

Project Name SK LH2 REFUELING STATION II-I					
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Equipment Load Data For H2 Station

Date	2026.01.19
Rev	00
Made by	SH Kim

NOTES
1. Power Distribution Panel #0, #1 are applicable for Train Type 1 and Type 2.
2. Power Distribution Panel #2 is applicable for Train Type 2 only.
3. Items of tag number with suffix of "A" in PDP tables are applicable for PDP #0/PDP #1 and those with suffix of "B" for PDP #2.

POWER DISTRIBUTION PANEL #1 / #2

TAG	DESCRIPTION	Load Type	Operating Type (Continuous, Stand-by, Intermittent)	Voltage (V)	Phase (ph)	Frequency (Hz)	Rated Power		Non-overload brake power	Load Factor (%)	Power Factor (%)			Efficiency (%)			Consumed Power			Data Status	Remark
							Power (kW)	Ampere (A)			50%	75%	100%	50%	75%	100%	Active (kW)	Reactive (kVar)	Apparent (kVA)		
HTR-410A/B	PRE HEATER 1	HTR	Continuous	380V	3	60	42	60.0	42	100	100	100	100	100	100	100	42.0	0.0	42.0		
HTR-440A/B	PRE HEATER 2	HTR	Continuous	380V	3	60	42	60.0	42	100	100	100	100	100	100	100	42.0	0.0	42.0		
HTR-450A/B	POST HEATER	HTR	Continuous	380V	3	60	24	45.0	24	100	100	100	100	100	100	100	24.0	0.0	24.0		
HTR-503A/B	HC-50 IMMERSION HEATER	HTR	Intermittent	380V	3	60	65	98.0	65	100	100	100	100	100	100	100	65.0	0.0	65.0		
P-200A/B	LH2 BOOSTER PUMP	MTR	Continuous	380V	3	60	64	13	1.1	17	85	85	85	75	75	75	1.5	0.9	1.7		
P-300A/B	LH2 HIGH PRESSURE PUMP	MTR	Continuous	380V	3	60	75	149.2	55	73	68	78	83	89	91	92	59.8	40.2	72.0		
P-500A/B	CC COOLANT PUMP	MTR	Continuous	380V	3	60	45	85.4	38	84	69.5	79.5	84.5	88.7	90.7	91.7	41.4	26.2	49.0		
P-510A/B	DISPENSER COOLANT PUMP	MTR	Continuous	380V	3	60	5.5	10.9	1.2	22	71	81	86	86.5	88.5	89.5	1.3	0.8	1.6		
-	AUX POWER	FDR	Continuous	220V	1	60	3	12	3	100	75	75	75	75	75	75	4.0	3.5	5.3		
Total Apparent																	281.0	71.6	290.0		

POWER DISRIBUTION PANEL #0

TAG	DESCRIPTION	Load Type	Operating Type (Continuous, Stand-by, Intermittent)	Voltage (V)	Phase (ph)	Frequency (Hz)	Rated Power		Non-overload brake power	Load Factor (%)	Power Factor (%)			Efficiency (%)			Consumed Power			Data Status	Remark
							Power (kW)	Ampere (A)			50%	75%	100%	50%	75%	100%	Active (kW)	Reactive (kVar)	Apparent (kVA)		
C-900A	NITROGEN GENERATOR	FDR	Continuous	380V	3	60	12.5	26.3	12.5	100	85	85	85	85	85	85	14.7	9.1	17.3		
UPS-101	UPS	FDR	Continuous	380V	3	60	9.0	15.8	9.0	100	96	96	96	90	90	90	9.4	2.7	9.8		
CH-560	CHILLER	FDR	Intermittent	380V	3	60	69	137.0	69	100	90	90	90	85	85	85	81.2	39.3	90.2		
Total Apparent																	105.3	51.2	117.0		

