says the AEC should do more careful analyses not only of peaceful nuclear technology but also of the entire electric power industry. "A comprehensive technology assessment which considers all the implications of a power-intensive technology is urgently needed."

But the picture is not all dark. Ten years ago, water project agencies were notoriously careless in their preparation of cost-benefit analyses. They usually did not even bother to look at social and environmental aspects of their projects. This has changed substantially, says Coates. Largely because of environmentalist demands and the National Environmental Policy Act, assessment of new water projects "has been broadened and improved over the past five years" and the outlook is for even greater improvement.

The best technology assessment is accomplished, says Coates, when it is done by an agency not directly responsible for the program or project being assessed. She names NSF and the Executive Office of the President as two examples of such independent—and thus generally objective—agencies. Likewise, independent research groups or university groups "which value their reputation for objectivity as a chief stock in trade" make the best contractors for technology assessment. Frequently, the worst assessments get done in-house by self-interested agencies or by contractors under pressure by such agencies to come up with the "right" answers.

The sheer number of technology assessments has proliferated greatly due to the requirement for all Government agencies to provide environmental impact statements on any proposed program or project. But the quality of the statements varies greatly, says Coates, even though, in general, the new requirement is "a strong stimulus to the development of the technology assessment process." □

DDT, health and the 3rd World: Delicate balance

Now that DDT has been indicted for impairing the reproduction of certain bird species and for working its way up the food chain, the United States has banned virtually all use of DDT in this country (SN: 6/24/72, p. 404). The next question is what is being done about DDT in the developing countries. Several authorities on pesticides tackled the question at the meeting of the American Chemical Society last week in New York City.

The discussion made clear that DDT usage in the developing countries is not about to abate. As James W. Wright of the World Health Organization in Geneva stressed, the lives of millions of people there depend on disease control and food production, which in turn stem from use of pesticides that are effective, cheap and minimally toxic to mammals and man. DDT is usually the pesticide of choice. WHO sets the safety levels of application, but the developing countries do not always adhere to them. Meanwhile WHO is trying to find alternatives to DDT that are just as effective and safe but less persistent in the environment. The problem, noted Wayland J. Hayes Jr., a toxicologist at Vanderbilt University, is that compounds as effective as DDT are usually more toxic to mammals and man. WHO has examined 1,300 compounds since 1960, he said. Of those, only 12 made it to field trials in 1969, and today only three of the 12 are being used as substitutes for DDT.

Jesse L. Steinfeld, Surgeon General of the United States, asserted that as long as biodegradable compounds cost a lot more than DDT, the United States should continue to provide the developing countries with DDT. In view of insect-caused diseases and food needs in the developing countries, Wright concluded, "DDT will be used there for an indefinite period of time." Hayes and Steinfeld agreed.

The scientists also touched upon the effects of DDT on human health. Hayes declared, "It is one of the wonders of the age that it [DDT] is so safe for humans." Wright said that WHO called upon 10 scientists from throughout the world for their opinions, and they concurred that DDT represents no harm to man. Steinfeld added that DDT has been fed to people without producing any problems. Such cavalier endorsements of "DDT as safe for humans" are puzzling, however, especially as Steinfeld noted that DDT research is uncovering increasingly more complex problems. Neither he, nor Hayes, nor Wright, ventured to mention that scientists are beginning to probe the effects of chronic, low-level doses of DDT on man, and the picture that is emerging is a complex one indeed.

In 1965, for example, the United States Community Pesticide Studies were launched, to examine the effects of low, chronic levels of pesticides upon man. The CPS examined 1,200 persons in 14 states, and all were found to have residues of DDT or DDE (the breakdown product of DDT) in their bodies. DDT and DDE have been found in the blood, umbilical cord and amniotic fluid of pregnant women. If mother or fetus encounters stress, maternal fat could be used up rapidly, with DDT becoming abruptly (and possibly hazardously) available to the fetus. Mothers' milk contains DDT. A newborn's liver enzymes might not be functional enough to detoxify the compound. High levels of DDT have been detected in premature babies.

Obviously such findings must be put in perspective. DDT may indeed be "safe for humans," but scientists have yet to confirm it. □

NCI seeks Soviet leukemia virus

Since the United States and the Soviet Union signed their agreement on scientific cooperation in May (SN: 6/3/72, p. 357), American cancer researchers have visited the U.S.S.R. and Soviet cancer researchers have visited the United States. Last week the National Cancer Institute announced it will probably be soon receiving, from the Soviet Union, samples of a virus that may cause leukemia in humans. Boris Lapin, director of the Institute of Experimental Pathology and Therapy at Sukhumia, Georgia, and a chief investigator on the Soviet leukemia project, attended the NCI news conference.

As long ago as 1967, Lapin and his colleagues inoculated blood samples from leukemia patients into an apparently susceptible species of baboon. About a third of the inoculated animals came down with leukemia or sarcomas (connective tissue cancers). The researchers subsequently detected a C-type (RNA) virus—one of the major human cancer virus candidates—in the baboons that developed cancer, and also in some of the blood samples from the leukemia patients.

"We have been trying to get the virus from the Soviets for several years now," says John Maloney, associate scientific director of NCI. "I think the agreement has strengthened our chances. We are anxious to determine whether the origin of the virus is cat, mouse, elephant, human or whatever."

If NCI scientists or Russian scientists should confirm that the virus is indeed of human origin, "It would be very exciting," notes Maloney. It would more or less confirm, at last, that a virus can cause cancer in humans, as it can in many experimental animals. Even if the virus turns out to be a baboon virus, which Maloney concedes he personally thinks it is, he says it should serve as an "excellent test system" for the development of cancer vaccines and biochemical preventatives against cancer in humans, because primates are close to humans phylogentically.