Developer of Fermi breeder reactor reviews world electricity capability

Walker Lee Cisler, president of the Overseas Advisory Corporation, Detroit, Michigan, has been in the electricity industry for 61 years. Trained as a mechanical engineer at Cornell University, he served in World War I, and then for nearly 20 years worked for the Public Service Electric and Gas Company of New Jersey. He joined the War Production Board during World War II, then was commissioned as lieutenant colonel and sent to the Mediterranean theatre to work on power supplies. He was appointed chief of the Public Utilities Section of Supreme Headquarters Allied Expeditionary Forces (SHAEF), and worked directly with General Eisenhower to provide electricity for the military drive.

After the war Cisler participated in the Marshall Plan. He established semi-annual power surveys in Europe and Japan, worked with the Atomic Energy Commission, and attended the first international conference on Peaceful Uses of Atomic Energy in Geneva, Switzerland. He conducted a campaign to inform heads of state on the safety of nuclear power and the need for the breeder reactor. Cisler formed and headed the company which built the Enrico Fermi I Breeder Reactor in Detroit (1956-72). He became president of Detroit Edison in 1951 and served in various capacities until he retired as chairman of the board in 1975.

Cisler has made power studies and surveys of India, the Philippines, Taiwan, Korea, Thailand, Vietnam, Iran, and Tunisia, and continues to travel internationally on special projects. In 1968 he became chairman of the International Executive Council of the World Energy Conference, made up of 81 nations.

During September 1983, Walker Cisler was in New Delhi attending the 12th Congress of the World Energy Conference, for which he is now honorary chairman. This interview was given to EIR*'s Marcia Merry Pepper in February of this year.*

EIR: What special measures were taken to provide electricity for the war effort?

Cisler: I think it's best that I start with the War Production Board mobilization. Electric power was never too little or too late during the war. It was made possible by the mobilization of the electric power resources of the country and the additional resources that were necessary to make up for a possible deficiency. It was a magnificant effort, all very well organized and put together by a group of people in Washington whose background and life experience was in manufacturing, business, and technology. The country came together as never before or since in mobilizing to win the war so that there would be power as necessary for wartime requirements as well as for civilian requirements.

The United States came to the war with its existing facilities highly mobilized, and additional facilities were provided where necessary. The manufacture of heavy power equipment for utilities for civilian industry in the United States and for the military and defense requirements went hand in hand with the manufacturing of production facilities. You had the maximum utilization of the machine tools—the cutting edges of industry—and the result was that you had very orderly manufacturing of the needs for the military and for civilian needs.

EIR: What were the electrification efforts following the war?

Cisler: Under the Marshall Plan, which was the most magnificent manifestation of the generosity of the American people that has ever been shown, steps were taken to build up Western Europe. The destruction was enormous, but rebuilding was accomplished in a short period of time. The manufacturing facilities of Western Europe were modernized and they proceeded to advance into modern engineering, technology, and science in a very big way.

In 1955 the Geneva Atoms for Peace Conference was held. Bhaba [Dr. Homi Bhaba, physicist] of India was the chairman. The two countries that have made the most progress are the Soviet Union and the Americans. They were in rivalry as to who had progressed the farthest at that time. The

Geneva conference brought together not only a demonstration of what the Americans had but also what the Russians had.

There was great hope for the future. The Geneva Conference, Atoms for Peace, gave hope that the curse of the atom would be used for peace, for peaceful uses, rather than the military uses—the destructive uses. We kept away from that. But at the present time, I don't know where we stand. The timetable of Atoms for Peace was much faster than it happened. We have been retrogressing in the past few years.

I would like to see a revival of the Atoms for Peace. We could have a great abundance of electric power for all kinds of productive and cultural purposes. The big release of electric energy will create productivity for all of the manifold purposes, because electric energy is the most versatile form of energy. Electric energy is man-made, and so it's classed as a secondary form, the primary being the basic energy of coal, oil, gas, hydraulic, water vapor, even rain and others. Electric energy is secondary energy, but it's the most versatile form of energy. It will run both the smallest computer and also the largest steel rolling mill—they are one and the same as far as the electric energy. . . .

When I came into the industry in 1922 only about 10 percent of all energy—primary energy—was transformed into electric energy. That has steadily grown until now it is about 30 percent, and we anticipate by the year 2000 that it will be 50 percent.

But there has been a material slowing down in that growth in the last two or three years. I do not know today whether it will reach 50 percent by the year 2000, or whether it will take longer. But I believe that electric energy will provide an ever-increasing amount of the total energy requirements of the country—whether that reaches 50 percent by the year 2000 or somewhat less.

EIR: What do you think about the decline in power supply development in the United States and the obstruction of nuclear power development?

Cisler: We're trying to find our way out of that now, and it is taking much too long to do so. People are environmentalists about this and that. There is the matter of waste disposal. You get all kinds of reasons why you shouldn't do this and you shouldn't do that. But the truth of the matter is that people want to have a better society.

I think the progress of mankind has been the result of the use of energy. It is only a relatively short period of time since the industrial revolution—250 years—brought about the great advances in the productivities and standards of living that we have experienced. I can think of thousands and thousands of ways in which we have been assisted in our advancement by energy, the productivity of energy, the use of energy.

I think it all can be done successfully without defacing the landscape or placing it in uncertainty or danger at all. I'm one who has built an atomic power plant and operated it. I know what I am talking about. The United States is falling behind other nations.

EIR: And the Clinch River Breeder Reactor [the only major U.S. breeder reactor project since Walker Cisler's Fermi I Breeder Reactor was shut down in 1974], whose funding has been cut?

