Southern Utah Coal: The Railroad Challenge

by Jeff Brinton

Introduction

It was almost two years ago that the Union Pacific Railroad Company, in conjunction with a consortium of coal and utility companies, first publicly disclosed that a preliminary feasibility study was underway considering the possible construction of a railroad line to serve coal fields located in the southern Utah area. At that time, two alternative routes were being projected for accessing the Kaiparowits Plateau (see Figure 1). Each alternative alignment required approximately 200 miles of new trackage. As originally intended, the proposal was to have been progressed as quickly as possible so as to allow for completion of the rail line by June, 1986. This date coincided with the date by which the federal coal leases were required to be in production in accordance with diligent development regulations contained in the Federal Coal Leasing Act Amendments of 1976.

Union Pacific's interest in the southern Utah area was due to a variety of factors, including an acknowledgement both of coal's expanded role in this nation's (and the world's) energy future, and of the tremendous potential of the Kaiparowits Plateau, which contains one of the largest undeveloped bodies of high-quality coal in the United States. This was combined with a belief that the transport of this coal resource in raw form to outside markets by rail would be environmentally preferable to either mine mouth electrical generation, mine mouth synthetic fuel conversion, or slurry transport utilizing valuable water resources; and, of course, Union Pacific's existing lines were ideally positioned to tap Kaiparowits coal.

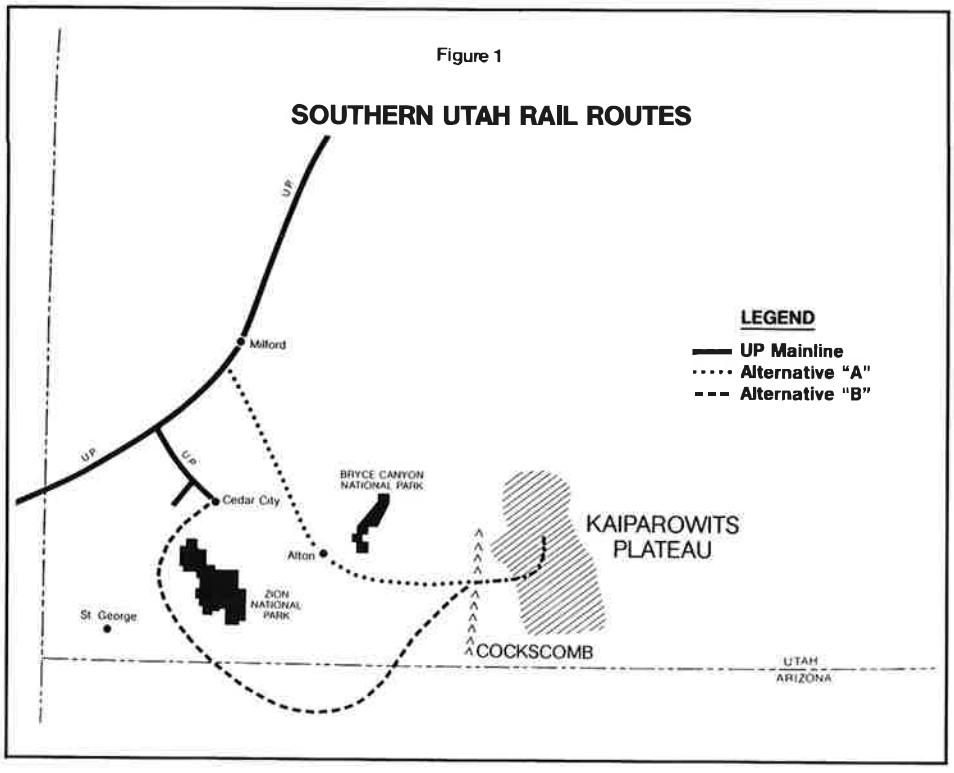
While the opportunities were readily apparent, it was also realized that the proposed undertaking would present a series of challenges, some of them formidable. Not the least of these was the task of laying 200 miles of track through the sometimes difficult terrain of the Colorado Plateau. The magnitude of the project was reflected in its cost—the total estimated cost of the main access line with one branch line, based on 1978 dollars, ranged from $317 million to $350 million. Added to this was the financial commitment required on the part of coal developers to develop the associated underground mining complex. No less imposing was the challenge of balancing energy resource values with environmental values in an area well known for its natural amenities. And, finally, there were a number of difficulties inherent in the coordination of the diverse and sometimes competing interests of the respective mining, transportation, and utility companies.

Given the complexities noted above, it is not surprising that the ambitious time schedule originally proposed has not been met. In spite of this delay, there have been significant positive developments which impact on both the environmental and economic feasibilities of the project and which, therefore, are directly related to the status of the proposal at the present time. These developments are briefly reviewed in the following sections.

