AGL ENERGY LIMITED

AGL TARRONE OPEN-CYCLE GAS PEAKING POWER STATION

PLANNING PANEL HEARING

EPA SUBMISSION

Date: 21 January 2011

1. Introduction and Framework

1.1. Environment Protection Act 1970

The Environment Protection Act 1970 establishes the Environment Protection Authority (EPA), defines EPA's powers, duties and functions, and provides a number of instruments which are used to minimise wastes, pollution and environmental risks.

The instruments used by EPA include:

- State Environment Protection Policies ("SEPPs");
- Waste Management Policies ("WMPs");
- works approvals and licences;
- pollution abatement notices ("PANs");
- environment improvement plans ("EIPs");
- sustainability covenants; and
- the publication of Best Practice Environmental Management ("BPEMs") guidelines.

Principles for guiding the development and implementation of environmental policy and programs are incorporated into Section 1 of the Environment Protection Act (1970). These principles include:

- Principle of integration of economic, social and environmental considerations
- Precautionary Principle;
- Intergenerational Equity;
- Conservation of Biological Diversity and Ecological Integrity; and
- Improved Valuation, Pricing and Incentive Mechanisms.
- Shared responsibility
- Product stewardship
- Wastes hierarchy
- Integrated environmental management
- Enforcement
- Accountability

1.2. State Environment Protection Policies

State Environment Protection Policies (SEPPs) are declared by the Governor in Council under section 16(1) of the Environment Protection Act 1970. SEPPs are binding on the Crown, industry and the public. A SEPP may, for a specified segment of the environment:

- identify the beneficial uses of the environment that are to be protected;
- describe the environmental indicators to be employed to measure and define the environmental quality;
- state environmental quality objectives to protect beneficial uses (where practicable); and
- describe a program by which the stated environmental quality objectives are to be attained.

SEPPs provide a context for environmental decision making and a clear set of publicly agreed environmental objectives that all sections of the community work together to achieve. Within this framework, EPA has the primary role for pollution prevention and control, whilst other government departments and agencies have other responsibilities to ensure SEPP objectives are attained.

SEPPs are developed to reflect the principles of the Intergovernmental Agreement on the Environment. This agreement was signed by heads of government of the Commonwealth, State and Territories and representatives of local government in Australia in 1992.

EPA has prepared a summary of the relevant clauses contained in the SEPPs for applicants for works approvals. A copy of this summary is attached in Appendix **Error! Reference source not found.**.

1.3. The Planning Scheme Amendment process and the EPA Works Approval process

1.3.1 Works Approval Triggers

Clause 19A(1) of the Environment Protection Act 1970 requires that:

(1) The occupier of a scheduled premises must not do any act or thing, including the commencement of any construction, installation or modification of plant, equipment or process or any subsequent step in relation thereto, which is likely to cause—

a) an increase or alteration in the waste discharged or emitted from, deposited to, or produced at, the premises; or

b) an increase or alteration in the waste which is, or substances which are a danger or potential danger to the quality of the environment or any segment of the environment which are, reprocessed, treated, stored, contained, disposed of or handled, at the premises; or

c) a change in any method or equipment used at the premises for the reprocessing, treatment, storage, containment, disposal or handling of waste, or of substances which are a danger or potential danger to the quality of the environment or any segment of the environment; or

d) a significant increase in the emission of noise; or

e) a state of potential danger to the quality of the environment or any segment of the environment—

except in accordance with a works approval or a licence or a requirement specified in a notice given by the Authority as the case may be unless the act or thing is only in the course of and for the purpose of general maintenance.

……..

(3) The occupier of any premises must not do any act or thing in relation to those premises that would make those premises a scheduled premises except in accordance with a works approval, a research, development and demonstration approval or a notice issued by the Authority.

The *Environment Protection (Scheduled premises and Exemptions) Regulations 2007* contains a list of premises and defines scheduled premises in Schedule 1 and includes the following definitions:

Column 1 *Type Number and Summary Description*	*Column 2* *Description of Scheduled Premises**	*Column 3* *Does a category specific exemption from works approval under section 19A or licensing under section 20(1) apply?†*	*Column 4* *Is a Financial Assurance Required?*
K01	Premises which generate	Premises using solely natural gas	No

Column 1 *Type Number and Summary Description*	*Column 2* *Description of Scheduled Premises**	*Column 3* *Does a category specific exemption from works approval under section 19A or licensing under section 20(1) apply?†*	*Column 4* *Is a Financial Assurance Required?*
(Power stations)	electrical power from the consumption of a fuel at a rated capacity of at least 5 megawatts of electrical power.	turbines and which have a total rated capacity of less than 20 megawatts are exempt from licensing under section 20(1) of the Act.	

……...

L01 (General emissions to air)	Premises which discharge or emit, or from which it is proposed to discharge or emit, to the atmosphere any of the following— (i) at least 100 kilograms per day of— • volatile organic compounds; or • particles; or • sulphur oxides; or • nitrogen oxides; or • other acid gases (excluding carbon dioxide); or (ii) at least 500 kilograms per day of carbon monoxide; or (iii) any quantity from any industrial plant or fuel burning equipment of any substance classified as a class 3 indicator in State	No	No

The proposed power station is a scheduled premises and requires a works approval prior to construction and a licence prior to operation.

The natural gas supply pipeline construction does not require an approval through EPA; however the activities associated by the pipeline(s) may be controlled, if pollution is a significant risk. For example, EPA could serve a pollution abatement notices on the companies undertaking the construction of the pipeline. Any action taken by EPA would be in consultation with the agency for regulating the pipeline(s).

1.3.2 Decision Making Criteria for Works Approval

Under Section 20C (2) and 20C (3) of the Environment Protection Act 1970, EPA may refuse to issue a works approval or a licence where it considers that the issue would be:

a) contrary to, or inconsistent with policy; or

b) *likely to cause or contribute to pollution; or*
c) *likely to cause an environmental hazard; or*
d) *if the person applying for the works approval or licence issue is not a fit and proper person.*

Additionally, under section 19A (5) of the Environment Protection Act 1970, EPA may refuse to issue a works approval if:

a) *the Secretary to the Department of Health submits a written report objecting to the application on the grounds that public health will be endangered; or*
b) *if the proposed works is prohibited by a planning scheme.*

1.3.3 Joint Advertising

Section 20AA of the Environment Protection Act 1970 permits the joint advertisement of works approvals with a preparation of an amendment to a planning scheme which is required to be given under the Planning and Environment Act 1987. This advertisement was in the major state and local papers.

As part of the normal works approval process, the EPA may convene a conference under section 20B of the Environment Protection Act 1970, of persons concerned in any matter under consideration by the EPA if it may assist in a just resolution of the matter. Under Section 20B (4) of the Environment Protection Act 1970, the EPA must:

> *Take into consideration the discussions and resolutions of any conference under this section and the recommendations of any person presiding at that conference.*

In the case of a joint advertisement of a Planning Scheme Amendment and works approval application, a panel may be appointed by the Minister for Planning and Local Government to hold hearings for the jointly advertised proposal. Such a panel hearing takes the place of a Section 20B conference under the Environment Protection Act and forms part of the EPA's works approval application assessment process.

EPA also considers public submissions made to the planning panel. The Minister for Planning receives recommendations from this panel to make an assessment. EPA will consider the Minister's assessment and any relevant recommendations of the panel in determining whether or not to issue a works approval. As outlined in section 33(3A) there are no appeal rights by the applicant and under section 33B (1B) there are no third party appeal rights if a works approval issued:

a) *is jointly advertised under section 20AA with a planning scheme amendment or after the report of any panel appointed under the Act to consider the submission and*

b) *is substantially in accordance with the application*

In order to assist the panel in its deliberations, this submission identifies key environmental issues of concern to the EPA and details the framework within which the works approval assessment will be completed.

1.4. Project overview and EPA Approvals

EPA has been asked to consider a works approval application for an open-cycle gas peaking power station to be located at Tarrone (WA67921). The plant nominal capacity is between 720 – 920 MW.

1.5. Comments from Referral Agencies

EPA is required to refer any application for works approval to the Department of Health and the local Council

1.5.1 Department of Health

The Department of Health has responded to EPA that it has no objection to the proposal on public health grounds. A copy of the response is attached in Appendix **Error! Reference source not found.**.

1.5.2 Moyne Shire Council

Moyne Shire has commented to EPA that it does not object nor does it necessarily support the proposal. They have advised that the site for the proposal is prohibited by the Moyne Shire Planning Scheme but that the Minister for Planning intends to determine a planning scheme amendment for this site. A copy of the response is attached in Appendix 6.3.

As the proposal is prohibited by the current planning scheme EPA cannot issue any works approval until the planning scheme amendment has been approved by the Minister for Planning.

1.6. Framework Key Issues

- The Planning Panel process replaces an EPA third party conference (EP Act 1970 section 20B)
- Until the Planning Scheme Amendment is approved EPA cannot issue any works approval.
- EPA will consider public submissions during the hearing process and take them into account during the works approval assessment.
- If EPA acts in accordance with planning panel recommendation there are no appeal rights by the applicant and no third party appeal rights to the Works Approval.

2. WA67921 - Proposed Power Station

2.1. Proposal

The proposal is for an open-cycle gas turbine peaking power station, compromising up to four turbines, at Tarrone Victoria. The cost of works will be $600 million. The plant will have a nominal capacity between 720-920 MW. The site is located 300 km from Melbourne and 23 km north of Port Fairy.

