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Implementation of mechanized roof-bolters for low-seam hard-rock mining

Kempenaars, Cornelius

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Name: RIAN BURGER

Position: GENERAL MANAGER

Years at Company: 12 YEARS

Date: 29/06/18.

Time: 8:41 AM.

Location: DWARSRIVIER MINE

What was your role in the implementation of the mechanized roof bolter project?

FINANCIAL MANAGER AND TO THE LATER PART OF THE PROJECT THE GENERAL MANAGER

Will you have any objections if the conversation of interview gets recorded? (~~yes~~/ ~~no~~)

The purpose of the recording is to ensure that all relevant information can be captured if the space in the answer box is insufficient

WE DISCUSSED THE following Questions
1-5, 12-15, 20, 23, 60.

Objective

1. What was the main objective for the implementation of the mechanized roof bolter?

IMPROVE SAFETY ON THE MINE, REDUCE AND OR ELIMINATE THE BOTTLENECKS IN THE MINING PROCESS, AND IMPROVE THE HEALTH OF THE U/G' EMPLOYEES

2. What were the agreed success indicators or criteria of this implementation project?

- REDUCTION IN LTI AND NLTI
- REDUCE THE NUMBER OF EMPLOYEES EXPOSED TO THE RED ZONE
- INCREASE THE NUMBER OF SUPPORTED FACES AND OR METER FACE LENGTH PER SHIFT

3. How was these success indicators communicated and monitored during the cause of the project and what was the platform used for this communication of feedback?

THROUGH MASH MEETINGS AND TOOLBOX TALKS WITH THE EMPLOYEES, MONITOR WHERE WENT through Normal Safety Audits and REPORT AND PRODUCTION REPORTS

4. Was the said success criteria met by this project, please elaborate.

YES LTI's, REDUCE SIGNIFICANT IN FACE AREA to almost ZERO, FACE length increased, NO MORE WET RED's coming out from U/G AND GETTING SICK.

5. What lessons was learned during the project with regards to the setting of these success criteria and the monitoring process followed?

CONSTANT Communication, REALISTIC KPI's FOR INDIVIDUALS and TEAMS.

People

6. What is your understanding of Mechanization?

7. In your view what was the objective of mechanization of the roof bolter function?

8. What human factors in your view will have or had an impact on the successful implementation of mechanized roof bolting at DWR and looking at future mechanization project?

9. What factors in your view affects or affected the effectiveness of this mechanization project's implementation?

10. In your view and experience, what roll did the employees play in this process that was followed during the implementation of the roof bolters, how was their views and experience working with the equipment rolled back to the implementation process?

11. What process was follow when the new equipment was selected, how was the decision taken to implement the said equipment, how was this communicated to the work force, what was the results or the feedback from the different parties?

12. What communication media was used with this project? What work and did not work with you method of communications?

WE USE OUR NORMAL MEMO PROCESS, MASS MEETING, SAFETY TALKS, CONSULTATION WITH UNIONS, MASS MEETING WORKED WELL AS EMPLOYEES COULD ASK QUESTIONS AND RAISE CONCERNS.

13. How long prior to the implementation was the communication done to the works force and in what format was this done?

WE STARTED WITH CONSULTATION 12 MONTHS BEFORE THE IMPLEMENTATION STARTED, AS WE RAN A PILOT SECTION TO PROVE CONCEPT AND GET BUY-IN FROM EMPLOYEES.

14. Was the unions part of the decision to mechanize, and to what extent, and what was their role in this process?

THEY WERE CONSULTED WHEN DICISSIONS WERE MADE AND NEW TECHNOLOGY.

MANAGEMENT MADE IT VERY CLEAR THAT NO JOBS WILL BE NEGATIVELY AFFECTED, AND UNIONS WERE COMFORTABLE AND MOTIVATED.

15. In your view how did the implementation of the mechanized roof bolter impact on the labour compliment of the mine in general and why?

No AS all Employees WAS PLACED AND THE number Stud at INCREASE OR DECREASE to the EXTENS AND REPLACING of Labour.

16. Did the new equipment require new skill-set in your area? If yes elaborate on the new skill set

17. How did the skill impact on the rest of the team and was this communicated?

18. What impact this new skill set have on your ability to manage and direct tasks in your section?

19. If you should rank the following aspects from high impact to low impact on the implementation process that was followed at DWR, Selection of people, training of people, changes to process, safety, setting and measuring of performance indicators?

