ABSTRACT

Approval conditions developed during environmental impact assessment (EIA) decision-making are intended to ensure that proposals are implemented in an environmentally acceptable manner. While compliance auditing is intended to ensure that approval conditions are implemented in practice, it is not always clear how effective these conditions have been in achieving environmental protection goals. This paper presents the results of an EIA follow-up study of the changes incurred in several development projects in Western Australia following the attachment of approval conditions. The study aimed to understand how approval conditions affect proponent's environmental practices and what aspects of approval conditions are likely to have the greatest effect.

Two types of conditions may be utilised: goal oriented or process oriented. A condition establishing an environmental management objective to be met by the proponent or requiring an environmental management plan to be prepared is an example of a process oriented condition. A condition requiring a company to undertake a specific action is goal oriented. In addition to the nature of approval conditions (whether goal or process oriented), origin and implementation by proponents during project commencement and operation. These include the type of conditions (whether goal or process oriented), origin and legal status as well as company size and experience with EIA and external factors such as public pressure. These are discussed briefly in turn.

Approval conditions can be classified according to two types; whether they are prescriptive or adaptive in nature. Prescriptive or goal oriented conditions fall into the classic 'command and control' approach and identify a specific action that needs to be performed by proponents or a standard (eg. emission levels) that need to be met. Adaptive or process oriented conditions take a more flexible approach. Bailey (1997) previously noted that the EPA in Western Australia often establish conditions in which an environmental objective is specified or which require the preparation and subsequent approval of an environmental management plan (EMP) prior to project commencement.

1. INTRODUCTION

For environmental impact assessment (EIA) to be effective, approval decisions should be based on the findings of the EIA report and review, as well as be transparent, accountable and preferably legally binding (Sippe 1990, Ortolano 1993, Wood 1994, Sadler 1996). Whilst there have been a number of follow-up studies that have examined the utility of approval conditions established by EIA decision-makers in terms of compliance audits (eg. Reed et al. 1983, Bisset 1984, Munro 1987, Bailey et al. 1992) and studies of the linkages between approval decisions and subsequent environmental management performance (eg. Morrison-Saunders and Bailey 1999, Marshall 2001, Marshall et al. 2001), there appears to have been no attempt to understand the impact of EIA decisions upon project management practices. The purpose of the research reported on here was to examine the influence that EIA approval conditions have on the environmental management practices of proponents in four case study projects in Western Australia.

The research was initiated and funded in part by the Western Australian Environmental Protection Authority; the key agency responsible for EIA decision-making. Whilst this is only an exploratory study of a small number of case studies that are not meant to be representative of EIA practice in Western Australia generally, it is hoped that the findings will be of interest to EIA decision-makers.

2. FACTORS INFLUENCING THE EFFECTIVENESS OF APPROVAL CONDITIONS

There are a number of factors that may influence the effectiveness of approval conditions, in their implementation by proponents during project commencement and operation. These include the type of conditions (whether goal or process oriented), origin and legal status as well as company size and experience with EIA and external factors such as public pressure. These are discussed briefly in turn.

Approval conditions can be classified according to two types; whether they are prescriptive or adaptive in nature. Prescriptive or goal oriented conditions fall into the classic 'command and control' approach and identify a specific action that needs to be performed by proponents or a standard (eg. emission levels) that need to be met. Adaptive or process oriented conditions take a more flexible approach. Bailey (1997) previously noted that the EPA in Western Australia often establish conditions in which an environmental objective is specified or which require the preparation and subsequent approval of an environmental management plan (EMP) prior to project commencement.
In these cases, the details for how the objective is to be achieved or the specific content of the EMP is left to the proponent to determine. These flexible conditions are usually accompanied by a monitoring requirement and thus promote an adaptive management approach to EIA.