The project will be commissioned in two stages, with only some of the turbine engines to be installed in the first stage (at a cost of $400 million), with the second stage to go ahead depending on market demand for peak power. The first stage will commence construction in the first quarter of 2011 with completion by third quarter of 2012.

AGL's business model requires that the power plant proposal go out to tender to ensure the best cost for systems and construction. Considering this, AGL's application has considered a variety of off the shelf proven technologies and has modelled various configurations which have the most conservative (highest emission) scenarios for air emissions and noise emissions.

The proposals being considered for Stage 1 are:

- Two or three E class turbines; or
- Two F class turbines.

Should Stage 2 go ahead, the final configuration will be:

- Four E class turbines; or
- Three F class turbines.

The application assumes that stage 2 will go ahead therefore the worst case scenarios have been modelled.

The power station will operate 5% of the year, or 440 hours a year. AGL propose to operate for short periods for 200 days a year, at an average of 2-6 hours at a time. The station is expected to operate over the summer during hot days, and in winter in the mornings and evenings. Overnight operation will be rare.

2.2. Power Station Best Practice Considerations

EPA has determined that "open cycle" gas turbines meets best practice for meeting short-term peaks in electricity demand in past applications and can be used in power stations to meet short term peaks. The reason being that a gas turbine plant should produce 50 – 60% less GHG than equivalent brown coal plants and be able to start-up quickly. Heat recovery, as found in a combined cycle plant, is best practice for a base load power plant, which is continually operating and can make use of this heat recovery. For the short duration that peaking plants operate a combine cycle plant is more expensive to operate, due to higher capital costs for short periods of time and is slower to commence generating electricity. Table 1 shows all the peaking plants (except for one) which have been approved in the last decade by EPA Victoria are open cycle gas fired plants as this is considered best practice.

With regards to operation, peaking plants require a quick response to peak load demands which a gas fire open cycle can meet. The quick start up time reduces the energy required and peak air emissions for start ups.

Table 1 – EPA Approved Peaking Power Stations

Plant	Capacity (MW)	Mode of Operation	Cycle	Buffer Distance metres	Noise dBA Day Evening Night	GHG Emissions ($kT\ CO_{2-e}$/year)
AGL Tarrone WA67921) – Currently being assessed	720-920	Peaking	Open	1500	45 37 32	126 - 189
Origin Mortlake (WA58927)	1000	Base/ peaking	Combined (base)/ Open (peaking)	1400	N/A N/A 34	2500 - 4000
Snowy-Hydro Laverton (WA55267, EA62044)	350	Peaking	Open	700	N/A N/A 48	1,701 (from the gas plant)
Stonehaven (WA46026)	500	Peaking	Open	1200	45 40 35	-
AGL Somerton (EA51148)	156	Peaking	Open	1000	45 37 32	-
Valley Power Traralgon (LA48018)	300	Peaking	Open	4000	-	-

AGL chose the proven technology of Dry Low NO_x combustors ("DLN"). DLNs are a standard control used in open cycle gas power plants in Victoria. The alternatives, some being able to further reduce NO_x production, create waste by-products which must be managed or have not been successfully proven.

EPA has through other works approvals for gas fired power plants, determined that for power plants with turbine capacities of more than 200 MW, that best practice for NOx emission controls is through the use of DLN technology.

As part of the tendering process, AGL have asked that tender applicants investigate wet compression and fogging which can further reduce NO_x.

2.3. Power Station Greenhouse Gas Emissions

The proposal needs to be assessed in relation to the significant carbon dioxide and other greenhouse gas discharges. The framework for this assessment is provided by the EPA Publication 824 *Protocol for Environmental Management - Greenhouse Gas Emissions and Energy Efficiency in Industry* ("PEM") which is an incorporated document of the SEPP (AQM).

To quantify the relative effect of various greenhouse gases emitted from a process or premises they are compared using carbon dioxide as a reference and expressed as CO2 equivalents (CO2-e). For example 1 kg of CH4 = 21 kg of CO2-e.

2.3.1 Greenhouse emissions

The proposal will emit greenhouse gases from the combustion of natural gas. Depending on the final engine configuration, the plant will produce 126,000 -189,000 tonnes of CO_2-e/year. In total Victoria produced an estimated 121.9 million tonnes of CO_2-e/year in 2006. This is about 0.15% of the estimated Victorian Emissions of CO_2. (*State & Territory Greenhouse Gas Inventories 2006,* Australian Greenhouse Office, Department of the Environment and Water Resources, June 2008*.)*.

2.3.2 Best Practice

The PEM requires that a new facility must utilise best practice to reduce energy consumption. Based on AGL's proposed GHG emissions, the Tarrone plant will be required to conduct a level 2 energy audit and will be required to participate in EPA's Energy and Resource Efficiency Program ("EREP"). To date AGL's Somerton plant is part of EREP as are other power plants in Victoria. Open cycle designs as best practice for peaking plants was outlined in section 2.2.

Consumption of electricity to run the plant has been benchmarked against AGL's Somerton plant, which uses older generation turbines at a lower energy rating (156 MW). AGL identified all the sources of energy consumption and have committed to sourcing equipment with high energy efficiency. AGL has considered all possible equipment on site including the potential for a water treatment system should ground water be utilized on site.

Evaporative cooling is currently being proposed to reduce inlet temperature to improve efficiency. Further turbine efficiency, is being investigated during the tender process. This includes wet compression and fogging.

The application is to be assessed against the requirements *of EPA Protocol for Environmental Management Greenhouse Gas Emissions and Energy Efficiency in Industry and appears to comply*.

2.4. Power Station Planning Issues and Buffers

EPA has published recommended buffer distance guidelines, EPA Publication AQ 2/86 *Recommended Buffer Distances for Industrial Residual Air Emissions*, to ensure that unintended or accidental air emissions such as dust or odour from industrial facilities do not adversely impact on the amenity in nearby sensitive areas. The use of appropriate buffer distances is not to protect amenity during normal operation and does not remove the need for a high level of control. This publication reflects similar buffer requirements set out in Section 52.10 of the Victorian Planning Scheme.

For "a power station" there is no recommended buffer distance. The proposal has a buffer distance of approx 1,500 metres. Table 1 outlines buffer distances for other open-cycle peaking power plant.

2.5. Power Station Key Environmental Issues

2.5.1 Power Station Air Quality

The final turbine model and configuration has yet to be finalized and all options are being considered. In order to allow assessment against air policies, AGL have provided modelling for two scenarios. These scenarios are; one with data from a typical E class turbine (Alstom 13E2); and one from a typical F class turbine (GE 9FA). In both cases the models represent emissions at the completion of stage 2.

The statutory approved modelling tool is AUSPLUME. AGL's consultants, URS applied for alternative model request and were granted one by EPA. URS have informed that their reasons for using an alternative model, in this case CALPUFF, were:

- The application is for a peaking plant which unlike a base loading plant, will have many start up conditions. Start up conditions may result in higher mass rates for a short period of time.
- The site is located in area with the potential for influence by sea breeze circulation.
- Impact over a large domain will be assessed.

For the above reasons, CALPUFF is a more appropriate modelling tool to use rather than AUSPLUME.

In order to assess air emissions from the two possible turbine configurations, URS used manufacturer's data and where this was not available calculated the emission using NPI techniques.

URS modelled emissions for both start up and steady state operation. Table 2 is an excerpt from Table 9-10 of the application and identifies the emission levels from the new application. The data turbine performance was attained from the manufacturers.

URS have taken a conservative approach and include emission levels from the proposed Shaw River plant which will be located more than 5km away from AGL's site. This facility has not yet been constructed but was approved by EPA.

URS have also undertaken background analysis using MET data from EPA. As the nearest EPA monitoring site, Warrnambool does not have a full year of data, URS have followed SEPP (AQM) requirements and used the 70th percentile of available monitored data to use as their background for monitoring.

The model shows that the predicted emissions from the plant should comply with SEPP (AQM). URS have identified that there is a potential that depending on the successful tender applicant, the final air emission results may be higher than that modelled. For the turbines identified in this proposal, there is a chance that for an alternative E class the ground level

concentrations may be 1.3% higher than modelled, and for an alternative F class the ground level concentration may be 7.3% higher.

Considering modelled results are well below SEPP (AQM) design limits (even including Shaw River results), an alternative turbine selection would still be well below these design limits. Adding further to its conservative modelling, URS have assumed that all NO_x modelled has been converted to NO_2, which is the more problematic air indicator.

Of interest is start up emission values. For peaking plants using DLN turbines, start up emissions have the potential of releasing higher concentrations for a short duration. The maximum ground concentration modelling results show that start up to have lower ground level concentrations than the steady state operation.

Table 2 – Maximum modelled (99.9th percentile) ground level concentration (without background)

Species	**NO_x as NO_2**	**SO_x as SO_2**	**CO**	**$PM_{2.5}$**
Units	**$\mu g/m^3$**	**$\mu g/m^3$**	**$\mu g/m^3$**	**$\mu g/m^3$**
Averaging Period	**1 hour**	**1 hour**	**1 hour**	**1 hour**
Alstom 13E2 Steady State	16.11	0.86	1.97	2.31
GE 9FA Steady State	14.23	0.86	4.25	0.996
Alstom 13E2 Start Up	3.15			
GE 9FA Start Up	4.8			
Alstom 13E2 Steady State plus Shaw River	55.1		13.5	
GE 9FA Steady State plus Shaw River	55.1		13.5	
Background Concentration	11.3	0	229	7.5
SEPP (AQM) Design Criteria	**190**	**450**	**29,000**	**50**

AGL have also assessed three other air impacts. The expected air quality has been also assessed against NEPM (AAQ), Safe Work Australia requirements assessed against National Occupational Health and Safety Commission Worksafe Australia 2001 and a Plume Rise Assessment to comply with the Aviation Safety Authority's ("CASA") requirements. These will be forwarded to the relevant Authorities for assessment.

