



ITF Update on LIPA's IV&V of OMS 6.7.X Implementation

February 15, 2023

STATUS OF PSEG LONG ISLAND OMS REDEPLOYMENT

PSEG Long Island redeployed CGI Outage Management System (OMS) v6.7.8 into production on February 6, 2022

- OMS v6.7 failed during Tropical Storm Isaias in August 2020
- Smart meter integration into OMS was deployed in June 2022. Performance (stress) testing on OMS-AMI integration was completed in September 2022
- **PSEG Long Island reports that the system is functioning as expected**

KEY ELEMENTS OF LIPA'S IV&V OF OMS 6.7X

The overall objective of LIPA's Independent Verification and Validation (IV&V) is to reduce risk to LIPA and its customers

- **Functional Testing**
This category of IV&V testing ensures that the systems functional requirements are being satisfied. This consists of regression testing, testing of new functionality, and edge-case testing
- **Document Reviews**
Document reviews ensure that key artifacts such as requirements, design specifications, test plans, test scripts, and test cases are properly constructed and of good quality
- **Code Reviews**
Code reviews involve detailed review of programming code to ensure correctness of implementation. This applies especially to new code implemented
- **Performance (Stress) Testing**
Performance testing ensures that the system behaves robustly during high load as one would expect during severe storms

IV&V: FUNCTIONAL TESTS

- On September 19, 2022, PSEG Long Island resubmitted 92 scripts of the original 129 scripts that failed to run reported to the Board in July 2022
- LIPA has submitted an additional 200 test scripts that failed to run to PSEG Long Island to correct since the July 2022 Board meeting

	Test Points	Tests Run	Pass %	*Failed to Run %
July	535	358 (67%)	229 (64%)	129 (36%)
September	642	581 (90%)	279 (48%)	302 (52%)
November	646	616 (95%)	421 (68%)	143 (23%)
December	646	645 (99%)	451 (70%)	141 (22%)
January	646	645 (99%)	463 (72%)	118 (18%)

- PSEG Long Island has committed to review all defective scripts and correct them so that they can be executed in a documented, repeatable manner
- LIPA has re-tested the corrected scripts as they have become available. LIPA will be working through each of the failed to run test scripts with PSEG Long Island until all issues are resolved

IV&V: STRESS TEST

PSEG Long Island deferred its formal DPS-mandated 24-hour tests to December 12, 2022 because of errors arising during their 12-hour performance tests that required specific bug-fixes. The IV&V Team was therefore compelled to delay its Phase II IV&V performance test until mid-January to accommodate PSEG Long Island's schedule

- The IV&V Team and PSEG-LI ran a smoke test for the IV&V performance test model on January 12th. The test was a failure. The background OMS process for handling the outage report call queue got stuck and OMS failed to process outage reports
- A modified smoke test was run on Jan 18th which ran without failure
- Another smoke test, identical to the one which was run on the 12th, was run on January 25th for collecting additional log data for a better understanding of why the January 12th test had failed. But this re-test ran successfully
- PSEG Long Island is working with CGI to investigate the January 12th failure
- **Once we know the root cause of the failure on January 12th and its resolution, we will schedule a formal IV&V performance test**

LIPA IV&V Team is also developing specific recommendations for PSEG Long Island to improve the content of the formal performance test by (a) incorporating additional critical scenarios for testing, (b) rearchitecting the test design to ensure reproducibility, and (c) consolidating the test activities to fewer, more comprehensive test plans



Discussion

Questions?