



AN ALLETE COMPANY

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September 22, 2015



Mr. Darrell Nitschke  
Executive Secretary  
North Dakota Public Service Commission  
600 E. Boulevard Ave., Dept. 408  
Bismarck, North Dakota 58505-0480

**RE: Minnesota Power's Bison 3 Wind Project  
Siting Application for a Certificate of Site Compatibility for the  
Bison 3 Wind Project, Oliver and Morton counties, North Dakota  
Case No. PU-11-162**

Dear Mr. Nitschke:

Attached please find Minnesota Power's Tree and Shrub Survival Report in the above-referenced case. The original has been placed in today's mail.

Please let me know if you have any questions related to this matter.

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller".

David R. Moeller

DRM:  
Attach.

# Minnesota Power 2015 Tree and Shrub Survival Report

Bison 3 (PU-11-162)



A WIND ENERGY INITIATIVE OF MINNESOTA POWER IN NORTH DAKOTA



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2014 Tree and Shrub Report- Bison 3,.

## Contents

**Minnesota Power Tree and Shrub Survival Report. Pages 2-3**

**Appendix A- 2015 Planting 3 Survival Survey Results**

**Appendix B- Minnesota Power's Bison 3 Tree and Shrub Mitigation Plan**



**Introduction**

In 2012 Minnesota Power (an ALLETE Company) completed construction of its Bison 3, 105 MW wind facility. During construction some trees and shrubs were removed. In keeping with the Certificate of Site Compatibility for the Bison 3 facility, Minnesota Power developed a Tree and Shrub Mitigation Plan (Plan) for the project (Appendix B). The plan was submitted and filed with the North Dakota Public Service Commission (PSC) prior to beginning any mitigation activities. The Plan facilitated the replacement of trees and shrubs disturbed during construction and minimized any associated environmental impacts.

Per PSC order requirement, mitigation tree and shrub species were to be mitigated at a ratio of 2:1 for every stem removed during construction and required to have at least a 75% survival rate at three years post planting.

The following is Minnesota Power’s 2015 Survival Report for the Bison 3 facility.

**Survival Report**

The Bison 3 mitigation planting was combined with a Low Shrub Species Replant from a previous mitigation effort and comprised the same planting effort. For purposes of discussion the combined planting effort will be referred to as Planting 3.

Table 1-1 outlines the corresponding survival check and percent survival for Planting #3 (Bison 3 and a Low Shrub Species Replant).

(Table 1-1) **Planting #3** –  
Bison 3 & Low Shrub Replant

<b>2013 Survival Check</b>	Stems Planted for 2:1 Ratio	Stems Observed	Percent Survival
Tree/Tall Shrub Species	78	169	217%
Low Shrub Species	762	844	111%
<b>2014 Survival Check</b>			
	Stems Planted for 2:1 Ratio	Stems Observed	Percent Survival
Tree/Tall Shrub Species	78	142	182%
Low Shrub Species	762	872	114 %
<b>2014 Survival Check</b>			
	Stems Planted for 2:1 Ratio	Stems Observed	Percent Survival
Tree/Tall Shrub Species	78	126	162%
Low Shrub Species	762	724	95%



**Results/Conclusion**

Upon Review of the 2015 Survival Report and Survey Results for Planting 3 in table 2-1 Survival Results, the third and final survival check for Planting 3 was conducted in the fall of 2015. A mitigation survival ratio exceeding 75% has been maintained for three years and all PSC tree and shrub mitigation requirements have been completed. Planting 3 will not be included in future mitigation reports.

(Table 2-1)- Survival results

	2013	2014	2015
Planting 3	Tree/Tall Shrub- Adequate Low Shrub- Adequate	Tree/Tall Shrub- Adequate Low Shrub-Adequate	Tree/Tall Shrub- Adequate/Complete Low Shrub-Adequate/Complete

**Appendix A**

**-2015 Planting 3 Survival Survey Results**

**WOODLAND PLANT SURVIVABILITY MONITORING  
FROM MINNESOTA POWER- A DIVISION OF ALLETE, INC  
WITHIN THE BISON 3 AND PLANTING 1 LOW SHRUB REPLANT**

**Conducted by Minnesota Power September 7, 2014**

A survival count of Planting 3 (comprised of two blocks) for the Bison 3 wind farm and Planting 1's Low Shrub Replant was conducted by Minnesota Power staff on September 7, 2014. The survival results can be found in table 1-1 in the Minnesota Power 2015 Tree and Shrub Survival Report. The overall survival for the third growing season was 63% for Tree/Tall Shrub Species and 79% for Low Shrub Species. 126 living Tall Trees/Shrubs were surveyed from a total of 200 Tall Trees/Shrubs that were originally planted. 724 Low Shrub Species were surveyed from a total of 917 Low Shrubs that were originally planted. The number of stems originally planted for each size class was greater than the mitigation requirements based upon the 2012 disturbance sampling conducted by KDK consulting. The Tree/Tall Shrub and Low Shrub replacement numbers are well above the 2:1 replacement survival numbers required by the North Dakota Public Service Commission (ND PSC).

Based on a 2:1 planting ratio, 78 mitigation seedlings were to be planted for the Trees/Tall Shrub classification and 762 Low Shrub species were to be planted for mitigation. In 2015, Tree/Tall Shrubs survival was at 162% of its mitigation requirement and Low Shrubs was at 95% of its mitigation requirement. This planting exceeds the 75% survival ratio required by the ND PSC for successful mitigation of disturbed woodlands during construction.

The data within the tables provides sufficient information to aid any additional efforts that may be needed based on evaluation.