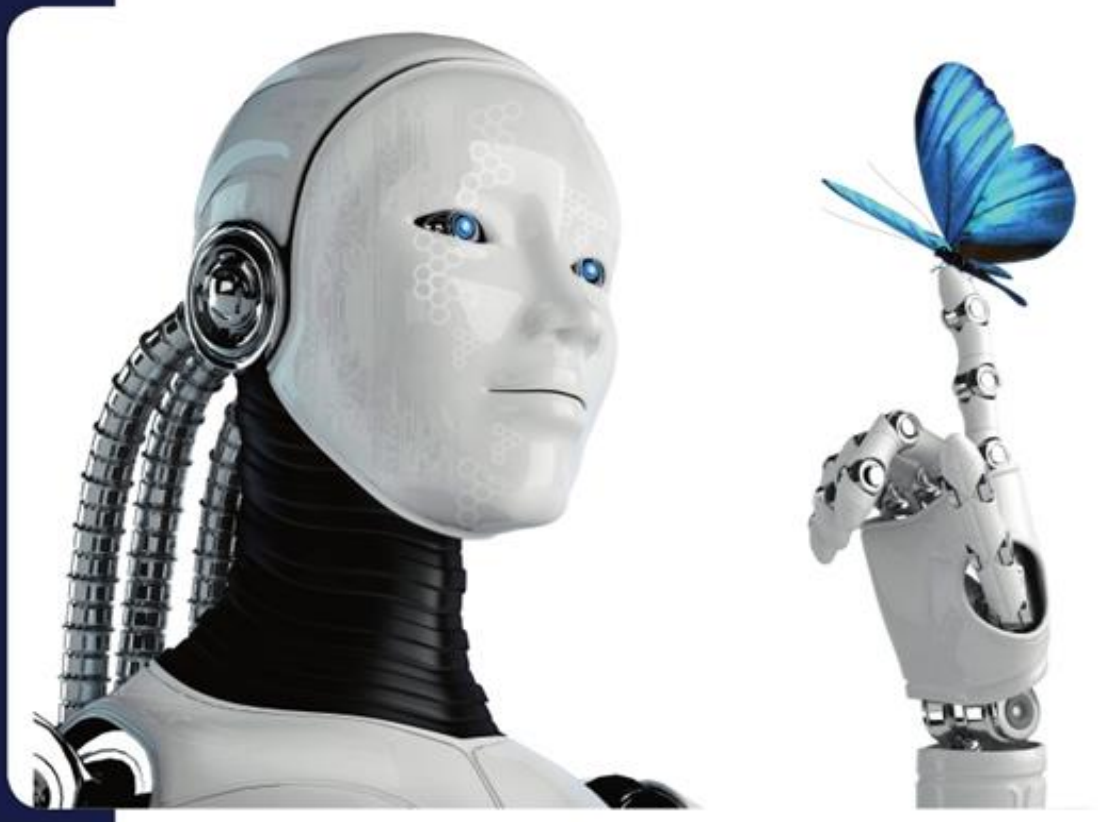
Newsletter
October, 2022

ICR



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Hot Issue

1. Completion of ICR Battery Testing Center
2. Revision of ISO Certification Application Form
3. Revision of Standard Form of Test Report of Designated Testing Institutions (National Radio Research Agency)
4. IEEE Std. 519-2022 revision

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Completion of ICR Battery Testing Center

<View of ICR Pyeongtaek Battery Testing Center>

▣ **ICR Ltd. has built a testing center** specializing in mid- to large-sized **batteries (EV, ESS)** with a total floor area of 5,710m2 with 4 floors of performance test building and single floor of safety testing building in Pyeongtaek, Gyeonggi-do and it will be operational from **October** of this year.

▣ In particular, **the safety test building consists of six medium/large explosion-proof rooms,** which allow abuse test to be carried out in a safe test environment, such as thermal runaway, propagation, external short circuit, crush, nail-penetration, and drop test and so on.

