

Managing Mining Contracts

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INTRODUCTION

Contractors have penetrated all areas of the Australian mining industry over the last 15 years. The process started in the WA gold and nickel mines and has since spread around the nation to iron ore, base metals and coal mines.

The mine contracting industry has progressed from tentative beginnings in the 80s to the current situation where it is now providing high standards of professional management, safety and workmanship with competent people and high quality plant and equipment.

People are the most important link in the mining contract management chain. This applies equally to both the principals and contractors in the mining industry. The key is competent people on all sides who can manage the projects well and build effective working relationships.

The steps to successfully managing mining contracts include:

1. Starting with an effective contract document;
2. Understanding how the contractor has priced the work;
3. Recruiting competent and experienced personnel;
4. Establishing thorough systems to document and record all aspects of the project;
5. Establishing systems to promptly and fairly deal with:
 - Progress payments,
 - Other monetary claims,
 - Extensions of time claims, and
 - Variations.
6. Establishing a complete mine development program and keeping it up to date; and
7. Both parties understanding the other's business practices

THE RISE OF CONTRACTING

Mining contractors were practically non-existent in the Australian mining industry until the 1950s. Most mining companies sank their own shafts and undertook any other capital development that they required. Major mines started to use contractors for shaft sinking projects from the 1950s onwards. Examples of this in the hard rock sector included Mt Isa, Mt

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Lyell, Leinster and Mt Charlotte. The unions in Broken Hill kept contractors out of all the major shaft sinks there. Allied Constructions were active in the coal industry through the same period sinking shafts in the Newcastle and Wollongong areas.

The WA gold boom transformed mining industry attitudes towards the use of contractors in the mining industry. Many of the small gold mining companies born in the 1980s operated with minimal capital. These companies preserved their capital base by using earth moving contractors to mine their open pits. Intense competition kept contract mining prices to a minimum with the contractors usually mining the ore bodies at less cost than the companies could have themselves.

During the 1990s, many of the gold mines have reached the lower limit of their open pits and have commenced underground mining. The use of contractors has continued as these mines have gone underground. As a result, the majority of mines in WA are now using contractors to carry out their mining work.

Based on the success with contractors in the gold sector, mining companies introduced contractors into the newest generation of iron ore mines in the Pilbara region of WA. Some of these mines are producing up to 10 million tonnes per annum.

Other very large scale open pit operations are also using contractors now. Some of the most notable include the Super Pit at Kalgoorlie, Lihir Island in Papua New Guinea, Mt Keith, Boddington and Ernest Henry.

WMC provides one of the best examples of the mining industry's embrace of contractors. They led the way with the introduction of contractors to their new nickel mines in the 1980s. This had the effect of changing the prevailing work practices in these new mines at Kambalda and focussed mine site managements and their workers on productivity and costs.

Following the early successes at Kambalda, WMC used contractors exclusively at the Leinster Nickel Operations and Agnew Gold Operations when these were started in the late 1980s. In 1996, the wheel turned full circle when WMC introduced contractors to all their Kambalda and St Ives mines.

Prior to this change, the Kambalda nickel operations had suffered industrial relations problems as difficult as any in the coal industry. The introduction of contractors has given WMC far greater flexibility to manage their mines more productively.

The eastern Australian coal industry has also grasped the contracting nettle in the 1990's. The use of contractors in both surface and underground mining is increasing. Thiess have underground mining contracts at Oakey Creek and Newlands and surface coal mining contracts at Collinsville, Burton Downs, South Walker Creek and Mt Owen. There are now several other surface mines using contract mining in the Hunter Valley and in Queensland. In most cases, the mining companies have achieved significant productivity gains and cost reductions.

Other underground coal mines in the Bowen Basin are using contractors to increase their flexibility. Oakey Creek has gone as far as to have contractors operating longwalls and development sections. They, and a number of other mines in the Bowen Basin are also using contractors to carry out a wide range of underground activities such as longwall moves, belt installations and miscellaneous construction activities.

