Central Intelligence Agency

Washington, D.C. 20505

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19 August 1985

MEMORANDUM FOR: Secretary of State
Secretary of Defense
Assistant to the President for
National Security Affairs
Director, Federal Bureau of Investigation
Director, National Security Agency

SUBJECT: Exposure of Official U. S. Personnel in Moscow and Leningrad to the Chemical Compound NPPD (S)

1. There is incontrovertible evidence that the KGB has been systematically applying chemical substances to official U. S. personnel in Moscow and Leningrad. Although at least three or four different compounds appear to be involved, the most consistently applied substance has been 5-(4-nitrophenyl)-2, 4-pentadiene-1-al (NPPD). The KGB program is designed to contaminate U. S. officials in the USSR with a highly persistent chemical so that these individuals leave detectable traces of the substance on any objects they subsequently touch.

2. There has been periodic intelligence reporting on the contamination of U.S. personnel in the USSR with NPPD and other substances for a number of years. The first confirmed reporting of the presence of NPPD, in the form of a yellow powder noted on clothing and cars, was in Moscow in October 1976. Positive samplings for NPPD in yellow powder form were: one in 1977, none in 1978, none in 1979, three in 1980, none in 1981 and three in 1982. The initial analysis identified this specific chemical (NPPD), but the full significance and extent of the deployment of this chemical against U. S. personnel were not known until the early summer of 1985. In an effort to establish whether the KGB program posed health or safety risks to U. S. personnel, this Agency arranged for NPPD to be subjected to the Ames/Salmonella test (see paragraph 4 below) in 1983. Although results of the tests, received in April 1984, revealed that NPPD could be harmful, the level of exposure by means of the yellow powder was not believed significant.

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3. On the basis of evidence that NPPD, as a tracking compound, was being employed in forms other than yellow powder, [redacted] in May and June 1985, implemented an extensive sampling program for NPPD in the Soviet Union and East European countries. Laboratory testing is still incomplete, but the preliminary results indicate that the contamination of U. S. personnel in Moscow and Leningrad is more pervasive and chronic than we had previously assumed. Further sampling will be required to determine the full extent of the exposure of official U.S. personnel in the USSR to NPPD and other chemical substances, but there is absolute proof that several U.S. officials and their family members have been contaminated. NPPD does not occur in nature, so the presence of the chemical is not accidental. The exposure is deliberate and specifically directed against U.S. officials.

4. The Ames test was developed 10 years ago by Professor Bruce Ames at the National Institute of Health and is currently the most widely used short-term test to determine whether a chemical can cause genetic mutations. This test is widely used throughout the western world and has been used to a limited extent in Eastern Europe and Asia. Damage to genetic material (mutations) can result in adverse genetic effects in future generations, specifically cancer and inherited birth defects. Substances failing the Ames test have been shown to have a 75-90 percent probability of being carcinogenic in humans. Ames testing of NPPD revealed it to be a very potent mutagenic agent. NPPD tested positive in all 10 Ames categories, an extremely rare event. Next, a series of toxicity tests with animals was conducted to determine the acute lethal effects of NPPD. The results showed that NPPD is not acutely toxic. However, a very unexpected effect was observed from oral exposure to massive doses of the chemical. Classic neurotoxicity, unsteady gait followed by coordination and balance problems, was observed. Animals lost the use of their hind limbs, went down, and later developed respiratory problems. This led to severe respiratory repression and eventual death. The potential for cumulative toxicity with repeated exposure to NPPD is unknown, but the importance of this question is heightened by the apparent neurologic involvement. Delayed deaths at lower, although still heavy, doses in the animal tests reinforced this concern. In summary, the Agency's testing resulted in the conclusion that the mutagenic potency of NPPD is strongly indicative of a potentially

carcinogenic material and that important questions of toxicity through chronic exposure remain to be resolved. Additional information on the Ames test and NPPD is attached.

5. All U.S. personnel and dependents who have been assigned to Moscow and Leningrad from 1975 to the present may have been exposed to NPPD and/or other substances in unknown quantities. Medical monitoring of these individuals is indicated to allay any concerns they may have and to determine whether there have been harmful long-range effects. Additional sampling and laboratory testing are required to identify conclusively the other substances involved and to determine whether they are also potentially harmful. A coordinated interagency program is underway to deal with the many implications of this problem and to prepare the appropriate U.S. Government responses.

William J. Casey
Director of Central Intelligence

Attachments