

Alternative hydrogen supply, Kwinana

Liquid Air WA Pty Ltd

**Report and recommendation of the
Environmental Protection Authority**

Environmental Protection Authority
Bulletin 461
November 1990

**Alternative hydrogen supply from CSBP and Farmers
for Liquid Air's air separation plant, Kwinana**

Liquid Air WA Pty Ltd

**Report and recommendation of the
Environmental Protection Authority**

ISBN 0 7309 3539 6

ISSN 1030-0120

1. Background

In February 1990, the Minister for the Environment issued a Statement which gave approval to Liquid Air WA Pty Ltd to establish an Air Separation Plant for the production of oxygen, nitrogen and argon. The plant is situated at Lot 129 Leath Road, Naval Base (adjacent to Mason Road), and construction is now nearing completion.

To produce high purity argon, a hydrogen supply is required. The approved proposal included plans to pipe hydrogen gas from the new Nufarm Chlor-alkali installation located on the south-east corner of the Tiwest Joint Venture (formerly Cooljarloo Joint Venture) site near Mason Road. An interconnecting pipeline running from the Air Separation Unit site to a position adjacent to the Nufarm plant has now been installed.

2. Proposal

Due to a breakdown in negotiations between Liquid Air and Nufarm, Liquid Air is now seeking to pipe the hydrogen instead from CSBP and Farmers' nearby chlor-alkali plant.

The proposal necessitates an extension of the existing 50 mm diameter pipeline through private land owned by Tiwest and CSBP and Farmers over a further distance of some 1.6 km. The proponent has identified a preliminary route for the pipeline extension (see attached map). Approval from Tiwest for the pipeline extension within its boundaries has been granted and, because Liquid Air has a corporate relationship with CSBP and Farmers, Liquid Air considers that formal approval from CSBP and Farmers is not required. Relocation of a small compressor and drier unit to the CSBP chlor-alkali site will be required.

3. Environmental impacts and management

Field inspection of the proposed pipeline route confirmed that construction of the 50 mm pipeline would not cause a significant impact on the existing environment. However, the risks and hazards of operating such a proposal need to be adequately addressed.

Hydrogen is a hazardous material because it is flammable and potentially explosive when mixed with air. In supporting documentation for the Consultative Environmental Review the proponent indicates that procedures for installation, damage protection and testing of the pipeline will be in accordance with those previously adopted for the approved and constructed section of pipeline. Liquid Air has advised the Explosives and Dangerous Goods Division of the Department of Mines of its intentions. It is the statutory responsibility of the Department of Mines to ensure that the correct installation and operating codes are abided by.

The Department of Resources Development and the Industrial Land Development Authority are working towards the development of a services corridor to allow for safe movement of hazardous materials in the Kwinana industrial area. The precise alignment of the pipeline has not been determined but the Authority believes that it should follow this corridor to the maximum possible extent.

Under Ministerial Conditions imposed on the Air Separation Plant now under construction, the proponent is required to prepare a comprehensive hazard identification and risk management programme prior to commissioning. The proponent should ensure that the pipeline extension is incorporated in this programme and also in the Kwinana Integrated Emergency Management System (KIEMS).

The Environmental Protection Authority concludes that, given the small quantities of hydrogen to be handled, the safeguards to be incorporated in the proposal, the separation distance from the general public, and the proponent's safety record in the industry to date, the risk levels due to the proposed pipeline are considered to be low enough to be acceptable to the Authority.

4. Consultation

During the assessment of this proposal the Authority consulted with the Department of Mines with regard to risks and hazards, the department of Planning and Urban Development and the Town of Kwinana on planning considerations, and the Department of Resources Development. During the public review only one comment was received, from CSBP and Farmers.

Recommendation 1

The Environmental Protection Authority concludes that the proposal, as described in the supporting documentation for this Consultative Environmental Review, is environmentally acceptable and recommends that it could proceed.

The Authority 's experience is that it is common for details of a proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have a positive effect on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve environmental performance and protection, should be provided for.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.