

Sangachal SCP Welding Fatality

Accident Summary

BP Recordable. Circle 1 level of influence

17th March 2006

UKOPA/06/0037

Key Messages

Nature of the incident

- Tamiraz Samadov (47 yrs old, Azerbaijani, married with 2 children) died at 19:16 hrs Friday 17th March while attempting to repair a weld defect inside a 30 inch pipeline

Work being undertaken

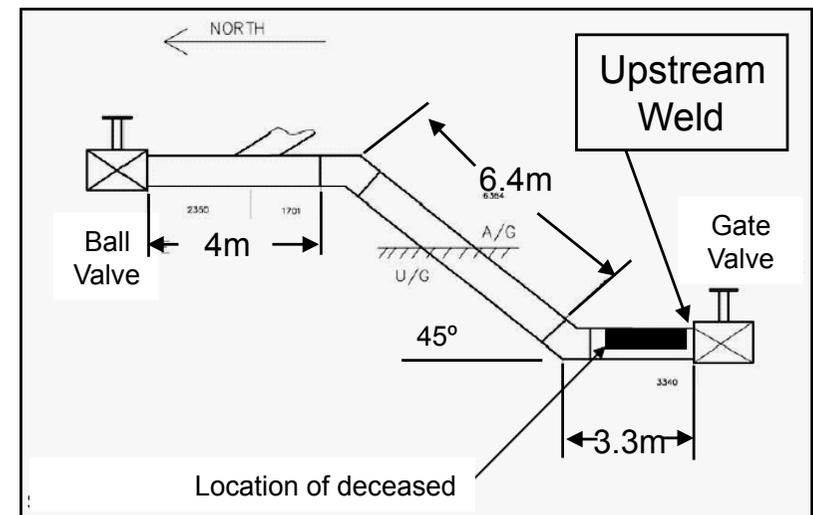
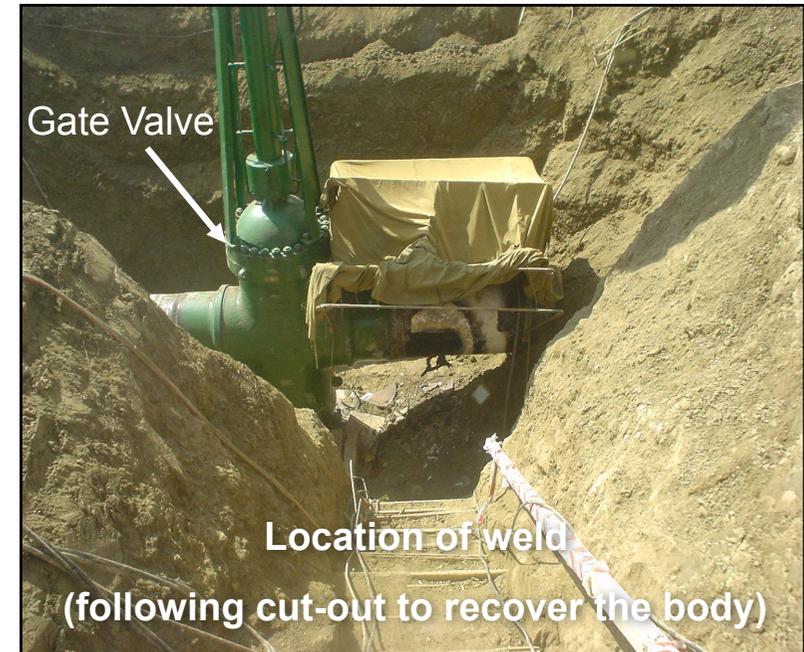
- A valve was being welded into the SCP pipeline at Sangachal terminal
- Welding of the joint was difficult due to pipeline misalignment and the first welds failed radiography
- Final attempts on the outside of the pipe by specialist welders and Tamiraz failed to repair a section of the weld

What went wrong:

- Tamiraz, supported by his team and supervisor, and despite reservations, attempted to repair the weld from inside the pipeline
- Site leadership were unaware of this activity, which occurred after normal working hours
- No confined space entry or hot work permit was in place for this activity, and no risk assessment was conducted before Tamiraz entered the pipeline
- No one stopped the job

Key forward actions:

- Verify that there is adequate supervisory presence on site at all times and supervision is competent
- Review control of work system to ensure appropriate control extends into overtime work
- Take steps to change the culture of the teams to reduce risk taking and encourage safe work including stopping the job



What Happened?

