君合专题研究报告 JUNHE

2022 年 6 月 30 日

环境健康与安全专题系列（二十四）：-- 电化学储能项目运营中的安全管理注意事项

近年来，储能电站发生火灾、爆炸事故时有发生，出现员工伤亡，甚至在事故救援过程中，出现消防员牺牲的情况。该等事故，有些是由储能项目使用的电池本体或管理系统问题诱发（例如电池突发内短路故障引发热失控），有些是储能场所安全风险隐患导致（例如电池室环境或装修材料不达标）。这些事件给电化学储能电站项目（以下简称“**储能项目**”）运营中的安全管理敲响了警钟。本文以近两年储能项目相关的立法变化为脉络，简要梳理储能项目运营安全方面的监管重点。

一、储能项目安全监管的近期立法动态

国家发展改革委、国家能源局于 2021 年 8 月 24 日发布了《电化学储能电站安全管理暂行办法（征求意见稿）》（以下简称“**《安全管理草案》**”），对储能项目的准入、生产与质量控制、设计咨询、施工及验收、并网及调度、运行维护、退役管理、应急管理与事故处置等环节要求进行全生命周期监管。

《安全管理草案》明确了储能项目“安全第一、预防为主、综合治理”的管理方针，要求储能项目建设单位应建立安全风险分级管控制度和事故隐患排查治理制度。同时，《安全管理草案》也进一步明确了安全监管上的细节，例如，要求在开工建设前完成储能项目的备案，确保安全设施与主体工程“三同时”，项目设计时禁止在人员密集场所、高层建筑内、地下建筑、易燃易爆场所部署储能电站，及储能项目投运前通过消防验收等。

尽管《安全管理草案》尚未实施，但从草案中可预见储能项目的安全监管将会成为储能监管的重中之重。这一重点在国家能源局于 2022 年 4 月 26 日发布且生效的《国家能源局综合司关于加强电化学储能电站安全管理的通知》（国能综通安全〔2022〕37 号）（以下简称“**《能源局通知》**”）也有体现。《能源局通知》强调“人民至上、生命至上”，要求高度重视储能项目安全管理。

此外，《能源局通知》也对储能项目相关参与方责任作了较细致规定：储能项目安全运行的责任主体为业主（项目法人），（如通过委托运维单位进行项目运维的）应当明确业主和运维方的安全责任并且监督受托方严格执行法规和标准，明确消防安全责任人和消防安全管理人履行消防安全管理职责。国家发展改革委、国家能源局于 2022 年 6 月 7 日制发的《国家发展改革委办公厅、国家能源局综合司关于进一步推动新型储能参与电力市场和调度运用的通知》（发改办运行〔2022〕475 号）中，进一步要求各地要加强新型储能建设、运行安全监管，督促有关电力企业严格落实《能源局通知》要求，并鼓励电力企业积极参加国家级储能项目安全监测信息平台建设。

针对新建动力电池的梯次利用[1]储能项目，国家能源局于 2021 年 9 月 24 日发布的《新型储能项目管理规范（暂行）》（国能发科技规〔2021〕47 号），

[1] “梯次利用”即对废旧动力蓄电池进行必要的检测、 分类、 拆分、 电池修复或重组为梯次利用电池产品。

规定应遵循全生命周期理念，梯次利用电池均要取得安全评估报告。对已建和新建的动力电池梯次利用储能项目，应建立在线监控平台，实时监测电池性能参数，定期进行维护和安全评估，做好应急预案。我们留意到实践中监管部门对梯次利用电池新建储能项目的审批仍采取较严苛口径[2]。

二、针对储能项目安全的整治方案及行动

执法层面，2021 年 11 月 30 日，国务院安全生产委员会办公室发布了《电化学储能电站安全风险隐患专项整治方案》（安委办〔2021〕9 号）（以下简称“**《整治方案》**”），要求各地主管部门和企业对已建成和在建储能项目检查到位，防范安全风险。

《整治方案》出台后，我们注意到不少地方主管部门陆续出台了具体的风险隐患评估方案，并开展了储能项目安全风险专项治理。以北京、上海地区的专项治理为例，我们对监管态势有如下观察：

