GE Energy

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NYPAPol-001

Stephen Wilhelm, PMP
Project Management
Associate Electrical Engineer
New York Power Authority
123 Main Street
White Plains, NY 10601

Dear Mr. Wilhelm:

GE has calculated that the time to restart the 500MW NYPA Poletti plant to a base loaded condition following a full load trip is between 180-320 minutes, based on the table and the assumptions below.

Milestone	Description	Time (min)
T0	**Plant Trip**	**0**
T1	**Restart 1st 7FA**	**90**
T2	**7FA's Ready for loading and ST temp match**	**130-240**
T3	**Steam Turbine Roll**	**150-280**
T4	**Plant at Base Load**	**180-320**

Assumptions:

1. The T1 time of 90 minutes to restart the 1st 7FA is based on historical data of time to reach turning gear following a trip. It is also assuming that the plant operations staff and the Black Start Generating Source are capable of bringing the plant to a Ready to Start condition within that 90 minute timeframe.
2. The lower bound on T2 of 130 minutes is based on condenser vacuum being maintained during the shutdown period. The upper bound of 240 minutes is assuming that it takes 2 hours following the 1st 7FA reaching FSNL to re-establish condenser vacuum. If vacuum takes longer than 2 hours to establish, the overall start time will increase accordingly.
3. The grid is assumed to be ready for loading as soon as the 500 MW plant 7FA Gas Turbines are ready for loading. T2 could be potentially further out if the grid is not ready for loading at the

same time as the 500 MW plant. Note that in the case of the 130 minute T2, the grid power would be used to start the 2nd 7FA unit rather than directly powering it from the 1st 7FA.

4. Steam Turbine Roll is assumed to be 20-40 minutes following loading of the 7FA Gas Turbines. The actual time for this will be based on the drain sizing and arrangement of the Poletti site. GE does not have access to historical data for this portion of the startup.
5. Given the uncertainty in time to reach T2 as described in items 2 through 4 above, there is further uncertainty as to the temperature of the Steam Turbine when it is ready to be started, thus the time from T3 to T4 has a wider range of potential time.
6. All times assume a liquid fuel startup. Transfer to gas fuel at any point could potentially cause holds (and longer start times) for performance fuel heating.
7. All times are estimates and are not guaranteed.

Please review and if any questions, let me know.

Sincerely,

J. Kevin Daniels
Sr. Project Director

cc:
David O'Sullivan, NYPA
Rick Martin, GE
Jonathan Hadley, GE