

August 15, 2013

Mr. Keith O'Neal
Director, Division of Reliability Standards
Office of Electric Reliability
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: *Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings* issued October 7, 2010 and updated November 30, 2010

Dear Mr. O'Neal:

This is the North American Electric Reliability Corporation's ("NERC") sixth summary report following the issuance of the "Facility Ratings Recommendation" ("Recommendation") on October 7, 2010,¹ which was updated November 30, 2010.² NERC is submitting this report to the Federal Energy Regulatory Commission ("FERC" or the "Commission") pursuant to Rule 810 of the NERC Rules of Procedure. This report provides an update on the progress that Transmission and Generator Owners have made toward completing remediation for discrepancies discovered on their high- and medium-priority transmission facilities. Additionally, it provides information on Transmission and Generator Owners' efforts to complete assessments on their low-priority transmission facilities and their progress toward remediating discrepancies found on low-priority facilities.

Background

In 2010, NERC and the Regional Entities became aware of discrepancies between the design and actual field conditions of transmission facilities.³ NERC and the Regional Entities thought these discrepancies were significant and widespread and that they could result in incorrect line ratings.

On October 7, 2010, NERC distributed the Recommendation as a Level 2 Alert. NERC recommended that Transmission and Generator Owners (also referred to as Transmission Facility Owners) of Bulk Electric System transmission facilities review their current Facility Ratings Methodology for solely and jointly owned transmission facilities to verify that the methodology used to determine facility ratings was based on actual field conditions. Initially, NERC requested that Transmission Facility

¹ *Recommendation to Industry Consideration of Actual Field Conditions in Determination of Facility Ratings* (October 7, 2010)
http://www.nerc.com/fileUploads/File/Events%20Analysis/Ratings_Recommendation_to_Industry_20100929Final.pdf

² *Recommendation to Industry Consideration of Actual Field Conditions in Determination of Facility Ratings* (November 30, 2010)
<http://www.nerc.com/fileUploads/File/Events%20Analysis/Ratings%20Recommendation%20to%20Industry%20FINAL-REVISED.pdf>

³ The term "transmission facilities" includes generator tie lines, radial lines, and interconnection facilities that fall under the scope of the current NERC-approved definition of Bulk Electric System.

Owners: (1) issue their plans for assessing their facilities by December 15, 2010; (2) report any discrepancies that resulted from the assessment by April 7, 2011; and (3) mitigate issues by October 2012, unless otherwise extended by NERC and the Regional Entities. Facility owners were also expected to answer a series of survey questions that accompanied the Recommendation. In order to coordinate any changes in facility ratings with the appropriate operating and planning entities, the Recommendation was also distributed to Reliability Coordinators, Transmission Operators, Generator Operators, Transmission Planners, and Planning Authorities.

NERC hosted an industry webinar on October 28, 2010 to discuss the expectations of the Recommendation for the Transmission Facility Owners. As a result of the concerns expressed by industry, NERC issued a revised Recommendation on November 30, 2010, which provided applicable Transmission Facility Owners an additional month (until January 18, 2011) to submit their assessment plans using a modified implementation strategy. The revised Recommendation requested that entities submit their assessment plans using a prioritized approach: high-priority facilities (as determined by the Transmission Facility Owner) assessed by the end of 2011, medium-priority facilities by the end of 2012, and the remaining facilities by the end of 2013. In addition, if Transmission Facility Owners identify discrepancies that result in potentially incorrect facility ratings, they have one year from the date the issue is identified and confirmed to mitigate the issue, unless an extension is granted.

To support this modification, NERC conducted a second industry webinar on November 29, 2010, and NERC's President and CEO, Gerry Cauley, issued a letter outlining revised expectations. NERC also provided a compliance application notice and published a question and answer document to support the Recommendation effort. This guidance was intended to focus on reliability while providing an avenue for industry to emphasize associated compliance activities in a positive, proactive manner.⁴

Of the 1,122 applicable NERC registered entities targeted to receive the Recommendation, approximately 98 percent submitted a response that was approved by a company officer or designee on or around the January 18, 2011 submission date. NERC, in conjunction with the Regional Entities, reviewed the submitted responses and accompanying assessment plans. NERC and the Regional Entities worked with the Transmission Facility Owners over the next three months to provide guidance on the expectations of the Recommendation. To assist in this effort, NERC developed the Assessment Plan Review Criteria and posted it onto NERC's Facility Ratings Alert webpage on May 11, 2011. NERC also conducted a third industry webinar on May 12, 2011, to discuss the Assessment Plan Review Criteria and to answer questions about the Recommendation. NERC developed responses to each of the questions posed during the webinar and posted the responses on the Facility Ratings Alert webpage on June 14, 2011.

To date, NERC has submitted five summary reports to the Commission. A summary of each report and the information for this sixth report follow.

Past Reports to the Commission

⁴ These documents are available on the "Facility Ratings Alert" page on the NERC website, *available* at http://www.nerc.com/filez/facility_ratings_alert.html.

1. February 17, 2011 Report

NERC submitted its initial Facility Ratings Recommendation summary report to the Commission on February 17, 2011. The information in that update indicated that 1,122 registered entities were targeted and received the Recommendation; 1,102 registered entities submitted a response approved by a company officer. Of those responses, 930 were submitted by Transmission Owners, Generator Owners, or both. Of the Transmission Facility Owners who responded to the alert, 228 (nearly 25 percent) reported that they had already addressed the Recommendation, and 409 (44 percent) had submitted their proposed plans to address the Recommendation. In the remaining 293 responses, mostly from Generator Owners, entities reported that the Recommendation was not applicable to their facilities.

