LP testing event

(January 2004 – LT accident)

LP Testing

Subject: testing of LP Shock Star 9000 ms, R&D test after 30 days – 50 C in PAPE bag .

- **Cause** – ST rupture close to the crimping point, operator did not follow precisely operating instructions
- **Countermeasure** – lesson learned from this event info to all employees / safety delay blocking of the door to the testing room 1 min. / change of testing procedure .

2. LP Testing - data

- R&D department – build. 57
- R&D stability test of LP´s
- 5 detonators Shock Star 9000ms
- Manual sequencing and operation
- Digital display to control the data
- R&D staff only
- January 2004 , right after winter SD

2.LP testing - flow

PREPARATION OF LP DETONATORS (5 pcs - 9000 ms)	Vokounová + Urbanová
INSERTING DET. INTO TESTING BOXES	Vokounová + Urbanová
MANUAL SEQUENSING : SHOT, TIME RECORD, SWITCH TO NEXT SHOT	Urbanová operated the sequential testing while Vokounová was standing by the door
REMOVING OF RESIDUAL DETONATOR AND ST	Vokounová + Urbanová
VISUAL INSPECTION AND CUT OFF DET FROM ST - SEPARATION OF WASTE	Vokounová + Urbanová

2. LP testing- process

Operator inserted 5 LP´s into testing boxes. Initiation start and switch for the next shot is sequentional.

After 1st shot operator checks the delay time, records it and switches for next shot. This procedure repeats 5 times.

4th time delay at the display was 10,8 ms instead 9000ms. The signal was taken from ruptured ST but 4th det was burning ! Operator recorded 10,8 ms , thought that it is misfire and switched for the next 5th detonator.

2. LP Testing- process

Thinking that she is measuring 5th det – the last one, she registered time of detonation, but it was the 4th one with time 93 ms . The 5th one was burning at that time !) .

Considering that the test is over (she-they have heard 5 shots) she entered the test room „ earlier than she should „ and by coincidence she started to pull out the detonators from the 5th – last position .

Than the last one exploded just when she was pulling it out of chamber.

2. LP Testing-process

She had light injury of the skin on fingers and paunch by Al shell fragments .

She was off 3 weeks .

Cause : ST rupture close to crimping point, operator did not pay enough attention to the testing activity (different sound effect of ST and detonator is recognizable , she did not wait 1 min. after the test finished to enter the room , by coincidence she pulled out 5th detonator first.

1.LP testing- foto

LP testing event foto documentation .

2. LP testing- actions

Countermeasures :

- Info to all employees
- Safety delay time switch on the test room door preventing to enter the room early than 1 min. after the test finished .
- Change the procedure with LP´s in respect to min. time of next operation must be nominal time of the detonator + 1 sec . (loading line, final assy, testing)

THANKS FOR YOUR ATTENTION

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