

section, the reaction kinematics, and spectral data used for calculating the primary recoil spectrum should be referenced. In the case of ion bombardment, the method of calculating the energy deposited into atomic processes (E_{Damage}) as a function of depth should be stated with appropriate definition of parameters.

3. Future work should include studies of the energy partition and recombination processes. Recognizing the dependence of displacement calculations on neutron interaction cross sections, we recommend that the IAEA compile and evaluate cross-section sets used in such calculations.

RECOMMENDATIONS FOR GRAPHITE

The meeting saw no reason to change the conclusions reached at the Seattle meeting in 1972, and it agreed that the recommendations made at that meeting and also published in Ref. 2 should continue to be used.

Thank you for your cooperation in publishing these recommendations.

V. Chernyshev, Scientific Secretary

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International Working Group on
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November 11, 1977

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COMMENTS ON "RECENT DEVELOPMENTS IN THE DESIGN OF CONCEPTUAL FUSION REACTORS"

I have just completed reading the paper in the July issue of *Nuclear Technology* by Ribe.¹ While I am in no position to assess the correctness of the degree of optimism expressed about fusion technology or economics, I must point out that if Fig. 7 is typical of the entire article, there is a serious problem of credibility. To indicate that no current data are available on estimating fast breeder reactor costs

is really absurd. One might disagree with the available numbers—either too high or too low—but a plethora of data does exist, data that are much more extensive than that existing for solar electric, coal-fired magnetohydrodynamics, or UWMAK III.

It also is not clear why oil-fired gas turbines and geothermal are shown as post-1980 when both currently exist in utility systems.

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REFERENCE

1. F. L. RIBE, "Recent Developments in the Design of Conceptual Fusion Reactors," *Nucl. Technol.*, **34**, 179 (1977).

REPLY TO "COMMENTS ON 'RECENT DEVELOPMENTS IN THE DESIGN OF CONCEPTUAL FUSION REACTORS' "

I can understand Levenson's concern¹ that Fig. 7 of my paper shows "no current data available" for liquid-metal fast breeder reactor (LMFBR) costs. What is meant there and in the UWMAK III report, from which Fig. 7 was taken, is that no data from Bechtel Corporation were available from their studies on advanced energy systems, of which UWMAK III is one.

However, the same page of my article does quote a fast breeder cost of 45 to 55 mill/kWh as derived in the UWMAK III report. Figure 1 (see next page) is a new version of Fig. 7 in which Conn provides an update of advanced-systems costs, including the fast breeder. The range of LMFBR costs goes from a low of 20% premium over light water reactor costs (an oft-quoted "target") to 55 mill/kWh. The value of 45 mill/kWh is obtained simply as half the estimated cost of the Clinch River Breeder Reactor based on historical trends, as quoted in Ref. 2.

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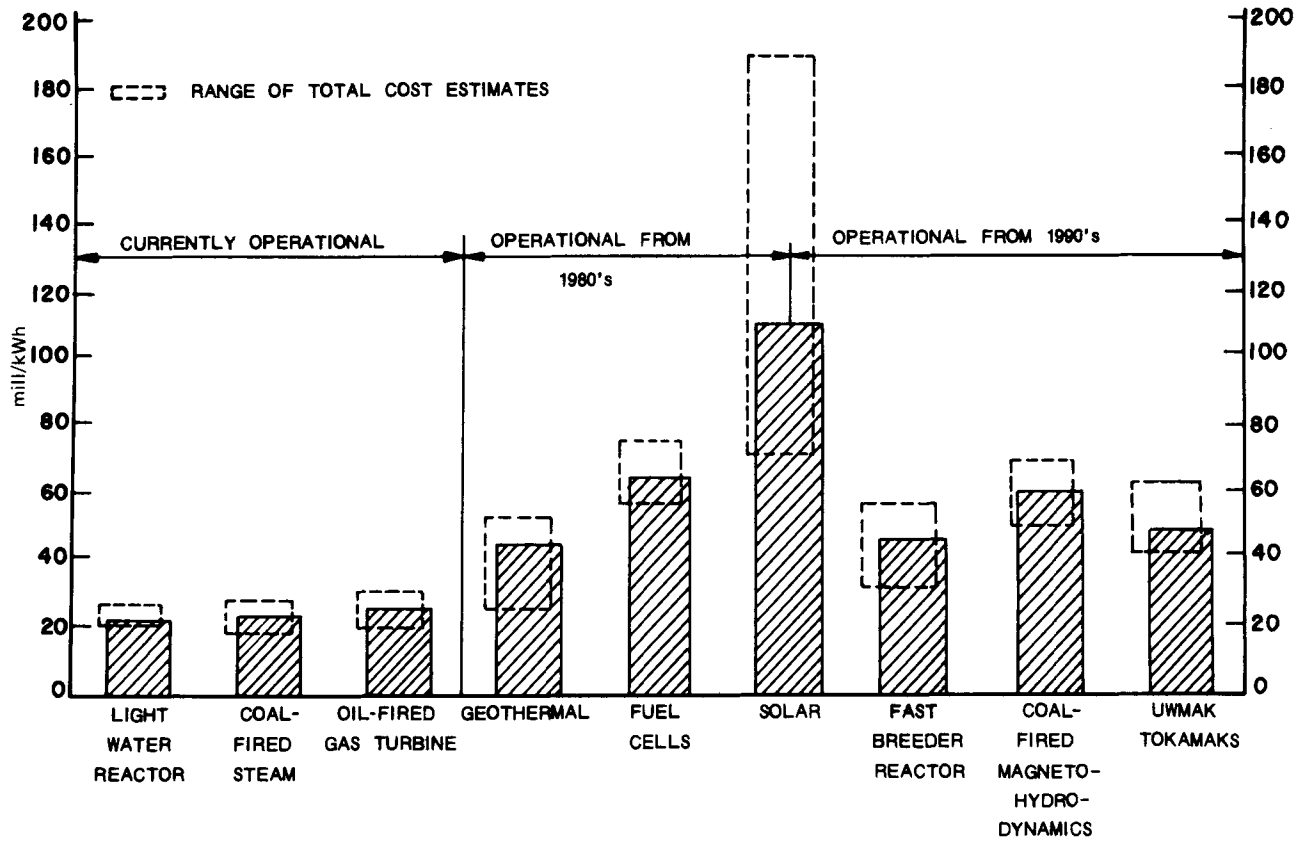


Fig. 1. Approximations of the cost of electric power, fourth quarter, 1975 dollars.