The origin of approval conditions may fall into two categories: proponent commitments for mitigating impacts; and conditions imposed by EIA decision-makers. For the latter case in Western Australia, these arise from EPA recommendations to the Minister for the Environment. The final decision and conversion of EPA recommendations into legally binding approval conditions is made by the Minister (Wood and Bailey 1994). While it was hypothesised that origin of conditions may influence proponent management practices differently, it is interesting to note that Hobbs et al. (1990) and Morrison-Saunders (1997) found no difference in compliance or level of implementation for approval conditions and mitigation measures arising from proponent commitments compared to EPA recommendations.

It has often been suggested that EIA approval conditions should be legally binding (eg. Ortolano and Shepherd 1995, Wood 1995, Sadler 1996) in order to improve the certainty of EIA outcomes and increase the likelihood that they will be implemented when projects commence. However, Morrison-Saunders and Bailey (1999) suggest that the presence of legally binding approval conditions is not a prerequisite for compliance, citing a case study example in which 100% of proposed and recommended management practices were implemented by the proponent even though they were not legally bound by the EIA approval.

The nature of proponents may also have a bearing on the implementation of EIA approval conditions. For example, Glasson and Therivel (1997) suggested that experience with EIA led proponents and their consultants to produce better quality documents in their review of British EIA documents produced between 1988 and 1996. Similarly Morrison-Saunders et al. (2001a) found that company size was an influencing factor in that better quality EIA documents could generally be attributed to the larger proponents with greater financial resources. It was therefore hypothesised that company size and experience may have bearing on the implementation of EIA approval conditions and the nature of subsequent environmental practices.

A final factor that may influence proponent's environmental practices arises from public pressure. This influence on EIA activities and outcomes has previously been recognised by several researchers (eg. Wood 1995, Sadler 1996 and Morrison-Saunders et al. 2001a). It includes both direct pressure brought about through public involvement, lobbying and litigation as well as indirect pressure arising from the fear of negative publicity (Culhane et al. 1987). External factors such as public pressure may translate into internal reforms by proponents and self regulatory initiatives such as voluntary implementation of environmental management systems including the ISO 14,000 series (eg. as described by Marshall et al. 2001).

### 3. RESULTS

Four mining case study projects in Western Australia were selected for examination. Interviews were conducted with environmental managers for each proponent company as well as with the EIA regulators responsible for project assessment and establishment of approval conditions. Staff within the Audit Branch of the EIA regulator were also interviewed. Interviewees were asked to comment on the nature of approval conditions for the case studies, their implementation status and the other factors concerning environmental practices of the proponent companies. The results are presented in response to questions posed for each of the potentially influencing factors mentioned previously. The discussion includes information from relevant EIA documents as well as quotes from interview transcripts (which have been treated anonymously).

**Do approval conditions affect the environmental practices of proponent in Western Australia? If so, how?**

All interviewees perceived that approval conditions played some role in influencing the environmental management practices of proponents. Identified influences or mechanisms included: providing a measure against which auditing can be performed; providing a tool for internal conflict resolution; focussing environmental management efforts onto areas considered important by decision-making authorities; and preventing unsatisfactory practices from taking place.

A variety of influences were suggested by the proponent interviewees. For example, one effect approval conditions were thought to have was 'to force the focus [of management] onto issues the EPA considers important'. A slightly different view suggested that it doesn't force the proponent to focus on specific issues so much as 'highlight main areas of which you need to be aware'.

A more direct influence approval conditions have had on a proponent's environmental management practices was to provide a means of resolution for internal conflict relating to differences of opinion between factions within the proponent company. This source of conflict was identified by one environmental manager, who stated: 'as a mining company we are based around production; because of this we are always responding to the decisions of the production department'. The presence of approval conditions 'makes the production department aware of what the EPA requires and so justifies the recommendations of the environmental management department to upper management'. In this situation approval conditions were used by environmental managers as a means of justifying environmental management approaches.