Job Description:

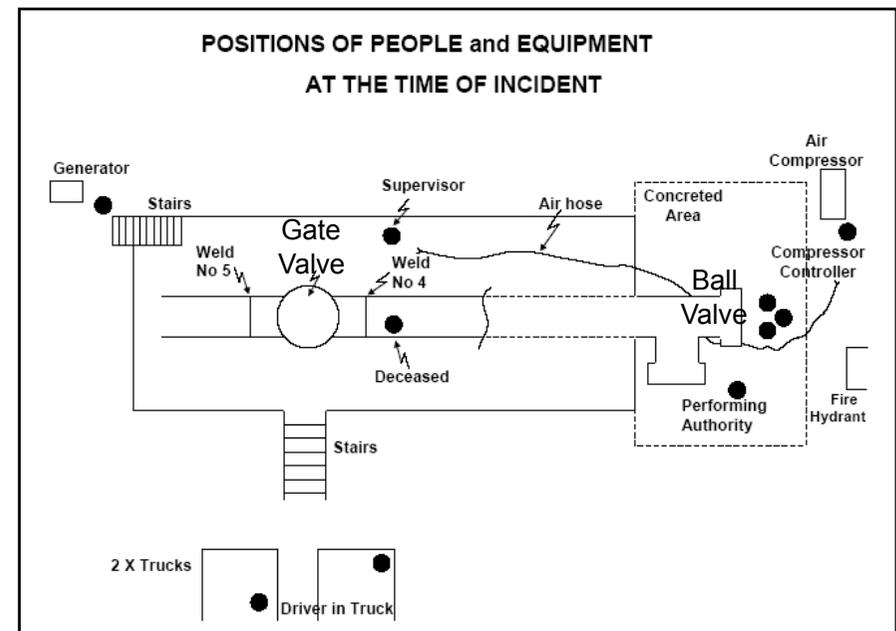
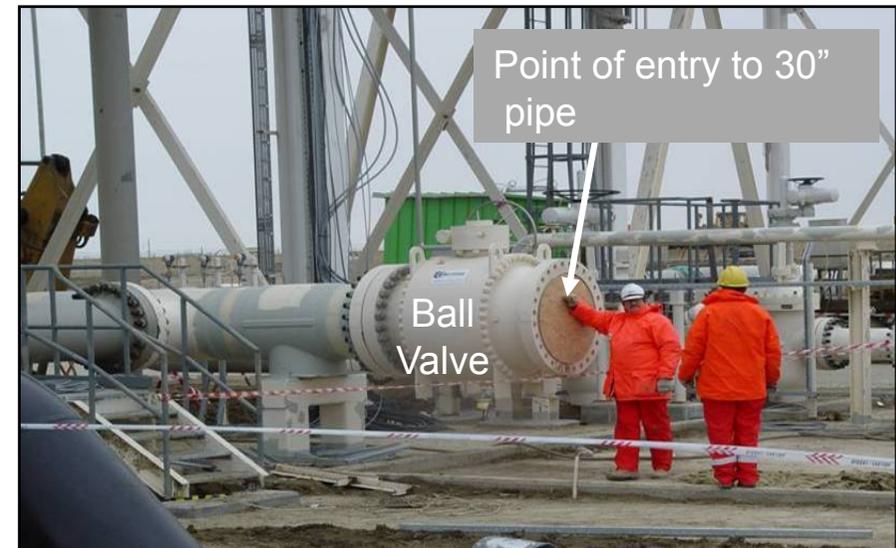
- A 30 inch gate valve was being welded into the SCP gas export line by an experienced crew
- This work was not on the critical path or under time pressure

Pre Incident:

- The pipeline, buried nine months earlier, was excavated and cut and the valve welded into place
- Radiography inspections detected weld defects
- Specialist welders attempted to repair the weld but concluded that it was not possible and left the site
- Tamiraz unsuccessfully attempted to complete the weld repairs from outside the pipe
- Tamiraz, support by the crew, decided to repair the weld from inside the pipeline
- The crew cut a slot in the pipe near the weld and used an air hose to provide ventilation

Events:

- Tamiraz entered the pipe feet first with a rope and welding cable tied to his body and a small pen light
- He completed about 20 cm of the weld and was heard shouting “I am burning”
- The crew attempted to pull him out but the rope and welding cable were not connected to Tamiraz
- No further sounds were heard from inside the pipe and it was later confirmed that he had died



What Went Wrong?

