

# Michigan Electric Transmission Company

## Generator Status Verification



**METC has scheduled the following transmission outage which impacts generation. METC plans to contact the generator and/or their designee to verify the generator status in preparation for the planned outage.**

### MISO Transmission Planned Outage:

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| <b>Posting Date:</b>            | 10/04/2018   |
| <b>MISO Crow Number:</b>        | 1-19839609   |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Alma   |
| <b>To Station:</b>              | Regal  |
| <b>Equipment Name:</b>          | Alma – Regal #1 Line   |
| <b>Planned Start Date/Time:</b> | October 6 <sup>th</sup> , 2018 0800 EDT  |
| <b>Planned End Date/Time:</b>   | October 7 <sup>th</sup> , 2018 1700 EDT  |
| <b>Outage Type:</b>             | Planned  |
| <b>Comments:</b>                | With the Alma – Regal #1 and Alma – Regal #2 lines out of service a loss of the Tittabawassee – Redstone line will force all of Gratiot Winds output down the Begole – Regal line. If Gratiot Wind is producing more than 65MW it will overload the Begole bank in the event of a contingency. <b>Therefore, Gratiot wind needs to be limited to 65MW for the duration of this outage.</b> |

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| <b>Posting Date:</b>            | 3/28/2017   |
| <b>MISO Crow Number:</b>        | 1-13279953  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              | Donaldson Creek   |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek 138kV line  |
| <b>Planned Start Date/Time:</b> | Forced  |
| <b>Planned End Date/Time:</b>   | 03/30/2017 16:00 EDT  |
| <b>Outage Type:</b>             | Forced Outage – Repair of Line  |
| <b>Comments:</b>                | When the Amber-Donaldson 138kV line open loss of Amber Pere – Marquette will cause all generation output from Lake Winds to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer, the Lake Winds generation output will be restricted to 60MW. |

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| <b>Posting Date:</b>            | 3/10/2017  |
| <b>MISO Crow Number:</b>        | 1-13095116   |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Battle Creek   |
| <b>To Station:</b>              | Verona   |
| <b>Equipment Name:</b>          | Battle Creek – Verona #2   |
| <b>Planned Start Date/Time:</b> | 03/13/2017 07:00 EST   |
| <b>Planned End Date/Time:</b>   | 03/13/2017 17:00 EST   |
| <b>Outage Type:</b>             | Maintenance  |
| <b>Comments:</b>                | <p>With Battle Creek – Verona #2 out of service a loss of the Battle Creek – Verona #1 line may cause overloads on the Lafayette 138/46kV transformer during high West – East transfers. In order to prevent this overload Plymouth Street generation may need to be called on.</p> <p>If CE RTCA shows the Lafayette 138/46kV transformer exceeding 95% of its winter emergency ratings for the loss of Battle Creek – Verona #1 METC will contact Plymouth Street generation to run for the remainder of the outage.</p> |

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| <b>Posting Date:</b>            | 10/7/2016   |
| <b>MISO Crow Number:</b>        | 1-10887016  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              | Donaldson Creek   |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek 138kV line  |
| <b>Planned Start Date/Time:</b> | 10/20/2016 07:30 EDT  |
| <b>Planned End Date/Time:</b>   | 10/21/2016 16:00 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | <p>When the Amber-Donaldson 138kV line is open loss of Amber Pere – Marquette will cause all generation output from Lake Winds to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer, the Lake Winds generation output will be restricted to 60MW.</p> |

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| <b>Posting Date:</b>            | 4/5/2016 /                         |
| <b>MISO Crow Number:</b>        | 1-10381329                         |
| <b>KV:</b>                      | 138kV                              |
| <b>From Station:</b>            | Amber                              |
| <b>To Station:</b>              | Donaldson Creek                    |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek 138kV line |
| <b>Planned Start Date/Time:</b> | 04/16/2016 07:00 EDT               |
| <b>Planned End Date/Time:</b>   | 04/16/2016 15:30 EDT               |
| <b>Outage Type:</b>             | Maintenance                        |