1、 主要监管部门。储能项目安全监管的日常主要监管部门除应急管理部门与消防部门外，还涉及发改部门、能源部门、工信部门和市场监管部门等（例如查处提供不合格储能电池的生产商和供应商）。出现事故被问责时，除行政处罚，视违法行为性质和危害程度，储能项目相关责任人员还可能被司法机关追究刑事责任。

2、 重点监管领域。储能项目安全风险评估，涉及多个维度，包括储能项目的规划与选址（例如项目设立批复或备案文件）、设计与平面布置（例如消防验收、防火间距）、建筑与结构（如耐火等级达标与安全出口设置）、储能系统安全（如电池质量安全、防火防爆措施）、消防系统与安全设施（如火灾报警系统、防雷设计达标）以及安全与应急管理（如人员资质、安全生产规章制度、应急预案编制）等。安全风险评估的开展，既涉及监管部门对文件资料的查阅，也涉及对储能项目的现场勘察。

3、 储能项目安全监管的“红线”。当出现一些特定情形时，储能项目在安全风险评估中可能直接被认定为高风险等级，在后续督办整治中，被重点责令及时整改，重大事故隐患排除前或排除过程无法保证安全的，可能被责令停产停业整顿甚至予以关闭。该等情形包括但不限于：储能电站设计、施工单位不具备相应资质，储能电站设置在建筑物内地下室（半地下室），接入 10（6） kV 及以上电压等级的储能系统未获得有资质单位出具的并网测试报告，电池管理系统无法正常运行（不能实时监测电池状态、不能及时上传报警信息、不能及时启动电池电气保护），储能电站内使用、储存易燃易爆危险化学品，三年内发生过较大以上安全事故的，或者近一年内发生 1 起以上亡人一般安全事故的。储能项目运营方应当尤其留意避免上述情形出现。

三、我们的建议

安全无小事，储能尤应慎。各地应急管理部门也正组织或将组织进行安全大检查（参见《“安全生产十五条措施”出台，全国安全生产大检查即将开展！》[3]），我们提示储能项目运营方及投资方：

[2] 例如根据北京市城市管理委员会于 2022 年 3 月 30 日发布并实施的《关于公开征集“十四五”时期新型储能拟建设项目的通知》，该次征集新型储能项目不得使用梯次利用动力电池。

[3] https://mp.weixin.qq.com/s/VqnLxyCZERqPWD6MkRRAHQ

1、 关注储能安全管理方面的相关立法动态，充分、准确地识别和落实监管要求，并结合中央和各地对储能项目安全风险专项治理，及时梳理和降低储能项目的安全合规风险。

2、 关注安全生产的相关立法动态，严格落实安全生产责任制及《安全生产法》的各项要求，加强供应商管理（更多的讨论，请参见《安全生产管理协议，为企业安全保驾护航》[4]）。

3、定期进行 EHS 内、外部合规审计，及时排查和整改储能安全管理方面的隐患，防范安全事故。如需，请与您的 EHS 律师或顾问联系。

[4] https://mp.weixin.qq.com/s/mDGg91Xw5zmScd85D15ujg

朱 核	合伙人	电话：86 21 2208 6340	邮箱地址：zhuh@junhe.com
倪天伶	合伙人	电话：86 21 2208 6346	邮箱地址： nitl@junhe.com
刘 欣	律 师	电话：86 21 2208 6002	邮箱地址： liuxin_lea@junhe.com
陈清源	律 师	电话：86 21 2283 8334	邮箱地址： chenqingyuan@junhe.com
赵 颉	律 师	电话：86 21 2283 8380	邮箱地址： zhaoj_Jerry@junhe.com

JUNHE
SPECIAL REPORT

JUNHE

June 30, 2022

Environmental Health and Safety Series No.24

Safety Management Considerations for the Operation of Electrochemical Energy Storage Projects

In recent years, many fire hazards and explosions have occurred in energy storage power stations, with resultant employee casualties and, on occasion, the death of firefighters. Some of these incidents have been due to problems with batteries or the management systems used in electrochemical energy storage power station projects (hereinafter referred to as "**Energy Storage Projects**") (e.g., thermal runaway caused by sudden short-circuit battery failure), and some have been caused by unseen safety risks in energy storage sites (e.g., a failure to meet battery room standards). These incidents have raised alarms regarding the safety management of Energy Storage Projects. In this article, we briefly look at the legislative changes that have been introduced in the last two years relating to the operational safety of Energy Storage Projects.