Approval conditions were perceived to 'set the bar' by which environmental performance was assessed. This was directly related to the auditing process of the EIA regulators and was a theme that was identified in relation to almost all aspects of approval conditions. For example this was certainly the case for a coal mining project; where stringent
Do different types of conditions influence the environmental practices of proponents differently?

In this study a distinction was made between conditions that prescribe the production of an EMP and conditions that prescribe compliance with specific emission limits or practices. This section aims to elucidate differences between these two types of conditions with regards to a proponent's environmental management.

A prescriptive approval condition was issued during the original EIA of a mineral sands mining project which prohibited the mining of a flora reserve although mining was permitted to proceed elsewhere in the vicinity. Two subsequent EIAs were undertaken resulting in significant alterations from the initial proposal being made (EPA 1996a, EPA 1999, Cable Sands 2002). In the first of these, an amended proposal that the EPA recommended could proceed was struck down following a public appeal, on the grounds that it was inconsistent with the original approval condition (EPA 1996a). Before a proposal to mine in the flora reserve could be approved, it had to be made significantly different from the initial proposal in which mining in the reserve was denied. A second amended proposal was subsequently approved which included a significant reduction in the area of the reserve to be mined as well as the provision of extra land containing similar habitat as compensation for that lost to mining within the reserve. Without the original condition specifically stating that no mining of the flora reserve was to occur, the proponent would have mined the entire reserve and would not have provided the second area as an in-kind compensatory conservation reserve. The presence of this prescriptive condition therefore resulted in an improvement of the proponent's environmental management practices.

Environmental management plans were a requirement of approval conditions for two of the cases examined. For example, a nickel-cobalt mining project had three conditions prescribing the production of: a management plan; a management strategy; and an environmental management system (EPA 1996b). With these three conditions in place populations of a rare plant species, Hemigenia exilis, were protected to the satisfaction of Audit Branch staff within the EPA regulator. While audits of the site indicated that the species had been protected in the region, a conclusion as to whether this was a result of the flexible approach taken to approval conditions for this project cannot be made. However some interesting comments were made by EIA practitioners interviewed in the study concerning the approval condition type.

Proponents perceived a significant difference between the prescriptive goal oriented conditions and process conditions. For example, one environmental manager stated that: 'prescriptive targets are an end while the management plan is a means to achieve this end'. Interestingly, all interviewed parties, whether proponents or EIA regulators, indicated a preference for the more flexible management plans.

The preference for the management plan appears to stem largely from the flexibility that this approach offered environmental managers with one respondent stating: 'if commitments are less specific they allow management to decide what the important aspects are'. A flexible approach allowed 'freedom in the choice of technology or method used' to address environmental management concerns. Environmental management plans were thought to be flexible in their 'capacity to be changed over time'. This enabled uncertain or unpredictable events to be incorporated into the project's environmental management and is one of the benefits attributed to EMPs by Bailey (1997).

Concern was raised by EIA regulatory staff that conditions prescribing the implementation of flexible management plans should still be detailed enough to indicate 'specifically which areas should be focussed on by the management plan'. This encourages the management of the factors identified as relevant by the EPA during the EIA process. The 'inclusion of review systems should be built into the management plans' and could increase the effectiveness of management plans by ensuring that the plans in place were up to date and effectively address the issues they were designed to manage.

One of the proponents interviewed appreciated clear limits for auditing purposes. Conditions prescribing limits were perceived to give 'clear focus' to the environmental management practices of the proponent. From this perspective the benefits of conditions prescribing clearly set targets can be understood. Further, another benefit relates to the accountability to the community at large. Complying with clearly set limits gives the proponent 'certain comfort in doing what the EPA says. This is something which is not present when the proponent effectively writes and proposes their own terms under a management plan'. This link between prescriptive approval conditions and public pressure relates to the use of the general public as a monitoring tool and is examined later.
The presence of prescriptive conditions has been identified as being a discouragement to continual improvement. Where a management plan may specify 'continual improvement' and 'best practice', a prescriptive condition may actually prompt the opposite of this; a stagnation of management practices. Two proponents indicated that the presence of a limit 'discourages further improvement' of their management practices. This was driven partly by a fear that the prescriptive limit may 'follow them down'. A hypothetical example for instance could be an improvement in the dust management practices of a project that resulted in a dust emission far below the prescribed limit. This may prompt regulating agencies to lower the allowable limit of dust production to account for this improved practice. This would place pressure on the proponent to continue the level of environmental performance and such events may ultimately discourage the initial improvement of the management practices.