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| <b>Comments:</b> | When the Amber-Donaldson 138kV line open loss of Amber Pere – Marquette will cause all generation output from Lake Winds to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer, the Lake Winds generation output will be restricted to 60MW. |
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| <b>Posting Date:</b>            | 2/29/2016   |
| <b>MISO Crow Number:</b>        | 1-10152249  |
| <b>KV:</b>                      | 345kV   |
| <b>From Station:</b>            | Nelson Rd.  |
| <b>To Station:</b>              | Renaissance   |
| <b>Equipment Name:</b>          | Nelson Rd. – Renaissance #1   |
| <b>Planned Start Date/Time:</b> | 03/09/2016 07:00 EDT  |
| <b>Planned End Date/Time:</b>   | 03/11/2016 17:00 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | Renaissance will not be able to generate for the duration of this outage. |

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| <b>Posting Date:</b>            | 6/26/2015   |
| <b>MISO Crow Number:</b>        | 1-08545466  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              | Donaldson Creek   |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek 138kV line  |
| <b>Planned Start Date/Time:</b> | 06/30/2015 06:00 EDT  |
| <b>Planned End Date/Time:</b>   | 06/30/2015 16:00 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | When the Amber-Donaldson 138kV line open loss of Amber Pere – Marquette will cause all generation output from Lake Winds to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer, the Lake Winds generation output will be restricted to 50MW. |

6/26/2015: Amber 188 Outage will be rescheduled for a new date. Another posting will be made once the new dates are confirmed.

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| <b>Posting Date:</b>            | 6/24/2015   |
| <b>MISO Crow Number:</b>        | 1-08463852  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              |   |
| <b>Equipment Name:</b>          | Amber 188 138kV Breaker and Amber 138/46kV Transformer #1 |
| <b>Planned Start Date/Time:</b> | 06/29/2015 07:00 EDT                                      |
| <b>Planned End Date/Time:</b>   | 06/30/2015 15:00 EDT                                      |
| <b>Outage Type:</b>             | Maintenance   |

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| <b>Comments:</b> | When the Amber 188 138kV breaker and Amber Transformer #1 are opened, the loss of the Amber-Donaldson 138kV line will cause all generation output from Lake Winds to flow down the Oceana Transformer 1. To prevent the post-contingent overload of the Oceana Transformer, the Lake Winds generation output will be restricted to 60MW. |
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| <b>Posting Date:</b>            | 5/11/2015  |
| <b>MISO Crow Number:</b>        | 1-07482934   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Keystone   |
| <b>To Station:</b>              | Ludington  |
| <b>Equipment Name:</b>          | Keystone - Ludington 345kV line  |
| <b>Planned Start Date/Time:</b> | 05/15/2015 06:00 EDT   |
| <b>Planned End Date/Time:</b>   | 05/17/2015 16:00 EDT   |
| <b>Outage Type:</b>             | Maintenance  |
| <b>Comments:</b>                | This outage will require the use of Northern Michigan Peaking Generation to maintain adequate voltage support in the area. This generation includes the Livingston Peakers and Wolverine Gaylord Peakers. The amount of generation needed will be dependent on the system loads and will vary throughout the outage. The amount of generation needed will be determined by the ITC and MISO control rooms in real time. Please prepare to have these units properly staffed for the duration of this work. |

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| <b>Posting Date:</b>            | 3/4/2015   |
| <b>MISO Crow Number:</b>        | 1-07308085   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Livingston   |
| <b>To Station:</b>              | Tittabawassee  |
| <b>Equipment Name:</b>          | Livingston – Gallagher – Tittabawassee 345kV line  |
| <b>Planned Start Date/Time:</b> | 03/13/2015 06:00 EDT   |
| <b>Planned End Date/Time:</b>   | 03/17/2015 13:00 EDT   |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | This outage will require the use of Northern Michigan Peaking Generation to maintain adequate voltage support in the area. This generation includes the Livingston Peakers and Wolverine Gaylord Peakers. The amount of generation needed will be dependent on the system loads and will vary throughout the outage. The amount of generation needed will be determined by the ITC and MISO control rooms in real time. Please prepare to have these units properly staffed for the duration of this work. |

