

Id	Activity	Value	Uom	Description	Remarks	Source
1	Process Isolation	0.25	h/conn.	Time needed to close a SBB and to check proper isolation		expert judgment
2	Process Isolation	0.50	h/conn.	Time needed to close a DBB and to check proper isolation		expert judgment
3	Depressurization	0.50	h	Time needed to reach atmospheric pressure by opening BDV and discharging to flare		expert judgment
4	Cool down	○	○	See dedicated table		expert judgment
5	Electrical Isolation	0.25	h	Time needed to locate and disconnect the circuit breaker and to verify isolation in field according to HSE procedures		expert judgment
6	Draining	0.50	h	Time needed to open connections to drain system (or to connect temporary lines)		expert judgment
7	Draining	2.50	m/s	Liquid velocity in the draining line		expert judgment
8	Purging	0.50	h	Time needed to connect the nitrogen generator		expert judgment
9	Purging	2.00	bar	Pressurization pressure (applicable to purging by pressurization/depr. cycles)		expert judgment
10	Purging	1.00	bar	Discharge pressure (applicable to purging by pressurization/depr. cycles)		expert judgment
11	Purging	1,400.00	Sm3/h	Nitrogen generator flow rate	TO BE DEFINED BASED ON PROJECT	PROJECT SOURCE
12	Purging	3.00	n/a	Sweeping factor		expert judgment
13	Blinding	0.50	h/conn.	Time needed to apply/remove positive isolation devices (i.e. spectacles, blind flanges, spools)		expert judgment
14	Ventilation	0.50	h	Time needed to open a manway		expert judgment
15	Ventilation	1.00	min/m3	Time needed for ventilation		expert judgment
16	Ventilation	24.00	h	Maximum ventilation time		expert judgment
17	Washing	○	○	See dedicated table		ENI Std. 20560_430_rev02
18	Item Removal	○	○	See dedicated table		expert judgment
19	Reinstalling	0.50	h/conn.	Time needed to remove positive isolation devices or to reinstall spools		expert judgment
20	Reinstalling	0.25	h/conn.	Time needed to open isolation valves		expert judgment
21	Reinstalling	○	○	Time needed to restore other mechanical connections: see dedicated table		expert judgment
22	Leak test	0.50	h	Time needed to connect the high pressure nitrogen generator		expert judgment
23	Leak test	1.10	○	Leak test pressure to operating pressure ratio		expert judgment
24	Leak test	1,400.00	Sm3/h	High pressure nitrogen flow rate	TO BE DEFINED BASED ON PROJECT	PROJECT SOURCE
25	Leak test	0.25	h/conn.	Time needed to check each flange for leaks after the test pressure is achieved		expert judgment
26	Air Removal	0.50	h	Time needed to connect the nitrogen generator		expert judgment
27	Air Removal	0.21	○	Initial oxygen concentration (in case leak test has not been performed)		expert judgment
28	Air Removal	0.03	○	Target oxygen concentration		expert judgment
29	Air Removal	2.00	○	Pressurization pressure (applicable to purging by pressurization/depr. cycles)	Assumed equal to Purging	expert judgment
30	Air Removal	1.00	○	Discharge pressure (applicable to purging by pressurization/depr. cycles)	Assumed equal to Purging	expert judgment
31	Air Removal	1,400.00	○	Nitrogen generator flow rate	Assumed equal to Purging	expert judgment 342101BPST02508 34210ABPRV02054

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32	Commissioning & Start up	1.00	h	Temperature restoring time		expert judgment
33	Commissioning & Start up	0.50	h	Pressure restoring time	Assumed equal to Depressurization time	expert judgment
34	Commissioning & Start up	○	○	Level restoring time	Assumed equal to Draining time	expert judgment
35	○	2.00	○	Maximum numbers of crews working in parallel for isolation/blinding		expert judgment
36	○	0.80	○	Efficiency of maintenance crew	Not applied to essentially labor-free activities (i.e. Cool down and Ventilation)	expert judgment
37	Item conveyance to workshop	1.00	h	Loading / Unloading		expert judgment
38	Item conveyance to workshop	1.00	h	Travel to WS		expert judgment