In 1997 Anaconda Nickel introduced BOOT (Build - Own - Operate - Transfer) contracts to the mining industry. They are using BOOT contracts to provide fixed plant for the Murrin Murrin laterite nickel project in WA. Outside of the mining industry, these types of contracts are gaining in popularity with State governments around Australia for the provision of infrastructure.

GENERAL OBSERVATIONS

Professionalism

The fledgling hard rock mine contracting sector's professionalism left a lot to be desired in the 1980s. The quality of many hard rock mining development projects was poor. The focus was entirely on speed and profit at the expense of

workers health, safety and standards of workmanship. Following a strong industry push around Australia this decade, standards have improved dramatically. Australian contractors are now on a par with the best contractors around the world and stand up well in comparison to the better mining companies.

This is not a claim that could have been made 10 years ago. In particular:

- Health and safety of workers is systematically managed;
- Workers are well trained and competent;
- Plant and equipment are of a high standard; and
- Efficient systems for maintenance have been developed.

Occupational health and safety

The gradual improvement in standards of occupational health and safety in the contracting industry has mirrored the increasing professionalism of the contractors. The standards of training and safety management among the major contractors is on a par with the major mining companies. This is now reflected in the excellent safety records of the main contractors. Lost time injury frequency rates have come down from rates in the 100s ten years ago to in some cases less than 10. There are some underground mine sites operated by contractors in WA that have operated for several years without an LTI. At least one of the main contractors is adopting leading edge safety management systems such as the Positive Attitude Safety System (PASS) and the ISRS safety system.

Variation in rates

Rates appear to be remarkably similar across many of the major hard rock mining projects around the country. Tendered rates will vary significantly on any particular project. However, the winning rates across many projects are quite similar. This reflects the realities of the market place where most of the major contractors have similar cost structures.

The variation in tendered rates for any particular project will reflect the varying judgements of risk and desire to win the work from each of bidders. In some cases, inexperienced contractors will underbid work due to omissions in their cost calculations or underestimation of the difficulty of the work.

In the coal sector, rates will vary more as there is less experience with major mine development and operations contracting on hard money. Rates should stabilise as the contractors gain more experience in the coal industry.

ESTABLISHING THE CONTRACT

Writing the contract

One of the greatest causes of problems and disputation on projects is poor contract documentation. Typically, many contracts are ambiguous, have repetitious and contradictory clauses and incomplete or incorrect specifications. As a result, the contract is of little use to the people on site who are managing the work. About the only part they will refer to is the Schedule of Rates to determine the monthly progress claim. This is not a problem if nothing significant goes wrong. However, if a seriously expensive issue arises that is not clearly covered by the contract document, disputes and deteriorating relationships on site often result.

An effective contract provides an easily understood guide book to all the parties on the project. It will clearly define for both parties their powers, entitlements and duties, who does what, how the work is to be done and the standards required.

To achieve the above goals, an effective contract must be:

- Clear;
- Consistent (no ambiguities);
- Competent;
- Complete
- Certain;
- Conclusive; and
- Capable of being enforced.

Superintendents and project managers must know and understand the contract if they are to represent and protect the interests of their respective employers. It is disturbing to hear a superintendent or project manager say *“Oh I don’t worry about the contract. We threw it in the bottom draw at the start of the job. If we have any problems here, then we sort them out as we go along”*. One may survive with this attitude so long as nothing goes seriously and expensively wrong. However, in the event that a dispute arises over significant amounts of money and either party hasn’t fulfilled its obligations under the Contract, then that party may well find itself in breach of contract and liable to the other party.

When difficulties arise on the job, both parties need to be able to refer to the contract for guidance in resolving the issues. This will usually come down to who pays. In these situations where the contract has to be interpreted, the fundamental question to be asked is *“what does the contract say?”*. If it is an effective contract, it will usually provide the guidance needed to resolve the issues.

