

IMPLEMENTATION OF NSW NOISE POLICY— AN UPDATE

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BACKGROUND TO THE NEW NOISE POLICIES

Over the past 3 to 4 years the EPA has been building an improved policy platform for dealing with noise pollution in NSW. Thorough research, comprehensive consultation and economic analyses of changes has resulted in more robust policies that have a wider ownership by stakeholders. Both the NSW Industrial Noise Policy (INP) and the road traffic noise policy underwent extensive public consultation that involved issuing a draft policy, advertising in the media the opportunity to comment, conducting seminars and addressing the issues raised in producing a final policy. An important part of the process of developing these policies was that they should represent a "whole-of-government" position. Accordingly the policies were discussed with interested government agencies and have received government endorsement. The road traffic policy was published in May 1999 and the INP published in January 2000. Both of these policies are available from www.epa.nsw.gov.au

There were a number of objectives we wanted the INP to achieve:

- The policy needed to be sufficiently *flexible* to be able to accommodate the range of different circumstances that occur in the real world and allow for the best solution to be developed. This meant that the process should allow for innovation in assessment and control techniques and include an ability to negotiate agreed outcomes.
- The approach needed to provide the framework for a *consistent outcome* in assessing noise impacts, so that different people would come to the same conclusions for a given set of circumstances. To do this the policy gives details on how an assessment of noise should be conducted.
- We wanted to ensure that as far as possible assessments of noise impacts would result in predicting *what would actually occur in practice*. This meant including influences such as wind and temperature inversions which increase noise levels.
- In the past a large amount of effort was sometimes expended on debating what noise criteria were appropriate to apply to assess whether an impact occurred. We wanted to move this debate away from the numbers that should apply and *focus much more on the best ways to mitigate the noise*.
- The concept of applying all *feasible and reasonable means of mitigation* needed to be articulated so that interested parties could see what level of control was expected.

- We wanted to *highlight the role of land-use planning* as a means of avoiding noise problems. And develop an understanding that, in some cases, there was likely to be a limit to the degree of noise control from engineering and management practices. And that in this situation it is necessary to look to additional means of minimising noise impacts such as in the design and construction of sensitive developments that are predicted to be affected by noise.

TRAINING

Perhaps an equally important part of introducing a new policy is to follow-up its introduction with training in its use. We decided at an early stage to make a major commitment to training and extensive programs were offered following the release of each policy. In total 47 separate one day courses were offered (24 for road traffic and 23 for industrial noise). To give good access to training courses they were held at various metropolitan and country locations across the State. Interest was high and almost nine hundred people were trained.

IMPLEMENTING THE POLICIES

After INP was published in January 2000 there was a six months transition period where we would accept assessments done using either the old policy or the INP. The approach appears to have worked well and all assessments are now being done using the INP. To date we have received around 30 to 40 assessments using INP and one Commission of Inquiry was held only recently and involved an extension to a coalmine in the Hunter Valley.

During the application of the policy a relatively small number of issues have come up that needed clarification. In some instances the issues were limited to the particular development but in others their application is broader. For example there is sometimes a question on what land use category should apply to an area, what wind speed to assign where winds are found to significantly increase noise and how private haul roads and rail lines should be assessed. We are working towards providing some explanatory notes on common issues.

Assessing and managing noise from industry encompasses both technical and policy issues. Because of the breadth of the subject the policy needed to draw a careful balance between being concise and understandable, and including sufficient detail to cover typical situations. Clearly a policy document, even one with a large technical component should not attempt to cover in detail all of the range of scenarios that may occur in practice. To do so would be likely to create a large and complex document whose usefulness would be greatly diminished

What is important is that the policy clearly establishes the principles or intent on how it should be applied. Applying the policy to any new set of circumstances then becomes a matter of referring to the principles established in the policy.