20. What process was followed during setting of the selection criteria for the operator of a roof bolter operator?

WE USED OUR DOVER-SYSTEM TO EVALUATE THE ABILITY OF THE RDOS AND THEN A NORMAL INTERVIEW PROCESS.

21. Were you involved in setting up the selection criteria and to what extend?

22. How was the employees accommodated that did not meet the said criteria?

23. Does the mine have a program what will cater for the development of different skills for the employees that did not meet the selection criteria of roof bolter operator? Please elaborate if the program exists.

WE IDENTIFY ALTERNATIVE JOBS FOR THE PEOPLE IN SIMILAR JOB CATEGORIES ESLE WHERE IN THE MINE.

ONLY 9 RDOS WERE OVERCUPLOYMENT BUT WE USED TO ASSISTS AND WHEN THERE IS ABSENT PEOPLE.

24. Who do you think should for part of the team setting up the criterial and the selection process?

25. What structure changes happened in your area of responsibility with the implementation of the mechanized roof bolters, who did it affect your team and the team dynamics and what did you do to re-establish the team dynamics?

26. How did this implementation of new technology impact on your day to day activities? Looking at your job description, what were added to you work, did your work become easier or more complex?

27. How would you have done the structural changes differently in your section?

28. With the new equipment did you receive any additional training?

29. How was the training material aligned with regards to the actual work done outside in the work place?

30. How was the new technology explained to you?

31. Were you involved with the compilation of the training material, and in what way?

32. How did the competency training differ from the normal competency training you receive on other equipment?

33. How long were trained or observed before you were allowed to operate the equipment allow?

34. Was there any follow up checks done with you after you were found competent?

35. What should the process be when compiling new training material for new equipment?

36. What was the process that was followed in developing the new training and competency material?

37. What additional competency training was developed for the new equipment?

43. Did the equipment improve or hamper your processes and in what way?

44. How was these processes re-designed and what role did you play in this process, who was involved in this redesign, was it successful? If not why and what should have been done differently?

45. In what manner did this new equipment impact on your day to day planning for you section, how did you adopt to this and what changes did you make to ensure that this new machine can achieve what is was set out to do?

46. How did the new equipment change and or impact your longer term process, like monthly planning, resource allocation (people), material usage....?

47. Were there any improvements after the new equipment on performance, stats, efficiencies, absenteeism, hours work? Please give comparative examples.

48. What role did the OEM play in the implementation process?

49. What was the OEM's involvement in changing and re-establish new processes and activates?

50. What support was given to you during this change process?

Results

51. The main objective of the mechanization was to improve safety in the working face and increase efficiency in areas where bottle necks were identified, in your view was this achieved, how was this done?

52. Was this implementation a success? Why?

53. How the individuals and section's KPI's were affected with the new equipment?

54. In what way did the sections KPI Changed, please to what extend and what were the challenges and the lessons learned in this process if any?

55. How was the new KPIs developed and how was this done? (SMART?)

56. What factor affected the selection of the KPI criteria's and measures?

57. What was or should the objective of the new KPI's in your view be?

58. How was the KPI communicated to team members?

59. Explain to me the process followed in displaying and monitoring the new KPI's?

60. What platforms are there for feedback on the performance of the equipment and process?

SAFETY MEETINGS ON THE SUPPORT INSTALLATION
Daily Production MEETINGS AND REPORT WHERE UTILIZATION AND Availability was discussed

Name: JUNIOR SAYIYA.

Position: STORES CONTROLLER

Years at Company: 11 YEAR

Date: 21/06/18.

Time: 14H00.

Location: DUNDS RIVER MINE.

What was your role in the implementation of the mechanized roof bolter project?

STORE KEEPER. CACHING PROCUMENT SUP)

Will you have any objections if the conversation of interview gets recorded? (yes / no)

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Objective

1. What was the main objective for the implementation of the mechanized roof bolter?

2. What were the agreed success indicators or criteria of this implementation project?

3. How was these success indicators communicated and monitored during the cause of the project and what was the platform used for this communication of feedback?

4. Was the said success criteria met by this project, please elaborate.

5. What lessons was learned during the project with regards to the setting of these success criteria and the monitoring process followed?

