

LFI - 3: Tank Overflowed into Bund Area





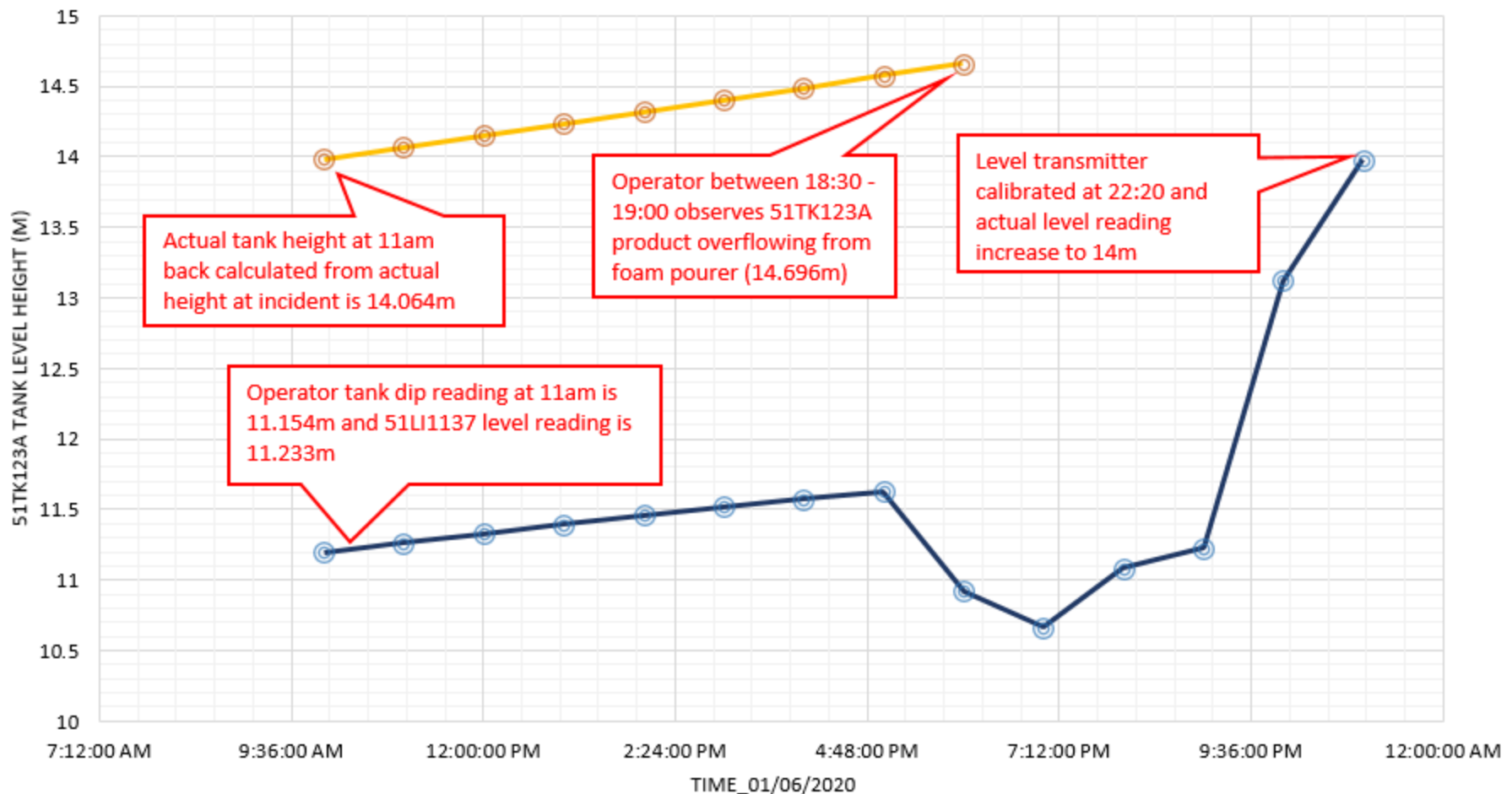
LFI: Incident Description

- June 2020, shift was on duty during nightshift. The level on 51TK123A was at 78.2%.
- The panel operator asked the outside operator to change the rundown from 51TK123A to 51TK123B after seeing the level in the tank suddenly decrease.
- The outside Operator that went to the site discovered that product in 51TK123A had overflowed through the bursting disc of the foam pourer.
- No high high level alarm had activated. Spray water was opened to dissipate the fumes and washed to the API Separator.

