Comparison of MoOSTs tasks based on their traditional and fuzzy criticality numbers

No.	Breakdown of MoOSTs Tasks	F	C	Cav no	Fuzzy no	Cav level	Labour discipline
1	Amendment of leakage at the burner pipe due to fine coal pressuring at air pipe	3	8	24	35.9	C	Mechanical fitter and welder
2	Anchoring of burner pipe exposed portion	4	8	32	48.1	C	Mechanical fitter and welder
3	Assembling of crusher rotor onto new shaft	4	8	32	48.1	C	Mechanical fitter and welder
4	Back filter bottom screw No.1 - 10 drive chains cleaning	4	7	28	48.1	C	Mechanical fitter
5	Capping of cracked shell portion (Inside of the kiln)	4	14	56	75.4	EC	Mechanical fitter
6	Capping of cracked shell portion (outside of the kiln)	4	14	56	75.4	EC	Mechanical fitter
7	Casting of stage 4 riser duct area	4	14	56	75.4	EC	Mechanical casting
8	Connections of main drive motor left and right hand side rotor cables	4	8	32	48.1	C	Automation and electrical
9	Connections of main drive cooling fan motor power cable	4	8	32	48.1	C	Automation and electrical
10	Connections of main drive motor 3.3KV power cables	4	8	32	48.1	C	Automation and electrical
11	Connections of main drive motor control cables	4	8	32	48.1	C	Automation and electrical
12	Connections of main drive tacho cables	4	8	32	48.1	C	Automation and electrical
13	Cut off lining plate out of inspection door @ stage 4	4	10	40	48.3	C	Mechanical fitter
14	Cutting of new holes (6off) for the blaster stainless steel pipes	4	8	32	48.1	C	Mechanical welder
15	Cutting of platforms channels, plate & hand rails pipes @ DA17 Dampers areas	4	14	56	75.4	EC	Fabricator and welder
16	Cutting of stainless steel pipe (6")	4	8	32	48.1	C	Mechanical fitter
17	Dismantling of burner pipe oil gun jacket tube	4	8	32	48.1	C	Mechanical fitter
18	Dismantling of canter-lever scaffold at preheater stage 4	4	8	32	48.1	C	Scaffolding
19	Dismantling of scaffold @ Gepol fan inlet & outlet duct expansion joint area	4	8	32	48.1	C	Scaffolding
20	Dismantling of scaffold @ LIW hopper internal	4	8	32	48.1	C	Scaffolding
21	Dismantling of scaffold @ LIW plug valve area	4	8	32	48.1	C	Scaffolding
22	Dismantling of scaffolding at backend up-riser area	4	8	32	48.1	C	Scaffolding
23	Dismantling of the backend blaster ((8off)	4	8	32	48.1	C	Mechanical fitter
24	Erect scaffolding @ Niro inlet & outlet duct inspection door areas	2	14	28	41.5	C	Scaffolding
25	Extraction gate power cylinder servicing 4off	4	8	32	48.1	C	Electrical
26	Extraction gate power cylinder removed to workshop 4off	4	8	32	48.1	C	Electrical
27	Filling & hard-facing of clinker crusher hammers (old ones)	3	10	30	48.1	C	Mechanical welder
28	Fix and tighten main drive DE top/bottom covers	4	8	32	48.1	C	Mechanical technician
29	Fix and tighten main drive NDE top/bottom covers	4	8	32	48.1	C	Mechanical technician
30	Fix back roofing support frame vertical and horizontal	4	8	32	48.1	C	Mechanical
31	Form-work	4	8	32	48.1	C	Mechanical
32	Free and service all cyclone flaps.	4	8	32	48.1	C	Mechanical fitter
33	General house and conveying of all scrap metals/pipes	4	7	28	48.1	C	Fabricator and welder
34	Gepol fan lubrication flow switch serving and test	4	8	32	48.1	C	Automation and electrical
35	Gepol fan motor cooling unit servicing	4	8	32	48.1	C	Automation and electrical

Table IX (*Continued*)