2. August 12, 2011 Report on High-Priority Transmission Facilities

NERC submitted its second summary report to the Commission on August 12, 2011. After the January 18, 2011 initial responses from the Transmission Facility Owners, NERC encouraged the owners to review the Assessment Plan Review Criteria for guidance on how to implement the Recommendation. In Section C of the Review Criteria, owners were requested to provide their first high-priority assessment update to their Regional Entities by July 15, 2011. By that date, 202 Transmission Facility Owners reported to their Regional Entities and NERC that they had completed high-priority assessments on 1,557 circuits and indicated there were 248 discrepancies discovered. Of the discrepancies reported, 96 were for inadequate clearances between the transmission line and under-built distribution lines. Transmission Facility Owners also indicated that approximately 169 of the discrepancies identified had already been mitigated. NERC conducted an industry webinar on September 22, 2011 to provide stakeholders with information from the first high-priority assessment reporting period.

3. March 2, 2012 Report on High-Priority Transmission Facilities

NERC submitted its third summary report to the Commission on March 2, 2012. This report provided information on the progress that Transmission Facility Owners made toward completing their high-priority assessment plans through December 31, 2011. NERC and the Regional Entities received responses from 202 Transmission Facility Owners. The report indicated that 197 of the Transmission Facility Owners had performed assessments covering 4,271 circuits and 69,623 miles of transmission line. However, 20 of these 202 Transmission Facility Owners requested an extension. Reasons for requesting extensions included damage received and repair required from Hurricane Irene in August 2011 (for Transmission Facility Owners in the Northeast), the high use of and limited number of Light Detection and Ranging / Power Line Systems - Computer Aided Design and Drafting (“LiDAR/PLS-CADD”)⁵ vendors, coordination with other entities, and insufficient manpower. By the end of 2011, Transmission Facility Owners reported 5,100 discrepancies and had completed 2,142 remediation plans. Registered entities began reporting multiple discrepancies on a single circuit during this report period. NERC conducted an industry webinar on March 20, 2012, to provide stakeholders with information from the second high-priority assessment reporting period.

⁵ The majority of Transmission Facility Owners utilized LiDAR/PLS-CADD technology in performing their assessments.

4. October 10, 2012 Report on High- and Medium-Priority Transmission Lines

NERC's fourth summary report, submitted to the Commission on October 10, 2012, provided both an update on the progress registered entities made toward completing remediation plans for discrepancies discovered on high-priority transmission facilities and on the completion of their assessment plans for the first of two updates on their "medium" priority transmission facilities. This first update on each registered entity's medium-priority transmission facilities was due by July 17, 2012.

With respect to high-priority assessments, Transmission Facility Owners, including those who had been granted extensions, reported they had completed their assessments. The Transmission Facility Owners discovered 7,966 high-priority discrepancies. Of those discrepancies reported, 3,968 have been mitigated. LiDAR/PLS-CADD technology, which was used in 58 percent of the high-priority assessments, was the primary choice of Transmission Facility Owners in performing their assessments.

The fourth report was also the first of two updates on each Transmission Facility Owner's medium-priority transmission lines due to the Regional Entities on July 17, 2012. NERC received assessment responses from 147 Transmission Facility Owners covering 46,275 miles and 2,215 medium-priority transmission circuits. From these assessments, 6,284 discrepancies were discovered. The most reported type of discrepancy for this update was inadequate clearance between the transmission line and the ground or structure underneath the line. Of the discrepancies reported in the July 17, 2012 submissions, 2,388 had already been mitigated.

NERC conducted an industry webinar on October 3, 2012 to provide stakeholders with updates on the high-priority remediation efforts and to provide information from the first medium-priority assessment reporting period.

5. March 20, 2013 Report on High- and Medium-Priority Transmission Lines

NERC's fifth summary report, submitted to the commission on March 20, 2013, provided an update on: 1) the progress registered entities made toward completing remediation plans for discrepancies discovered on high-priority transmission facilities; and 2) the completion of their assessment plans for the second update on their "medium" priority transmission facilities.

With respect to high-priority assessments, all high-priority transmission facilities had been assessed as of the fifth summary report. For the 7,966 discrepancies that were discovered from the 76,125 miles of high-priority transmission lines, 718 circuits that contained discrepancies were mitigated. Transmission Facility Owners who provided high-priority remediation completion dates mostly reported that their high-priority circuit mitigations are expected to be complete by July 2013, with one exception involving required U.S. Bureau of Land Management approvals.

NERC and the Regional Entities received all the Transmission Facility Owners' medium-priority assessment responses by the requested January 15, 2013 report date. The responses indicated 14,993 discrepancies were discovered for 87,560 miles of medium-priority transmission lines on 6,284 circuits. Of those discrepancies, 73 percent were identified as inadequate clearance between the transmission

line and the ground or structure underneath the line. Of the 14,993 discrepancies, 5,098 medium-priority discrepancies (34 percent) had already been mitigated. Fifteen (15) Transmission Facility Owners had requested extensions for completing their medium-priority assessments. In the Northeast, the extensions were primarily related to repairs and state-required work from Hurricane Irene in August 2011 and the effects of Hurricane Sandy in October 2012. Other reasons cited by the Transmission Facility Owners include limited LiDAR/PLS-CADD vendors, budgeting constraints, coordination issues with other entities, and required federal permitting. Seventy percent of Transmission Facility Owners used LiDAR/PLS-CADD technology to perform their assessments. Of the total 101,473 medium-priority miles reported by the owners, 13,908 still require assessment.

