Candidature Report and Oral Defence: Structure & Expectations
Prof Eric May, Gas Processing Division, Centre for Energy, 16 August 2012

The Candidature report is supposed to build (significantly) upon the research proposal submitted to the Graduate School by the 6 month point of your PhD. The report is due 1 month before your confirmation of candidature is due (11 month point). It should be about 8000 words long with a sufficient number of key figures that communicate your message, and with references used and formatted appropriately. Below is the structure that the report should follow and some of the expectations that the panel assessing it will have about the report and the oral defence that follows.

1. Summary of research goal & motivation
   Explain in no more than one page what you are broadly trying to achieve and why it is significant – what (engineering) problem will the research, if successful, help overcome?

2. Fundamentals
   Demonstrate that you understand the key concepts relevant to your research. Often this information will come from text books or perhaps review articles or older, seminal papers in the field. These concepts should cover both the scientific basis of the topic and the fundamentals of the relevant engineering practice.

3. Review of relevant research literature
   This should not just be a summary of the relevant papers but also an analysis of them. Interpret these papers and criticise the results they present, explaining what they mean and what is their significance and relevance to your research.

4. Results to date of your research
   Present and explain the results you (and your team) have produced in the first year of your PhD. Analyse them critically explaining their significance and deficiencies.

5. Forward research plan
   Provide a specific discussion about:
   a. What your contribution to knowledge will be.
   b. How, specifically, will you achieve this contribution
   c. What are likely to be the specific research challenges that need to be overcome to achieve this contribution
   d. What specific outcomes will your research deliver and what are the likely titles of the three primary journal articles that your PhD research will generate.

The Oral Defence should be a presentation 15 to 20 minutes in duration that summarises the content of the Candidature Report. As always, you should consider your audience: their knowledge and familiarity with the material being presented, and most importantly, what they want to hear. In this case the panel will be quite knowledgeable about the topic you are describing and familiar with your experiments (ie they are your supervisors). The panel wants to hear that you understand the topic well, be assured that you understand the specific details of the research analysis required, and that you have thought through in some detail what will be required to achieve your PhD.