People

6. What is your understanding of Mechanization?

7. In your view what was the objective of mechanization of the roof bolter function?

8. What human factors in your view will have or had an impact on the successful implementation of mechanized roof bolting at DWR and looking at future mechanization project?

9. What factors in your view affects or affected the effectiveness of this mechanization project's implementation?

10. In your view and experience, what roll did the employees play in this process that was followed during the implementation of the roof bolters, how was their views and experience working with the equipment rolled back to the implementation process?

11. What process was follow when the new equipment was selected, how was the decision taken to implement the said equipment, how was this communicated to the work force, what was the results or the feedback from the different parties?

12. What communication media was used with this project? What work and did not work with you method of communications?

13. How long prior to the implementation was the communication done to the works force and in what format was this done?

14. Was the unions part of the decision to mechanize, and to what extent, and what was their role in this process?

15. In your view how did the implementation of the mechanized roof bolter impact on the labour compliment of the mine in general and why?

16. Did the new equipment require new skill-set in your area? If yes elaborate on the new skill set

NO, AS THE SAME PEOPLE WORK INSTORES AND THE SAME WORK WAS DONE

17. How did the skill impact on the rest of the team and was this communicated?

NONE, BUT THE TEAM HAD TO WORK HARDER AS THERE IS MORE WORK

18. What impact this new skill set have on your ability to manage and direct tasks in your section?

MUCH MORE MOTIVATION DUE TO THE WORK LOAD ON THE STORES

19. If you should rank the following aspects from high impact to low impact on the implementation process that was followed at DWR, Selection of people, training of people, changes to process, safety, setting and measuring of performance indicators?

20. What process was followed during setting of the selection criteria for the operator of a roof bolter operator?

21. Were you involved in setting up the selection criteria and to what extend?

22. How was the employees accommodated that did not meet the said criteria?

23. Does the mine have a program what will cater for the development of different skills for the employees that did not meet the selection criteria of roof bolter operator? Please elaborate if the program exists.

24. Who do you think should for part of the team setting up the criterial and the selection process?

25. What structure changes happened in your area of responsibility with the implementation of the mechanized roof bolters, who did it affect your team and the team dynamics and what did you do to re-establish the team dynamics?

26. How did this implementation of new technology impact on your day to day activities? Looking at your job description, what were added to you work, did your work become easier or more complex?

THE WAS MORE WORK ORDERS TO BE DONE AND PAPERWORK AT THE STORES. NO DIFFERENT WORK BUT MORE OF THE SAME.

27. How would you have done the structural changes differently in your section?

28. With the new equipment did you receive any additional training?

NO AS THE WORK STAYED THE SAME IN MY SECTION.

29. How was the training material aligned with regards to the actual work done outside in the work place?

30. How was the new technology explained to you?

31. Were you involved with the compilation of the training material, and in what way?

32. How did the competency training differ from the normal competency training you receive on other equipment?

33. How long were trained or observed before you were allowed to operate the equipment allow?

34. Was there any follow up checks done with you after you were found competent?

35. What should the process be when compiling new training material for new equipment?

36. What was the process that was followed in developing the new training and competency material?

37. What additional competency training was developed for the new equipment?

38. What was the impact on the moral or your team and attitude towards the new machine and how did you coupe with it and what did you put in place to ensure the new equipment will add value to your team?

Processes

39. In your view, is the technology selected suitable for this operation, work force skill set, area, time, explain why?

40. How did the implementation of roof bolter machine change your operational structure and how you do things wrt to the normal process you us?

NO MORE WORK LOAD FOR THE STORE PEOPLE AS ALL ROOFBOLTS ARE LOADED BY HAND; THE PROCESS DID NOT CHANGE.

41. What changed in you processes and how did it influenced you as supervisor/manager?

INCREASE IN STORE AREA, AND STOCK VALUE. SPACE BECOME A BIG ISSUE

PRICES ON MACHINE SPARES ARE VERY HIGH.

42. To what extend did the new equipment have an impact on sub processes that do not forming part of your direct workplace activities, and in what way did it affect you and how was it rectified?

ONE DELIVERY PER WEEK OF ROOFBOLTS AND NOW TWO DELIVERIES PER WEEK

TRUCK ORDERS ALSO INCREASED FROM ONE PER WEEK AND NOW 2 TRUCKS PER WEEK.