Current Report on High-, Medium- and Low- Priority Transmission Lines

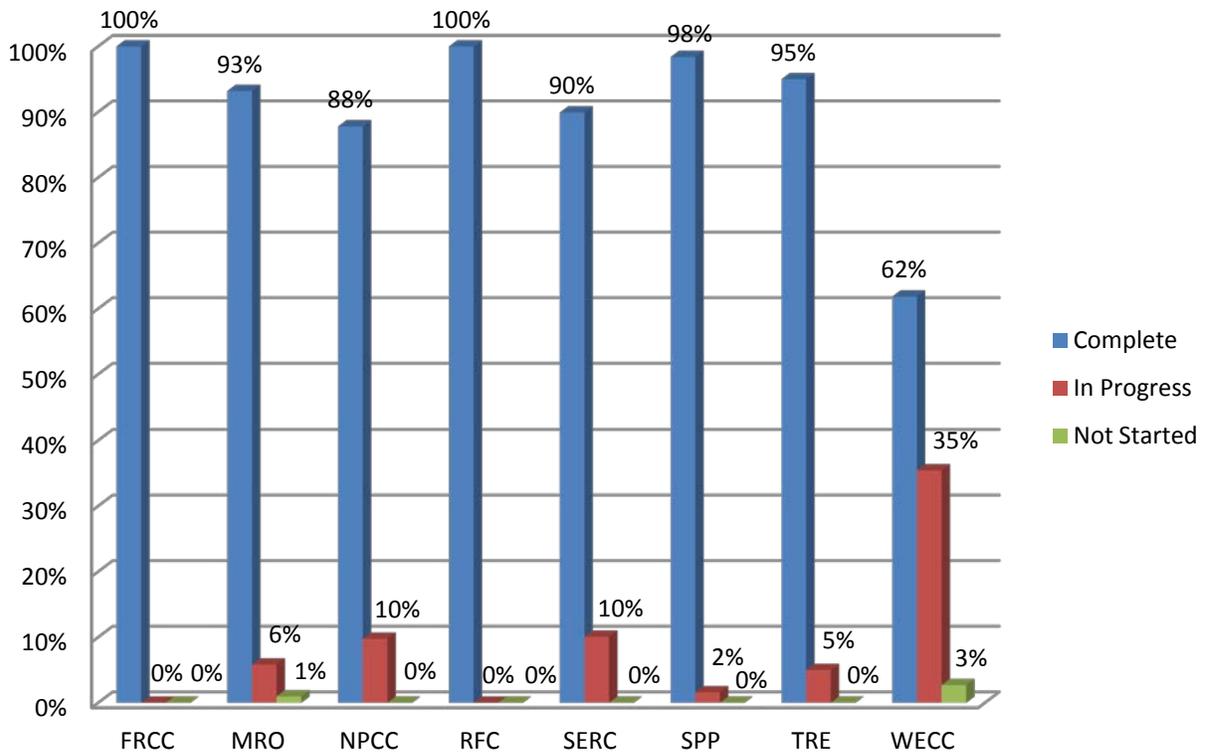
NERC's sixth summary report provides an update on the progress registered entities have made toward completing remediation for discrepancies discovered on their high- and medium-priority transmission facilities. The first of the two low priority assessments, due on July 15, 2013, was completed by registered entities. A report on the findings of low-priority assessments is also provided.

1. High-Priority Transmission Lines

All high-priority transmission facilities were assessed prior to NERC's fifth summary report submitted on March 19, 2013. That report summarized 7,966 discrepancies discovered during the assessment of 941 high-priority transmission lines comprising 76,125 circuit miles. Of the 941 high-priority transmission lines with discrepancies, 785 lines (83 percent) have been fully remediated. Given that 3,519 high-priority facilities have been assessed during the course of the Facility Ratings Alert project, 95.6 percent of the high-priority transmission lines have as-built field conditions consistent with their design.

Twenty-two (22) registered entities have not completed remediation on their 156 identified high-priority transmission lines with a total of 1,577 identified discrepancies. Of that total, eight specific transmission lines, owned by two registered entities, account for 965 of the 1,577 discrepancies. Those two entities did not provide specific estimated completion dates for the high-priority remediation due to the complexity and interdependency of the outage scheduling required to complete remediation. An additional eight registered entities representing 40 high-priority transmission lines did not provide estimated completion dates or information.

High-Priority: Remediation Status by Region (Based on Circuits Assessed with a Discrepancy)