The application will be assessed against the *State Environment Protection Policy (Air Quality Management) and appears to comply.*

2.5.2 Power Station Noise

Noise Policy and Guidelines

There is no State environment protection policy setting objectives for noise in country Victoria. *State environment protection policy (Control of Noise from Commerce, Trade and Industry)* No N-1 ("SEPP N-1") applies as law within the Melbourne Metropolitan area.

EPA Publication No N3/89[1], *Interim Guidelines for Control of Noise from Industry in Country Victoria* is adopted for areas outside the Melbourne Metropolitan area. The interim guidelines adopt SEPP N-1 for use as a guide where background sound levels are

[1] The interim guidelines are under review and a public draft was released for comment in 2010, but no revised document has been adopted.

comparable to metropolitan Melbourne and make provision for lower limits in areas where background sound levels are very low (i.e. <25 dB(A) night or <30 dB(A) during the day and evening periods).

Construction noise is also addressed in the guidelines and there is allowance of an additional 10 dB (A) for construction activities. This allowance only applies during the daytime period.

Although no statutory noise criteria apply outside the Melbourne Metropolitan area, EPA has a general power and duty to protect the environment through various tools such as Works Approval for new works and Pollution Abatement Notices.
Furthermore, though there is currently no requirements to do so by EPA, AGL have also assessed against low frequency noise requirements which are produced from open cycle gas fired plants. The reason being that open-cycle gas fired power plant may generate high levels of low frequency noise. This has been an issue at sites such as Snowy-Hydro's plant in Laverton. Looking at noise over an octave frequency spectrum, these turbines have the highest sound energy at the low frequency range.

Noise Modeling

In order to undertake an assessment of noise, AGL has taken data from typical turbine engines and modelled all noise sources using SoundPlan. AGL looked in particular at noise emitted at the low frequency range to determine the noisiest source to model.

As part of their noise assessment, AGL conducted background noise monitoring to set noise limits in accordance with N3/89. Other design criteria that AGL have set with regards to noise levels are outlined below:

(a) Sleep disturbance criteria (World Health Organisation standard);

(b) Low frequency noise levels (literature review); and

It was found during background noise measurement that the background levels in the area are very low typically 24-25 dB(A) and therefore the lowest limit of 32 dB(A) for the night time period has been set for the area.

It should be noted that AGL have conducted modelling showing both neutral weather conditions and adverse weather conditions. Adverse being conditions which favour noise propagation. Models have also been derived considering cumulative noise with the Shaw River plant.

Table 3 has a summary of the model predictions. The models do not show any exceedance to noise limits. In adverse conditions one of the residential properties will detect noise at the top end of the night time noise limit.

Table 3 – N3/89 noise limits and predicted noise levels

Day Time Limits (Weekday 7:00 – 18:00 Saturday 7:00 – 13:00)	L_{Aeq} (dBA)	Receptor	CONCAWE method		ISO9613 method
			L_{Aeq} (dBA) Neutral	L_{Aeq} (dBA) Adverse	L_{Aeq} (dBA) Neutral & Adverse
	45	A	24	19	28
		B	28	33	29
		C	29	33	31
		D	26	30	28
		E	24	21	28

		F	<20	<20	<20
		G	25	21	28
		H	<20	15	24
Evening Time Limits (Weekday 18:00 – 22:00 Saturday 13:00 – 22:00 Sunday 7:00 – 22:00)	L_{Aeq} (dBA)	Receptor	L_{Aeq} (dBA) Neutral Conditions	L_{Aeq} (dBA) Adverse Conditions	L_{Aeq} (dBA) Neutral & Adverse
	37	A	24	21	28
		B	28	28	30
		C	29	32	31
		D	26	31	28
		E	24	29	28
		F	<20	<20	<20
		G	25	30	28
		H	<20	24	24
Night Time Limits (All 22:00 – 7:00)	L_{Aeq} (dBA)	Receptor	L_{Aeq} (dBA) Neutral Conditions	L_{Aeq} (dBA) Adverse Conditions	L_{Aeq} (dBA) Neutral & Adverse
	32	A	24	21	28
		B	28	28	30
		C	29	32	31
		D	26	31	28
		E	24	29	28
		F	<20	<20	<20
		G	25	30	28
		H	<20	24	24

Conclusions	**Adopted limit L_{Aeq} (dBA)**	**Receptor**	**Night time prediction of highest at Receptor** L_{Aeq} (dBA)	**Background** L_{Aeq} (dBA)
	32	A	24	25
		B	28	25
		C	32	25
		D	31	25
		E	29	25
		F	29	25
		G	30	25
		H	24	25

Sleep Disturbance

Victorian policies do not have a criterion with regard sleep disturbance. The World Health Organisation has sleep disturbance criteria which AGL have adopted. The criteria are:

- L_{eq} (dBA) = 35 dBA (inside a house), L_{eq} (dBA) = 45 dBA (outdoors)
- L_{max} (dBA) = 45 dBA (inside a house), L_{max} (dBA) = 55 dBA (outdoors)

As the N3/89 noise limit set is lower than any of the above criteria, it is expected the residents will not be impacted by noise during sleep and this will be confirmed in assessing the works approval.

It should be noted that as the plant is a peaking plant, night time operation will be very infrequent as the plant is expected to operate during peak load requirements, that is usually during the day and evenings but it may operate at times outside these periods.

Low Frequency Noise

Where noise limits are assessed in the A weighting range, low frequency is assessed in the C weighting range. AGL have used the following publication, *Proposed Criteria for Low Frequency Noise from Combustion Turbine Power Plants* (Noise – Con 2004, Baltimore, Maryland, G. F. Hasseler Jnr, 2005) to determine limits.

The paper states that for intermittent daytime operation or seasonal operation, in an area where the background noise is lower than L_{A90} = 40 dBA, the low frequency noise limits is 65 dBC. In NSW, the Department of Planning considered that if the dBC levels were measured/predicted to be over 65dBC, than a 5 dBA adjustment would also be needed to the A weighted measurements/predictions.

Unlike the A weighted predictions, only neutral conditions are taken into account as studies in literature have shown that C weighted measurements are very sensitive to wind so can only be taken during calm conditions. Table 4 contains a summary of noise predictions in C weighting.

Table 4 – Low frequency, C-weighted, noise predictions

L_{eq} (dBC)	Receptor	L_{eq} (dBC) 31.5 Hz – 8 kHz CONCAWE/ISO9613	L_{eq} (dBC) 20 Hz – 8 kHz ISO9613
65	A	37/50	60
	B	45/45	62
	C	47/48	63
	D	45/48	62
	E	44/47	61
	F	28/36	60
	G	44/47	61
	H	38/45	57

It can be seen that under both methods, the levels do not exceed 65 dBC and therefore, no further adjustments are needed the A weighted predictions.

AGL have also conducted analysis of noise levels during construction and predicted noise levels from the Shaw River power plant as heard at the residents closer to Tarrone.

The model assumptions used, the modelling method and noise criteria assessed against are considered appropriate. The noise levels predicted should comply against *N3/89 Interim Guidelines for Control of Noise from Industry in Country Victoria and this will confirmed in EPA's assessment*.

2.5.3 Power Station Water, Land and Groundwater Issues

There are no planned water discharges from the facility. All wastewater will be captured on site and either re-used or sent to an evaporation pond. Waste from the evaporation pond will be disposed of at a facility licensed to accept the waste.

The application complies with *State Environment Protection Policy (Waters of Victoria).*
Waste water will be captured in an evaporative pond on site. Sludge/solids from the evaporation process will be collected and sent off site to a facility licensed to accept the waste. AGL intend to line the evaporative pond with a composite liner consisting of a High Density Polyethylene ("HDPE") geo-membrane placed over 1 m of compacted clay to achieve a minimum permeability of 1×10^{-9} m/s, which is the standard requirement for leachate ponds, wastewater lagoons, compost pads and landfill liners. A composite liner design has been chosen as a safe fail design in case the clay liner fails.

The designed holding capacity will meet a 90^{th} percentile year which is standard design requirements for wastewater lagoons.

The transformers and diesel fuel tanks will be stored in concrete lined bunded areas in accordance with EPA Publication 347 *Bunding Guidelines*.

The application should complies with *State Environment Protection Policy (Prevention and Management of Contaminated Land)* and with *State Environment Protection Policy (Groundwaters of Victoria)*.

2.5.4 Other Environmental Considerations

EPA will also be assessing water consumption on site to ensure the most efficient water use is being considered. At this stage, AGL has yet to finalise their options for sourcing water for use on site.

Waste generated on site, its management and disposal will be assessed in the works approvals process.

2.6. Power Station Public Concerns

EPA received 6 objections from the public. Areas commented on through these objections which pertain to EPA's assessment criteria include are

- air emissions from the plant and particle fall out impacting human and livestock health;
- cumulative air emissions impact from power stations in the area; and
- noise emissions from the plant impacting sleep and local amenity.

3. Environment Management

The main hazard is the natural gas which is flammable, upset conditions will be around management of this product. AGL have commissioned a report to assess upset conditions and processes and will produce operational and management plants to control these situations. The report confirmed that a hazardous event will be contained on site.

