

## MEMORANDUM

**DATE:** September 23, 1998

**TO:** Tom Bell, Mohandas Bhat, Frank Hawkins, Ruth Neta, Ed Podolak, Joe Weiss,  
and Libby White

**FROM:** Barrett Fountos 

**SUBJECT:** Trip Report to Spain with Accomplishments Related to Palomares Program  
Review

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The primary goal of the trip to Spain from June 29 through July 3, 1998, was to hold the final meetings of the Palomares Scientific Review Committee (SRC). These meetings were to discuss each reviewers' comments, clarify and resolve scientific issues, and incorporate consensus changes to the draft report. All of these activities were accomplished during this trip and are summarized below.

### Summary of Activities:

- Line by line, the SRC discussed and resolved comments on each section of the draft report. Linda Sharp of Oak Ridge Institute for Science and Education took minutes and revised the document on-line according to the consensus opinion of the SRC.
- It was agreed upon by the SRC that the final report would not contain language related to risk management decisions, which are to be made, based on the final report, by the Department of Energy and Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT).
- The SRC reiterated its intention to adhere to the schedule which indicated that the final report will be made available to DOE and CIEMAT by July 31, 1998.
- Pursuant to the Charter, the SRC prepared written minutes of the entire week's activities, which are attached.

Attachment

cc: Marshall Carter-Tripp, U.S. Embassy, Madrid

**Palomares Site Review**  
**Second Meeting**  
**June 29 - July 3, 1998**

*Monday, June 29*

In attendance: Dr. Emilio Iranzo, Dr. Chet Richmond, Dr. George Voelz, Dr. Jose Gutierrez-Lopez, Dr. Asuncion Espinosa, Mr. Barry Fountos, and Ms. Linda Sharp  
Absent: Mr. Eduardo Sollet (on business travel)

Barry Fountos - Welcome

Concerns; Location of pits; and John Tashner's site maps, declassified in 1966.

Emilio Iranzo - need to be consistent on measurements (curies, etc.)

Important to recognize that Pu was left at the site.

There were not enough drums to take all the Pu away.

Chet Richmond - there were more drums brought in than were taken away.

Our report will be able to clarify these things.

Still need to clarify location of pits.

Barry Fountos - I have produced my action items as requested at the last meeting.

Emilio Iranzo- this report makes me a little worried about things. Maybe work in Palomares may not be continued very soon, but now much needs to be done.

Barry Fountos- stick to the science in the report. I was very impressed with the report so far.

George Voelz - should recommendations be a separate section? Emilio agrees.

Emilio Iranzo- how do we reorganize the report? In relation to tables, figures, and recommendations.

Chet Richmond- I have pulled together a format, if acceptable to everyone.

Barry Fountos- overall recommendations may cross over all sections and impact total report.

Chet Richmond- some recommendations at end of each section and then some clearly overall recommendations.

Emilio Iranzo- conclusions at end of each section. Then separate final recommendations.

George Voelz- leave the technical information in each section.

Emilio Iranzo- main conclusions and recommendations at the end. We will decide about conclusions near end of week.

All panel members agree:

Tables and figures - should be placed in each section near the correct text. Chet has the 2 figures that Emilio wants to include. Color copies of figures to be included if available. (Emilio gave one document to Chet in color).

Consistent symbols throughout (superscripts). Chet will help edit.

Barry Fountos - DOE must make report available to public.

Emilio Iranzo - Spanish government feels that this is very sensitive situation. We must decide what we can publish.

Chet Richmond - we agreed to write a technical report only, then DOE and Spain must decide how to distribute it.

Emilio Iranzo - things were not done in the right way in 1966 so take into consideration the political sensitivities.

George Voelz - what was the level of the soil in the drums. What was actually taken out of the site versus what was left--the concentration level?

Chet Richmond - we don't really know. The Fowler report was not comprehensive. The reports give different answers.

Emilio Iranzo - the important thing is that there are so many curies still remaining - if the correct cleanup was done there should be no Pu left.

George Voelz- the whole hill side was scraped off. Wasn't there difficulty?

Emilio Iranzo - if all the contaminated soil was put in the drums from zone 2 there would be no Pu now.

George Voelz - that area (pit in zone 2) was the highest level of contamination.

Chet Richmond - there was never a survey done after the remediation.

Emilio Iranzo - no

Chet Richmond - after the scraping was done, no one resurveyed the area.

Emilio Iranzo and George Voelz - this was more complex and difficult.

George Voelz - we need to make a recommendation on risk assessment that will address all the points that we have discussed, then the government agencies must make the final decisions.

Chet Richmond - conclusions and decisions should be made by governments in six months.

Emilio Iranzo - we know the risk assessment of Pu 238, 240, and 242. In some vegetation there is more Pu 238 than Pu 240. (Table 3, page 17)

Chet Richmond - EG&G Rocky Flats, Nuclear Safety Technical Report, 'Reference Computations of Public Dose and Cancer Risk From Airborne Releases of Plutonium', will be useful for this computation.

Emilio Iranzo - in the report Plutonium will mean 239+241 Pu. In the text use both curies and Becquerels, in Tables always use Becquerels.

Jose - 2nd word in Introduction should be "accident" instead of "incident".

Discussion and revisions to the Draft -3a begins.

***Tuesday, June 30 - Wednesday, July 1***

In attendance: Emilio Iranzo, Chet Richmond, George Voelz, Eduardo Sollet, Jose Gutierrez-Lopez, Asuncion Espinosa, Barry Fountos, and Linda Sharp

Continuing discussion and revisions to report.

***Thursday, July 2***

In attendance: Emilio Iranzo, Chet Richmond, George Voelz, Eduardo Sollet, Jose Gutierrez-Lopez, Asuncion Espinosa, Barry Fountos, and Linda Sharp

Format of report:

**Title page** - includes: Title, date, authors (all appropriate info)

**Table of Contents** -

**Scientific Review of the Palomares Plutonium Surveillance Program  
1966 - 1998**

Executive Summary.....	Page 1
Introduction.....	
Physical Characteristics of Palomares Soils.....	
Intro or Background (whatever titles are used in each section).....	

Other headings as listed in each section.....

Air Contamination and Inhalation Risk.....

Vegetation Contamination and Ingestion Risk.....

Internal Exposure of People.....

Recommendations.....

    Soils

    Air

    Vegetation

    People

References (all references included in this section alphabetically) (author and date only  
referenced in text (Iranzo et al, 1998)).....

Acronyms.....

Appendix.....

    1. Hall-Otero Agreement

    2. DOE/CIEMAT Implementing Arrangement, 1997

Edits:  
cpm (counts per minute) used throughout report

*Friday, July 3*

In attendance: Emilio Iranzo, Chet Richmond, George Voelz, Eduardo Sollet, Jose Gutierrez-Lopez, Asuncion Espinosa, Barry Fountos, and Linda Sharp

Panel discussion of Executive Summary, Recommendations, and edits to report.  
Meeting adjourned.