I. Recent legislative developments in safety regulations for Energy Storage Projects.

On August 24, 2021, the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) released *the Interim Measures for Safety Management of Electrochemical Energy Storage Power Stations (Draft for Comment)* (hereinafter referred to as "**Draft Safety Management**") to regulate the life cycle of Energy Storage Projects. This draft covered areas such as project approval, production and quality control, design consultation, construction and acceptance, grid connection and scheduling, operation and maintenance, decommissioning management, emergency management and incident treatment.

The Draft Safety Management specifies a management policy of "prevention-

oriented, comprehensive management and safety first" for Energy Storage Projects. It requires that the construction unit of an Energy Storage Project should establish a safety risk grading system and a mechanism for the management of incidents and hidden dangers. The Draft Safety Management further clarifies details regarding safety supervision; for example, it requires that all filing of Energy Storage Projects happens prior to the start of construction. It ensures the "Three Simultaneities" of safety facilities and prohibits the building of energy storage power stations in crowded locations, in high rise and underground buildings, as well as in the vicinity of flammable and explosive materials. It also requires Energy Storage Projects to pass a fire safety inspection before a commercial operation commences.

Although the Draft Safety Management has not yet taken effect, we can predict that safety regulations for Energy Storage Projects will become a high priority. *The Notice of the Comprehensive Department of the National Energy Administration on Strengthening the Safety Management of Electrochemical Energy Storage Power Stations* (NEA General Safety [2022] No. 37) (hereinafter referred to as "**NEA Notice**") issued by the NEA and which came into effect on April 26, 2022, also reflects this. The NEA Notice emphasized a philosophy of "pro-people, pro-life" and highlighted the priority of the safety management of Energy Storage Projects.

The NEA notice stipulates the responsibilities of the relevant participants in Energy Storage Projects, i.e. (i) the landlord (project legal person) shall be the main responsible party for the safe operation of Energy Storage Projects, (ii) (in the event of subcontracting the project's operation and maintenance) the responsibility of the project landlord and the operator for the operation and maintenance of the Energy Storage Project shall be clear and the landlord shall supervise the operator's implementation of the regulations and standards, and (iii) the person in charge of firefighting and the firefighting safety manager shall duly perform the relevant fire safety management duties. *The Circular of the General Office of the National Development and Reform Commission and the General Affairs Department of the National Energy Administration on Further Urging New Energy Storage to Participate in the Power Market, Scheduling and Operation* (NDRC Operation [2022] No. 475), issued by the NDRC and the NEA on June 7, 2022 further strengthens the management of the construction of new energy storage projects as well as the operational safety supervision, and urges the relevant electric power enterprises to

strictly implement the NEA Notice. It also encourages electric power enterprises to actively participate in the construction of national safety monitoring information platforms for Energy Storage Projects.

In terms of echelon battery use in Energy Storage Projects[5], the NEA on September 24, 2021 issued *the new energy storage project management specifications (Temporary)* (National Energy Development Science and Technology Regulation [2021] No. 47), which strengthen the life cycle concept, and stipulates that echelon battery use shall be subject to safety assessment reports. Energy Storage Projects shall set up an online monitoring platform to monitor live battery performance parameters, conduct regular maintenance and safety assessments, and make emergency plans. We have observed in practice that regulatory authorities usually adopt a strict attitude towards the approval of echelon battery use in new Energy Storage Projects[6].

II. Remediation programs and actions for the safety of Energy Storage Projects

On November 30, 2021 the Office of Work Safety Committee of the State Council issued *the Special Remediation Plan for Safety Risks and Hazards of Electrochemical Energy Storage Power Stations* (Office of Work Safety Committee [2021] No. 9) (hereinafter referred to as "**Remediation Plan**"), requiring local authorities and enterprises to inspect established and evolving Energy Storage Projects to mitigate any safety risks.

After the enforcement of the Remediation Plan, we observed that various local authorities had successively introduced solid hidden risk assessment plans and carried out special projects to rectify the safety risks of Energy Storage Projects. Based on our observation of the action plans already implemented in Beijing and Shanghai, we have noted the following regulatory trends.

