

necessity that we have moved into the simpler activities first. We didn't have high technologies, high skill levels to enter into machinery or industrial plant manufacturing. That was beyond our capability and beyond our resources. So we did what we could, mobilizing what we could, and what we have done is the only thing that could have been done with our limited resources.

But since we have increased our income, we now save more and can invest more, so we can do something more than we could have 10 years ago. We don't want heavy industry for its own sake. We have restrained ourselves from getting into prestigious activities, which many developing countries like to get into. We were very slow in building our steel mill. But when we built it, from the first year of operation it generated sizable profit, and the capacity utilization rate is around 100 percent, when around the world the average utilization rate is around 60 percent. We wait until we can do it really well, and then do it without too much delay and with reasonable efficiency.

We consider countries like Switzerland, Belgium, Netherlands, Norway, to be guiding us in the direction in which we can move. Heavy industry is a very broad definition. We want to get into something like Switzerland is doing very well, machinery. We are in a very similar situation. We had a bidding for an electric power plant a while ago, quite a big one, and a Swiss company competed with the U.S., Japan and West Germany, and it was the winner. They are a small country, but they can be the best in the world, in certain specialized activities. We want to find that little corner in the world production activities that we can specialize in, and become the best producer in the world. That is the way a small country obtains a high standard of living.

Japan is very different from us because they are so big; they can afford to do many different lines of business, and they don't have to specialize in a few lines. The Japanese economy is more than 25 times our Gross National Product, so we can never do all the things the Japanese do. We have to select a few, and import the rest.

The U.S. model

Q: Do you see the future of the world economy going in the direction Korea has gone? That is, the developing countries developing light industry, and then moving toward higher skill levels?

A: Yes, certainly. The process of development is really the process of restructuring, which means constantly changing the structure of your economy, so that workers continue to move into more satisfying and higher paying occupations. It goes from agriculture, to light industry, then to sophisticated industry, which assures a high quality of life to the workers.

I believe the greatness of the United States was built by businessmen constantly seeking new products, new

activities, and restructuring their operations instead of staying in one kind of activity for many decades. The spirit of restructuring is very much alive and should be encouraged by government policy everywhere in the world. I hope American businessmen understand that America did not become great by staying in one form of activity.

Q: Your use of the term restructuring is very similar to the Japanese term "knowledge intensification."

A: Yes, they have the same meaning.

'We will have no choice but to rely on nuclear'

Our correspondent discussed South Korea's long-term energy needs with Dr. Bong Suh Lee, Assistant Minister for Planning and Administration in the South Korean Ministry of Energy and Resources in Seoul.

Q: How do you plan to meet the large growth in energy demand expected in Korea over the next quarter-century?

A: Well, these days no one is planning to build more conventional oil-burning stations, except maybe the oil-producing countries. For countries like ours, which have to import almost all of the oil from abroad, it would be very foolish to plan on that. The power plant scheduled for completion in 1983 will probably be the last oil-burning station we build, and if we can help it, we are not going to depend on oil-burning types. If anything, in the hydrocarbon area, they will be coal burning. But when it comes to coal-burning, what we produce here in Korea domestically is anthracite coal, and all of this is used for house-heating purposes. And even for this purpose, we don't produce enough domestically. So we have to import coal, and if the fuel situation remains the way we think it will, we will have to import more as the years progress. Which means that if we want to use coal for electricity generation, again, we have to import 100 percent of the thermal coal from abroad. And as you know, although thermal coal is plentiful throughout the world, the transportation problem is very difficult. And also, you have to have land space here where you could have the power station and hinterland where you can store your reserve coal. Even more, you have to locate this near the coast line, because of the transportation and pollution problems. Although Korea happens to be a peninsula so we have more coastline than almost anybody else, when you actually examine our geography you find that we don't actually have that many available spots. So, although we would like to have thermal coal power stations as much as possible there we find definite physical limitations.

