Apr. 21, 1998

To: MURR Management team,

From: [redacted] Ex 7C

Subject: Morocco project

Attached to this letter are two MURR pre-proposal/proposal worksheets for the project to build a powder diffractometer for Morocco. We would provide a full system consisting of shielding (empty tank to be filled on-site), monochromator and associated mechanics, diffractometer base and sample table, position sensitive detector, shield and collimator, and all associated electronics, computers, software and documentation: essentially a turn-key system. The first worksheet is for the base system, likely to be accepted in full, while the second is for some options which may or may not be accepted.

For the base system the cost to MURR is estimated to be [redacted], using the base salary + benefit rates. Costing the project at 2.2 times salary + benefits, and including a 20% overhead/profit on all other items, leads to a total system cost of [redacted] The quote to GA technologies (which is managing the total project) for this work is [redacted] Thus, it is clear that we have met all the MURR requirements on project costs, with a large margin to spare. This is only one of several projects in the pipeline that have common elements and which were costed on the same basis as this project. If they all proceed, the actual costs will be still smaller because design and documentation will be carried out only once, but charged to each customer. Likewise, shop costs can be reduced if fabrication of two pieces can be done simultaneously rather than sequentially. We would, therefore ask for approval to proceed with these projects.

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The question has been raised as to why MURR should be in this type of business. Apart from the obvious financial benefits outlined above, these have substantial value to MURR. First, they have led to enhanced visibility for the center and its programs, which generates grant funding and scientific interaction. Second, these efforts have, in the past, (and will in the future), stimulated the development of enhanced instrumentation at MURR. These have led to MURR's leadership in several areas, including powder diffraction and high-resolution quasielastic scattering. These projects have also provided the "bridge" funding for the Instrument Development group, allowing it to function at times when internal projects were at a low ebb. As a result, there has been sufficient stability in ID that we can be sure that it is available when we need it for critical projects. A similar situation exists vis-à-vis the Physics Machine shop. This is one of the outstanding machine shops in the country, putting concepts into design and successful fabrication. Much of the success at MURR, especially in neutron-scattering, can be traced to the availability of its unique skills. In return, it is highly dependent on MURR for enough work to maintain its staffing levels. These projects provide much of the extra funds for this when internal projects are not at the fore.

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In addition to these benefits, there are some serious costs associated with not proceeding. Most important is the credibility of the center and the scientists who have promoted these projects. Quotes were provided to GA, (for the Morocco and Thailand projects) in good faith, after comprehensive discussion with [redacted] Although we have not had any written commitment, it has been understood since the first day that these projects will proceed. If MURR chooses not to pursue these, then we feel that we must proceed outside MURR in order to protect our own reputations as credible, reliable scientists. Delivery of a successful system will probably stimulate multiple orders down the road, since our technology is superior to the alternatives.

Assuming MURR agrees to accept these projects, there remain several problems to be resolved.

1) How will the funds be managed? -- We would like a separate C-3 account established in which all funds were held. Only the project managers could authorize spending, as is the case with grant accounts. Surpluses would be held in the account until successful completion of the project as contingency funding. How should salaries be charged?

2) Will any discretionary funds for the neutron scattering group be generated by this project? -- Part of the justification for undertaking this type of work, which will require considerable effort on our part, was to generate discretionary funds for our own projects. In particular, it is important to allocate some of the excess revenue to "product development." Our production costs could be substantially reduced by small commitments to detector electronics R & D. New monochromator designs may improve our own scientific efficiency as well as creating new products to market. If this type of funding is no longer available, the incentive to pursue this work will certainly be decreased, as will our market opportunities. We do not cling to any strict formula for allocation of funds, but feel that the principle of research incentive funds is a critical one for scientists who are juggling grants, research, administrative tasks, etc.

3) Will there be any "intellectual property" rewards? --We have raised this issue (in writing) several times over the past year or more. The University recognizes inventors through royalties, when an idea is licensed outside the University. The University's lawyer, Connie Armentrout, felt that the same principle applied when the University itself sold the results of a staff member's inventiveness. Considering that for these projects the inventors are also responsible for successful execution of the work, it seems all the more appropriate.