



Utility & Fire Systems (I) Pvt. Ltd.

Sai Utility & Fire Systems (I) Pvt. Ltd

Hazard Identification and Risk Assessment Sheet

Doc. No :- SUFSIPL/HS/014

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Date :- 2 nd Feb 2021

Scope of Work / Activity: Installation of Fire Hydrant Systems & Accessories (Internal & External)

Initial Assessment Date: 02/02/2021

HIRA Co-ordinator Name : Mr. Dattatray Suryawanshi

Project:- SP- Infocity B7 , Fursungi Hadapsar, Pune

Risk Assessment No: SUFS / SPI / HIRA03

HIRA Functional Involved Team : Mr. Gaurav Shah, Mr. Vikas Shrivastav

AREAS AND ACTIVITIES				RISK ASSESSMENT									LAST REVIEW DATE - July 2020	NEXT REVIEW DATE - N / A
S. No	Activity	Routine / Non-Routine	Hazard	Risk	Overriding criteria			Likelihood of Occurrence (a)	Detectability (b)	Severity (c)	Total Risk Factor (TRF) = (a)x(b)x(c)	Risk Level (High / Medium / Low)	Legal requirement applicable (Yes / No)	Present Control Measures
					N	A	E							
1	Mobilization of manpower towards site working location	Routine	Lack of Awareness of working team about the site hazards and job area, leading to injury on any body part	Bodily Injury	N	-	-	1	2	2	4	low	NO	Elimination:- NA Substitute:- NA Engineering:- De-Marcation of walkways in workplace Administrative:- - Ensure all team medical check-up & gate pass procedure completed. 1.All employees should cover in SUFS safety induction/ training. 2.Job specific safety training should be conduct with all team before the activity start & activity details / job location & associated hazards should be communicate with all involved team. PPE:- Safety Shoes, hand glove cut level 03, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.
2	Movement of personnel on site for measurement, inspection, visual cross checking at site working areas	Routine	Speaking on mobile phone while moving on site may STF hazards leading to body injury	Bodily Injury	N	-	-	1	2	2	4	low	NO	Elimination:- NA Substitute:- NA Engineering:- De-Marcation of walkways in workplace Administrative:- - Ensure all team medical check-up & gate pass procedure completed. 1.Gate pass shall be issued after safety Induction Training only. 2.Mobile phone speaking is strictly prohibited while moving on site (May safe access area consider) 3.Person should follow the signages and site procedures. 4.Only path way should be use for manpower movement at site. PPE:- Safety Shoes, hand glove cut level 03, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.
3	Mobilization of manpower at projects premises – respective working area	Routine	Movement of personnel nearby slippery / watery, oily area may slip, fall leading to body injury	Bodily Injury	N	-	-	1	2	2	4	low	NO	Elimination:- NA Substitute:- NA Engineering:- N/A Administrative:- - Ensure all team medical check-up & gate pass procedure completed. 1.Watery & oily, slippery area dried / housekeeping should do before allowing the personnel movement at site. 2.Person shall walk through slippery/watery, oily surfaces very cautiously, and by making safe distance. 3.Person shall respect & follow the signages PPE:- - Safety Shoes, hand glove cut level 03, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.
4	Site area clearance	Routine	Access way obstruction may lead to STF	STF	N	-	-	1	2	2	4	low	NO	Elimination:- access to be kept clear of all unwanted material Substitute:- NA Engineering:- Clearance from various departments of SPCL and LOTP procedure shall be implemented. Administrative:- Trainings, no phone while walking, illumination, No material in access, Housekeeping to be done frequently PPE:- Safety shoe, helmet, Goggles, hand gloves

