

Environmental Assessment Requirements

Application Number	DA35/98-Mod-6
Project	Ixom Chlorine Liquefaction Plant
Location	16-20 Beauchamp Road, Banksmeadow within the Bayside local government area
Proponent	IXOM Operations Pty Ltd
Key Issues	<p>Hazards and Risks – the environmental assessment must:</p> <ul style="list-style-type: none"> • include a Quantitative Risk Analysis (QRA) in accordance with the Department’s <i>Hazardous Industry Planning Advisory Paper No. 6, ‘Hazard Analysis’</i> demonstrating that the existing chloralkali plant (CAP) with the proposed chlorine liquefaction plant (CLP) (‘the modified facility’ up to DA 35/98-Mod-6) complies with both the qualitative criteria, in particular the consideration of site location and technology, and the quantitative criteria in the Department’s <i>Hazardous Industry Planning Advisory Paper No. 4, ‘Risk Criteria for Land Use Safety Planning’</i>. The QRA must also include: <ul style="list-style-type: none"> ○ a site layout diagram showing the location of all buildings enclosing the CLP and dangerous goods (DG) storage, and the location of all DG piping to and from these buildings. ○ a description of all buildings enclosing the CLP and DG storage including: <ul style="list-style-type: none"> ▪ structural design specifications to enable full containment of major DG release incidents; ▪ building capacities and ventilation rates; ▪ scrubber design specifications including inlet and outlet conditions (flow rates, concentrations, etc.); and ▪ building layout diagrams showing the location of the CLP, DG piping to and from these buildings, DG storage, and staging and parking areas for vehicles associated with DG transport for all operating modes of the modified facility. ○ a detailed process description of the CLP including: <ul style="list-style-type: none"> ▪ process flow diagrams; ▪ operating conditions (flow rates, temperature, pressure, state of matter, etc.); ▪ maximum DG quantities for all operating modes of the modified facility; and ▪ overview of mass balance between the CAP and the CLP for all operating modes. ○ a description of all necessary modifications at the CAP to accommodate the design and operation of the CLP. ○ major incident hazard identification and details of all safeguards to address these hazards with reference to all relevant engineering standards, codes of practice and best practice especially for chlorine and ammonia. ○ a QRA assumptions register with justification on the appropriateness of all assumptions. ○ a list of all potential major incident hazards which may affect both on-site or off-site and the associated consequence distances with corresponding release conditions including and not limited to the total isolatable quantity, flow rate, temperature, pressure and state of matter.