Having said all of the above, situations will arise that not even the best contract will have anticipated. In these situations, there is no substitute for good will and fair dealing between the parties. The fundamental question to ask in this case is *“what is fair?”*. When tempted to be “hard nosed”, one should always remember the old adage that *“what goes around comes around”*.

Role of the lawyers

Contrary to popular opinion (of engineers), there is a role for lawyers in forming effective contracts. Too often, engineers with little or no legal or contractual training will modify standard form general conditions of contract with absolutely no appreciation of the consequences of their actions. In this case, the lawyers are not involved until the project has ran into major difficulties and the parties are talking about serious claims.

Engineers should consult experienced construction lawyers for advice when they want to modify standard form general conditions of contract. The ideal lawyer in this case is one with broad construction litigation experience. They will have a sound appreciation of the pitfalls and problems that can be caused when modifying conditions of contract.

Using standard form conditions of contract

Most experienced practitioners in the construction fraternity will advise clients to stick as closely as they can to standard conditions of contract. The AS 2124 series of standard form general conditions of contract have traditionally in the Australian construction and mining industry.

The advantages of such standard forms are that:

- All the clauses have been tested in court over the years;
- The document has been refined over the years through several editions to remove ambiguities, inconsistencies and contradictions;
- In the event of disputation, experienced contract professionals advising the parties all know and understand what the clauses mean; and
- They are fair to both parties.

Mine owners who have had unfortunate or unpleasant experiences with a contract gone wrong will often be tempted to heavily modify their next contract in their favour. Such temptations should be strongly resisted. The result more often than not is a clumsy document that is full of inconsistencies, ambiguities and contradictions. The author has had to administer some over these contracts at different times.

The standard form contracts provide an astute superintendent with all the power he needs to effectively manage a contract. Clauses 33.1 and 35.2 in AS 2124 provide the superintendent with all the powers he needs to deal with a contractor who is failing to perform. Those who heavily modify standard form contracts to improve their positions would do better to more effectively manage their contracts rather than to rely on onerous and unfair contracts.

Negotiating effective contracts

An effective contract is one that is fair to both parties and meets the criteria set out above. A contract will be seriously flawed from the start if it fails to meet these criteria.

In the author's experience, five is the optimum number of contractors to invite to tender after exhaustive preselection evaluations have been conducted. The cost of tendering is so great that it is grossly unfair of mine owners to invite contractors to bid for work when they have no intention of awarding them the work. With five tenders, a wise bid evaluator will normally discard the highest and lowest bids and negotiate with the three tenderers in the middle price range.

The aim of the mine owner should be to select a contractor who has a proven track record in the type of work to be carried out, can bring competent and capable people, suitable equipment and a well resourced management team to the project and has fair prices for the work to be carried out.

Having narrowed the negotiating down to the preferred tenderer who meets the above criteria, the shrewd and wise mine owner then spends as long as is required in discussion with the contractor in order to completely understand how the contractor has priced the work, what is and isn't included in the rates and how contractual differences will be resolved once the project is underway. It is important to reach an understanding up front as to how the thorny issue of claims will be dealt with. Many people put their heads in the sand and pretend that problems won't happen on their project. In other words, it's vital that the mine owner gains a thorough understanding of how the contractor does business.

A "partnering" style of post award workshop can be very useful to help the parties and their staff understand what is driving the other side and to start to build the ever so important personal relationships that will either enhance or plague the project.

Mine owners who automatically chase the lowest bid without regard to all the other issues that may affect the project often finish up with a more expensive project than they would have had they followed the process outlined here.

PERSONNEL

Need for competence

The key to successful contract management is the presence of competent people on both the mine owner's and the contractor's teams. When competent people are present on a project, problems will nearly always be resolved; the work will be well planned by the mine owner and well executed by the contractor.

Projects may survive inadequacies on the mine owner's side but not in the contractor's team. A competent contractor can often compensate for deficiencies on the other side. Unfortunately, disaster will often strike if the contractor's team does not know what it's doing.

The first casualty when competence is lacking is trust and cooperation between the parties. This is because each party will be blaming the other for all the problems that will inevitably be starting to trouble the project.