5	Material Vehicle movement in site areas- towards working location	Routine	Vehicle may hit pedestrian	Bodily Injury	-	-	E	1	1	4	4	low	NO	Elimination:NA Substitute:NA Engineering:NA Administrative:. Vehicle movement happen in presence of signal man.General work permit will be taken prior to activity, Security person to check vehicle condition and documents PPE:- Safety Shoes, safety helmet, jacket, etc.
6	Material Vehicle movement in site areas- towards working location	Routine	Vehicle may run over someone if proper stoppers are not used for parking	Bodily Injury	N	-	-	1	2	2	4	low	NO	Elimination:NA Substitute:NA Engineering:NA Administrative:. Vehicle movement happen in presence of signal man.General work permit will be taken prior to activity, Security person to check vehicle condition and documents PPE:- Safety Shoes,
7	Parking vehicle near Building 7 - Road Area	Routine	Pedestrian may hit/ trip/ fall if vehicle no sufficient space provided for other man/material movement	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering:NA Administrative:. Vehicle movement happen in presence of signal man.General work permit will be taken prior to activity, Security person to check vehicle condition and documents 2. Proper access should be provide for man movement & area shall be proper baricading PPE:- Safety Shoes,safety helmet etc.
8	Loading / unloading material by manually from vehicle (Pipes, Fittings, Equipments, Machinories Etc.)	Routine	Loading unloading of material equipment's by manually may causes cut, pinch injuries lead to minor bodily injury or property damage	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering: Material unloading / shifting by hand trolley Administrative:. Vehicle movement happen in presence of signal man.General work permit will be taken prior to activity, Security person to check vehicle condition and documents PPE:- Safety Shoes,cut resistance handgloves,safety helmet,goggle etc.
9	Loading / unloading material by manually from vehicle (Pipes, Fittings, Equipments, Machinories Etc.)	Routine	Back pain due to lifting piping material repeatedly	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination: NA Substitute: NA Engineering: material handling trolley need to be provided Administrative: Material handling training, provide sufficient manpower, ensure man will not lift the load above 18 kgs, supervision, work permit, taking brake for every beach of 10 min. PPE:- Safety Shoes, hand glove, safety helmet, goggle, etc.
10	Loading / unloading material by manually from vehicle. Contact group of people	Routine	Person may come in contact group of people leads transmits of COVID-19	Health hazards	-	A	-	1	4	2	8	Medium	NO	Elimination: NA Substitute: NA Engineering: NA Administrative: Maintain the social distancing, Training: - TBT, COVID-19, Dos and Don'ts Training, Thermal scanning of all employees and sanitize their hands, common touch points & tools tackles, equipment's, machineries etc. PPE: - Usage of Mask is must & face shield, hand gloves etc.
11	Stacking of FPS piping Material at designated locations by manually	Routine	Finger/hand caught in between material while stacking	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering: Proper wooden block should be use for material stacking. Administrative: TBT, Material handling safety training will be conduct. PPE:- Safety Shoes,cut resistance handgloves,safety helmet,goggle etc.
12	Stacking of FPS piping Material at designated locations by manually	Routine	Roll over of pipe,Improper stacking may leads to Bodily injury & Property damage	Bodily Injury/ Property Damage	N	-	-	1	2	4	8	Medium	No	Elimination: N/A Substitute: N/A Engineering: Stoppers shall be kepts to stop roll over hazard Administrative: 1) Pipes should be stacked in satandard way. 2) Pipes should not be kept on ground directly. 3) Wooder gattu or ms beds shall be provided to keep pipes . 3) Only experienced Rigger shall perfoeme the task. PPE: Safety Shoes, Hand Gloves, safety helmet, etc.