Other environmental issues that will require management include air emissions, noise and waste water. AGL operates an ISO14001 accredited environmental management plan which it will use at this plant. It covers things like monitoring for environmental performance.

4. Conclusion

The application for works approval must show compliance with the relevant State Environment Protection Policies for a works approval to be granted.

The Air and Noise Modelling submitted by the applicant appears to demonstrate compliance with the the relevant SEPPs

EPA will do a detailed verification of the information submitted by the applicant for works approval confirm that the assumptions in the application such as modelling for air and noise emissions

5. Appendices

5.1. Summary of State Environment Protection Polices for WA applicants

- Environment Protection (Industrial Waste Resource) Regulations 2009 ;
- State Environment Protection Policy (Waters of Victoria);
- State Environment Protection Policy (Groundwaters of Victoria);
- State Environment Protection Policy (Air Quality Management);
- State Environment Protection Policy (Prevention and Management of Contamination of Land);
- State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1;

Policies on a Page
Guidance for Works Approval Applicants

Key Clauses from
State Environment Protection Policies & Waste Management Policies

Waters of Victoria

Air Quality Management

Prescribed Industrial Waste

Prevention and Management of Contaminated Land

Groundwaters of Victoria

Control of Noise from Commerce, Industry and Trade

The Environment Protection Act 1970, section 20C(2) requires that any works approvals issued be consistent with all applicable state environment protection policies.

These policies together comprise over 120 pages. Not all clauses in the policies apply to works approval applicants. To assist applicants to focus on the key clauses, the following 10 pages have been prepared. Each one is structured to lead applicants through the relevant requirements including:

- aims and intent of the policy
- designing for best practice
- meeting environmental quality objectives
- other specific requirements

In all cases, you should refer to the policies themselves on key points and you should contact EPA if you have any questions.

Draft TR, 11/12/07

Water Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy Waters of Victoria*

See the Water policy for more detail. Contact EPA if you have any questions.

Policy purpose

5. The purpose of the policy is to help achieve sustainable surface waters.

- *Note that the policy aims to achieve sustainable surface waters.*

Water conservation

40. To conserve the use of potable water and ensure a sustainable water supply for all beneficial uses, agencies need to work with businesses to implement water saving practices and measures, particularly for new developments and to ensure that reuse and recycling of wastewater is maximised.

- *Demonstrate that your proposal implements water saving measures and maximises recycling.*

Chemical management and spills

38. Businesses must undertake measures to prevent the spillage of chemicals, oil or other hazardous substances into surface waters

37(1) Chemicals and hazardous substances must not be stored in or adjacent to surface waters, drainage lines or floodplains unless the storage facilities prevent them from coming into contact with surface waters;

37(2) Businesses that use, store or transport chemicals and hazardous substances must develop and maintain plans for the avoidance of spills, leakages or breakdowns. Contingency plans need to include emergency holding and clean up measures, actions to minimise environmental risks, methods for disposal of spilled materials and staff training in operating and emergency response procedures.

- *Demonstrate that your proposal includes appropriate chemical storage, measures to prevent spills and contingency plans.*

Construction activities

56. Construction works need to be managed to minimise land disturbance, soil erosion and the discharge of sediments and other pollutants, consistent with guidance from the EPA.

- *Demonstrate that construction will be managed to minimise discharge of sediments and other pollutants*

Clauses that apply to proposed discharges to water

Connection to sewerage

34. Where sewerage is provided, premises must be connected to the sewerage system unless wastewater is reused in accordance with guidance provided by the EPA.

- *Confirm that you are planning to connect any wastewater discharges to sewer (if available).*

28(3) EPA will not approve any new discharges:
(a) to areas of high conservation significance (see Schedule B);
(b) where a discharge will impact on potable supplies.

27(3) In licensing a wastewater discharge, the EPA will not approve a wastewater discharge that displays acute lethality at the point of discharge.

- *Confirm that your proposed discharge will not display acute lethality and that it is not in an area of high conservation significance or a potable water supply catchment.*

Beneficial uses

10. Beneficial uses for each segment of the environment are listed in Table 1 and include aquatic ecosystems and water suitable for recreation, aesthetic enjoyment and agriculture.

Best practice

12. Environment management practices that effectively minimise environmental risks to beneficial uses need to be implemented. These may include the implementation of best practice if required to ensure effective environmental management.

27. To protect beneficial uses, the discharge of wastes and wastewater must be managed in accordance with the wastes hierarchy, with priority given to avoiding the generation of wastewater. In licensing a wastewater discharge, the EPA will:
(2) require licence holders to implement effective wastewater management practices to minimise environmental risks to beneficial uses;
(3) only approve wastewater management practices, including disinfection, that will not increase the toxicity of the wastewater discharge

28. The potential impact of new wastewater discharges needs to be minimised to protect beneficial uses. To enable this EPA will:
(1)(a) require applicants for works approvals to incorporate measures to avoid, re-use and recycle wastewater.
(1)(b) where a discharge cannot be avoided, reused or recycled, require applicants of works approvals to incorporate effective wastewater management practices to avoid the discharge resulting in the exceedance of environmental quality objectives in surface waters
(3)(c) not approve any new discharges where a discharge would pose an environmental risk to beneficial uses and best practice management practice has not been adopted.

- *Demonstrate that your proposal applies best practice and will not pose an environmental risk to beneficial uses.*

Management of wastewater reuse and recycling

31. It is important that the reuse and recycling of wastewater is sustainable and does not pose an environmental risk to the beneficial uses of surface waters and groundwaters. To enable this, wastewater reuse and recycling needs to be consistent with guidance from EPA. If the EPA is satisfied that wastewater can be treated and managed to a level that will protect beneficial uses, the discharge of that wastewater to surface waters to provide water for the environment or other uses, is an acceptable form of re-use.

- *Demonstrate that any proposed wastewater reuse does not pose an environmental risk.*

Environmental quality objectives and indicators

11. The environmental quality objectives in Schedule A describe the level of environmental quality needed in most surface waters to avoid risks[1] to beneficial uses and to protect them. Non-

[1] Surface waters and their aquatic ecosystems need to be free of any substance or impact that would pose a risk to beneficial uses. Risk would be manifested, for example, through human health impacts, the increased occurrence of fish kills and algal blooms, sedimentation, loss of biodiversity and environmental flows, objectionable odours, colours, taints, visible floating materials, foam, oil or grease or dirty water

attainment of an objective will trigger investigation to assess risks to beneficial uses. If a risk is posed to beneficial uses, mitigating actions need to be implemented.
(1) The environmental quality of some surface waters will be better than the objectives. In these cases, quality should remain as close as practicable to background levels;
(2) The environmental quality objectives for some surface waters may not be attained (see policy for details)

Management of discharges to surface waters

27(1) In licensing a wastewater discharge, the EPA will consider the existing environmental quality of surface waters and protection of beneficial uses and the potential impacts of future wastewater discharges on beneficial uses.

- *Demonstrate that your proposed discharge will protect beneficial uses and meet the relevant objectives. Include a risk assessment if necessary.*

Mixing zones

27(3) In licensing a wastewater discharge, the EPA will not approve a wastewater discharge that causes chronic impacts outside any declared mixing zone.

28(1)(c) EPA may approve a mixing zone as part of a licence.

30. In issuing a licence the EPA may approve a mixing zone where it is not practicable to avoid, reuse, recycle and effectively manage wastewater. Within a mixing zone, designated objectives do not need to be met and therefore beneficial uses may not be protected.
(1)(b) EPA will not approve a mixing zone if it will result in harm to humans, unacceptable impacts on plants and animals or where it will cause loss of aesthetic enjoyment.
(2) EPA will require licence holders to develop and implement an environment improvement plan that includes effective management practices aimed at continuously reducing the size of the mixing zone and preferably achieving its complete elimination.

28(2) EPA will, if a licence is approved, ensure that it is consistent with policy and includes an environment improvement plan to progressively reduce the impacts of wastewater discharges on beneficial uses and a monitoring program to assess the impact of the wastewater discharge on beneficial uses

- *If you are applying for a mixing zone, provide a detailed proposal to support your application and an EIP*

Offset measures

26. The EPA may approve, for a specified period, a discharge of a lower quality from premises than would otherwise be acceptable if the occupier of the premises agrees to, in consultation with the community, implement and maintain any offset measures that offer either equivalent or greater protection of beneficial uses.

- *Provide details of any proposed offset measures (include outcomes of community consultation).*

Specific industries and areas

The policy has clauses relevant to various activities that may require works approval including:

35.	Sewerage management	48.	Aquaculture activities
36.	Saline discharges	52.	Intensive agricultural industries
39.	Animal wastes	58.	Extractive industries

Also Port Phillip Bay, Western Port and Gippsland Lakes and catchments are covered by schedules **tbc**

- *Demonstrate that you meet any industry specific requirements.*

Air Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy*
Air Quality Management

See the Air policy for more detail. Contact EPA if you have any questions.

Policy aims

6. The aims of the policy are to:
   a) ensure that environmental quality objectives are met;
   b) drive continuous improvement in air quality and achieve the cleanest air possible having regard to the social and economic development of Victoria; and
   c) support Victorian and national measures to address the enhanced greenhouse effect.

Policy intent

8. Emissions will be managed so that the beneficial uses of the air environment are protected. Proposals for new or substantially modified industrial sources of emissions will be designed to minimise their operational impact. Cumulative impacts will be a major consideration. Action to manage emissions will be coordinated so that neighbourhood, local and regional air quality are protected and global atmospheric issues are addressed.