Kaiparowits Coal Development and Transportation Study

Not long after the rail line proposal and associated coal developments were announced, the federal and state governments joined forces to sponsor a broad-brush environmental feasibility study of potential coal-related activities in the

Figure 1



southern Utah area. In essence, the effort was designed not only to supplement previous environmental studies such as the Southern Utah Coal EIS (1979), but also to provide a general planning document upon which critical decisions relating to the Plateau's future could be based. It was envisioned that detailed site analyses would be conducted at a later time in conjunction with specific mining plans and applications for rights of way.

A consultant, Environmental Research and Technology, Inc., of Fort Collins, Colorado, was selected to perform the environmental analyses. In addition, the Five County Association of Governments headquartered in St. George, Utah was responsible for the analysis of socioeconomic impacts under an arrangement with the state of Utah. A federal-state steering committee guided the work effort. In August of 1980, after approximately one year of study, the report was released to the public. Three levels of coal production were analyzed in the report: a low production level of 5 million tons per year, a medium production level of 54 million tons per year, and a high production level of 84 million tons per year. Several transportation corridors and transport modes were also studied.

While ERT's study refrains from "making value judgments about the desirability of coal development or the acceptability of impacts," it does suggest that sizable tonnages of coal can be mined and transported from the Kaiparowits region without violating present environmental regulations, if proper mitigating measures are applied. However, some degradation of the environment and socioeconomic problems would accompany development and this is indicative of the trade-offs which are to be expected. The significance of these impacts would depend primarily upon the level of coal production and the type and location of coal transportation facilities.

The effects of regional coal development and transportation on the socioeconomic environment were also studied and were found to have both positive and negative elements. Positive impacts would include increased money in the local economy, a larger tax base, more employment opportunities, and less moving away of young local residents in the eligible work force. On the negative side, the large population increases projected for some communities could result in concomitant increases in the tax rate structure, the need for major capital outlays to provide for basic community services (possibly in advance of any substantial growth-related revenue increases), and substantial increases in the cost of living. With a large influx of residents from outside areas sociocultural changes in the communities could also occur.

The findings of the study indicated that significant quantities of coal could be developed and transported from the southern Utah region while maintaining acceptable levels of environmental quality. With its regional and integrating perspective, the ERT study fills a void in the planning process which otherwise might not have been provided. It supplies a foundation which now can be used in conjunction with other supporting evidence to chart a course for the Kaiparowits area. It will also help guide the advanced planning effort which will be required to minimize the adverse socioeconomic impacts.

The transportation corridors studied are realistic and should help focus and expedite further study efforts and site-specific analyses. However, it should be cautioned that any tendency towards a rigid delineation of these corridors should be rejected in favor of a more flexible approach which will recognize that changing circumstances and opportunities may lead to new or modified alignments.

Assuming the steering committee is continued, as is recommended by ERT, to ensure that "appropriate interangency coordination and future planning efforts are implemented," it would be strongly advisable to explore the possibility of involving one or more representatives from the coal mining and transportation industries in the committee's work.

Transportation Corridors and the Wilderness Review Program

Rail access to the coal-rich Kaiparowits Plateau is complicated for several reasons, including both institutional and physical constraints. With respect to the former, it may be said that the Plateau is literally encircled by several state and federal recreation areas, both existing and proposed. Just as constraining is the extremely rugged terrain of the region which severely limits the number of corridors which railroads can successfully utilize.

For those seeking to access the Plateau from the West, the Cockscomb stands as a very real geologic barrier. Only one suitable corridor through this barrier has been found by our engineers—the Paria Box. Here the Cockscomb is breached by the Paria River, which forms a natural corridor through the rugged terrain. This route would permit the construction of a rail line with a maximum grade of 1 percent against the loaded movement, a practical necessity for unit coal trains.

Because of the criticality of this corridor, its proposed inclusion within an area of land designated for wilderness study poses a serious threat to the viability of a rail transportation option. This obstacle was the most significant potential constraint to rail transportation identified in the ERT study. The concern was expressed as follows: "Designation of the Paria Box as a wilderness study area would severely restrict the development of a rail line to Milford or Cedar City. Engineering and economic constraints at a different crossing of the Cockscomb could be prohibitive." Because of the potentially serious nature of this constraint, the wilderness review program and its possible ramifications on coal transportation are summarized below.

Section 603 of the Federal Land Policy and Management Act of 1976 directs the Secretary of Interior to determine which public lands have wilderness characteristics (as described in the Wilderness Act of 1964), and to report to the President his recommendations as to the suitability or nonsuitability of each such area for preservation as wilderness. It is the Bureau of Land Management's responsibility to develop these required recommendations and to forward them to the Secretary who will, in turn, submit them to the President (before the 1991 deadline). The President must then report his recommendations to Congress by 1993. Only Congress can designate an area as wilderness. To aid in carrying out its wilderness mandate, the BLM has developed a wilderness review process with three phases: inventory, study, and reporting.

In November of 1980, after completing the inventory phase and scrutinizing the public comments received the Bureau issued its final decision on the Wilderness Study Areas (WSA's). In summary, the decision included the Paria Box corridor within a WSA unit, thus providing interim protection and preventing rail construction. The final WSA decisions were sched-