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Completion of ICR Battery Testing Center

<Testing Equipment>

Equipment / Facility	Setup & Operation	
	2022-09 ~ 2022-12	2022-11 ~ 2023-02
Pack Cycler (1500V, 1000V)	O	
Module Cycler (200V)	O	
Cell Cycler (6V)	O	
Walk-in Chamber	O	
Temp. & Humid. Chamber	O	
Large Thermal Shock Chamber	O	
Altitude Simulation		O
Salt Spray		O
IP Water(IPx1, 2, 3, 4, 4K, 5, 6, 6K, 9, 9K)		O
Pack/Module Crush/Nail Penetration	O	
Cell Crush/Nail Penetration		O
External Short-Circuit	O	
Immersion (IPx7, 8)	O	
Drop	O	
Impact		O
Large Shaker (30tf)	O	
Explosion-proof Room #1 (Drop, Impact)	O (Drop)	O (Impact)
Explosion-proof Room #2 (Immersion, Cell crush/nail, Heating, Propagation)	O (Immersion, Propagation)	O (Cell crush/nail, Heating)
Explosion-proof Room #3 (Pack crush/nail)	O	
Explosion-proof Room #4 (Propagation)	O	
Explosion-proof Room #5 (Overcharge, External short-circuit etc.)	O	
Explosion-proof Room #6 (Vibration)	O	

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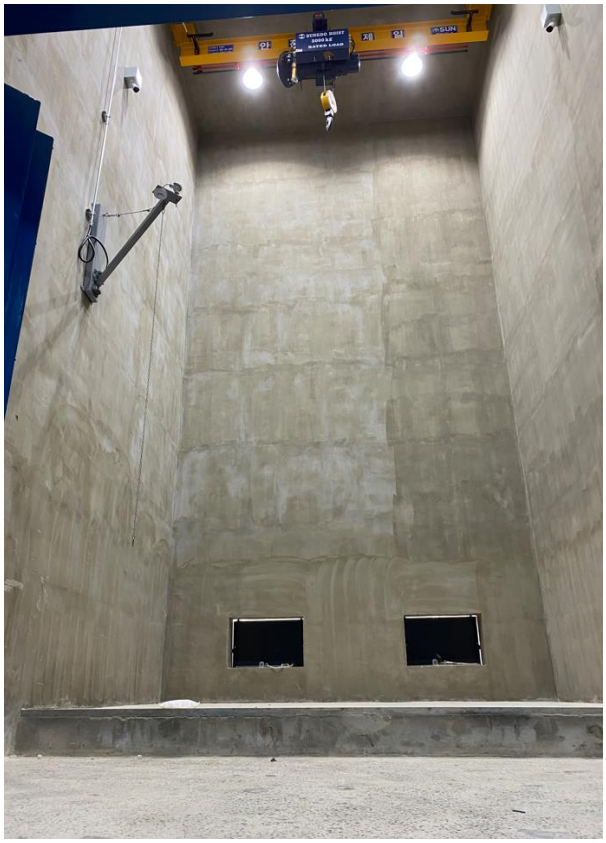
Completion of ICR Battery Testing Center

< Testing Equipment >

30tf Large Shaker (Oct.)

Drop (Sept.)



Thermal Propagation (Sept.)

Short-Circuit/Overcharge (Oct.)

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<Testing Equipment >

Cell Cyclers & Temp./Humid. Chamber (Nov.)

Temperature/Humidity Chamber (Nov.)

Thermal Shock (Nov.)

Walk-in Chamber (Nov.)

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Completion of ICR Battery Testing Center

<View of ICR Pyeongtaek Battery Testing Center>

▣ The below table shows **the list of equipment being set up**, and the operating time varies depending on the test equipment, **the 300kN(about 30tf) shaker and explosion-proof rooms can be used from October this year.**

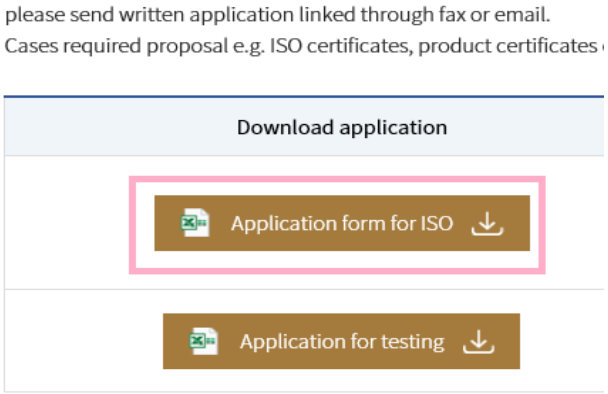
▣ If you need any additional equipment other than the above equipment list, we can discuss and make additional investment, so please feel free to contact our Battery Testing Center.