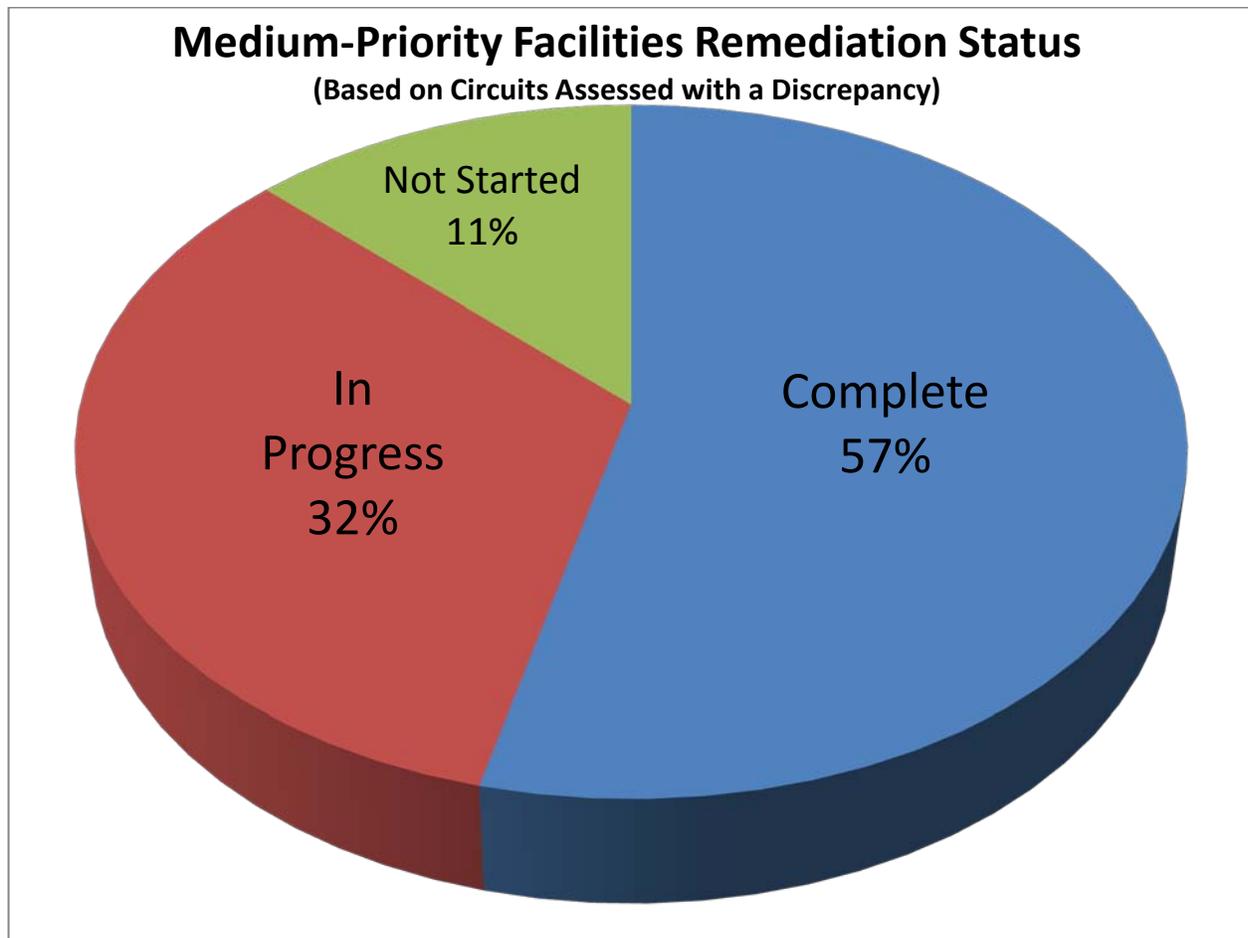
Region	FRCC	MRO	NPCC	RFC	SERC	SPP	TRE	WECC	Totals
Circuits Assessed	388	188	289	809	711	246	304	584	3519
Circuits with Discrepancy	90	103	82	132	119	62	20	333	941
Discrepancies	1140	961	568	913	444	350	77	3513	7966
Circuits Mitigated	90	96	74	132	107	61	19	206 ⁶	785

⁶ WECC’s reported mitigation number decreased from 219 in the previous report to 206 in the current report due to one or more entities omitting a total of at least 13 circuits that had been mitigated prior to this report. NERC will evaluate this issue and provide an update in its next submittal.

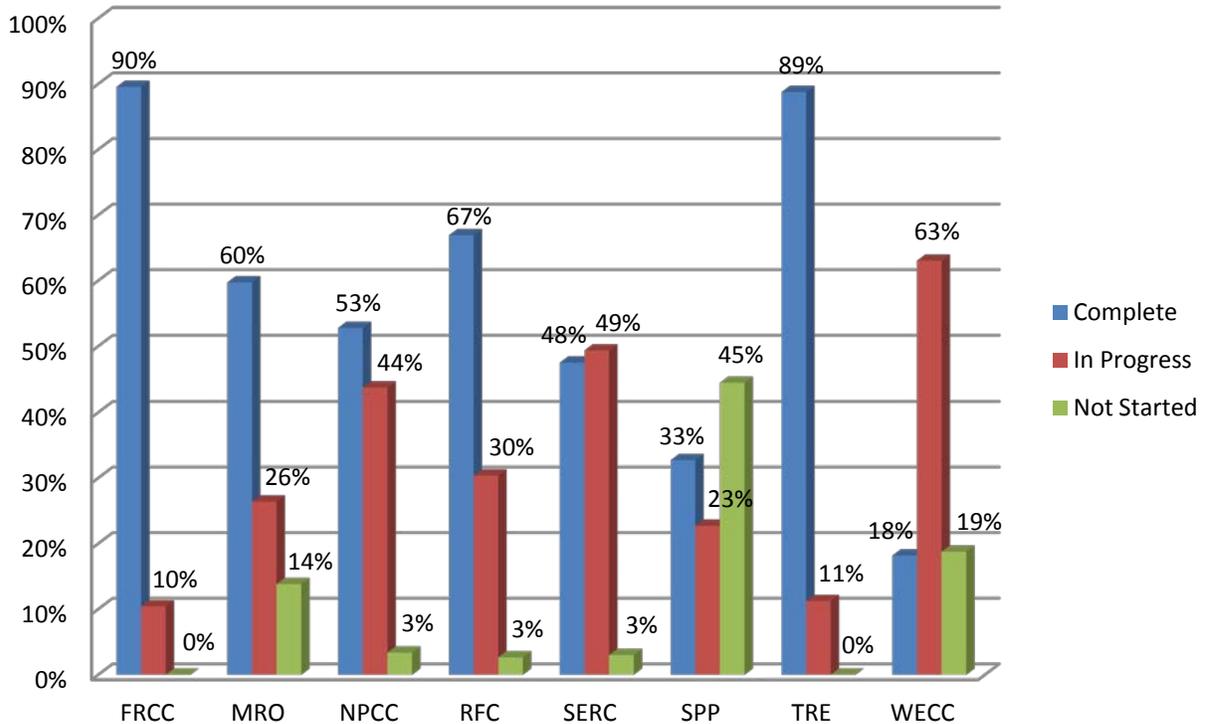
2. Medium-Priority Transmission Lines

As of the date of this report, Transmission Facility Owners have completed assessments on 5,962 of 6,428 medium-priority transmission facilities, or 93 percent of the total population. The responses indicated that 1,927 (32 percent) of those facilities contained a total of 16,862 discrepancies. Of the 1,927 medium-priority transmission lines with discrepancies, 1,087 lines (56 percent) have been fully remediated. Given that 4,035 medium-priority facilities have been assessed without any discrepancies during the course of the Facility Ratings Alert project, 79.7 percent of the medium-priority transmission lines have as-built field conditions consistent with their design.