LFI Incident: Event Sequence

Date & Time	Activity / Event	Condition
01/06/20 @ 11h00	The Outside Operator from the day shift performed the monthly physical dip as per procedure.	The tanks are dipped on the 1st of the month, the purpose of doing the physical dip is to verify that the instrument is reading correctly and to calibrate the instrument if a variance of more than 5% between the level transmitter and Dip reading is observed. The dip reading was 11154mm and 51LI1137 was 11232mm
01/06/20 @ 18h00	The Panel Operator called the Shift Supervisor to inform him that the tank level was at 78.2% and that they must switch the rundown from 51TK123A to 51TK123B	Shift Supervisor Informed the Panel Operator that they were still in the 18h00 meeting and that he would do so immediately after the meeting. Normal operations is to change over the rundown to a different tank once the tank level reaches 80%.
01/06/20 @ 18h30	The Panel Operator asked the outside Operator to switch the rundown from 51TK123A to 51TK123B	The panel Operator saw the reading on level transmitter 51 LT 1137 had taken a sudden dip.
01/06/20 @ 18h40	The outside Operator went onto the plant and saw that the tank had overflowed.	Although it was dark and misty he saw the penexate spilling from near the top of the tank out of the aeration holes of the foam pourer and onto the bund.
01/06/20 @ 18h45	The outside operator called the Panel Operator and the Shift Supervisor over the radio to inform them of the spillage.	The Shift Supervisor and another outside operator came to the tank to assess the situation and how best to manage the spillage.

LFI Incident: Event Sequence



Observations

- The physical Dip reading of 11.155m taken at 11h00 on the 1st June 2020 was incorrect by 3m.
- Maintenance Plan scheduled trip tests for 51LSHH1175 were found to be overdue.
- The Penex leaked through the foam pourers - this has raised concerns of possible fire-fighting foam contamination. Fire Department is busy with the investigation to ascertain the condition of the foam.

Causal Factors

Sub-standard Acts / At Risk Behaviors

- Following procedure- Improper Dipping
 - There was an error in the physical dip reading taken by the operator. The reading taken by the operator was 11.155m at 11h00 but the actual level was 14.064m at 11h00.

Sub-standard Conditions / At Risk Conditions

- Protective systems – Defective guards or protective devices.
 - The level transmitter 51LI1137 gave an incorrect level reading. The level switch 51LSHH1175 failed to detect the high high level when it reached 14.19

Root Causes

Competency-Inadequate assessment of required skill.

- According to training records the operator that carried out the physical dipping has completed the theoretical assessment on tank dipping but the practical assessment has not yet been done. The operator is performing a task that they have not yet been assessed and found competent in. They were shown how to perform the task by other operators on shift and not the trainer or supervisor.

Competency-Lack of coaching on skill

- There is no record of a signed Job Observation carried out by the Shift Supervisor on the employee to assess ability in tank dipping. Ongoing job observations by supervisors can provide coaching and assessment of skills required in carrying out routine tasks.

Engineering- Inadequate adjustment/repair/maintenance.

- The maintenance plan to do annual trip tests which includes functional test on the level switch was not adhered to.

Lessons Learned

- **Personnel should only be allowed to perform tasks which they have been assessed and found to be competent in.**
- **Rescheduling or cancellations of planned maintenance activities such as Trip tests should be communicated to Area Manager and other relevant personnel to ensure that the risks are understood and managed. Following procedure (Plant Maintenance Master Data) for change requests.**
- **Further detailed incident recommendations were made and is being actioned to prevent re-occurrence.**

Thank You...