43. Did the equipment improve or hamper your processes and in what way?

44. How was these processes re-designed and what role did you play in this process, who was involved in this redesign, was it successful? If not why and what should have been done differently?

LONGER HOURS TO GET WORK DONE
MORE LOADING WORK

45. In what manner did this new equipment impact on your day to day planning for you section, how did you adopt to this and what changes did you make to ensure that this new machine can achieve what is was set out to do?

46. How did the new equipment change and or impact your longer term process, like monthly planning, resource allocation (people), material usage....?

WERE THERE WAS ONLY 2 BELT EXTENSION PER MONTH IT WENT UP TO 6 EXTENSIONS THUS SPARES FORWARD ORDERING AND STOCK HOLDING CAPACITY WAS AN ISSUE

47. Were there any improvements after the new equipment on performance, stats, efficiencies, absenteeism, hours work? Please give comparative examples.

48. What role did the OEM play in the implementation process?

NONE, COMMUNICATION ON CRITICAL SPARES WAS NOT DONE, MIN/MAX OF SPARES WAS ALSO NOT COMMUNICATED AT THE START OF THE PROJECT.

NO "SLA'S" WITH OEM

49. What was the OEM's involvement in changing and re-establish new processes and activates?

50. What support was given to you during this change process?

Results

51. The main objective of the mechanization was to improve safety in the working face and increase efficiency in areas where bottle necks were identified, in your view was this achieved, how was this done?

Name: GLADWIN BALOYI

Position: Roof Bolter Operator

Years at Company: 10 YEARS

Date: 22/06/18

Time: 10:28

Location: Dwarsrivier Mine.

What was your role in the implementation of the mechanized roof bolter project?

I was selected as Roof Bolter Operator

Will you have any objections if the conversation of interview gets recorded? ~~(yes)~~ / (no)

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Objective

1. What was the main objective for the implementation of the mechanized roof bolter?

2. What were the agreed success indicators or criteria of this implementation project?

3. How was these success indicators communicated and monitored during the cause of the project and what was the platform used for this communication of feedback?

4. Was the said success criteria met by this project, please elaborate.

5. What lessons was learned during the project with regards to the setting of these success criteria and the monitoring process followed?

People

6. What is your understanding of Mechanization?

THAT A PERSON WILL BE REPLACED BY A MACHINE TO DO THE JOB.

7. In your view what was the objective of mechanization of the roof bolter function?

TO REMOVE THE RDO'S FROM THE FACE AND NOT TO ~~HE~~ INJURE PEOPLE.

8. What human factors in your view will have or had an impact on the successful implementation of mechanized roof bolting at DWR and looking at future mechanization project?

9. What factors in your view affects or affected the effectiveness of this mechanization project's implementation?

10. In your view and experience, what roll did the employees play in this process that was followed during the implementation of the roof bolters, how was their views and experience working with the equipment rolled back to the implementation process?

11. What process was follow when the new equipment was selected, how was the decision taken to implement the said equipment, how was this communicated to the work force, what was the results or the feedback from the different parties?

12. What communication media was used with this project? What work and did not work with you method of communications?

13. How long prior to the implementation was the communication done to the works force and in what format was this done?

14. Was the unions part of the decision to mechanize, and to what extent, and what was their role in this process?

15. In your view how did the implementation of the mechanized roof bolter impact on the labour compliment of the mine in general and why?

16. Did the new equipment require new skill-set in your area? If yes elaborate on the new skill set

17. How did the skill impact on the rest of the team and was this communicated?

13. What impact this new skill set have on your ability to manage and direct tasks in your section?

19. If you should rank the following aspects from high impact to low impact on the implementation process that was followed at DWR, Selection of people, training of people, changes to process, safety, setting and measuring of performance indicators?

20. What process was followed during setting of the selection criteria for the operator of a roof bolter operator?

21. Were you involved in setting up the selection criteria and to what extend?

22. How was the employees accommodated that did not meet the said criteria?

23. Does the mine have a program what will cater for the development of different skills for the employees that did not meet the selection criteria of roof bolter operator? Please elaborate if the program exists.

