BGS Plans for remaining year on SWIGS

**Bold = higher priority activities**

Refine pipeline model

* Interaction with industry and/or industry journals (Pipe diameters, thickness, coating conductance…)
* **Scenario testing (historical, hypothetical) -> where are the hotspots?**
* **Translate PSP to corrosion rate and pipe lifetimes (repeat the work that Malcolm did in NZ and showed at a previous BGS seminar)?**

Explore railway modelling (*speculative*)

* International lead is David Boteler (NRCan), who wishes to engage with us on this
  + Electrical model of track circuits in ‘problem’ areas of UK

Power transmission

* We have added 33kV, 60kV systems in transmission system
* Model GIC differences now at ~10% difference level
* **Only major changes foreseen (time permitting):**
  + **Shapefile data for accurate transmission line paths**
  + **Transformer grounding resistances**
* Inductance?
  + For 1-60 sec B fields

Electric field model

* Refining UK Earth conductivity models
* Validation

Forecast GIC

* **Suggest we try GORGON test runs of historical storms to test rudimentary forecast capability for UK**
  + **E.g. October 2003, March 2015**
  + **‘What if’ scenario: July 2012 ‘Super-CME’ solar wind data**

GIC Services

* **Complete ‘GIC activity index’ paper: going beyond Kp=9 (with Met Office and National Grid)**

GIC monitoring

* **Complete DMM fieldwork -> assemble database and publish in some form**
* **Validate & modify power grid model as necessary**

Suggested Papers:

* GIC activity index; UK conductivity/E-field model; 2nd DMM paper; pipeline model & scenarios; Gorgon+GIC/PSP model