

Example - Cleaning Process

PROCESS FMEA				PRODUCT: _____						FMEA NO. _____				
				SUBSYSTEMS _____						PAGE _____ OF _____				
				DRAWING OR SPEC: EXAMPLE - PARTS CLEANING INSIDE CLEANROOM						REV: _____				
PROCESS DESCRIPTION FUNCTION	POTENTIAL FAILURE MODE	SEVERITY POTENTIAL EFFECTS OF FAILURE	S	OCCURRENCE POTENTIAL CAUSE(S) OF FAILURE	O	DETECTION CURRENT CONTROLS	D	RPN	RPN = O x S x D ACTION PRIORITY	CORRECTIVE ACTION	RESULTING			
											S	O	D	RPN
Clean potentially contaminated parts to Code 100 cleanroom requirements	Contaminated parts escape cleaning process	Product failure due to contaminated surfaces, reliability failures	8	Inadequate cleanliness specs for new designed parts	5	Materials lab test for NVR	3	120	B	Develop cleanliness specifications and review current processes	8	3	3	48
	Cleaning residue on parts	Fail particle count test	6	Incomplete cleaning cycle	6	Visual inspection, no set plan	8	288	A	Install timer to prevent operator from adjusting cleaning cycle	6	3	1	18
				Equipment malfunctions	3	Warning light temperature not met, no control for overheat	5	90	C	Add auto shutdown for over temp	6	3	1	18
				Contaminated cleaning solution due to failure to complete PM as scheduled	2	Visual inspection twice per shift	6	72	C	Add extra filters to system	6	2	3	36
Prevent parts from being damaged	Parts damaged, broken, bent or stained	Parts rejected, scrapped	5	Incorrect racks used due to availability	6	No instructions	10	300	A	Add rack type to process instructions, evaluate availability	5	2	1	10
				Operator not trained due to job rotation	2	Lead worker monitors and trains new employees	2	20	D	Add rack type to process instructions, evaluate availability	5	2	1	10

Example - Accounting Process

PROCESS FMEA			PRODUCT:						FMEA NO.					
			PROCESS/OPERATION: <i>Example: Accounts Payable Vouchering</i>						PAGE OF					
			PLANNING REFERENCE:			DATE:		BY:						
			SEVERITY	OCCURRENCE	DETECTION	RPN = S x O x D								
PROCESS DESCRIPTION	POTENTIAL FAILURE MODE	POTENTIAL EFFECTS OF FAILURE	S	O	D	RPN	ACTION PRIORITY	CORRECTIVE ACTION	RESPONSIBILITY & DATE DUE	ACTION TAKEN	RESULTING			
FUNCTION											S	O	D	RPN
Issue a payment voucher	Voucher not issued by deadline	Late payment	5	8	6	240	A	Daily batch report reviewed by supervisor			5	2	4	40
			5	3	2	30	C							0
			5	5	8	200	A	Track man-hours for loading			5	2	3	30

Example - Design Rules

PROCESS FMEA			PRODUCT:		FMEA NO.									
			SUBSYSTEMS		PAGE		OF							
			DRAWING OR SPEC:		EXAMPLE - PROCESS-SPECIFIC DESIGN RULES				REV:					
			SEVERITY		OCCURRENCE		DETECTION		RPN = O x S x D		CORRECTIVE ACTION			
PROCESS DESCRIPTION FUNCTION	POTENTIAL FAILURE MODE	POTENTIAL EFFECTS OF FAILURE	S	POTENTIAL CAUSE(S) OF FAILURE	O	CURRENT CONTROLS	D	RPN	ACTION PRIORITY	CORRECTIVE ACTION	ULTING			
											S	O	D	RPN
Analog signal used to process a sensor signal	Output stuck - high or low	Instrumentation shows zero readout	8	Short circuit due to insufficient space allotment between conductors	2	Computer simulation	10	160	A	100% test to verify validity of design rules	8	2	1	16

Example - Reducing Occurrence

PROCESS FMEA			PRODUCT:		FMEA NO.								
			SUBSYSTEMS		PAGE OF								
PROCESS DESCRIPTION FUNCTION			DRAWING OR SPEC:		REV:								
			EXAMPLE - REDUCING OCCURRENCE										
			SEVERITY	OCCURRENCE	DETECTION	RPN = O x S x D							
			S	O	D	RPN	ACTION PRIORITY	CORRECTIVE ACTION	ULTING				
			POTENTIAL EFFECTS OF FAILURE	POTENTIAL CAUSE(S) OF FAILURE	CURRENT CONTROLS					S	O	D	RPN
Deposit a uniform, defect-free oxide at desire thickness			Reduced reliability	Flaking of the quartzware	Inspect oxide after deposition	4	168	B	Increase frequency of quartz cleaning	6	2	4	48
									Implement an automated vision inspection system	6	2	1	12

Example - New Equipment or Process

PROCESS FMEA		PRODUCT:		FMEA NO.											
		SUBSYSTEMS		PAGE		OF									
DRAWING OR SPEC:		EXAMPLE - NEW EQUIPMENT OR PROCESS				REV:									
PROCESS DESCRIPTION		SEVERITY		OCCURRENCE		DETECTION		RPN = O x S x D							
FUNCTION		POTENTIAL FAILURE MODE	POTENTIAL EFFECTS OF FAILURE	S	POTENTIAL CAUSE(S) OF FAILURE	O	CURRENT CONTROLS	D	RPN	ACTION PRIORITY	CORRECTIVE ACTION	ULTING			
												S	O	D	RPN
Connect device to circuit	Open circuit	Non-functional circuit	9	Lifted wire at the device due to non-optimized wirebond process	6	Conduct process optimization at wirebond	4	216	A	Document process window in process spec to assure that the process meets visual and performance standards	9	2	4	72	
				Cratering on the device due to non-optimized wirebond process	4	Conduct process optimization at wirebond	4	144	B	Same	9	2	4	72	
				Broken wire at the lead frame due to non-optimized wirebond process	3	Conduct process optimization at wirebond	4	108	B	Same	9	2	4	72	

Example - Weakness of Manual Inspection

PROCESS FMEA		PRODUCT: _____ FMEA NO. _____												
		SUB SYSTEMS _____ PAGE _____ OF _____												
PROCESS DESCRIPTION FUNCTION		DRAWING OR SPEC: EXAMPLE - WEAKNESS OF MANUAL INSPECTION REV: _____												
		SEVERITY POTENTIAL EFFECTS OF FAILURE	S	OCCURRENCE POTENTIAL CAUSE(S) OF FAILURE	O	DETECTION CURRENT CONTROLS	D	RPN = O x S x D	RPN	ACTION PRIORITY	CORRECTIVE ACTION	ULTING		
											S	O	D	RPN
Pack and ship right product to the right customer	Mixed product	Fails to meet customer requirements and expectations	8	Mis-read product label	3	Visual inspection of product label	8	192	B	Install barcode system for product identification	8	1	1	8