

WPCC Physicist: World Faces Crisis

By TROY HOUSER

News Herald Staff Writer

"I feel we are entering an age of scarcity and every little bit we can do will be of some help."

Dr. Walter Nicaise, professor of physics and mathematics at Western Piedmont Community College, is concerned over what the future holds for Burke County, the nation and the world. He stresses this concern by noting that the world is on the threshold of shortages in all areas of raw materials from petroleum products to metals.

His greatest concern lies within the realm of petroleum depletion, raw material shortages and the resulting impact upon the world population. Secondary in his concern is the pollution problem and the fact that research has moved too fast, failing to consider long-range effect, of various pollution-control measures.

Dr. Nicaise was born in Nauvoo, Ill. He attended the University of Chicago, where he earned his B.A., then went to the

See WPCC page 5A

WPCC Physicist: World Faces Crisis

from page 1

University of Wisconsin, where he earned his M.S. in physics. In 1972, he received his Ph.D. in nuclear physics from N.C. State University.

Since coming to WPCC last year and even in previous fields of endeavor, Dr. Nicaise said he has been conscious of inevitable petroleum and raw materials shortages and of a need for stringent pollution controls. In academic positions, he said he has always stressed upon his students the necessity of being environmentally conscious at all times in order to preserve the world's resources.

After earning his B.A., Dr. Nicaise was active with the Marine Corps reserve and served nearly three years maintaining airborne electronics systems and equipment. He later worked with General Motors' AC Sparkplug division, where he designed and maintained electro-mechanical testing equipment.

From A-C, he returned to school for his M.S. and Ph.D. then worked one summer with the Environmental Protection Agency (EPA), where he studied stationary emission sources (smokestacks).

In his EPA findings, he said the electrostatic precipitation systems employed to remove fly-ash may be more dangerous to mankind than smoke filled with fly-ash.

In explaining, he said that when fly-ash is eliminated from the smoke, the element of potassium (a base) is removed. The smoke becomes more acid in content. Therefore, the acid collects in the atmosphere and is brought to the ground by rain, causing the earth to have a higher than normal acid content.

On a similar topic, he said the catalytic converters on new automobiles may not provide any answers to pollution. The converter takes the hydrocarbons out of the emissions, but replaces them with sulfuric acid, he said.

"Our early attempts to remove pollution have moved too fast," he said. "We can expect some serious mistakes at the beginning."

Dr. Nicaise has attended conferences and lectures that foretell of forthcoming shortages that are soon to plague America and the world.

During an interview with Dr. Nicaise, Dr. Jack Huss, chairman of WPCC's Department of Natural Science and Mathematics, was present to give his views on the shortages.

Both Huss and Nicaise expressed grave concern over the energy crisis expected to hit in the future — with inadequate gasoline, oil, natural gas, electricity, and subsequently all those products that depend upon the use of those resources.

Both agree that no immediate answer to thwarting these inevitable shortages is available. However, both also agree that research to find the answer should be given governmental go-ahead and that scientists should proceed with their research at an unprecedented rate.

Huss pointed out that even with the present oil supplies and new oil reserve discoveries, the world can expect at best (at the current rate of use) about 100 more years. That leaves future generations without petroleum.

"It's dastardly that we use gasoline and natural gas to warm ourselves and run our cars," Huss said, "especially when we can put our petroleum products to much better and recyclable uses."

Dr. Nicaise added that once the petroleum products are burned, they're gone forever. The better usages as pointed out by Huss are the manufacture of all goods which depend upon petroleum as a base or ingredient. "Were it not for petroleum," Huss said, "you would be sitting on the floor instead of that chair and you'd most likely be embarrassed since most of the clothes you're wearing are made of synthetics derived from petroleum."

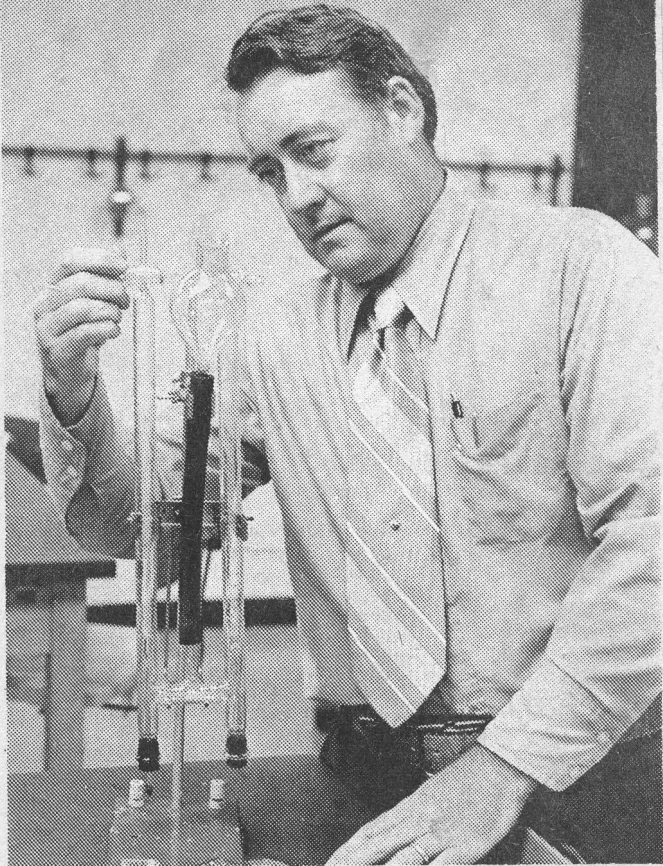
The more immediate answers to the petroleum shortages, Dr. Nicaise said, lie within the development of alternative energy supplies.

Nuclear power and nuclear fusion may be two possible answers; however, nuclear power produces vast amounts of radioactive waste materials that must be stored for tens of thousands of years to "cool off radioactively."

The concept of nuclear fusion, however, would be cleaner and produce a different and less-contaminating waste but its concept at this point is merely theory.

A breakthrough on fusion, may not come for another 20 years. On the other hand, scientists may find the answer next year. At any rate, to plan, build and put into operation the nuclear fusion plants, Huss predicted it would be 20 years or more after the breakthrough before the world could realize any noticeable benefit from the process.

Then there is the concept of solar energy. Present theories are impractical but science is working on them. Dr. Nicaise and Huss both state that the use of solar energy is one of two pollution-free energy sources; the other is the wind, using windmills for power sources. In some areas of the United States, Nicaise says, the concept of utilizing hot springs and steam from cracks in the earth is being studied for heating homes.



Electrolysis splits water into hydrogen, oxygen.