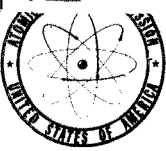


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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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Atomic Energy Commission

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Withdrawal No. DEF 28-106

MEMORANDUM FOR REVIEW COMMITTEE ON UNDERGROUND NUCLEAR TESTS

The Honorable Dean Rusk, Secretary of State
The Honorable Robert S. McNamara, Secretary of Defense
Honorable Richard N. Helms, Director of Central Intelligence
General Earle G. Wheeler, Chairman, Joint Chiefs of Staff
Honorable William C. Foster, Director, Arms Control and Disarmament Agency
Honorable Charles L. Schultze, Director, Bureau of the Budget
Dr. Donald F. Hornig, Special Assistant to the President for Science and Technology

The purpose of this memorandum is to:

1. review the PIN STRIPE experiment and provide a summary of the subsequent venting;
2. inquire as to the suitability of the notification procedures;
3. request your concurrence in a change we are considering to the notification procedures and inform you of associated changes to our own operating procedures; and,
4. solicit your comments regarding the development and possible utilization of a set of preapproved press releases which could be used if and as necessary to make public notification of a radioactive effluent release.

Review of PIN STRIPE

The underground nuclear experiment, PIN STRIPE, conducted on April 25, 1966, resulted in a venting of radioactivity. Despite extensive safety reviews by the Laboratories and the Commission and precautions taken

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at the site, an undetected geological fracture zone caused the venting. PIN STRIPE illustrates that despite rigorous precautionary measures and the absence of any indication of potential difficulties, unpredictable circumstances may nevertheless result in an occasional release of radioactivity, and there remains a possibility that in some future instance measurable amounts of activity may cross U.S. borders.

At no time was the public health and safety jeopardized; however, the AEC deemed it prudent to place cows of one dairy on dry feed for a period of time. This and other precautionary actions; e.g., measurements by the Public Health Service of iodine levels in thyroids, gave rise to considerable publicity, both local and National, including some speculation on limited test ban treaty violation.

Attached is a summary of the PIN STRIPE venting, including a preliminary analysis of the probable cause of the release.

Review of Notification Procedures

On October 22, 1965, I sent you a memorandum on procedures for notifying a responsible officer in the appropriate agencies in the event that an underground nuclear test produces unexpected results which might require prompt governmental action. Since that time, we have had occasion to utilize the procedures. I would appreciate hearing from you relative to your views as to how these notification procedures are working.

Proposed Changes to Notification and Operating Procedures

We intend to contact your representative on a more frequent basis following the initiation of these procedures in the event of an unanticipated release of radioactivity. This should keep you apprised of the situation in advance of any proposed public announcement and would cover the contingency of the radioactivity release coming to the attention of the news media from another source.

The present Atomic Energy Commission Test Operations Center Standard Operating Procedures (TOC SOP), copies of which I am attaching, do not address the problem relating to actions required in the unlikely event that there be a venting of such magnitude that radioactivity could be detected beyond the National border. In this connection, we are currently considering revision of the TOC SOP so as to be prepared for this contingency by outlining possible courses of action. Further, we plan to delete possibly ambiguous terminology in the TOC SOP. We shall provide you with copies of the revised TOC SOP when the revision has been completed.

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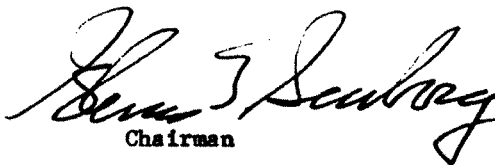
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Development of Preapproved Press Releases

PIN STRIPE has demonstrated that certain procedural changes should be considered so that we will be better prepared to cope with these situations should they arise in the future.

As you will readily appreciate, when releases of radioactivity could become known to the press, it is advisable for the AEC to act as the focal point for information and to inform the news services of the situation in advance of their receiving a possibly distorted version of the incident. In consonance with this, we are formulating a series of preapproved press releases which could be used to the extent that the circumstances warranted. Your comments on the press releases and recommendations relative to their use will be solicited.



