## Step 1—Determine L\_PulseOther

1. Short T Line 1 to T Line 2.
2. Perform runs with pulse generator set to pulse width, frequency, and amplitude values that span the range that will be used in actual core runs, allowing sufficient time between stepping these parameters for the pulse-generator/termination-resistor packs to reach thermal equilibrium.
3. Using measured data from above, calculate L\_PulseOther for each combination of pulse parameters using formula below:

**L\_PulseOther(1) = P\_Pi(1) – L\_Coolant(1)**

**where L\_Coolant = [T\_CoolOut – T CoolIn] \* F\_Coolant \* Spec-Ht\_Coolant]**

## Step 2—Determine L\_Pulse2Core

1. Reconnect T Line 1 and T Line 2 to core
2. Operate core with helium gas
3. Perform runs with the same pulse generator parameters as used in Step 1, allowing sufficient time between steps for core to reach thermal equilibrium.
4. Using the measured data and the calculated values for L\_PulseOther from Step 1, calculate L\_Pulse2Core for each combination of pulse parameters using formula below.

**L\_Pulse2Core(2) = P\_Pi(2) – [L\_Coolant(2) + L\_PulseOther(1)]**

Note that the calculation of L\_Pulse2Core does not depend on core temperature.

## Step 3—Determine jacket losses

### Approximate method

This method ignores any differences in the spatial distribution of heat added to the core by the heater as compared to the pulse.

1. Operate core without pulse and with helium gas
2. Perform runs with various settings for the heater power, allowing sufficient time for the core to reach thermal equilibrium.
3. Using the measured data, calculate the jacket losses as a function of core temperature using the formula below:

**L\_Jacket(3) = P\_Heater(3) - L\_Argon(3) - L\_He(3)**

**where L\_Argon and L\_He are calculated from input and out temperature and gas flow rate measurements for argon and helium in a manner similar to that for the coolant as shown in Step 1 (3)**

Note that under this approximate method, jacket losses are independent of pulse parameters.

### More accurate method

This method provides a more accurate measurement of jacket losses that accounts for differences in the spatial distribution of the power deposited into the core by the heater and the pulse.

1. Operate core with helium gas
2. Perform runs with various combinations of settings for heater power and pulse parameters, using the same pulse parameter combinations as used in Step 1.
3. Using the measured data, calculate the jacket losses as a function of core temperature and pulse parameters using the formula below

**L\_Jacket(3) = P\_Heater(3)+ L\_Pulse2Core(2) - L\_Argon(3) - L\_He(3)**

**where L\_Pulse2 Core is taken from Step 2**

## Step 4—calculate LENR power generated

1. Operate core with hydrogen
2. Perform runs with same combination of pulse power parameters as used in Step 1, varying core set temperature if desired.
3. Calculate LENR power generated for each combination of pulse parameters using formula below:

**P\_LENR(4) = L\_Jacket(3) + L\_Argon(4) + L\_H(4) – [P\_Heater(4) + L\_Pulse2Core(2)]**

**where L\_Pulse2 Core is taken from Step 2 and L\_Jacket is taken from 3**

1. Create individual graphs of P\_LENR vs a single pulse parameter, with the core temperature constant for all points shown on that plot. A single plot can have multiple lines in different colors, each line connecting the points for a particular value of another pulse parameter. For example, vertical axis is P\_LENR, horizontal axis is pulse amplitude, different lines on the chart connect points with the same value of pulse width.