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| <b>Posting Date:</b>            | 12/23/2014 <b>REVISED: 1/8/2015</b>  |
| <b>MISO Crow Number:</b>        | 1-07065497   |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Beecher  |
| <b>To Station:</b>              | Whiting  |
| <b>Equipment Name:</b>          | Beecher – Whiting  |
| <b>Planned Start Date/Time:</b> | 1/5/2015 0700 EST  |
| <b>Planned End Date/Time:</b>   | <del>1/10/2015 1830 EST</del> <b>NEW END DATE: 1/14/2015 1600 EST</b>  |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | With both the Whiting – Custer and Beecher – Whiting lines out at the, the loss of either of the remaining two Whiting outlets would cause post-contingent overloads on the other. To avoid this issue the total output of all Whiting units will be restricted to 180 MW for the duration of this outage. |

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| <b>Posting Date:</b>            | 12/22/2014   |
| <b>MISO Crow Number:</b>        | 1-06614236   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Livingston   |
| <b>To Station:</b>              | Tittbwassee  |
| <b>Equipment Name:</b>          | Livingston – Gallagher – Tittabawassee 345kV line  |
| <b>Planned Start Date/Time:</b> | 12/29/2014 06:00 EDT   |
| <b>Planned End Date/Time:</b>   | 12/31/2014 17:00 EDT   |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | This outage will require the use of Northern Michigan Peaking Generation to maintain adequate voltage support in the area. |

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| <b>Posting Date:</b>            | 11/10/2014  |
| <b>MISO Crow Number:</b>        | 1-06228026  |
| <b>KV:</b>                      | 345kV   |
| <b>From Station:</b>            | Keystone  |
| <b>To Station:</b>              | Ludington   |
| <b>Equipment Name:</b>          | Keystone – Ludington 345kV  |
| <b>Planned Start Date/Time:</b> | 11/19/2014 06:00 EDT  |
| <b>Planned End Date/Time:</b>   | 11/20/2014 16:00 EDT  |
| <b>Outage Type:</b>             | Construction  |
| <b>Comments:</b>                | This outage may require the use of Northern Michigan Peaking Generation to maintain adequate voltage support in the area. |

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| <b>Posting Date:</b>     | 10/27/2014 |
| <b>MISO Crow Number:</b> | 1-06675467 |
| <b>KV:</b>               | 345kV      |

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| <b>From Station:</b>            | Keystone  |
| <b>To Station:</b>              | Livingston  |
| <b>Equipment Name:</b>          | Keystone – Livingston 345kV   |
| <b>Planned Start Date/Time:</b> | 11/08/2014 06:00 EDT  |
| <b>Planned End Date/Time:</b>   | 11/08/2014 20:00 EDT  |
| <b>Outage Type:</b>             | Construction  |
| <b>Comments:</b>                | This outage may require the use of Northern Michigan Peaking Generation to maintain adequate voltage support in the area. |

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| <b>Posting Date:</b>            | 10/22/2014   |
| <b>MISO Crow Number:</b>        | 1-06533923 & 1-06423895  |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Raisin   |
| <b>To Station:</b>              | Whiting  |
| <b>Equipment Name:</b>          | Parr Road – Whiting  |
| <b>Planned Start Date/Time:</b> | 10/27/2014 0800 EST  |
| <b>Planned End Date/Time:</b>   | 10/29/2014 1730 EST  |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | With both the Whiting – Custer and Parr Road – Whiting lines out at the, the loss of either of the remaining two Whiting outlets would cause post-contingent overloads on the other. To avoid this issue the total output of all Whiting units will be restricted to 265 MW for the duration of this outage. |

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| <b>Posting Date:</b>            | 4/25/2014  |
| <b>MISO Crow Number:</b>        | 1-05349662   |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Amber  |
| <b>To Station:</b>              | Donaldson Creek  |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek  |
| <b>Planned Start Date/Time:</b> | 05/09/2014 1331 EST  |
| <b>Planned End Date/Time:</b>   | 05/24/2014 1330 EST  |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | When the Amber – Donaldson Creek 138kV line is opened, the Lake Winds Generator will only have two outlet paths: One path to Pere Marquette, and the other path down the Amber (138/46kV) Transformer 1. Loss of the Amber-Pere Marquette 138kV line will cause all generation output to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer 1, the Lake Winds generation output will be restricted to 60MW. |

