

December 10, 1991

Trip Report

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Travel to Spain on Indalo Project and Participation
in the IV National Congress of the Spanish Society of Radiation Protection
November 23-27, 1991

Purpose:

The purpose of this travel was to meet with representatives of the Spanish Center for Energy, Environment and Technology Research (CIEMAT) in Madrid, Spain on November 23, 1991, to discuss the Indalo Project and for Mr. Jones to continue travel to Salamanca, Spain to present a paper at the First International and IV National Congress of the Spanish Society of Radiation Protection.

Discussion:

November 23, 1991 - Met with Mr. Robert Morris, Science and Technology Counselor, at the United States Embassy Madrid, to discuss the history of and continued involvement of the Department of Energy (DOE) in the Indalo Project with the Spanish Government. The Indalo Project is the code name for the continued environmental surveillance and personnel monitoring program around the community of Palomares, Spain as a result of the atmospheric dispersion of plutonium oxide from the release and subsequent ground impact of nuclear weapons after a collision of a U.S. Air Force B-52 and KC-136 in 1966. The DOE has been working with the Spanish Government to continue this surveillance since the signing of the Otero-Hall Agreement in February 1966.

After briefings and discussions with Mr. Morris we were driven to the Center for Energy, Environment and Technology Research (CIEMAT), the responsible Spanish Government Agency for the Indalo Project. We received a tour of the facilities with each staff member providing a brief discussion of their responsibilities. We were impressed with the breadth of equipment and facilities dedicated to the project. We were then provided a briefing by Mr. Francisco Mingot, Director of the Institute, and his staff on the history and status of the Indalo Project. The following provides a synopsis of the briefing:

- o CIEMAT provides two technical reports and one Annual Report to their Nuclear Safety Council (their governing body). We have requested copies of the last years reports.
- o The population of interest is approximately 800 people and the area of interest is about 223 hectares or 2.5 square Km.

- o In 1986 the Palomares population became very vocal about their concerns relative to plutonium in the environment. Since that time CIEMAT has been conducting briefings and communications with the town Mayor and people. This open communications has been successful in allaying the concern of the people.
- o CIEMAT is responsible for the technology associated with the Indalo Project and the Regional Health Ministry is responsible for any epidemiologic or health related follow-up.
- o A current concern is the redistribution of plutonium oxide in the environment due to encroachment, mainly for farming, into the effected area.
- o The minimum detectable levels for CIEMAT analysis of environmental samples and bioassay seemed high. We see this area as one where the DOE can contribute expertise and technology to lower these values.
- o The annual Indalo budget consists of the following:

Environmental Analysis	- \$300K
Urine Analysis	- \$160K
M & A	- \$370K
Overhead	- \$350K
TOTAL	\$1100K
- o We were requested to provide between 40% and 50% of the research support for a total annual request for support of approximately \$300K. Up to 1988 when funding from DOE ceased the level of funding was approximately \$200K so the request appears to be in line. We feel with that sum of support we can enhance the technical capabilities of the Project and translate the technology gained in support of the Marshall Islands program into the Indalo Project. We did however identify areas for future possible cost savings and will pursue those.
- o The check for \$500K was accepted as payment in full for all past DOE obligations in support of the Indalo Project. This action saved the Department an estimated \$100K.
- o Within the next couple of weeks CIEMAT will provide us with copies of the viewgraphs they used to conduct the briefing as well as copies of the last years technical and annual reports for our translation into English.
- o Within the next couple of months CIEMAT has agreed to prepare a report, in English, that summarizes the activities and findings over the last five years of the Indalo Project.

- o It is anticipated that in March 1992, when the summary report is available, CIEMAT representatives would come here for meetings. At that time we will meet with them for 2 to 3 days on the Indalo Project specifically. Then the remaining 2 or 3 days we would have our Marshall Islands contractors in to initiate and facilitate technology exchange across the two programs.
- o In September of each year CIEMAT conducts a site visit to Palomares to meet with the Mayor and the people, conduct maintenance on their meteorological and air sampling equipment and tour the area. We have been invited to accompany them on their next trip in the fall of 1992.

November 24 - 29, 1991 - Mr. Rick Jones continues travel to Salamanca, Spain to present a paper and participate in the First International and IV National Congress of the Spanish Society of Radiation Protection. The Congress was attended by over 300 representatives interested in or responsible for national radiation protection standards, policy or guidance development. The afternoon of the first day Mr. Jones presented his paper entitled, "Implications of the ICRP Report 60 Recommendations to the U.S. Department of Energy (DOE)." This presentation was the same information approved for and provided to the Northeast Chapters of the Health Physics Society in April of this year. The paper demonstrates impacts to the older facilities of the DOE costing into the 10's to 100's of millions of dollars from having to adopt a strict annual worker radiation exposure limit of 20 Msv (2 Rem). The only comment received by the audience was a dismissal of the data indicating that the European community was told, by the users, that similar costs and impacts would occur in response to the doubling of the neutron quality factor, yet the impact was never seen.

It became very clear through the conduct of the Congress that the United States is the only developed country that is not prepared to adopt the ICRP 60 recommendations. NRPB in the United Kingdom has already adopted new standards, Canada is in the process, CEC is about to publish the rewriting of their Safety Series, and IAEA and NEA have a collaborative effort to rewrite the IAEA Safety Series. The following observations and recommendations are provided:

- o EH-41 should initiate the ALARA Committee to inform line management of these events and establish a strategy to reduce DOE individual annual dose to less than 20 Msv per year. This action should be done prior to restart of existing and new facilities, where possible, to maximize the opportunity for dose savings prior to resumption of normal operations.
- o Senior Nuclear Managers should also be informed of these events for their planning.
- o NCRP is expected to publish new recommendations shortly. These recommendations are expected to maintain the current 50 Msv (5 Rem) annual limit but place a limit on an individuals cumulative dose to not exceed 10 Msv (1 Rem) times the

individuals age. I personally believe that this is just the first step. International pressure will be placed on the NCRP to also adopt the recommendations of ICRP 60 which will leave the U.S. with the new recommendations of ICRP 60 and a cumulative dose limit on the workers. The DOE should begin now to accommodate these changes through an aggressive ALARA Committee.

- o The IAEA is also attempting and has significant momentum to establish mandatory international nuclear safety standards. These mandatory standards would then also be enforceable.
- o It is recommended that the U.S. State Department coordinate the conduct of a meeting of the interested Federal Agencies to establish a U.S. position on the ICRP 60 recommendations and the IAEA effort to establish mandatory standards. Meetings are being held internationally, various people from the Federal Agencies are attending meetings representing the U.S. and no "official" position or coordination of the people and their statements has been established.

Summary:

The activities of the Office of Health have been effective in initiating a positive relationship with the Spanish Government for the continuation of the Indalo Project. The funding provided to the Spanish Government was accepted as total payment of past debts thus saving the Department over \$100K.

The international radiation protection community has embraced the ICRP 60 recommendations and are in the process of implementing those recommendations in national standards. The U.S. will soon be the only developed country to not adopt the ICRP recommendations. The DOE should establish an aggressive ALARA Committee to develop a strategy to assure accommodation of the ICRP recommendations within 5 to 7 years. The DOE should take an active role to encourage the State Department to develop a national position on ICRP recommendations and the IAEA initiative to develop mandatory nuclear safety standards and coordinate the involvement of U.S. representatives in international meetings.

/s/

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