13	Shifting of tools tackles & required material to working area by manually		Ergonomic hazard while shifting of material lead to bodily injury (foot / leg, hand etc.)	Bodily Injury/ Property Damage	N	-	-	1	2	4	8	Medium	No	Elimination: NA Substitute: NA Engineering: material handling trolley need to be provided Administrative: Material handling training, provide sufficient manpower, ensure man will not lift the load above 18 kgs, supervision, work permit, taking brake for every beach of 10 min. PPE:- Safety Shoes, Cut resistance hand glove, safety helmet, goggle, face shield, etc.
14	Temporary connection of electrical tools equipment's and illumination lamps lights at working area	Non-Routine	Electrical Shock during Connection of lights & equipment's may lead to major incident ht	Bodily Injury/ Property Damage	-	-	E	2	2	4	16	Medium	No	Elimination:NA Substitute:NA Engineering: LOTO beore the electrical operation start. Administrative: Work Permit,TBT, LOTO training must be conduct before the work start. TBT,Deployed only authorized electrician for the activity, supervision. PPE:- Safety Helmet, Jacket,Safety Shoes, face shield, hand gloves, nose mask, etc.
15	Erection Dismantling of mobile scaffolding for hydrant piping installation work	Non-Routine	Fall of material from height / may lead to bodily injury	Property Damage	N	-	-	1	1	3	3	low	No	Elimination:- NA Substitute:- NA Engineering:- NA Administrative:- Working area to be proper barricading , JOB specific safety training to be done, continuous supervision, proper housekeeping, sufficient illumination PPE:- Safety helmet, Safety shoe, goggles, hand gloves.
16	Erection Dismantling of mobile scaffolding for hydrant piping installation work	Non-Routine	Fall of person from height / may lead to major bodily injury	Bodily Injury	-	A	-	2	1	3	6	low	No	Elimination:- NA Substitute:- NA Engineering:- NA Administrative:- TBT, Work permit, Working at height safety training to be done,deployed only trained person. sufficient illumination PPE:- Full body safety harness, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.
17	Erection Dismantling of mobile scaffolding for hydrant piping installation work	Non-Routine	Collapse of scaffolding due to improper erection	Property Damage	-	A	-	1	1	2	2	low	No	Elimination:- NA Substitute:- NA Engineering:- Provide proper site supports and bracing & locking of cup lock. Administrative:- TBT, Work permit, job specific safety training to be done,deployed only trained scaffolders. sufficient illumination, PPE:- Working area should be proper barricading, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.
18	Erection Dismantling of mobile scaffolding for hydrant piping installation work	Non-Routine	Missing of sequence leading to collapse of scaffolding	Property Damage	-	A	-	1	1	2	2	low	No	Elimination:- NA Substitute:- NA Engineering:- Follow the sequence of operation. Administrative:- TBT, Work permit, job specific safety training to be done,deployed only trained scaffolders. sufficient illumination, PPE:- Working area should be proper barricading, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.
19	Installation & fixing of supporting structure,'C' Chanel type Supports, tie rod etc.	Non-Routine	Installation of C Channel pipe supports by manually lead to hand injury due to contact with sharp object & Finger/hand caught in between material.	Bodily Injury	N	-	-	3	2	1	6	low	No	Elimination:NA Substitute:NA Engineering: All tools tackles to be inspected & good working condition. Administrative: TBT, Job specific safety training, supervision ,work permit, use only inspected tools tackles only. PPE:- Safety Shoes,Cut reistance hand glove cut level 03, helmet, goggle etc.
20	Installation & fixing of supporting structure,'C' Chanel type Supports, tie rod etc.	Non-Routine	Material hand tools falling hazards during the installation work may lead to personal injury or property damage	Bodily Injury / Property Damage	N	-	-	3	2	1	6	low	No	Elimination:- NA Substitute:- NA Engineering:- NA Administrative:- Working area to be proper barricading , JOB specific safety training to be done, continuous supervision, proper housekeeping, sufficient illumination PPE:- Safety helmet, Safety shoe, goggles, hand gloves .
21	Installation & fixing of supporting structure,'C' Chanel type Supports, tie rod etc.	Non-Routine	Fall of person from height / may lead to bodily injury	Bodily Injury	-	A	-	2	1	3	6	low	No	Elimination:- NA Substitute:- NA Engineering:- NA Administrative:- TBT, Work permit, Working at height safety training to be done,deployed only trained person. sufficient illumination, proper working platform scaffolding. PPE:- Full body safety harness, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.

