## **Black-Start RTDS Tutorial**

## Opening Black-Start RTDS

- 1. Installation of RSCAD and VPN client
  - a. Speak with John Jacksha (JJ) to have both programs installed
- 2. Connect to RTDS racks (Optional: only necessary for simulation of RTDS models)
  - a. Double click "OpenVPNGUI" icon
    - i. "OpenVPN GUI" icon will appear in Windows Start Toolbar



b. Right click this "OpenVPN GUI" icon and select "Connect"



- 3. Opening RSCAD Black-Start model
  - a. Double click "RSCAD" icon



## b. Select "Draft" in RSCAD window



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- c. Select the "Open From Disk" option and find Black-Start file location
- d. Compile the black-start by selecting the option in the tool-bar of the "DRAFT"



- e. Access RTDS Tutorial Manual
  - i. Default location: C:\RSCAD\DOC\TUTORIAL

REAL TIME DIGITAL SIMULATOR TUTORIAL MANUAL (RSCAD VERSION)

June 2015

## Simulation of Black-Start

1. Select "Runtime" in the RSCAD window

A RSCAD 4.006.2



2. Select "Open From Disk" and find "BlackStart.sib" in "Flash RTDS" folder



 Verify that the black-start in "No excitation" mode by selecting option 3 of the dial Excitation Switch



4. Select "Run Case" icon in RUNTIME toolbar



**a.** (Optional) Select the "Update Plots" icon to make sure plots are all at zero



- 5. Switch to "Battery Excitation" mode using the dial (option 2)
- 6. Switch to "AVR Excitation" option on dial (option 3) to complete Black-Start Process