

memorandum

DATE: December 6, 1995

REPLY TO
ATTN OF: EH-63:Elaine Gallin:3-2105

SUBJECT: IMPLEMENTING ARRANGEMENT TO SUPPORT MEDICAL AND ENVIRONMENTAL STUDIES IN PALOMARES, SPAIN

TO: Tara O'Toole, EH-1

THRU: Paul J. Seligman, EH-6

Before the attached draft of the Implementing Arrangement Between the Department of Energy of the United States of America and The Ministry of Industry, Commerce and Tourism of the Kingdom of Spain on Cooperation in Research on Radiological Evaluations is forwarded to Spain for their consideration, we would like your concurrence on our plan to continue supporting the studies in Palomares, Spain, by implementing this arrangement.

I. Purpose of Implementing Arrangement

Provides a vehicle for continued Department of Energy (DOE) support of the medical and environmental surveillance program (Indalo Program) in Palomares, Spain. The contract under which this program was funded was canceled in October 1993 (see attachment 1). The attached Implementing Arrangement will reinstate the vehicle for providing funds for this project and establish an independent review panel to review the status of the program (attachment 2).

II. Cost to DOE

Up to \$300,000 for 1 year to support the environmental and medical surveillance program and \$50,000 to fund an independent review panel.

III. Duration of Implementing Arrangement

General arrangement is in force for 10 years. However, because we are establishing an independent review panel to review the status of the program and to make recommendations for future activities, the Project Annex describing activities to be carried out and funding levels is in effect for only 1 year.

IV. Status of Arrangement

Cleared by the Department of State and by DOE General Counsel, but has not been sent to Spain.



V. Reasons for Continued Support

Political: The cost of maintaining our commitment is relatively low and this is possibly a politically sensitive issue. Funding for this project lapsed after the contract supporting this project was closed. The last funds were obligated to cover fiscal year 1993 expenses. Over the past year, Spain has made several inquiries about funds for the Indalo program through Helen Lane at the American Embassy in Madrid, Spain. We have responded to these inquiries with the assurance that we are proceeding with a new funding document.

Scientific: Future health monitoring of the small population of Palomares, Spain, residents is unlikely to provide new or useful scientific information. However, the following issue warrants attention:

Environmental surveillance suggests changes in the pattern of contamination. Plutonium levels at surface are rising due to migration to top from previously plowed area. Additionally, both increased agricultural activity in once remote areas, and migration of plutonium from the hillsides into agricultural valleys has occurred. Thus, the migrant agricultural workers (nonresidents of Palomares, Spain) may be at risk from exposure to resuspended soil actinides.

The annex to the Implementing Arrangement provides additional DOE funds (\$50,000) to establish an independent scientific review panel to review the program and provide recommendations for future activities.

VI. Background Information on Indalo Program

- o On January 17, 1966, during a refueling operation a U.S. Air Force KC-135 tanker and a B-52 bomber carrying four thermonuclear devices collided.
- o Three devices landed in Palomares, Spain, a village of about 1,500 people. The high explosives in two devices detonated upon impact with land, approximately 560 acres of predominantly agricultural land including the village of Palomares, Spain, were contaminated with plutonium-239.
- o Immediate remediation - 10 cm surface layer of the most contaminated soil (only 1 percent of the area impacted by the accident) was removed and remaining area was watered down and deep plowed.
- o The Hall-Otera Agreement (February 1966) between the United States and Spain provided basis for assistance to Spain. Responsibility transferred to DOE in 1986.

- o DOE has contributed ~\$300,000/year or 20-25 percent of cost of environmental and medical surveillance program to the Spanish Center for Energy, Environment and Technology Research (CIEMAT) in the Ministry of Industry, Commerce and Tourism of Spain.
- o DOE supported activities have included:
 - Provide scientific/technical assistance and collaboration;
 - Ensure effective assessments and scientific validation; and
 - DOE participants have included scientists from Lawrence Livermore National Laboratory and Brookhaven National Laboratory.
- o No evidence that health of Palomares, Spain, residents has been affected by 1966 incident.
- o Urinary analysis of plutonium and americium is done on approximately 150 residents of Palomares annually. Fifty-five people are considered to have suffered from detectable internal contamination.
- o The Spanish Government generally has kept a low profile on potential risk of ingestion/inhalation of actinides.

Please let me know if I can proceed with finalizing this arrangement by signing one of the spaces below.


 Elaine K. Gallin, Ph.D.
 Deputy Director
 Office of International
 Health Programs

2 Attachments

Concur: AS. for T&T

Nonconcur: _____

Date: _____