22	Installation of hydrant header piping by manually or chain pulley block	Non-Routine	Using of defective lifting appliance's chain pulley block, slings, bow shackles leading to breakage causes major property damages or person bodily injury	property damage	N	-	-	3	2	3	18	Medium	No	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: -Lifting work permit, TBT, Job Specific safety training, site audit. 1.Inspection of lifting appliances before its usage as per the safety checklist. 2.Ensure all lifting equipment's have valid third party inspection (Form No.11) certificates. 3.Daily safety inspection of lifting appliances should be done by safety officer and site engineer & ensure inspection color coding as per SUFS / SPCL safety standard PPE: - Safety helmet, Safety shoe, goggles, hand gloves, nose mask, Covid-19 face shield, apron etc.</p>
23	Installation of hydrant header piping by manually or chain pulley block	Non-Routine	Fall of material / pipes due to overload or breakage of slings leading major property damages or major injury to involved person	Bodily Injury / Property Damage	N	-	-	3	2	1	6	low	No	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: -Lifting work permit, TBT, Job Specific safety training, site audit. 1.Ensure correct capacity of chain block is selected as per approved lifting plan. 2.Do not lift loads with unknown weight. 3.Inspection of lifting appliances before its usage as per the safety checklist. 4.Ensure all lifting equipment's have valid third party inspection (Form No.11) certificates. 5.Daily safety inspection of lifting appliances should be done by safety officer and site engineer & ensure inspection color coding as per SUFS / SPCL safety standard. 6.Person never to be allowed under suspended load or within swinging area. 7.Working area shall be proper barricading with display safety signs. PPE: - Safety helmet, Safety shoe, goggles, hand gloves, nose mask, Covid-19 face shield, apron etc.</p>
24	Installation of hydrant header piping by manually or chain pulley block	Non-Routine	Failure of anchorage point may cause major incident or personal injury	property damage	N	-	-	3	2	3	18	Medium	No	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: -Lifting work permit, TBT, Job Specific safety training, site audit. 1. Ensure proper fixing of anchorage arraignment. 2. Ensure encoring plate & 'C' Chanel must be as per load calculation 4. Never over load than the capacity of anchoring point. 5. Check the chain block hook & rope properly. 6. Barricade the working area with safety sign. 7. Authorized engineer will inspect the anchorage point before starting the activity. PPE: - Safety helmet, Safety shoe, goggles, hand gloves , nose mask, Covid-19 face shield, apron etc.</p>
25	Installation of hydrant header piping by manually or chain pulley block	Non-Routine	Swinging of suspended load May cause bodily injury and damage to property	Bodily Injury / Property Damage	N	-	-	3	2	1	6	low	No	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: -Lifting work permit, TBT, Job Specific safety training, site audit. 1. Personnel never to be allowed under suspended load or within swinging radius 2. Cordon off area restrict area to and limit number of authorized persons 3. Appropriate size / length tag line will be providing for control unbalancing & swinging the load 4.Working area will be barricaded properly & display safety sign. 5.Person never to be allowed under suspended load or within swinging area. 6.Arraignment of clit welded stopper for both end of pipe to avoid slippage of rigging point PPE: - Safety helmet, Safety shoe, goggles, hand gloves, nose mask, Covid-19 face shield, apron etc.</p>
26	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Burn injury or cut injury due to the flying metal particles during grinding.	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	<p>Elimination: NA Substitute: NA Engineering: NA Administrative: Work permit, TBT, Job specific safety training, Supervision. Welding, grinding apron should be used, leather hand gloves will be providing, PPE:- Safety Shoes, cut resistance, hand glove cut level 03, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.</p>