Role of superintendent

The superintendent's role is to manage the work under the contract. The responsibilities placed on the superintendent go to the heart of effective contract management. The role under most forms of construction contract is not only to be the mine owner's agent, but also to be an independent certifier of the value of work done under the contract.

The mining environment is a particularly difficult one for superintendents to operate in. This is due to all the unknowns in underground mining. Superintendents have to call on all of their experience and knowledge of mining, contracts and people, usually at the same time, when something has gone seriously wrong underground. This is because the superintendent has to determine what went wrong, why it went wrong and who is going to pay to fix it.

Most mining contractors will acknowledge how important it is to have a superintendent who possesses the above experience. Major disputes have arisen when superintendents have not possessed this experience.

With respect to superintendents contract management experience, at least one of the major contractors active in the coal industry has related his extreme frustration to the author of having to deal with superintendents who had no contractual expertise and consequently were oblivious to the effects their decisions were having on the contractor under the contract. Contractors are placed in a very difficult position when an inexperienced superintendent is administering a contract poorly and adversely impacting on the contractor, ie costing them money. Most superintendents and mine owners get very agitated when contractors start talking about claims.

In fact the worst tag any contractor can get is be labelled "claims conscious". Yet if they are losing money due to the superintendent's poor administration of the contract, they are entitled to compensation. Most contractors will endure this situation until the pain gets too expensive to bear in the interests of maintaining the relationship with the mine owner and his superintendent.

Superintendents must also be aware of how dependent the contractor is on them, as the mine owner's agent, for the timely supply of drawings, directions etc. required for the efficient planning and execution of the work. Delays in this area are a major source of frustration to most contractors from time to time.

Another trap for young (and not so young) superintendents is in becoming an unrealistic perfectionist. It seems that many superintendents quickly forget the realities and difficulties in getting things done underground. They may demand perfection from the contractor when this is not practical at the time. This can lead to a lot of tension and poor working relationships on the job. An experienced superintendent working with the contractor will achieve far higher standards in the long run.

Importance of relationships

Effective working relationships are the key to effectively managing contracts from both the mine owner's and contractor's perspective. These relationships are built on competence and trust at all levels, particularly at the top. It is a very powerful model for the technical and supervisory staff on a project when they can see their bosses committed to working cooperatively to get the job done.

Poor relationships inevitably are a factor in most contractual dispute. Sometimes they can be a result of more fundamental problems on the project. At other times, they may be the root cause of the problems.

Difficulties in retaining a stable workforce

The last few years have been characterised by shortages of experienced staff at all levels in all facets of the mining industry. As a result, the demand for good staff (and their remuneration) has risen significantly, leading to greatly increased turnover.

The result is, that despite the contractor's best intentions, the staff they had committed to a project at the time they were awarded the tender may have left for greener pastures prior to, or during, the job starting. Such turnover may have an adverse effect on productivity.

It is not uncommon for principals to include strongly worded clauses in their contracts to the effect that the contractor cannot change any of his people without permission. The reality is that contractor's staff will often move on regardless of what is written in the contract. One way for mine owners to minimise these risks is, where practical, to select a contractor who has a low turnover of key staff. This can easily be determined from the resumes submitted in the tender schedules.

Contractor's manning levels

The manning levels contractors apply to projects may not be consistent with the outcomes desired by the mine owner in areas such as training, safety, road maintenance or grouting post grouted rock bolts. The requirement for these things will normally be written into the contract, but the contractor may not have the personnel on site to properly carry them out. It is very important that mine owners ensure the contractor has committed sufficient personnel to the project to do all of the things that they want, and are paying for.

This issue often arises in the areas of safety, training, environmental management and quality assurance. Contractors have been known to leave this work up to their Project Manager, Foreman or Site Engineer. In today's commuting environment on isolated projects, these people often do not have the time to adequately discharge these other responsibilities. This may lead to major disputation later on in the project if the contractor is failing his duty of care obligations or cannot verify the quality of the work done.

