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Mr. Richard Stone
Deputy Assistant General Counsel
Department of Defense
Washington, D.C. 20301

Dear Mr. Stone:

This is in response to your telephone request of June 14, 1979, to members of my staff for information relative to the recent past, current, and projected costs and general content of the continuing and anticipated Department of Energy (DOE) programs in the Marshall Islands.

The enclosed consists of a "best estimate" by the staff. In view of the nature of the programs, the fact that the direction and magnitude of future efforts often depends upon conclusions resulting from continuing surveillance of the situation, and the expectation that future requests from various interested parties may significantly affect the program, it should be clearly understood that the enclosed cost estimates are considered as tentative only. As you well know, the present circumstances in the Marshall Islands are very fluid, and it is difficult to anticipate a wide spectrum of possible demands upon the programs which might alter the cost estimates.

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Furthermore, it should be noted that we have not included those programs which are not of a continuing nature and are considered to terminate within the next fiscal year (e.g., the 18-atoll survey, support to the Defense Nuclear Agency for activities associated with the cleanup of Eniwetok).

I trust that this information is responsive to your request. Please let me know if we can be of further assistance.

Sincerely,
Original signed by
Ruth C. Clusen
Assistant Secretary for Environment

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Ruth C. Clusen
Assistant Secretary for Environment

Enclosure

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The Department of Energy program in the Marshall Islands consists of medical, monitoring and assessment components. Past, current and estimated future operating costs (X 1000) are:

	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
Budgeted cost	1875	2770	3095	3390	3692	6100	7000
Unbudgeted				1585	1849		

Estimated manpower requirements vary between 40-50 man-years of effort depending upon number of trips, specific needs, unanticipated requests, etc.

It must be emphasized that it is extremely difficult to anticipate all possible needs and contingencies in the activities in the Marshall Islands. Past and present experience shows that unexpected findings and unanticipated requests from various sources (e.g., the Marshall Islands Government, legal representatives for various groups of people) may significantly affect, alter or add to the projected program. While these issues have been included herein to the best of our knowledge, additional efforts and requests are not precluded. For these and other reasons, a standing capability of response must be maintained. The projected cost estimates, therefore, should only be considered as tentative.

The two major components of the program are discussed in greater detail below:

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Medical Program

The medical program in the Marshall Islands in FY 79 provides medical surveillance of persons on Rongelap and Utirik who were radiologically exposed following testing in the

Marshall Islands, plus a matched control population consisting primarily of unexposed Rongelap people. In addition, a limited surveillance has been provided to those persons who were relocated from Bikini. The approximate numbers of Marshallese are:

Rongelap	~ 90
Utirik	~ 160
Matched controls	~ 200
Bikinians	~ 140
	<hr/>
TOTAL	~ 590

Depending upon circumstances, usually three of four trips are made each year to these locations. Brookhaven National Laboratory (BNL) Medical Department physicians coordinate and direct these programs. One of these trips consists of a large medical staff (usually 12), the majority of whom are specialists from various leading U.S. medical centers and institutions. At this time the annual physical examinations are given, including hematological, urological, serological and other examinations as appropriate.

During these visits, "sick call" is held for all residents wishing medical attention; this usually results in up to several hundred persons on each atoll seeing the physicians. Included in "sick calls" are physical examinations, blood tests, treatment if possible, and referral to the Trust Territory Health Services.

Other visits during the year are far more specialized examinations (e.g., pediatrics, thyroid, dental, intestinal parasites, etc.) and include BNL staff and appropriate specialists.

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A resident physician assists in these visits.

Because of the particular concern related to radiation effects on the thyroid, a separate baseline comparison group has been established, consisting of approximately 500 persons on Rongelap and Utirik and a limited number of other atolls. While this group does not receive complete annual physical examinations, they do provide a baseline for a number of thyroid function tests and thyroid disease incidence rates.

The medical program may need to be expanded in FY 80:

1. Persons who resided on Bikini will be included in the program.
2. Baseline medical information will be obtained on persons scheduled to return to Enewetak; this may include in excess of 450 people.
3. It may be necessary to conduct a medical survey of approximately 600 persons who were present on Likiep in 1954.
4. It is anticipated that based upon radiological surveillance results other population groups (unknown at present) may need to be included. These activities could require \$1 million which is above current budget availability.

Depending upon medical findings, the medical program in FY 81 is expected to include persons living on Rongelap, Utirik and Likiep, and Bikinians at their residence locations.

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The greater than three-fold increase anticipated in the population under medical surveillance during FY 80 and FY 81 results in a special problem. The ship which is presently

under charter for these (and other) visits is only marginally adequate for the present program, and would be totally inadequate for any expansion in the program. If an adequate medical program is to be conducted, it is essential that funds be made available for purchase of a 175-foot ship. An estimated cost for the ship and appropriate outfitting is \$1,500,000 - \$2,000,000 but is not in the budget.

The past, present and estimated projected operating funding levels (X 1000) are:

	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 8</u>
Budgeted Funding	810	1154	1265	1413	1580	3000	3500
Unbudgeted				1000	1000		

Monitoring and Assessment Program

The radiological monitoring and assessment program in the Marshall Islands consists of field operations, laboratory studies and analyses, exposure assessments, and advisory services.

During FY 79 three trips are being conducted to carry out whole-body counting activities among the Rongelap, Utirik and Bikini peoples, and to begin acquisition of baseline information from Enewetak people planning to return to their atoll. The approximate numbers of people included in this activity are:

Rongelap	~100 plus controls
Utirik	~100 plus controls
Bikinians	~200 plus controls
Enewetak	~100
TOTAL	<u>~500</u>

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It is expected that two or three trips a year will be continued, with four or five professional staff participating on each trip. If circumstances require (e.g., including all resettled Enewetak people, other atoll peoples), additional effort may be required.

Environmental monitoring is conducted on the atolls of Enewetak, Bikini, Rongelap and Utirik. Included are studies of radionuclide transport mechanisms and exposure pathways to man (e.g., foods and food chains) from both the terrestrial and the marine environments. Also included are studies of the dietary components on the several atolls. At present, these efforts require four trips per year to the Enewetak and Bikini atolls, and two trips per year to the Rongelap and Utirik atolls. Depending upon the specific purpose of each trip, five to seven professional staff persons participate. These trips result in 2000-3000 samples of various types being returned from analytical examination each year.

It is expected that the current program will be continued, and that some modest expansion may be projected due to (a) additional studies at Enewetak after the people return, and (b) possible increased effort at other atolls (unknown at present) as radiological findings and circumstances dictate.

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Individual and population dose assessments are based upon the actual measurements of radionuclides in residents and in the environment. These assessments provide the bases upon which decisions are made with respect to the acceptability or unacceptability of various living patterns, residence locations, food consumed, etc.

The immediate past and current funding levels, together with estimates of projected operating funding requirements for FY 80-83 are as follow (X 1000):

	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>
Budgeted Funding	1065	1616	1830	1977	2112	3100	3500
Unbudgeted				585	849		

It is anticipated that a whole-body counter will require replacement at a cost of about \$100K. Also, replacement of and additions to other laboratory and field equipment will amount to roughly 5-10 percent of the operating budgets.

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