So You've Been Placed on Notice...Now What?

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Jonathan Jordan BSEE, CFEI
Goodson Engineering

Lithium-Ion (Li-Ion) batteries have received much attention in recent years by the public at large but also by fire investigators and forensic engineers. This attention is primarily due to product recalls and exothermic battery failures caught on video and posted to the Internet. Due to this heightened awareness of battery volatility, entities that manufacture, distribute or sell batteries are being placed on notice of fire losses with much more frequency in the last few years.

Once placed on notice and involved in a property loss investigation, these entities need to understand what it means to be placed on notice, how to respond, the fire investigation process and who to retain as their expert.

Background

The idea of lithium batteries has been around since the early 1970s and development of the Li-Ion battery as we know it today since the mid-1980s. Safety of lithium-based batteries has been a concern since the beginning. However, many strides have been made to improve cell safety, which by and large are safe. Nonetheless, periodically there are battery failures that result in exothermic events. This attention to the few exothermic events has created a situation where manufacturers, distributors and retailers of Li-Ion batteries found in the origin area of a fire loss are routinely placed on notice as a potential defendant. With so many products utilizing Li-Ion batteries, numerous fires across the globe will result in these entities being notified of losses as potential defendants.

Figure 1. Lithium-Ion 18650 Cell Heat Exposure

Loss Notification

The fire investigation profession has changed a lot through the years. In the past, potential defendants might not be notified of loss until after suit was filed. Today, when fire damage occurs, the widely accepted methodology is to determine fire origin and place the manufacturers of products in the origin area on notice as well as any service providers that previously performed work in the area. NFPA 921: Guide to Fire and Explosion Investigations1 has been instrumental in this movement. These improvements allow all parties the same investigation opportunities, thus leveling the playing field. Potential defendants are notified earlier in the process allowing examination of the fire scene and later examination of evidence in a laboratory. Unfortunately for potential defendants, they are now placed on notice more frequently, resulting in higher investigation costs. Many times examination results exonerate a defense party although they have already spent significant dollars investigating, thus it may be viewed by some as wasted resources. However, it is almost always worth the time, effort, energy and dollars to participate in such investigations to determine the truth whether the potential defendant's product is at fault or not.

The purpose of notifying potential defendants of the loss and investigation is to afford all parties an equal opportunity investigation and prevent spoliation arguments. Spoliation of evidence is defined by NFPA 921 as "Loss, destruction or material alteration of an object or document that is evidence or potential evidence in a legal proceeding by one who has the responsibility for its preservation."1 Many times potential defendants are overwhelmed by notification of a fire loss, particularly for the first time. They feel accused of causing the loss simply from the notice letter. This is not necessarily the case. The best scenario for forensic investigations is one that allows all parties equal opportunity. If potential defendants were left out, that party could make spoliation arguments, something no one wants. Therefore, all potential defendants within the origin are notified regardless of the likelihood of culpability. Please note that ASTM standard E860 Standard Practice For Examining And Preparing Items That Are Or May Become Involved In Criminal or Civil Litigation2 dictates the notification of potentially adverse parties.

Due to the aforementioned visibility of Li-Ion battery failures, investigators are sure to notify battery entities. Prior to this visibility, many fire investigators would have dismissed a battery product as a fire cause simply because it was unplugged at

the time of the fire. However, visibility has changed that perception and made all batteries fair game because fire investigators typically do not understand the difference in chemistries. This leaves battery entities defending legitimate claims and claims of batteries incapable of causing fire. Today, any cell or pack found in an origin area may result in notifying battery entities of loss.

Response to Notification

Sometimes potential defendants are placed on notice and simply do not show for an examination. Certainly, there are times where potential defendants do not receive the notice or are given such short notice they cannot attend the proposed examination. When this happens, that argument may be made at some point. However, those potential defendants that simply ignore the notice as though the issue will go away need to understand that is unlikely. If they were notified but did not participate in the examination(s) their defense could be at a disadvantage as the fire scene may have been repaired and/or evidence altered. Such alteration of evidence may limit the investigation one can perform at a later time.

