

Paddy's Run 11 Retirement Proposal

Summary

In November 2020, LG&E's Paddy's Run 11 (12 MW; 53 years old) ("PR11") was placed in Forced Outage status. Subsequently, a boroscopic inspection was performed, which confirmed damage in the unit's compressor section. Based on these findings, Plant Maintenance expects significant damage would be found to the unit should it be opened for inspection. On January 12, 2021, PR11 was placed in Mothball status.

A \$2.55 million repair cost estimate indicates that the economics of returning PR11 to service are unfavorable. Given its small size, PR11 does not materially impact the Companies' reserve margin. For these reasons, it is proposed that the work required for returning PR11 to operational status not be performed and that the unit be retired on March 31, 2021.

Background

PR11 is a 12 MW simple cycle natural gas-fired combustion turbine that began commercial operation in 1968 (53 years old).

On November 10, 2020, PR11 experienced a forced outage following a routine test run. Upon preliminary inspection, it appeared that material had been liberated from the compressor section of the machine, based upon the debris found in the combustors and that the machine locked up on coast-down. Thus, the failure appears to be in the compressor section of the machine. GE has estimated the repair cost at \$2.55 million.

Economic Evaluation

The repair cost is 20 to 25 times the unit's annual impact on expected reliability costs.¹ According to the 2018 IRP Reserve Margin Analysis, PR11 reduces the Companies' expected reliability costs by \$100 - \$130k/year.

Operational Considerations

Given its small size, retiring PR11 does not materially change the Companies' reserve margin. The removal of 12 MW reduces the Companies' 2021 summer reserve margin by only 0.2 percentage points (from 24.4% to 24.2%). In addition, while PR11 was a black-start capable unit, Generation Compliance has engaged Transmission and others to reassign Black Start status to four diesel generator sets recently installed at Cane Run.

Since 2011, PR11 has been operated minimally with:

- 73 starts, (54 of those times for testing),
- 84 hours of run time, and

¹ Given its high dispatch cost and limited operating hours, PR11's impact on generation production costs is negligible.

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- 842 MWh of net generation.

Recommendation

The costs associated with returning PR11 to service far outweigh the benefits. Because of its high dispatch cost and small size, retiring PR11 has no material impact on production costs or system operations, and its impact on system reliability is small. As a result, it is proposed that the work required for returning PR11 to operational status not be performed and the unit be retired on March 31, 2021.