

# MMP Investigation of Y49 Sprainbrook-East Garden City

Requestor	[REDACTED]		
Facility Name	Y49 Sprainbrook-East Garden City		
Date of Request	May 12, 2003		
Type of Facility	HPFF Cable		
Topic of Investigation	Outages in the month of May and possible TCC gaming		
Investigator:	David L. Smith		
Investigation Initiation Date	May 14, 2003	Completion Date	October 15, 2003
Date of Issuance	April 30, 2004		
Case Number	20030128122714		

---

## Introduction:

The Y49 Sprainbrook-East Garden City (“Y49”) is a high-pressure fluid-filled cable approximately 26.6 miles in length. It is a submerged/submarine facility that runs from the city of Yonkers, north of New York City, to East Garden City on Western Long Island. The cable, which was installed in 1991, is owned and maintained by the New York Power Authority (NYPA). Consolidated Edison Company of New York (Con Ed) owns and maintains the Sprainbrook substation. NYPA leases a section of the substation. The East Garden City substation is owned by Long Island Power Authority (LIPA) and maintained by KeySpan Electric Services (KeySpan) as an agent of LIPA. An outage of this facility significantly impacts both the energy flow onto the Island and the prices on Long Island. On May 12, 2003, [REDACTED] requested a formal investigation into the May scheduled outages. [REDACTED] allegation was that Con Ed and LIPA “had a substantial financial incentive in taking these lines out of service and in delaying the return of these lines to service, thereby increasing their TCC (Transmission Congestion Contract) revenue.”

The NYISO initiated this investigation of the scheduled outages and extensions on May 14, 2003. The NYISO Investigation Team studied the impact on various markets including TCCs of the outage of the Y49. This included rerunning the Security Constraint Unit Commitment (SCUC) program, the algorithm that generates Day-Ahead unit commitments, with the Y49 modeled in service when in the initial run it was modeled out of service. Additionally, the NYISO investigation team, with the assistance of EDG Power Group, studied the work being conducted during the May 04 – May 21 outage. Our main source of data was collected through interviews with personnel involved with the outage and documents supplied by each of the companies involved, namely LIPA/KeySpan, NYPA, and Con Ed.

## TCC Studies:

Transmission Congestion Contracts (TCC) are agreements purchased by a market participant through the monthly or biannual NYISO TCC auction process, or through third party sales made by a TCC holder. A TCC is composed of a point of injection (POI), a point of withdraw (POW) and duration. The POI and POW are physical buses on the system. The POI is the bus at which the delivering party makes energy available to the NYISO; the POW is the bus at which energy made available to the receiving party. The duration of the TCC is the period of time the TCC is in effect. A cost optimization algorithm using bids and a power flow model determines the auction value of a TCC and awards market participants the TCCs. The market participant that holds a TCC with negative congestion between its POI and POW is paid by the NYISO whereas the market participant that holds a TCC with positive congestion between its POI and POW pays the NYISO to hold the TCC. The daily rent associated with a TCC is based on the quantity of positive or negative congestion between the POI and the POW determined in the Day-Ahead Market

(DAM). If the DAM has positive congestion between the POI and the POW, the NYISO pays the holder of the rent for holding the TCC. If the DAM has negative congestion between the POI and the POW, the holder of the TCC pays the NYISO rent for holding the TCC. ██████ was awarded numerous TCCs in the monthly TCC reconfiguration for the month of May with POI on Long Island and POW off the Island. Since the congestion associated with these TCC was negative, the NYISO paid ██████ to hold these TCCs. The congestion associated with the DAM modeling determined the amount of rent ██████ was required to pay for each day during the month of May. Congestion in the DAM increased for ██████ TCCs when the Y49 was modeled as out of service in the DAM.

MMP conducted an analysis of the impact of the Y49 outage as part of a comprehensive study of ██████ TTC and Virtual Bidding revenues for the month of May. As part of this study, the SCUC run that generated the May 30 DAM was rerun with the Y49 modeled in service (the Y49 was modeled originally as out of service for May 30 for a scheduled outage). The following observations were made with the Y49 modeled out of service:

- LBMPs increased on Long Island and in the NYC zone
- The outage caused congestion on the W. 49th St. - Sprainbrook line
- As a result of the increased congestion, the total combined TCC revenues paid to TCC holders increased
- TCC revenues for contracts with a point of withdrawal on Long Island more than tripled
- TCC revenues for contracts with a point of withdrawal in NYC more than doubled
- Companies that experienced the largest decrease in revenues were ones that owned large TCC with a point of injection on Long Island

Studies were also conducted for May 9 and May 21 with similar results.