24. Who do you think should for part of the team setting up the criterial and the selection process?

25. What structure changes happened in your area of responsibility with the implementation of the mechanized roof bolters, who did it affect your team and the team dynamics and what did you do to re-establish the team dynamics?

26. How did this implementation of new technology impact on your day to day activities? Looking at your job description, what were added to you work, did your work become easier or more complex?

27. How would you have done the structural changes differently in your section?

28. With the new equipment did you receive any additional training?

YES, BY THE MINE TRAINING CENTER

29. How was the training material aligned with regards to the actual work done outside in the work place?

SAME AS WHAT WE DO IN THE FACE.

30. How was the new technology explained to you?

THROUGH CLASS WORK, SIMULATOR WORKSHOPS, UNDERGROUND COACHING

31. Were you involved with the compilation of the training material, and in what way?

32. How did the competency training differ from the normal competency training you receive on other equipment?

SAME AS THAT OF D Rock DRILLS AND FACE RIGS.

33. How long were trained or observed before you were allowed to operate the equipment allow?

- TWO WEEKS IN CLASS AND
- TWO WEEKS IN TRAINING CENTER W/G
- MONTH IN FACE.

34. Was there any follow up checks done with you after you were found competent?

35. What should the process be when compiling new training material for new equipment?

36. What was the process that was followed in developing the new training and competency material?

37. What additional competency training was developed for the new equipment?

38. What was the impact on the moral or your team and attitude towards the new machine and how did you coupe with it and what did you put in place to ensure the new equipment will add value to your team?

Processes

39. In your view, is the technology selected suitable for this operation, work force skill set, area, time, explain why?

40. How did the implementation of roof bolter machine change your operational structure and how you do things wrt to the normal process you us?

41. What changed in you processes and how did it influenced you as supervisor/manager?

42. To what extend did the new equipment have an impact on sub processes that do not forming part of your direct workplace activities, and in what way did it affect you and how was it rectified?

43. Did the equipment improve or hamper your processes and in what way?

44. How was these processes re-designed and what role did you play in this process, who was involved in this redesign, was it successful? If not why and what should have been done differently?

45. In what manner did this new equipment impact on your day to day planning for you section, how did you adopt to this and what changes did you make to ensure that this new machine can achieve what is was set out to do?

46. How did the new equipment change and or impact your longer term process, like monthly planning, resource allocation (people), material usage....?

47. Were there any improvements after the new equipment on performance, stats, efficiencies, absenteeism, hours work? Please give comparative examples.

48. What role did the OEM play in the implementation process?

49. What was the OEM's involvement in changing and re-establish new processes and activates?

50. What support was given to you during this change process?

Results

51. The main objective of the mechanization was to improve safety in the working face and increase efficiency in areas where bottle necks were identified, in your view was this achieved, how was this done?

SAFETY IMPROVED, AS YOU DO NOT WORK UNDER THE NETS AND LOOSE ROCKS

52. Was this implementation a success? Why?

YES BECAUSE I AM SAVE!

53. How the individuals and section's KPI's were affected with the new equipment?

54. In what way did the sections KPI Changed, please to what extend and what were the challenges and the lessons learned in this process if any?

55. How was the new KPIs developed and how was this done? (SMART?)

56. What factor affected the selection of the KPI criteria's and measures?

57. What was or should the objective of the new KPI's in your view be?

COMMUNICATION BETWEEN MINER AND RDO/ROOF BOLTER OPERATOR

58. How was the KPI communicated to team members?

59. Explain to me the process followed in displaying and monitoring the new KPI's?

60. What platforms are there for feedback on the performance of the equipment and process?

Name: STANLEY MOTHLALA.

Position: ROOF BOLTER OPERATOR

Years at Company: 10 YEARS

Date: 22/06/18

Time: 10:28

Location: DWARSRIVIER MINE.

What was your role in the implementation of the mechanized roof bolter project?

I WAS A SELECTED ROOF BOLTER OPERATOR FROM RDO.

Will you have any objections if the conversation of interview gets recorded? (~~yes~~/no)

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Objective

1. What was the main objective for the implementation of the mechanized roof bolter?

2. What were the agreed success indicators or criteria of this implementation project?

3. How was these success indicators communicated and monitored during the cause of the project and what was the platform used for this communication of feedback?

4. Was the said success criteria met by this project, please elaborate.

5. What lessons was learned during the project with regards to the setting of these success criteria and the monitoring process followed?

