never admitted that it exists, presumably due to sensitivity about its military nature. Soviet officials continue to maintain that all Russian space shots are launched from the Baykonur Cosmodrome near Tyuratam in central Asia, with a few additional small satellites launched from a minor test range on the lower Volga River. But American observers say Plesetsk is the busiest spaceport on earth, accouting for 40 percent of all the world's space launches. Tass placed itself in a potentially embarrassing situation by reporting the UFO: To explain the sighting would be to reveal the existence of the base.

The identification of the Soviet UFO as the Cosmos-955 spy satellite was made by James E. Oberg, a space specialist in Houston who is both a well-known authority on the Russian space program and an investigator of UFO reports. He is also a member of the recently formed UFO subcommittee of the private Committee for the Scientific Investigation of Claims of the Paranormal, which last week issued his report explaining the sighting.

"As soon as I read the newspaper reports, I thought of a rocket launching," Oberg says. "I made a phone call to a friend of mine who keeps records of Russian satellites, and sure enough, I found that two satellites had been launched that morning." Calculations based on orbital predictions issued by NASA's Goddard Space Flight Center in Greenbelt, Md., enabled Oberg to determine that the missile had blasted off a few minutes before 4 a.m. local time. The reports from Petrozavodsk, which is about 200 miles southwest of Plesetsk, began at 4 a.m. The satellite was launched toward the northeast, thus, says Oberg, providing the surprised witnesses with a spectacular view right up the exhaust plumes. "The identification," he adds, "is 100 percent certain."

Nighttime rocket launchings in the United States have often resulted in UFO reports because the expanding vapor trail sometimes glows in the dark and can assume odd shapes.

Oberg says this is only the fourth time that a launch from Plesetsk has had just the right conditions of azimuth, high altitude, booster and darkness to produce an awesome visual display. In one case, the launch of the Meteor 2 weather satellite in October 1969, dozens of eyewitness reports came in from observers in Finland and Sweden. An amateur astronomical society in Helsinki collected the reports and later published drawings of the phenomenon.

The vivid descriptions of this latest sighting are virtually identical to the Finnish reports about the Meteor 2 launch eight years ago. The mysterious tentacles, or "shafts of light," Oberg says, were in fact the separate vapor trails left by the four parallel booster units attached to the core rocket stage. "Films of Soviet rocket launchings show this 'shaft of light' effect clearly." □

Nonproliferation Act: A vote for apple pie

A primary aim of the Carter administration is to assure that diversion of nuclear fuel for weapons proliferation be prevented at all costs. President Carter's preference for halting reprocessing of spent nuclear fuel in this country is but one confirmation of this stance. Backing nonproliferation legislation regarding export of nuclear fuel and technology is another. And with passage of the Nuclear Antiproliferation Act of 1977 last week by the House of Representatives in a vote of 411 to 0, the Congress has added its support—although at this time, a vote against antiproliferation legislation really comes down to a vote against apple pie and the American Way.

Even though the United States is the world's major supplier of nuclear technology, it has not until now clarified conditions for nuclear exports or what circumstances would cause a break in relations with nuclear-importing nations. The act calls for strict control by the United States of how fuel it sells other nations is used and ultimately disposed of—or, as in the case of the recent U.S.-Japanese agreement over the Tokai Mura reprocessing plant—weather fuel will be reprocessed in a way that will prevent its diversion to weapons.

Perhaps the most recent lesson on the importance of this issue is confirmation within the last month of a U.S. detonation of a nuclear bomb made from "reactor-grade" plutonium—something hitherto claimed impossible by the commercial nuclear industry. The May 18, 1974, nuclear detonation by India using material from a supposedly peaceful experimental reactor reinforces the point. And with recent interest by such governments as Bangladesh, Israel and the Arab states in acquiring nuclear power technology, the issue of arms proliferation becomes even more timely and essential.

The nonproliferation act would end cooperation with nations, such as India and South Africa, that refuse to apply international safeguards to their allegedly peaceful nuclear research.

A Senate version of the bill provides—unlike the House—that the President seek to establish an International Nuclear Fuel Authority that would guarantee that uranium supplies would be exchanged regardless of the politics of member nations. Also, the House version wants to provide money to aid underdeveloped countries in developing nonnuclear resources as an alternative to nuclear energy. Differences between the House and Senate bills are small, however, and it is expected that resolution of those differences will come in the conference committee.

One phrase within the legislation that has caused considerable controversy has been "whether or not *timely warning* of any diversion" of nuclear materials can be "provided to the United States *well* in advance of the time at which the nonnuclear weapon state could transform the diverted material into a nuclear explosive." Since a bomb could be prepared in advance of the availability of a nuclear explosive, some have questioned whether any form of "timely warning" is possible. This drawback could essentially prohibit nuclear export.

It now appears that a compromise amendment attached to the House version will permit the Secretary of Energy to enter agreements for reprocessing of U.S.-supplied fuel if "such reprocessing or retransfer will not result in a significant increase of the risk of proliferation beyond that which exists at the time approval is requested."

In other words, nations such as England and Japan, with reprocessing technology and access to nuclear fuel, could and would reprocess regardless of restrictions on U.S.-supplied fuel. They would, therefore, likely be granted at least temporary approval for reprocessing of U.S.-supplied fuel (Japan has already received such approval for Tokai Mura). Reprocessing approval for Bangladesh, however, would be a very different story. □

Our energy goals: How clean are they?

In the final days, prior to its incorporation in the Department of Energy, the Energy Research and Development Administration released a draft summary of its first annual Environmental Analysis of Energy Technologies. The study assesses impacts of proposed energy supply strategies for use in setting research priorities. Although begun months before completion of the President's National Energy Plan (NEP), the study has been revised to include the NEP.

The upshot of the study is that although the NEP would initially (by 1985) cause greater environmental degradation than our current energy policy, by the year 2000 the impacts would reverse. By then the NEP would offer significant environmental advantages over impacts from our present energy strategy. Conservation programs in NEP alone would bring reductions (compared with 1975) of 32 percent in hydrocarbons and 65 percent in suspended solids.

What is not clearly pointed out in the draft report is that there would be little difference in environmental impact between the NEP and current energy policy if the "best available" environmental-control techniques were required of all coal-burning equipment; it seems, though, that soon such will be the case. What is needed more is a realistic assessment of whether either the NEP or pre-NEP strategy will be able to meet actual U.S. energy requirements. If, as many think, neither can, then the whole study is moot. □