Beneficial uses

9(1) The beneficial uses protected throughout the State of Victoria includes life, health and well being of humans, ecosystems, local amenity, visibility and climate systems.

- *Note that the policy aims to address climate change and to achieve the cleanest air possible.*

Management of emissions

18 (1)(a) In this policy the management of emissions means avoiding and minimising emissions in accordance with the preference established in the principle of the wastes hierarchy

18(3) Generators of emissions must:
(b) pursue continuous improvement in their environmental management practices and environmental performance; and
(c) apply best practice to the management of their emissions or, if they emit class 3 indicators, reduce those emissions to the maximum extent achievable (due to their extremely hazardous nature).

- *Demonstrate that your proposal applies best practice to the management of emissions (or for class 3 indicators reduces emissions to the maximum extent achievable)*

Management of Global Issues – Greenhouse gases

33. (1) Generators of emissions of greenhouse gases must manage their emissions in accordance with the provisions of clause 18.
(3) the EPA will apply protocols for environmental management relating to greenhouse gas emissions to generators of emissions subject to works approvals and licences,

- *Demonstrate that your proposal is best practice and meets the protocol for the management of greenhouse gas emissions.*

Air quality management in Air Quality Control Regions

30 (1) For the purpose of improving or maintaining regional air quality within an air quality control region[1], EPA may

a) require emission generators to reduce their emissions to a greater extent than required by clause 18; and

b) refuse to issue a works approval for a large new source of emissions unless emission reductions for other sources are able to offset the impacts of the proposed emissions.

- *Assess the significance of your proposal on regional air quality.*

Local air quality management

27(1) In assessing an application for a new development that may have impacts on local air quality, the EPA will have regard for:

a) best practice for environmental management;

b) recommended separation distances between emissions sources and sensitive land uses; and

c) the use of design criteria and dispersion modelling for assessing emissions.

- *Assess the separation distance for your proposal against the recommended distance.*

Air quality indicators

10(3) Design criteria for class 1, 2 or 3 indicators for the purpose of assessing proposals for new emission sources or modifications to existing emission sources are established in Schedule A

Modelling of emissions

28(1) In addition to managing emissions in accordance with clauses 18, 19 the EPA may require a generator of emissions to:

(a) model the transport and dispersion in the air environment of emissions (see Schedule C of the Policy for details) and;

(b) for new sources of emissions, demonstrate that the model predictions meet the relative design criteria; or

(c) in the case of odorous emissions, demonstrate that local amenity will not be adversely affected.

- *Demonstrate that your proposal meets relevant design criteria and that odour will not affect local amenity.*

Risk assessment

16(3)&(4) A generator of air emissions may undertake or be required to undertake a risk assessment to gain a better understanding of the impact of emissions from its activity on the beneficial uses of the environment.

- *Provide a risk assessment if necessary (discuss the need for this with EPA)*

Emission Limits (see policy for details)

Schedule D specifies emission limits for stationary sources in Victoria

Schedule E specifies emission limits for stationary sources in air quality control regions [2]

22(1) provides certain exemptions from compliance with Schedules D and E

- *Demonstrate that your proposal meets the emission limits in Schedule D or E, subject to the exceptions in 22(1).*

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[2] applies to Port Phillip (Melbourne & Geelong) and Latrobe Valley regions– see Schedule F of policy for details.

Industrial Waste Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy*
Industrial Waste Management Policy (Prescribed Industrial Waste)

See the Industrial Waste Policy for more detail. Contact EPA with any questions.

Policy Objectives

5. The objectives of this policy are to:
   a) protect human health, amenity and the environment from hazards that may be posed by prescribed industrial waste.
   b) Minimise the generation of prescribed industrial waste through all aspects of design, raw material selection, production and use of goods and services; and,
   c) Eliminate as soon as practicable the disposal of prescribed industrial waste to landfill.

Principles

6 This policy applies the following principles which reflect community expectations about how prescribed industrial waste should be managed. These principles must be used to guide decisions about managing these wastes:
(1) Waste management hierarchy: prescribed industrial waste should be managed in the following order of preference:
   a) avoidance;
   b) reuse;
   c) recycling;
   d) recovery of energy
   e) repository storage
   f) treatment
   g) containment

Policy Intent

7. The intent of the policy includes:
   (d) Those who commission and/or produce goods and services which give rise to prescribed industrial waste have the primary responsibility to:
   (i) avoid the generation of that waste, and
   (ii) maximise the reuse and recycling of, and recovery of energy from that waste for productive purposes.
   Where this is not practicable the generator of prescribed industrial waste has the primary responsibility to ensure that the waste is treated and/or contained in a manner that protects people and the environment.
   (e) Prescribed industrial waste generators retain responsibility for their waste throughout its life cycle.

- *Note that the policy aims to avoid the generation of prescribed industrial waste and eliminate disposal to landfill*

Responsibilities for Management of PIW

9. (1) PIW generators must ensure their waste is managed -
a) in accordance with the order of preference indicated in the policy principles and intent; and
b) in a manner that achieves the best environmental outcome.

Prescribed Industrial Waste Management Decision Framework and Classification

11(2) When making decisions affecting the management of PIW, the EPA will:
(a) have regard to the waste classification in accordance with Schedule 1; and
(b) apply the PIW waste management decision framework set out in Schedule 2.

Environment Improvement Plan

15(1)(a) A PIW generator must submit to the EPA an Environment Improvement Plan in a manner approved by the EPA when making an application for works approval;

- *Demonstrate that your wastes will be managed in accordance with the wastes hierarchy. Use the framework in Schedule 2. Assess the waste classification in schedule 1. Provide an EIP*

Other Requirements

16. (1) PIW must not be reused, recycled, used as a source of energy or otherwise minimised, stored, transported, reprocessed or treated in such a way that contaminants are transferred to other environmental media unless this results in the best environmental outcomes

- *Demonstrate that your proposed waste management will not cause other environmental issues.*

16(2) PIW must not be diluted, mixed or otherwise treated where this reduces the potential for reuse, recycling or the recovery of energy unless:
a) reuse, recycling or the recovery of energy is not practicable; or
c) the treatment is necessary to obtain the best practicable environmental outcome.

- *Demonstrate that your proposed waste treatment will not reduce reuse options.*

Land Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy*
Prevention and Management of Contaminated Land

See the Land Policy for more detail. Contact EPA if you have any questions.

Policy goal (part 1)

6(a) The goal of this policy is to maintain the condition of the land environment sufficient to protect current and future beneficial uses by preventing contamination;

Policy intent (part 1)

8. Human health and the environment will be protected through the prevention of contamination of land. All occupiers will give effect to their duty to prevent contamination of land which they occupy.

- *Note that the policy aims to protect land from contamination*

Prevention of contamination of land

17(1) The occupier of any site must ensure that the land is managed to prevent contamination.

17(2) To prevent contamination of land, any occupier or other person involved in the transport, storage or handling of any chemical substance or waste must:
a) apply best practice;
b) comply with any waste management policy or dangerous goods legislation; and
c) have regard to any guidance document[3] approved by the EPA.

- *Demonstrate how your proposal meets best practice for preventing contamination of land.*

17(3) The occupier of a premises, where the principal activity is storing or handling chemical substances or waste that has the potential to contaminate land, should prepare and implement an Environment Improvement Plan to prevent contamination.

17(4) The EPA may through statutory mechanisms (such as works approval) require the occupier of any premises where there is potential to contaminate land to prepare and implement an Environment Improvement Plan.

- *Where your proposal has potential to contaminate land, provide an EIP (discuss the need for this with EPA)*

Additional clauses for proposed discharges to land (see the policy for details)

Application of chemicals or waste to land

16(1) The application of chemical substances or wastes to land, including land used for agriculture, may be undertaken in the course of managing land for a beneficial use.

16(2) The application of chemical substances or waste to land may only occur in accordance with any works approval, licence, legislation or best practice.

- *Demonstrate that your proposal to discharge to land is best practice.*

[3] Bunding guidelines

Beneficial Uses

10(1) The beneficial uses of land protected by this policy are: maintenance of ecosystems, human health; buildings and structures; aesthetics and production of food, flora and fibre.

10(2) The protected beneficial uses for the various land use categories are listed in Table 1[4]

Indicators and objectives for land

11(1) The Authority will have regard to the indicators and objectives listed in Table 2 to determine whether the level of any contaminant at any site poses an unacceptable risk to protected beneficial uses listed in Table 1.

- *Demonstrate that your proposal will protect beneficial uses and meet the objectives in Table 2.*

11(2) Subject to Clause 16 the condition of all land in Victoria is to be maintained as close as practicable to background levels.

- *Demonstrate that your proposal will maintain land quality as close as practicable to background levels.*

Additional clauses for premises with existing contamination (see policy for details)

Policy Goal (part 2)

6(b) The goal of this policy is to maintain and where appropriate and practicable improve the condition of the land environment sufficient to protect current and future beneficial uses of land from the detrimental effects of contamination by, where pollution has occurred, adopting management practices that will ensure unacceptable risks to humans and the environment are prevented and pollution is cleaned up or otherwise managed to protect beneficial uses.

Policy Intent (part 2)

8. Without derogating any responsibility incurred by the polluter, occupiers will clean-up or manage pollution for the site for which they are the occupier

Management of Contamination – Site Contamination Assessment

19. The Authority may through works approval, licence or notice require the occupier of a premises to undertake and report the results of a site contamination assessment to determine:
    a) the nature, extent and levels of existing contamination;
    b) the actual or potential risk to any protected beneficial uses at the site or off-site resulting from that contamination.

