

Shell Polymers Monaca

Totally Enclosed Ground Flares (TEGFs) Monthly Inspection Report

Prepared by: Shell P&T Senior Heat Transfer Engineer

Reviewed by: Site Heat Transfer Specialist

Report Date: July 5, 2024

For Time Period: June 7, 2024 to July 4, 2024

EXECUTIVE SUMMARY

This Monthly Inspection Report was prepared with the goal to demonstrate that both TEGFs are in good operating condition based on examination performed by qualified site personnel as required by section 3.b of the order under the May 24, 2023 COA. Operator inspections were performed nightly from June 7, 2024, to July 4, 2024 by operations personnel. The operator inspections conform of the following activities addressed as questions for the operators:

- Is there presence of flame on all burner tips in stages in service?
- Presence of Coke build up - Check in all stages. (Observed from walkway above staging valves)
- Are burner tips free of damage? (i.e., cracks, bulging)
- Are there any abnormal sounds coming from inside the ground flare?
- Are there any signs of a hot spot on the shell of the ground flare?

If any of the items listed above are observed, the operator reports to their Production Team Lead and subsequently gets reported to the Site's Heat Transfer Specialist / Heat Transfer Engineer to determine the need of any mitigating actions. There were no reports to the Heat Transfer Specialist.

On July 5, 2024, the Shell P&T Senior Heat Transfer engineer performed a visual and drone footage inspection of the flares. The flares were under the following operating condition:

Flow: 8.72 TPH

Flare Gas Net Heating Value: 988 Btu/SCF

Stages In Service: stages 1, 2 and 3 for TEGF A and stage 1 and 2 for TEGF B.

At the time of the inspection all tips were free of soot, and without any damage. Prior to this inspection reports a planned outage had occur to repair both TEGFs. During the outage all damaged tips were replaced, some tips were modified, combustion chamber floor was modified and replaced, the lower 41 ft of the ceramic fiber modules (internal lining) were upgraded with the objective to improve flare reliability and availability. Current condition of the flare complies with the manufacturer's performance guarantee as described in Exhibit D of the Consent Order and Agreement entered on May 24, 2023. Both TEGFs achieve the destruction efficiency to meet Plan Approval Section D, Source 205, Condition 002.

This month will be the last monthly report per Shell's commitment to rebuild/repair both TEGF was achieved as follows:

- TEGF A
 - Shut down on June 10th at 12:00 PM for repairs
 - Repairs were performed from June 10 to June 19, 2024
 - Flare was put back in service on June 19, 2024 at 8:45 AM

- TEGF B
 - Shut down on June 19th at 8:00 PM for repairs
 - Repairs were performed from June 9 to June 28, 2024
 - Flare was put back in service on June 28, 2024 at 5:45 AM

See Summary Tables for details on this month's inspection.

1. SUMMARY TABLES

TABLE A: TEGF A (A-59011A) – July 5, 2024, Inspection Points

Inspection Point	Acceptable per Performance Guarantee? (Yes/No)	Actions Required? (Yes/No)	Comments/Action Taken
Daily Inspection Completed	Yes	No	With exception of the periods where the flares were out of service to perform repairs
Burner Tip Residual Formation (i.e., Look for Coke or Soot)	Yes	No	N/A
Is Burner Tip Mechanical Condition Acceptable? (i.e., Look for Damage Such as Cracks or Bulges)	Yes	No	All damaged tips were replaced during the outage
Burners within a Stage Ignited	Yes	No	N/A
Is There any Abnormal Sounds to Be Reported	No	No	N/A
Pilots Condition	Yes	No	N/A
As built Floor Location with Respect to the Tips	Yes	No	Floor was replaced and placed in correct location with respect to the tips during the repairs.
Combustion Chamber External Condition	Yes	No	N/A
Combustion Chamber Internal Lining Condition (i.e., Look for Refractory Damage).	Yes	No	Lower 41 ft was upgraded, and all other areas were repaired during the outage.
Stages Out of Service	Yes	No	All stages were back in service after the repairs.
Burner Tip Mechanical Condition (i.e., Cracks or Bulges)	Yes	No	All damaged tips were replaced during the outage.

TABLE B: TEGF B (A-59011B) – July 7, 2024, Inspection Points

Inspection Point	Acceptable per Performance Guarantee? (Yes/No)	Actions Required? (Yes/No)	Comments/Action Taken
Daily Inspection Completed	Yes	No	With exception of the periods where the flares were out of service to perform repairs
Burner Tip Residual Formation (i.e., Look for Coke or Soot)	Yes	No	N/A
Is Burner Tip Mechanical Condition Acceptable? (i.e., Look for Damage Such as Cracks or Bulges)	Yes	No	All damaged tips were replaced during the outage.
Burners Within a Stage Ignited	Yes	No	N/A
Is There any Abnormal Sounds to Be Reported	No	No	N/A
Pilots Condition	Yes	No	N/A
As built Floor Location with Respect to the Tips	Yes	No	N/A
Combustion Chamber External Condition	Yes	No	N/A
Combustion Chamber Internal Lining Condition (i.e., Look for Refractory Damage).	Yes	No	Lower 41 ft was upgraded and all other areas were repaired during the outage.
Stages Out of Service	Yes	No	Stages 1 and 3 are out of service
Burner Tip Mechanical Condition (i.e., Cracks or Bulges)	Yes	No	All damaged tips were replaced during the outage.