What about the moral obligation to determine if products or services have a defect? If an issue exists, there is a possibility of reoccurrence. A responsible entity wants to determine if an issue exists with their product or service and correct the issue. Only through conducting a proper investigation can the entity determine if a failure occurred, failure mode and likelihood of reoccurrence. Depending on the investigation results, the entity may need to take recall actions. Entities that take recall actions may take a hit to their reputation and their bottom line since recalls are public and may get media attention. Thus, there may be a reluctance to proceed with a recall. However, despite the public perception, entities that act responsibly should be commended.

When placed on notice, potential defendants should recognize the opportunity to participate in an investigation that involves their product or service rather than panic or ignore the notification. Assuming the potential defendant is insured, they should report the notice to their carrier. The carrier will contact the subrogation carrier to inform them of the intent to participate in the investigation. Should an entity not be insured, the entity should contact the subrogation carrier promptly and express their desire to participate.

The potential defendant must realize the subrogation carrier has control of the property, fire scene and evidence during the investigation. Subrogation carriers are only obligated to notify parties of the loss and investigation. If there is no response from the potential defendants after a reasonable amount of time following notification, the subrogation carrier may proceed with the investigation with or without the non-responsive party. This is understandable as the subrogation carrier needs to begin repairs as a family is waiting to return home or employees are waiting to return to work. The response should also request to be informed of suggested examination dates if one or more options were not provided in the notice letter. Many times the notice letter is received only a day or two prior to an examination for one reason or another. Therefore, it is reasonable to request examination dates further out as getting travel arrangements together may be difficult to impossible. It can be very difficult to schedule representatives, particularly an expert on such short notice. Depending on the situation, either the entity retains an expert or the carrier retains an expert on the entity's behalf to attend the examination. Some entities choose to send their employed engineers in addition to the retained expert.

The Fire Investigation Process

Once parties have responded and examination date set, the property will be made available by the subrogation carrier. The subrogation carrier's experts will lead the examination. Upon arrival one should expect a sign-in sheet typically requesting name, entity representing, contact information and signature. Each attendee should sign this form as this is common practice. However, any other requests for signing documents should be scrutinized as this is atypical in such examinations. I attended an examination that requested signing documentation stating no further examination would be required following the current examination. I refused signing as the evidence may need further examination in the future. The point is that no party should limit their investigation or corner themselves. I proceeded and completed examination without signing that document. Documentation besides sign-in sheets should be produced prior to examination so that it may be properly reviewed. Whether parties agree that the document can be signed as-is, with edits, or not at all should be agreed upon prior to examination. If subrogation representatives attempt to prevent examination without signatures, the potential defendant's attorney(s) should be notified immediately. The attorneys may resolve the conflict, allowing the examination to proceed.

Since the subrogation experts are leading the examination, the potential defendant should allow them to perform their job. However, experts for the potential defendant should be conducting their independent investigation so long as they do not disturb, destroy or damage evidence. The same can be said of the subrogation experts as they should ensure all parties have been able to document evidence prior to moving or altering evidence. The bottom line is all parties should conduct their independent investigation, but they need to be on the same page with regard to the fire scene and evidentiary items as the investigation progresses.

Figure 2. Fire Scene Example

For the battery entity, they know their product better than anyone. At a fire scene, battery analysis will likely be little more than finding and identifying cells or packs. However, this piece is very important as only the battery entity representative(s) will likely know the number of cells in the product involved and only they will likely have the ability to identify

parts such as the Battery Management Unit (BMU). A responsible entity wants to collect all evidence so that appropriate analysis can be performed and determine if their product is at issue. Similarly, the entity wants to identify all components of a pack or cell so that they can determine if it is indeed their product. For example, finding cell connections or an intact BMU can be an easy way to confirm or deny manufacture. Thus, entities play an important role in this process and their own defense, so they need to be involved.