Analysis of the medium-priority assessment and mitigation information provided by Transmission Facility Owners has been complicated by variability in reporting styles. Accurately aggregating these reports for presentation of Regional and NERC-wide metrics has required a significant amount of manual reconciliation, which is still ongoing. While these manual reconciliations will likely update the precise aggregate totals of many of the current and previously reported metrics, the overall conclusions drawn from the analysis are not expected to change significantly.

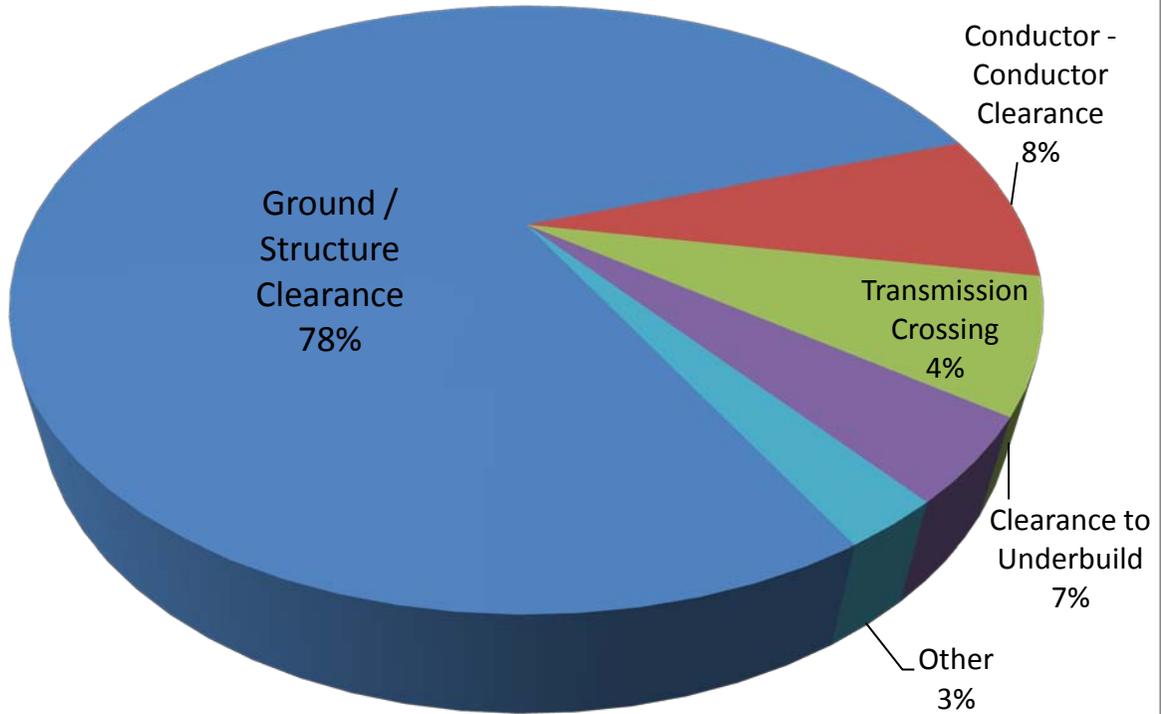


Medium-Priority: Remediation Status by Region (Based on Circuits Assessed with a Discrepancy)