27	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Breakage of grinding wheel while working can lead to serious injuries due to wheels particles hitting the hand, eyes, legs, as projectiles.	Bodily Injury	-	A	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering: Machine guard shall be provided and alignment shall be properly done. Administrative: Work permit,TBT,Job specific safety training, Supervision, grinding face shield to be used. PPE:- Face sheild, Safety Shoes,Cut resistamce hand glove cut level 05, helmet, welding aprpon, nose mask etc.
28	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Fire due to hot metal partical comes on combustibile materials	Personal Injury, property damage	-	-	E	2	1	4	8	Medium	NO	Elimination: NA Substitute: NA Engineering: NA Administrative: Work Permit, TBT, job specific safety training. 1.Proper housekeeping should be done (cleaning of all oily contains) 2.Cleaning of flammable & combustibile material & containment trays. 3.Proper GI sheets should be use for welding work covered. 4.Fire watcher should be available during the welding work activity 5.Working area will be closed by fire blankets & sheets. PPE: - Safety Shoes, cut resistance, hand glove, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.
29	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Hand injury due to tools slippage or improper tools	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering:NA Administrative: HSE training ,Hand tool inspection before its use,100% Super vision PPE:- Face sheild, Safety Shoes,hand gloves, helmet, welding aprpon, nose mask etc.
30	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Respiratory hazards, eye irritation	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering:NA Administrative: Job specific safety training need to be conduct. PPE:- Nose Mask, (Welding) Face shield, Safety Shoes, , helmet, welding apron, nose mask etc.
31	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Fall of person from height / may lead to bodily injury	Bodily Injury	-	A	-	2	1	3	6	low	No	Elimination:- NA Substitute:- NA Engineering:- Proper scaffolding platform to be provide Administrative:- TBT, Work permit, Working at height safety training to be done,deployed only trained person. sufficient illumination PPE:- Full body safety harness, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.
32	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Use of defective hand tools(hammers and spanners) may cause of bodily injury	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination:NA Substitute:NA Engineering:NA Administrative: Only inspected tools & equipments to be use, Work permit,TBT,Job specific safety training, Supervision. PPE:- Face sheild, Safety Shoes, hand glove, helmet, welding aprpon, nose mask
33	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Fall of person from height / may lead to bodily injury	Bodily Injury	-	A	-	2	1	3	6	low	No	Elimination:- NA Substitute:- NA Engineering:- Proper scaffolding platform to be provide Administrative:- TBT, Work permit, Working at height safety training to be done,deployed only trained person. PPE:- Full body safety harness, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle etc.
34	Fabrication & Installation of Hydrant Piping Work Welding / Grinding / Cutting Operation	Routine	Working in low illumination may lead to bodily injury or property damages	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	Elimination: - NA Substitute: - NA Engineering: - N/A Administrative: - TBT, Work permit, Job Specific safety Training, 1. Provided proper illumination in working area PPE: - Ear muff, Safety helmet, Safety shoe, goggles, hand gloves, helmet, goggle, face shield, etc.

