

ABANDONMENT COST, FINANCIAL ASSURANCE AND PRESENTATION OF THE DOCUMENT.

Abandonment cost :

Determining the cost associated with closure and accruing these costs during the life of the mining operation is the fundamental part of closure planning so as to ensure that there are sufficient funds to close the operation and that closure cost do not become a burden at later parts of mine life. The closure plan should provide cost estimate for progressive rehabilitation on five yearly basis and for final closure activities including post closure maintenance and monitoring exercise. The cost for estimation for final closure should be initiated sufficiently in advance (a least 2 – 5 years) before the final closure activities start as by that time there is sufficient site specific information and data available. The closure cost can be estimated reasonably based on the present market value.

The closure cost though be indicative only but can be based on broad industry experience.

The closure cost should be reviewed regularly to reflect changing circumstances. While estimating the cost of abandonment different activities required for reclamation and rehabilitation, maintenance and monitoring including post closure monitoring and another administrative expenditure related to the closure operations should be accounted for as the objective of providing a financial provision is to ensure that the adequate funds are available at the time of closure. While determining the closure cost the following items and activities should be the part of estimation of closure cost.

1. Decommissioning/demolition
2. Removal of infrastructure
3. Removal of equipment and heavy machineries.
4. Site safety
5. Remediation/mitigation measures
6. Reclamation and rehabilitation of workings
7. Maintenance/monitoring during and after closure operation.
8. Retrenchment and re-location cost.
9. Research & Development.
10. Administration/management.

1. Decommissioning/demolition.

This may include the cost of dismantling, demolition and disposal of buildings i.e. structures and foundation of administrative, residential and service building, mineral processing plants, etc. and support facilities i.e. electrical transmission lines, water and gas pipes, water work sewer systems, telephone cables, etc.

2. Removal of infrastructure :

All the infrastructure created in the mining areas which are not required retained are to be dismantled and removed. The expenditure to be incurred on the following items should be accounted for.

- (i) **Transportation infrastructure** : This may include roads, rails, ropeways, belt conveyors, bridges, culverts etc.
- (ii) **Electrical infrastructure** : This may include electrical equipments, cables, transformers, electrical transmission lines, etc.

3. Removal of equipments and heavy machineries :

The expenditures to be incurred on removal of mining equipments i.e. pumps, hoists, fans, motor vehicles, drills, shovels, compressors, mineral processing equipments (crusher, grinding mills, flotation cells, etc.) and other equipments, if any are to be taken into account.

4. Site Safety :

The expenditure to be incurred may include the following activities :

- (i) Sealing of underground opening (Shafts, adits, inclines).
- (ii) Providing stability to pillars, stopes and other underground structures and subsidence areas.
- (iii) Safety measures required to prevent access to open pits, voids and underground openings i.e. providing fencing, safety walls, bunds, etc.

5. Remediation/mitigation measures:

Under this head the cost to be incurred for control and abatement of pollution and Providing physical and chemical stability to the accumulation areas is to be considered. This may include the following activities :

- (i) Providing/constructing bunds, check dams, garland drains, retaining walls, diversion channels, sedimentation tanks, etc.
- (ii) Providing physical and chemical structure stability to the tailing dams, dumps etc.
- (iii) Reclamation and rehabilitation of dumps and tailing ponds etc. through vegetation, plantation, covers and water proof ness mechanism (for acid mining drainage control) etc.

6. Reclamation and rehabilitation of workings:

Under this head the following activities should be taken into account for cost estimation.

- (i) Rehandling of waste material, back filling, levelling and rehabilitation by way of vegetation, plantation, agriculture or any other post mining land use.
- (ii) Where back filling is not possible, the expenditure for developing pits/voids into water reservoirs for use of domestic/irrigational, pisciculture, recreational lakes etc. to be taken into account including

modification of pit stopes, land scaping and development of final land form which should be stable, productive and self sustaining.

7. Maintenance/monitoring during and after closure operation :

Maintenance and monitoring of physical and chemical stability and of environmental Protection measures taken during and after closure operation is carried out to ascertain that remedial measures taken are effective and the site is safe and stable. The duration of maintenance and monitoring after closure may vary from 2-5 years as per the situation. The maintenance and monitoring cost may include following :

- (i) Providing equipment and instrument to be used for the purpose.
- (ii) Collection of samples and testing/analysis of pollutants, tailings and waste material (Physical, chemical and biological).
- (iii) Data collection and evaluation of information gathered.
- (iv) Salary and wages on manpower deployment for the purpose.