IMPORTANT PRINCIPLES

Four important principles established in the policy and that must be considered where questions in interpretation arise are:

1. That the noise assessment needs to address the noise levels that are expected to occur in practice. This means that the effects of weather need to be considered.
2. That all feasible and reasonable controls be applied to limit emission of noise. This recognises the mitigation of noise as the central concern but that there is a limit to what can be achieved.
3. Where noise levels exceed the criteria after applying all feasible and reasonable controls the expected impact from the exceedance needs to be quantified and the proponent needs to clearly explain other relevant factors such as:
 - * economic and social benefits,
 - * complaint history and views of other stakeholders such as council, and
 - * whether the project results in a net reduction in noiseThis information can greatly assist a broader understanding of the context of the project and assist making balanced and well-informed decisions. What we at the EPA are looking for is a demonstration that the range of mitigation measures have been carefully assessed and applied and a good sense of the implication of any remaining level of noise and relevant economic or social factors.
4. That the application of the policy must result in clear and enforceable conditions. This benefits both the licensee and the public by clearly defining the boundaries for noise.

LAND USE CONFLICTS

Land use conflicts happen where noise sensitive and noise producing developments are co-located. Once the location of a noise producing activity is decided it's important not to create situations where unachievable expectations on reducing noise will lead to conflicts. This type of pressure occurs where noise has not been properly considered when developing adjacent land for noise sensitive activities. This isn't to say that a noise producing industry can ignore its noise impact. The primary obligation to control external noise lies with the noisemaker. However where all feasible and reasonable noise control measures are already applied any further reduction depends on future noise control technology and new work practices and is only possible over time.

In situations where land is relatively scarce it makes sense to take all reasonable steps to maximise the use of available land. This implies that a balanced approach is needed that as well as requiring noise producers to apply all feasible and reasonable measures to reduce noise, looks to incorporating noise mitigation in noise sensitive developments to control noise.

CASE STUDIES

1. Extension to existing industrial development

The first case involves a plant that is located in a country town. An extension to the existing plant was being sought. The plant is the only sizeable industrial development in the town and this

was likely to remain the case for the foreseeable future. Noise from the existing plant was relatively high, exceeding the relevant noise criteria.

The issues here were how the INP handled the noise from the existing plant and noise from the new extension and how local factors were able to be considered in deciding the best outcome. The INP notes that for existing premises one reason for setting noise limits and developing a noise reduction program is a proposed upgrade or expansion of the development. The emissions from both the existing and proposed plant need to be addressed in any assessment to ensure the cumulative emissions from the plant are accounted for. Once this is done the expansion and the existing plant can be dealt with separately.

In this case the expansion was being designed with low noise emissions and to significantly reduce noise from trucks servicing the plant. There was some early discussion and debate between the proponent and the EPA on what the approval of the new extension needed to cover. The result was that the company and the EPA agreed that a Pollution Reduction Program for noise from the existing plant was needed and this would be negotiated outside of the approval process for the new extension. This resulted in the approval for the extension proceeding and allowed more time to properly consider what needed to be addressed for the existing plant in a Pollution Reduction Program.

The noise assessment identified local circumstances such as the length of time the plant had been at that location, its economic and social importance to the town, the low possibility that additional large industrial development would occur in the area and the reduction in truck noise from the new extension. The INP notes that such local factors are relevant to a balanced and well-informed assessment of impacts and they were considered in assessing the noise impacts from the whole plant. This case demonstrated how the INP was able to handle new and existing premises and to include local circumstances to tailor an appropriate outcome.

2. New industrial development

In this next case a new coalmine was proposed in an area near Muswellbrook in the Hunter Valley. A number of other coalmines are located in the same area, some operating and other approved but not yet working. Weather effects, in particular wind and temperature inversions, can significantly increase noise levels. This is typically a problem where the distances between noise sources and residents is large. In the Hunter Valley it has become increasingly apparent that weather effects are playing a significant role in creating noise impacts.

The main issues here were how to address noise increases due to weather effects, cumulative noise impacts and providing clear and enforceable conditions for noise. The INP clearly requires that weather effects need to be assessed where they are likely to result in a significant increase in noise levels. The policy provides guidance on how this should be done but is not prescriptive. Cumulative noise is directly related to the policy's amenity criteria for different land uses. The policy also supplies guidance (S2.2.4) on how the cumulative noise from multiple developments should be handled.

The noise assessment for the mine recognised that weather effects were significant and put forward a new method of assessing increases in noise due to weather. The approach was based on modelling all the weather conditions that had been monitored for the site and identifying the noise levels that would be met for 90 percent of the time. The proponent used these noise levels to compare to the noise criteria.