35	Installation & fixing of hydrant piping accessories, hydrant valves, pressure switch, transmitter switches, pressure gauges etc	Non Routine	Use of defective hand tools(hammers and spanners) may cause of bodily injury	Bodily Injury	N	-	-	2	2	2	8	Medium	NO	<p>Elimination:NA Substitute:NA Engineering: All tools tackles to be inspected & good working condition. Administrative:TBT, Job specific safety training, supervision ,work permit, use only inspected tools tackles only. PPE:- Safety Shoes, hand glove, helmet, goggle etc.</p>
36	Installation & fixing of hydrant piping accessories, hydrant valves, pressure switch, transmitter switches, pressure gauges etc	Non Routine	Fall of piping accessories, valve, pressure switches, gauges etc. from height leading to major bodily injury or property damages.	Bodily Injury	-	A	-	2	1	3	6	low	No	<p>Elimination:- NA Substitute:- NA Engineering:- Material supports, ms plate should be proper tied with rope & fixed with struture to avoid the fall. Administrative:- Working area to be proper barricading , JOB specific safety training to be done, continuous supervision, proper housekeeping, sufficient illumination PPE:- Safety helmet, Safety shoe, goggles, hand gloves.</p>
37	Installation & fixing of hydrant piping accessories, hydrant valves, pressure switch, transmitter switches, pressure gauges etc	Non Routine	Emergency situation – working team not aware about emergency situation or exit escape routs may create panic condition.	Bodily Injury	-	-	E	1	1	3	3	low	No	<p>Elimination:NA Substitute:NA Engineering:NA Administrative:.1. Safety trained will be conduced with all team on emergency situations & SUFS ERT & procedure. 2. All involved team should be aware about emergency exit escape routs and procedures. 3. SP Infocity emergency procedure should be communicated in safety induction & training. PPE:- Safety Shoes, helmet, goggle, hand gloves,appron, etc.</p>
38	Wrapping & Coating of Underground hydrant Pipes	Non Routine	Burn injury/Property damage	Back injury , Bodily injury.	N	-	-	2	2	1	4	low	NO	<p>Elimination: N/A Substitute: N/A Engineering: 1)A hand trolley should be used to transport LPG cyclinder from one place ro another. Administrative: 1)A training shall be conducted regarding LPG Cyclinder safety Precaution. 2)Well trained and experienced worker shall perfoeme the task. 3)Strict supervision shall be provided. 4)SOP shall be followed. 5)Work area must be barricaded before start of work activity. PPE: Safety Shoes, Hand Gloves ,welding aprpone,Face sheild,gogles,etc.</p>
39	Wrapping & Coating of Underground hydrant Pipes	Non Routine	Fire due to hot metal partical comes on combustibile materials	Personal Injury, property damage	-	-	E	2	1	4	8	Medium	NO	<p>Elimination: NA Substitute: NA Engineering: NA Administrative: Work Permit, TBT, job specific safety training. 1.Proper housekeeping should be done (cleaning of all oily contains) 2.Cleaning of flammable & combustibile material & containment trays. 3.Ensure proper Flash back arrestor shall be provide for heating torch & regulator in ISI standard. 4.Fire extinguisher shall be available near to wrapping coating activity. 5.Working area will be closed by fire blankets & sheets. PPE: - Safety Shoes, cut resistance, hand glove, helmet, goggle, Covid-19 face shield, goggle, nose mask, etc.</p>
40	Hydraulic/ Pnematic Testing of hydrant piping.	Non Routine	Failure of pipe line under test due to high pressure.	Back injury , Bodily injury.	-	A	-	2	2	1	4	low	NO	<p>Elimination: N/A Substitute: N/A Engineering:N/A Administrative: 1.Inspect and ensure proper connection of hose, accessories prior to pressurizing. 2.Provide only calibrated pressure gauge to the system to ensure that the pipeline under test is not over pressurized. 3.Tighten studs /bolts/plugs once the pressure in reduced. 4.No attempt to be made to tighten or loosen the bolts while line in under pressure. 5.Ensure that the line to be tested in isolated positively. 6. Brief workmen about the testing pressure. 7.Provide disposal area for drained water. 8.Effective supervision & tool box talk before starting of the activity. 10.Follow approved procedure for hydro testing. 11. Two nos. pressure gauges will be provide (Upper & lower Portion)</p>