Effective supervision was absent:

- The supervisor did not stop Tamiraz from entering the pipe, and even helped in the un-permitted activity
- This activity took place after the shift ended and supervisory presence was limited (safety advisor, area authority and deputy construction manager had left the site)
- Contractor and BP line management were unaware of non-permitted activity being undertaken

Control of work was inadequate

- There was not an effective means of ensuring that jobs are formally reviewed if they are to continue beyond the end of shift
- There was no permit in place or risk assessment performed for the entering the pipe

Team culture led to risk taking

- Misplaced priorities led to a shortcut on the job
- The crew members did not intervene to stop the job





What Actions Are Needed?

Supervision

- Conduct a review to ensure that adequate levels of line and safety supervision exist on site at all times
- Assess all levels of supervision to determine that they are competent to fulfil their roles including regular auditing of site works and permits
- Clarify the role of the construction manager as the owner of the PTW system and final approver of permits

Control of Work

- Revise the control of work system to ensure positive verification at the end of shift of the validity of the PTW and that proper supervision and safety cover is present before a job extends into overtime

Team Culture and Motivation

- Review crews which have been together for a long time and may have developed traits of overconfidence and informality
- Reinforce the obligation of everyone, through signing a personal contract, to stop the job if they believe it is unsafe

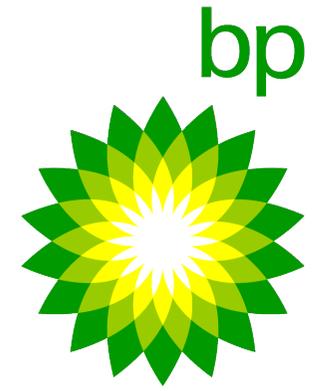
Specific Actions Related to Welding

- Mandate that welding inside a pipe is banned without Project Director approval
- Ensure proper tools are available and used at the work site to measure misalignment and fit-up to confirm weld is within specification
- Before the start of welding, measure the fit-up to confirm that the job is within specification. If not stop the job and notify the Quality Control Manager
- When there is a change to the original construction plan the specifics of the change must be risk assessed and approved by supervisors before starting the change
- Remove the focus on welder defect performance by keeping detailed records confidential
- Change procedure for NDT manager to inform the Quality Manager and Welding Technical Authority when a weld requires more than one repair

Messages for Other E&P BU's



- Do you have adequate supervision at all times and are they competent?
- Does your control of work system ensure that all jobs are reviewed at the end of a shift to confirm if the permit is valid for overtime?
- Do your workforce know that working inside pipe can only take place with a confined space permit?
- Have you done everything you can to ensure that your teams do not cut corners to complete a job and always challenge unsafe working?
- Do you exercise increased vigilance prior to a holiday or work break to prevent corner-cutting, particularly after normal working hours?



BACK UP

Sequence of Events

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- 14th 30 inch valve dropped into cut in pipe (valve delivery)
- 15th Initial welds on both sides of valve made and x-rayed
- 15th Both welds failed
- 16th Tamiraz and pipeline crew involved in initial attempts to repair the weld.
- 17th Requested assistance from Argon welders owing to difficulty completing welds. Argon welders unable to complete weld – left c18:30
- c. 18:30 Tamiraz made further repair to weld number 4, however ‘did not believe weld would pass radiography’.
- c. 19:10 Tamiraz entered 30 inch pipe with cables and rope attached, with the intention of finalising the weld repair from inside the pipe.
- Crew assisted Tamiraz in this effort. Air was fed into pipe from a slot cut in pipe.
- Tamiraz completed majority of weld
- c.19:15 Tamiraz was heard by colleagues shouting ‘I am burning’
- Crew pulled on rope and cables – both came free. Smoke poured from open end of pipe.
- Nothing else was heard from Tamiraz