☎ Inquiries
Battery Testing Center / Young-Ho Park
T. 02-6351-9003 / youngho.park@icrqa.com

Revision of ISO Certification Application Form

▣ As the ISO certification application form has been revised, **it has been updated on the ICR website.**

▣ The **ISO certification application form** can be downloaded through the path below.



▣ **The revision contents are as follows.**

① Changed the address of the ICR System Certification Division

② 2. Type of Organization – "Non-permanental personnel" Add writing items

▣ The application that were completed by the client, shall be submitted with documentary evidence of number of employees to ICR.

▣ The ICR System Certification Division will send a proposal with a quote to the customer upon receipt of an application form from the customer.

☎ **Inquiries**

System Certification Div. / Hwang, Hyun-Soo

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Revision of Standard Form of Test Report of Designated Testing Institutions

(National Radio Research Agency)

▣ **1.** Related

▶ **A.** Article 13 of the Public Notice Concerning the Designation and Management of Testing Organizations for Broadcasting and Communications Equipment (Test Report, etc.)

▶ **B. Information and Communication Synthesis Division - 992** ('22.07.14, revised standard format of test report (proposed) collection of opinions)

▣ **2.** Revision and distribution of the standard format of the test report for the efficient execution of the test work of the designated testing agency as follows:

▶ **A. Major amendments to the seven standard formats**

• (Common) Review raw data test results traceability, reflection for post-management and operational efficiency, and simplify and centralize test report formats

• (By test field) Currentization of technology revision, contents of test measurement procedures, etc.

* Wired (two types), wireless (one type), electromagnetic compatibility (one type), electromagnetic absorption (one type), electromagnetic intensity (two types)

▶ **B. Date of Enforcement: After October 4, 2022**

☎ **Inquiries**
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IEEE Std. 519-2022 revision

Requirements for Harmonic Control in Electric Power Systems

<Published:08/04/2022>

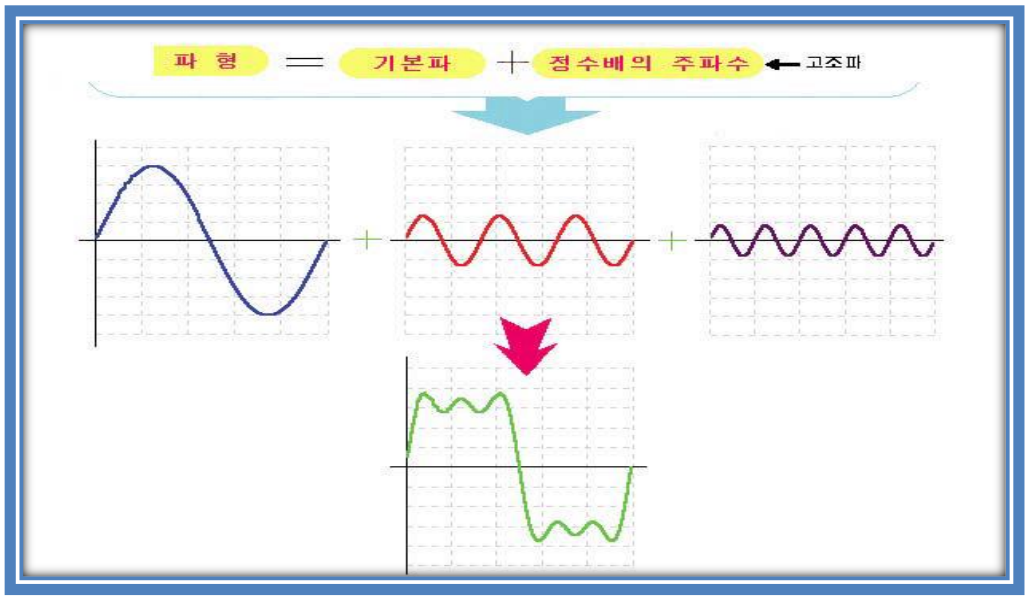
▣ Purpose

- This is to prevent malfunction, damage, and overheating/ energy loss of devices and to ensure quality power quality by harmonics that are inevitably issued due to advances in power and electronic technology.