Nos.	Breakdown of MoOSTs activities	F	C	Cav no	Fuzzy no	Cav level	Labour discipline
36	Inspection of Niro screw journals & hanger bearings	4	8	32	48.1	C	Mechanical inspection
37	Inspection of preheater cyclone top	4	8	32	48.1	C	Mechanical inspection
38	Inspection of preheater stage 4 wall bricks	4	8	32	48.1	C	Production/Operations
39	Inspection of stage 1, 2,3 & 4 Wall linings / hanging material	4	8	32	48.3	C	Production/Operations
40	Install air-lensing holes at preheater cyclone flap areas	4	8	32	48.1	C	Mechanical fitter
41	Backend Gas Analyser	2	12	24	30	C	Instrumentation
42	Bolts and align main drive motor with coupling	4	8	32	48.3	C	Automation and electrical
43	Bottom screws top & bottom covers seal ropes to be replaced	4	8	32	48.3	C	Mechanical fitter
44	Casting of backend inlet segment plate	4	10	40	48.3	C	Mechanical casting
43	Casting of backend inlet trays (4 off)	4	10	40	48.3	C	Mechanical casting
46	Cleaning of the girth gear teeth	4	9	36	48.3	C	Mechanical fitter
47	Clinker crusher internal & external inspection / wear rate measurement	3	10	30	48.3	C	Mechanical inspection
48	Clinker crusher old hammers to be removed	4	10	40	48.3	C	Mechanical fitter and welder
49	Clinker crusher top cover to be boxed up	3	10	30	48.3	C	Mechanical fitter
50	Convey and Fix L.I.W LHS & RHS plug valve compartment unit	4	8	32	48.1	C	Electrical
51	Convey and fix to position L.I.W LHS & RHS plug valve compartment	4	8	32	48.1	C	Electrical
52	Cooler 1 replacement of 10 bad mild steel lifters, 10 cast lifters & 2 slotted	4	8	32	48.1	C	Mechanical fitter and welder
53	Cooler 1 replacement of 3 cast lifters	3	8	24	35.9	C	Mechanical fitter and welder
54	Cooler 1 replacement of 6 worn cone breakers, 10 cast lifters & 9 slotted	3	8	24	35.9	C	Mechanical fitter and welder
55	Cooler 2 replacement of 5 straight edge mild steel lifters, 10 cast lifters &	3	8	24	35.9	C	Mechanical fitter and welder
56	Cooler 2 replacement of 6 slotted hub lifters	4	8	32	35.9	C	Mechanical fitter and welder
57	Couple back / alignment of kiln main drive motor coupling	4	8	32	48.3	C	Mechanical
58	Couple back kiln girth gear pinion coupling	4	8	32	48.3	C	Mechanical fitter
59	Crusher rotor back to site / assembled	4	8	32	48.3	C	Mechanical fitter and welder
60	Cyclone 1 - 4 thermocouple probe servicing in the workshop	4	8	32	48.3	C	Instrumentation
61	Cyclone 1 -4 thermocouple probe to disconnect and remove to workshop	4	8	32	48.3	C	Instrumentation
62	Cyclone 1- 4 thermocouple probe to fix and connect back	4	8	32	48.3	C	Electrical
63	Cyclone 4 bottom flange leakage	4	8	32	48.3	C	Mechanical fitter
64	Cyclone 4 gas outlet expansion joint loose bolt.	4	8	32	48.3	C	Mechanical fitter
65	Erect scaffold / installation of tarpaulin @ station 1 - 3 for cracks welding work	4	8	32	48.1	C	Scaffolding
66	Erect scaffold / installation of tarpaulin @ station 2 for kiln shell cracks welding wo	3	10	30	48.3	C	Scaffolding
67	Erect scaffold @ backend power cylinder area	3	10	30	48.3	C	Scaffolding
68	Erect scaffold @ Gepol fan inlet & outlet duct expansion joint area	3	10	30	48.3	C	Scaffolding
69	Erect scaffold Gepol fan damper bearings area	4	8	32	48.3	C	Scaffolding
70	Erect scaffold @ girth gear area	4	8	32	48.3	C	Scaffolding