RECORDS

Advantages of good records

Good records are an essential part of effective contract management. They enable the parties to keep track of what has been directed, agreed, disagreed, gone wrong and been done on the job. The discipline involved in correctly documenting these matters aids clear communication and minimises misunderstandings.

In the event of disputes or differences of opinion, good records will allow differences to be quickly resolved. Where the records are poor, disputes flourish because it becomes one person's word against another. This is particularly significant in the area of variations to the scope, sequence of work, methods, procedures and latent conditions.

There will be turnover of staff on both the mine owner's and contractor's staffs during the course of the project. Good records allow new people joining the project to see what has gone before. In the event of problems, they can refer to the records to see the background to the issue in question.

Form of records

Records may comprise the following forms:

- Diaries
- Correspondence
- Meeting minutes
- Agreements
- Reports
- Plans and designs
- Databases and spreadsheets
- Photographs and videos

Contractual records

Contractual records are important to ensure that all parties are meeting their obligations under the contract. They will include registers and files for:

- Document transmittals;
- Site memos;
- Site instructions;
- Variations;
- Extensions of time; and
- Requests for information.
- Progress payments;
- Dayworks;
- Drawing register;
- Progress reports; and
- Minutes of meetings.

Quality assurance records

Quality Assurance records provide verification that the contractor's work is in accordance with the specifications. This is vital to the contractor if the mine owner later disputes the quality of the work.

QA records will include:

- Work procedures;
- Non conformance reports;
- Inspection and test reports;

Safety and training records

Safety and training records are vital to verify that the contractor's obligations under "duty of care" are being met. They also help to promote compliance with the safety management program in force on the project.

The following records should be kept:

- Personnel resumes and approvals to start;
- Training and assessments;
- Incident and accident investigations;
- Toolbox meetings; and
- Audits and inspections.

MANAGING THE CONTRACT

Meetings

Regular meetings are very important in the efficient management of mining contracts. They provide an excellent method of coordinating activities, and documenting progress, problems, agreements and other issues.

On major mining projects, daily coordination meetings are important. This is especially so when there is a lot of traffic in the mine entry and there are potentially conflicting activities to be coordinated. Key staff from the superintendent's team and all the contractors will normally be present at these meetings.

Weekly meetings involving all the contractors on the project are important on projects of all sizes. Minutes of these meetings should be written up and signed off by both parties within 24 hours. Provided they are circulated quickly, minutes provide an excellent record of the progress of discussions and decisions on a range of issues. In fact, minutes can be used to record a lot of matters that would otherwise require letters back and forwards between the superintendent and contractor.

Progress payments

Delays in paying progress claims can be a source of frustration to contractors. It is important that the superintendent has the resources to process the monthly claim in a timely fashion.

One trap that both parties should avoid is allowing discrepancies to creep into the progress claim between what the contractor has claimed and what the superintendent has approved for payment. Aggressive contractors have been known to push a welter of dubious claims in the hope of being paid for some of them in the final wash up. It is in the interests of both parties to put a stop to this nonsense as soon as it appears. By the same token, it is important that the superintendent settles valid claims quickly. The best policy when there is genuine good will on a project, coupled with an efficient contract document, is to settle all outstanding claims each month and not let them accumulate.

Unfortunately it often will not be possible to promptly settle claims when the contract clauses are open to more than one interpretation as to how the issue at hand should be valued. In this case, protracted negotiations are often required. This is especially so if prolongation costs could be an issue.

Claims

Claims are the dirty five letter word in the mining industry that most superintendents and mine owners dread. Fairness dictates that if the contractor has a valid claim under the contract, then the superintendent should pay it. Unfortunately this often does not happen, which then leads to distrust and deteriorating relationships.

The same superintendent who automatically rejects any contractor's "claim", irrespective of its merits, will often give the contractor a sympathetic hearing if the contractor asks "for help with a problem". Contractor's project managers would do well to follow this line. By the same token, superintendents must accept the contractor's right to give due notice of a potential claim under most contracts to ensure that time bars in the contract will not rule out future discussion of valid claims.

