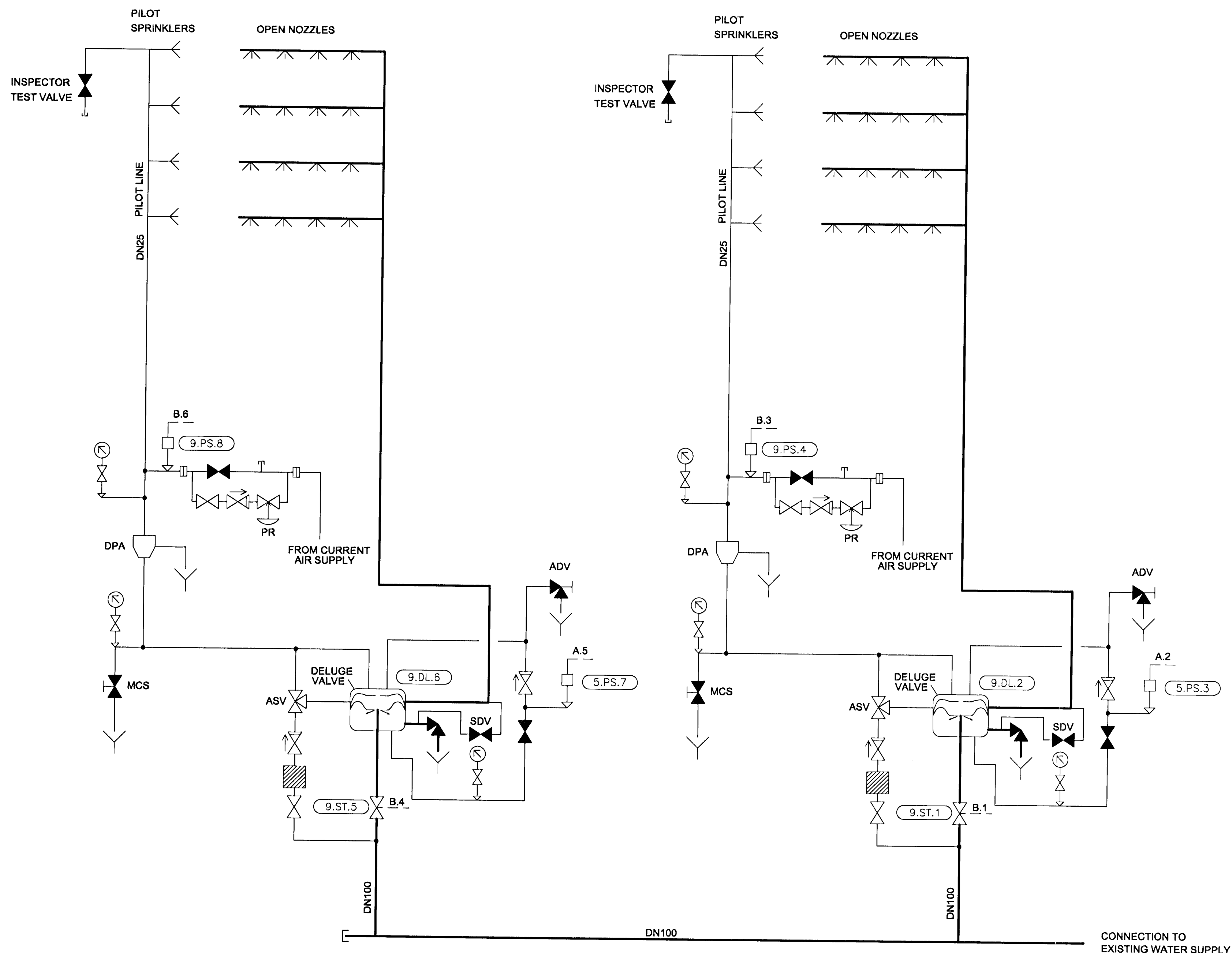


Nick Indriðason
N:1

TRANSFORMER 2

TRANSFORMER 1



Equipment and Testing

All equipment that contractor provides shall be accepted by the Icelandic fire authorities (Brunamálastofnun) and listed by UL or FM. Contractor shall be licenced by the Icelandic fire authorities (Brunamálastofnun).

Pipes shall be acc. to DIN 2440, made of black steel, material acc. to IST-EN 10025 or similar material that is approved by NFPA 13 and accepted by designer.

Pipe joints shall be acc. to IST-EN 10242, made of cast iron, material acc. to DIN 1692 or similar material that is approved by NFPA 13 and accepted by designer.

Valves shall be grooved end butterfly valves listed for use in sprinkler systems by UL or FM. The valve shall have a visual indication as to whether the valve is open or closed, and SPDT contacts that connect to fire alarm system.

Deluge valves shall be listed and equipped with a trim suitable for pneumatic action.

Sprinkler heads shall be listed for use in the appropriate hazard classes as shown on designer drawings. For installation of sprinklers and nozzles special tools must be used as detailed in installation manuals.

All parts of piping that can not be drained through the main drain valve shall be equipped with auxiliary drain valves in acc. with section 8.15.2.5 of NFPA13. Pipes in pilot line shall have a minimum slope of 2 mm/m.

