

ENVIRONMENTAL ASPECTS OF FOSSIL ENERGY DEMONSTRATION PLANTS

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Abstract

This paper described the full range of environmental activities which are undertaken in conjunction with Fossil Energy's demonstration plant program. These activities address key environmental problems generic to any Fossil Energy demonstration plant: resource limitations (e.g., water availability), socio-economic impacts (e.g., housing shortages); new and potentially harmful pollutants; existing environmental standards; and future environmental standards.

In order to provide a background for the discussion of specific environmental activities, the paper first described the overall Fossil Energy Demonstration Program, including program objectives, ERDA's role, industry's role, and funding. The paper then defined the three developmental phases of demonstration plants (Phase I: preliminary and detailed plant engineering; Phase II: plant construction; and Phase III: plant operation, testing, and evalua-

tion), since specific environmental activities occur at each phase.

During Phase I, environmental activities include the preparation of site specific environmental impact assessments (EIS's) and/or environmental impact statements (EIS's), development of environmental control strategies, design of environmental monitoring and control systems, compilation and review of public comments, and securing of necessary permits. During the design phase data describing ambient environmental conditions at prospective sites also are collected.

During Phase II, environmental monitoring and control systems are constructed for inclusion in the demonstration plant. During construction ambient air and water quality data are collected in order to assess the impacts of construction on the local environment. Worker health and safety surveillance programs are established, and potentially hazardous plant areas are pinpointed.

A comprehensive program to monitor air emissions, water effluents, and worker health and safety is implemented during Phase III. A comparison of air and water monitoring data with background ambient data collected during Phase I will allow changes in the local environment to be assessed. Data also are collected to ensure compliance with environmental standards, and tests are carried out which will lead to improvements in environmental control technology.