Then, what do you have left? Hydro capacity. We have some hydro resources here and of course we will try to maximize them. But up to now we have used about 50 percent of our hydro capacity, and if we maximize its utilization, perhaps we can double what we have at this moment. But the actual quantity is not too much. Right now, hydro supplies about 10 percent of our needs and our total demand of electricity by the year 2000 will be about 12 or 13 times what it is now. So you can imagine, by the year 2000 hydro can supply perhaps 1 percent, if that, of our energy needs.

Well, there is a huge gap, which will have to be filled with something. Naturally, the only alternative we have left is nuclear power. We have set out to see what our total demand is going to be, and then to see how we can meet that demand with the more conventional forms of energy supply systems, and the gap we will try to fill with nuclear power. In that kind of exercise, you will find we will have to have something close to 40 nuclear power stations by the year 2000. Whenever we say 40 units, then people get really surprised and ask how you can afford 40 units. And my answer is if our economy demands 40 power stations, then certainly we will be able to afford 40. It pays for itself. It is a matter of the general economy leading and power supply following.

As you know, our projection is that the economy will probably grow at a rate of 10 percent for the next 10 years or so and then slightly less than that, but the forecast is that the economy will certainly maintain the momentum of growth for the next 15 to 20 years. And if that is the case, certainly we will need a lot of power. And if we need a lot of power, we will have no choice but to rely on nuclear rather heavily. Our blueprint shows that perhaps something like 60 percent of power supply will have to be met by nuclear power, by the year 2000.

Korea and U.S. nuclear policy

Q: Have you pretty much dropped the idea of obtaining fast-breeder technology, which you tried to obtain in 1973?

A: Right now our position is not so much to develop nuclear technology ourselves. We are thinking we will leave that and development of fancy technology to somebody who can afford it. We will just buy it as it is developed, as we have done. We will also have to take into consideration people like President Carter who do not want to see mankind engaged in this kind of activity. So far our nuclear plan has been based mainly on the American technology, American machinery, and American supply of uranium. So, in order to keep our agreement with your government intact and in order to avoid disruptions in our energy

program, we think it is better for us if we go along with the American policy of nonproliferation.

Q: How many nuclear power plants do you have in operation at this time?

A: At present we have one plant in commercial operation, four plants are under construction, and two more are being bid on by international suppliers. We want the last of these seven in operation by 1986.

Q: Are you somewhat confused by the seeming lack of understanding in Washington that countries like yours have no choice but to move into nuclear power generation? U.S. policy does not seem to be in line with this.

A: I am neither confused nor bewildered by the American policy. But we certainly would like to present our position, namely that the U.S., with all kinds of energy alternatives, can afford to neglect nuclear and go to coal or oil if you would like to. But in our case, as I said before, we don't have a choice. Since energy is really the basic — well, the energy for industry and the economy as a whole — if you don't have sound and continuous supplies of energy resources, then you cannot very well plan your economy. When we say we *have* to have nuclear power stations, we really mean that. There are no other implications behind that. But we think the kind of policy America is pursuing these days is thinking behind the implications — that is, once you go into nuclear technology, then one of these days you are bound to develop a nuclear weapons system. Well I don't know if this is actually the case, that one really follows the other. It seems to me it really doesn't have to. You can take our position honestly, and right now you have very exact checking systems. As it is, we cannot move one bit of enriched uranium without being checked by your authorities. If you maintain this kind of checking system in the future, then I don't see why we should be so concerned about the technology being misused elsewhere. And again, if you extend that logic a little further, if we have enough uranium resources of our own, then we can stick to the more conventional kind of power generating system. As we know, world uranium supplies are limited, and countries like us don't even have limited reserves of uranium. Then, naturally, we will have to worry about how to maximize the use of the existing reserves of uranium. And there, we understand that the fast-breeder type reactor is very suitable. And if that is the case, then surely we are all for that. The world has always followed the latest and most up-to-date technology, and I don't see why we should have an exception in this field, particularly when it involves the very crucial energy problem.