While approval conditions of a prescriptive nature were perceived to have been beneficial by some of the study participants, others interviewed suggested that these types of conditions may not be of much positive use. Certainly, a perception that approval conditions do not influence the long-term management of a project has been illustrated by several of the interviewed proponents. For example, one proponent stated that:

Any limitation would merely be a target; like dust for instance. We have a license condition for dust and particulates... our emissions have gone down but that limit still stays there. It's not a compliance issue for us. The [EIA regulator] issued license limit has stayed the same but our emissions have gone down.

In this case, the limit on dust and particulates remained the same but the actual emissions produced by the project remain well below the prescribed limit. This statement suggests that although a clear limit for the emissions of dust was present, this proponent was not affected by this limit on an ongoing basis as they had moved beyond compliance. The situation for this proponent was less related to compliance with an approval condition and more related to the proponent achieving the 'best possible results'.

With regards to auditing, interviews with staff of the EIA regulator indicated a preference for the production of EMPs. One interviewee justified this preference by stating that 'a mining proposal involves a very large number of small issues such as dust control, fencing rehabilitation and ground water management. There are too many issues to be put into a set of approval conditions. We ask the proponent instead of making hundreds of commitments, to put these into the production of an environmental management plan'. An approach to the creation of approval conditions that aim to develop a broad management plan, rather than a long list of specific commitments, has the added benefit of reducing the workload on the assessing agency.

This study has identified a preference for management plans among both staff of the EIA regulator and environmental managers in industry. This preference appears to stem from the flexibility that this type of condition offers the proponent and the simplicity both of condition production and auditing for regulators. Staff from the EIA regulator suggested that management plans were more likely to result in a positive environmental outcome. This observation is consistent with the findings of Bailey (1997) and Morrison-Saunders and Bailey (1999) who indicated that a flexible management approach is needed to achieve effective environmental protection.

### Does the origin of a condition influence how well it is implemented?

In this section, the origin of EIA approval conditions is considered. Although both become legally binding Ministerial conditions in Western Australia, reference is made to 'EPA recommendations' and 'proponent commitments' to clearly distinguish their origin during the EIA process.

A perception that the origin of a condition has some bearing on how well the condition is implemented has not been identified in this study. Conditions arising as EPA recommendations or proponent commitments were further perceived to be treated or implemented equally and this is consistent with the findings of Hobbs et al. (1990) and Morrison-Saunders (1997). However, some other interesting ideas were indicated. The EPA appeared to recommend approval conditions where shortcomings in the proponent's commitments were identified. The interviewees also suggested that approval conditions should be produced through a process of careful consultation to ensure that approval conditions cover all of the important issues. The findings are discussed in turn.

The mineral sands mining project discussed previously provides an example of an EPA recommendation that had clear effects on the proponent's environmental management practices. The original approval condition stemming from an EPA recommendation that the proponent should not mine a flora reserve sparked two subsequent environmental impact assessments and caused the proponent to provide a large area of nearby bushland as a trade-off for permission to subsequently mine part of the reserve.

The coal mining project provided an example of a case where proponent commitments were perceived by the EPA to be insufficient to achieve their environmental protection objectives. In this case, the proponent's commitment to produce an EMP did not appear to satisfy the EPA's objective 'to protect the amenity of surrounding residents from adverse noise impacts' (EPA 1995). The EPA's response to the proponent's non-specific approach to commitment development was to recommend a condition that limited the proponent's noise production to specific levels. In this instance the EPA's recommendations appeared to be a precautionary measure aiming to prevent possible future breaches of the EPA objectives where the proponent failed to provide quantitative data where requested.

