July 6, 1993

Charles F. Baxter, Director
United States Department of Energy
New York Support Office
26 Federal Plaza
New York, NY 10278-0068

Re: Quarterly Progress Report ThermaLock Products, Inc.

**Title:** Development of a System of Innovative Insulated Building Blocks under Energy Related Inventions Grant

**Agreement No.:** DE-FG42-92R215551

**Period Covered:** April 1, 1993 to June 30, 1993

**Progress:** This report covers the third quarterly reporting period of the grant. Within this period there has been a great deal of progress made on the five tasks as summarized below:

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Total Amount</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coursing</td>
<td>Using a power auger to pump mortar into dry stacked TL blocks. Goal: increase labor productivity.</td>
<td>$12,037</td>
<td>35% Completed</td>
</tr>
<tr>
<td>2. Stuffer</td>
<td>Automated, pneumatic machine which can be added to existing conveyor system. Goal: increase speed and quality over manual stuffing.</td>
<td>$13,614</td>
<td>100% Completed</td>
</tr>
<tr>
<td>3. New Blocks</td>
<td>Design, fabricate mold and produce half &amp; half block. Goal: have a vertical reinforcing block.</td>
<td>$31,077</td>
<td>90% Completed</td>
</tr>
<tr>
<td>4. Earthquake</td>
<td>Test a variety of wall designs under various in-plane &amp; out-of-plane seismic conditions. Goal: obtain information for various code bodies.</td>
<td>$30,308</td>
<td>60% Completed</td>
</tr>
<tr>
<td>5. Sound Tests</td>
<td>Test walls to determine the STC rating of TL Goal: prove anticipated sound qualities.</td>
<td>$7,454</td>
<td>100% Completed</td>
</tr>
<tr>
<td>6. Final Report</td>
<td>Summarize all the tasks and their results</td>
<td>$2,022</td>
<td>Targeted for Fall '93</td>
</tr>
</tbody>
</table>

Task 1. has been started with an investigation into the equipment necessary to demonstrate the technique of "laying up" walls in this non-conventional manner. The actual trials are now scheduled for the end of August. Two and four block prisms will be made along with the wall to test the compressive strength of blocks mortared using this method.
Task 2. has been completed. The company recently made arrangements with a third party to fabricate our prototype stuffing machine in both single and dual pneumatic piston drive and sell them directly to our licensees. They have also agreed to sell Licensees parts, including the complete list of materials and schematics, for those who wish to assemble these units themselves.

Task 3. is approximately 90% completed. All design drawings have been completed and the initial field tests have been undertaken. Modifications were made to the hanging mechanism to strengthen this component and new tests runs have been scheduled.

Task 4. is approximately 60% completed. Four of the eight to ten walls have been built and tested. Preliminary results look very positive. The test walls showed Ultimate Load strengths of 11 to 15 kips (equivalent to 1650 lbs/ft through 2250 lbs/ft of length). This is an "in-plane" flexural strength of a high order. The shear strength will be tested next. Shear results will be even higher than these because none of the walls failed in shear. Additional test configurations are now being formulated based upon initial results and will take place over the next two to four months.

Task 5. has been completed.

Task 6. will not be started until the first five tasks are completed.

**PLANNED PROGRESS:** Given the 18 month time period of this contract, we are substantially ahead of schedule and should have all tasks including the Final Report completed within 14 months from the time we started.

**IDENTIFICATION OF PROBLEMS:** No problems are anticipated in bringing this project to closure by the late fall of 1993.

**SCHEDULE STATUS:** Percentage Completed through the first three quarters: 78%

**ATTACHMENTS:**

NONE

Respectfully submitted,

John P. Neff

**DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.