I visited Everson Electric on October 14th – 16th 1998 to inspect the vacuum mold and placement of the coil into the mold before potting. The following findings and recommendations were made:

1. A completely ground wrapped coil (coil#3) was placed into the vacuum mold. Initially this coil was tight on all radii and loose on all inner rails. The s-bend area required some additional clamping which eventually pushed the outer rail and coil in towards the inner rail. At first this looked like a problem, but when the s-bend outer rails were put into place the remaining outer rails seemed like they would fit with ease. As expected the outer rails fit quite nicely. All straight sections, on the outer rails, were tight against each rail. This left a 3/8” gap on all inner straight rails. This was the “springing” that took place when the coil was removed from the winding fixture. As each coil is placed into the vacuum mold, the gap between rails should be nearly identical coil to coil. These gaps will be stuffed with glass fibers.

2. On an earlier site visit MIT and Everson measured each coil after “springing” had occurred. These measurements are now invalid because of the dimensional changes that occur to fit the coil into the mold. This was seen when the outer s-bend rails were put into place as described in (1) above.

3. Tedlar release tape was used on all radii; therefore the measurement of the potting fixture should not be used to design the frame. MIT should measure the completed coil after potting and use these numbers for that purpose.

4. The position of the drill bushings should be investigated further. Using a jig and some epoxy we can locate and install drill bushings in a suitable manner. It was not discussed whether MIT or Everson would perform this process. Some discussion should be made as to the location of the bushings, so that they do not interfere with detectors, supports, etc.
5. A resistance test of the trim coils was performed and the results are as follows:

<table>
<thead>
<tr>
<th>Coil #</th>
<th>Trim Coil Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.933 Ω</td>
</tr>
<tr>
<td>2</td>
<td>0.942 Ω</td>
</tr>
<tr>
<td>3</td>
<td>0.941 Ω</td>
</tr>
</tbody>
</table>

A check of the # of turns for 10 gauge wire:

\[(1000\text{ft}/1.02\Omega) \times 0.933\Omega = 914 \text{ ft}\]

Perimeter of coil = 422.56” = 35.21 ft/turn

\[(1\text{Turn/35.21ft}) \times 914\text{ft} = 26 \text{ Turns}\]

This is \(0.15\%\) to \(0.21\%\) of the coil field.

A resistance test of all trim coils will be made and added to the traveler. All values should be within 5% of each other.

6. Parker elbows for the inlet and outlet water connection was sent to MIT.

7. Minor changes to the vacuum mold “top hat” were made during the visit. The inlet water connection area was cut out by accident. Everson had to weld another plate in the missing space. This was necessary because the area that was removed would be under vacuum.

8. Coil #4 had finished up the initial winding process and the trim coil winding had begun.

9. MIT will send Everson the exact location of the Power Tabs on the lead ends of the coil.

In conclusion I found things moving along very nicely. At this time only one shift was working on placing the coil into the vacuum mold. Just like the first coil winding, this was done to work the “bugs” out of the process. I believe that this process went very smoothly and future coils will proceed without delay. Everson should continue with the potting process at which point we will have another site visit to inspect the first finished coil.