumed to be exceeded at the discharge point. However, court agreed environmental guideline values that are protective of 99%, 95% and 90% of species in the ecosystem lie at 2.2, 7.2 and 13µg chlorine-produced oxidants (CPO)/L respectively. Consequently, the environmental limits for discharging into the lake are set at a low level. Also Delta staff noticed a chlorine smell and noted fish in distress and later dead fish after the incident was noticed.

Delta's DCS and other risk management actions such as daily checks etc, where not enough to identify the failure of the fail safe valve failure, despite it being 2 years old and recently maintained. It seems that the DCS required additional inputs, such as the physical position of the valve/s to identify such failures of fail-safe valves. Considering the range of monitoring etc on the valve, there was the assumption it was going to work and not get stuck. Also its failure appeared intermittent, which increases the difficulty in identifying the root cause. It seems to meet sO2.1 of your EPL requires that no trust be given in any system, such as a fail-safe valve. Environmental law is clear if such a failure occurs in the operation of a system the site is responsible for its environmental consequences. Consequently, fail safe systems cannot be trusted and must have some form of a feedback mechanism to ensure they are indeed operating as required. For this case there are many different approaches such as a physical valve position sensor, free chlorine monitoring in the outlet etc.

ASBG will continue to track the outcomes of this case, but it is assumed that a penalty will be issued. Fortunately, the doubling of fines occurred in 2024, so the penalty will be of the older levels, likely to be less than $100,000, but this is a forecast. Nevertheless, one cannot be too careful when complex controls and systems are required to deliver perfect environmental outcomes where any failure is not acceptable under O2.1.

Muscat Developments Again.

Muscat Developments has been issued a Clean Up Notice on an illegal tyre dump in Bickley Vale. This comes after the 6 court cases covering a separate incident involving 334 kt of C&D waste in Wollondilly (See *SBW 11/11/25*).

The background to this CUN dates back to December 2023, when EPA commenced criminal proceedings against Mr Taimi Lokeni in the Local Court of NSW for failing to comply with Direction 3 of Clean-up Notice 3503463. Here the court ordered the removal of 1,000 tyres with proof of proper disposal. However, by August 2025 only 380 tyres were removed from the site leaving >500 tyres on site.

In August 2025 a fire in the stockpile of tyres occurred attended to by NSW Rural Fire Service, which conveniently destroyed the remaining tyres on the site. Fire water and vehicle wash-down waters were collected in a dam on the site, where these contaminants remained. An area approximately 35 metres by 25 metres of burnt tyre residue containing tyres, burnt tyres and wire. EPA claimed this burnt tyre stockpile is causing and continues to cause water pollution in the dam which may overflow in a flood.

EPA's directions include:

- By 26 February 2026, provide a report on the chemical assessment and waste classification of the dam water.
- Employ an environmental consultant to prepare a remedial plan on the burnt area.
- Remove and properly dispose of all dam water
- Provide proof of dam water disposal and submit the remedial plan for EPA review.

While EPA was not involved in the Wollondilly illegal dumping, by Muscat, they have taken interest in other sites where environmental harm has occurred. Considering the fire conveniently occurred following the court order, there is a probability that this incident may again go back to court for contempt of its ruling. While the stockpile was destroyed by fire, this was not the intent of the court's ruling, but we will see if this goes further.

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