

Third Addendum To 2003 Baseline RTEP Report

The reinforcements described below were required on the PJM system due to requests received to retire the following generators. Ongoing analysis may identify the need for additional reinforcements to support these retirements.

B L England 1, 2, 3

B L England IC1-IC4

1. The single contingency involving the Martins Creek-Morris Park-Gilbert 230kV circuit results in an overload on the Greystone – Whippany 230kV circuit under the 2008 load deliverability test for Eastern MAAC. The recommended solution is to change tap of limiting CT and replace a breaker at Greystone 230 kV substation by June 2008. The estimated cost is \$0.35 million.
2. The single contingency involving the Gilbert – Glen Gardner 230kV circuit results in an overload on the Kittatinny – Pohatcong 230kV circuit under the 2008 load deliverability test for Eastern MAAC. The recommended solution is to replace a line trap at Kittatinny 230 kV substation and to change tap of limiting CT at Pohatcong 230 kV substation by June 2008. The estimated cost is \$0.035 million.
3. The single contingency involving the Portland – Greystone 230kV circuit results in an overload on the Greystone – West Wharton 230kV circuit under the 2008 load deliverability test for Eastern MAAC. The recommended solution is to change tap of limiting CT at Greystone 230 kV substation by June 2008. The estimated cost is \$0.005 million.
4. The single contingency involving the Branchburg – Flagtown 230kV circuit results in an overload on the Branchburg – Readington 230kV circuit under the 2008 load deliverability test for Eastern MAAC. The recommended solution is to replace a wave trap at Branchburg 230 kV substation by June 2008. The estimated cost is \$0.50 million.
5. The double contingency involving the loss of Waldwick – Hillsdale and Athenia – Saddle Brook 230 kV circuits result in an overload on the Bergen – Leonia 230 kV circuit under the 2008 N-2 test. The recommended solution is to convert the Bergen - Leonia 138 kV circuit to 230 kV circuit by June 2008. The estimated cost is \$20 million.
6. The single contingency involving the Deans – Smithburg 500 kV circuit results in an overload on the East Windsor – Smithburg 230 kV circuit under the 2008 load deliverability test for JCPL. The recommended solution is to replace a line trap on both East Windsor and Smithburg 230 kV substations by June 2008. The estimated cost is \$ 0.08 million.
7. The single contingency involving the Larrabee – Smithburg 230 kV circuit results in a voltage drop problem in south JCPL area under the 2008 load deliverability test for JCPL. The recommended solution is to install 72 Mvar capacitor at Cookstown 230 kV substation by June 2008. The estimated cost is \$0.955 million.
8. The single contingency involving the Keeney – Rock Spring 500kV circuit results in a voltage drop problem in the Eastern MAAC 500 kV substations under the 2008 load

deliverability test for Eastern MAAC. The recommended solution is to install the following capacitors: 86.4 Mvar at Planebrook 35 kV substation for \$2.2 million, 161 Mvar at Planebrook 230 kV substation for \$2.0 million, 161 Mvar at Newlinville 230 kV substation for \$2.0 million and 161 Mvar at Heaton 230 kV substation for \$2.0 million by June 2008. The total estimated cost is \$8.2 million.

9. The double contingency involving the loss of any two New Freedom 500/230 kV transformers result in an overload on the remaining New Freedom 500/230 kV transformer under the 2008 N-2 test. The recommended solution is to configure the New Freedom substation to switch an in-service “operating spare” single phase 500/230 kV transformer for the long term outage of any of the in-service single phase banks. The estimated cost is \$6.0 million.
10. The single contingency involving the loss of the Hunterstown – Conastone 500 kV circuit and Hunterstown 500/230 kV transformer results in a voltage drop problem on the Juniata 500kV substation under the 2008 generation deliverability test. The recommended solution is to install a 4% 230 kV reactor in series with the low side of the Hunterstown 500/230 kV transformer and to install two 100 Mvar PLC switched capacitors at Hunterstown 230 kV substation by June 2008. The estimated cost is \$13.0 million.
11. The Chichester – Mickleton 230 kV circuit is overloaded for several contingencies under different tests. The worst overloads are due to *load deliverability test* (for the outage of the Hope Creek – Red Lion 500 kV circuit) and *N-2 test* (for the outage of the Salem – New Freedom and Hope Creek – New Freedom 500 kV circuits). The recommended solution is to install a 2% reactor in Chichester substation on the Chichester – Mickleton 230 kV circuit and to build a new 500/230 kV substation in AE area. The high side of the new substation will be tapped on the Salem – East Windsor 500 kV circuit and the low side will be tapped on the Cumberland – Churchtown 230 kV circuit by June 2008. The estimated cost is \$1 million for the reactor and \$45 million for the new substation.
12. The single contingency involving the New substation - Cumberland 230 kV circuit results in a voltage collapse in AE area under the 2008 load deliverability test for AE. The recommended solution is to install 50 Mvar capacitor at Cardiff 230 kV substation by June 2008. The estimated cost is \$2.6 million.
13. The single contingency involving the loss of the Dennis – Corson 138 kV circuit and the Dennis 230/138 kV transformer results in an overload on the Union – Corson 138 kV circuit under the 2008 load deliverability test for AE. The recommended solution is to re-conductor the Union – Corson 138 kV circuit for \$6.1 million and to upgrade both Union and Corson substations for \$0.3 million by June 2008. The total estimated cost is \$6.4 million.