In the event that the superintendent still does not help, then it becomes a commercial judgement as to the merits of pursuing the claim.

The decision to go to litigation is never taken lightly by contractors in the mining industry. Even when they are in the right, they often run the risk of being tagged as a "claims conscious" or even worse still, a "litigious" contractor. Contractors who have won such reputations have found it difficult to win work in the mining industry.

Litigation in the mining industry to resolve claims has not been common in the past. Although claims often arose during mine construction projects, they were usually settled by negotiation. It was very uncommon for the parties not to resolve their differences. This was due in part to the small size of the mining community and the fact that many of the key players on both sides of the contractual fence had been educated in the same mining schools and received their early professional training in the same mining districts.

However, given the increasing size of mining contracts and the amounts of money at stake, disputes are on the increase. There are several major disputes in the WA mining industry heading for litigation at the time of this conference. In each

case, the contractors have lost a lot of money on the projects involved and they are seeking to recover some of their losses through claims.

Effective management of mining contracts by mine owners, superintendents and contractors is the surest way to avoid disputes and litigation.

Significant claims can arise early in major projects. They have in two out of the three projects that the author has managed in the last 5 years. There is an enormously positive spin off if the issue is resolved to the mutual satisfaction of both the parties. This is that trust is established early in the project, with major benefits to the project in the longer term. The contractor sees that the mine owner will treat him fairly when he has a legitimate problem and the mine owner sees that the contractor is not trying to "rip him off".

Variations

Poor management of variations is one of the greatest sources of problems on mining contracts. The types of variations likely to be encountered by superintendents include:

- Genuine mistake by the contractor;
- Latent conditions;
- Changing development or production programs requiring new levels of resources;
- Changing scope of work as a result of changing mine designs; and
- Other changes directed by the superintendent causing the contractor to incur extra cost.

It is not uncommon for all of these types of variations to occur on one project. In order to manage them properly, there is no substitute for the superintendent having a thorough knowledge of the contract and how to value the claims that can arise under it.

Thorough documentation and complete records are also vitally important if variations are to be well managed. They will ensure that misunderstandings are kept to a minimum and that all parties know what has and has not been agreed.

As a general rule, variations should be kept to a minimum. In the mining environment, this is often not possible. Changing ground conditions will dictate changes to mining plans and sequences. Thorough mine planning and scheduling by the mine owner will minimise the need for variations.

Careful structuring of the scope of work in the contract documents is vital to minimise variations. Contractors will quite happily tolerate all sorts of changes provided that their ability to work efficiently, cost effectively and profitably is not compromised.

Mine owners must be extremely careful how they handle variations in situations where their contractors are losing money. In this case, an unscrupulous contractor may be able to exploit loopholes in the contract to claw back some of the money they have lost. This is one of the reasons why it is so important to select a contractor who has sensibly priced the work, rather than the low bidder who has gone in expecting to make his money on the inevitable variations that arise in mining contracts.

Extensions of time

Extensions of time are a potential mine field involving Liquidated Damages (LDs), prolongation and acceleration costs. When the contract contains LDs, contractors must claim an extension of time when entitled to, in order to protect their position under the Contract. Otherwise the contractor may not finish the work by the date for practical completion. In this case the mine owner may deduct LDs from the contractor's payments.

It is rare to see LDs actually deducted in mining contracts. Usually there is enough fault on both sides to deter the mine owner from deducting them. Mine owners should be aware that where LDs are put into a document, the contractor will have made an allowance in the price to pay at least a portion of them. In other words, the mine owner is increasing the cost of the work by including LDs in the contract.

The other drawback of LDs in a contract is that they usually lead to overly conservative mine development schedules from the contractor. It is much easier to get a realistic schedule from a contractor if LDs are not an issue.

