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THE WORLD BANK  
Washington, D.C.

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The World Bank  
1818 H Street NW  
Washington DC 20433  
Telephone: 202-473-1000  
Internet: [www.worldbank.org](http://www.worldbank.org)

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ALLARDICE, CORBIN - ARTICLES & SPEECHES (1959)



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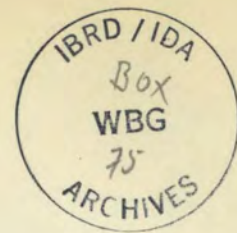


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Remarks of Mr. Corbin Allardice, Adviser on Atomic Energy to the World Bank, before the European Conference for Industrial Management held under the auspices of the Organization for European Economic Cooperation and the European Nuclear Energy Agency at Stresa, Italy, May 11-14, 1959.

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I have been asked to speak to you today about the International Bank for Reconstruction and Development -- known somewhat immodestly, but perhaps not undeservedly as the World Bank -- to speak of what it is, how it works and what it does. I am also asked to present some considerations of financing nuclear power plants as we of the Bank view it, with particular reference to the proposed Bank lending to finance the SENN nuclear power station to be built on the Garigliano River north of Naples.

The International Bank for Reconstruction and Development is an international cooperative organization and is associated with the United Nations, having the status of a Specialized Agency. Its aim is to assist the economic development of its member countries and so raise the standards of living of the peoples of the world. The Bank may lend to member governments, governmental agencies or private enterprises; if the borrower is not a government, the guarantee of the member government concerned is required for the loan.

The Bank's membership consists of the governments of 68 countries, which are the Bank's stockholders. Each member country nominates a Governor to the Bank's Board of Governors, which has delegated most of its powers to the 18 Executive Directors. These meet at least once each month and consist of

five nominated Directors who represent the five largest stockholders in the Bank, and 13 elected Directors chosen by the other member countries.

The voting powers of the Executive Directors are proportionate to the capital subscriptions of the country or countries which they represent. The Executive Directors are responsible for matters of policy and must approve all the loans made by the Bank. The day-to-day conduct of the Bank's operations, including the making of recommendations to the Executive Directors on loans and questions of policy, is the responsibility of its President, who is also Chairman of the Board of Executive Directors.

The total subscribed capital of the Bank is \$9.5 billion.<sup>1/</sup> Of this amount, however, only 20% is paid in, partly in gold or dollars and partly in local currencies. The remaining 80% is subject to call if required to meet the Bank's obligations.

This year the member governments of the Bank are taking steps to increase the Bank's capital subscriptions to meet the increasing rate of development lending. If the proposed increase materializes, the total authorized capital of the Bank will be more than doubled to \$21 billion.

The Bank is not only a lender but also a borrower, since the capital subscribed by its member governments was never intended to finance all its operations. Whereas the Bank has already paid out over three and a quarter billions of dollars on its loans, less than half has come from the capital subscriptions of its members. The remainder has been drawn mainly from the sale of its bonds in the capital markets of the world. By March 1959 the

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<sup>1/</sup> As used in this paper, \$1 billion = \$1 thousand million, i.e.,  $\$1 \times 10^9$ .

Bank had outstanding borrowings of \$1,840 million, mostly in the form of issues of U. S. dollar bonds, but also including bond issues denominated in Canadian dollars and European currencies. About half of the Bank's borrowed moneys is owed to investors in the United States, the other half being owed to investors in many other countries.

The Bank also enlists the support of private investors by selling parts of its loans, and has in this way added over \$492 million to the funds used for development financing. The Bank also uses for lending the amounts arising from earnings and from the repayment of earlier loans.

The Bank makes loans only where private capital is not available on reasonable terms. The Bank's first loans, made in 1947, were for European postwar reconstruction; a total of \$500 million was lent by the Bank for this purpose. In 1948 the Bank turned to lending for development, an increasing proportion of its funds being directed to the less developed areas of the world. By March 1959 the Bank had made 226 loans totaling over \$4.3 billion to finance more than 600 projects in 49 countries or territories.

The Bank's loans are mainly directed to helping its member countries to build the foundations of economic growth. Approximately one-third of the Bank's development lending has been for electric power and has helped to finance the addition of over nine million kilowatts to the world's generating capacity. Another third has been for transport improvement -- railways, highways, air and waterways. The remaining third of the Bank's loans has been for agriculture, especially irrigation; for industry, especially steel production; and for general development purposes.

The rate of interest charged by the Bank is based on the rate which it would itself have to pay to borrow money at the time the loan is

made, plus a 1% annual commission charge which is allocated to a Special Reserve. In practice, because of changes in money rates in the main capital markets in which the Bank sells its bonds, the long-term lending rate of the Bank has varied between  $4\frac{1}{4}\%$  and 6%. At any one time, however, the Bank does not distinguish between borrowers in regard to the rate of interest charged.

