to whether the bombing of Hiroshima was necessary for hastening the end of the war, it would be hard to contest that today a tribute is due the Japanese for their museum in Hiroshima, whose message is clear: There should never again be atomic bombing, or for that matter, any other kind of bombing.

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**References and Notes**

1. R. G. Hewlett and O. E. Anderson, Jr., *The New World* (Univ. of Pennsylvania Press, Philadelphia, 1962), see particularly p. 374. Reprinted as *USAEC Rep. WASH 1214* (1972).
2. L. O. Love, *Science* **182**, 343 (1973).
3. D. Irving, *The German Atomic Bomb* (Simon & Schuster, New York, 1967).

## Energy Facility Siting

The California Coastal Commission is attempting to solve the kind of agonizing problems associated with coastal energy facility siting that are raised by Luther J. Carter in his article on the Hampton Roads Energy Company refinery and oil terminal proposed for Virginia's Elizabeth River (News and Comment, 10 Feb., p. 668). The California gas utilities have been seeking approvals for a liquefied natural gas (LNG) terminal site on the coast for 4 years. Confidence in the utilities' site selection has been low because they originally chose a site in Los Angeles Harbor, near a major earthquake fault. Their current choice, a remote area on the western end of the Santa Barbara Channel near rich kelp beds, expensive ranches, and excellent surfing spots, has aroused intense opposition. Frustrated with the uncoordinated permit processes and suspicious of the companies' site selections, the California legislature has required the Coastal Commission to determine the least objectionable site for an LNG terminal.

This is an uncomfortable technical role for a coastal management and land use planning agency. The commission has evaluated 82 possible sites. The public nominated 16 of them. Woodward and Clyde geotechnical consultants, H. J. Degenkolb and Associates structural engineers, and John J. McMullen Associates maritime consultants assisted the commission in evaluating the sites, and, after a public hearing, the commission eliminated 77 of the sites and retained five for a final ranking (*1*). The California Liquefied Natural Gas Terminal Act of 1977 requires the commission to base this site ranking primarily on protection of coastal resources, but the costs of the ranked sites must be reasonable. This site selection process is completely open. The gas utilities are major participants in the process, but so are the Sierra Club, the Western Surfing Association, and property owners near the five candidate sites.

This is an experiment worth watching. The final site ranking must be submitted to the California Public Utilities Commission by 31 May 1978, and that commission determines whether the terminal is needed and whether to approve it at the site ranked number one by the Coastal Commission. Carter asks, "Is there no better way by which sites for refineries and other major energy facilities could be selected and approved?" Perhaps there is, but this LNG terminal siting exercise may alienate natural supporters of the Coastal Commission, because it has an active role in siting a facility with unavoidable, large, and adverse coastal impacts. In addition, the commission will be in that uncomfortable position heretofore reserved for energy companies, when a site is selected and a few years later an unknown earthquake fault is found nearby or a massive oil spill occurs, threatening valuable coastal resources, hundreds of millions of dollars of investment, and the agency's credibility and confidence (*2*).

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**References**

1. California Coastal Commission, "Preliminary and final staff recommendations on proposed liquefied natural gas terminal sites to be retained for further study and ranking" (San Francisco, 11 January 1978 and 26 January 1978).
2. W. R. Ahern, in *Proceedings of the Symposium on Technical, Environmental, Socioeconomic and Regulatory Aspects of Coastal Zone Management* (American Society of Civil Engineers, New York, 1978).

## Coal Liquefaction: Cost Estimates

Lest your readers think pioneer coal liquefaction plants are a bargain, I should note that the estimated cost for a pioneer coal liquefaction plant capable of processing 10,000 tons of coal per day, as given in my article "Liquid fuels from coal: From R & D to an industry" (10 Feb., p. 621), is a misprint. Current estimates are around $750 million (1976 dollars), *not* $75 million.

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