During fire scene examinations, the subrogation experts will harvest evidence from the scene. Per ASTM E860-072, the evidence recovered should be identified and protected prior to leaving the scene such that it will be in the same or near same condition when it is evaluated in a laboratory environment. This is typically done by placing smaller evidence in heavy duty Ziploc type bags and shrink-wrapping larger items. For identification, an evidence tag is typically attached to each evidentiary item. An evidence list is also created to easily identify and account for all evidence recovered. The evidence list is generally made available to all parties, although one may have to request this document from the subrogation party.

The next step is to conduct an evidence examination in a proper laboratory setting. The key term is "proper" as some laboratories are little more than a storage locker with a table. Mark Goodson's paper, "Engineering Labs – What is the Paradigm?"3,addresses a proper laboratory. During an evidence examination, the subrogation engineer should lead the examination, but again all parties should work together such that everyone has equal opportunity to document evidence. As an investigation participant, one may request a written protocol be produced prior to examination. This will provide all parties with expectations of the exam. Any party can also make recommendations or request changes to the protocol.

While the subrogation engineer leads the examination, any party can request anything be done at any time. For example, debris may be adhered to a conductor, one may request that the conductor be cleaned with an ultrasonic cleaner even if the opposing expert was not planning on performing that task. In my experience, most hosting experts will accommodate almost any reasonable request. One just has to realize this is acceptable, particularly when participating for the first time.

When parties agree that an examination will be destructive, the potential defendant(s) needs to understand that their product will be disassembled by any means necessary to the extent needed for the examination. For a battery pack, this may mean disassembling the pack, examining cell connections and mechanical design, weighing and measuring cells, measuring voltage and impedance of cells, and examining BMU remains. Depending on its condition, the BMU may be repopulated with good components to determine functionality. The battery manufacturer may be requested to check the logic on board the BMU to determine number of charge cycles on the pack, any registers that reveal warnings, and the like. At cell level, cells may also be disassembled and examined for evidence of shorting, plating, dendritic growth or other phenomena.

Retaining an Expert

For battery manufacturers, distributors or retailers involved in a fire investigation they first need to retain an origin expert. Most often, subrogation experts have determined fire origin as they see it. However, expressing an opinion on fire origin does not mean they have concluded correctly. Retaining a well-qualified origin expert is essential for potential defendants to determine if they agree with the origin area. This is an important point for any defendant since their product could only be a potential fire cause if it were within the fire origin.

Regarding fire investigations, electrical engineers are frequently used due to electrical potential ignition sources. It seems battery entities are unsure of which experts to retain. While it is clear a battery expert is needed, there are few battery experts in the US. There may also be an assumption that electrical engineers by default are battery experts. As a result, many times electrical engineers are retained but have little to no battery expertise. Therefore, when searching for battery expert representation, search for electrical engineers that have extensive experience with battery failure modes and fire causation as well as batteries that were fire victims. Be cautious of battery experts who design and develop batteries but have little to no experience in battery failure analysis or fire causation. While they deal with the same product, design and development are vastly different from failure analysis and fire causation.

Summation

The receipt of a notice letter is not the end of the world. Rather, it should be viewed by the potential defendant as a chance to learn about the loss, investigate the loss, and defend themselves if necessary. If there is a legitimate problem, the entity needs to be aware of the issue and address it.

The potential defendant should retain a qualified expert and participate in the examinations. Similarly, the manufacturer's expert should ensure that all investigative work is done in proper fashion in a well-equipped facility. It is by following the steps of the investigation in a systematic manner that a reliable answer may be found.

References

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Jonathan Jordan is a Consulting Engineer at Goodson Engineering. He received his BSEE from The University of Texas at Austin in 2001, and holds a CFEI certification. Mr. Jordan specializes in electrical engineering issues and addresses issues related to failure analysis of a wide array of products and components including but not limited to electronics, printed circuit boards, appliances, HVAC/R, residential and commercial wiring, motors, power supplies, and battery failure analysis with an emphasis on Li-ion battery technology.

For more information please contact Goodson Engineering at 940-765-8986, jonathan@goodsonengineering.com or www.goodsonengineering.com.

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