In addition to making loans, the Bank also renders to its member governments a wide variety of technical assistance, ranging from full-scale economic surveys of the development potential of member countries -- there have so far been 17 such surveys -- to regional investigations or advice on particular projects.

The joint Government of Italy-World Bank study known as "Project ENSI", which will be described later, is a further example of Bank assistance to member governments.

The lending operations of the World Bank are conducted on the basis of three main principles: first, that the borrowing country will be in a position to repay the loan; second, that the project or program to be financed will be of such benefit to the economy as to justify the borrowing of foreign exchange; and third, that the project is itself well designed and feasible of execution.

Before making a loan, the Bank satisfies itself that the borrower, whether it be a government, an autonomous agency or a private corporation, will be able to service the debt. In making this judgment the Bank must investigate not only the borrower's position in terms of its own local currency, but also the country's foreign exchange situation, because Bank loans are made and must be repaid in currencies other than that of the borrowing country.

The next step is for the Bank to make an appraisal of the merits and priority of the proposed project or program. If satisfied on these counts the Bank then investigates the project in detail, the plans made for its design and construction, the economic and financial returns expected, and the provision for management when it comes into operation.

When this process of appraisal is successfully completed, the Bank negotiates the loan. The Bank never lends the total cost of a project or program, normally financing only the foreign exchange costs involved in the purchase of imported goods and services. Local costs, usually more than half the total, are met by the borrower out of other resources. The Bank loan is disbursed over the construction period when evidence is produced of payments having been made on the agreed purposes of the loan. Although all orders for goods and services are placed by the borrowers, the Bank requires the use of efficient methods of procurement of supplies. The Bank usually requires international competition in placing orders financed out of the loan. The average term of Bank loans is 15 years.

In addition to having contributed to basic economic development all over the world, the operations of the Bank have also been financially successful. By March 1959 the Bank had accumulated reserves totaling \$401 million. The net earnings of the Bank now amount to over \$40 million a year.

Let me now turn to the Bank's activities in nuclear energy and in financing nuclear power stations. These activities have their genesis in general Bank policy on lending as extrapolated to the nuclear field, for, as Eugene R. Black, President of the Bank, stated: "... The Bank is not interested in atomic power as an academic exercise. We are not an academic



or research institution; we are an international development bank whose activities are directed towards aiding our member countries to develop their economic strength through the establishment of well-based policies and practices so that they may make the best use of their investment and other resources."

In line with this attitude the Bank developed in 1956 certain views on where and under what circumstances nuclear power might be economically practicable. These views were stated to our Board of Governors at our Eleventh Annual Meeting in Washington in September 1956 following an informal panel discussion on the subject in the following words:

" On the basis of the statements made here today and studies we have conducted in the Bank, we believe it is possible to describe in general terms the circumstances under which a large nuclear reactor of essentially present design might have good prospects for producing electricity at costs competitive with that of electricity produced from fossil fuels:

1. The generation and distribution system into which the nuclear plant is to be integrated must be large, capable of permitting a 100,000 kilowatt or larger plant to operate as a base load unit.
2. The nuclear plant would have to be located in a country with relatively high fossil fuel costs, with poor hydroelectric potential, and with sufficient availability of capital so that relatively low-cost money could be obtained.
3. The country would have to execute such intergovernmental agreements as are necessary to assure a continuing supply of fuel, reprocessing and, if necessary, the import of components, unless, of course, it has these materials and technical abilities at its own command.
4. Power rates in the system into which the plant would be connected should be flexible enough so that if the nuclear plant should cost more than expected or should not perform as anticipated, the excess cost could be absorbed without a significant adverse effect.
5. Until further operational experience has been obtained, it would not be prudent, we think, to establish the nuclear plant in a system where it would represent a considerable proportion of the total system generating capacity. "

Consideration of these circumstances -- one might almost say "these criteria" -- led to the now well-known Project ENSI, a joint Government of Italy-World Bank study of a large nuclear power station to be constructed in Southern Italy. This study will be described in some detail by my colleague Professor Felice Ippolito. Suffice it here to say, Project ENSI began in July 1957 and consisted of the preparation of an invitation to bid on a 150,000 kilowatt nuclear power plant to be built in Southern Italy, and an examination of the nine tenders which were later submitted by suppliers from the United States, the United Kingdom and France. In this respect, certain principles basic to Project ENSI should be noted:

1. The type of nuclear reactor to be built by SENN would be determined as a result of the investigations of Project ENSI. Therefore, it was necessary so to prepare the Invitation to Bid as to make it possible for manufacturers and bidders to propose whatever type of nuclear power plant the particular manufacturer or bidder believed best and was willing to tender at a firm price or similar basis with warranties on output and performance.
2. A further objective of Project ENSI was to introduce, to the extent feasible, the concept of competitive international bidding since it was believed that such competition would result in closer estimating of costs by the bidders and thus lead to lower power and equipment costs. It was recognized that if one type of reactor were chosen in advance and the Invitation to Bid built around the technical specifications of that particular reactor, the feature of international competition would be missing since it appeared that most firms in the United States, for example, would tender only enriched reactors, whereas firms in the United Kingdom and France would most probably tender natural uranium gas-cooled systems.