Management of Contamination – Statutory Environmental Audits

26(1) The Authority may require through works approval, licence or notice the owner or occupier of a site to undertake an environmental audit of the site.

- *Assess any existing contamination and how your proposal may impact on, or be impacted by, that contamination (discuss with EPA the need for an assessment or an audit)*

Management of Contamination – Management Strategies

22(1) Where contamination has occurred, site management strategies must:
    a) be consistent with any policy or notice;
    b) prevent further contamination; and
    c) where practicable maximise all potential uses of a site.

- *Where there is contamination, provide a site management strategy.*

---

[4] EPA may determine that a protected beneficial use does not apply (see clause 10(3) of the Policy)

Groundwater Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy*
Groundwaters of Victoria

See the Groundwater Policy for more detail. Contact EPA if you have any questions

Policy goal

5(1) The goal of this policy is to maintain and where necessary improve groundwater quality sufficient to protect existing and potential beneficial uses.

Beneficial uses

9(1) The beneficial uses specified in Table 2 will be protected[5] (includes ecosystems; potable water, agriculture and stock watering)

Policy principles

5(2) The principles upon which this policy is based are:
(a) Groundwater is an undervalued resource and all Victorians share the responsibility to protect groundwater;
(b) The protection of groundwater is fundamental to the protection of the environmental quality of surface waters;
(c) Groundwater should be protected to the greatest extent practicable from serious or irreversible damage; and
(d) The principles of environmental policy including polluter pays; intergenerational equity; and the precautionary principle

- *Note that the policy aims to protect groundwater quality*

Prevention of groundwater pollution

12. All practicable measures must be undertaken to prevent pollution of groundwater.

- *Demonstrate that you are taking all practicable measures to prevent groundwater pollution*

20. There must not be any direct discharge of waste to any aquifer.[6]

- *Confirm that you have no direct discharge to any aquifer*

Additional clauses for proposed discharges to land

Hydrogeological assessment

16(b) In the development of works approval conditions the Authority may require a hydrogeological assessment to be undertaken to determine any potential risk to groundwater quality and beneficial uses of groundwater

- *Provide a hydrogeological assessment if your proposal presents a potential risk to groundwater. (Discuss the need for this with EPA).*

[5] The EPA may determine a beneficial use does not apply in some cases – see clause 9(2) of the policy for details
[6] See the policy for details of exceptions.

Groundwater quality indicators and objectives

10(1) The levels of groundwater quality required to protect beneficial uses are those specified in Table 3.

10(2) The groundwater quality indicators and objectives specified in Table 3 will apply to all groundwater except where:

(a) The Authority designates an attenuation zone[7] in any works approval, licence or notice.
(b) The groundwater is within a groundwater quality restricted use zone .
(c) The background level of a groundwater quality indicator is greater than the objective, in which case the background level will become the objective; or
(d) The groundwater is within a groundwater protection zone for which more stringent objectives have been developed.

- *Demonstrate that your proposal meets the objectives in Table 3, subject to the exceptions in 10(2).*

10(3) Water quality is to be maintained as close as practicable to background levels.

- *Demonstrate that your proposal will maintain groundwater quality as close as practicable to background levels.*

21. Any proposal to discharge, deposit or dispose of wastes to land with potential to cause detriment to groundwater quality must include an assessment of –
(a) any background rate of rise of the water-table;
(b) any rise of the water table expected to be caused by recharge induced by the discharge, deposit or disposal of the waste; and
(c) the impact of any rise of the water-table on the sustainability of the proposal, the surrounding land use and any nearby ecosystem.

- *Provide an assessment of the impact of your proposal on the water-table*

[7] An attenuation zone may only be designated for landfills receiving municipal waste, wastewater irrigation, ash ponds or salinity evaporation basins. See clause 17 of the Policy for details

Noise Policy Guidance for Works Approval Applicants

Key clauses from *State Environment Protection Policy N1*
Control of Noise from Commerce, Industry and Trade [8]

See the Noise Policy for more detail. Contact EPA if you have any questions.

Policy goal

6. The goal of this policy is to protect people from commercial, industrial or trade noise that may affect the beneficial uses made of noise sensitive areas while recognising the reality of the existing land use structure in the metropolitan region.

Beneficial uses

8. Beneficial uses shall be the normal domestic and recreational activities including in particular sleep in the night period.

Noise sensitive areas

20. Noise sensitive area means all residential dwellings; and other buildings where people sleep.

- *Note that the policy aims to protect the sleep and amenity of residents from industrial noise.*

Best practice

19. It is advised that, where equipment is to be replaced or new equipment installed, the quietest equipment available should be used where a significant reduction in noise in noise sensitive areas can be expected to occur.

- *Assess whether quieter equipment will reduce your noise impact.*

Policy objectives

11. The environmental quality objectives are the noise limits determined according to schedule B which outlines how to measure and calculate noise limits.

Policy limits

16. Where it is planned to develop new commercial, industrial or trade premises, the premises shall be designed so that the noise emissions do not exceed the noise limits.

- *Demonstrate how your proposal meets the noise limits?*

18. Where two or more premises contribute to the effective noise level in a noise sensitive area, each shall be controlled so that the contribution from each of the premises, when combined, will meet the noise limit at the noise sensitive area.

- *Are there other premises contributing to noise in the area? If yes, demonstrate that the combined noise will meet the noise limits.*

Addressing noise issues (only applies to existing noisy sites)

17A(1) Where the Authority is satisfied that noise outside a premises exceeds the environmental quality objectives and that there are no practicable means currently available to comply with those objectives, then the occupier may submit an environment improvement plan to the Authority.

17G(1) Implementation of an approved environment improvement plan constitutes compliance with the policy

- *Is the noise from your premises above the limits? If yes, provide an EIP.*

---

[8] This policy applies in Melbourne and is used as a guide in regional centres. For rural areas see Guideline N3/89

5.2. Response from Department of Health

Department of Health

Incorporating: Health, Mental Health and Senior Victorians

50 Lonsdale St
GPO Box 4057
Melbourne Victoria 3001
DX210081
Telephone: 1300 650 172
Facsimile: 1300 785 859

OUR REF: WA67921
YOUR REF: 67921

12 August 2010

Dung Nguyen
Statutory Facilitation
Environment Protection Authority
GPO 4395
MELBOURNE 3001

Dear Ms Nguyen

RE: Application for Works Approval WA67921 – AGL Energy Limited

The department has reviewed this application and has no objection based on public health grounds provided the application complies with the relevant State Environment Protection Policies (SEPPs) and Environmental Guidelines.

If there are any queries regarding this matter, please contact Nathalie Allaz-Barnett of the Environmental Health Unit on 9096 5148.

Yours sincerely

Julie Hoy
Manager, Community Health Risk

State Government Victoria

5.3. Response from Moyne Shire Council

MOYNE SHIRE

Enquiries to: Strategic Planning Unit
Telephone: (03) 55680555
Our ref: Tarrone Power Station

28th July 2010

D Nguyen
EPA Victoria
DX210082
Melbourne

Dear Sir/Madam

RE: Application for Works Approval WA 67921 for the Tarrone Power Station

In response to your referral letter under the provisions of the Environmental Protection Act 1970, Council do not object nor does it necessarily support the Tarrone Power Station proposal.

The land is located in a Farming Zone in which an "industry" is a Section 3 use. The use and development proposed (defined as an industry) is prohibited by the Moyne Planning Scheme.

The Minister for Planning has notified the Council that he has called the proposal in and he intends determining the planning scheme amendment application as opposed to the Council acting as the planning authority (see attached).

Council reserves its right to consider the proposal through the "co-ordinated" process that the Minister is proposing to undertake (see attached letter).

In the event that a license is granted the Council require the following condition to be placed on the license:

- A Works Approval under the Environment Protection Act must not be granted until such a time that a decision has been made in regard to C47 of the Moyne Planning Scheme and in the event that the Planning Scheme Amendment is not approved, then no Work Approval under the Environment Protection Act must be granted.

Council looks forward to working with the EPA and all other relevant agencies in assessing this State/regionally significant proposal in the very near future.

yourshire

34

If you have any queries in regard to this matter, please contact me on 55680555.

Yours faithfully

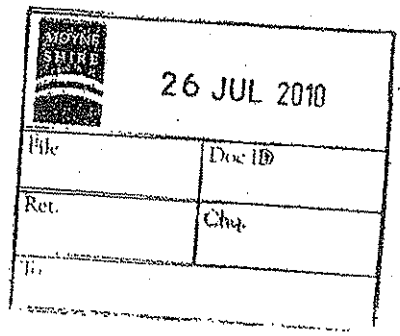
Bronwyn Mellor
Strategic Planner

Minister for Planning

8 Nicholson Street
GPO Box 2392
East Melbourne Victoria 3002
Australia
Telephone: (03) 9637 8087
Facsimile: (03) 9637 8921
ABN: 90 719 052 204
DX 210098

21 JUL 2010

Our Ref: CMIN021116



Cr James Purcell
Mayor
Moyne Shire Council
PO Box 51
PORT FAIRY VIC 3284

Dear Cr Purcell

TARRONE POWER STATION PROJECT – AMENDMENT C47 TO THE MOYNE PLANNING SCHEME

In accordance with Section 8 of the *Planning and Environment Act 1987*, I have agreed to a request from AGL Energy Limited that I act as planning authority for Amendment C47 to the Moyne Planning Scheme for the Tarrone Power Station project.

As you are aware, the project also requires approval under the *Environment Protection Act 1970*. My decision to act as planning authority for Amendment C47 will provide for a coordinated exhibition and decision making process for this major energy sector project of state and regional significance.

