Middle Arm Senate Inquiry
Response to questions on notice
NT Environment Protection Authority

Dr Paul Vogel AM, Chairperson, NT EPA

Question 1: Could you please confirm whether the NT EPA is currently investigating any further breaches or events regarding Empire Energy and their wells, and provide information relating to these?

The NT EPA is not the regulator for these activities. This question is a matter for the Environment Minister and Department of Environment, Parks and Water Security, who administer the Petroleum (Environment) Regulations.

Question 2: Please confirm the requirements or limits imposed in INPEX Australia's EP licence for their Darwin LNG processing plant regarding volatile organic compounds, including benzene

The Ichthys LNG Environment Protection Licence requires monthly monitoring for Benzene, Toluene, Ethylbenzene and Xylene (BTEX) at the 'hot vent' authorised discharge points (ADPs).

There is a requirement to notify the administering agency when the Acid Gas Removal Units (AGRUs) are off line for any reason.

With regard to flaring, the licence requires that flares are designed, operated and maintained to minimise emission of VOCs.

Question 3: Please provide details of all communications you have had with INPEX Australia regarding volatile organic compounds (VOCs) or the failure of their acid gas incinerators at their Darwin LNG facility.

Correspondence is significant and goes back several years. In early 2019, not long after Ichthys LNG reached steady state operations, it encountered technical issues and delays with supplies for the AGRUs. In accordance with the licence, Inpex notified the NT EPA that by-pass was necessary. Notifications have been received by the Department on each occasion when the AGRUs were by-passed and re-started.

In late 2020 a delegate of the NT EPA requested an expansion of the Ichthys LNGs licence's audit scope to include an updated air quality impact assessment. The findings of this modelling were provided to the Department.

Modelling indicated that for a "worst case scenario" benzene, being the most harmful of VOCs, would contribute approximately 3% of the NEPM (Air Toxics) at the area of peak influence during continuous hot venting conditions.

Question 4: Are there any notification requirements or minimum timeframe requirements regarding acid gas incinerators being offline?

Under the conditions of their licence Ichthys LNG is required to notify the administering agency when the AGRUs are by-passed, such as when they go offline due to maintenance.

Planned by-passes must be notified 10 business days prior to commencement, unplanned by-passes within 24h and must include reasons.

Question 5: In their EP licence, INPEX Australia is required to 'take all reasonable and practicable measures to minimise fugitive volatile organic compound emissions', and that 'venting of AGRU acid off gas will be infrequent and only when the incinerator is shut down for maintenance'.

This question refers to EPL condition 49, related to fugitive emissions, which are unintended emissions, for example leakages from valves in pipe work. The licence requires the implementation of a leak detection and repair program to ensure leakage is detected early and minimised.

The latter half of the question refers to a footnote for another condition (condition 44). The footnote is intended to clarify the requirements in condition 44. Information provided by Ichthys LNG at the time of licence issue indicated that AGRU by-pass and venting would be infrequent.

Question 6: Why has the EPA not investigated INPEX for breaching this requirement of their license, given that both their acid gas incinerators have been off for at least 12 months and thus there is nothing to minimise VOCs?

There has been no investigation because there has been no breach of a condition.

Question 7: The requirements in Santos' EP licence relating to their acid gas incinerator being offline are stronger than those for INPEX. Why are they different?

The Santos and Inpex Environment Protection Licences were originally issued 8 years apart, in 2009 and 2017 respectively.

While some conditions are standard across licences, others are bespoke and are determined on the basis of the best available information and a risk assessment at the time of issuing the licence.

Licence conditions are also amended from time to time. Amendments can be initiated by the licensee, or, under certain conditions, by the NT EPA.

This process can lead to differences between conditions for different facilities.

Question 8: How long has Santos' facility been without an acid gas incinerator?

The Santos acid gas incinerator was designed for a minimum feed rate of 180kNm3/hr. As the gas supply from the Bayu-Undan field diminished in 2023, the feed rate reached the lower limit, meaning the AGI could no longer be operated safely. In May 2023 the Santos engineering team determined that the AGI could not be safely restarted and the unit has not been in use since this date.

The gas supply from the Bayu-Undan field has now been depleted and there is no gas being processed at the facility. Santos is currently demolishing the acid gas incinerator in preparation for the installation of a new acid gas management system, including a thermal oxidiser to replace the AGI.

Environment Protection Approval 378 authorises this modification of the Darwin LNG facility.

Question 9: Could you confirm if the EPA measures total VOCs or specific BTEX VOCs at the air monitoring stations.

The EPA's air quality monitoring stations continuously record CO, NO2, O3, SO2, and particulate matter (PM2.5 and PM10). BTEX are monitored at the Stokes Hill Air Quality Monitoring Station on a quarterly basis by qualified contractors for Inpex when AGRUs are not operational.

Question 10: How are BTEX VOCs monitored? How frequently are measurements taken, and where are these published?

BTEX are monitored at the Stokes Hill air quality monitoring station on a quarterly basis by Ichthys LNG.

Licence conditions require all LNG facilities to monitor VOCs/BTEX at multiple monitoring points on site where relevant discharges to air are occurring. Required monitoring frequencies vary between monitoring points but are generally quarterly to monthly.

Monitoring data is reported to the NT EPA according to licence conditions. Monitoring reports are publicly available on the NT EPA website for all Environment Protection Licences (https://ntepa.nt.gov.au/your-business/public-registers/licences-and-approvals-register/environment-protection-licences)