All pipe hangers shall be listed for use in sprinkler systems. Maximum distance between hangers shall be 3,6 m for DN25 and DN32 pipes and 4,5 m for other pipes. Couplings for pipes DN65 and larger shall be rigid, except for following cases:

- 1.) Within 600 mm of the top and bottom of all risers unless the following provisions are met:
 - a) In risers less than 900 mm in length, flexible couplings can be omitted.
 - b) In risers 0,9 m to 2,1 m in length, one flexible coupling is adequate.
- 2.) Within 0,3 m above and 0,6 m below any floor in a multistory building.
- 3.) On both sides of concrete or masonry walls within 0,3 of the wall surface, unless the following conditions are met:
 - Diameter of holes through walls shall be 50 mm larger than the pipe for sizes DN25 through DN90, and 100 mm larger for pipes DN 100 and bigger.

Earthquake braces shall be accepted by the Icelandic fire authorities and listed by UL or FM.

Pipes shall be pressure tested with 15 bars, or with pressure of 3,5 bars in excess of maximum working pressure, whichever is greater. The pressure shall be steady for 2 hours without loss or leakage from joints. Pilot line shall be additionally tested with 2,8 bar air pressure for 24 hours. Any leakage that results in a loss of pressure in excess of 0,1 bar for the 24 hours shall be corrected.

Pressure testing shall be done with sprinklers installed in the system. Equipment marked with system numbers shall be marked with permanent markings and letters shall be at least 10mm high. These markings shall be permanently attached to the appropriate equipment in a manner accepted by designer. Contractor shall install markings in acc. with checklist F from the Icelandic Fire Authorities (Brunamálastofnun).

MEANING OF SYMBOLS:

	INDICATING STYLE BUTTERFLY VALVE		PRESSURE REGULATOR
	DRY PILOT ACTUATOR		PRESSURE SWITCH
	VALVE NORMALLY OPEN		PRESSURE GAUGE WITH VALVE
	MANUAL CONTROL STATION		STRAINER
	CHECK VALVE		SYSTEM DRAIN VALVE
	AUTOMATIC SHUTOFF VALVE		UNION
	CONNECTION TO DRAIN		
	AUTOMATIC DRAIN VALVE		

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EQUIPMENT LIST

9.ST.01	Indicating stop valve DN 100
9.DV.02	Deluge valve DN 100
9.PS.03	Pressure switch, with two SPDT contacts
9.PS.04	Pressure switch adjustable
9.ST.05	Indicating stop valve DN 100
9.FM.06	Deluge valve DN 100
9.ST.07	Pressure switch, with two SPDT contacts
9.ST.08	Pressure switch adjustable

WARNING MESSAGES

NO.	Text on fire alarm panel
B.1	Valve for transformer 1 closed
A.2	Water flows toward transformer 1
B.3	Low air pressure at transformer 1
B.4	Valve for transformer 2 closed
A.5	Water flows toward transformer 2
B.6	Low air pressure at transformer 2
A = Fire alarm	
B = Warning message	

Skýringar: The system is designed in accordance to NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection.
Legend: Design density in 10 mm/min/m² in acc to NFPA 15 section 7.4.4.3.
The system is fully hydraulically calculated, calculations are done with FHC hydraulic calculations program.
Water demand is 1340l/min at 2,75 bars at connection.
The system is connected to a central alarm station.

Slg nr / Rev no	Lýsing / Description	Dagsetning / Date	Han / Thn / Des / Drw	Yfir / Ckd	Notk heim / Suppl / Rel	Notk heim / ISAL / Rel
4	DEFINITION FOR 9.PS.03 AND 9.PS.07 UPDATED	2011.12.21	Slp	ÓS		
3	ISSUED FOR CONSTRUCTION	2011.06.10	Slp	ÓS		
2	ISSUED FOR TENDER	2011.02.28	Slp	ÓS		
1	ISSUED FOR BLUE DESK REVIEW	2011.01.28	Slp	ÓS		

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Scale: A1
Format: A1
Scale: %
Dimensions without tolerances according to ISO 2768-1 medium.



Dagsetning / Date	2011.01.28
Hannað / Designed	Teikn / Drawn
Slp	Slp
Varktöki / Supplier	HRV
Teikn nr / Verktöki / Supplier drw. no.	IDP-411-K2-092-006
Sambýkkt / Approved	Yfir / Chkd
ÓS	ÓS
Hluti af / Part of:	

IPU 410 - SUBSTATION SPRINKLER SYSTEM P & I DIAGRAM		Flokkur nr.:	Bláð nr.:	Næsta bl. nr.:
TRANSFORMER BAYS		Kostn. nr. - Ccno. / Búnr. - Eqno		
Rio Tinto Alcan		AKS		
ISAL Iceland Ltd Sýslumálaráðgjafi 18-222 Hafnarfordur Ísland		Teikn. nr. ISAL / Drw. no. of ISAL		
		4		
		ISAL Yfirráð og sköð, dags / ISAL Checked, date		
		ISAL Sambýkkt, dags / ISAL Approval, date		