fers who worked on the project at first proposed to make recommendations for changes in specific types of equipment, but in the end they decided to offer broad, generic suggestions. As one NSAC staffer said, the operators at Crystal River were "flying blind" during the crisis because the control room instrumentation had failed. Therefore, the principal recommendation of the NSAC study is that some sort of redundancy be built into the controls that govern normal operation of the plant. This would require a redesign of electrical power supply systems.

No matter what remedy the NRC chooses, the decision will be difficult, for the commission works in a highly charged political environment today. Industry leaders are protesting loudly that the government has become too concerned with the trivial mechanical problems of nuclear plants and not enough concerned with impending energy shortages. Yet the NRC can hardly ignore the safety-related problems that its own staff and NSAC have identified. It will be interesting to see how the lessons of the Crystal River incident will be applied.

—ELIOT MARSHALL

Navy to Close Arctic Research Lab

Other agencies and the state of Alaska have been asked about supporting the facility, but so far no takers

The Naval Arctic Research Laboratory at Barrow, Alaska, which has come to serve as a national lab for arctic and polar research since its establishment 33 years ago, will begin closing down this fall despite recommendations by some prominent arctic specialists that it be kept operating.

Senator Ted Stevens (R-Alaska), who is trying to save the lab, has proposed an amendment to the pending Alaska lands legislation which calls for a 1-year study of both the need for a continuing program of arctic research and the possibility that some agency (or group of agencies) other than the Navy might assume responsibility for the facility at Barrow. At the moment, however, the likelihood is that the lab will not survive beyond this summer. The Navy feels that its need for the lab has diminished to the point that it can no longer justify bearing the substantial cost—$11.6 million in fiscal 1979—of the lab's operation.

According to Navy sources, after 3 decades of work conducted from the facility, the Navy has met many of its research needs with respect to the western part of the arctic basin and now wishes to focus more on the eastern part. In cooperation with the government of Denmark, the Navy is engaged in research conducted from Nord, a community near the northeast tip of Greenland and the East Greenland and West Spitsbergen currents. These major currents, one flowing south and the other north between Greenland and Spitsbergen, account for some 80 percent of the exchange flows between the Arctic Ocean and other oceans and are now a prime subject of arctic research interest.

Naval Arctic Research Laboratory at Barrow, Alaska.

In 1979 the National Oceanic and Atmospheric Administration (NOAA) and the Department of the Interior actually conducted substantially more research out of the Barrow facility than the Navy did. Nevertheless, when the White House Office of Science and Technology Policy (OSTP) and the Directorate of Defense Research and Engineering wrote NOAA, Interior, and other agencies last year to ask whether they wished to assume responsibility for the lab, the answer was no. And, according to Philip Smith of OSTP, the state of Alaska also has not come forward with an offer to take over the lab or even contribute state funds to its support.

(The state would appear to be in an excellent position to help support the lab. Alaska gets 12 percent of all the oil produced at Prudhoe Bay, and, with last year's dramatic rise in oil prices, oil revenues are piling up, with a budget surplus of $1 billion or more expected at the end of June. The University of Alaska has been managing the lab under a Navy contract.)

The study that Senator Stevens has in mind apparently would again look to the chance that a group of federal agencies will wish to join in the support of the lab.

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But this appears to be a slim possibility at best, especially in light of the current budgetary exigencies growing out of the Carter Administration's struggle to reduce the budget and control inflation.

If the lab is to be closed for good, many scientists will deplore the loss. The recent report from a November workshop sponsored by the Office of Naval Research concluded that there is a continuing need for the lab, not least because of the role it can play in the monitoring of environmental changes induced by such activities as the construction of roads for mining operations, drilling for oil and gas both on shore and in the Beaufort and Chukchi seas, and the building of an arctic gas pipeline.

Chaired by Dael Wolfle, professor of public affairs at the University of Washington, the workshop brought together more than a dozen arctic specialists and researchers, including Jerry Brown of the U.S. Army Cold Regions Research and Engineering Laboratory and botanist William S. Benninghoff of the University of Michigan. It recommended that the federal government support the lab at a level of some $8 million to $10 million a year; 80 percent of the money would be spent in serving visiting scientists and engineers, with the rest going for staff research and educational activities.

Senator Stevens sees the Navy lab as a key resource for the shaping of a much needed national arctic policy.

Senator Stevens and his staff are in the early stages of an effort to promote—possibly through legislation—development of a national policy for the arctic, a region where economic activity and resource management conflicts are very much on the increase. The research lab at Barrow, Stevens feels, could be an important scientific resource in the shaping and carrying out of such a policy.

As of 30 September, all research activities at the lab will be winding down, with the facility moving rapidly to a standby status that will continue through September 1982 against the chance that some other agency or agencies will arrive to put it back in service.

—LUTHER J. CARTER

Physicians Take on Nuclear War

Group keys pitch for disarmament on futility of attempts to recover from a nuclear exchange

Like Californians who have become inured to the prospect of a devastating earthquake, Americans have been living so long under the shadow of possible nuclear war that it has been shoved far back into the corners of most minds.

But world events are now stirring crisis-jaded mentalities. Last spring considerable publicity was accorded a report from the Office of Technology Assessment on "The Effects of Nuclear War," which set forth some of the grisly short- and long-term effects of a U.S.-Soviet nuclear exchange.

An even more immediate and ghastly picture was drawn last month at an open symposium at Harvard Medical School. This meeting, on "the medical consequences of nuclear weapons and nuclear war," produced 2 days of horrifying scenarios about what would happen if a 20-megaton nuclear bomb were to land on Boston. The unanimous conclusion of the speakers was that no adequate medical response would be possible even in the event of a "limited" nuclear exchange, and that civil defense plans are nothing more than a dangerous illusion.

In a nuclear attack on Boston, speakers said, everyone and everything within a 6-mile radius would be destroyed instantly, and half the people within a 20-mile radius would be killed or injured. Winds up to 300 miles an hour would create vast fire storms. Windblown fallout would kill people for hundreds of miles around. Bomb shelters would become ovens. There would be about 10,000 severe burn cases in Boston—unmanageable even if medical personnel and facilities were left intact, since the whole country has no more than 1000 intensive burn care beds. Deaths from infections, starvation, dehydration, and radiation sickness would continue indefinitely; food and water supplies would be poisoned; and the population would be reduced to roving bands competing for food.

The meeting, organized by a group called Physicians for Social Responsibility, seems to have marked the beginning of a crusade of sorts by members of the medical profession, a profession that for some years now has not been distinguished for its political activism.

The purpose of the movement is to try to penetrate numbed minds with the hideous realities of nuclear war, to try to persuade governments that it is folly to think of nuclear war even as a "rational possibility," and to press harder for disarmament and reduction of international tensions. Vague and idealistic as these goals may sound, they do not emanate from innocent young idealists but from many who constitute the cream of the nation's medical establishment. Those who have enlisted in the cause include some of the leading lights at Harvard, as well as five Nobel Prize winners, including Frederick C. Robbins, dean of Case Western Reserve Medical School and incoming president of the Institute of Medicine, and Salvador Luria of the Massachusetts Institute of Technology Center for Cancer Research.

Following the February meeting, 60 physicians signed a telegram to President Carter and Chairman Brezhnev warning that medical disaster planning for nuclear war is "meaningless," that "there is no effective civil defense," and that "recovery from a nuclear war would be next to impossible." A larger group of more than 600 individuals subsequently spon-

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