Cisler: It should have gone ahead full speed. When we had to shut down the Fermi reactor, which was in 1972, the United States went back 10 years. We had the largest operating fast breeder reactor in the world. And we've never caught up. We've lost ground.

I have seen the Soviet BN 600 running very well. It's the largest fast breeder reactor in the world. The next is the French. We have nothing here.

EIR: Do you see prospects for a new Atoms for Peace?

Cisler: I don't know. . . . I did it, I don't know whether President Reagan could do it. That's what is needed, a revitalization, wiping out all of these unnecessary restrictions, delays and hindrances. We often said, what it really needs is a Marshall Plan for nuclear energy.

EIR: What is your view of some of the priority hydropower and other projects proposed by the Mitsubishi Research Institute and the *EIR*? For example, developing the Qatarra Depression [a dry geologic basin in northern Egypt which could be filled from the Mediterranean]?

Cisler: Some day probably, the Qatarra Depression will be built . . . as we studied during the war, letting water into the Dead Sea out of the Mediterranean. That hasn't been done. Of course, it means the removal of tremendous amounts of earth.

EIR: What do you think of the potential of the new Brazilian dams, the Itaipu and the Tucuri?

Cisler: [The Itaipu Dam, on the Parana River between Brazil and Paraguay] That's a magnificent project! It's the largest project in the world so far. It's not as large as Cariba, on the Congo in central Africa. That has about 20,000 million kilowatts. I visited it and photographed it from a helicopter over the rapids. . . .

EIR: Can you describe the national energy development programs you have been involved in?

Cisler: In 1962 we made a monumental study of energy and economic growth for India . . . they're still using it. I proposed the power plant of the Himalayas in 1962 for the Damidar Valley, west of Calcutta in the State of West Bengal. It was a coal fuel plant using the flushings from the washing of the coal from the steel mills, to get the cost low and yet to use a high quality coal. It was never built, but that's what led to a waste power plant.

I worked for 25 years in Iran. The Shah was very knowledgeable, a very intelligent man. I told him they could have their first nuclear plant in seven years, and he said "I will order it to be done." There could be nuclear plants in operation now, but they [the Khomeini regime] are not interested. They're pretty much completed, but they've all been aban-

Walker Cisler, left, and Gov. G. Mennen Williams of Michigan with a model of the Fermi fast breeder reactor in 1956.

doned as far as I can tell. . . .

As you know, the electrification of Japan has been magnificent. There are 10 integrated power systems; the three largest, in order are: Tokyo, Kansai, and Kyutu.

Look at some of the maps of Russia, Siberia, and Japan. You see how close they are, only a relatively few hundred miles off the Kansai gradient railway. [The new Baikal-Amur Railway in the Soviet Union] opens up the [Siberian] coalfields, the coal mines, diamond mines.

EIR: Can you comment on the development of electricity in the Soviet Union?

Cisler: Before the blitz of the Ukraine, the Russian empire had about 10 million kilowatts of electric power for the whole country, which is two and a half times larger than the United States. About half of that was destroyed in the blitz of the Ukraine. They started with less than 5 million kilowatts, which was about the size of a medium-size electric power system in the United States today. We helped them greatly under Lend-Lease. We built vast amounts of equipment, and we put this behind the Urals and elsewhere. We built complete power plants, we built power trains, we built power cars. We helped them greatly—it fell to my lot to do that.

I was in Washington, and then I went into the service, and I went with General Eisenhower from North Africa to Berlin. I was in Germany as part of the quadripartite government, and I worked with the Russians in Berlin. Through all these 41 years it has always been a constructive relationship between myself, in what I do, and the Russians. They've been very responsive to me. . . . My credibility with the country has been uninterrupted for 41 years, and that's why I like to go there to visit and work with them.

EIR: What about Soviet projects elsewhere in the world?

Cisler: They built the High Aswan Dam. I've been there. They're as good hydraulic engineers as you find anywhere in the world.

EIR: There are proposals for mass producing nuclear power plants that could be floated to their ultimate installation location. You developed the first-ever floating power plants during the war. . . .

Cisler: They were part of the War Production Board. . . they were built under my direction in Pittsburgh. The hulls were fabricated by Bethlehem Steel at Ambridge, down the Ohio River, and we took them up the Monongehela near McKeesport. There were four ships; remarkable ships.

First they were to be used in the inland waterways in the United States. Only one ever got used for that purpose. The first one at Vicksburg was tied into the power system and supplied power for the ginning of the cotton crop. The rest of the time they were used overseas. They were built as a precaution, to ensure that the nation would not be without power.

They were completely sustained. They could supply power at 132,000 volts, and carried their fuel in the bottom of the ship. It supplied the fuel for several days' operation. The draft was 320 feet long, but the ships can go into water shallower than 10 feet. They operate at dual cycles—30,000 kilowatts of 60 cycles, and 25,000 kilowatts at 50 cycles.

[The floating power plants] *Sea Power* and *Resistance* were put overseas. They arrived in the estuary of the Thames at Christmastime, 1944. *Sea Power* was put in a canal in Belgium where it supplied 15 percent of the power of Belgium, providing power for the fabrication of steel. . . .

I released two ships to General MacArthur [who requested two of the floaters after recapturing the Philippines]. I knew him, met with him, and I helped him in rebuilding Japan. . . . *Resistance* was used in Korea, used in Okinawa, used in Guam, used in the other islands in the Pacific. The *Impedance*, the last one built, has been used in all these places, [MacArthur used it in reconstructing Manila] and now it's in Jamaica.