Henry J. Seaborg
Chairman

Attachments:

1. Summary of PIN STRIPE Venting
2. AEC Test Operations Center
Standard Operating Procedures

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SUMMARY OF PIN STRIPE VENTING

The PIN STRIPE event, conducted by Sandia Corporation for the Department of Defense, was executed at the Nevada Test Site (NTS) on April 25, 1966. A radioactive effluent release (estimated at ten kilocuries calculated at H plus twelve hours) resulted. A line-of-sight (LOS) pipe was employed from the device to the surface; however, the radioactive release was not associated with the presence of this pipe or with its functioning. A visual inspection from the head of the emplacement shaft has disclosed the steel dome on the top of the LOS pipe to be intact; a preliminary analysis as to the probable cause of the PIN STRIPE venting shows that it resulted from a geological fracture zone that was not detectable at the surface. It is to be noted that the PIN STRIPE experiment was conducted in a relatively new area.

The venting started at a location between 100 and 150 feet southwest of surface zero just after H plus one minute. Chimney collapse took place at H plus 4 minutes and 25 seconds. The venting appeared to cease within 30 seconds of final chimney collapse. A very small seepage, which was visible for several more minutes, subsequently stopped. Ground radiation levels at the 1000-foot arc from surface zero were an average maximum of 400 R/hr at H plus 1 minute and an average of 3 R/hr at H plus 30 minutes. A steady decrease in radiation levels was indicated shortly thereafter by all monitoring instruments surrounding surface zero.

The cloud left NTS heading toward the north-northeast. After approximately three hours travel time at 10 mph, it turned easterly and began to shear greatly. By the time the cloud had traveled about 90 miles with increasing velocity (to about 20 miles per hour), the cloud front extended approximately 90 miles. The Nevada Aerial Tracking System (NATS) aircraft and other planes under the operational control of the AEC, assisted by aircraft from the Air Force Technical Applications Center (AFTAC), tracked and sampled the radioactive cloud throughout the night and until the evening of April 27 (three days later). On Thursday morning, April 29, AFTAC flights over Illinois, Wisconsin, southern Minnesota and Iowa found less than 1 pCi/m³ total activity through use of airborne instrumentation. At noon of the same day, the NATS plane made a possible (but not positive) contact with isolated pockets of scattered, trapped, gaseous activity near North Platte, Nebraska. At Thursday midnight, the NATS plane again made a possible (but not positive) contact with an isolated pocket of unidentified radioactivity about twice background located approximately 60 miles northeast of Grand Junction, Colorado. Both of the NATS contacts are listed as possible since they were so low that they might have occurred because of natural radioactivity.

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The Nevada Operations Office-Public Health Service (NV-PHS) extended milk sampling network was placed in operation throughout Nevada, Utah, Colorado, Wyoming, and southern Idaho. Also, the NV-PHS extended air sampling network

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was fully alerted. The Utah State Public Health Service was notified by NV shortly after the venting occurred. A peak radiation reading was recorded some 14 miles east of Coyote Summit, Nevada (about 50 miles from surface zero) of 8 mR/hr. This dropped to 2 mR/hr within 30 minutes after the peak reading.

Although this venting received some publicity, at no time was the public health and safety jeopardized. However, as a precautionary measure the Atomic Energy Commission arranged for one of the dairies at Hiko, Nevada (northeast of the NTS), to put 134 cows on dry feed rather than on pasture. In addition, a mobile unit from the AEC Nevada Operations Public Health Service containing a portable thyroid counter was relocated in Hiko, Nevada, on April 27. The projected thyroid doses, based on the radioiodine found in the thyroids of 11 children and 2 adults counted on this day, ranged from about 50 to 200 mR. The highest dose was recorded for a four-year-old child. By April 29, examinations had been conducted on a total of 10 adults and 20 children. There was no change in the projected thyroid doses--the average dose being approximately 50 mR. The milk samples collected and analyzed through April 29 by the PHS network, under contract to AEC for the states of Wyoming, Utah and Colorado, showed no detectable radioiodine. However, later milk samples collected near Provo, Utah, disclosed a small amount (less than 100 picocuries per liter) of I-131; within two days all of the milk collected in this area had returned to normal.

These levels of radioiodine found in the milk are only a small fraction of the value at which the Federal Radiation Council recommends protective action be instituted. Based on preliminary evaluation of the data from both airborne and ground-monitoring activities, it is concluded that no health hazard was produced by the effluent from PIN STRIPE. Further, there is no reason to believe that any radioactive debris crossed the border in amounts that would be detected by equipment or techniques currently employed.

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