41	Hydraulic/Pneumatic Testing of Pipes	Routine	Hose pipe Slip due to high pressure causes bodily injury		-	A	-	3	1	2	6	low	NO	<p>Elimination: N/A Substitute: N/A Engineering: N/A Administrative: 1. Proper housekeeping will be done before starting of the activity. 2. Ensure pressure hose should be tied with hose clamps /or treading nipples. 3. Making extra connecting clamp arrangement to pipe line header & pump hose pipe for avoid slippage 3. Brief workmen about the testing pressure. 4. Effective supervision & tool box talk before starting of the activity 5. Appropriate PPE's will be provide (helmet,jacket,hand gloves,safety shoes and goggle) 6. Restricted unauthorized person around working area 7. Working area will be proper barricade & safety signage's to be display. PPE: Safety Shoes, Hand Gloves ,welding aprrone,Face sheild,goggles,etc.</p>
42	Hydraulic/Pneumatic Testing of Pipes	Routine	Exceeding Maximum Allowable Pressure causes failure of compressor / bursting		-	A	-	3	1	2	6	low	NO	<p>Elimination: N/A Substitute: N/A Engineering: N/A Administrative: 1 Ensure the pressure relieving device is set at maximum allowable pressure for weakest portion of the segment to be pressure-tested. 2. Monitor the pressure gauge from a safe distance away from the potential source of high pressure jetting (Such as Flange Joint, Spade, and Coupling etc.) 3. Provide only calibrated pressure gauge to the system to ensure that the pipeline under test is not over pressurized. 4. Ensure the workers are wearing required PPE 5. Effective supervision & tool box talk before starting of the activity PPE: Safety Shoes, Hand Gloves ,welding aprrone,Face sheild,goggles,etc.</p>
43	Back filling -Work After Completion of Internal hydrant Systems installation work.	Non Routine	Untrained operator/Drivers may cause incident which may lead to property damage or injury of persons	Bodily Injury /Property damage	-	-	E	1	2	3	6	low	NO	<p>Elimination: - NA Substitute: - NA Engineering: - N/A Administrative: - 1) Vehicle / driving awareness trainings shall be conducted. 2. Ensure driver shall have Valid RTO issued driving license. 3. Ensure vehicle documents – valid insurance / RC / PUC etc. 4) Ensure driver should be well experienced. 5) Signal man shall be provided. PPE: - Safety Shoes, Hand Gloves, safety helmet, etc.</p>
44	Painting of Hydrants Pipes above the ground	Routine	Handling of paints - Inhalation of paints leads to health hazard.	skin irritation/ eye itching/ Skin burn/Inhalation problem	N	-	-	1	1	3	3	low	NO	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: - Work Permit, TBT, Training. 1. Ensure painting nose mask should be worn by worker before work start. 2. Training has to be given as per MSDS, regarding the Exposure time limit. 3. Hazards and consequences will be discussed in tool box talk for more awareness 4. Proper face shield and goggle should be providing. PPE: - Safety Shoes, Rubber Hand gloves, helmet, goggle, goggle, nose mask, etc.</p>
45	Painting of Hydrants Pipes above the ground	Routine	Fire explosion due to paint contact with ignition material leading to major injury to involved person or property damages.	Fire / Property damages	-	-	E	2	1	4	8	Medium	NO	<p>Elimination: - NA Substitute: - NA Engineering: - NA Administrative: - Work Permit, TBT, Training. 1. Paint will be stored away from the igniting / flammable material (Paint storage maximum 40Kg). 2. Separate storage for paint will be provided. 3. MSDS will be displayed Infront of the paint storage yard. 4. ABC type fire extinguisher and Fire bucket will be placed separately for paint storage yard. 5. signages to be displayed 6. Proper Ventilation to paint storage area PPE: - Safety Shoes, Rubber Hand gloves, helmet, goggle, goggle, nose mask, etc.</p>

46	Housekeeping after completion of activity	Routine	Cut injury/Slip hazard/Trip Hazard	Personal Injury, property damage	N	-	-	2	2	2	8	Medium	NO	<p>Elimination: - NA Substitute: - NA Engineering: - N/A Administrative: - 1)Housekeeping shall be done on daily basis. 2)Proper illumination shall be provide in the eveining. 3)Scrap should be collected at one place. PPE's: Mandatory PPE's should be providing (Safety helmet, jacket, safety shoes, etc.)</p>
<p>(a) Overriding Criteria- N- Normal, A-Abnormal, E- Emergency Concern (b) Likelihood of Occurrence: 1=Rarely; 2=Once in a month; 3=Once in a week; 4= Daily; 5=Continuous (c) Detectibility: 1=Immediate; 2=Detectable by humans; 3=Requires Instruments; 4=Takes more than a day; 5=Takes long time (d) Severity: 1=Negligible impact; 2=Incidental (Minor, no lost time); 3=Minor (Single injury); 4=Serious (One or more serious injury / disabling injury) 5=Major (Fatality or permanent disability)</p>											<p>Evaluation Criteria: I) a) Total Risk Factor (TRF) = (a) x (b) x (c) i. If TRF is more than 27 - Risk Level is High ii. If TRF is between 8 - 27 - Risk Level is Medium iii. If TRF is less than 8 - Risk Level is Low b) Hazards with Risk Level "High" or legal / emergency concerns are considered Significant. c) "Significant hazards" as arrived from the risk assessment or hazards that are considered significant by professional judgement require Occupational health Management Program (OMP) d) Other hazards require Work Instructions (WI) II) Non-Acceptable risks require control measures (even if TRF <27)</p>			
<p>Prepared By: SUFSIPL- Safety Dept.</p>			<p>Reviewed By: SUFSIPL- HSE Lead / Project Manager</p>			<p>Reviewed / Approved By: SPCL - Project Manager</p>			<p>Approved By: SPCL – Safety Manager</p>					