1. Main regulatory authorities. Besides the emergency management departments and the fire departments, other authorities in charge of the safety supervision of Energy Storage Projects include the local competent authorities of the NDRC and NEA, industry and information authorities and market supervision authorities (who for instance, investigate and punish manufacturers and suppliers who

[5] "Echelon use" means the necessary testing, sorting, dismantling, battery repair or reorganization of used power batteries into secondary use battery products.

[6] For instance, the *Notice on the Public Call for New Energy Storage Projects to be Built in the 14th Five-Year Plan* issued and implemented by the Beijing Municipal Commission of Urban Management on March 30, 2022, prohibits new Energy Storage Projects from echelon battery use.

provide unqualified energy storage batteries). In the event of a safety incident, apart from an administrative penalty and depending on the nature of the violation and the extent of the injury, the management in charge of an Energy Storage Project may also be held liable from a criminal law perspective.

2. Key regulatory areas. Safety risk assessment of Energy Storage Projects involves multiple dimensions, including the planning and citing of Energy Storage Projects (e.g., project approval or the filing of documents), design and layout (e.g., fire hazards), building and structure (e.g., fire resistance rating compliance and safety exit settings), energy storage system safety (e.g., battery quality, fire and explosion prevention measures), fire protection systems and safety facilities (e.g., fire alarm systems, lightning protection design compliance), and safety and emergency management (e.g., personnel qualifications, safety production regulations and emergency planning). A safety risk assessment may be carried out by a document review and a site inspection by the regulatory authorities.

3. The "Bottom line" of Energy Storage Project safety supervision. In certain circumstances, an Energy Storage Project may be ranked as high-risk. Consequently, such a project may be ordered (i) to rectify the violations in a timely manner, and (ii) in the event of a failure to rectify the significant incident risks or ensure the safety before such risks are eliminated, to cease production and operations or even shut down the station. Such specific circumstances may include the energy storage power station designer or the constructor lacking the required qualifications, the energy storage power station being located in the basement of a building (semi-basement), the energy storage system has access to or above the voltage level of 10 (6) kV and has failed to obtain the grid connection test report from the qualified institutions, the battery management system fails to operate on a regular basis (e.g. failing to monitor live battery status, failing to upload alarm information, or to launch battery protection in a timely manner), using or keeping flammable and explosive hazardous chemicals in an energy storage power station, and the occurrence of a significant safety incident within the last three years, or the occurrence of more than one safety incident with fatalities within the last

year. The operator of an Energy Storage Project should pay particular attention to avoid any of the aforementioned circumstances.

III. Our Suggestions

No detail is too trivial when it comes to safety, especially concerning Energy Storage Projects. Local emergency departments are organizing various safety inspections (please see our article "*Fifteen Measures for Work Safety' and Upcoming Nationwide Work Safety Inspection*"[7] for more details), and we remind the operators and investors of Energy Storage Projects to:

1. Pay attention to the relevant legislative developments in energy storage safety management, fully and accurately identify and implement the regulatory requirements, and together with central and local departments sort and reduce safety compliance risks in a timely manner.

2. Pay attention to the relevant safety legislative developments regarding production, and strictly implement production safety responsibility systems and the requirements of *the Production Safety Law* to strengthen the management of supply chains (for more details, please refer to our article "Safety Management Agreements Ensure the Safety of Enterprises"[8]).

3. Conduct EHS internal and external compliance audits on a regular basis to identify and rectify any hidden dangers. For more information, please contact your EHS lawyer or consultant.

[7] https://mp.weixin.qq.com/s/VqnLxyCZERqPWD6MkRRAHQ
[8] https://mp.weixin.qq.com/s/mDGg91Xw5zmScd85D15ujg

George Zhu	Partner	Tel: 86 21 2208 6340	Email: zhuh@junhe.com
Carey Ni	Partner	Tel: 86 21 2208 6346	Email: nitl@junhe.com
Liu Xin	Associate	Tel: 86 21 2208 6002	Email: liuxin_lea@junhe.com
Chen Qingyuan	Associate	Tel: 86 21 2283 8334	Email: chenqingyuan@junhe.com
Zhao Jie	Associate	Tel: 86 21 2283 8380	Email: zhaoj_Jerry@junhe.com