Many Superintendent's are unaware of their powers under Clauses 33.1 and 35.2 of AS2124 to order the contractor to accelerate if he is behind schedule. Used judiciously, these powers are far more effective than LDs in getting the job finished on time. On the other hand, if the superintendent uses these powers unwisely, then the mine owner may be exposed to a substantial claim.

The real problem for superintendents with extension of time claims is the spectre of prolongation costs lurking in the background. If the contractor is delayed and is granted an extension of time, then there may be an entitlement to payment for the extra time that the contractor will be on the job due to the delay for which an extension of time has been granted. An efficient contract document will contain delay clauses that clearly identify these costs, how they will be paid for and under what circumstances.

A superintendent may spend months resolving major delay claims when the contract document fails to address these issues.

Mine construction program

Managing the mine construction program is one of the superintendent's most important tasks. Most of the problems that arise on mine construction projects stem from the work falling behind program. One of the most important things a superintendent can do is to start the project with a thorough and realistic program that includes all the important activities.

It is not uncommon for the program in the feasibility study to be lifted straight into the tender documents for the mine development contract. Often these feasibility study programs are too general to be of use as a project and contract management tool. The problems for the superintendent in managing the contract are compounded when the contractor accepts or does not question the mine owner's unrealistic mine development program.

With the advent of powerful spreadsheet programs and A0 plotters, it is now possible to set up massive development programs with columns for each week of the schedule and a row for each development face. These schedules may contain hundreds of rows. The best way of establishing these programs is to provide a blank copy to the tenderers when the job is being bid. They can then fill in their estimates of advance of each face on a weekly basis. Doing this ensures that the bidders do not miss anything. During final negotiations with the preferred bidder, the weekly advance rates in the mine construction program can be reviewed and amended as required to ensure the contractor's commitment to the program. As the project proceeds, the actual advances can be entered into the spreadsheet each week against each face. The whole program is then updated at the end of each month allowing any problems to be identified and addressed. The need to regularly update the program and re-forecast the program is vitally important.

INFRASTRUCTURE STRATEGIES

The provision of infrastructure is an issue for the mine owner rather than the superintendent. The contractor normally provides the mobile plant and people for a mine development contract. With regard to infrastructure, either party may provide:

- Power generation;
- Power reticulation;
- Pump stations;
- Main vent fans;
- Magazines
- Workshop;
- Bulk fuels storage;
- Offices; and
- Camp;

The advantage to the mine owner of the contractor providing all this infrastructure is that it minimises the capital commitment by the mine owner to the project. This can be a significant advantage to some mine owners. However, they must remember that the more the contractor provides, the greater the disruption to the project if the contractor is changed.

TRAPS FOR THE UNWARY

The items in this section list some of the problems that principals, superintendents and contractors can create for themselves during a mine construction project.

Unrealistic program

Both the mine owner's feasibility construction program and the contractor's tender program have been known to be quite unrealistic.

When the program is too ambitious, the inevitable delays as the project progresses will cause significant stress to all parties, particularly when the process plant is ready to go and the mine is not yet producing ore or coal.

The opposite problem can also occur when the program is too conservative. This can happen when the contract contains LDs and the mine development program in the contract is very conservative to protect the contractor. The problem then arises where the site people for both parties measure themselves against the conservative program in the contract rather than a realistic one.

Failure of contract to address delays

In the event of major delays, there should be a delay clause in the contract that pre-agrees payment to the contractor for all the fixed costs, direct plant and equipment costs and material costs. Such a clause simplifies the resolution of major delay claims. On the other hand, the absence of such a clause may lead to disputation in the resolution of major delay claims. At the very least, it may take the superintendent and contractor months to resolve how to pay for the delay.

Contradictions and ambiguities in the contract

Poor contract documents are the bane of superintendent's and contractor's lives on a major mining contract. If contradictions and ambiguities are present in the contract they may lead to serious disagreement as to the interpretation of the contract. Even with goodwill, a lot of time will be wasted in resolving how to fairly interpret a poorly written contract.