There is a provision in the NYISO Tariff's that requires all grandfathered TCC revenues to be passed directly onto the consumer. A review of TCC holdings showed that all the TCCs held by LIPA and the majority of Con Ed's TCCs were grandfathered. Con Ed and its subsidiaries held an additional 440 MW of TCCs that were not grandfathered. The additional revenue Con Ed made on May 9 for these holdings was \$3.28 a megawatt, less than \$1,500 for the day. KeySpan did not hold any TCCs during this period.

Conclusion – The studies conducted by MMP confirmed that LIPA/KeySpan and Con Ed, the organizations that coordinated and performed the maintenance on the Y49, increased their TCC and generator revenues while the Y49 was out of service. The majority of these earnings were required by NYISO Tariffs to be passed directly on to their customers. It is the opinion of the NYISO investigation team that there was no gaming of the Y49 outage by these organizations to increase their own or their subsidiaries TCC revenues.

#### **Y49 Scheduling Requirements:**

All the transmission facilities that comprise the LIPA-Con Ed interface (listed below) are A2 facilities. As an A2 facility, the switching authority is required to notify the NYISO of scheduled outages but does not need NYISO approval for the outage. Generally, an A2 facility is one that requires the switching authority to notify the NYISO of a scheduled outage not less than two business days prior to the outage. There are a limited number of A2 facilities that the NYISO requests five-business days notification prior to the scheduled outage, including the Y49. Once the facility has been removed from service, the NYISO's policy is to accommodate extensions to the scheduled outage based on the underlying reason for the extension and on the system topography. A review of the Y49 outage notifications revealed that NYISO was given less than a five day notice for only one of the scheduled outages, the May 12 outage. However, the NYISO Scheduling Department studied the outage request and the scheduled outages for that period and determined that the outage could be accommodated. As in this case, the Scheduling Department has the flexibility to accept scheduled outages when notification is less than the requested minimum notification time and system conditions permit the outage.

The Y49 is one of four cables that comprise the LIPA-Con Ed interface. The other facilities that comprise the LIPA-Con Ed interface are: the Y50 Dunwoodie-Shore Road (Y50), the 901 L&M Jamaica-Valley Stream (901), and the 903 Jamaica-Lake Success (903). The normal rating of the LIPA-Con Ed interface is

1500 MW and is derated to the following based on the facility out of service: to 775 MW with the Y49, to 800 MW with the Y50, to 1150 MW with the 901, and to 1150 MW with the 903. The interface is also impacted by components connected to the Y49 in the East Garden City substation. There is a transformer bank and phase angle regulator (PAR) pair in parallel circuits that when either circuit is out reduces the LIPA-Con Ed interface limit to 1225 MW. In keeping with general industry practices, only one of the transmission lines would be scheduled out-of-service at any given time. This explains why the Y49 was rescheduled to May 04. A review of the scheduled outages for the beginning of May reveals scheduled outages for the 901 on May 01 and the Y50 on May 02 (Figure 2).

Conclusion – The Y49 was scheduled in keeping with the NYISO A2 facility requirements.

### **Events Timeline:**

The investigation followed the scheduling changes from when the facilities on the Con Ed-LIPA interface were initially scheduled in mid-April through to the Y49's return on May 21. The following is a brief summary of the parties and their involvement in the Y49 outage:

- NYPA owns the Y49 and scheduled work at the Sprainbrook substation
- Con Ed owns the circuit breakers on the Y49 at Sprainbrook and is responsible for switching at that end
- Con Ed was subcontracted by NYPA to perform the maintenance that required the Y49 outage
- A similar arrangement exists at the East Garden City end of the Y49 between NYPA and LIPA\KeySpan
- LIPA\KeySpan scheduled and performed maintenance at East Garden City on NYPA's components.

In addition, work by NYPA and LIPA\KeySpan was done continuously throughout the outage.

April 21 – KeySpan schedules the Y49 out of service from 0400 on May 01 through 1400 on May 14 for work at East Garden City. The timeliness and the nature of the work are in keeping with general industry practices.

April 28 – The outage scheduled on April 21 is moved. It is now scheduled out at 0400 on May 04 through 2000 on May 11. KeySpan, Con Ed, and NYPA agree to this change to facilitate work by all parties in both substations. This action prevents the need for a second outage, and reduces the overall length of time the facility would be out of service. This action and its timeliness are in keeping with general industry practices.