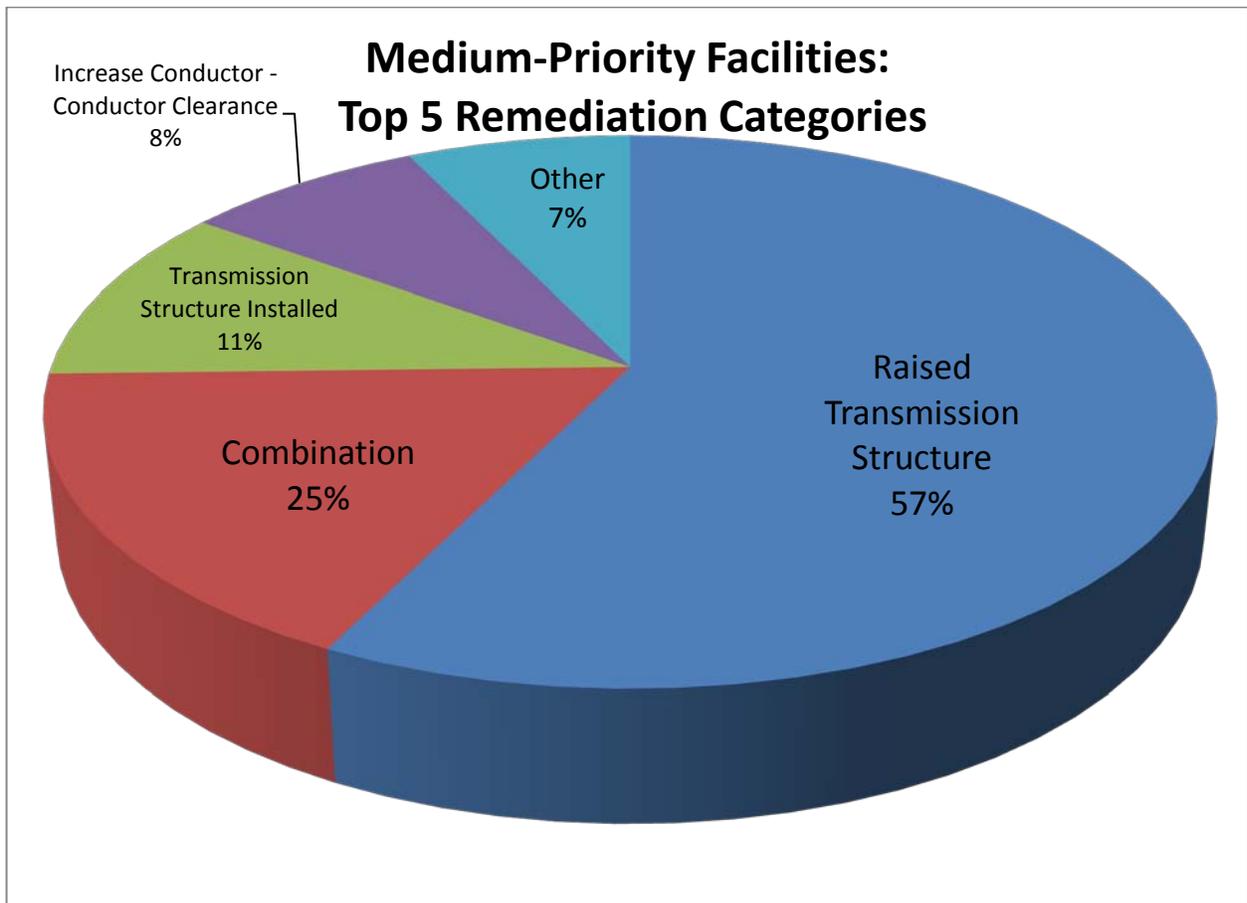


Region	FRCC	MRO	NPCC	RFC	SERC	SPP	TRE	WECC	Totals
Total Circuits	673	409	322	1064	1309	325	839	1487	6428
Circuits Assessed	673	290	266	1021	1299	325	775	1313	5962
Circuits with Discrepancy	297	159	89	375	397	110	89	411	1927
Discrepancies	2017	1323	913	2949	1559	1891	209	6001	16862
Circuits Mitigated	266	95	47	251	189	36	79	124	1087

Medium-Priority Facilities: Top 5 Discrepancy Categories



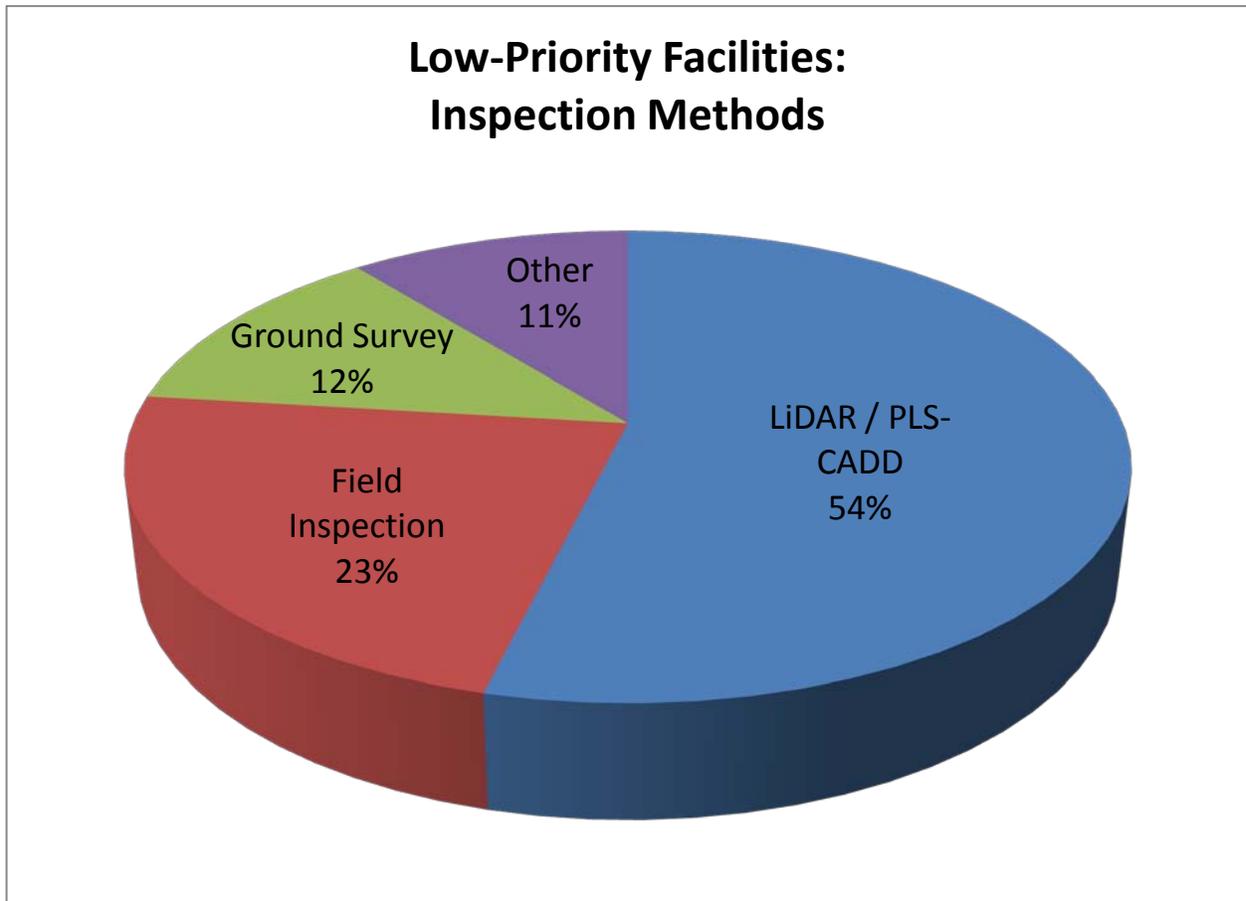
Consistent with previous reports covering medium-priority facilities, the majority of discrepancies reported were due to less than as-designed clearance between transmission line conductors and the ground or other structures. This category includes the earth, parts of the transmission structure supporting the conductors, and other non-utility structures such as buildings or billboards. All other types of discrepancies were less common and relatively evenly distributed.