Failure of the parties to control their site representatives

Two not uncommon scenarios are:

- An aggressive project manager, out to make his name, causes unnecessary conflict with the superintendent and is unproductive and uncooperative; or

- Alternatively, the dictatorial superintendent gives instructions that cause the contractor to incur extra cost which leads to claims and disputes

In either case there will be a break down of site relationships to the detriment of both parties and the project itself. It is therefore important for senior management on both sides to be aware of potential personality conflicts on the project and to control their representative where necessary.

Not resolving claims

Failure to resolve contractor's claims in a timely manner is one sure way for superintendents to create very real problems for themselves. It is not uncommon for superintendents ignore claims in the hope that they will go away. All that happens in this case is that there is a large backlog of claims to be resolved at the end of the project. Not only that, but key relationships and trust will have been steadily deteriorating as the claims are left unresolved.

It is in the best interest of all parties to ensure that claims are resolved promptly and not left to fester.

Lack of records

Good records are vital to all parties on a mine development project. Particularly when something has gone expensively wrong. Without complete records, it is difficult for a contractor to convince the superintendent that there is a valid case for extra compensation for the problems on the project. By the same token, it is difficult for a superintendent to properly assess a contractor's claim if there are incomplete or poor records of the events.

Many disputes arise over what has or has not been directed by the superintendent at various times. Complete records of all directions will avoid such disputes and the damaged relationships that result.

With contractual correspondence on site such as memorandums, instructions and document transmittals, the author strongly recommends to all parties that the recipient countersigns the document to acknowledge receipt of the document. This can avoid a lot of problems down the track if documents are misplaced.

No financial incentive in contract to complete certain work

Some types of work are built into the contract rates and incur no financial penalty if they are not completed by a particular time. Classic cases of work that may contain no incentive for completion are grouting post grouted rock bolts (HGB's) and paving decline roadways in hard rock mines.

Incentives for completion of these tasks can be built into the contract rates. The most effective incentive is to withhold payment until the work in question is completed. This will not cause problems provided that the rules are clearly spelt out in the contract before the work starts.

Without these incentives, it will be a constant battle between the superintendent and contractor to get these jobs completed. This battle can be intensified when the contractor is working on very low margins and is struggling to make a profit. A not uncommon scenario here is for the parties to argue for months about the unfinished work. In the end, the superintendent in frustration, withholds significant amounts of money from the progress payment in an attempt to force the contractor to complete the work. As a result the relationships on the site deteriorate even further.

Contractor's manning levels

Hard nosed mine owners must remember that the only way most contractors can reduce their costs is to reduce the resources committed to the project. In particular, the pressure will usually be on contractors to reduce their staff on the project. This can impact on the contractor's ability to achieve the levels of safety and quality demanded by the mine owner.

A popular cost cutting measure in the past was to have the shift supervisor working as a dedicated operator on the crew, usually as the jumbo operator in hard rock situations. Depending on the complexity of the operation, the quality of the supervision and safety on the job can suffer when the supervisors do not have time to ensure that their "duty of care" responsibilities are being properly addressed.

Contractor losing money

Superintendents beware! A contractor losing money on his job will usually lead to all sorts of problems. Contractor's head offices quickly forget that it was their aggressive bidding for the contract in the first place that probably led inevitably to the losses on the job. Instead, they will put their site managements under immense pressure to increase revenue, which can lead to "corner cutting" or innovative claims.

CONCLUSIONS

The success of the contracting systems can be summarized as a set of recommendations as follows:

To Mine owners:

- Start with an effective contract;
- Carefully select the contractor;
- Select the superintendent with just as much care; and
- Ensure the superintendent establishes and maintains a good working relationship with the contractor.

To contractors:

- Ensure a good working relationship is established and maintained with the superintendent and mine owner; and
- Resource the job to meet all the obligations under the contract.

To superintendents:

- Manage the contract fairly and consistently;
- Be wary of perfectionism; and
- The standard you set is the standard you get.

To all Parties:

- Recruit competent and experienced people;
- Train them in contract management; and
- Consciously develop relationships and trust.

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