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| <b>Posting Date:</b> | 4/23/2014 |
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| <b>MISO Crow Number:</b>        | 1-05336807   |
| <b>KV:</b>                      | 138kV  |
| <b>From Station:</b>            | Amber  |
| <b>To Station:</b>              | Donaldson Creek  |
| <b>Equipment Name:</b>          | Amber – Donaldson Creek  |
| <b>Planned Start Date/Time:</b> | 04/28/2014 0530 EST  |
| <b>Planned End Date/Time:</b>   | 05/09/2014 1330 EST  |
| <b>Outage Type:</b>             | Construction   |
| <b>Comments:</b>                | <p>When the Amber – Donaldson Creek 138kV line is opened, the Lake Winds Generator will only have two outlet paths: One path to Pere Marquette, and the other path down the Amber (138/46kV) Transformer 1. Loss of the Amber-Pere Marquette 138kV line will cause all generation output to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer 1, the Lake Winds generation output will be restricted to 60MW.</p> <p>Revised 4/24/2014</p> |

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| <b>Posting Date:</b>            | 01/10/2014   |
| <b>MISO Crow Number:</b>        | 1-04807856   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Donaldson Creek  |
| <b>To Station:</b>              | Redwood  |
| <b>Equipment Name:</b>          | Donaldson Creek – Redwood 138kV line   |
| <b>Planned Start Date/Time:</b> | 01/21/2014 630 EST   |
| <b>Planned End Date/Time:</b>   | 01/22/2014 1830 EST  |
| <b>Outage Type:</b>             | Safety Clearance   |
| <b>Comments:</b>                | <p>Opening the Donaldson Creek – Redwood line at Donaldson Creek will also open end the Amber – Donaldson Creek 138kV line. When the Amber – Donaldson Creek 138kV line is opened, the Lake Winds Generator will only have two outlet paths: One path to Pere Marquette, and the other path down the Amber (138/46kV) Transformer 1. Loss of the Amber-Pere Marquette 138kV line will cause all generation output to flow down the Amber Transformer 1. To prevent the post-contingent overload of the Amber Transformer 1, the Lake Winds generation output will be restricted to 60MW.</p> |

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| <b>Posting Date:</b>     | 10/8/2013   |
| <b>MISO Crow Number:</b> | 1-03899807  |
| <b>KV:</b>               | 345kV   |
| <b>From Station:</b>     | Livingston - Gallagher                            |
| <b>To Station:</b>       | Tittabawassee                                     |
| <b>Equipment Name:</b>   | Livingston – Gallagher – Tittabawassee 345kV line |

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| <b>Planned Start Date/Time:</b> | 10/26/2013 600 EDT   |
| <b>Planned End Date/Time:</b>   | 10/27/2013 1800 EDT  |
| <b>Outage Type:</b>             | Maintenance  |
| <b>Comments:</b>                | During this outage a loss of the Keystone – Ludington 345kV line will cause low voltages and overloads in the northern Michigan area. To prevent these overloads the following units should be available to run if needed at any point during this outage: CE Gaylord 3 Units, Wolverine Gaylord 2 Units, Livingston Peakers 3 Units. If for any reason there are fewer units available this outage will be reevaluated. These units will be brought on as needed based on real time CA Results. |

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| <b>Posting Date:</b>            | 10/8/2013  |
| <b>MISO Crow Number:</b>        | 1-03899808   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Livingston - Gallagher   |
| <b>To Station:</b>              | Tittabawassee  |
| <b>Equipment Name:</b>          | Livingston – Gallagher – Tittabawassee 345kV line  |
| <b>Planned Start Date/Time:</b> | 10/19/2013 600 EDT   |
| <b>Planned End Date/Time:</b>   | 10/20/2013 1800 EDT  |
| <b>Outage Type:</b>             | Maintenance  |
| <b>Comments:</b>                | During this outage a loss of the Keystone – Ludington 345kV line will cause low voltages and overloads in the northern Michigan area. To prevent these overloads the following units should be available to run if needed at any point during this outage: CE Gaylord 3 Units, Wolverine Gaylord 2 Units, Livingston Peakers 3 Units. If for any reason there are fewer units available this outage will be reevaluated. These units will be brought on as needed based on real time CA Results. |