The study was completed in October 1958, at which point an International Panel consisting of seven internationally known experts on nuclear power, appointed by the Bank to take part in the study, had analysed and reported on the nine tenders. Subsequently, the Italian utility which will be responsible for the new power plant, Societa Elettromucleare Nazionale,

selected the tender submitted by the International General Electric Company of New York.

Only last week the Bank released the Summary Report of the International Panel and, in publishing it, the President of the Bank noted:

" The choice by SENN and the Italian authorities of the successful tender was, of course, neither within the scope of the Panel's responsibility nor within that of the Bank, and, as I understand the Report of the Panel, the final choice could as well have gone another way. What particularly impresses me is that in the highly competitive field of nuclear power development, the study (Project ENSI) has been accepted by the commercial firms and the governmental authorities as a balanced and impartial work and as a valuable contribution to nuclear power development. "

The Italian Government, through the Cassa per il Mezzogiorno, has formally requested the Bank to consider a loan for the SENN project. Originally, it was thought that the loan would be required by SENN in the Spring. However, closer examination of the cash requirements of SENN to meet expenditures under the proposed contract made it apparent that large scale expenditures would not begin until the Fall of this year. Thus, the Italian authorities have notified the Bank that they have decided to postpone action on this application until the Fall of this year. The project, meanwhile, is going forward as originally planned and should be completed in 1963.

The main terms of the Loan have been worked out with our Italian partners but in view of the foregoing circumstances, the Loan Agreement has not yet been presented for the approval of the Bank's Board of Executive Directors. Subject to this reservation I should be glad to outline briefly the main features of the proposed financing.

The proposed loan would be to the Cassa per il Mezzogiorno for re-lending to SENN, and would carry the guarantee of the Italian Government. It is the Bank's custom to lend only part of the cost of any project, leaving

it to the borrower to provide the remaining finance required. In the case of the SENN project, we would finance an agreed proportion

of the capital costs, including those for the nuclear facilities, the civil works, the sub-station, about 100 kilometers of transmission lines, fabrication of the first core and spare fuel elements, necessary engineering expenses, prudent contingencies and capitalization of interest during construction.

We normally finance power projects on a long term basis and in this case the term would probably be 20 years. During the years of construction, interest would be paid on amounts actually disbursed<sup>2/</sup>; thereafter, both interest and amortization would be met through a series of equal sums in annual instalments designed to retire the entire loan by the date of the final maturity.

The owners of SENN would assume the responsibility first of providing all funds in excess of the Bank loan needed to complete the plant and to bring it into full operation, and, thereafter, to provide any additional funds that may be necessary, beyond reserves, if any, to keep the plant in operation; second, to accept on a proportionate basis all the output of the SENN station; and third, after the plant comes into operation, and regardless of the amount of power produced, to make monthly payments sufficient in the aggregate to cover not only all operating costs (including recurring fuel costs) but also full service on the loan as well as allocations to reserves. Thus, the owners of SENN would undertake the basic risks of the project.

Underlying the loan would be, of course, the guarantee of the Italian Government to repay the principal of the loan and interest on it. However, it

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<sup>2/</sup> There is, however, a small commitment fee of 3/4 of 1% on amounts not disbursed.

is Bank policy to lend on power projects only if they are set up on a self-liquidating basis; thus, we would not expect to have to call upon the underlying Government guarantee.

There are other interesting examples of problems that nuclear lending brings; because of limitations of time I shall only briefly note them topically:

Insurance, both property and third party liability;

Construction contracts for design and supply of the nuclear and related equipment;

Assurance of a supply of fuel;

Training of operators;

Future Government policies on nuclear power.

All of these have required special consideration.

In closing, I should like to say that financing of nuclear power plants offers a challenge to the financial community. What is needed is the kind of creative banking thinking that had its roots here in Italy in the 13th and 14th centuries when the bankers and merchants of Genoa, Florence and Prato developed the basic banking techniques that so successfully underwrote the mercantile and trade rebirth following the Dark Ages.

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