▣ Harmonic

- Integer times the default frequency(2,3,4,5,6,.....n) is a voltage and current with a frequency.

- Caused by distortion of voltage/current by non-linear load operation.



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<Published:08/04/2022>

▣ Harmonic sources

- Harmonics by switching power electronic devices in rectifiers, inverters, and converters.

- Harmonic waves caused by current due to the characteristics of the transformer magnetization (hysteresis phenomenon).

- Harmonics caused by resonance of inductive reactance and capacitive reactance.

- harmonic waves caused by transients

- Illumination stabilizer and harmonic wave by SCR AC phase control device.

IEEE Std. 519-2022 revision

Requirements for Harmonic Control in Electric Power Systems

<Published:08/04/2022>

▣ Current Harmonic Management Criteria

- Revision: Expanded from 3 to 50th order current harmonic limit to 2nd to 50th order

SCR =ISC/IL	Systems rated 120 V through 69 kV						
	2014 Ver	3 ≤ h <11	11 ≤ h < 17	17 ≤ h < 23	23 ≤ h < 35	35 ≤ h ≤ 50	TDD
	2022 Ver	**2 ≤ h <11**	**11 ≤ h < 17**	**17 ≤ h < 23**	**23 ≤ h < 35**	**35 ≤ h ≤ 50**	**TDD**
< 20		4.0	2.0	1.5	0.6	0.3	5.0
20-50		7.0	3.5	2.5	1.0	0.5	8.0
50-100		10.0	4.5	4.0	1.5	0.7	12.0
100-1000		12.0	5.5	5.0	2.0	1.0	15.0
> 1000		15.0	7.0	6.0	2.5	1.4	20.0

SCR =ISC/IL	Systems rated 120 V through 69 kV						
	2014 Ver	3 ≤ h <11	11 ≤ h < 17	17 ≤ h < 23	23 ≤ h < 35	35 ≤ h ≤ 50	TDD
	2022 Ver	**2 ≤ h <11**	**11 ≤ h < 17**	**17 ≤ h < 23**	**23 ≤ h < 35**	**35 ≤ h ≤ 50**	**TDD**
< 20		2.0	1.0	0.75	0.3	0.15	2.5
20-50		3.5	1.75	1.25	0.5	0.25	4.0
50-100		5.0	2.25	2.0	0.75	0.35	6.0
100-1000		6.0	2.75	2.5	1.0	0.5	7.5
> 1000		7.5	3.5	3.0	1.25	0.7	10.0

SCR =ISC/IL	Systems rated > 161 kV						
	2014 Ver	3 ≤ h <11	11 ≤ h < 17	17 ≤ h < 23	23 ≤ h < 35	35 ≤ h ≤ 50	TDD
	2022 Ver	**2 ≤ h <11**	**11 ≤ h < 17**	**17 ≤ h < 23**	**23 ≤ h < 35**	**35 ≤ h ≤ 50**	**TDD**
< 20		1.0	0.5	0.38	0.15	0.1	1.5
20-50		2.0	1.0	0.75	0.3	0.15	2.5
≥50		3.0	1.5	1.15	0.45	0.22	3.75

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▣ Voltage Harmonic Management Criteria

Bus Voltage at PCC	Individual Voltage Distortion(%)	Total Voltage Distortion(%)
V ≤ 1.0 kV	5.0	8.0
1.0 kV < V ≤ 69 kV	3.0	5.0
69 kV < V ≤ 161 kV	1.5	2.5
161kV < V	1.0	1.5

☎ Inquiries

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