Table IX (*Continued*)

Nos.	Breakdown of MoOSTs activities	F	C	Cav	Fuzzy no	Cav level	Labour discipline
71	Erect scaffold Gepol fan damper power cylinder area	4	8	32	48.3	C	Scaffolding
72	Erection of mini scaffold for removal of damper power cylinder	3	10	30	48.3	C	Scaffolding
73	Erection of scaffold (canter-lever) at preheater state 4 internal	3	10	30	48.3	C	Scaffolding
74	Erection of scaffold / blanking at kiln backend internal	4	8	32	48.1	C	Scaffolding
75	Filling / Machining of clinker crusher rotor shaft bearing seat	4	14	56	75.4	EC	Mechanical fitter and welder
76	Fix back clinker crusher drive belt & guard	4	8	32	48.3	C	Mechanical fitter
77	Girth gear heat shield bolts retightening / replacement of heat shields	4	14	56	75.4	EC	Mechanical
78	Goudging of cracked shell at station 2	2	12	24	30	C	Expert gouder
79	Goudging of cracked shell from inside of the kiln	2	12	24	30	C	Expert gouder
80	Gouging / grinding of station 1- 3 cracked tyre pads	4	8	32	48.1	C	Mechanical steel work
81	Greasing of girth gear pinion coupling	4	8	32	48.1	C	Method lubrication
82	Greasing of station 1& 2 thruster block	4	8	32	48.1	C	Method lubrication
83	Grinding of the girth gear mushroomed teeth	2	12	24	30	C	Mechanical fitter
84	Hard-facing of clinker crusher rotor and casing liners / patching of punctured	3	10	30	48.3	C	Mechanical fitter and welder
85	Hydraulic unit lube tank oil to be drain and tank to be clean	4	8	32	48.1	C	Mechanical fitter
86	Inspect & record clearance of bag filter fan bearings (DE & NDE)	4	8	32	48.3	C	Mechanical inspection
87	Inspect Gepol fan outlet duct expansion joint canvas (need scaffolding).	4	8	32	48.3	C	Mechanical fitter
88	Inspection / cleaning of air chamber	4	8	32	48.3	C	Mechanical fitter
89	Inspection / replacement of damage diaphragms	4	8	32	48.3	C	Mechanical fitter
90	Inspection / validation of preheater stage 4 canter-lever scaffold	4	8	32	48.3	C	Pyro-processing
91	Inspection / validation of scaffold	4	8	32	48.3	C	Safety inspection
92	Inspection / validation of scaffold @ fan damper power cylinder area	4	8	32	48.3	C	Safety inspection
93	Inspection / validation of scaffold @ girth gear area	4	8	32	48.3	C	Safety inspection
94	Inspection / validation of scaffold @ LIW plug valve area	4	8	32	48.3	C	Safety inspection
95	Inspection / validation of scaffold @ LIW screw area	4	8	32	48.3	C	Safety inspection
96	Inspection / validation of scaffold @ Niro chamber Internal	4	8	32	48.3	C	Safety inspection
97	Inspection / validation of scaffold @ Niro inlet & outlet duct inspection door	4	8	32	48.3	C	Safety inspection
98	Inspection / validation of scaffold + platform	4	8	32	48.3	C	Safety inspection
99	Inspection / validation of scaffold at station 1 & 2	4	8	32	48.3	C	Safety inspection
100	Inspection /lidation of backend scaffold & blank	4	8	32	48.3	C	Safety inspection
101	Inspection of bag filter fan base vibration isolator	4	8	32	48.3	C	Mechanical inspection
102	Installation of backend floating rings segments (12off)	4	10	40	48.3	C	Mechanical fitter and welder
103	Kiln Turn with No.1 - 9 cooler @ TDC	4	14	56	75.4	EC	Production/Operations
104	Re-build platform No.1 - 9 elbow area	3	8	24	35.9	C	Scaffolding
105	Ultra-Sonic crack detection test of station 1 - 4 right roller shafts	3	10	30	48.3	C	Ultra sonic crack detection