



*Natural Resources
Defense Council*

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NATURAL RESOURCES DEFENSE COUNCIL
NUCLEAR TEST BAN VERIFICATION PROJECT

STATUS REPORT
NOVEMBER 1986

On May 28, 1986, the Natural Resources Defense Council entered into an historic agreement with the Soviet Academy of Sciences to establish three seismic monitoring stations around the principal nuclear weapons test site in each nation. The purpose of the project is to demonstrate that verification is not an obstacle to a nuclear test moratorium or ban. The project will also collect seismic data to improve estimates of yields of nuclear weapons tests, under the current treaty limit of 150 kilotons or a possible lowered threshold. In just five months, NRDC has made remarkable progress in the implementation of one of the largest and most important private scientific exchanges ever undertaken with the Soviet Union.

SEMIPALATINSK SEISMIC STATIONS

Since late summer, NRDC scientists have been operating surface seismometers at three locations around the major Soviet nuclear weapons test near Semipalatinsk, about 1800 miles southeast of Moscow in the Republic of Kazakhstan. The Soviets have virtually completed construction of the three permanent stations at Karkaralinsk, Bayanaul, and Karasu. These stations are to be equipped with state-of-the-art high-frequency seismometers placed in 300-foot-deep boreholes, which will be capable of detecting explosions on the test site as small as a few tons. The seismometers and related computer-driven digital recording equipment is now being manufactured in the United States. In January 1987, an NRDC team will travel to the Soviet Union to install the high-frequency seismic equipment.

NEVADA SEISMIC STATIONS

On November 9, 1986, a team of seismologists from the Institute of the Physics of the Earth of the Soviet Academy of Sciences will come to the United States to join NRDC in the selection of sites for the seismic stations around the Nevada nuclear weapons test facility, about 65 miles northwest of Las Vegas. NRDC's seismologists have been studying about eight potential sites, of which the most favorable are located in or near Nelson and Railroad Valley, Nevada, and Deep Springs, California. Due to visa restrictions, the Soviet seismologists

will not visit the potential sites for seismic monitoring stations. While this is unfortunate, we will be able to proceed with the site selection, installation, and operation of the stations. Our plans are to use microwave telemetry to transmit data from these stations to the Scripps Institution at the University of California - San Diego.

NEW PLANS FOR A COMPUTER NETWORK AND AN NRDC OFFICE IN MOSCOW

In mid-October, NRDC and the Soviet Academy agreed to establish a computer network linking all six of the seismic stations, laboratories at Karkaralinsk and Scripps, and offices in Moscow and Washington, D.C.. The network would facilitate the transfer of seismic data and of information needed to administer the project. This would represent the first such computer network linking multiple facilities in the United States and the Soviet Union. In December, we intend to take the first step in establishing this network by attempting to link Scripps with Moscow and Karkaralinsk.

NRDC's Dr. Thomas Cochran and Soviet Academy Vice President Velikhov also agreed that it would be very useful if NRDC would establish an office in Moscow. This office would greatly facilitate our capability to communicate and cooperate with the Soviet Academy and would be of service to the increasing number of other American private organizations interested in cooperation with the Soviets. The office would include a computer, telex, and telephone link and would be set up and initially staffed by Barbara Finamore, who is former NRDC Project Attorney living in Moscow and now serving there as our ad hoc representative.

U.S. GOVERNMENT RELATIONS

Since the outset of this project, NRDC has sought the involvement and cooperation of the United States Government. We see our role as an "honest broker" to stimulate agreement between the U.S. and the Soviet Union. NRDC has indicated its interest in turning this project over to the U.S. Government. We have consulted frequently with top officials at the Department of State and have met with Assistant Secretary of Defense Richard Perle, who has been publicly critical of the project. NRDC has received quiet encouragement and assistance from within the Executive Branch.