8. Retrenchment and relocation cost :

Under this head the compensation and any other benefit to be paid for the manpower to be retrenched, expenditure to be incurred for providing training suited to any alternative job, facilities to be extended to the communities affected with the mine closure including health and safety measures etc. are to be considered for the purpose.

9. Research & Development (R&D) :

Expenditure to be incurred for R&D work related to restoration and rehabilitation i.e. revegetation studies, stability studies, studies on control and treatment of waste generating acid mine effluents etc. are to be considered.

10. Administrative/management :

The cost may include fees to be paid for preparation of closure plan, procurement of information and data from various institutions/organizations. Salary and wages of supervisory and managerial personnel for maintenance and monitoring activities and any other related administrative expenditures.

Financial Assurance : Financial assurance is the financial surety to be furnished by the lessee to the Regional Controller of Mines or to the officer authorised by the State Govt. as the case may be so as to indemnify the authority in the form guarantee by bank or any other financial institutions. The amount of surety to be deposited should be computed based on the area put to use for mining and allied activities. It should be estimated 5 years progressively basis on the basis of conceptual plan submitted with an addition of areas to be excavated during five year period minus the area already rehabilitated. The financial guarantee given should be irrevocable and encashable when needed.

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Area to be excavated, storage for top soil, overburden dump, mineral storage, infrastructure (road, railway, workshop etc.), green belt, tailing pond, effluent treatment

plant, mineral processing plant, township, others (to specify). The estimation should be carried out as follows :

- (i) A category mines – Rs.25000 per hectare to the minimum of Rs.2 lakhs.
- (ii) B category mines – Rs.15000 per hectare to the minimum of Rs.1 lakh.

The financial assurance/guarantee as per rule should be submitted in any of the following forms or in combination of them.

- a. Letter of credit from any schedule bank.
- b. Performance or surety bond
- c. Trust fund
- d. Any other form of security/guarantees acceptable to the authorities

a) **Letter of credit** : It is issued by banks (acceptable from any scheduled bank). Letter of credit is an agreement between financial institutions and a company authorizing the bank to pay funds to a third party (to RCOM or authorized officer of State Govt.). The letter of credit is normally valid for one year or more. The agreement must provide for the automatic renewal of the letter of credit until the certificate of release is issued by the competent authority. In case bank has no provision for automatic renewal then it should be renewed when due by the party and the same should be submitted to the authority with whom it was earlier submitted.

b) acts and failures) of third party (mining company). This is issued in the form of Fidelity bonds/surety bonds/performance bonds. Etc.

c) **Trust fund** : Such type of trust fund probably has not yet been established. However, if any guarantee given from such trusts so established for the purpose, that may be acceptable.

d) **Any other form of security/guarantee** : The preference has to be given for financial assurance of the type mentioned in the form of letter of credit or surety bond. However, other form of surety may be in the form of mortgage of the property by the applicant or by a third party who may stands guarantee on behalf of the applicant by hypothecation of immovable property or in any other form as acceptable by the competent authority i.e. N.S.C. fixed deposit, infrastructure bonds etc.

Clause of agreement : The agreement between the financial institutions amongst others should also include the following :

- a) That no person may make withdrawal and reimbursement without prior authorization from RCOM/authorized officer of state govt. as the case may be. The purpose of the guarantee is to ensure completion of the work provided for in the mine closure plan.
- b) In case the authority to whom financial security/guarantee was deposited and authority need to use the amount for carrying out protection, reclamation and rehabilitation work the guarantee becomes payable on request.

Therefore the clause of agreement should be such that guarantee given should be irrevocable and encashable when needed.

Certificate :

A certificate as mentioned below has to be enclosed with the mine closure plan duly signed by the lessee.

“The mine closure plan complies all statutory rules, regulations, orders made by the central or state govt., statutory organisations, court etc. has been taken into consideration and wherever specific permission is required the concerned authorities will be approached. I also give an undertaking to the effect that all measures proposed in this closure plan will be implemented in a time bound manner”.

Documentation :

The report should be concise and may be written in clear and simple language. It must be informative and contains all relevant information with tables to present results. Calculation details, analysis reports, and other data should be attached as appendices/annexures. However, only results and summarized statistics are to be presented in the body of the text. The report should be bound preferably with spiral or ring binder. The final closure plan should be first submitted in draft form (two copies) to the Regional Controller of Mines and finally it has to be submitted in five copies for approval.

Plans, sections etc. :

The closure plan should be supplemented with all the plans, sections, sketches/drawings required for implementation of rehabilitation work as envisaged under various chapters of the guidelines of Mine Closure Plan already circulated. In addition to the requisite plans and sections where possible photographs of the sites, satellite images etc., may also be provided.