LA-SUB--93-156

OPTO-MECHANICAL SUPPORT SERVICES

FINAL REPORT

SUBCONTRACT NO. 9-XT8-8701U-1

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SUMMARY

This subcontract was for Optomec'c support of the Los Alamos National Laboratory's (LANL's) Group MEE-12 in the technical specialty area of opto-mechanical deign, engineering and fabrication. The work was performed over approximately a one year period from March 1, 1988 to February 28, 1989. Two individual tasks were defined by MEE-12 and completed by Optomec personnel. Edward J. Yavornik acted as Principal Investigator on the Wire and Fluoresent Fiber Offset Grid (WAFFOG) for the Neutral Particle Beam (NPB) GTA Experiment, and Thomas A. Swann acted as Principal Investigator on the ESS-7 Photometers Project. The working relationship between Optomec personnel and MEE-12 personnel was somewhat informal. Optomec personnel worked closely with MEE-12 personnel almost as if they were part of the MEE-12 staff. Some of the work was done at Optomec's facility at the Los Alamos Small Business Center in Los Alamos, some at Optomec's new facility in Santa Fe and some of it was done at LANL at the descretion of MEE-12. Some hardware was procurred/fabricated for the ESS-7 Photometer task, however, most of the work consisted of design and engineering support resulting in drawings and specifications which were prepared by MEE-12 personnel. There were no technical papers or patents generated by Optomec personnel as a result of this work, and all work defined in the contract was completed.

PROJECT TASK DESCRIPTIONS

Each of the two major tasks defined under this subcontract are discussed in the following sections:

WAFFOG

The Wire and Fluoresent Fiber Offset Grid (WAFFOG) is a diagnostic instrument used to measure steering and focus for neutral particle beams on the GTA Experiment. Mr. Yavornik, who was Optomec's Principal Investigator for this task, was responsible for the engineering, design and fabrication of the WAFFOG instrument. Although the design drawings were prepared by MEE-12 personnel and outside contractors performed the actual fabrication, it was all done under the direction of Mr. Yavoirnik who stayed on the project until fabrication assembly and checkout were complete.

A related subtask was the preparation of a portable clean room with filtered air for environmental control for the WAFFOG. In addition to the WAFFOG instrument itself, Mr. Yavornik was also responsible for the engineering, design and fabrication supervision for this portable clean room.

ESS-7 PHOTOMETER

Two Photometer assemblies were engineered, designed and fabricated under the direction of Mr. Swann, who was Principal Investigator for this task. For this task, all drawings, specifications etc, were prepared by Optomec personnel, who also either fabricated or procurred most of the parts with some parts being furnished by LANL. Assembly, alignment and checkout of the photometers were perfomed by Optomec and LANL/ESS-7 personnel, for whom the MEE-12 work was performed, at Optomec's facility in Santa Fe. The two Photometers were delivered on-time and successfully used to gather data during the Beam Experiment Aboard a Rocket (BEAR) at White Sands Missile Range.