Raising one or more transmission structures to increase clearances has been the most common remediation strategy for medium-priority facilities. Other types of remediation were evenly divided. “Combination” means that multiple types of remediation were used on a given circuit.

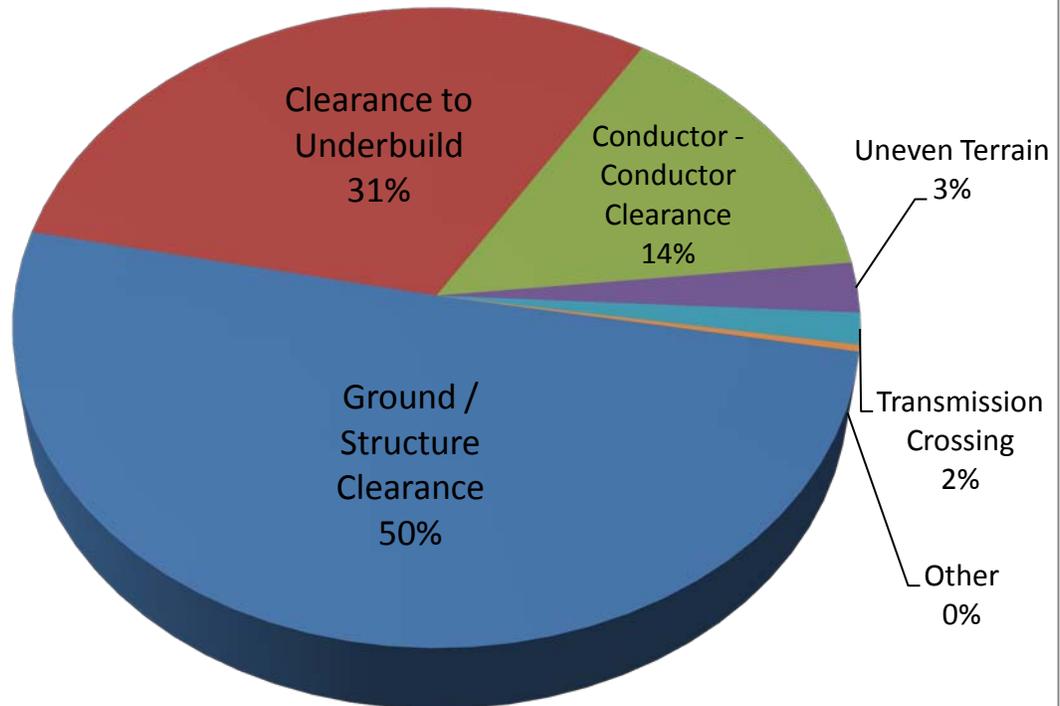
3. Low-Priority Transmission Lines

The first of two updates on each Transmission Facility Owner's low-priority facilities was due on July 15, 2013. NERC received assessment responses from 71 percent of low-priority facility owners indicating that approximately 27 percent of their circuits were assessed. The following graphs provide collective information on the progress of low-priority assessments and remediation plans to date.