The case study examining the management of declared rare fauna *Hemigenia exilis* at the nickel-cobalt mine was an example of a case where the EPA did not specify any particular measures for the issue. Here the EPA accepted
the proponent's commitments in full and simply added the recommendation that the proponent produce 'management plans and strategies for the management of Hemigenia exilis' (EPA 1996b). This reflected the importance bestowed by the EPA while giving the proponent freedom in how they would satisfy this condition. The EPA regarded the proponent's commitment 'to develop a management plan for Hemigenia exilis' to be 'highly commendable' (EPA 1996b) although it was essentially no different from the commitments made by the proponent for the coal mining project, but for which the EPA attached some additional prescriptive conditions.

This discrepancy of behaviour may relate more to the quality of the EIA document produced by each proponent that to the wording of the specific commitments. In both cases the proponent stated an intention to develop a management plan. The proponent of the nickel-cobalt mine, on the one hand, provided quantitative data regarding expected numbers of plants lost as a result of the project while the coal mining proponent didn't provide quantitative predictions or mitigation commitments regarding noise levels despite this issue having previously been identified as a significant aspect of the project. EPA recommendations for these cases appear to have been issued in relation to the quality of the proponent's EIA document and the level of commitment made by the proponent. One of the objectives of EIA in Western Australia is to 'ensure that proponent's take primary responsibility for protection of the environment influenced by their proposals' and the EIA regulations direct proponents to describe management arrangements and 'commitments to ameliorate those impacts to the most practical extent possible' (Government Gazette 2002). These examples support this and suggest that the EPA prefers proponents to make appropriate environmental management commitments in their EIA document, and only adds its own recommendations for further mitigation measures when these are perceived to be inadequate or inappropriate. This notion was supported by some of the interviewee comments in this study.

All interview respondents recognised that both EPA conditions and proponent commitments are legally binding. While some of the interviewees perceived 'no difference' between the two, EPA recommendations were suggested by others to be a means of 'focussing management on the issues that are of a higher priority'. This was perceived as being recognition that where 'the EPA has specific concerns as to the nature of the proposal' they may 'set conditions for key environmental issues of the project'. A theory proposed by two of those interviewed suggested that where the EPA does make recommendations for specific approval conditions, may be 'a reflection that the proposal is not up to scratch'. For this reason the proponent would benefit if they were seen to address all possible issues in commitments made in their EIA document. A proposal appeared more likely to proceed in a manner reflecting the proponent's proposed methods of mitigation if they were perceived to have addressed all the concerns of the EPA effectively in the first place.

The process of developing the commitments was perceived by one interviewee as being important for proponents: 'It forces the proponent to go through the mental process of setting out what is important.' This relates to another statement by a respondent who said: 'the company knows how things are going to work; it's their equipment and their environment they are working in. Any approach they take to managing the impacts of the project should be made by them consistent with their best principles'. This statement sums up the arguments raised by those interviewed with regards to who proposes the approval conditions. All interviewed perceived the proponent as being responsible for making commitments as to the approach used to manage the impacts of the project. The role of the EPA in this case was to ensure that all important issues are addressed satisfactorily; this is reflected in the formulation of recommendations for the case studies.

A perception that approval conditions should be the result of 'careful and extensive consultation' was also raised in the interviews. This involves consultation with all stakeholders, and includes: the public; the proponent; and the regulatory body. Consultation with stakeholders was identified by Morrison-Saunders et al. (2001b) as being an important aspect of any regulatory agency. In developing proponent commitments, the consultation that occurred with 'other government departments such as the Department of Minerals and Petroleum Resources or the [EIA regulator]' was also perceived by one interviewee as being an important part of the development of approval conditions. This process of consultation allowed information regarding important issues to be assessed and improves the quality of the EIA process overall.