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| <b>Posting Date:</b>            | 10/8/2013  |
| <b>MISO Crow Number:</b>        | 1-03899809   |
| <b>KV:</b>                      | 345kV  |
| <b>From Station:</b>            | Livingston - Gallagher   |
| <b>To Station:</b>              | Tittabawassee  |
| <b>Equipment Name:</b>          | Livingston – Gallagher – Tittabawassee 345kV line  |
| <b>Planned Start Date/Time:</b> | 10/12/2013 600 EDT   |
| <b>Planned End Date/Time:</b>   | 10/13/2013 1800 EDT  |
| <b>Outage Type:</b>             | Maintenance  |
| <b>Comments:</b>                | During this outage a loss of the Keystone – Ludington 345kV line will cause low voltages and overloads in the northern Michigan area. To prevent these overloads the following units should be available to run if needed at any point during this outage: CE Gaylord 3 Units, Wolverine Gaylord 2 Units, Livingston Peakers 3 Units. If for any reason there are fewer units available this outage will be reevaluated. These units will be brought on as needed based on real time CA Results. |



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| <b>Posting Date:</b>            | 05/14/2013  |
| <b>MISO Crow Number:</b>        | 1-03768118  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              | Donaldson Creek   |
| <b>Equipment Name:</b>          | Amber-Donaldson Creek 138kV line  |
| <b>Planned Start Date/Time:</b> | 05/20/2013 07:30 EDT  |
| <b>Planned End Date/Time:</b>   | 06/07/2013 16:30 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | During the scheduled outage of the Amber-Donaldson Creek 138kV line the Lake Winds Generator will have three outlet paths: One path to the 138kV Pere Marquette substation, a path down the Amber (138/46kV) Transformer 1, and a path down the Amber (138/46kV) Transformer 2. Loss of the Amber-Pere Marquette 138kV line will cause all generation output to flow down the Amber Transformer 1. To prevent the contingent overload of the Amber Transformer 1 the Lake Winds generation output will be restricted to 50MW. |

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| <b>Posting Date:</b>            | 04/05/2013  |
| <b>MISO Crow Number:</b>        | 1-03670319  |
| <b>KV:</b>                      | 138kV   |
| <b>From Station:</b>            | Amber   |
| <b>To Station:</b>              | Pere Marquette  |
| <b>Equipment Name:</b>          | Amber-Pere Marquette 138kV line   |
| <b>Planned Start Date/Time:</b> | 04/16/2013 08:00 EDT  |
| <b>Planned End Date/Time:</b>   | 04/16/2013 16:30 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | During the scheduled outage of the Amber-Pere Marquette 138kV line the Lake Winds Generator will have two outlet paths: One path to the 138kV Donaldson Creek substation and the other path down the Amber (138/46kV) Transformer 1. Loss of the Amber-Donaldson Creek 138kV line will cause all generation output to flow down the Amber Transformer 1. To prevent the contingent overload of the Amber Transformer 1 the Lake Winds generation output will be restricted to 50MW. |

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| <b>Posting Date:</b>     | 02/01/2013                          |
| <b>MISO Crow Number:</b> | 1-03458342                          |
| <b>KV:</b>               | 138kV                               |
| <b>From Station:</b>     | Redstone                            |
| <b>To Station:</b>       | Tittabawassee                       |
| <b>Equipment Name:</b>   | Redstone – Tittabawassee 138kV line |

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| <b>Planned Start Date/Time:</b> | 02/04/2013 06:30 EDT  |
| <b>Planned End Date/Time:</b>   | 02/09/2013 18:30 EDT  |
| <b>Outage Type:</b>             | Maintenance   |
| <b>Comments:</b>                | Having the Redstone-Tittabawassee 138kV line out causes Gratiot Wind to have one outlet path to the Regal substation. Loss of the Regal-Summerton 138kV line along with the concurrent outage of the Alma-Regal #1 line may cause the Begole-Shepherd 46kV line to exceed its winter emergency rating as power from Gratiot Wind flows on this line. During Saturday (02/09/2013) Gratiot Wind may need to be restricted. |