I have taken into account advice from your council that it would prefer to retain responsibility for the amendment, or otherwise participate in a project working group.

I note that this project is substantially advanced and ready for exhibition. Any outstanding concerns can be considered through the independent panel hearing and review process and a working group is not required in this instance. I encourage your council to make a submission on the proposed amendment and to continue the good lines of communication with the department's regional officers.

My department will be in contact with the proponent (AGL Energy Limited) and your council shortly to finalise arrangements for the commencement of public notice.

Yours sincerely

JUSTIN MADDEN MLC
Minister for Planning

Victoria
The Place To Be

5.4. Extract of WA58227 issued to Origin Power Ltd

1 GENERAL CONDITIONS

1.1. The works must be constructed in accordance with the works approval application accepted on 16 November 2005 and further information received between the 20 March and 24 March 2006 except that in the event of any inconsistency arising between the application and the conditions of this works approval the conditions of this works approval shall apply.

1.2. This works approval will expire;

a) on the issue or amendment of a licence relating to all works covered by the works approval; or

b) on the issue of written notification from EPA confirming that all works covered by the works approval are complete and that no licence or licence amendment is required to operate the works; or

c) two years from the date of issue unless the works have been commenced by that date to the satisfaction of EPA.

1.3. The occupier must notify EPA when works have commenced.

2. WORKS CONDITIONS

AIR

2.1. Prior to commencing construction for Stage 1 the occupier must submit a report to EPA which includes the following:

a) For the turbines to be installed;

i) the Manufacturer;

ii) specifications including the duty of each turbine and the expected emissions of NO_x and CO; and

iii) the number and layout of the turbines to be installed;

iv) thermal efficiency in turbines and steam generators;

b) estimates of NO_x and CO emissions from the turbines to be installed in both start-up and operation modes;

c) a calculation using EPA's approved regulatory model of the emission from the turbines to be installed showing predicted ground level concentrations for NO_2 and CO; and

d) the stack height proposed so that emissions from the proposed turbines comply with the requirements of the *State environment protection policy (Air Quality Management)*.

2.2. Construction of Stage 1 must not commence until the report required by condition 2.1 is approved by EPA in writing.

2.3. Prior to commencing construction for Stage 2 the occupier must submit a report to EPA which includes the following:

a) for the turbines to be installed;

i) the Manufacturer;

ii) specifications including the duty of each turbine and the expected emissions of NO_x and CO; and

iii) the number and layout of the turbines to be installed; and

iv) the thermal efficiency in turbines and steam generators;

b) a demonstration that the proposed turbines will meet the "best practice" requirement of the *State environment protection policy (Air Quality Management)* at the time of installation;

c) estimates of NO_x and CO emissions from the turbines to be installed for Stage 2 in both start-up and operation modes;

d) a calculation using EPA's approved regulatory model of the emission from the turbines to be installed showing predicted ground level concentrations for NO_2 and CO; and

e) the stack height proposed so that emissions from the proposed turbines comply with the requirements of the *State environment protection policy (Air Quality Management)*.

2.4. Construction for Stage 2 must not commence until the report required by Condition 2.3 is approved by EPA in writing.

2.5. The occupier must construct an exhaust stack(s) to discharge wastes from the power station so that the:

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a) height and diameter of each stack is constructed in accordance with the dimensions specified in the reports required by Condition 2.1 and 2.3;

b) outlet of the stack will allow free vertical discharge of wastes;

c) stack is clearly labelled with the discharge point number; and

d) provisions for sampling are included in accordance with EPA Publication No 440.1 *"A guide to the Sampling and Analysis of Air emissions and Air Quality."*

NOISE

2.6. The occupier must design and construct the plant so as to ensure the Noise Design Targets specified in Table 1 are achieved at all times when assessed according to *State environment protection policy (Control of Noise from Commerce Industry and Trade) No. N-1.*

Table 1: Noise Design Targets

Noise Modelling Location	Noise Design Target	
Premises designated as DR1, DR2, DR3, DR4, DR5, DR7, DR8, DR9, DR11, DR12, DR13 in the application	Day: Evening: Night	45 dB(A) 39 dB(A) 34 dB(A)

2.7. The occupier must submit a report to EPA prior to installation of the plant detailing the required works and measures to be employed to achieve the noise design targets specified in Table 1 and noise modelling demonstrating compliance with the noise design targets.

2.8. The report specified in condition 2.7 must include but not be limited to consideration of:

a) sound power level data of all mechanical and electrical plant and equipment that emit significant noise;

b) details of noise abatement measures undertaken, or proposed to be undertaken, to plant elements or structures; and

c) predictions of plant noise contributions at the noise modelling locations, including details of all modelling assumptions and adjustments in accordance with *State environment protection policy (Control of Noise from Commerce Industry and Trade) No. N-1.*

2.9. The installation for any turbine must not commence until the report required by Condition 2.7 is approved by EPA in writing

Water

2.10. The occupier must install the works so that no process wastewater is discharged to any local surface waters during the operation of the plant.

2.11. The occupier must install works so that areas that are capable of discharging potentially contaminated stormwater are discharged to the oil catch tank

2.12. All chemical or waste storage areas are to be constructed in bunded areas or otherwise contained areas which may discharge water to the stormwater as described in the works approval application

2.13. The first flush tank/pit must be constructed so that any seepage is minimised.

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2.14. The stormwater system must not be installed until the design is approved by EPA in writing.

Construction

2.15. Prior to construction the occupier must receive written approval from EPA of its construction environment management plan.

2.16. Odours offensive to the senses of human beings must not be discharged beyond the boundary of the premises.

2.17. Construction activities at the premises must not result in the discharge or seepage of hydrocarbon or chemical waste from the premises to land, groundwater or surface waters.

2.18. Construction activities at the premises must not result in noise levels at nearby residences (due to activities with the premises????) in excess of noise levels specified in Table 2 below as assessed using procedures set out in the *State environment protection policy (Control of Noise from Commerce, Trade and Industry) No N-1*.

Table 2- Construction Period Noise Limits

Time Period	Noise level dB(A)
DAY	55 dB(A)
EVENING	39 dB(A)
NIGHT	34 dB(A)

2.19. Stormwater discharged from the site must not exceed the following limits:

a) suspended solids not greater than 80 mg/m3; and

b) turbidity not greater than 100 NTU.

2.20. All construction activities must be undertaken in accordance with EPA Publication 480 "Environmental Guidelines for Major Construction Sites".

2.21. All construction activities must be undertaken in accordance with the Environment Management Plan for Construction activities as approved by EPA except as specified in accordance with conditions 2.15 through 2.20 inclusive.

2.22. The occupier must submit a written report to EPA on the first day of each month during construction which includes:

a) brief summary of construction activities for the preceding month;

b) summary of the activities anticipated in the coming month; and

c) summary of any environmental incidents for the preceding month.

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3. REPORTING CONDITIONS

3.1. Prior to commissioning of the works, the occupier must submit an Environment Improvement Plan to EPA for approval which addresses but is not restricted to the following:

a) A program for the routine monitoring of all licensed air discharges;

b) Assessment and minimisation of fugitive gas emissions;

c) A program for the routine monitoring of all noise emitted from the premises;

d) A program for the routine monitoring of all discharges to surface waters;

e) Procedure for the operation and management of the stormwater treatment systems;

f) A program for the routine monitoring of soil and groundwater at the premises;

g) A procedure for spill, leak and incident response and cleanup of spilt materials;

h) An incident reporting procedure which details the circumstances under which the occupier is to notify EPA of any spills, leaks or non-routine discharges to the environment;

i) A procedure for the recording of incidents; and

j) A procedure for the recording of community complaints about the environmental performance of the premises.

3.2. Prior to commencement of the installation of plant equipment allowed by this works approval, the occupier must submit a summary of the outcomes and recommendations of a Hazard and Operability Study of the power station.

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4. PLAN OF PREMISES

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EPA VICTORIA

5.5. EPA Publication 938 Environment Improvement Plans – An overview

ENVIRONMENT IMPROVEMENT PLANS – AN OVERVIEW

Publication 938
February 2004

An Environment Improvement Plan (EIP) is a public commitment by a company to improve its environmental performance. An EIP outlines areas for improvement including actions and time lines. An EIP is usually but not always developed in consultation with the local community in the area surrounding the company's premises. This document discusses the development of EIPs in Victoria between industries and their community neighbours.

One of the fundamental principles underpinning the development of an EIP is people have a right to know about decisions that may affect them. Developing an EIP is a dynamic process and putting the plan together requires effective collaboration with all those involved. Once a plan has been completed it requires ongoing monitoring by the local community and regulatory agencies.

ORIGIN OF ENVIRONMENT IMPROVEMENT PLANS

Historically, environment protection measures have had a narrow and highly regulatory focus, and environmental problems have generally been resolved within this framework.

In many cases, frequently as a result of past planning decisions, either industries or housing have been allowed to develop too close together, causing amenity problems for nearby residents. Conflicts have then sometimes emerged where the community has rejected outright any plans for industrial developments including plans for environmental improvements. There are generally no winners in these situations, and a traditional regulatory approach has not always worked. Once any statutory processes have been applied, for example a prosecution or infringement notices, the problem can still very often exist. Much depends on the attitude of the company then as to whether or not there is positive change and a willingness to improve its environmental performance.

In an attempt to more effectively deal with these more challenging situations, some years ago, EPA Victoria recognised the value of getting industry and its community neighbours together to attempt to resolve these problems. The concept of environment improvement plans came to be.