**Does the legal backing of an approval condition influence the proponent's implementation of the condition?**

Interestingly, none of the interviewed proponents perceived the legally binding nature of approval conditions to be important. On the other hand, the interviewed staff of the EIA regulator all indicated that legally binding approval conditions were of importance in influencing a proponent's environmental management. This contrast in views warrants further examination.

A recognition that the EPA rarely prosecutes for breaches was identified in the interviews. One respondent suggested that this was due to a lack of resources and stated that, 'it is better not to [prosecute] if you cannot'. This may account for the perceived lack of importance that the legally binding nature of approval conditions has for proponents. A suggestion that the pressure exerted by the approval conditions arises more from public pressure was also put forward by one representative from the EIA regulator.

Public pressure with regards to the binding nature of approval condition relates to the 'knowledge that a proponent's failure to meet set conditions would cause public backlash'. A fear of negative public perception was identified throughout the interviews and case studies as a frequent source of pressure acting on proponents. This source of pressure will be examined later.
To be legally enforceable, approval conditions must be worded in a way that is clear and concise. In the words of one EIA regulator: 'they must clearly state who, what and when environmental management practices must be performed', otherwise enforcing and auditing the conditions may be difficult. Increasing the legalistic style of language used for approval conditions, however, was perceived by another EIA regulator as being counterproductive. It was suggested that the more legalistic approach could decrease the public's understanding of what the approval conditions aim to achieve and may therefore reduce the effectiveness of the public as an auditing body.

A benefit of having legally binding approval conditions follows on from a previously discussed point that they provide a means of resolving internal disputes within proponent companies. The legally binding nature was perceived as being of importance to one environmental manager when dealing with upper management and was referred to as 'a legal fall-back position'. In this case the legally binding nature may infer greater importance for environmental management when arguing against profit-oriented upper management.

A clear link between the legally binding nature of approval conditions and the proponent's environmental management practices was not identified for each of the case studies. However, two of the cases presented interesting situations of relevance here.

The coal mine project presented an example in which the wording of proponent commitments in their EIA document were non-committal using phrases such as 'as far as possible', 'impacts are minimised', 'minimisation of disturbance' and 'if necessary and practical' (Western Collieries Ltd 1991). In a situation where the statements made by the proponents may need to be enforced through the legal process, these statements would make this difficult or impossible. Interestingly, the EPA subsequently assigned a prescriptive condition for noise emitted by the mine. This condition was worded in a manner that was clearly enforceable and would render a breach of the approval conditions legally punishable.

The mineral sands mining project was a case in which the legally binding nature of approval conditions was observed to have a significant influence. As discussed previously, an appeal against a revised mining proposal was upheld due to the legally binding nature of the original EIA approval condition. Hence the legal status of EIA approvals in Western Australia would appear to be advantageous.

Interestingly though, the proponents interviewed for this case study did not perceive the legally binding nature of approval to be especially important to their daily environmental management. However, all interviewed proponents did suggest that the legally binding nature of approval conditions is still important as some companies may require this to encourage compliance. Similarly, interviewees from the EIA regulator suggested that a value is placed by the agency on the legally binding nature of approval conditions.

The legal backing of an EIA system has been identified in the literature as being an important aspect of a good EIA system (Wood 1995, Sadler 1996). While support for this position was evident from the EIA practitioners interviewed in this study, it was also indicated that the legally binding nature of approval conditions was not needed to ensure their implementation. This notion is consistent with the findings of Morrison-Saunders and Bailey (1999) who found no correlation between the legally binding nature of EIA mitigation measures and subsequent implementation. At least one case, however, demonstrated that the legally binding nature of approval conditions had a positive effect on the environmental impacts of the project. A possibility recognised by all EIA practitioners interviewed in this study however, was that regardless of the good intentions of the majority, there may still be some proponents that need the threat of prosecution to ensure they implement the objectives of the approval conditions. Hence justification for having legally binding EIA decisions is provided.

