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PROBLEMS IN DISPOSAL AND UTILIZATION OF FLYASH

Dr. Anjani Kumar Mishra*

*H.O.D. cum Principal, Govt. Polytechnic, Vaishali

ABSTRACT

It is well known that India has a rich potential to generate flyash as a number of industries are already running which utilize coal as fuel. The coal used has high ash content generating approximately 170 million tons of flyash every year. Thus there is huge potential of availability of flyash in abundance. The disposal of flyash is itself a problem, which tended the attitude of scientist and Research scholars for its mass application. The disposal problems also causes threat to the environment.

Multidimensional development is a necessity of hour to support growing population of India. Roads, embankments, canal, building etc. are major areas where flyash should be utilized. There are many constrains to use flyash on commercial scales. The National flyash policy for utilisation of flyash products in building, roads, dams and other Civil Engineering construction works are still far behind the goal to attain the target of flyash utilisation in India. There is need of flyash management for its safe disposal and proper utilization

Keywords- Flyash, Problems, Utilization.

1. INTRODUCTION

The problem involved in disposal of flyash is becoming a challenging jobs. The most common way of disposal is in the ash bunds, which is expensive and covers large agricultural area. The survey is disposed in an ash bund where ash settles down and water flows over the waste weir. So alternative methods of disposal of flyash and its economic utilization is great concern for engineer's and scientist.

The National flyash policy has also laid norms and guidelines for utilisation of flyash around the area of thermal power plants generating huge amount of flyash. Flyash is one of the worst pollutant of sub-soil and air which has already occupied several thousands of hectares of land stretching farther and further with additional generation. The flyash utilisation seenario offers a gloomy picture in India registering a consumption of about 2-3%, allowing the rest of output to get accumulated. It is on account of this alarming situation, the Policy on flyash is drawn as a national programme towards a coordinated time bound action plan. The National flyash policy should be implemented at each and every production point of flyash. The high strength cements like 43 & 53 grade enhances the opportunities for more ash input and in turn increased utilisation on cement front. On brick front technological features permits the production of flyash brick with competitive price logistics and superior technicalities over clay brick and there by finds the way for use of 100% flyash produced. The flyash can meet the requirements of uses without any trouble through proper fund management for collection and delivery system. Administrative Monitoring of the scenario for end utilisation of flyash should be made by the Government. It should also take necessary steps to ban clay flyash bricks within permissible radius of area of thermal power plants. A number of indigenous technologies have been developed by R&D laboratories and other institutions for gainful utilization of flyash. Various research work are being carried for application of flyash as building material and for other Civil engineering works but still the use of flyash is limited. The utilization ranges from low value added utilization like use in road/embankments, mine-fills, lime flyash concrete, cement flyash concrete, etc. to high value added utilization which have been tried at laboratory scale and would need more years towards 100% commercialization..

2. MAIN THRUST

The overall concern for the environment and need for safe disposal and effective utilization of flyash has encouraged many agencies to undertake the project on flyash. Primarily, the flyash is disposed off using either dry or wet disposal scheme. In dry disposal the flyash is transported by truck chute or conveyor at the site where it is utilized for final commercial disposals. In wet disposal, the flyash is transported as slurry through pipe and disposed off in impoundment called "ash pond" Most of the power plants in India use wet disposal system and when the lagoons are full, four basic options are available.

- a) Constructing new lagoons using conventional materials
- b) Hauling of flyash from existing lagoons to another disposal site
- c) Raising the existing dyke using conventional construction material
- d) Raising the dyke using flyash excavated from the lagoon (ash dyke).

In this way all the methods are costly and threat environment issues also. The ash produced in thermal power plants can cause all three environment risk i.e. air, surface water and ground water pollution. A number of ash disposal facilities across the country have been designed and demonstrated. Flyash mission with the help of NTPC have prepared detail manual on ash disposal practice. Geotechnical and environmental parameters should be considered while disposing ash. Since coal residues contain potentially hazardous substances, So improper, handling and disposal could cause undesirable environmental effects.

It is very much apparent that flyash is being used for gainful applications like filling material, manufacture of clay flyash bricks, manufacture of flyash blocks and slabs for embankment lining. Also it is useful for hydraulic structures, window and doorframe, Tallies, fence posts, compound wall panels. Road dividers construction of ash pond dykes using flyash in place of soil has been technically demonstrated at power stations of NTPC and also implemented at many places of construction works. It saves top soil. Extraction of alumina from flyashes has been reported to be economically and technically feasible through technology developed by CBRI, Bangalore. Use of flyash is technically economical, if utilized by application of optimum technologies, which are available with commensurate levels of automation and capacity generation. The fine quality of dry ash can be utilized in the asbestos industry though this has a limited scope.

The problem faced by country like India is that we could not establish factories and manufacturing units in spite of availability of flyash in abundance at many places of its production. In spite of National flyash policy the administration fails to implement it at its level due to lack of knowledge of applications of the pollutant flyash and shortage of manpower to force the National flyash policy.

The general problems on which stressed is to be focused are:

- i. People are not aware about flyash bricks for the use of House buildings/roads/pillars/Stopper or protection of slopes in embankment.
- ii. (The society does not have knowledge of economy of flyash bricks as compared to other general brick and confusion over durability of flyash mixed products.
- iii. Lack of technical knowhow regarding strength and manufacture of flyash bricks product and its application in different areas where it can be used.
- iv. Centralized apex Institution to Co-ordinate the activity of flyash disposal and utilization.
- v. Professional services and technical assistance.
- vi. Suitable linkages between administrative, technical and financial Institutions for bringing technology credit, subsidy etc. together, associated with flyash application.
- vii. Co-operative society, NGO and self help group (SHG) to become intermediary between marketing system of bricks and raw material likewise flyash.

All and above, we have to investigate the problems in a common way for disposal and commercialization of flyash applications. The main problems are in brief categorized with

- Associated with the process.
- Associated with Govt. Policies.
- Exemption of flyash associated production of sale tax /any other taxes.
- Assessment of sick units conditions.
- Survey of existing flyash bricks making facilities and flyash disposal systems.
- Use of flyash bricks at public places.
- Confidence in a common man to use these flyash bricks willingly.

3. CONCLUSION

Detailed market surveys are required in order to assess products where a sustainable competitive advantage is achievable through the use of flyash.

A total flyash management needs to be implemented throughout our country to inforce the National Policy on flyash. The disposal of flyash guidelines should be designed and implemented on National level.

The way it is put in right application with proper technological adoption encourages the scope of flyash disposal and utilization. For the product like flyash, any amount of application avenues are appreciable and adoptable. Flyash is a product of multifarious performance in many fields. It could be a good soil supplement with superior shear strength

and engineering values for the formation of embankment substitute of the roads bricks, beam & columns, dividers etc. Its application as micronutrient is well established for increasing the yield of certain crops, but for the chances of percolation of heavy metals from flyash into the ground over long term application are under studies.

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