May 04 – Y49 is removed from service at approximately 1252.

May 05 – KeySpan schedules transformer bank 2 out of service from 0400 on May 12 through 2000 on May 23. "Piggy-backing" the transformer bank maintenance onto the Y49 outage reduces the number of switching operations. This reduces exposure of personnel to dangers inherent to switching operations and extends the lifespan of the equipment impacted by the switching operations. This is in keeping with general industry practices.

May 08 – KeySpan extends the Y49 outage through 2000 on May 13. This extension allows KeySpan to expedite their scheduled work at East Garden City and results in the cancellation one of two half outages, one scheduled from May 14 through May 23 and the other to be scheduled after the first is completed. This is in keeping with general industry practices.

May 12 – NYPA schedules the continuation of its work from 04 May through 11 May for 0300 on May 16 through 2359 on May 19 for work on the Sprainbrook end that resulted in the initial Y49 outage. Notification falls short of the requested 5 business days but the NYISO acknowledges the request, which in itself is in keeping with general industry practices.

May 13 – KeySpan needs the outage scheduled from May 04 through May 13 to be extended to May 14. This is caused by problems with a component in the East Garden City substation. The request and its underlying cause are in keeping with general industry practices. The DAM solution produced for May 14 and 15 was done with the Y49 modeled in service. The financial affect of this model benefited [REDACTED] and harmed LIPA/KeySpan and Con Ed in the Day-Ahead and Real-Time Markets.

May 14 – NYPA requests the original May 04 outage to be extended to May 19. The most recent extension, caused by an unforeseen problem at East Garden City, was scheduled to end at 2000 on May 14. The cable is scheduled out again at 0300 on May 16. During interviews with Con Ed, KeySpan, and NYPA representatives, the NYISO team learned that the minimum switching time for this facility is 8 hours; thus, it would take at least 16 hours to put the cable in service and to take it out again. The switching procedure also has inherent safety issues for the work crews and lifespan issues for the equipment. The decision to keep the facility out of service seems prudent and in keeping with general industry generals. The DAM solution produced for May 15 is done with the Y49 modeled in service. The financial affect of this model benefited [REDACTED] and harmed LIPA/KeySpan and Con Ed in the Day-Ahead and Real-Time Markets.

May 19 – NYPA extends the outage on May 19 to 2359 on May 20. This action is a result of the switching parties confronting an unexpected configuration while preparing to restore the facility at Sprainbrook. The switching process was halted until the new configuration was verified and a new switching procedure put in place. Halting of the switching operation is in keeping with general industry practices. The SCUC run for the 20 modeled the Y49 as in service. Thus, the financial affect benefited [REDACTED] and harmed LIPA/KeySpan and Con Ed in Day-Ahead and in Real-Time Markets.

May 20 – NYPA makes one final extension; it is due to problems uncovered during the restoration process. It is in keeping with general industry practices.

May 21 – The Y49 is restored to service at approximately 0505.

Conclusion – The underlying cause of each of the extensions fall within general industry practices.

**Summary:**

[REDACTED] alleged that Con Ed and LIPA/KeySpan were manipulating the Y49 outage to increase their TCC revenues. The NYISO investigation found that, although the outages did increase Con Ed's and LIPA/KeySpan's TCC revenues, the repair work conducted by all parties was diligent and consistent with industry practices, and there was no evidence of intentional delay. LIPA/KeySpan, in order to reduce the duration of the Y49 outage, moved their scheduled outage work for NYPA components at East Garden City to coincide with NYPA's scheduled work at Sprainbrook. Con Ed was not responsible for the scheduling of the work on the facility; their only involvement in the outage was as subcontractors to NYPA. In addition, only Con Ed held TCC's that did not require direct pass through of TCC revenues to their customers and the revenue from these were insignificant. The NYISO team has concluded that Con Ed and LIPA/KeySpan were not manipulating the outage to increase their TCC revenues.

## References

- I. Email from [REDACTED] on May 12, 2003
- II. Market Monitoring & Performance “Analysis of [REDACTED] TCC Auction & Virtual Trading Strategies” dated June 2003 May 2003
- III. Impact of the Y49 Outage on [REDACTED] TCC Revenues
- IV. Email Analysis from James David, NYISO MMP dated June 11, 2003
- V. Email Analysis from James David, NYISO MMP dated January 13, 2004
- VI. SCUC outages for market days March 1 through March 31
- VII. Market Monitoring [REDACTED] May 16, 2003 Final Report
- VIII.** Market Monitoring review of Scheduled Outages