**Does the nature of a proponent affect their response to approval conditions?**

Insufficient case studies were examined in this study to fully explore the effect that variations in proponent size and experience with EIA may have on the implementation of approval conditions. However, the EIA practitioners interviewed provided some interesting comments on this matter.

Both proponents and EIA regulators suggested that the experience of proponents was integral in directing their response to approval conditions. One proponent suggested that 'in the early days approval conditions set the performance bar but now that the project is established we don't refer to them any more'. Another proponent indicated that they were new to their environmental management position and were still acquiring knowledge of the project's environment practices. In daily management this proponent indicated that approval conditions played an important role in directing their daily activities with staff. This indicates that the experience of staff may have an influence on how approval conditions are used in practice.

The experience of a proponent may go beyond that of individual staff members and may extend to the entire project. When asked to rate the influence approval conditions had on their project's environmental management, one proponent gave the lowest rating for the established project they were managing. The same proponent went on to state that for a separate project they were also managing they would attach the highest rating. When asked to clarify this point the respondent indicated that the approval conditions 'directed our initial environmental management of the project but as the project became established the ongoing influence of approval conditions became less important'. This suggests that the role approval conditions played was important not only with new staff but also with new projects.

With regards to the nature of the proponent, the attitudes and 'cultural climate' of the company may also have a great
influence on the proponent's environmental management practices. EIA regulators and proponents perceived that 'the majority of proponents want to perform responsible environmental management'. For these proponents approval conditions can be used as a reference to focus their environmental management onto the most important issues. Not all proponents had this approach to environmental management though. Some upper management was perceived to have a 'bunker mentality' in which environmental protection was an obstacle in the way of the company's profit. The comment was made that in situations in which 'the proponent has a negative view of environmental management, getting effective management to occur is more difficult'. Being aware of a proponent's attitude to environmental management appears important, therefore, when EIA decision-makers set approval conditions; a negative attitude may mean the proponent may not effectively implement the approval conditions. As discussed previously, having legally binding approval conditions may also be necessary to ensure appropriate environmental outcomes are achieved.

The size of proponent companies was suggested to be a possible relevant factor in some of the interviews although no specific examples were provided. This may refer to the greater resources available for a larger company's environmental management as suggested by Morrison Saunders et al. (2001a). Neither the interviews nor the case studies, however, provided any noticeable distinction between proponents and projects of different sizes.

The nature of a proponent may be relevant to the setting of approval conditions. Being aware of variables such as a proponent's previous experience with EIA and their approach to environmental management may improve the effectiveness of approval conditions by allowing EIA decision-makers to incorporate these variables into the setting of future approval conditions.

**What other factors influence the proponent's environmental management practices?**

There were a variety of other factors identified as having some influence on the proponent’s environmental management practices. Of these, the factor suggested by all of the interviews to have the greatest influence was public pressure. In the words of one proponent 'the public cannot be underestimated, they can shut you down.'

During the pre-decision stages of EIA, the public may identify points that they consider important. This may result in the production of proponent commitments aiming to address these concerns. In Western Australia, after the public review period, the proponent is invited to respond to the public submissions received, prior to review by the EPA. If the proponent does not adequately address public concerns, the EPA may recommend additional approval conditions accordingly. The attachment of prescriptive approval conditions for noise management for the coal mining project was an example of public influence proceeding in this manner. The influence of the public was not limited to the pre-decision stages however; the post-decision stages of EIA were also affected by the public.

When the issues associated with a project were perceived by the public to have some influence on them they made a greater effort to ensure that these issues were managed effectively. For ongoing environmental management this related to a means by which monitoring of an impact can be performed. For the coal mine project, auditing of environmental management measures was performed by the Collie Coal Mine Environment Committee: a coalition comprising of local industry representative, government departments and members of the public. This provided a forum in which complaints regarding the quality of a proponent's environmental management could be made and discussed. Interviews with EIA regulator staff indicate this was a useful method of performing auditing of the project as 'the public live or work locally and so they are aware of the local issues'.