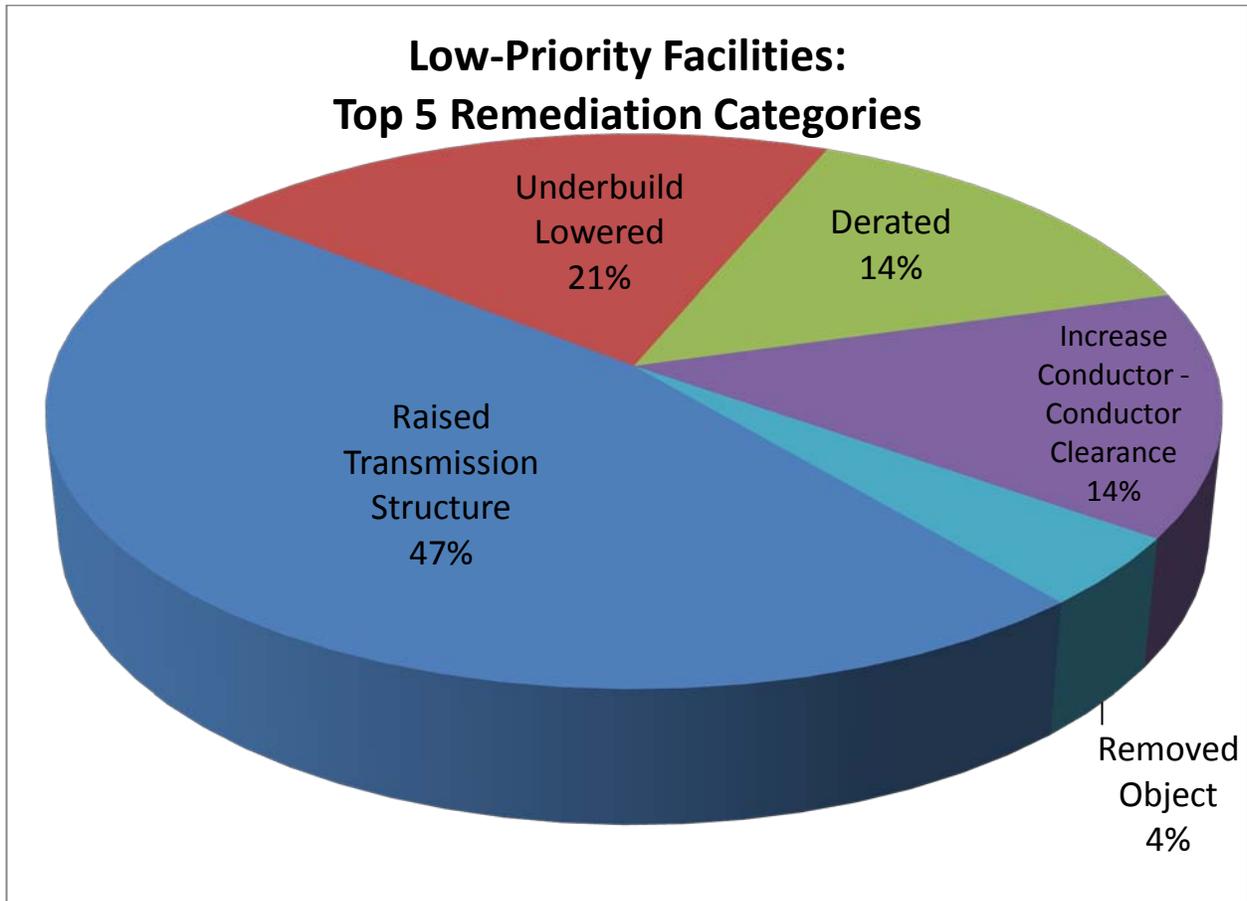


Consistent with the high- and medium-priority facility assessments, LiDAR/PLS-CADD technology has been the most common assessment method for low-priority facilities.

Low-Priority Facilities: Top 5 Discrepancy Categories

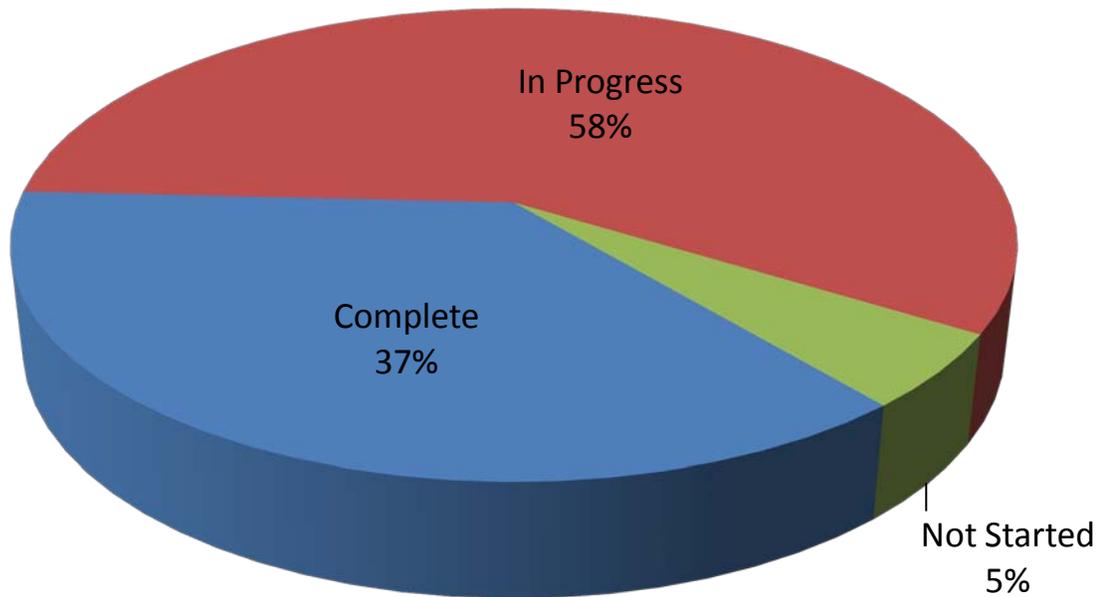


Half of all low-priority facility discrepancies reported were due to less than as-designed clearance between transmission line conductors and the ground or other structures. This category includes the earth, parts of the transmission structure supporting the conductors and other non-utility structures such as buildings or billboards. Clearance to underbuilt facilities was the second most common discrepancy at 31 percent. Other types of discrepancies were less common.



Consistent with medium-priority facilities, raising one or more transmission structures to increase clearances has been the most common remediation strategy for low-priority facilities. Other types of remediation were evenly divided. Permanently de-rating a transmission line to remediate discrepancies was used 14 percent of the time.

Low-Priority Facilities Remediation Status (Based on Circuits Assessed with a Discrepancy)



More than one third of the low-priority circuits assessed with discrepancies have already been fully remediated. Remediation efforts have started on another 58 percent.

Conclusion

As of July 15, 2013, 95.6 percent of the transmission facilities classified as high-priority by their owners have as-built field conditions consistent with their design. To date, 785 circuits have been fully remediated, and 156 high-priority facilities still have outstanding discrepancies. For medium-priority facilities, 79.7 percent have as-built field conditions consistent with their design. 1,087 circuits have been fully remediated, 840 circuits have outstanding discrepancies, and 466 circuits have not yet been assessed. Low-priority facility assessment is still in progress, with 27 percent of assessments complete. For those low-priority facilities assessed to have discrepancies, 37 percent of the circuits have been fully remediated with another 58 percent of the circuits having remediation efforts in progress.

NERC looks forward to working with the Regional Entities and the Transmission Facility Owners as the owners complete their outstanding assessments and remediation plans on an organized basis, consistent with the importance of the risks involved.

Our final summary report will be submitted to FERC following the January 15, 2014 data submission date. If you have additional questions, please do not hesitate to contact me at (404) 446-9706 or via email at sam.chanoski@nerc.net.

Respectfully submitted,



Samuel D. Chanoski
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