While the method is not in-line with the process described in the policy it does meet the intent of the policy to assess weather effects and in fact provides a more comprehensive assessment of weather effects than is required. The advantages of the method used for weather effects are:

- * that the noise levels for all the measured weather conditions have been assessed, and
- * that a noise limit can be assigned that is independent of weather, for example that the noise will not exceed a set level of say 40 dBA for at least 90 percent of the time regardless of weather conditions.

The disadvantages can be:

- * that the assessment can be more complex and costly as the noise levels for all the measured weather conditions need to be modelled for all affected residents, and
- * that monitoring compliance can be costly because attended monitoring needs to be done over a period (in this case 9 days) and the data analysed to show that the measured noise levels met the noise limits for 90 percent of that time.

For such a large project occurring in an area that is sensitive to noise impacts this type of approach may be justified. This case study demonstrates that the policy is flexible and can accommodate innovative approaches to assessments (in this case weather effects) provided the intent of the policy is met.

3. New residential development

In this case a new residential subdivision is being developed alongside a hard rock quarry. The quarry has existed for a long period and is concerned that using the adjacent land to build houses may lead to conflicts due to the noise from quarrying and ultimately could restrict their operation.

The INP contains guidance on mitigating noise impacts that can occur where industrial and residential land uses are to be co-located. The land-use planning options mentioned cover the initial planning stage, the residential subdivision stage and the house design stage. Because of their concerns that noise should be properly accounted for in the adjacent residential development the company placed a caveat on the title deed for land within 300 metres of the quarry and its access road. Negotiations with the developer and local council followed. The company retained an acoustical consultant who provided an assessment of noise based on the INP. Following more negotiations the company and the developer agreed that a reasonable means of mitigating noise would be for two zones to be defined.

One zone where houses could not be built and a second where houses could be built provided they incorporated noise mitigation measures in their design and construction. The zones were defined based on noise from operations of trucks

on the access road as this ran alongside the boundary for the residential area and was the main noise source. Where noise during the night was more than 45 dBA then housing was to be prohibited. This level of 45 dBA equates to the background noise level plus 10 dB. Where noise at night was in the range 40-45 dBA then housing needed to be designed and constructed to mitigate noise. Both the company and developer agreed that this approach was reasonable.

4. New industrial & residential developments

This case involves a large development that has both an industrial component and a residential one. There are a number of advantages to co-locating employment generating and residential land use. The advantages can include reduced travel times, reduced air emissions and lower infrastructure costs from less demand on the road system. However, there is also a risk to the amenity of the residential areas in being located close to industrial activities. Noise is one of the main amenity issues and the means to minimise noise impacts needs to carefully considered during the planning process.

A particular problem for noise can be where separate industrial developments occur in a gradual manner over time. There is the potential here for pressure from later developments to exceed amenity noise levels. This occurs because early individual developments are typically assessed in isolation, without considering what the cumulative level of impact would be when the whole area has been developed.

Initially the issue of noise effects on the proposed residential area was limited to assessing an existing quarrying operation. However, the EPA highlighted that the greater noise issue was likely to be from development of the new industrial area and that addressing this issue at the planning stage provided a good chance to avoid or at least minimise potential conflicts over noise.

The land developer retained consultants who conducted noise modelling of various development options. The final proposal consisted of splitting the industrial area into 5 zones and assigning overall noise limits to each of the 5 zones. The noise limits applied were based on achieving the INP's noise criteria for amenity at the adjoining proposed residential area. Predictive modelling, that placed 3 heavy industrial sites in each of the 5 zones was done by the land developer. This showed that the noise limits were reasonable and could be expected to be met in practice.

It appears that the developer, the council, the State planning authority and the EPA are satisfied with the outcome and that it will be incorporated into the Precinct Plan for the area. This case demonstrates how it is possible to incorporate noise requirements into land use planning. The result has been:

- * an equitable distribution of noise requirements amongst the employment zones,
- * avoiding uncontrolled cumulative noise impacts
- * providing some flexibility in how noise is managed within each employment zone, and
- * protection of the future amenity of adjacent residential areas.