NRDC has encountered difficulties on obtaining visas for the Soviet seismologists for their visit to select the sites for the NRDC/Soviet Academy stations around the Nevada Test Site. The Administration has so far conditioned access to the proposed sites upon their willingness to observe a nuclear explosion at the Nevada Test Site and a demonstration of the CORRTEX device, which is used to measure the yields of large nuclear detonations. In effect, the Administration is trying to compel the Soviets to accept their top agenda item on nuclear testing, which involves an agreement on improved verification as a basis for ratification of the 1974 Threshold Test Ban Treaty, which sets a 150 kiloton limit on nuclear weapons tests. The Soviets have not acted on this invitation which was first made by President Reagan last April and indicated that the delegation of Soviet seismologists participating in the NRDC/Soviet Academy Project was not the appropriate one to view a demonstration of CORRTEX. As indicated above, we will be able to implement our project fully even if the Soviets are never permitted to visit our monitoring stations around the Nevada Test Sites.

There has been substantial Congressional interest in the program. NRDC has given briefings to Members and their staffs. The program was seen by a number of key moderate Representatives, including Les Aspin, as perhaps signaling a significant change in Soviet attitudes on verification. This led to the vote by the House of Representatives on August 8th to cut off funding for all but the smallest nuclear tests for one year starting January 1, 1987 - the first time the House had ever adopted a binding moratorium on nuclear testing. While the House cut-off was dropped in Conference with the Senate just days before the Iceland Summit, we expect testing and our project to be the focus of attention again when the Congress comes back next January.

PUBLIC EDUCATION AND MEDIA RELATIONS

NRDC has made a substantial effort to call the attention of the American public to our project and to educate them about the nuclear testing issue. The project has been the subject of dozens of national newspaper, magazine, radio and TV stories, including a segment on ABC 20/20 in mid-August. NRDC is also undertaking efforts to work with local and regional media. In combination with speaking engagements, we already have had media tours in Chicago and New York, which involve appearances on talk shows and meetings with local journalists. Plans are underway for a such a visit to Boston in December.

There has been a strong demand for speakers from NRDC on this program. We have already spoken before audiences at Princeton University, University of Chicago, Rockefeller University, and Columbia University, and in citizen meetings in New York, Providence, and Hartford. We have found that we are able to bring a message of real hope to many Americans who are deeply frustrated by the lack of Governmental response to their desire and efforts to end to the nuclear arms race.

PROJECT STAFF, TECHNICAL PERSONNEL AND ADVISERS

NRDC Senior Staff Scientist Thomas B. Cochran, who conceived the idea for this scientific exchange, and Senior Staff Attorney S. Jacob Scherr are serving as co-directors of the Project. NRDC Board Chairman Adrian DeWind, who signed the agreement with the Soviet Academy on behalf of NRDC, is playing an active role in its implementation. NRDC's Executive Director John A. Adams, along with other NRDC staffers, also are making major contributions to what is the largest single initiative ever undertaken by NRDC. The estimated cost to NRDC for the first year of this unprecedented Project is \$2.4 million.

NRDC has been very fortunate to enlist the cooperation and assistance of a number of leading American seismologists in the implementation of the project. Our chief technical adviser is Dr. Charles Archambeau of the University of Colorado-Boulder, who is one of the foremost authorities in the world on the monitoring of nuclear testing. Dr. Archambeau is serving as chairman of our distinguished Seismic Monitoring Advisory Committee, which had its first meeting in mid-September. NRDC is contracting with the Scripps Institution at the University of California-San Diego to install and operate the stations. The co-leaders of the NRDC team at Scripps are Drs. Jonathan Berger and James Brune, both of whom have extensive international experience in seismic monitoring.

In October, NRDC and the Soviet Academy agreed to encourage the participation of a non-governmental group of British seismologists in our exchange. The organizers of the group include Frank Barnaby, former head of SIPRI; Professor Joseph Rotblat, Director of PUGWASH; Dr. Dorothy Hodgkin, President of PUGWASH and Nobel Prize Winner; and Jeremy Leggett, a geologist at the Imperial College of Science and Technology.