WHAT DO EIPS HAVE TO OFFER?

EIPs are a reflection of community right to know. The process of consultation in developing an EIP, if done well, provides for an openness between the various parties that might otherwise be very difficult to achieve. It can also lead to greater mutual understanding and resolution of concerns.

There is a growing number of examples where formerly hostile communities have become much more supportive of local industry. This has led to little if any delays with plant upgrades or further developments. In one instance with the Altona

Chemical Complex for example, around $1.8 billion was invested in the area - unopposed, between 1992 and 1995 - a dramatic change when compared to the late 1980s when the local community objected to almost everything the complex wanted to do, including in one case, a bicycle shed.

WHAT IS IN AN ENVIRONMENT IMPROVEMENT PLAN?

Each EIP will be unique to the particular site involved and incorporates specific issues. Any EIP should ideally include the following components:

- undertakings to comply (or even go beyond compliance) with licences and regulations
- emission and waste production standards
- monitoring of compliance
- audits and assessments
- improvement project details including what needs to be done, how it will be done and by when
- provision for upgrading of plant
- assessment of new and emerging technology
- emergency and contingency plans
- enhanced response to community complaints
- community relations, health and safety issues
- community reporting requirements on progress

Implicit in the EIP development process is the willingness of the company and regulators to provide information that can assist in addressing community concerns. There will sometimes be constraints in terms of commercial confidentiality of some information. It is EPA's experience that the community respects and recognises this. Equally, there need to be actions undertaken by the company to improve its environmental performance.

The EIP document itself should be written as clearly as possible, avoid the use of technical jargon and include site maps and diagrams of production processes to assist in describing the particular industry's operations. A glossary is also an important component, as is having the program of improvements documented in summary form for easy reference.

ENVIRONMENT IMPROVEMENT PLANS - THE PROCESS

What is described below is typically how EPA would advise industry about what to do when developing an EIP. The time it takes to develop an EIP will be very much dependent upon the nature of any prior relationships between the company and the community, and the efforts put into the production of the EIP document. Most EIPs generally take about 12 months to complete.

Getting the process right is critical to the development of a successful EIP. Above all, the process should allow for a truly combined effort in identifying issues and developing plans for improvement. The combined effort comes from the group of people formed to develop and monitor the EIP. This group, frequently referred to as a community liaison committee, usually comprises company representatives, residents, local government, EPA and other government regulators as appropriate.

The steps to develop an EIP are outlined below.

Identify the need

Typically a company would be making some internal decisions about the value of undertaking an EIP. Clearly, if there are some environmental impacts on the surrounding community, then some form of dialogue with the community is likely to be beneficial, not only in dealing with any potential conflicts but also in demonstrating that the company is a good corporate citizen and is serious about being a better neighbour.

Make contact with the community

This can be done in a variety of ways. The company may have ongoing contact with its community neighbours over environmental pollution reports, or EPA or the local council may have had reports made directly to them.

In the development of many EIPs, EPA has acted as a broker. This has involved EPA contacting neighbours directly to see if they would be interested in meeting with the company to develop an EIP and then organising an initial meeting. The local council is also invited to participate as are other government agencies that may have an interest. At this meeting, it is useful to ask residents if they may know of other interested residents who might be interested in participating. It has been EPA's experience that this approach has usually been quite successful.

Other means of attracting interested members of the community include letter box drops, advertising in the local paper or the company holding an open day and seeking interest from people who attend. Public meetings are also another option. If that option is considered, careful planning will be required. If these meetings are not managed carefully, more frustration and anger in the community can be the result.

A final point here is not to assume that the community members who come along will represent the wider community. Sometimes of course, some residents will attend on behalf of others, but it is important to recognise from the outset a truly representative group is not possible. The group that comes together is a group of people who have a common interest – to see the particular industry improve its environmental performance. What is more important, is for the group to ensure that the wider community is regularly kept informed of what is happening, thus providing opportunities for any other comments or feedback. This raises the need for some kind of communications plan, which is discussed later.

THE FIRST MEETINGS

Building up trust

In initial meetings, people need to get to know each other and find out what an EIP is all about. These first meetings can sometimes be heated, particularly if there have been some long-standing problems. If these problems have not been resolved, the community often comes to the first meeting with little reason to trust that things will change. More often than not however, the community has welcomed such initiatives from industry, and people have been willing to be constructive. It is critical for these meetings to be skilfully chaired.

Dealing with technical issues

A common point raised at these initial meetings is that residents sometimes feel they do not necessarily have the required technical expertise to be able to contribute. It is therefore important to communicate clearly and without the use of jargon and industry specific language.

It is possible for residents to contribute to these discussions. They live in the area, experience the problems and may be able to help in tracking down sources of the problem if they are not immediately obvious.

In initial meetings it is often very useful to have a site tour, pointing out problem areas (as well as improvements). This helps put things into some sort of context.

Over time, using this approach, residents' comments and suggestions have led to effective solutions to long-standing problems. At a carbon black manufacturing plant in Altona, Melbourne, some nearby residents experienced vibrations and loud noise in their homes from the plant's operation. After negotiations with the residents, using their feedback, the company was able to find the source of the problem. In the short term the company installed a noise barrier and also changed work practices as it attempted to permanently fix the cause of the problem, which it ultimately did.

THE SUBSEQUENT MEETINGS

Setting the boundaries

In the early stages of the consultation process, it is important to look at some 'ground rules' such as who will chair meetings, where they will be held, who will take and distribute meeting notes, and how decisions will be reached. Decision-making is a particularly important aspect to consider. Ideally this should be by consensus, and, universally, this has been the way community liaison committees developing EIPs have operated.

Numbers in the group can also be an issue. Ideally about 12 people are a good number, although it is important to have as much resident participation as possible. People do come and go, so having a core group and opportunity for observers to attend can help deal with any number in excess of the optimum.

Do a lot of listening

What is critical, particularly in the early stages and really for the life of the consultation process, is to do a lot of listening and to attempt to see the situation from the community's point of view. This is particularly important when attempting to scope what actions will be addressed in the EIP. Hearing people out and responding openly and honestly to questions are important behaviours to adopt.

It is also important to discuss how any improvements will be funded and/or what funding limitations exist. Some companies have expressed reservations that they will not be able to fund or meet all the expectations of the community. As a rule however, residents have not been unreasonable in their requests and understand that there are limited resources. What becomes the challenge often, is how issues are prioritised, how improvements will be implemented, and what commitment the company really has to the process.

People will quickly identify if the company (or for that point the regulators) are not treating the issues seriously.

Involve the right staff

In terms of commitment to the EIP and its development, it is important that senior company staff and key decision-makers are involved in the discussions. This is another way of demonstrating to the community that the company is serious about its commitment to the EIP.

As well as senior staff, it is important to also think about involving other employees who actually operate the plant. This provides another level of assurance to the community that the EIP is well understood at all levels in the company.

Be willing to be open to scrutiny

For further building on credibility it is important that there is an openness about having any information scrutinised for its environmental soundness. If this ever becomes an issue, someone who has the confidence of all parties should ideally check the information. Interestingly, as the dialogue builds up and trust begins to develop, this has never become an issue with EIP development. In most cases EPA as the environmental regulator has been called upon to provide comment and this has generally satisfied the community. As the trust grows even further, information provided by the company has been more readily accepted as well.

Develop a communications plan

It is important to recognise that not all the surrounding community will be involved, or want to be involved, in the development of the EIP. Thought therefore needs to be given about how the wider community will be kept informed. What has worked well in many groups is the regular circulation of a newsletter, documenting progress with the EIP or circulating a media release to the local media, particularly newspapers and radio in regional areas of Victoria. Some companies have also had periodic open days, and many companies have organised a public launch of the EIP once it has been finalised. This is an important way of recognising everyone's efforts. Increasingly companies are using their web site, if they have one, as another medium through which information can be shared.

COMPLETING THE EIP - BACK TO THE BEGINNING

Having produced an EIP, it is easy to think that the process has come to an end. In fact, it is only the beginning. The EIP is a dynamic document that will become integrated into a company's day-to-day operations.

The next stage is for the EIP to be monitored and the community liaison group needs to determine how this will occur. Generally the group meets less frequently and the company reports on specific items in the plan as required. This approach has worked quite well and if any other issues emerge, groups can reconvene more frequently as required.

An interesting outcome of the EIP process has been in how some companies have implemented community right to know principles in other community interactions. Some companies now plan for regular open days, others invite neighbours to visit the plant to attempt to pinpoint particular

problems and have even involved local residents in environmental audits. The EIP process has also been successfully adapted into other company operations, for example engaging its workforce to develop improved occupational health and safety procedures.

Overall, the net result where a company has developed an EIP is that there has been an overwhelmingly positive shift in community confidence about that company's operations and the role of the regulators, so in this way, everyone wins.

CONCLUSION

Historically EIP approaches have proven successful at dealing with complex environmental issues that have been difficult to resolve. Increasingly such programs have been seen by industry as good business practice – a good way of working on a triple bottom line approach. Fundamental to the EIP approach has been the recognition that industries operate within a community and have an obligation to be a good neighbour. Successful development of EIPs has resulted in effective co-operation that has seen win-win outcomes for the community, regulators and industry.

FURTHER READING

EPA Publication 520: *Ten Steps to Successful Community/Industry Consultation*, 1993.

EPA Publication 739: *Guidelines for the Preparation of Environment Improvement Plans*, June 2002.

EPA Publication 740: *Guidelines for Running Community Liaison Committees*, November 2001.

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