A perception identified by one proponent was that the influence of the public was to 'make us work a lot harder with regards to the quality of our environmental management'. This extra effort was not always perceived to be positive. The same manager suggested that the public may 'shift the focus away from the important areas'. This was due to the idea that the 'public is more concerned with to their own aesthetic pleasure than with environmental issues'.

Auditing of compliance with and implementation of approval conditions, whether it was performed by the proponent (1st party or internal auditing), an external body such as the EIA regulator (2nd party auditing) or a body involving the public and/or other stakeholders (3rd party auditing), was identified by interviewees as an 'important factor for ensuring that approval conditions are implemented effectively'. The effects auditing had were to 'ensure that the conditions are implemented and to ensure they are having the desired results'. All interviewees strongly perceived that auditing was an important aspect of EIA.

External auditing of EIA approval conditions in Western Australia is undertaken by the Audit Branch of the EIA regulator as they are the body responsible for ensuring that approval conditions are implemented effectively. However, other regulatory bodies such as the Department of Minerals and Petroleum Resources may also attach licenses that require compliance checks. For example auditing of approval conditions for a synthetic rutile plant resulted in detection of a breach of the Noise Abatement (Neighbourhood Annoyance) Regulations 1979 (WA) associated with operation of the main exhaust stack (Woodward-Clyde 1995). This led to corrective action being taken by the proponent which included the installation of silencing equipment, and this issue was thereby resolved to the satisfaction of the EIA regulator.

Although external auditing was identified as being important, proponent and EIA regulator interviewees alike suggested that the effectiveness of external auditing in Western Australia may be limited by the shortage of resources available to the Audit Branch.
Internal auditing by proponents was one method identified whereby this lack of external auditing resources could be overcome. Internal auditing is the practice by which a proponent self-evaluates their environmental management practices to ensure that they remain in compliance with any regulations, including approval conditions, and that they are effective in achieving their goals. It may be a purely internal process or extend through to external accreditation associated with environmental management systems. Internal auditing was perceived by several interviewees to be very important for effective implementation of approval conditions. Not only does internal auditing detect breaches as they occur, but it also enables the continual improvement of environmental management practices; again a feature of environmental management systems such as the ISO 14,000 series.

Internal and external auditing were both perceived to be important in ensuring that approval conditions are implemented and that they are functioning effectively and both forms appear to be influenced to some extent by public pressure. In conjunction with legal pressure, the influence of the public appears to be especially influential to the proponent's implementation of approval conditions; a result that is consistent with the views of Wood (1995), Sadler (1996) and Morrison-Saunders (1998) who identified public influence as an important aspect of EIA. Public pressure appears to be of significant importance to development and influence of approval condition as it is for the rest of the EIA process.

CONCLUSIONS

This study has provided evidence that approval conditions do have some positive effect on proponent's environmental management practices and offers some useful lessons for EIA decision-makers. No difference was found between conditions recommended by the EPA and those originating as proponent commitments. However, the nature of approval conditions, with regards to their prescriptive or flexible nature was perceived to have some influence. A preference for process oriented conditions prescribing the development of management plans was indicated by proponents and EIA regulators alike. The nature of the proponent company, with regards to their experience with the EIA process and project management also appears to have some influence on their response to approval conditions. The legally binding nature of approval conditions appears to have some influence although this appears less important than the influence of public pressure, both before and prior to project assessment. Follow-up activities in the form of compliance audits, whether 1st party checks carried out by proponents internally or 2nd party audits by EIA regulators were seen to be important to ensure that approval conditions were implemented as intended. Due to the exploratory nature of this study however, a conclusion as to the magnitude of each of these factors cannot be determined.

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