UPS

TAG	DESCRIPTION	Load Type	Operating Type (Continuous, Stand-by, Intermittent)	Voltage (V)	Phase (ph)	Frequency (Hz)	Rated Power		Non-overload brake power	Load Factor (%)	Power Factor (%)			Efficiency (%)			Consumed Power			Data Status	Remark
							Power (kW)	Ampere (A)			50%	75%	100%	50%	75%	100%	Active (kW)	Reactive (kVar)	Apparent (kVA)		
MCP-101	MAIN CONTROL PANEL	FDR	Continuous	220V	1	60	3.5	15.6	3.5	100	90	90	90	90	90	90	3.9	1.9	4.3		
	SPARE	FDR	Continuous	220V	1	60	-	-	-	-	-	-	-	-	-	-	-	-	-		
ER1	WORKSTATION CONSOLE	FDR	Continuous	220V	1	60	0.5	2.8	0.5	100	90	90	90	90	90	90	0.6	0.3	0.6		
EL1	비상전동(사무,전기실등)	FDR	Continuous	220V	1	60	0.3	1.7	0.3	100	90	90	90	90	90	90	0.3	0.2	0.4		
EL2	방폭조명(설비등)	FDR	Continuous	220V	1	60	0.7	3.9	0.7	100	90	90	90	90	90	90	0.8	0.4	0.9		
EL3	방폭조명(설비등)	FDR	Continuous	220V	1	60	0.6	3.4	0.6	100	90	90	90	90	90	90	0.7	0.3	0.7		
EL4	방폭조명(충전등)	FDR	Continuous	220V	1	60	0.8	4.5	0.8	100	90	90	90	90	90	90	0.9	0.4	1.0		
EL5	방폭조명(충전등)	FDR	Continuous	220V	1	60	0.8	4.5	0.8	100	90	90	90	90	90	90	0.9	0.4	1.0		
EL6	방송설비(CCTV)	FDR	Continuous	220V	1	60	0.9	5.1	1	100	90	90	90	90	90	90	1.0	0.5	1.1		
EL7	SPARE	FDR	Continuous	220V	1	60	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total Apparent																	9.0	4.4	10.0		

	Load Summary For H2 Station	Date	2026.01.19
		Rev	00
		Made by	SH Kim

Notes:

1 General

This document presents the load summary for SK E&S LH2 REFUELING STATION

2 References:

Document No.	Rev No.	Document Name
(i) 24SK21-00-EL-02	00	Single Line Diagram

3 Abbreviations

MTR	Motor	FDR	Feeder	HTR	Heater
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4 Terms and Definitions

4.1 Load factor is the ratio of absorbed load to motor/load rating.

4.2 Rated efficiency & power factor are the ratio of the absorbed load to consumed load

4.3 Utility load factors &

-Continuous load 1 Items that are required to operate without interruption whenever the plant is running

-Intermittent load 0,5 Items that are not in continuous operation and are switched on and off automatically/manually in response to process requirements.

4.4 Condition for Load Summary

-Operating load	=	$x(\%)F + y(\%)G$
Where,	F	= sum of all continuous operation loads
	G	= sum of all intermittent loads
	x(%)	= 100
	y(%)	= 50

5 Operating load

5.1 HC-50 IMMERSION HEATER and CHILLER are not operated at the same time. These item will be considered as Intermittent load

5.2 Result of Calculation

	KW	KVAr	KVA
F =	456.1	155.1	481.8
G =	211.2	39.3	214.8
$x(\%)F + y(\%)G =$	561.7	174.8	588.3



Cable calculatin For H2 Station

Date	2026.01.19
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2021 한국 전기설비규정 핸드북 기준
(매설깊이 보정계수는 KS IEC 60502-2 기준)

Type 1 (ELP Duct, XLPE Insulated)			
Descrtiption	Condition	Factor	Remark
복수회로 저감계수	6(0.25m)	0.8	P 979, 표 A230-1-3 (Horizontal)
	2(0.25m)	0.9	P 979, 표 A230-1-3 (Vertical)
지중온도 보정계수	30°C	0.93	P956, 표 230-1-0
열저항 보정계수	3 K.m/W	0.96	P956, 표 230-1-3
매설 깊이 보정 계수	1.75m	0.94	KS IEC 60502-2, 표 B. 13
총 감소 계수		0.60	

Type 3 (ELP Duct, XLPE Insulated)			
Descrtiption	Condition	Factor	Remark
복수회로 저감계수	2(0.5m)	0.95	P979, 표 A230-1-3 (Horizontal)
지중온도 보정계수	30°C	0.93	P956, 표 230-1-0
열저항 보정계수	3 K.m/W	0.96	P956, 표 230-1-3
매설 깊이 보정 계수	1.75m	0.94	KS IEC 60502-2, 표 B. 13
총 감소 계수		0.80	

