

which can be used widely in many community operations in lieu of gravel. The inventors claim the high operations temperature will greatly reduce the need for air pollution control devices and thus lower the costs even more. If the evaluation proves successful, a demonstration in an appropriate community could follow and perhaps a major contribution in incinerator technology.

The small community has been unable to utilize incineration because of the inability to take advantage of economy of scale. A demonstration grant to the City of Shippensburg, Pennsylvania is supporting the evaluation and demonstration of a small mechanically stoked rotary grate incinerator developed in West Germany which if successful will allow communities in the 25,000 population range to consider incineration as a satisfactory method of disposing of solid waste and effectively meeting air pollution control criteria.

Through the contract mechanism the Solid Wastes Program is in the process of developing a new concept in incineration which may lead to a major breakthrough in incinerator technology. Many incinerators here and abroad have considered utilization of waste heat to lower the net cost of operation by generating steam for purposes of heating or electric power generation. Our new approach takes advantage of jet engine technology to transform waste heat from combustion directly to a gas turbine and generate electric power with far greater efficiency and thus lower net cost. If this method, which includes effective air pollution control devices, proves to be as successful as it now appears likely, the net cost of operation may be substantially lower than present incinerators operating *without* any air pollution control devices.

Since the irregular size of solid waste can contribute to ineffective operation and actually produce greater amounts of particulate matter to pollute the air, a demonstration grant awarded to the City of Buffalo, New York, is supporting a demonstration of a crusher to effectively presize refuse prior to incineration and thereby increasing the efficiency and air pollution control effectiveness of the incineration process which follows.

At the present time the most commonly used alternative to incineration is land disposal. The sanitary landfill is currently recommended as the most desirable technique. This method prohibits burning at any time, is designed and engineered to prevent pollution of ground and surface water, and is covered daily with an adequate layer of clean earth to prevent insect and rodent infestation and eliminate other insults to our environment. Too often the sanitary landfill degenerates into an open burning dump through poor operation—giving this method a bad name. If not used instead of incineration some method of land disposal is generally used with it to dispose of residue and outsized material which cannot be handled by the incinerator. Rising land costs and shortages of suitable areas have restricted use of sanitary landfill as have such factors as lack of citizen acceptance because of bad publicity. When public opinion or lack of available land forces the location of this operation long distances from the source of the waste, the resultant transportation cost may equal or even exceed the savings one might expect from land disposal as opposed to proper incineration. Lack of reliable information concerning settlement of sanitary landfills and the effects of methane gas produced as a result of decomposition of buried and compacted solid waste have also hindered effective utilization of this technique.

The Public Health Service is approaching these problems on the basis that land disposal properly designed and conducted is an exceptionally desirable form of solid waste disposal. Air and water pollution are effectively controlled and land reclamation can be accomplished. I cannot say enough about the potential of land reclamation through the disposal of solid wastes. The State of Maryland partially supported by a solid waste demonstration grant is showing how solid waste can be used to reclaim strip mines. This could change a blight of America into a precious asset and at the same time effectively deal with a pressing community problem—solid waste disposal. Another demonstration grant to the Chicago Sanitary District will show how sewage sludge after its removal from waste water can be transported to low cost land and converted into a profitable resource for agricultural and recreational purposes. Perhaps the most infamous example of solid waste disposal, the Kenilworth dump in Washington, D.C., is being converted into a model sanitary landfill operation which will ultimately be transformed into a tree-lined, grass-covered park and recreational area. There is no reason why necessary community functions cannot result in a community asset if technology can but respond to the challenge.

The pancake-flat terrain around Virginia Beach, Virginia, will have a welcome