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LOS ALAMOS SCIENTIFIC LABORATORY
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IN REPLY
REFER TO: SPO-593
MAIL STOP: 120

March 17, 1975

Mr. D. K. Nowlin, Director
Special Programs Division
Albuquerque Operations Office
U.S. Energy Research & Development Administration
Albuquerque, NM 87115

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Dear Duke:

Enclosed is a proposal (LASL #P-445) prepared collaboratively by the Los Alamos Scientific Laboratory (LASL) and the Vanderbilt University Medical School. The proposed project, entitled "Diagnostic Image Integration for Tumor Localization," is aimed at demonstrating (non-destructive) techniques for locating tumors in humans with more precision than presently possible, and thus maximizing the benefits of radiation treatments.

The Vanderbilt University Medical School would assume overall responsibility for the project. Images of human tumors and/or organs via X rays, isotope emission, and ultrasound reflection will be recorded on film and on digital-computer tape at Vanderbilt. Using image enhancement and image "integration" techniques available at Los Alamos, the LASL will develop methods for constructing a single, three-dimensional representation of the tumors and/or organs observed. Phantoms will also be used for comparison purposes. For phantoms, images will also be obtained via proton irradiation at LAMPF. No human subjects will be used at LASL.

The integrated representations of observed organs/tumors as constructed at LASL from the images obtained at Vanderbilt University will be returned to Vanderbilt. Evaluation of the reconstructions as to their value as clinical aids will be the responsibility of Vanderbilt University. The responsibility of LASL will be limited to processing of data provided (except possibly for obtaining of proton images of phantoms), and returning results of the data processing.

The Los Alamos Scientific Laboratory desires to participate with Vanderbilt University in the project as proposed in the enclosed, and can do so without interference to ERDA commitments if funding is provided for the three-year period -- about \$80,000 for the first year beginning 1 July 1975.

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D. K. Nowlin

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March 17, 1975

We understand that that portion of the enclosed proposal formatted as a document of Vanderbilt University is being submitted to the National Institute of Health with the understanding that endorsement by ERDA is required before LASL participation can be formally offered. We request your coordinating the ERDA review of the enclosed, and your informing the Vanderbilt representative -- Mr. Gazzo -- of the results of the review. Under separate cover, we have provided Mr. Gazzo with a copy of the LASL document, and advised him that ERDA review is in process. Mr. Gazzo has indicated that he would be agreeable to informing the NIH of the results of the ERDA review.

You will note that the estimated costs of the LASL participation (\$81,000 first year) have been included in the cost estimate of Page 3 under "Other Expenses." As per past practice, we anticipate that a purchase order from Vanderbilt University citing an NIH grant as the funding source would be an acceptable funding document.

As noted in the enclosed, improved techniques for tumor localization would be of direct benefit to and available for direct utilization in the joint ERDA/NIH-NCI-sponsored preclinical trials of Pion Cancer Therapy in progress at the LAMPF. We suggest that the proposed Image Integration project be classified as being of joint interest to ERDA.

By copy of this letter, we are providing the enclosed to ERDA/DBER -- Dr. J. Kirby-Smith -- to facilitate its review there.

Thank you very much for your assistance in this matter.

Sincerely,



A. D. McGuire
Special Projects Officer

Encl: Proposal LASL #P-445

Distribution:

D. K. Nowlin, ERDA ALO, w/3
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