LETTERS

Understanding Iran

There is abundant irony for all in a juxtaposition of the fine article by Nicholas Wade (News and Comment, 14 Dec. 1979, p. 1281) on the failure of American intelligence to utilize the scholarly information available on Iran with earlier articles about whether Senator Proximire's Golden Fleece awards are appropriate. However much Proximire may be agitated by scholarship that penetrates to the level of asking about the role of brothels in Peru, Wade's subtitle "The failure of understanding" emphasizes the need for the funding of perceptive, comprehensive study (as opposed to spy operations) of all the societies of the world. Understanding is the only basis on which one can build a world of friendship and peace.

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I would like to expand on Wade's perceptive article about Iran. Even in 1976 the Khomeini drumfire of attack from Iraq was being heard by percipient Iranians. In my view the situation results not simply from the peculiarities of Shia Iran as from the cracks in *any* traditional edifice produced by excessive wealth and modernization. In power to corrupt, 20th-century oil can be equated to Spanish gold from the Americas in the 16th century. Were we to content ourselves with the Shia religious background of the Iranian revolution, we would be overlooking the extent to which the oil-rich Islamic portion of the traditional world represents the Achilles heel of energy-hungry Western civilization. We are on notice that Arab oil supplies to the West *will* be reduced and raised in price, as traditional regimes seek to survive. Khomeini has not penetrated simply to the weaknesses of the Shah. He has penetrated also to the vulnerabilities of the world order as kept in equilibrium by the United States, an order blinded by its own appetite to the inevitable course of revolutionary events in Iran and the Islamic world. One would have hoped that Moscow, in Afghanistan, would have weighed the total threat to Western civilization explicit in the present situation.

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Nuclear Safety: The SL-1 Accident

William A. Lochstet (Letters, 9 Nov. 1979, p. 637) misleads the reader on the subject of nuclear safety when he refers to the SL-1 accident.

The Stationary Low Power Reactor No. 1 (SL-1) was a low-power (1/1000th the thermal power of "high-powered nuclear reactors") natural circulation boiling water reactor. This type was to be used as a heat source and for electricity at remote military installations. Argonne National Laboratory was the prime contractor from the design stage to 500 hours into full-power operation. At that time contractual responsibility was turned over to Combustion Engineering, Inc. Combustion Engineering, to begin with, filed a report which stated that the plant was "substandard in areas of operation, design, construction, safety and maintenance" (*1*). It was not up to civilian nuclear power plant standards.

The basic causes of the accident have been traced to two factors: design and sabotage. Faulty attachment of the burnable poison boron strips to the fuel rods caused them to flake off so that the reactor could be made to quickly go critical by withdrawing only its central control rod. Sabotage was apparently the cause of the event itself; one or two of the operators, on top of the reactor, deliberately manually lifted the central control rod 20 inches out of the core instead of the 4 inches required to perform maintenance duties during reactor shutdown. The reactor went out of control and rose 9 feet in the air, instantly killing the two operators and causing the death of a third 2 hours later. The sabotage was later determined to be an instance of murder-suicide (*2*). All three men were military personnel.

This accident can in no way be construed as implying that civilian nuclear reactors are unsafe. Commercial "high-powered" nuclear reactors are of an entirely different design. Operators cannot manually lift control rods. That is presumably why Peter A. Morris (Letters, 13 July 1979, p. 148) did not mention the SL-1 accident while discussing nuclear safety.

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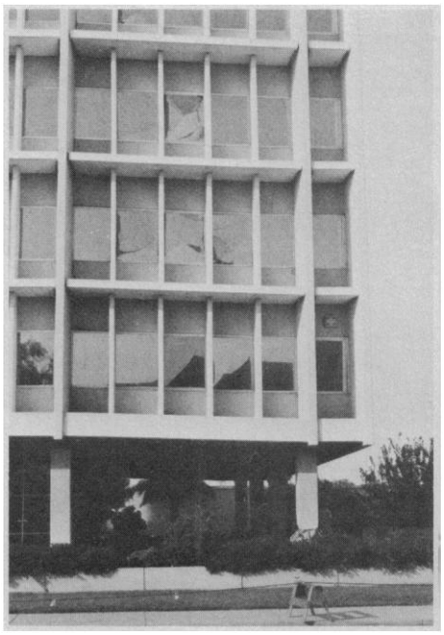
References

1. T. J. Thompson and J. G. Beckerly, *The Technology of Nuclear Reactor Safety* (MIT Press, Cambridge, Mass., 1964), vol. 1, pp. 653–682.
2. R. Gillette, Los Angeles *Times*, 29 December 1979, p. 28.

"Earthquake-Resistant" Buildings

During the earthquake of 15 October 1979 in the Imperial Valley, California, the services building of Imperial County was severely damaged. This quake reached a peak magnitude of 6.6 on the Richter scale. As a result the steel-reinforced concrete pillars on the east side of the building were virtually sheared at ground level (see photograph).



Inasmuch as this building was supposedly engineered to withstand an earthquake of magnitude 8, one might ask, To what extent are simulation studies of quake effects on modern structures really adequate? Earthquake shocks are generally simulated on shaking platforms on which a model of a structure has been erected. The model structure in turn is usually bolted onto the platform. However, this mode of fastening bears little correlation with the actual structural connection between the real building and its foundation. In other words, even though a real building may remain structurally intact from the second floor upward, it may sustain unacceptable damage between foundation and superstructure. Therefore there is considerable concern to be voiced about the adequacy of shock testing, design features, and to what extent present buildings are actually as quake-resistant as is claimed.

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