People

6. What is your understanding of Mechanization?

REMOVE PEOPLE FROM DANGEROUS WORK PLACE

7. In your view what was the objective of mechanization of the roof bolter function?

REMOVE RSO's FROM UNSAFE WORK PLACE

8. What human factors in your view will have or had an impact on the successful implementation of mechanized roof bolting at DWR and looking at future mechanization project?

9. What factors in your view affects or affected the effectiveness of this mechanization project's implementation?

10. In your view and experience, what roll did the employees play in this process that was followed during the implementation of the roof bolters, how was their views and experience working with the equipment rolled back to the implementation process?

11. What process was follow when the new equipment was selected, how was the decision taken to implement the said equipment, how was this communicated to the work force, what was the results or the feedback from the different parties?

12. What communication media was used with this project? What work and did not work with you method of communications?

13. How long prior to the implementation was the communication done to the works force and in what format was this done?

14. Was the unions part of the decision to mechanize, and to what extent, and what was their role in this process?

15. In your view how did the implementation of the mechanized roof bolter impact on the labour compliment of the mine in general and why?

16. Did the new equipment require new skill-set in your area? If yes elaborate on the new skill set

17. How did the skill impact on the rest of the team and was this communicated?

18. What impact this new skill set have on your ability to manage and direct tasks in your section?

28. With the new equipment did you receive any additional training?

YES, SANDVICK DONE THE TRAINING

29. How was the training material aligned with regards to the actual work done outside in the work place?

WAS THE SAME AS IN THE WORKPLACE GAINED EXPERIANCE AND NOW IT IS BETTER

30. How was the new technology explained to you?

YES, PRACTICAL INDUCTION ON MACHINE AND SIMULATORS AND VIDEOS

31. Were you involved with the compilation of the training material, and in what way?

32. How did the competency training differ from the normal competency training you receive on other equipment?

SAME AS OTHER TRAINING

33. How long were trained or observed before you were allowed to operate the equipment allow?

34. Was there any follow up checks done with you after you were found competent?

35. What should the process be when compiling new training material for new equipment?

36. What was the process that was followed in developing the new training and competency material?

37. What additional competency training was developed for the new equipment?

38. What was the impact on the moral or your team and attitude towards the new machine and how did you coupe with it and what did you put in place to ensure the new equipment will add value to your team?

Processes

39. In your view, is the technology selected suitable for this operation, work force skill set, area, time, explain why?

40. How did the implementation of roof bolter machine change your operational structure and how you do things wrt to the normal process you us?

41. What changed in you processes and how did it influenced you as supervisor/manager?

42. To what extend did the new equipment have an impact on sub processes that do not forming part of your direct workplace activities, and in what way did it affect you and how was it rectified?

43. Did the equipment improve or hamper your processes and in what way?

44. How was these processes re-designed and what role did you play in this process, who was involved in this redesign, was it successful? If not why and what should have been done differently?

45. In what manner did this new equipment impact on your day to day planning for you section, how did you adopt to this and what changes did you make to ensure that this new machine can achieve what is was set out to do?

46. How did the new equipment change and or impact your longer term process, like monthly planning, resource allocation (people), material usage....?

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49. What was the OEM's involvement in changing and re-establish new processes and activates?

50. What support was given to you during this change process?

Results

51. The main objective of the mechanization was to improve safety in the working face and increase efficiency in areas where bottle necks were identified, in your view was this achieved, how was this done?

- SAFETY IMPROVED
- FACE IS DONE FASTER
- WILL NOT WORK AS RDO AGAIN!

52. Was this implementation a success? Why?

YES, I am Safer and Not WET Anymore.

53. How the individuals and section's KPI's were affected with the new equipment?

54. In what way did the sections KPI Changed, please to what extend and what were the challenges and the lessons learned in this process if any?

55. How was the new KPIs developed and how was this done? (SMART?)

56. What factor affected the selection of the KPI criteria's and measures?

57. What was or should the objective of the new KPI's in your view be?

- 3 PANELS
- START EARLY AND THE REACH TARGET.

58. How was the KPI communicated to team members?

59. Explain to me the process followed in displaying and monitoring the new KPI's?

60. What platforms are there for feedback on the performance of the equipment and process?