Type 2 (ELP Duct, XLPE Insulated)			
Descrtiption	Condition	Factor	Remark
복수회로 저감계수	5(0.25m)	0.80	P 979, 표 A230-1-3 (Horizontal)
	2(0.25m)	0.90	P 979, 표 A230-1-3 (Vertical)
지중온도 보정계수	30°C	0.93	P956, 표 230-1-0
열저항 보정계수	3 K.m/W	0.96	P956, 표 230-1-3
매설 깊이 보정 계수	1.75m	0.94	KS IEC 60502-2, 표 B. 13
총 감소 계수		0.60	

Type 4 (Tray, XLPE Insulated)			
Descrtiption	Condition	Factor	Remark
복수회로 저감계수 (케이블 레더 단일)	4	0.8	P979, 표 A230-1-3
기중온도 보정계수	40°C	0.91	P956, 표 230-1-0
총 감소 계수		0.73	

POWER DISTRIBUTION PANEL #1 / #2																
TAG	DESCRIPTION	Rated Power		Circuit Breaker		Cable									Result	Remark
		Power (kW)	Ampare (A)	Pole	Current (AT)	Voltage	Type	Phase	Core	Parallel Lines	Size (sqmm)	Base Ampacity (A)	Derated Factor	Derated Ampacity		
	MAIN POWER		630	3	630	0.6/1kV	F-CV	3	3 X1C	4	150	1080	0.6	648.0	OK	Type 2
HTR-410A/B	PRE HEATER 1	42	60.0	3	75	0.6/1kV	F-CV	3	3 X1C	1	50	144	0.6	86.4	OK	Type 1
HTR-440A/B	PRE HEATER 2	42	60.0	3	75	0.6/1kV	F-CV	3	3 X1C	1	50	144	0.6	86.4	OK	Type 1
HTR-450A/B	POST HEATER	24	45.0	3	50	0.6/1kV	F-CV	3	4	1	25	96	0.6	57.6	OK	Type 1
HTR-503A/B	HC-50 IMMERSION HEATER	65	98.0	3	130	0.6/1kV	F-CV	3	3 X1C	1	120	240	0.6	144.0	OK	Type 1
P-200A/B	LH2 BOOSTER PUMP	6.4	13	3	25	0.6/1kV	F-CVS	3	4	1	6	44	0.6	26.4	OK	Type 1
P-300A/B	LH2 HIGH PRESSURE PUMP	75	149.2	3	200	0.6/1kV	F-CVS	3	3 X1C	1	240	353	0.6	211.8	OK	Type 1
P-500A/B	CC COOLANT PUMP	45	85.4	3	125	0.6/1kV	F-CVS	3	3 X1C	1	95	211	0.6	126.6	OK	Type 1
P-510A/B	DISPENSER COOLANT PUMP	5.5	10.9	3	25	0.6/1kV	F-CVS	3	3	1	6	44	0.6	26.4	OK	Type 1
-	AUX POWER	3	12.0	-	-	-	-	-	-	-	-	-	-	-		

POWER DISRIBUTION PANEL #0																
TAG	DESCRIPTION	Rated Power		Circuit Breaker		Cable									Result	Remark
		Power (kW)	Ampare (A)	Pole	Current (AT)	Voltage	Type	Phase	Core	Parallel Lines	Size (sqmm)	Base Ampacity (A)	Derated Factor	Derated Ampacity		
	MAIN POWER	-	250.0	4	250	0.6/1kV	F-CV	3+N	4 X 1C	2	120	480	0.6	288.0	OK	Type 2
C-900A	NITROGEN GENERATOR	12.5	26.3	4	32	0.6/1kV	F-CV	3+N	4	1	10	58	0.8	46.4	OK	Type 3
UPS-101	UPS	9	15.8	4	63	0.6/1kV	F-CV	3+N	4	1	16	100	0.73	73.0	OK	Type 4
CH-560	PACKAGED CHILLER	69	137	3	175	0.6/1kV	F-CV	3	3 X 1C	1	120	240	0.8	192.0	OK	Type 3