	<ul style="list-style-type: none"> ○ a description of the major incidents control philosophy of the CLP including identification of all preventive and mitigative safety critical engineering safeguards against all major incidents with required reliability for these safeguards where appropriate. ○ justification for all safeguards to minimise the risk from major incidents 'so far as is reasonably practicable' consistent with the intent under the Work Health Safety Regulation 2017 (WHS Regulation). ○ all population assumptions with justification adopted in the QRA. ○ risk analysis for both on-site and off-site consequences from the modified facility for all major incident hazards. ○ the individual and societal risk results for the CLP and the modified facility for the following cases, and compare these results against the most recent Botany Industrial Park (BIP) QRA submitted under DA 30/98 and the most recent CAP QRA submitted under DA 35/98 up to MOD 5: <ul style="list-style-type: none"> ▪ Case 1: Currently approved operations in the vicinity of the modified facility including the Qenos and Indorama facilities operating at its consent limits and the CLP operating at its expected utilisation intent across both normal operating mode or contingent operating mode; ▪ Case 2: Currently approved operations in the vicinity of the modified facility including the Qenos and Indorama facilities operating at its consent limits and the CLP is only operating at the normal operating mode at all times; ▪ Case 3: Currently approved operations in the vicinity of the modified facility including the Qenos and Indorama facilities operating at its consent limits and the CLP is only operating at the contingent operating mode at all times; ▪ Sensitivity Case 1: Potential future operations replacing the Qenos and Indorama facilities following permanent shut-down of these facilities and the CLP is operating at its expected utilization intent across both normal operating mode or contingent operating mode; and ▪ Sensitivity Case 2: Potential future operations replacing the Qenos and Indorama facilities following permanent shut-down of these facilities and the worst-case scenario (higher risk profile) between the normal operating mode or the contingent operating mode. ○ demonstration that risks from the modified facility will not have an effect on future developments in the vicinity of the modified facility; ● address all recommendations from the 2001 Botany/Randwick Industrial Area Land Use Safety Study Overview Report which are relevant to the modified facility; ● include a Transport Risk Assessment (TRA) to evaluate the potential impacts from DG transport to and from the modified facility with comparison to the TRA findings from Major Project approval MP 06_0089 MOD 2 (Vopak Bulk Liquids Storage Facility); and ● report on the consultation outcomes with: <ul style="list-style-type: none"> ○ SafeWork NSW in regards to compliance with the requirements for major hazard facilities under the WHS Regulation; ○ the Local Emergency Management Committees as per the <i>State and Emergency Rescue Management Act 1989</i> (SERM Act) for the Bayside LGA and Randwick LGA in regards to emergency planning in the vicinity of BIP; ○ the Regional Emergency Management Officer as per the SERM Act for the Central Metropolitan Region in regards to emergency planning for the credible worst-case scenarios and identify any issues in addressing such scenarios; ○ BIP in relation to the potential future land uses within BIP; and
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	<ul style="list-style-type: none"> ○ the public in the vicinity of BIP in regards to the perception of risks from the modified facility. <p>Contamination – including:</p> <ul style="list-style-type: none"> • a preliminary site investigation to identify potential contaminants on site • details of the depth of excavations and any cut and fill requirements • an assessment of the potential to encounter contaminated materials, intercept contaminated groundwater and acid sulfate soils • details of any required remediation works or proposed mitigation measures to manage potential impacts • an assessment of potential contamination risk via vapour intrusion into the proposed building • demonstration the modification would not impact on the requirements of existing contamination notices on the site • a statement from a consultant certified under either the Environment Institute of Australia and New Zealand’s Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme, that the site is suitable for the intended use. <p>Traffic and Transport – including:</p> <ul style="list-style-type: none"> • daily and peak traffic movements generated by the modification including the impact on nearby intersections and the need for any road upgrades to support the modification. Key intersections to be modelled include: <ul style="list-style-type: none"> ○ Beauchamp Road / Denison Street ○ Botany Road / Beauchamp Road ○ Wentworth Avenue / Denison Street ○ Beauchamp Road / Perry Street ○ Gate 1 Access / Beauchamp Road and Gate 3 Access / Denison Street (if proposed to be used for access) • a base case and base case + development scenario to demonstrate the impacts on the road network in terms of safety and efficiency for both vehicles and pedestrians • details of proposed accesses and parking including compliance with relevant Australian Standards • details of service vehicle movements and routes, including vehicle types, arrival and departure times, swept paths of the largest vehicles entering, manoeuvring and exiting the site and the key access gates • details of demolition and construction activities including vehicular routes, number of trucks, hours of construction, access arrangements and traffic control measures • details of measures to ensure drivers adhere to designated dangerous goods routes and do not use local roads. <p>Noise and Vibration – including:</p> <ul style="list-style-type: none"> • a quantitative noise and vibration impact assessment including background noise levels, identification of impacts from construction, operation and traffic associated with the modification and details of proposed mitigation measures to minimise impacts. <p>Air Quality – including:</p> <ul style="list-style-type: none"> • an assessment of potential air quality, dust and odour impacts from construction and operation on surrounding landowners, businesses and sensitive receptors, in accordance with relevant Environment Protection Authority guidelines, including details of proposed mitigation, management and monitoring measures. <p>Flooding - including:</p> <ul style="list-style-type: none"> • an assessment of the potential impacts of the modification on the existing floodplain, and details of measures to ensure buildings and dangerous goods storage areas would be protected from flooding. <p>Stormwater – including:</p>
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	<ul style="list-style-type: none"> • details of stormwater flows and quality, comparison with relevant water quality objectives and details of the measures to be implemented to ensure compliance with relevant discharge criteria. <p>Strategic and Statutory Plans – including:</p> <ul style="list-style-type: none"> • demonstration that the modification is consistent with relevant strategic and statutory plans. <p>Aviation Safety – including:</p> <ul style="list-style-type: none"> • details of the proposed building height and compliance with airport safeguarding requirements. <p>Heritage – including:</p> <ul style="list-style-type: none"> • measures to ensure the modification does not impact on listed heritage items. <p>Waste – including:</p> <ul style="list-style-type: none"> • details of the type and quantity of all wastes generated by the modification and procedures for storing, handling and disposing of all waste streams.
Engagement	<p>During the preparation of the Modification Report, you are required to consult with:</p> <ul style="list-style-type: none"> • Department of Planning, Housing and Infrastructure (Hazards team) • SafeWork NSW • Local Emergency Management Committees • Regional Emergency Management Officer • Bayside Council • Randwick City Council • Environment Protection Authority • Transport for NSW • Sydney Airport Corporation Limited • Civil Aviation Safety Authority • Local community groups and affected landowners

ATTACHMENT 1
Government Authority Advice