

Client name

Project: Refinery Expansion	Rev.1 by JB
SUMMARY OF SIL VERIFICATION	

No.	SIF Tag	TARGET			ACHIEVED			
		SIL	RRF	MTTFS	SIL	RRF	PFDavg	MTTFS
1	M4-LT-1111-01	SIL-1	20	10	SIL-1	56	1,79E-02	71
3	M4-LT-1212-01	SIL-2	200	10	SIL-2	459	2,18E-03	44
6	M4-PT-2312-06	SIL-2	200	10	SIL-2	459	2,18E-03	49
10	M4-PS-1112-10	SIL-2	200	10	SIL-2	239	4,19E-03	46
30	M5-FT-2312-30	SIL-2	200	10	SIL-2	244	4,11E-03	28
40	M5-BE-82412-01	SIL-2	200	10	SIL-2	439	2,28E-03	45
45	M5-TT-21022-01-PVST	SIL-2	130	10	SIL-1	55	1,82E-02	32
61	M5-PT-2312-G-01	SIL-1	20	10	SIL-2	4285	2,33E-04	34

Achieved				Lowest value for			
SIL			Route	SENSORS		ACTUATOR	
Pr.	AC	SC		SFF (1H)	DC	SFF (1H)	DC
1	1	2	1H	87,0%		52,5%	
2	2	2	1H	87,0%		52,5%	
2	2	3	1H	81,1%		52,5%	
2	2	3	61511		0,0%		0,0%
2	2	3	1H	91,4%		52,5%	
2	2	2	1H	92,8%		52,5%	
1	1	3	1H	84,2%		52,5%	
3	2	3	1H	81,1%		57,8%	

Possible changes to SIFs not achieving the target values:

Pr: Probability of failure
 AC: Architectural Constraints
 SC: Systematic Capability
 SFF: Safe Failure Fraction
 DC: Diagnostic Coverage=DD/(DD+DU)
 MTTFS in years: Mean Time To Fail Spuriously
 RRF: Risk Reduction Factor
■ SIL & RRF targets are not achieved
■ MTTFS target is not achieved